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Agenda Item 12: Review Action Items 11
Agenda Item 13: Draft Quarterly Status Report..... 11
Agenda Item 14: Executive Session 11
Attachment A: Listing of Bridge Task Force, TRT, TAG and User Group Personnel..... 12



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General Information – Meeting of the Bridge Task Force

Date: Wednesday, February 8 – Thursday, February 9, 2017

Participants:

| | | | |
|-----------------|-------------------------------|------------------|----------------------|
| AASHTO | Judy Tarwater | AASHTO | Project Manager |
| SCOJD | Bruce Johnson | Oregon DOT | SCOJD Liaison |
| T&AA | Wally Ballou | Kansas DOT | T&AA Liaison |
| BrM Task Force | Eric Christie | Alabama DOT | Vice-Chair |
| | Beckie Curtis | Michigan DOT | Bridge Management |
| | Mark Faulhaber | Kentucky TC | Bridge Management |
| | Bruce Novakovich | Oregon DOT | Bridge Management |
| | Thomas Martin | Minnesota DOT | Bridge Management |
| | Derek Constable (by phone) | FHWA Liaison | Bridge Management |
| BrDR Task Force | Todd Thompson | South Dakota DOT | Bridge Design-Rating |
| BrM Contractor | Jeremy Shaffer | Bentley | Bridge Management |
| | Josh Lang | Bentley | Bridge Management |
| | Josh Johnson | Bentley | Bridge Management |
| | Zac Boyle (by phone) | Bentley | Bridge Management |

General Discussion

The meeting was convened at 1:30pm.

Agenda Item 00: Review Agenda / Assign Minutes Recorder

The AASHTO Project Manager and a Bentley Representative will take the meeting minutes.

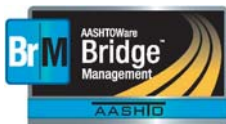
The agenda was reviewed and the following agenda items were added:

- Agenda Item 3b: Tunnel Enhancements
- Agenda Item 9c: Brainstorming Session with Arpine
- New Agenda Item 10: FHWA Update
- New Agenda Item 11: BrM Task Force Members

Agenda Item 01: Prior Business

1a. Review October Meeting Minutes

Minutes from October 25-26, 2016 Task Force meeting held in Asheville, NC were reviewed. All occurrences of 'Judy Skeen' will be changed to 'Judy Tarwater'. With these changes, the meeting minutes were approved.



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1b. Review October Meeting Summary Minutes

The Summary Minutes for the October Task Force Meeting in Asheville, NC have not been developed. When Complete, The AASHTO Project Manager will forward the summary minutes to a Task Force member for review and changes. Once complete, the AASHTO Project Manager will post the summary minutes on SharePoint for Task Force review and comment. The final summary minutes will then be forwarded to the BrMUG President for distribution to the BrMUG.

Agenda Item 02: Project Update

2a. Budget and Schedule

Bentley presented budget reports for the FY17 MSE and the 5.2.3 Project. All billings reported include invoices issued through 12/31/16. Most of the work to date under the MY17 MSE contract has been done under TM1 (Project Management and Administrative Services), TM2 (Customer Support), TM3 (Maintenance Services), and TM6 (Task Force Directed Tasks). TM6.1 – TM6.14 are all complete.

The BrM 5.2. Project is complete.

2b. Customer Support Statistics

Bentley presented an overview of the customer support hours by agency for FY2017. Agencies with the highest support levels (over 50 hours) include Florida, Kentucky, Michigan, North Dakota, and Utah. Alabama, California, Colorado, Kansas, New Hampshire, Tennessee, and Vermont have each used in excess of 25 support hours.

A couple of agencies are having trouble getting 5.2.3 up and running. Florida went live with 5.2.2 RC2 last month; therefore, the issues fixed after RC2 have not been deployed. An agency is having problems with filters working in 5.2.3. Another agency is having trouble creating the NBI report. Rhode Island is in production on 5.2.3.

2c. Service Unit Status

Bentley presented the service status report as of 01/31/17. In general, a majority of the service unit projects are on track. Four (4) projects have been placed on hold at the request of the agencies.

Bentley will need to shift developer resources from core product development to support service unit projects.

2d. License Revenue Report

The AASHTO Project Manager provided a summary of FY 17 license activity (and revenue) as of 01/27/17.

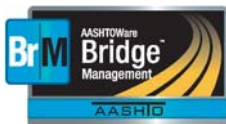
2e. Service Unit Report (Handout MFL-2e)

The AASHTO Project Manager provided a summary of service unit activity as of 01/27/17. The Task Force discussed the need to communicate to the member agencies the need to purchase service units to have 'in the bank' to fund crowd sourcing initiatives.

Agenda Item 03: Status of 5.2.3 Release 2

The following are the current list of bugs that will be patched in BrM 5.2.3 Release 2:

- PONWEB-2434



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- PONWEB-2471
- PONWEB-2478
- PONWEB-2480
- PONWEB-2490
- PONWEB-2508
- PONWEB-2524
- PONWEB-2540

3a. Tunnel Defects

In addition, to the bugs listed above, tunnel defects will also be included in 5.2.3 R2. Bentley's first iteration of the list was to logically group/simplify the defects. Josh Lang reviewed the tunnel defect list compiled by Bruce Novakovich (PONWEB-2473). It was decided that the list that Bruce provided would be sent to the TRT and attached to the PONWEB ticket for the users to review and comment on. Bruce Novakovich will coordinate the comments, determine the final version, and provide the final version to Bentley to include in BrM 5.2.3 R2.

3b. Tunnel Enhancements

The status of the Tunnel Enhancements was discussed and it was decided that Bentley will provide a cost estimate for the following three options:

- **Simplified Version:** Use a parameter field in place of the connection to actions/benefits
- **Similar to Bridge:** Use the same concept of benefits, actions and work candidates that are currently in the bridge module (the optimizer, projects and programs tables would not utilize the tunnels work candidates with this enhancement).
- **Complex Version:** Incorporate the rollup of actions that were propose by Caltrans (the optimizer, projects and programs tables would not utilize the tunnels work candidates with this enhancement).

Agenda Item 04: BrM 5.3

4a. Schedule

The Task Force reviewed the proposed schedule for the 5.3 project. Beta testing will begin on 04/20/17. Bruce Novakovich will give the Testing TAG a heads-up on the proposed testing schedule. Release candidates will be delivered for two week testing cycles. Testing on the workstation implementation should suffice although we should have at least one tester test the software on the enterprise version. The 5.3 release is scheduled to be delivered on 07/20/17.

4b. Element Condition Grid Re-Do

Bentley is working to document the element condition grid functionality details to ensure the process is clearly defined. Defect locations need to be captured to ensure the complete 'picture' of the bridge's condition at time of inspection is complete. The program needs to ensure the defect areas do not exceed the area of the bridge component.

This documentation will be the reference document for specific functionality, and will be referenced going forward. The documentation needs to be inclusive and thorough as it matures to ensure the nuances of the grid are well documented and additional questions or functionality debate are alleviated going forward. When mature, the documentation could be included in the user manual.



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4c. Cross-Section Demo

During the October Task Force meeting, the Task Force discussed Alabama DOT and Bentley moving forward with determining what would be required to incorporate the Alabama Cross Section features into the BrM Core product. Eric Christie provided a brief overview of the Alabama Cross Section capabilities and Josh Lang followed with a brief demonstration of the software.

The software produces a 'cartoon' graphic of the bridge components. Inspection data for multiple years can be displayed on top of the bridge cartoon image.

Work Flow

- 1) Define the structure detail – to include information such as historical flood levels. Station equations (to match the Lat/log data in the plan set) and bent directions can be entered.
- 2) Define the reference elevation, deck, footings, piles, pile type, superstructure thickness, remarks
- 3) Enter cross sections – original streambed
- 4) Enter scour resistant layer
- 5) Calculated results are graphically displayed

Alabama is willing to pay (via service units) to have this enhancement included in the 5.3 core product deliverable. The Task Force also discussed the possibility of deploying this as a patch to 5.2.3.

Alabama needs to complete their final review of the deliverable. At least one other agency is interested in looking at the feature set in detail to see if it meets a majority of their needs. The Task Force made the decision to include the feature set in 5.3 (and via a 5.2.3 patch) as-is and to notify the licensees that the enhancement will be included in 5.3 and suggest that they can look at changes or improvements to the cross-section functionality in 6.0 via service unit contributions.

The Task Force directed Bentley to proceed with incorporating the Alabama Cross Section module into the core BrM under the Alabama Service Unit Work Plan for this enhancement.

4d. User Funded Enhancements

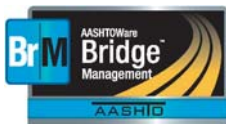
User funded enhancements (via service unit work plans) are subject to the same warranty requirements that apply to all other deliverables under the contract.

The development of user documentation / user manuals for service unit enhancement projects is typically not included the agency work plans. If agency-funded enhancements are later incorporated into the core product, the Task Force will need to consider whether or not Task Force funds should be used to develop documentation to support the enhancement(s)

- **Enhancement Initiated as a State Specific Deliverable (i.e. Originally Planned to be Used as an Extension to the Core Product)**

Bentley will proceed with pricing future custom work slated for a state specific enhancement similar how the ALDOT Cross Section Module was priced (for use within the state for which the enhancement is developed). Subsequent costs for the incorporation of the completed enhancement into the core product would be priced separately at the time the decision is made to include the enhancement in the core product.

- **Enhancement Initiated as a 'Crowd Funded' Deliverable for Incorporation into the Core Product**



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Whether the 'crowd' funding source is one agency or more than one agency, the identification of enhancements that have the potential for incorporation into the core product should be evaluated during the project's concept stage (as outlined in the AASHTOWare Service Unit Procedures). Identification of service unit funded enhancements at the onsite of project planning will positively impact the crowd sourcing of future enhancements through effective scoping and supporting the opportunity for multiple agencies to fund the project.

Service Unit Procedures Concept Stage:

- The requesting agency develops a high-level scope of work to be performed and forwards it to the AASHTO Project Manager.
- The AASHTO Project Manager arranges a discussion between the requesting agency, representatives from the product Task Force and the product contractor to discuss the scope of the requested work to be performed. Discussion may include:
 - Review of the proposed scope of work;
 - Category of work to be performed (i.e., agency-specific enhancements, development of custom reports, common software enhancements, incorporating add-on product(s) into AASHTOWare products);
 - How the requested work may or may not align with future plans for the product;
 - Whether or not other licensing agencies may be interested in participating in the requested work to be performed (i.e., enhancement, added functionality); and
 - Potential impacts to ongoing Task Force work.
- The AASHTO Project Manager informs the agency of the Task Force's concerns, issues and suggestions and attempts to work out an accommodating solution.
- Based on the feedback from the Task Force, the requesting agency determines whether or not the enhancement activity is a candidate for multi-agency funding (via Service Unit contributions). If so, the requesting agency performs an outreach to the agency licensee community, directly or through the support of the Task Force, to solicit other agencies interested in supporting the requested enhancement.
- The product Task Force approves or disapproves the Concept to proceed to stage 2, Contractor Resource Identification. The product Task Force chair communicates the decision to the AASHTO Project Manager.

4e. FHWA Requirements

- Update to the SD Equation - The task force made the decision to include both equations in the software. However, in BrM 5.3 SD will be calculated using the new equation since the rule goes into effect in 2018. There will be an option in BrM 5.3 (e.g. a toggle, button) to allow agencies to calculate the SD using the old equation for comparison purposes.
- Recursive LCCA – PONWEB: 2228 & 2229
Derek proposed the process be used for one element at a time. However, element level actions are not available unless the user builds these themselves. This could be performed at the bridge, component or element levels.

Agenda Item 05: Developer License (e.g. PONWEB 2492)

The Task Force discussed the need to provide access to the BrM development environment to support third party development. With the web-based implementation of 5.2.3, the opportunities to integrate BrM with other systems has expanded drastically.



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Developers could be directed to purchase service units to fund Bentley support hours. The developer’s license would include the basic system (i.e. a workstation version), APIs, development documentation and limited support hours. The developer license cannot be used for production work. (Production means this license cannot be used to perform an asset study.)

The Task Force made the decision to include a Developer License Option in the FY2018 catalog with an annual license fee of \$1,500. The AASHTO Project Manager will develop the catalog language for Task Force review.

Agenda Item 06: Intellectual Property

The Task Force discussed BrM intellectual property and associated direction on what should be made available (through appropriate channels and with the required source codes agreements executed with AASHTO) to AASHTO member agencies. The Task Force also discussed timelines for handling comments on documentation that is still under development.

In general the following applies:

- Source Code Documentation / Functional Design Specifications (FDSs) / MockUps – Documents such as FDSs, mockups, etc. will be provided to TAG members for discussion, input, etc.; however, once the design is ‘frozen’ and ready for development, comments and recommendations will no longer be accepted. The discussion will be closed. Any further enhancements can be discussed for inclusion in a later version of the product.
- Production Source Code for a specific version of the software – Production source code will not be provided until the version is officially delivered to AASHTO (at the end of the project).
- Completed Functional Design Specifications – FDSs will be made available to member agency licensees as requested but are provided for their use only. Such documents are not to be distributed to others.
- Mini Studies – Business Logic will not be distributed given the fact that the product has deviated from the original mini studies (developed by Paul Thompson). Instead, Functional Design Specifications (FDSs) should be made available via a technical manual.

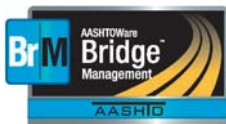
The Task Force also discussed the need to develop FAQs for gaps in the program logic that is documented in the Functional Design Specifications (FDSs). In example, the Virginia DOT has requested documentation on the health index formula. No decision was made on how or when to address the documentation gaps in the application logic. This will likely be a discussion item for a future meeting.

Agenda Item 07: BrM TAG Activities - Updates

7a. Testing TAG

The current testing TAG is comprised of the following members:

| | | |
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| Novakovich, Bruce | Oregon DOT, Chair | Bruce.D.Novakovich@odot.state.or.us |
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| Christie, Eric | Alabama DOT | christiee@dot.state.al.us |
| Coon, Amy | Kansas DOT | amy.coon@ks.gov |
| Cram, Ryan | Kentucky Transp. Cabinet | Ryan.cram@ky.gov |



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| Fish, Patty | Idaho DOT | patty.fish@itd.idaho.gov |
| Laughlin, Christopher | Florida DOT | Christopher.Laughlin@dot.state.fl.us |
| Martin, Thomas | Minnesota DOT | Thomas.Martin@state.mn.us |
| Murata, Kevin | Hawaii DOT | Kevin.A.Murata@hawaii.gov |
| Nazareth, Craig | Rhode Island DOT | cnazareth@dot.ri.gov |
| Nelson, Mike | Florida DOT | Mike.Nelson@dot.state.fl.us |
| O'Donnell, Larry D. | FHWA Resource Center | Larry.o'donnell@fhwa.dot.gov |
| Thompson, Todd | South Dakota DOT | Todd.thompson@state.sd.us |
| Willoughby, Rebekah | Nebraska DOR | rebekah.willoughby@nebraska.gov |

The Task Force made the decision to roll out the beta version of 5.3 to the entire Testing TAG. Continued membership on the Testing TAG thereafter will be based on their participation in the beta testing of that version. On site beta testing will not be scheduled for the 5.3 release.

7b. Reports TAG

The Reports TAG met and existing reports have been posted on SharePoint. All existing reports are reviewed and are being categorized as Keep, Needs Improvement, Better in Excel Output, and Unsure. In addition, questions on the existing reports are also being captured.

New Reports have not been created for all the new modules. After all the existing reports have been reviewed, the Reports TAG will make recommendations on new reports (or Excel data exports) for the new modules. The font size on all the reports need to be a minimum of 12pt.

The next meeting of the Reports TAG will be held on 03/02/17. Monthly meetings will be held for the foreseeable future. A Reports TAG wish list will be developed and delivered to the Task Force.

7c. DB TAG

Nothing to report.

Agenda Item 08: FY2018 Discussion

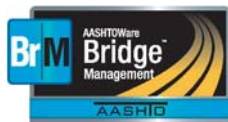
8a. Catalog

Mobile Inspection Software

Bentley is interested in introducing a mobile inspection module to support BrM inspection data; however, the application has not been developed. The Task Force has reservations about including the mobile application in the catalog in the absence of having a product ready to deliver to licensees. The two proposed catalog sections on the mobile application will be removed from the catalog draft language.

The Task Force agreed that the BrM license fees will increase 3% license over the FY2017 license fees. The following license fees will be documented in the FY2018 AASHTOWare Catalog.

| | | |
|-----------------------------|----|--------|
| BrM Super Site | \$ | 36,000 |
| Asset Tier 1 (1000 bridges) | \$ | 15,500 |
| Asset Tier 2 (750 bridges) | \$ | 10,300 |



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| Asset Tier 3 (250 bridges) | \$ | 7,700 |
| Enhanced Asset Tier Support | \$ | 3,000 |

Hosting services will still be offered but will not be required.

8b. FY2018 MSE Work Plan

Bentley walked through the current version of the FY18 MSE. No exceptions to the AASHTOWare Standards and Guidelines have been documented since no specific development has been spelled out in the plan. After some discussion it was decided to include the development exceptions spelled out in the 5.3 Work Plan to document what exceptions will be required if development is performed under Task Force Directed Work.

8c. Funding for New Coding Guide (solicitation?)

The Task Force discussed future coding guide changes and made the decision that BrM updates to support coding guide changes are essential elements of BrM and will therefore be funded through revenue generated via product licensing fees.

However, there are several enhancements that have been deferred to be completed in the planned coding guide update based on the expected costs. At some point in the future, license fee revenue may not be sufficient to support all of the required changes necessary to support changes to the coding guide.

Agenda Item 9: Marketing Activities

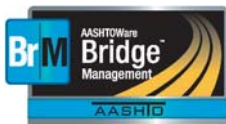
Marketing activities were discussed during the joint Task Force meeting on Wednesday.

9a. 11th International Bridge and Structure Management Conference

The SCOJD Liaison provided the Task Force with an update on activities associated with the 2017 International Bridge Management Conference which will be held April 25 – 26, 2017 in Meza, AZ. The committee is working to secure scholarship opportunities to pay for state DOTs to send one or two attendees.

The Task Force discussed the conference agenda and BrM material to be covered through the scheduled presentations. The following presentations will be given:

- AASHTOWare BrM – Welcome to BrM - It's not Pontis Anymore: This will be an overview of the differences between BrM and Pontis
- AASHTOWare BrM – Multi-Criteria Bridge Management: This will go over at a high level the concept of multi-criteria decision analysis and how it is used in bridge management and how that it is used in BrM.
- AASHTOWare BrM - Deterioration and Life Cycle Cost: This will go over how deterioration modeling and life cycle costs are incorporated into BrM
- AASHTOWare BrM - Conducting Trade-off Analyses: This will go over how the scenario explorer in BrM can be used to do trade-off analysis
- Implementation of BrM 5.2.3 to Meet Agency Policies and Objectives for Bridge Management while Addressing FHWA Requirements, Zac Boyle and Josh Johnson, Bentley Systems: This is a half day workshop for BrM and will hopefully include small success stories for BrM by state agencies.



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9b. SCOBS

The Task Force will stay on top of the planning and agenda development to ensure we are slated for AASHTOWare Bridge presentations.

9b. Marketing Brainstorming Session with Arpine Baghdasarian

The Task Force will hold a brainstorming session with Arpine Baghdasarian next week to discuss marketing ideas and develop a marketing approach for BrM 5.2.3. Items to discuss include the following:

- BrM 5.2.3 Email Campaign
- BrM 5.2.3 Video
- Quarterly Updates – format suggestions
- Annual Bridge Product Newsletters – the Task Force will continue to print physical hard copy newsletters; however, supplemental e-newsletters are also desired. Format suggestions for the hard copy newsletter are requested. Ask for Arpine’s input on reformatting the annual newsletter prior to the April Task Force meeting.

Agenda Item 10: FHWA Update

No FHWA Update.

Agenda Item 11: Task Force Members

The Task Force discussed BrM Task Force membership going forward. Thomas Martin’s first three year term will end on June 30, 2017 and he is unable to be re-appointed for a second three year term. The Task Force will make the decision on whether or not to fill the vacant position over the next few months. If it is decided to fill the position the request for potential BrM Task Force member resumes will be included in the BrDR Task Force member resume solicitation.

Agenda Item 12: Review Action Items

The AASHTO Project Manager reviewed the meeting Action Items.

Agenda Item 13: Draft Quarterly Status Report

Bentley walked the Task Force through the current version of the document. All suggested changes have been incorporated into the quarterly status report draft.

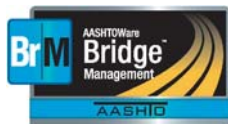
Agenda Item 14: Executive Session

The Task Force held a brief executive session prior to adjournment on Thursday. The meeting adjourned at 5:00pm.



Attachment A: Listing of Bridge Task Force, TRT, TAG and User Group Personnel

| <u>AASHTOWare Bridge Task Force</u> | | |
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| Waheed, Amjad | BrR, Ohio DOT | Amjad.Waheed@dot.ohio.gov |
| <u>Bridge Management (BrM) Members</u> | | |
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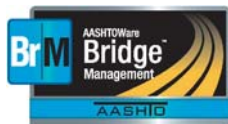


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| Woldemichael, Berhanu | Alabama DOT | woldemichaelb@dot.state.al.us |

BrDR Design Tool TAG (DTAG)

| | | |
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| Kemna, Aaron | Missouri DOT | Aaron.kemna@modot.mo.gov |
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| Schroeder, David | Montana DOT | daschroeder@mt.gov |
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BrDR Reports TAG (RTAG)

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| Curtis, Beckie | Michigan DOT | CurtisR4@michigan.gov |
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BrDR Modernization TAG

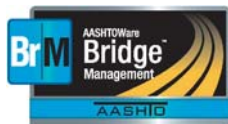
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BrM Database TAG – At Large Members

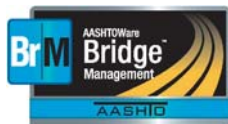
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