

Minutes Of The
AASHTOWare Bridge Management Task Force Meeting
October 25 - 26, 2016 **Asheville, NC**

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General Information – Meeting of the Bridge Task Force

Date: Tuesday, October 25 – Wednesday, October 26, 2016

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	FHWA Liaison	Bridge Management
BrDR Task Force	Todd Thompson	Bentley	Bridge Design-Rating
	Dean Teal	Kansas DOT	Bridge Design-Rating
	Josh Dietsche	Wisconsin DOT	Bridge Design-Rating
	Jeff Olsen	Montana DOT	Bridge Design-Rating
BrM Contractor	Josh Lang	Bentley	Bridge Management
	Josh Johnson	Bentley	Bridge Management
	Zac Boyle	Bentley	Bridge Management
	Clayton Garcia	Bentley	Bridge Management

General Discussion

The meeting was convened at 8:00am.

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 3: FHWA Update
- Agenda Item 13: International Bridge Management Conference

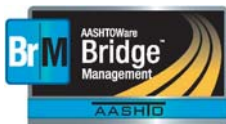
Agenda Item 01: Prior Business

1a. Review September Meeting Minutes (Handout ANC-1a)

Minutes from September 2016 Task Force meeting held in San Antonio, TX were reviewed and approved as is.

1b. Review September Meeting Summary Minutes (Handout ANC-1b)

The Summary Minutes for the September Task Force Meeting in Madison, WI were developed and reviewed by Thomas Martin prior to the meeting. The redacted minutes were approved as is.



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Agenda Item 02: Project Update (Handout ANC-2a)

2a. Budget and Schedule

Bentley presented budget reports for the FY17 MSE and the BrM 5.2.3 Project. All billings reported include invoices issued through 09/30/16. 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 (Freezing Projects), TM6.2 (Program Management Screen) and TM6.3 (Projects in Context of a Program) are all complete.

BrM 5.2.3 – Time and Material Tasks are 91% complete. Fixed Price Deliverables have been invoiced for 60% of the contracted amounts. As of 09/30/16, 69% of the contract has been invoiced and paid. Release candidate 2 is out.

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 Kentucky and Michigan. Colorado, New Hampshire, North Dakota, Utah, and Vermont have each used in excess of 25 support hours. An agency has reported problems with the application timing out. Bentley is continuing to contact users who provided negative feedback on the recent end user survey on a weekly basis.

2c. Service Unit Status

Bentley presented the service status report as of 10/22/16. In general, a majority of the service unit projects are on track. Five (5) projects have been placed on hold at the request of the agencies.

2d. License Revenue Report

The AASHTO Project Manager provided a summary of FY 17 license activity (and revenue) as of 10/16/16.

The Task Force has been made aware that the Washington DOT is interested into the possibility of using BrM. The AASHTO Project manager will reach out to the Washington DOT to to determine their level of interest.

2e. Service Unit Report

Bentley provided a summary of service unit activity as of 10/16/16.

Agenda Item 03: FHWA Update

FHWA released their new Transportation Asset Management Plan regulations on 10/24/16. In it, they spell out new requirements for bridge and pavement management systems state DOTs must use to develop their transportation asset management plans:

§515.17 Minimum standards for developing and operating bridge and pavement management systems Pursuant to 23 U.S.C.150(c)(3)(A)(i), this section establishes the minimum standards States must use for developing and operating bridge and pavement management systems. State DOT bridge and pavement management systems are not subject to FHWA certification under §515.13. Bridge and pavement management systems shall include, at a minimum, documented procedures for:



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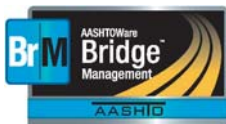
- (a) Collecting, processing, storing, and updating inventory and condition data for all NHS pavement and bridge assets.
- (b) Forecasting deterioration for all NHS pavement and bridge assets;
- (c) Determining the benefit-cost over the life cycle of assets to evaluate alternative actions (including no action decisions), for managing the condition of NHS pavement and bridge assets;
- (d) Identifying short- and long-term budget needs for managing the condition of all NHS pavement and bridge assets;
- (e) Determining the strategies for identifying potential NHS pavement and bridge projects that maximize overall program benefits within the financial constraints.; and
- (f) Recommending programs and implementation schedules to manage the condition of NHS pavement and bridge assets within policy and budget constraints. §

The entire regulation is available at the following location: <https://www.gpo.gov/fdsys/pkg/FR-2016-10-24/pdf/2016-25117.pdf>

- Plan describes how the State DOT will develop investment strategies and implement management of their pavements and bridges.
- Plan encompasses a 10-year period minimum.
- Plan shall include strategies leading to a program of projects that would make progress toward achievement of a state of good repair and State targets for asset condition and performance. The asset management rule and the forthcoming rule on pavement and bridge performance are directly linked and work together.
- Plan shall include:
 - A summary listing of the pavement and bridge assets on the NHS including a description of the condition of those assets;
 - Asset Management objectives and measures;
 - Performance gap analysis;
 - Life-cycle cost (analysis) planning;
 - Risk management analysis;
 - A financial plan
 - Investment strategies

FHWA advised that the rule is not substantially different from the proposed version with the exception of some of the dates. Pavement data is not on par with bridge data; therefore, the dates have been pushed further out.

- States need to document their risk analysis processes, including risks at the network level including risks associated with current and future environmental conditions, such as extreme weather and climate change, also seismic related risks, financial risks such as budget uncertainty, and risks due to failure.
- Not later than **April 30, 2018**, the State shall submit to FHWA their State approved initial Plan. The initial plan must include measures and targets for assets covered by the plan and include investment strategies that support progress toward achievement of the national goals. But, the life-cycle planning and risk analysis, as well as the financial plan analysis are not required to be undertaken; however, the



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State needs to describe their processes to address these elements. FHWA will review the processes described in the initial plan and make a process certification decision.

- Not later than **June 30, 2019**, the State shall submit a completed State approved Plan meeting all the requirements along with documentation demonstrating implementation of the Plan. FHWA will determine whether the Plan and implementation meet the requirements.
- FHWA will undertake an annual consistency determination of whether the State funding allocations are reasonably consistent with the investment strategies in the Plan.
- States are to submit their Plans including processes to FHWA for certification on a 4-year basis.
- Beginning **October 1, 2019**, and in each fiscal year thereafter, if a State has not developed and implemented a Plan consistent with the requirements in the Final Rule, the maximum Federal share on National Highway Performance Program projects and activities carried out by the State in that fiscal year shall be reduced to 65 percent for that fiscal year
- FHWA Divisions must certify that the submitted plans comply with the rules. Thereafter, annual consistency reviews will be conducted by the FHWA Division offices and state plans will be re-certified every four years.
- FHWA wants to ensure agencies do not take a near-sighted view. The ultimate (long term goal) needs to be described in short term measures. States need to document their risk analysis processes.
- FHWA changes to the NBI coding guide are expected to be posted on the federal register for review in early calendar year 2016.

Agenda Item 04: BrMUG Follow-up Discussion

4a. Meeting from the User Group (End User Conclave)

The Task Force will discuss user requested enhancements in conjunction with the FDS review (agenda item 7). FHWA proposed the idea of developing a bridge management course/workshop that could be delivered through a FHWA.

User Group Issue Ranking / Number of Votes

Rank	Issue	Votes (out of 35)
1	More Training on the Pyramid (Optimization)	32
2	Error Check pre-script	23
3	Clearance*	19
4	Default Data separate script	18
5	Responsiveness of pages to different screens (HTML-5)	18
6	Cross Sections**	17
7	Track Historical Changes	17
8	Export All Lists (Needs List, for example) and graphs	15
9	Load Ratings*	15
10	QC / QA*	11
11	Multimedia*	9
12	Import Process - More detailed errors	8
13	Item Multiple NBI Deterioration Curves	7
14	3D Modeling	7
15	Reports Stored Elsewhere	5



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16	An App Store	5
17	Multi-thread optimizer / Cassini Stability	5
18	More Complex Rules for Network Policy	5
19	Task Scheduler	4
20	Sync	2
	JIRA needs some improved filtering	14 of 17 who used

* **User Group to meet to propose requirements.**

** **Possible user sponsored solution**

4b. BrMUG Survey Response Summary

Responses were received from 43 member licensees.

- A majority of the respondents (20) are using version 5.2.1 SP3
- 21 respondents use the Enterprise platform, 11 respondents use the Workstation platform and 5 use both.
- A majority of the respondents (34) use Windows 7.
- Server Environment: 17 use a Physical Server, 24 use a Virtual Server
- BrM version planned to move to in the next year: 4 – no change, 16 – 5.2.2, 22 – 5.2.3
- A majority (28) use IE11.
- Plans for browser upgrade: 2 in 1-6 months, 3 in 6-12 months, and 12 in 12+ months.
- Bridge Element Data Collected: 3 – only on NHS bridges, 30 – all bridges in their inventory, and 8 - more than just NHS bridges, but not on the entire inventory
- Number of individuals in their organization using BrM: 2 have 1 user, 15 have 2-5 users, 6 have 6-10 users, and 19 have 10 or more users
- 26 respondents use Oracle database software and 17 use SQL
- BrM Features Used: 32 use inspection, 15 use project planning, 15 use deterioration modeling, and 9 use multi media.
- Interested in 3D Mobile Inspection: 21 – Yes and 22 – No
- Level of interest in 3D Mobile Inspection:
 - 5 - Interested in contributing funding to a BrM 3D Mobile Inspection project
 - 12 - Interested in a 3D Mobile Inspection software being made available as a BrM add-on product
 - 7 - Interested in increased BrM licensing fees with the 3D Mobile Inspection software included in the BrM core product
 - 16 - Not interested
- Using Third Party software in addition to BrM for inspection data collection: 23 – Yes, 20 – No.

The following licensees did not respond to the survey: New York City DOT, Arkansas HTD, FHWA, Louisiana DTD, Maine DOT, Ohio State University, and Vermont AOT.

4c. BrMUG End User Response Data

The AASHTO Project Manager provided the Task Force with a spreadsheet containing survey response details for all respondents.



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4d. 2017 BrMUG Location

Working on September 12 – 13, 2017 with September 19 -20, 2017 as alternate dates. That Task Force had no concerns with any possible locations in Virginia.

Agenda Item 05: Quarterly Status Report

Bentley provided the Task Force with the draft of the October Quarterly Status Report. The report included information on the following.

- 5.2.3 update
- 5.2.2 Release 2 Patch and 5.2.2 Release 3
- National Tunnel Inventory Data
- Information on Joining the Reporting TAG
- 5.2.3 Training
- International Bridge & Structures Management Conference

The Task Force made the decision to include a summary of the FHWA asset management rules and information on how BrM satisfies the requirements of these rules.

This agenda item will be moved to one of the last agenda items on future meeting agendas.

Agenda Item 06: FHWA Metrics Report

Bentley provided the Task Force with an example 23 Metric Report (developed using data from the Utah DOT). Bentley will update the FHWA Metrics Report to change the name to Facility Carried/Feature Intersected as well as to add filtering capabilities. The report will be sorted by months from target.

Agenda Item 07: Beyond 5.2

7a. Deferred Tickets/Maintenance Items

Bentley is developing a list of current maintenance/enhancement tickets that should be categorized as deferred. The list should be completed by the November 3 Task Force Conference call.

7b. Review of FDSs

The next full release version of BrM will be 5.3.

Bentley presented the Task Force with functional design specifications for the following MSE FDS development tasks.

- TM6.6 (User Group Priority 2) – Error Check and Pre-Script FDS – Phase 1: the concept is to dump all errors to an error table to provide the users with an alternate option for viewing the errors that need to be addressed. Phase 2 would provide the option to run a separate script before the main update script to look for invalid data, missing keys/indexes, corrupt/orphaned records, and non-standard objects.
 - The issue of unused tables/triggers was discussed. Bentley advised that this is a work in progress.
 - The check should list custom tables, or non-standard objects (tables, functions, columns, sequences and links)
 - It should be clarified that the pre-check script can be run independent of an upgrade.
- TM6.7 (User Group Priority 4) – Default Data Separate Script FDS – Phase 1: Add soft deletes to the following tables; PARAMTRS, PON_BENEFIT_GROUPS, PON_FLEXACTIONA_SETS, PON_FILTERS,



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PON_LAYOUTS, and PON_REPORT_REGISTER. The second phase would break the default data out of the current upgrade script into a separate script. The following tables would have their default data moved to the new script; parameters, benefit groups (and related tables), utility value (and related tables), and navigation items (and related tables).

- With isActive on the parameter table, soft deletes go away allowing the user to use hard deletes if they want them.
- Page sort orders or standard pages - security settings cannot be changed with an update, but sort orders can be re-asserted.
- isActive may be better for filters and layouts to allow users to still have the hard delete.
- TM6.8 (User Group Priority 5) – Responsiveness of Pages to Different Screens FDS – Compression of the menu would support optimized use of the screen space. Information would be organized based on the importance of the data. The FDS includes only the data included on the condition grid pages.– The Task Force made the decision to not pursue this enhancement at this time.
 - The bridge page is visited more and jump-to-bridge can't be accessed on the iPad.
 - On mobile phones, users just want to see the element grid, not edit.
 - Zooming in to the part of the page the user needs is acceptable functionality.
 - Bentley advised that making the following pages responsive would take less cost than doing the element grid: Bridge, Appraisal, Inventory, Roads.
- TM6.9 (User Group Priority 8) – Screen Needs List Export / Export All Lists FDS – Items are to be selected from these lists to add to a project(s).
 - For usage, the Analysis graphics don't provide benefit without the data behind the graph. A targeted approach may be better than a shotgun approach.
- TM6.11 (User Group Priority 3) – Clearance FDS
- TM6.12 (User Group Priority 9) – Load Ratings FDS
- TM6.13 (User Group Priority 6) – Cross Sections FDS
- TM6.14 (User Group Priority 7) – Track Changes FDS
- TM6.15 (User Group Priority 10) – QC / QA FDS

The Task Force directed Bentley to stop all future development on the FDSs. The Task Force would like to move forward with several of the priority enhancements for development and release prior to the 2017 BrMUG. These include TM6.6, TM6.7, TM6.12 (as fixed price items) as well as additional funding (time and materials) for Task Force Directed Work and a minimal amount for release delivery. The Task Force is concerned about the potential fee associated with the software release for a small scope enhancement project. Bentley advised that the estimates provided for the FDSs above includes a majority of the costs associated with releasing the enhanced software.

As a pre-cursor to developing the draft project work plan, Bentley will seek input from the user community for details related to TM6.12 (Load Ratings). The Task Force will encourage member agencies to crowd fund additional enhancements for possible inclusion in the work plan for the next release.

7c. Tunnel Enhancements

Bentley will provide the Task Force with a list of bullet points relating to the Caltrans solution. The Tunnel TAG chair will then coordinate this with Caltrans and report back to the TF the solution.



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Agenda Item 08: Status of 5.2.3 Testing

Release candidate 2 was recently released and should be good to go to production. All comments for RC2 should be submitted by 11/11/16.

Agenda Item 09: BrM TAG Activities

9a. DB TAG – Dropping Tables

Members of the Database TAG have expressed concerns related to the lack of Database documentation and the fact that users do not have sufficient information on the database tables. The users need clear and complete documentation on the tables. Table documentation needs to be published. Users don't understand why some old tables storing certain data were not used for the same new data instead of what was done (creating new tables with data that was previously existing in the old tables). Maybe some of the old tables need to go away. Users desperately need this information so perhaps, instead of some enhancements, this needs to take priority. Users are constantly going through the back door to find and analyze data they need to report information to their management. In example, with BRIDGE.DEF_OP_RAT, it is unclear that it was a switch for 4.X that would turn considering improvements on or off for 4.X scenarios.

Users have also advised that they will never use the APIs for this purpose. Users are under the impression that it is very difficult to use it in SQL since the API was written to be used as an application. Use of the API will require the user to build an app to put it in, an action which is not possible since the DOT IT folks work for a separate organization within the agency. The API will be good for moving information to and from other applications; however, it will likely never be used to support the day to day activities related to extracting data from BrM.

9b. DB TAG – Columns Beta Review Gate

No Discussion.

9c. Update on DB TAG Members

The Database TAG has been separated into three categories: 1) Active Members, 2) At Large Members, and 3) FHWA Group

Agenda Item 10: AASHTO Ballot Items

It appears there will be a SCOBS ballot item next year to remove the 'shall' condition on the predominate defect.

Agenda Item 11: FY2018 – Preliminary Discussion

11a. Catalog

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
Asset Tier 3 (250 bridges)	\$	7,700



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Enhanced Asset Tier Support	\$ 3,000
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11b. FY2018 MSE Work Plan

Bentley to develop the draft FY2018 MSE Work Plan for Task Force review and approval.

Agenda Item 12: Marketing Activities

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

Agenda Item 13: International Bridge 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 conference will include an opening plenary session with keynote speakers followed by three tracks and four half-day workshops: Federal Highway Workshop – rules on performance measures; Federal Highway Workshop – asset management rules; 5.2.3 Workshop – presentations from the Task Force and one or two states sharing their experiences with the implementation of 5.2.3 and user descriptions of how the software will be used; and General Bridge Management – how bridges are managed in Europe etc.

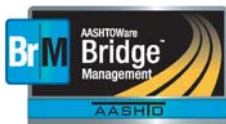
Given the International nature of the conference, the Task Force will discuss and make a decision on the potential of offering an International License for the AASHTOWare Bridge Management software in the FY18 AASHTOWare Catalog.

Agenda Item 14: Review Action Items

Action items were not reviewed prior to the end of the meeting.

Agenda Item 15: Executive Session

The Task Force held a brief executive session mid-day on Thursday. The meeting adjourned at 4:00pm.



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

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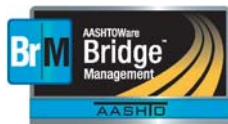
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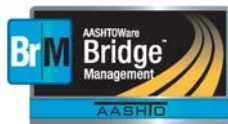
BrDR Reports TAG (RTAG)

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