

AASHTOWare Bridge Design-Rating (BrDR) Task Force Summary Meeting Minutes

April 1 - 2, 2014

San Francisco, CA

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General Information – Meeting of the Bridge Design & Rating Task Force

Date: Tuesday, April 1, 2014

Participants:

AASHTO	Judy Skeen	AASHTO	Project Manager
BrM Task Force	Mike Johnson	Caltrans	Vice-Chair
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 (BrD) Bridge Design (BrD) Bridge Rating (BrR) Bridge Rating (BrR)
BrDR Contractor	Jim Duray Herman Lee	Baker Baker	
Guests	Matt Farrar Jonathan Mallard Kevin Keady	Idaho ITD Virginia DOT Caltrans	OSOW Bridge Scan** OSOW Bridge Scan** OSOW Bridge Scan**

** NCHRP 20-68A Domestic Scan 12-01 -- “Advances In State DOT Superload Permit Processes and Practices”

Notes Taker: Todd Thompson / Judy Skeen

Agenda Item 0: Review Agenda/Assign Minutes Recorder

Tim Armbrecht opened the meeting at 8:03. Todd Thompson was assigned as the minute’s recorder.

Tom Saad advised via email that he had to cancel his flight plans at the last minute. He advised that he might be available to provide the FHWA update via conference call Wednesday afternoon.

PennDOT was added to agenda item 14 (Marketing Activities).

Agenda Item 1: Prior Business

1a. Review January Meeting Minutes

Minutes from the January 29-30, 2014 Task Force meeting in Destin, FL were reviewed. A few minor corrections were made and the corrected minutes were approved.

1b. Review Action Items

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

Agenda Item 3: Update on BrD/BrR Licensees (FY 2014)

3a. Product Report

Baker presented the product report, summarizing the current license breakdown. There are 3 evaluation licenses expiring in April



(all with the Idaho ITD). The Task Force briefly discussed the evaluation survey results. Judy demonstrated the Excel spreadsheet for product licensing generated by AASHTOWare Manager. The Task Force discussed differences between the content of the AASHTOWare Manager Report and the Baker-generated license report.

3b. Service Unit Report

The Service Unit report was provided and reviewed by the Task Force. The only change since the last meeting was the addition of 2 service units for the NMDOT that were purchased in 2009 and inadvertently not added to their service unit count.

3c. Licensing Options

No discussion.

3d. Evaluation Software Report

The Evaluation Software report was provided and reviewed by the Task Force. Judy indicated that some of the evaluation software licenses that were active earlier in the fiscal year may have dropped off the report once the evaluation end date has passed.

Agenda Item 4: Support and Maintenance Report

4a. Incident and Support Summary

Baker reviewed the Incident and Support Summary report. 33 bugs were added since last quarter. There are no unresolved critical issues. The Task Force discussed the definition of 'Critical' issues and made the decision to pursue establishing a definition to be used to categorize issues as critical.

4b. Progress on Bug Resolution

Baker reviewed Maintenance Progress reports for 6.6 and 6.7 releases. They were broken into two separate reports. They are on track to get all 6.6 maintenance items resolved by the 6.6 release. Currently there are 21 items. They may get those fixed before the 6.6 beta test release.

There are currently 19 items identified to be fixed in 6.7. These bugs represent defects identified after the January 1, 2014 6.6 bug identification deadline.

4c. Enhancement List Update

The Testing TAG Enhancement Buckets and BrDR Enhancement lists were reviewed. Six new enhancements were added to the BrDR Enhancement list since the January Task Force meeting. Items BRDR-208, BrDR-209, BrDR-210, and BrDR213 were submitted by Caltrans. Baker provided an overview of the history of the development of the FE Engine

4d. Maintenance Issues

No discussion.

Agenda Item 5: Update on 6.6

5a. Progress and Schedule Review

Everything has been tested except for FP5 (Adjacent Vehicle). FP5 testing will be complete by the end of this week. Beta 1 will be issued by April 22. The Alpha Test Plan will be edited to produce the Beta Test Plan. A beta checklist (short cut of the beta test plan) will also be developed and provided to the Testing TAG. The Alpha Test Report will be forwarded to the Task Force by April 18 for review and approval. Colorado DOT has reported several bugs. Vinacs has submitted several additional enhancement requests.

5b. TAG Update

Dean provided an updated list of Testing TAG Members that is broken down into three groups. The first group is Rating, the second is Design, and the third is those brought on board to test the post tension and multi cell box girders in version 6.5.1.

All 6.5 testers were asked to participate in 6.6 testing. Dean provided a list of testers (nine) who will participate in the May testing meeting in Pittsburgh. Elizabeth Befikadu (consultant) has



agreed to participate in the Pittsburgh testing on her own dime.

5c. May 13-15 Beta TAG Meeting

Dean provided a draft agenda for the May 13-15, 2014 TAG testing meeting in Pittsburgh. Dean would like for the Testing TAG to investigate options to review, scrutinize and reduce the enhancement list without losing important outstanding issues. One option discussed was moving some of the enhancements to a 'Wish List for Modernization'. Enhancements on the current list that don't make the modernization enhancement wish list would be dropped. Important enhancements could then be re-submitted to begin a list of enhancements for future consideration.

The Task Force suggested the enhancement list be first reviewed by the Testing TAG. The Testing TAG also needs to participate in the design of the user interface for the 'modernized' application. The 'short list' will be finalized during the May 13-15, 2014 Testing TAG meeting in Pittsburgh. The finalized 'short list' will be voted on during the RADBUG.

The Task Force made the decision to appoint Jeff Olsen to serve as the Vice-Chair of the Testing TAG. Dean Teal will continue to serve as the Testing TAG Chair.

Agenda Item 6: Enhancements

6a. 3D Straight Analysis Improvements – Mockups

For straight structures we want to switch to master-slave; however, when we do this we get large end moments. Baker proposes allowing the user to describe the support conditions for a 3D model and for a girder line. This would result in the addition of three columns in the user interface. Information on these changes will need to be incorporated into the help document.

This enhancement will be included in release 6.7.

6b. WWR for Concrete Structures - Estimate Welded Wire Reinforcement for Concrete Structures – the estimate includes the concrete deck but does not include single multi-cell boxes. The Illinois DOT would be willing to contribute service units to help fund this enhancement. The Testing TAG's recommendation will be discussed during the June Task Force meeting.

6c. MCB Individual Web Estimate (2014-BrDR-002)

MCB individual web is integral with Pier and will be included in the 6.6 release.

Discussion that the MCFT shear issues needs some additional independent research and coordination with T-18. If and what changes would be required by BRDR would depend upon those results. Matt Farrar will take the lead on this investigation.

Caltrans asked if the RC and PT Boxes could be accomplished in the 2014-2015 contract year. There was some discussion on whether database changes could be added with 6.6, so a patch could be distributed to Caltrans whenever it was ready.

Discussion on the range of applicability when computing LL distribution factors. Caltrans will work with Sue Hida and the Loads technical committee to see if this can get into the code. After which time the product would adopt that range of applicability. If Caltrans decides they want something sooner, a switch could be added to address this under their funding.

While not part of this agenda item – the ballot item on "spreading" or averaging the resteel for shear was also discussed.



6d. Steel Diaphragm Spec-Checking Updated Estimate (2014-BrDR-002)

This is for curved girders. Once Baker started working on this, it was determined there were more Spec Check articles than they had originally anticipated. The Gusset Plate analysis also includes some of the same spec check articles as diaphragms. Based upon the history column, some items were moved to different releases. This enhancement will be discussed in the future for possible inclusion in release 6.8.

6e. P/S Design Tool Requirements - Draft

Baker presented a summary of requirements generated through discussions with the Task Force, users and the Baker team. Jeff Olsen volunteered to lead a Design Tool TAG of BrD users to discuss and development requirements for the P/S Design Tool. Dean Tool will participate on the Design Tool TAG as the Vice Chair.

The Design Tool TAG progress will be discussed during the June Task Force meeting.

Agenda Item 7: Miscellaneous Items

7a. Modernization Update

Baker provided an overview of the BrDR Trial Architecture which was a deliverable from the Baker team workshop with Anthony Lattanze (March 12, 2014). Architectures were brainstormed during the workshop then revisited to compare options to the defined quality attributes. Three architecture 'experiments' have been discussed. Following the development of the detailed design, estimates will be developed with the goal of having the design and solicitation work plan developed by September 30, 2014.

Decisions on the user interface need to be made by the end of July. A Task Force/ selected TAG member meeting will be scheduled for July in Pittsburgh to finalize requirements for the user

interface. Baker will lead the discussion (which will begin with interface mockups).

BrDR Modernization Task Force conference calls will be scheduled monthly beginning May 8 (second Thursday of each month at 2:30pm Central) to discuss status.

7b. Rating Tool Prototype

Discussion with the 12-01 Advances in State DOT Superload Permit Processes and Practices Scan Team:

Matt Farrar (ID), Jonathan Mallard (VA) and Kevin Keady (CA). The OSOW scan was a type 3 scan where various agencies came to the scan team to present information on their practices and processes. Matt Farrar summarized the scan and provided an up to date status which includes the following large tasks.

- **Permit Fees** – Recommendation to get a better understanding of what the fees are and how to suggest to states to recover their costs to do things
- **Harmonization** – Make it easier to do a cross country move for the haulers. Won't be able to really make every states laws the same.
- **Load Rating** – Make things better by capturing the best practices of various states to help those states that have not started – get started. How to capture route selection, load rating, clearances and really more than just load rating.
- **Route mapping/GIS** – Concern of liability of bad data causing accidents or issues.

The scan team has been charged with gathering best practices from the states. Their attendance at this meeting satisfies a portion of their best practices gathering charge.

Tim Armbrrecht explained to the scan team the history of Virtis, now BrR, and how states have used the data to support superload analysis and, in some cases, have integrated BrR into their agency overweight systems.



The Rating Tool Prototype was discussed and the 20 preliminary requirements were reviewed. The group discussed issues such as whether or not the rating tool should automatically save the pre-processed data for the rating tool wrapper. Various schemes on what else could be done to handle this were also discussed. Jon Mallard volunteered to present the scan results to the BrDR users at the RADBUG meeting in August.

The Testing TAG will also be asked to review the Rating Tool Requirements. This issue will be discussed further during the June Task Force Meeting in Portland, ME.

7c. VML is obsolete in IE10

Vector Markup Language (VML) is obsolete in IE10. However, if we modernize to SVG, SVG components will not be displayed correctly without the addition of an IE plug-in. A work-around for the VML issue with IE10 would be to run in compatibility mode.

7d. icons and logos

Bridge Design-Rating splashscreen and icons. The decision was made to go ahead and use the combined BrDR trademarked splashscreen when the products are delivered as a combined product.

7e. FY2014 Contract Modifications

The requested Bridge Design-Rating contract modifications have been approved by the SCOJD. The executed documents have been placed in SharePoint.

- BrDR 6.5 Project – end date extended to 09/30/14
- BrDR FY14 MSE –end date extended to 06/30/15
- BrDR 6.6 Project –end date extended to 06/30/15

7d. FY2015 Contracts

- BrDR 6.7 Project – executed 07/01/14 – 06/30/15

- BrDR FE Engine Modernization – executed 04/01/14 – 09/30/14

The BrDR FY15 MSE contract will be developed and forwarded to the contractor in late May or June for a July 1, 2014 execution date.

Agenda Item 8: Third Party Issues

Third Party conference call with representatives from Bentley, BridgeSight, BridgeTech, and Intergraph. The following items were discussed.

- There will be no 6.5.1 release. The items originally planned for version 6.5.1 will be rolled into release 6.6.
- Future releases will be targeted for distribution to the end users by the end of June each year.
- A Third Party discussion has been scheduled for August 14 (the day after the RADBUG meeting)
- AASHTOWare Catalog - Third parties contractors also raised the subject of being able to include their companion software offerings in the AASHTOWare Catalog. Judy provided an overview of the Bentley HAO agreement and process as an example of how inclusion of their software might be possible.
- Brian Goodrich brought up the process launcher again during the Third Party Contractor conference call. It was decided that any development in this area will be considered in conjunction with the modernization effort.

8a. API Overview for adding a new engine (email from Todd 3/19)

Todd Thompson and Judy Skeen had a conference call with Dr. Fu (University of Maryland) on March 19. Dr. Fu is interested in making DESCUS a third party engine for the Bridge Design



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Dr. Fu is interested in obtaining information on the steps involved in getting a third party software to work within BRDR. Baker advised that the following documents already exist: API Guide, API Examples, and API Reference documentation.

Agenda Item 9: User Group

9a. Summary Minutes from November Meeting

Baker provided the draft of the summary minutes from the Destin meeting in the meeting packet. Judy will make the changes identified in the full meeting minutes to the summary minutes and post on SharePoint for Task Force review and comment.

9b. Status of 2014 RADBIG Planning / Registration

The RADBUG 'Save the Date' email went out to BrDR End User Designees and 2013 RADBUG meeting attendees on 12/09/13. The meeting registration website announcement email went out on 02/04/14. To date, 11 attendees have registered for the conference.

Brad Wagner sent a RADBUG announcement to MIDOT employees, Michigan Tech contacts and local consultants on 03/26/14.

9c. Invite host state User Group officer to June Task Force meeting to finalize agenda topics

The Task Force approved inviting Brad Wagner to the June Task Force meeting in Portland, ME.

Agenda Item 10: Work Plan

10a. Planning Estimates

This will be a standing agenda item. Dean presented the planning estimates which includes all the available cost estimated provided by Baker.

There was a question on if Curved Girder Part III(b) Lateral Bracing was or was not in the 6.7 Work Plan. Was it included in the gusset plate analysis?

The Task Force discussed the possibility of not going forward with 6.X named releases once the modernization effort is underway. This decision cannot be made until additional information is available on the work effort required to accomplish modernization.

10b. Future Work Plans

No discussion.

Agenda Item 11: FHWA Update New Director, FHWA Office of Bridges and Structures

Dr. Joey Hartmann, FHWA Bridge and Tunnel Team Leader, was recently named the new Director of the FHWA Office of Bridges and Structures, a position that opened with Myint Lwin's retirement in September 2013. Tom Everett, FHWA Bridge Program Team Leader, was announced as the new Director of the Office of Program Administration.

FHWA webinar, Load Rating for SHVs

On March 12, 2014, FHWA hosted a webinar to provide clarification on the need to load rate bridges for Specialized Hauling Vehicles (SHVs) consistent with FHWA memorandum dated November 15, 2013 entitled Load Rating of Specialized Hauling Vehicles. A set Questions and Answers on this topic was disseminated during the webinar, and to FHWA Division offices to aid in providing clarity in this requirement.



The Q&As are intended to provide clarification and further guidance on the approach FHWA will use to oversee bridge load ratings as they relate to SHVs. Please be reminded to include the evaluation of SHVs in the load rating process, as necessary, since these vehicles comply with all Formula B requirements and are considered legal to operate in every State.

Webinar Series on Earthquake Planning and Response

A series of “Earthquake Planning and Response Tools” webinars has been organized by the Federal Highway Administration, the United States Geological Survey, and California Department of Transportation. The purpose of these webinars is to familiarize emergency managers, planners, and responders, engineers, and transportation planners with two software tools: Risks due to Earthquake Damage to Roadway Systems (REDARS) and ShakeCast. The two software programs are available to State Departments of Transportations for mitigating the impacts of major earthquakes to highway infrastructure and for determining areas most in need of immediate response following an event. Both tools analyze vulnerability of bridges relative to ground shaking, each focusing on delivering products tailored to meet a specific use case. Session 1 was held March 5, 2014, to provide an overview of the tools available to States for earthquake planning & response. Session 2 was hosted on March 19, 2014, on REDARs and session 3 on ShakeCast will be held April 2, 2014.

Upcoming NHI Load Rating training

FHWA/NHI course no. 130092, Load and Resistance Factor Rating of Highway Bridges was hosted by the New Jersey DOT on March 4-7 and will be hosted in Minneapolis, MN on April 8-11 and April 28- May 1.

Agenda Item 12: Five Year Projection for BrDR

Discussed during executive session.

Agenda Item 13: Licensing Issues

13a. International Licenses

No discussion.

13b. Special Consultant Option Licensees

No discussion.

13c. General Discussion

The Task Force discussed the possibility of considering packaging design options as separate modules that could be licensed separately. They also discussed the potential of hiring a contractor to investigate how the modularization of the program functionality could potentially affect licensing revenue.

Agenda Item 14: Marketing Activities

14a. IBC

Dean Teal will attend the Monday session at IBC and will represent BrDR using a presentation created by Michael Baker. His presentation will be early Monday afternoon with questions at the end of the day. Krisha will be doing a presentation at the end of the week for Lubin Gao as part of the IBC.

14b. Alaska Response to Comments

Baker provided an overview of the email conversation with the Alaska DOT. The summary included Alaska DOT comments with Baker suggested responses. The Task Force reviewed the comments and finalized the responses.

14c. KYTC

KYTC is considering using Midas software. Marvin Wolfe (KYTC) sent an email on March 26 inquiring about the cost of AASHTOWare BrDR software. He was interested in securing licensing information in case they made the decision to compare bridge design and rating software options.



14d. PennDOT

PennDOT provided Baker with curved girder with heavy skew bridge data to perform an analysis of the structure using AASHTOWare Bridge Rating. Baker forwarded their analysis results to PennDOT on March 24. One of the required deliverables was 'lateral flange moments' which are not currently available in our standard reports.)

14e. Maine DOT

Agenda Item 15: Review Action Item list from this meeting

Judy reviewed the action items recorded during the meeting.

Agenda Item 16: Task Force Executive Session (as needed)

The BrDR Five Year Plan was discussed briefly during executive session. The meeting adjourned at 4:15pm.

