

**Summary Minutes Of The  
AASHTOWare Bridge Design-Rating (BrDR) Task Force Meeting  
June 27 - 29, 2017  
Seattle, WA**

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

Date: Tuesday, June 26 – Thursday, June 29, 2017

Participants:

AASHTO	Judy Tarwater	AASHTO	Project Manager
SCOA	Bruce Johnson	Oregon DOT	SCOJD Liaison
T&AA	Will Holmes	Kentucky TC	T&AA Liaison
BrDR Task Force	Todd Thompson	South Dakota DOT	Chair
	Joshua Dietsche	Wisconsin DOT	Bridge Rating (BrR)
	Jeff Olsen	Montana DOT	Bridge Design (BrD)
	Dean Teal	Kansas DOT	Bridge Design (BrD)
	Amjad Waheed	Ohio DOT	Bridge Rating (BrR)
	Tom Saad	FHWA	FHWA Liaison
BrM Task Force	Beckie Curtis	Michigan DOT	Bridge Management
	Thomas Martin	Minnesota DOT	Bridge Management
BrDR Contractor	Jim Duray	Michael Baker, International	BrDR Contractor
	Herman Lee	Michael Baker, International	BrDR Contractor
Guests	Ping Lu	Iowa DOT	Future TF Member
	Jeffrey Ruby	Kansas DOT	RADBUG President
	Craig Boone	Washington DOT	

Notes Taker: Joshua Dietsche / Judy Tarwater

### **BrDR Enhancement List Review (Tuesday, June 26)**

The Task Force discussed the enhancements currently existing on the list (275). These enhancements will be addressed in version 7.1 (to be released in June 2020). Requirements gathering for these enhancements will begin in the summer of 2018.

### **Agenda Item 0: Review Agenda/Assign Minutes Recorder**

Todd Thompson opened the meeting at 8:00 am. Joshua Dietsche was assigned as the meeting minute's recorder. The agenda was reviewed and no additional items were added to the agenda.

### **Agenda Item 1: Prior Business**

#### **1a. Review April Meeting Minutes**

Minutes from the April 5 - 6, 2017 Task Force Meeting in Memphis, TN were reviewed and approved as-is.

#### **1b. Review Action Items**

Jeff Olsen reviewed the Action Items and provided updates to the Task Force.

### **Agenda Item 2: Financial Overview and Work Plan Summary**

#### **2a. Update on Phase 21 (FY2017)**

Baker provided an update on the FY2017 MSE work plan as of 05/31/17. A majority of the spending to date has been on TM2 (Customer Support), TM3A (Database Maintenance), TM6B (User Group Meetings), TM8B (Cost Estimates), TM11 (Issue Maintenance), and TM13



(Specification-related Update). Current projections are showing that there will be about \$500 left at completion of the contract.

**2b. Update on 7.0 Release Work Plan (June 2019)**

Baker provided an update on the Modernization Project work plan as of 05/31/17.

**Agenda Item 3: Update on BrD/BrR Licensees (FY 2017)**

**3a. Product Report**

Judy Tarwater presented a product license summary report developed from the Excel output from AASHTOWare Manager. The report included licenses ordered as of 06/10/17.

Item	FY15	FY16	FY17	Sponsoring Agency
Bridge Design - 120-Day Evaluation License	2	2	12	
Bridge Design Developer License	1	1	2	
Bridge Design Educational License	9	14	7	
Bridge Design Single Workstation Option	2	1	4	
Bridge Design Special Consultant Option	35	36	34	
Bridge Design Unlimited Option	17	17	15	
Bridge Design/Rating Service Units	31	50	94	
Bridge Rating - 120-Day Evaluation License	3	10	23	
Bridge Rating Agency Sponsored Consultant Licenses	2	2	3	Illinois, Michigan, Virginia
Bridge Rating Developer License	3	4	5	
Bridge Rating Educational License	11	17	7	
Bridge Rating Single Workstation Option	20	17	25	
Bridge Rating Special Consultant Option	339	369	348	
Bridge Rating Unlimited Option	33	34	39	**
Sponsored Consultant Licenses (Bridge Rating) - No Fee	N/A	N/A	59	Illinois DOT

Sponsored Consultant Licenses (Bridge Rating) - No Fee	128	95	87	Michigan DOT
Sponsored Consultant Licenses (Bridge Rating) - No Fee	110	92	85	Virginia DOT

**\*\* Non-Member BrR Unlimited Licensees:**

- + HDR
- + HNTB
- + Parsons Brinkerhoff
- + TranSystems Corporation
- + Michael Baker International

**3b. Service Unit Report**

Baker presented the service unit summary report. There have been no changes to the total service units purchased since the February meeting. 94 new service units have been purchased in FY2017. Of note, Baker will be providing training to Louisiana DOTD and the New York State DOT in the near future.

**3c. Evaluation Software Report**

The current summary of BrDR software evaluations was discussed. We continue to receive requests for evaluation software. One survey response has been received since the conversion of the survey from the Vovici Survey Instrument to Survey Monkey.

**Agenda Item 4: Support and Maintenance Report**

**4a. Incident and Support Summary**

Baker presented the Defect History Report through release 6.8. Fifty (50) new defects have been added since the Task Force meeting in April 2017. The total number of defects reported were 2219. Currently, 2109 defects have been resolved; 67 defects are not reproducible; 2 defects need more information; and 41 defects are unresolved.



#### 4b. Progress on Bug Resolution

Baker reviewed Maintenance Progress reports for the 6.8.2 release as of 06/12/17. For the 6.8.2 release, all 217 reported incidences have been resolved.

Baker reviewed Maintenance Progress reports for the 6.8.3 release as of 06/12/17. For the 6.8.3 release, out of 100 total reported incidences, 59 have been resolved and 41 are assigned for resolution.

#### 4c. Enhancement List Update

Baker presented an update on the Enhancement List.

Fifteen additional enhancements have been added to the BrDR Enhancement List since the last meeting

- BRDR-1316 – Add user-defined effective length factor (K) for the diaphragms
- BRDR-1341 – Check bearing and block shear capacity for the gusset plates connecting members
- BRDR-1346 – Show individual DL forces and adjacent LL forces in the output report
- BRDR-1349 – Chord splice check if the splice plane is not aligned in the true vertical direction
- BRDR-1352 – Regression Utilities Enhancements
- BRDR-1353 – Prestressed Design Tool Enhancements
- BRDR-1369 – Engine feedback produces incorrect messages on dead load windows
- BRDR-1373 – Add an error on LLDF progress window to notify/force the user to define concrete deck for full length of beam
- BRDR-1374 – Non-Standard Gage Vehicle feature for culvert
- BRDR-1380 – Stirrup Design Tool should include splitting resistance

- BRDR-1381 – Consider access holes/perforations for truss LRFR rating
- BRDR-1382 – Batch Analysis System Error
- BRDR-1407 – Develop a 2D+ analysis option for Steel, PS, and RC multigirder bridges
- BRDR-1415 – Software is NOT running when the analysis setting is calling for “Member Alternative” on Box girder bridges
- BRDR-1416 – Rate on Interior Girder Only

Baker created a “Modernization” category in the Bucket List handout. The Task Force discussed each issue in this bucket and classified the enhancements similar to the process used for item 8b. Results of this discussion are as follows:

- BRDR-581: Tier 1 (discussed previously with item 8b)
- BRDR-1144: Tier 1 (discussed previously with item 8b)
- BRDR-1299: Tier 1
- BRDR-1419: Tier 1
- BRDR-1420: Administration/Maintenance
- BRDR-1422: Tier 1
- BRDR-1423: Baker to handle during modernization on a window-by-window basis
- BRDR-1424: Tier 1
- BRDR-1425: Tier 1
- BRDR-1426: Tier 1 (guided navigation)
- BRDR-1427: Same as BRDRSUP-285
- BRDR-1428: Tier 1
- BRDR-1429: Tier 2
- BRDR-1430: Tier 1 (if this issue should rise to the top in user voting, investigate further)
- BRDR-1431: Tier 1
- BRDR-1432: Tier 1
- BRDR-1433: Maintenance
- BRDR-1434: Tier 1
- BRDR-1435: Tier 1
- BRDR-1436: Tier 1
- BRDR-1437: Tier 1
- BRDR-1438: BrIM effort; remove issue
- BRDR-1439: Tier 1



- BRDR-1440: Tier 1
- BRDR-1441: Tier 1; similar to item from 8b discussion
- BRDR-1442: Group this issue with BRDR-1423
- BRDR-1443: Maintenance
- BRDR-1444: Tier 1
- BRDR-1445: Maintenance
- BRDR-1446: Tier 1
- BRDR-1447: Tier 1

4d. Maintenance Issues

No discussion.

**Agenda Item 5: Update on 6.8.2 (June 2017 release)**

5a. Progress and Schedule Review

All the outstanding issues have been resolved with the second update to the Beta 2 release (last Wednesday). An email was forwarded to all users who had issues remaining from the prior release. Two of the five recipients accepted the response.

On Wednesday during the meeting, Dean Teal sent an e-mail to the Beta Testers to get their feedback on a go / no-go decision on this release. The Beta Testers replied with direction to the Task Force to proceed with the release.

The 6.8.2 release will be sent to those DOTs that licensed in FY17, regardless of current re-commitment status. This has been the typical practice in the past.

5b. TAG Update

No discussion for 6.8.2.

For 6.8.3 beta testing, the current plan would have no alternative engine to test NSG or substructures. Baker was directed to investigate the level of effort required to provide an alternate engine for testing NSG.

The Task Force decided that substructure will have only the modernized engine available in 6.8.3.

**Agenda Item 6: Update on P/S Design Tool Phase**

2

Baker provided an estimate for the suggested enhancements to be included in the Prestressed Design Tool under Phase 2. Features and capabilities to include:

<b>N</b>	1. Girder System Entry
<b>N</b>	2. Line Girder Entry
<b>N</b>	3. Schematics
<b>W</b>	4. Add a Diaphragm Wizard
<b>N</b>	5. Add the ability to save the beam designs
<b>W</b>	6. Calling the Tool from BrDR
<b>R</b>	7. Iterate on Concrete Strength
<b>R</b>	8. Add the ability to debond a harped pattern
<b>R</b>	9. Add the ability to cut top strands
<b>W</b>	10. Allow users to override distribution factors
<b>W</b>	11. For a continuous design, compute the area steel is required in the slab over the negative moment region
<b>N</b>	12. Add user control for selecting continuous analysis, or continuous and simple span analysis
<b>W</b>	13. Calculate and report the hold down force
<b>N</b>	14. Create a camber table that includes the PCI multipliers
<b>R</b>	15. Create a summary output report
<b>N</b>	16. Compute stability checks for transport
<b>N</b>	17. Address issues BRDRSUP 1112 and 1120
<b>R</b>	18. Add tri-deck beams to the library

**N** = Needs

**R** = Really Wants

**W** = Wants



Idaho and Illinois have requested enhancements to the Rating Tool. This work is independent of modernization and somewhat tied to the legacy system. Both have funds available now to pay for their requests.

- Illinois needs the additional functionality in BrDR to support the production release of their routing system, and would therefore like to have the enhancements as soon as possible.
- Idaho is currently pursuing a new OSOW permitting system. The new system will need to be compatible with the Rating Tool.

Caltrans also has a list of enhancements that they wish to have incorporated into both the legacy system and the modernized product. The Caltrans enhancements are based on their efforts to meet deadlines to be compliant with FHWA Metric 13 (Load Rating). Baker advised that capacity issues may limit how fast this work can be accomplished.

### **Agenda Item 7: Modernization**

#### **7a. Update**

Baker advised that modernization work for the user interface is currently on schedule and within budget. They are a couple weeks behind on the engine due to reassigning staff to work on 6.8.2 bugs, but Baker is not worried about catching up. Baker provided the following update on modernization progress.

- Work on the engine is projected to be complete by mid-February 2018, a little later than anticipated. Baker is attempting to devote more resources to this work to finish earlier and allow additional time for alpha and beta testing. 7 ½ people are currently working on the engine and Baker is optimistic that it can be completed earlier.
- Work on the User interface is projected to be complete by mid-February 2019, a little later

than anticipated. Similar to the engine work, Baker is attempting to devote more resources to this work to finish earlier and allow additional time for alpha and beta testing. 10 ½ employees are currently working on the user interface.

- Baker currently has one person working on the domain.

#### **7b. TAG Update**

Caltrans submitted Dave Ward as their TAG representative, pending the finalized commitment. MnDOT nominated Yihong Gao as their TAG representative.

### **Agenda Item 8: Enhancements**

#### **8a. Guided Navigation Support (2017-BrDR-009)**

Task Force discussion centered on the value of the guided navigation feature relative to the projected cost, which is significant. Baker advised that a decision on this work is not time critical; this feature could be implemented now or later for the same projected cost and effort. The Task Force did not make a final decision on potential implementation at this time.

#### **8b. Tier 1 Enhancement List**

This item was discussed on Tuesday. The Task Force reviewed the list of items previously identified as Tier 1 enhancements, focusing on whether items should remain for user consideration, should be down-graded to Tier 2, or should be removed from the list altogether (may have been already done, request isn't clear, request is no longer relevant, etc.). Beckie Curtis took notes on taskforce decisions in a spreadsheet during this discussion.

#### **8c. Caltrans Enhancements**

The first request in the handout is new, the others have been discussed by the Task Force previously. Caltrans is willing to fund these enhancements for both the legacy and





modernized product. Baker notes that the estimates for these items would likely roughly double to implement in both systems.

#### 8d. Rating Tool Enhancements

Illinois requested work to add LFR floor systems to the Rating Tool.

Idaho requested work to add concrete box culverts (LFR) to the Rating Tool.

### **Agenda Item 9: Miscellaneous Topics**

#### 9a. Discussion on T-19 BrIM Project

T-19 has initiated a pooled fund project to help fund the BrIM effort, with Iowa DOT as the lead agency. FHWA is pursuing BrIM on a parallel path, but is also supporting the pooled fund project. T-19 has been in close communication with Brian Cozy (FHWA). Specific to AASHTOWare as a pilot project, we have provided a developer's license to Tim Chipman (Constructivity.com LLC). Baker will provide support as needed. The plan is to map IFC to the BrDR database.

#### 9b. Georgia interest in rating substructures

Georgia has existing LFR substructure rating files, created using an in-house tool (possibly the PennDOT rating software). Georgia is interested in a more modern substructure rating tool for LRFR, preferably one that could import their existing files.

### **Agenda Item 10: Third Party Issues**

#### 10a. Long-term Strategy

Judy advised that AASHTO has received the first order for PGSuper through the AASHTOWare catalog.

### **Agenda Item 11: User Group**

#### 11a. Summary Minutes from April Meeting

The summary minutes for the April BrDR Task Force meeting in Memphis, TN were provided. Judy Tarwater will post these on the SharePoint

site for Task Force review and comment. Once in final form, the summary minutes will be forwarded to David Schroeder (Secretary RADBUD) for posting on the RADBUD website.

#### 11b. 2017 RADBUD Meeting Agenda

The Task Force met with Jeff Ruby, RADBUD President, to review and finalize the 2017 RADBUD Meeting Agenda. A demonstration of the Regression Tool will be included in the RADBUD meeting agenda.

Judy Tarwater will post the final RADBUD meeting agenda on the RADBUD registration site and will send a RADBUD registration reminder email to the BrDR community to make them aware that the final meeting agenda is now available on the website.

#### 11c. Update on RADBUD Attendance

Currently 71 members of the BrDR community have registered for the 2017 RADBUD Meeting. The Task Force made the decision to reach out again to the following agencies to remind them of the Task Force's invitation to support the travel expenses for one representative to attend the 2017 RADBUD meeting.

- Texas DOT – Bernie Carrasco (cc Gregg Freeby)
- Washington DOT – Harvey Coffman (cc Tom Baker)
- Kentucky TC – Anne Irish (cc David Steele)

#### 11d. 2017 End User Surveys (Agency and Consultant Versions)

Judy Tarwater presented the updated draft agency and consultant surveys to the Task Force for review and discussion. A few minor changes to the surveys were discussed.

The Task Force established the following **Seven (7) Enhancement Categories:**





- **Technical** – Focus development efforts on adding new or improved analysis capabilities or improved analysis performance.
- **Usability** – Focus development efforts on making the user interface easier to use so as to decrease the learning curve for new users and improve productivity for all users.
- **Schematics** – Focus development efforts on adding more schematics to help users verify data entry.
- **Missing Functionality** - Focus development efforts on completing functionality that has been partially implemented or is important to the product such as adding new structure types.
- **Reports** - Focus development efforts on improving reporting of the data input by the users or generated by the analysis.
- **Wizards** - Focus development efforts on improving existing wizards or adding new wizards that guide the data-entry process.
- **Administration** - Focus development efforts on improving administrative capabilities.

The surveys will be forwarded to the EUDs on July 7. Responses by August 4 will be requested.

The agency survey will be sent to the agency BrDR EUDs to ensure we receive one response per agency. The consultant surveys will be sent to the consultant BrDR EUDs. Both surveys will require the respondent to provide their name and organization information.

#### 11e. RADBUG SWAG

The BrDR Task Force made the decision to purchase the Fashion solar power bank for RADBUG SWAG.

#### **Agenda Item 12: Work Plans**

##### 12a. Planning Estimates

FY18 will be MS&E only.

#### 12b. Future Work Plans

FY19 will include enhancement work; no further discussion.

In order to address the planned 3-year cycle to publish LRFD spec updates, Todd proposes to implement interim updates on an annual basis with a control option. No final taskforce decision is made on this topic.

#### **Agenda Item 13: FHWA Update**

Tom Saad provided the following report:

##### Additional Guidance for Managing Emergency Vehicles on the Interstate:

On December 4, 2015, the President signed into law the Fixing America's Surface Transportation Act (FAST Act) (P.L. 114-94), which includes new truck size and weight provisions that effect bridge load rating and posting requirements. Among those provisions is the exemption of emergency vehicles from meeting the nationwide Interstate truck weight limits set forth in 23 U.S.C. 127(a). On April 19, 2017, FHWA released supplemental guidance, in the form of questions and answers, to provide additional clarification for common questions received from FHWA Division Offices and State DOTs prior to and after the release of FHWA's Memorandum on Load Rating for the FAST Act's Emergency Vehicles dated November 3, 2016. The Q&As can be found at

<https://www.fhwa.dot.gov/bridge/loadrating/>

##### Fire causes bridge collapse in Atlanta:

On March 30, 2017, an intense fire under a I-85 bridge in the heart of Atlanta caused it to collapse during rush hour. FHWA provided rapid assistance to the Georgia DOT during the crisis. FHWA distributed an initial event report on April 5, 2017 reporting preliminary information on the cause of the fire which encourages bridge owners to direct inspectors, during their routine inspections, to be mindful of potentially combustible materials stored under



bridges and, if concerns exist, to communicate those appropriately to the bridge inspection program manager so those materials can be removed. The event report will be updated as more information becomes available. Please contact your FHWA Division Bridge Engineer for a copy of the report.

#### Announcement of Dr. Jean Nehme to head the LTBBP:

FHWA announced that Dr. Jean Nehme will soon join the Office of Infrastructure Research and Development as the Team Leader for the Long Term Infrastructure Performance Team. In this role, Jean will be responsible for advancing the Long Term Bridge Performance Program, as well as the Long Term Pavement Performance Program. Jean comes to FHWA after a 25-year career with the Arizona Department of Transportation (AZ DOT), where he served in a series of progressively responsible positions. Among the AZ DOT leadership positions he held are: State Bridge Engineer, State Asset Management Engineer, and (most recently) Director of Performance Management and Research. Jean holds a Doctorate in Structural Mechanics from the University of New Mexico.

#### Plans in place for Mid-Atlantic Load Rating Program Peer Exchange:

The FHWA offices of Bridges and Structures and the Resource Center will host a face-to-face Load Rating Program Peer Exchange in the Mid-Atlantic region this fall. It will be the 4<sup>th</sup> Load Rating Peer Exchange to take place; a forum to allow State load rating and permitting specialists to define and discuss challenges and solutions to issues they face as they load rate and permit their inventory of bridges. The States of Arkansas, Delaware, Kansas, Maryland, Virginia, West Virginia and the District of Columbia and Puerto Rico will be participating in this exchange.

Thus far, there have been peer exchanges in the Northeast, Southeast and Midwest regions with 8 States participating in each. FHWA anticipates developing a website to post best practices upon completion of this fourth exchange and will hope to host exchanges in the next two years to provide an opportunity to all States to discuss best practices for load rating, posting and permitting with their peers.

#### National Performance Measures to take effect:

On May 20, 2017, the FHWA final rulemakings on national performance measures for pavement and bridge condition (PM2), and system performance, freight, congestion, and air quality (PM3) will take effect, with the exception of certain portions of the regulation pertaining to the greenhouse gas (GHG) measure. A [notice](#) was posted in the *Federal Register* on June 29, 2017 that identifies the specific sections of 23 CFR 490 that have been suspended. The FHWA will publish a NPRM in the *Federal Register* in the future pertaining to this measure. The FHWA hosted webinars for their partners to roll out these two rules on May 31 and June 1. Additional information on the TPM process and rules, along with recorded webinars can be found at [www.fhwa.dot.gov/tpm](http://www.fhwa.dot.gov/tpm).

#### Agenda Item 14: Licensing Issues

##### 14a. Third-Party Add-Ons

The Master License Agreement with BridgeSight has been executed to allow the BridgeSight PGSuper and BridgeLink software to be included in the FY2018 AASHTOWare Catalog.

##### 14b. Future of Bundling Modules (Post-Modernization)

No discussion.



**Agenda Item 15: Marketing Activities**

We are in active contact with Georgia, Texas, and Kentucky on potentially licensing the BrDR product.

The AASHTOWare newsletter was recently distributed.

The AASHTOWare website will be re-configured in the near future to be more user-friendly.

**Agenda Item 16: Review Action Item list from  
this meeting**

Josh Dietsche read the action items recorded during the meeting.

**Agenda Item 17: Task Force Executive Session (as  
needed)**

An Executive Session was held on Thursday afternoon. The meeting adjourned Thursday, June 29 at 3:00 pm.

