

AASHTOWare Bridge Management (BrM) Task Force Meeting Minutes
June 10 – 11, 2014
Portland, ME

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General Information - Meeting of the Bridge Management Task Force

Participants:

AASHTO	Judy Skeen	Project Manager	Bridge
SCOJD	Bruce Johnson	Oregon DOT	SCOJD Liaison
BrM Task Force	Eric Christie Mark Faulhaber Bruce Novakovich Douglas Blades Derek Constable	Alabama DOT Kentucky TC Oregon DOT FHWA Liaison FHWA Liaison	
BrDR Task Force	Tim Armbrecht Jeff Olsen Dean Teal Todd Thompson Amjad Waheed	Illinois DOT Montana DOT Kansas DOT South Dakota DOT Ohio DOT	Chair Bridge Design/Rating Bridge Design/Rating Bridge Design/Rating Bridge Design/Rating
BrM Contractor	Jeremy Shaffer Josh Lang Shelly Tiwary Ben Daniels	Bentley Systems, Inc. Bentley Systems, Inc. Bentley Systems, Inc. Bentley Systems, Inc.	
Visitors	Beckie Curtis Nick Palecek	Michigan DOT South Dakota DOT	FY15 BrM TF BrMUG Secretary

Notes Taker: Shelly Tiwary / Judy Skeen



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Review Agenda / Assign Minutes Recorder

Tim Armbrecht opened the meeting at 8:00am on Tuesday. Mike Johnson will not be able to attend the meeting this week. Derek Constable, in-coming FHWA Liaison; Beckie Curtis, in-coming BrM Task Force member; and Nick Palecek, BrMUG Secretary, were welcomed to the meeting. Self-introduction of all attendees.

Todd Thompson and Dean Teal are traveling and will join the meeting later today.

Eric Christie reviewed the agenda to see if additional items need to be added for discussion.

- Additional time may be needed to discuss the inspection time activities.
- Need to add an item to discuss the SCOBS meeting presentations to the SCOBS general session and the T-18.

Prior Business

Review April Meeting Minutes

Minutes from the April 2 - 3, 2014 Task Force meeting held in San Francisco, CA were reviewed and approved as is.

Review April Meeting Summary

Summary Minutes from the April 2 - 3, 2014 Task Force meeting held in San Francisco, CA were provided. The Task Force was asked to review and be prepared to comment on and approve during the next BrM Task Force conference call.

Review Action Items

Judy reviewed the action items and following updates were provided to the Task Force:

Project Update

Budget

Jeremy handed out and provided an overview of the budget sheets for the FY14 MSE and the BrM 5.2.2 Project.

FY14 MSE – To fund unanticipated requests for customer support (TM2A), Bentley presented a request to move funding in approved budget monies from three time and materials tasks to support customer support needs through the end of June.

The Task Force approved the adjustment to the Time and Materials budget.

FY14 5.2 Project – Bentley needs to define the fixed price tasks for the 5.2.2 release. Rick Wagner has been tasked with the development and submission of the FDS documentation. Bentley estimates that approximately 20% of the FP2 work effort has been completed although they have not yet invoiced for any of these charges. The FP charges have been posted internally and will be billed one the Fixed Price 2 payment structure has been established. Bentley is currently managing the project as a T&M ‘not to exceed’ project.

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Customer Support Stats

Jeremy handed out and provided an overview of the agency customer support hours used thus far in FY14 (i.e., July 1, 2013 – May 31, 2014). Bentley expects the customer support hours to trend upwards as they move forward with the deployment of 5.2.1.

The current report includes the support requestor's name. Warranty versus customer support hours are tracked in JIRA. State DOTs that are not BrM licensees will be removed from future reports.

Three support 'buckets' will be set up in JIRA to make it easier for the user to determine where to log their issue(s)

- 5.2.1 Support (Current product support)
- 5.2.2 Support (Enhancements)
- 5.2.3 Support (Enhancements)
- Nice to Have (Future Enhancements)

Service Units

Jeremy handled out the current service unit report. Bentley anticipates more Service Unit work will be requested by states as they begin using 5.2.1. The invoices included in the report are those issued through April 2014. The May 2014 invoices have not yet been submitted to AASHTO.

License Revenue Report

Jeremy handed out and provided an overview of the BrM license and service unit revenue report. Manitoba is currently in contract negotiations with Bentley to secure support services (customization work) outside of service units.

BrMUG Meeting

Status of 2014 BrMUG Planning / Registrations

The meeting registration website announcement email went out on 02/04/14. To date, 15 attendees have registered for the conference.

The Task Force will meet for a half day on September 18 (the day following the BrMUG meeting). The TRT will not meet in conjunction with the BrMUG meeting.

BrMUG Meeting Agenda Discussion

Nick Palecek, BrMUG Secretary, provided an overview of the draft BrMUG Agenda.

Finalize the 2014 Customer Survey

Judy provided an overview of the draft 2014 survey. The survey was developed from the 2013 survey with many questions remaining the same to provide the Task Force with trends in respondent answers over multiple years. New questions on Task Force communication, inspection dates, Internet Explorer versions, and plans for collecting NHS data for all bridges were included in the 2014 survey draft as well.

Update on TRT Activities

Overall TRT Activities

Mark provided an overview of TRT activities. Most of the assigned TRT tasks are in the follow-up phases. Bentley is waiting on final recommendations/decisions on



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- Deterioration Modeling
- User Manual recommendations
- Default screen layouts (TRT needs to be provided with information on screen size restrictions)
- Feedback from the database TAG

Task	Version	Bentley Mapping	TRT Status
Task 1A: Utility value Functions will be based on actions. Default Actions & Costs need to be defined	5.2.1	Bentley needs as soon as possible. Bentley is waiting for the datapoints. Please send database for review.	Complete
Task 1B: Procedure for developing utility curves. How to set parameters for value functions.	5.2.1	Recommendation for Task 1B has been reviewed and incorporated into 5.2.1. Keeping open until all of Task 1 has been finalized.	Complete
Task 1C: Element listing impacted by each action	5.2.1	Bentley has received everything needed.	Received deliverable, awaiting user feedback.
Task 2: Review the use cases for network corridors	5.2.1 & 5.2.2	This is completed by the TRT. Network Corridor functionality included in 5.2.1. Improvements suggested by TRT will be incorporated into 5.2.2.	Complete
Task 3: Training and Deployment plan development	5.2.2	5.2.2	Bentley is awaiting feedback from the TRT on the user manual.
Task 4: Reports	5.2.1	Recommendations as soon as possible. Updated reports will be present in 5.2.1 pending TF acceptance/approval.	Complete
Task 5: Element category, type, and material for NBE's. Actions, action types, categories simplification.	5.2.1	Reviewed by Bentley and deciding implementation plan. No further action from this group required.	Complete
Task 6: Deterioration Model Implementation	5.2.2	5.2.2	Bentley will make a decision regarding multiple-protective systems, however Bentley is implementing this item into 5.2.2 now.
Task 7: Work Accomplishments	5.2.2	5.2.2	Deferred, pending project tracking.



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Task 8: Project Tracking	5.2.2	5.2.2	Bentley is awaiting feedback from the Task Force on the FDS.
Task 9: Project Analysis	5.2.2	5.2.2	Bentley is awaiting feedback from the Task Force on the FDS.
Task 10: Inspection Schedule Dates	5.2.2	5.2.2	Eric has created a proposal, there are still items being discussed.
Task 11: API Definition	5.2.2	5.2.2	Bentley sent comments to Paul, the TRT group will meet to discuss the comments.
Task 12: Default Layout and Filters	5.2.2	5.2.2	Bentley will allow horizontal scrolling, TRT is waiting on notes width from Bentley.
Task 13: New Sample Database	5.2.2	5.2.2	In Progress.

Database TAG

User feedback on the ERD / database changes was extremely limited. The database changes may be a much lower priority if the decision is made to delay the behind the scenes database conversion efforts.

Deterioration TAG

No discussion.

Inspection TAG

No discussion.

T&AA Standards Update

Wally provided an update on some new items that T&AA has been discussing. Below are the new items.

- **Application Infrastructure Standard** – T&AA has introduced changes to the standards to address the frequency of industry updates to web browser software. Since browser software is typically updated on an annual basis, the AASHTOWare software standards have been amended to require AASHTOWare product software to be functional with current browser versions within 12 months of browser software version adoption by industry. TF asked for the explanation of the date when T&AA specified 12 month period would start. Wally admitted that there is some confusion when the 12 month window to implement new version of browser will start.

After consulting with T&AA, Wally provided the additional clarification. “Plans shall be created and executed to complete the development and testing to support new versions of the application infrastructure components in each AASHTOWare product within 24 months after each new component version achieves general availability status. The production support for a new version of an application infrastructure component shall be included in the next planned release of the AASHTOWare product after the 24 month date. The exception is for new versions of browsers, which shall be tested and implemented within 12 months after the date of general availability and



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shall be supported in the next planned release after the 12 month date. General availability is a term used by Microsoft and other vendors that is defined as that stage of the product life cycle when the product, is stable, having successfully passed through all earlier release stages (such as beta and candidate releases) and is believed to be reliable, free of serious bugs, and suitable for use in production systems. The general availability date is announced by the vendor of each component product and is typically posted on the vendor's web site."

- **Disaster Recovery Backup Plan** – AASHTOWare contractors are not required to develop and provide a tailored backup plan for AASHTOWare products, rather AASHTO will accept the standard backup plan/strategy that supports contractors' internal operations. If the contractor does not have an internal backup plan in place, a backup plan for the AASHTOWare software must be developed and described at no additional cost to AASHTO. T&AA also requires an archive copy of the code twice a year that contractors have been providing already.

Bentley Staffing Report

Jeremy handed out an org chart of the current AASHTOWare Bridge Management staff. Nineteen staff members are currently dedicated to this work effort. The team is divided into two separate teams; Core BrM Team (18 persons) and the Service Unit Team (8 persons). Bentley continues to recruit talent for their Pittsburgh office.

The Task Force approved adding Modestas Krusa and Vytautas Gaidys to the BrM Development Team in Lithuania with the caveat that the salaries for these team members be appropriately scaled and that Bentley continue to focus building the team in Pittsburgh rather than adding members to their office in Lithuania. This approval is a stop-gap measure to add bandwidth to their development team.

5.2.1 Discussion – User Feedback

Many users have requested and have started using 5.2.1. New issues are being discovered as more users are using the product. Most of the issues identified are minor. Several users have reported random system shutdowns during use of the product. Some users have reports short-downs two or three times per day. Bentley is working to ramp up error checking processes to identify errors timely to allow graceful application shut-downs.

The issues previously reported by Paul Jensen on behalf of NDOR have been resolved.

At some point we need to focus on resolving all the old problems and bugs that were inherent in the software when passed on from previous contractors.

FHWA Reporting – June 2014 Report

Bentley presented the 2014 Q2 Status Report for June 2014. The Task Force was asked to review the report and provide feedback to Judy if any changes are needed. The report should include detailed information on the progress made during the specific reporting period and the percentage complete.

5.2.2 Update

BrM 5.2.2 FDS – Project Module

- Page 4, suggest 'Select Work Actions for Project' needs to show that it goes to 'Project Details'
- The arrow connecting 'Bridge Query' and 'Project Details' should be one way, Project Details should go to Bridge Query'



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- Page 5, 9 & 10 on the top should reference two rather than multiple projects
- Page 8, 'Contractor will create test scripts at each component' – Add that these will be sent to the Testing TAG as soon as possible
- Page 9, number 4 - Is all this information necessary? Get rid of the code that is in the document, just leave 'Paging (Optional)'
- Top of page 9, changing 'using' to use, and remove 'from'
- Page 10, on that view swap out longitude and latitude – add feature intersected
- Page 11, lists below requirements – remove locations and add feature intersected, facility carried is missing
- Page 12 – Color code the bridges on the map view, based on what you are displaying
- Page 13 – Should be 'Work View' not 'Map View'
- On ALL pages where it has latitude and longitude, replace with feature intersected, NBI ratings, and health index
- Page 19, bridge query fields – remove milepost, inspection date, year built/rehab, BSR, detour length, ADT, & bridge deck
- Page 19, Project Category Fields – Create a TRT for this – Create dynamic filters to create the bridge queries for now
- If the bridge engineer were querying for work on a bridge, the work items would be put together in a project with all of the work identified. Users may wish to determine dollar amount for the highest level of improvement, or what utility is best to improve
- Page 47, program details – if the funding source ID is to be the GUID, should that still be there?
- Add Project Categories
- In the deterioration modeling, whatever the performance measure gets prepared it should be included in this information in future project data, this should be captured in the FDS

The Task Force will review the remainder of the FDS and forward comments to all members of the BrM Task Force.

BrM 5.2.2 FDS – New Inspection Process

BrM 5.2 Upgrade Approach

Impacted Schedule

SCOPE:

- Planned beta release: end of October 2014
- Final acceptance release: ?
- Components Include:
 - Deterioration Modeling – 50% completed
 - Project Planning/Analysis – 10% completed
 - Program 'Stubs' – 0% completed
 - 5.2.2 NBE submittal – 25% completed
 - GUID Implementation – 40% completed - Candidate to Delay (estimates a delay in this would result in a 10-15% rewrite of the new functionality when GUIDs are implemented)
 - Metric/English Conversion – 10% completed - Candidate to Delay
 - Crystal Reports 2013 – 75% completed
 - API Integration – 50% completed
 - 5.2.1 Bugs
 - Further Cross Browser Support – 99% completed



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- Unplanned Components Include:
 - ~50 high priority tickets requested by TAG (yellow = 1 month impact, red = 2 months impact)
 - New Inspection Screen (2 weeks – 1 month impact) ** High User Priority
 - 5.2.1 NBE Submittal (2 weeks impact) ** High User Priority
 - SLI Security Enhancements (2 week impact)

Proposed Releases:

- 5.2.1 SP2 (could be ready for beta testing by the BrMUG – end of August)
 - NBE Submittal
 - Crystal Reports 2013
 - Yellow High Priority Bugs
- 5.2.2 (end of January)
 - Deterioration Modeling
 - New Inspection Screen
 - Project Planning/Analysis
 - Program Stubs (ability to group projects)
- 5.2.3 (end of January)
 - Tunnels
 - GUID Implementation (?)
 - Metric/English Conversion (?)
 - Life Cycle Cost / Deterioration 2
 - SLI Security Enhancements
 - API
 - ?? other additional items promised in 5.2.3 ??

5.2.1 SP2

NBE Submittal

Cross Browser Support

Bug fixes

The FHWA Tunnel Inspection Standards final rule will tentatively be released by the end of the calendar year. Per the last Notice of Proposed Rulemaking dated 07/30/13, states will have 120 days following the effective date of the final rule to submit minimal tunnel data. (For many states, it may be feasible that this first submittal, which will contain minimal data, be performed manually.)

The Task Force made the decision to move forward with 5.2.1 SP2.

Bentley to provide an estimate for 5.2.2 and 5.2.3 delivery prior to COB June 17 Task Force call. Bentley also to provide information on which budget buckets will be used for which tasks.

Deterioration Modeling Demo

Currently in 5.2.1, the user can see the utility of the bridge and work that has been completed. With the addition of the deterioration modeling section, it will be easier for the user when working with work candidates.

- Some of the key items on the screen, on the top portion of the screen are the work candidates.
- Users have the ability to stack work candidates, and see the deterioration of all the work candidates. On the chart, there are columns for work candidate, base utility, utility after work candidates, utility change, cost, benefit cost, start year, and repeat interval.



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- Where start year is located, users can plan for the future by entering how many years in the future they will be doing the work candidate. Eventually, within this screen, users should be able to add work candidates or system-generated work to the project.
- When searching with the element, the user is only able to select one element. There is uncertainty if any users would be interested in seeing the comparison of two separate elements.
- The health index is based on the elements.
- Currently, risk and health index do not deteriorate over time.
- Preservation activities can be tracked as well.
- As the bridges deteriorate, the protective services also deteriorate.

5.2.2 would have the data only, 5.2.3 would have the iterations and recommendations based on the how much a work candidate should be repeated. Deterioration information can be updated and/or changed. These values have been determined based on the TRT's advice. Beckie suggested making a change to allow the user to click on the health index graph and show what the condition state of the elements would be at for each year. Currently, users do not know when the elements are changing the condition state (depends on 1 – 4). Four small graphs are available but were removed to eliminate the cluttered display. The decision was made to create a table that has the utility values per year. There will be a website created with the deterioration model to allow the Task Force to click through the process.

FHWA Update

Federal Highway Administration - Update On Bridge Management Issues and FHWA Initiatives (last meeting San Francisco Apr 2, 2014, this meeting June 10, 2014 Portland, ME meeting)

Transitions/Recruitments – Derek Constable is the new Bridge Management Engineer. Gary Moss is acting Team Leader for the Safety, Preservation and Management Team and Chris Long is acting Team Leader for the Structural Engineering Team. Work continues to fill these positions permanently. Bill Bergeson is our new Tunnel Engineer; he has a background in design and construction of tunnels and their associated functional systems. Shane Boone, NDE Research Engineer at TFHRC, has left FHWA to work for a consultant; Ben Rivers is acting in that capacity for the next 3 months.

NBI Coding Guide – The NBICGU Team has completed Draft Final versions of the Specification Format, Identification, Structure Type and Material, Age and Service, Geometric Data, Navigation, Classification, Inspections, Condition Ratings, Loads and Load Rating, Traffic Safety Features, Bridge Elements and Appraisal sections. Working on updates to the appendices (calculated items), foreword, preface, introductions, acronyms and definitions. Current plan is to complete the Draft Final SNBI by June/July 2014 to include with NPRM for NBIS.

Specification for the NBI Bridge Elements and Collection of Element Level Inspection Data – A

memorandum was distributed to our Division Offices on December 16, 2013. It provided further guidance on our plan to collect element level data from bridge on the National Highway System. It issues the Specification for the NBI Bridge Elements (SNBIBE). It also includes the XML schema and an XML example data set. The schema provides the framework for how we plan to collect the data and build the NBI to be able to accept the data. The key dates from that memorandum are:

- October 1st, 2014, all State and Federal agencies that have not already done so are to be collecting element level data as each NHS bridge is field inspected, and
- April 1st, 2015, the annual submittal will include element level data for those bridges which have had an element level inspection.



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Doug Blades has been designated as the point-of-contact for implementing the element data collection within NBI. We are coordinating with the Coding Guide development team and the NBI development team to test the XML schemas and determine if there is a need to modify the previously provided schema. In addition, the Q&A distributed with the December 16th memo is being updated based on questions and feedback that has been received since December.

Element data collection for non-NHS bridges – As required by MAP-21, FHWA is conducting a study on benefits, cost-effectiveness, and feasibility of requiring collection of element level data for bridges not on the National Highway System (NHS) and will submit a report on the results of the study to the House T&I and Senate E&PW Committees. The project is utilizing contractor services via TFHRC. A questionnaire regarding current ELBI practices has been issued. Results are being compiled and analyzed and a report developed summarizing the benefits, cost-effectiveness, and feasibility of requiring element level data for non-NHS highway bridges. John Hooks has the lead and George Hearn is the SME. Draft report submitted to FHWA in May. Study completion date is June 2014. A final report is planned to be released to Congress in September 2014. Larry O'Donnell and Derek Constable are supporting Gary Moss on this study.

Bridge Management Questionnaire – The results of the bridge management questionnaire were distributed on Nov. 26th.

Bridge Management Technical Assistance – A total of 48 element inspection training sessions completed, 11 scheduled, 3 requested. Note that sessions completed, scheduled and requested include some repeat visits to some states. For the ones completed there have been 2,268 participants. Resource Center is planning a bridge inspection (load rating) peer exchange for Northeast. Sonny is leading this activity in PY 15.

National Bridge Management Business Plan and Roadmap – Nothing new to report.

NHI Bridge Management Course Series – We are developing web based training course consisting of: a) Bridge Management Fundamentals and b) Performance Based Management of Highway Bridges. The material that is developed will be reviewed by a State DOT / Federal team. States of Florida (Richard Kerr), Michigan (Becky Curtis), and North Carolina (Cary Clemmons) will participate. Derek Soden (RC), Dan Brydl (Illinois), Liz Cramer (UT) and Sheila Masters will represent FHWA on the team. Prototypes are under development, a third prototype was reviewed in March and a fourth is being developed based on comments on the third. Videos for the course have been recorded over the months of April and May. A pilot of the course is anticipated for March of next year.

NHI Bridge Inspection Course Updates –

1. A task order has been issued to update the 2-week course for the new element manual. No completion date has been set.
2. The Bridge Inspection Refresher Course has been partially updated for the new element manual and a new optional lesson for PT group inspection has been added. Further changes are underway for updating the case study at the end of the course.

Bridge Management Case Study – Nothing new to report.

Bridge Management Minimum Requirements – Because of MAP-21 we are still working on an Asset Management Regulation that includes pavement and bridge management minimum requirements.



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National Tunnel Inspection Standards – A final NTIS is currently projected before the end of 2014. NHI is developing training for Tunnel Safety Inspection similar to their bridge inspection course which is also expected to be available before the end of 2014. Feedback on the draft TOMIE Manual and the draft Specifications for the National Tunnel Inventory can be sent to Douglas Blades (douglas.blades@dot.gov). Those documents will be entering final development over the next couple months to coincide with publication of the NTIS.

National Bridge Inspection Standards – Drafting the NPRM for the NBIS. Target completion date is October 2015.

Long Term Bridge Performance Program –

1. The LTBP program has collected bridge data on 21 of 24 bridges in the Mid-Atlantic States after beginning in March 2013. Data is being collected for two clusters—a steel multi-girder bridge cluster and a prestressed concrete multi-girder bridge cluster. The Rutgers University contracting team is doing the data collection.
2. Through the Indefinite Delivery Indefinite Quantity contract for Performance Management of Bridges, Pennoni Associates, Inc. has awarded two task orders in support of the FHWA's Long-Term Bridge Performance (LTBP) Program. The first task order is to provide technical support to the LTBP Program, and the second contract is to develop and validate a numerical model for the data-driven LTBP Bridge Condition Index in support of the FHWA LTBP program.
3. The LTBP Bridge Performance Primer, report # FHWA-HRT-13-051, is available in printed form and on the FHWA website. Please contact Sue Lane at 202-493-3151 or Susan.Lane@dot.gov for copies of this report.
4. A workshop on the LTBP Program was held on January 16, 2014 during the 2014 TRB Annual Meeting. Information on the LTBP Protocols for data collection, state and industry timelines of changes in bridge practices, and the use of automated data collection using the RABIT™ Bridge Deck Assessment Tool were provided. The presentations from this workshop will be available on the FHWA website shortly.

NBIS Oversight Program Update: Revisions to the Metric Assessment Reports (MARs) are being incorporated into the NBI. The reports are being checked for quality assurance. Once those checks are completed and the incorporation in the NBI is confirmed, we plan to provide the reports along with supporting information the AASHTOWare BrM Task Force with a target date of June.

Element Converter: The converter is being updated to match the latest element changes. We are targeting its availability later this year. The converter is not intended as an only step in converting elements into NBI conditions ratings for submittal to FHWA. The converter only approximates a NBI condition rating value. Conversely, the converter only provides approximate values for element types and condition quantities, as there is not enough detail in NBI data to provide accurate element types and associated condition quantities. It is expected that all NBI condition ratings, element types and condition quantities should be field assigned or field verified.

Marketing Update

No discussion. Marketing items were discussed during the joint Bridge Task Force meeting.

Review Action Item list from meeting

Judy reviewed the action items captured during the meeting.



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Executive Session

Executive session adjourned at 5:00pm.



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

<u>AASHTOWare Bridge Task Force</u>		
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BrDR Design Tool TAG (DTAG)

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