

**Summary Minutes Of The  
AASHTOWare Bridge Design-Rating (BrDR) Task Force Meeting  
April 25 - 26, 2018  
Charleston, SC**

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

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Date: Wednesday, April 25, 2018

### Participants:

AASHTO	Judy Tarwater	AASHTO	Project Manager
SCOA	Tim Armbrecht - absent	SCOA	SCOA Liaison
T&AA	Will Holmes	T&AA	T&AA Liaison
BrDR Task Force	Todd Thompson	South Dakota DOT	Chair
	Joshua Dietsche	Wisconsin DOT	Bridge Rating (BrR)
	Ping Lu	Iowa DOT	Bridge Rating (BrR)
	Jeff Olsen	Montana DOT	Bridge Design (BrD)
	Dean Teal	Kansas DOT	Bridge Design (BrD)
	Tom Saad - absent	FHWA	FHWA Liaison
BrM Task Force	Mark Faulhaber	Kentucky DOT	Bridge Management
BrDR Contractor	Herman Lee	Michael Baker, International	BrDR Contractor
	Geoffrey Trees	Michael Baker, International	BrDR Contractor

Notes Taker: Judy Tarwater and Ping Lu.

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

#### **Recorder**

Todd Thompson opened the meeting at 10:05 am. The agenda was reviewed. One additional agenda item was added:

9.d. Simon Line girder analysis (NSBA's steel bridge design software)

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

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

Minutes from the January 23 – 24, 2018 Task Force Meeting in Tampa, FL were reviewed. The first sentence under agenda item 4b documented the status date as 01/04/19. The date should have been 01/04/18. With this change, the meeting minutes were approved.

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

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

As a follow-up to previous discussions on the Alaska DTPF Bridge Rating evaluation, planned to begin in July, 2018, the Task Force discussed the actions required to support their efforts.

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

#### **2a. Update on Phase 22 (FY2018)**

Baker provided an update on the FY2018 MSE work plan as of 3/31/18.

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

Baker provided an update on the Modernization Project work plan as of 3/31/18.

### **Agenda Item 3: Update on BrD/BrR Licensees (FY 2018)**

#### **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 04/09/18.

Item	FY16	FY	FY18	Sponsoring Agency
Bridge Design - 120-Day Evaluation License	2	12	2	
Bridge Design Developer License	1	2	2	
Bridge Design Educational License	14	7	9	
Bridge Design Single Workstation Option	1	4	3	
Bridge Design Special Consultant Option	36	34	36	
Bridge Design Unlimited Option	17	15	16	*
Bridge Design/Rating Service Units	50	94	89	
<b>Bridge Rating - 120-Day Evaluation License</b>				
Bridge Rating - 120-Day Evaluation License	10	23	9	
Bridge Rating Agency Sponsored Consultant Licenses	2	3	3	Illinois, Michigan, Virginia
Bridge Rating Developer License	4	5	6	
Bridge Rating Educational License	17	7	10	
Bridge Rating Single Workstation Option	17	25	47	
Bridge Rating Special Consultant Option	369	348	379	
Bridge Rating Unlimited Option	34	39	41	**
Sponsored Consultant Licenses (Bridge Rating) - No Fee	N/A	59	94	Illinois DOT
Sponsored Consultant Licenses (Bridge Rating) - No Fee	95	87	84	Michigan DOT
Sponsored Consultant Licenses (Bridge Rating) - No Fee	92	85	80	Virginia DOT
PGSuper Professional			2	KDOT and MassDOT
BridgeLink Professional			1	Idaho TD

\* Mississippi DOT is new to BrD Unlimited  
 \*\* Non-Member BrR Unlimited Licensees:

- + HDR
- + HNTB
- + Michael Baker International
- + Stantec Consultant Services
- + TranSystems Corporation
- + Los Angeles County Public Works

### 3b. Service Unit Report

Baker presented the service unit summary report. 89 new service units have been purchased in FY2018.

### 3c. Evaluation Software Report

The current summary of BrDR software evaluations was reviewed. We are still not having much success in getting evaluation surveys back, but we are getting a few new licensees from the evaluations.

## Agenda Item 4: Support and Maintenance Report

### 4a. Incident and Support Summary

Baker presented the Defect History Report through release 6.8. Thirty-eight (38) new defects have been added since the Task Force meeting in January 2018. The total number of defects reported were 2354. Currently, 2175 defects have been resolved; 67 defects are not reproducible; 2 defects need more information; and 110 defects are unresolved.

### 4b. Progress on Bug Resolution

Baker reviewed Maintenance Progress reports for the 6.8.3 and 6.8.4 releases as of 04/18/18.

- For the 6.8.3 release, out of 212 total reported incidences, 139 have been resolved and 73 are assigned for resolution.



- For the 6.8.4 release, out of 53 total reported incidences, 16 have been resolved and 37 are assigned for resolution.

#### 4c. Enhancement List Update

Baker presented an update on the Enhancement List.

One (1) additional enhancement has been added to the TAG Enhancement List (Maintenance bucket) since the last Task Force meeting. This is from Alpha testing group.

Useability	BRDR-1730	General preference items for 'Analysis Module' are missing for truss models
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Six (6) additional enhancements have been added to the BrDR Enhancement List since the last Task Force meeting.

Useability	BRDR-1656	VI 12471: User defined materials and beam shapes
Useability	BRDR-1657	VI 10371: Column reinforcement windows Generate Pattern Wizard should save and allow reuse of the inputs it used
Miss Function	BRDR-1658	VI 11566: Truss supports Deck
Output	BRDR-1708	Reactions at pier for simple DL/continuous LL bridges
Useability	BRDR-1716	Longitudinal Stiffener Fatigue Definition
Useability	BRDR-1730	General preference items for 'Analysis Module' are missing for truss models

#### 4d. Maintenance Issues

No discussion.

### **Agenda Item 5: Enhancements**

#### 5a. 2018 Spec Updates

During a meeting on February 6, AASHTO Staff discussed the 2017 COBS ballot items/spec updates, the timing of the publication of these updates and the timing of incorporating the updates into AASHTOWare. The meeting was attended by King Gee (Director of Engineering

and Technical Services), Jim McDonnell (Program Director for Engineering), Jan Edwards (Program Director for AASHTOWare), Erin Grady (Director of Publications Production), Patricia Bush (Program Manager for Engineering and COBS liaison), and Judy Skeen Tarwater (BrDR Project Manager).

The following topics were discussed:

- The bridge specification production schedule relating to how the bridge specs have been published over the last few years.
- Revised Editions of the specifications, and
- Published interim editions.

Tricia Bush advised that the bridge engineers (COBS) had asked that the spec publications be slowed down given the following: 1) the bridge specifications are now very mature and there isn't a need for a large amount of change on a yearly basis, and 2) DOTs are not in a position to make changes to their bridge operations on a yearly basis and are unable to take advantage of yearly updates. Tricia advised that the decision to move to the three year publications cycle was made by the state bridge engineers.

The items balloted in 2017, 2018 and 2019 are scheduled to be published in the LFRD 9<sup>th</sup> Edition which will probably not be published until early calendar year 2020.

The committee (and Tricia Bush) are willing to provide AASHTOWare with the details on the approved balloted items; however, if added to our software prior to publication the user would not have a published spec to review should they wish to research the changes that have been incorporated into BrDR (should we incorporate and deliver them yearly). As members of COBS, those folks would have access to the balloted (not published) specs on their secure portal;



however, the access would not be available to consultants. Further, software developers competing with BrDR would likely call foul because they would be put at a disadvantage given the fact that they would not have access to the items at the same time the information was provided to AASHTOWare.

The group decided that the Bridge Task Force can choose to go ahead and develop the code to support the unpublished spec updates as the items are approved each year via COBS ballot; however, we should not include access to the 2017, 2018, and 2019 specs in the application until the specs are published. So, we can choose to leave the development in our yearly work plans (to develop the code but not actually ‘turn it on’) so we don’t have a huge development effort to support spec changes for three years at the end of 2019 or, we can bundle them, as they are doing in publications, and have a larger spec update effort at the time the specs are actually being published.

The current approval process is as follows: COBS Approves the Ballot Items -> Council on Highways and Streets -> AASHTO Board of Directors. There is an effort underway to try to change the approval process to allow the Committees such as COBS to approve their items with the understanding that the other two higher level entities could still have the option to review their decisions if they chose to do so.

There was a lot of discussion about the pros and cons and how the software can allow the user to select which spec version(s) to run, and the fact that some states might want to see how the software behaves using the 2017 specs vs the 2016 specs, for example. But, the final decision was that we should not make the unpublished spec updates available in BrDR until they are published.

#### 5b. DOT-Funded Rating Tool Enhancements – Service Units

A summary of the DOT-Funding for the rating tool enhancements was discussed.

#### 5c. Missing Functionality for Saving Results and Reporting Options

During the January Task Force Meeting, Dean Teal reported the following culvert missing functionality

- Report Tool – Cannot create a report like most of the other bridge types
- Cannot save culvert results to the database like most other bridges

This has been reported in JIRA under BrDR-1618. The Task Force would like to see the same functionality for culverts as what currently exists for multi-girders.

#### 5d. Caltrans’ Enhancement List

Baker presented the estimates for Caltrans priority enhancements.

### Agenda Item 6: Modernization

#### 6a. Update

6.8.3 Beta 1 was sent out last Friday. The Alpha Test Plan will be completed this week and forwarded to Todd Thompson for sign-off. 6.8.3 Beta 2 will be released late this week or early next week.

- **Modernized Engine** - The analytical engine is being developed based on the framework for the Prestressed Design Tool for the multi-girder structure types. For other structure types the legacy engines are being directly converted with performance improvements. Work continues on the conversion of the analytical modules.
  - Continued alpha testing of the P/S multi-girder superstructures



- Continued alpha testing of the R/C multi-girder superstructures
- Continued alpha testing of the timber multi-girder superstructures
- Continued alpha testing of the corrugated metal deck
- Continued work on the engine Export for steel multi-girder superstructures
- Continued work on the 3D analysis
- Continued development of the connection of the modernized engine to the legacy user interface.
- Continued work on the substructure export (for release in 7.0)
- Continued converting the XML and TXT reports to C#.
- Continued work on converting the spec-check controllers to C#

**Estimated Completion Date:** June 2018 (release 6.8.3)

Modernized substructure engine will be released in June 2019 (release 6.8.4 and 7.0)

- **Modernized User Interface** - Mockups of the modernized User Interface have been prepared and approved. The framework for the Bridge Workspace has been completed. Windows are being developed based on the approved mockups. See below for status.
  - Continued development of the overall framework, Bridge Explorer, Library Explorer and Configuration Browser
  - Continued development of the Bridge Workspace windows and tree
  - Continued development of the Bridge Workspace windows – Girder System and Girder Line windows
  - Continued development of the Structure Definitions
  - Continued work on the member windows
  - Continued work on the culvert and MCB windows

- Continued work on substructure windows
- Continued maintenance of the Domain – the Domain is almost finished

**Estimated Completion of Development**

**Date:** December 2018

The following chart shows the status of the development of the modernized user interface. Windows more than 90% complete are considered to have 100% of the development completed with only the final review remaining prior to Alpha testing.

Windows > 90%	543
Windows 80-90%	20
Windows 50-80%	25
Windows 10-50%	20
Windows <10%	172
Total Windows	780

6b. TAG Update

Dean Teal discussed the current BrDR Modernization TAG membership and advised that there are three new TAG members: Andrew Spencer, Crystal Stone and Jacob Armour. Dean also provided the list of BrDR TAG Members – 2018 Version 6.8.3. There are three new TAG members, Damian Silverstrim, Crystal Stone, and Lenci Kappes. There will be no on-site testing for 6.8.3.

6c. Brainstorm Strategies for Alpha/Beta Testing of 6.8.4 and 7.0

Testing for 6.8.4 and 7.0 testing will be intensive. The Task Force discussed whether or not the deliverables should be tested in phases or all at once. 7.0 will include the same engine code as 6.8.4 with an updated user interface.

The Task Force discussed the following strategies:



- Remote testing with a webinar kick-off for 6.8.4 (beginning in January / February, 2019? Before 7.0 testing)
- On-site testing for 7.0 should be scheduled at the Baker offices
- Recruit additional testers at the RADBUG meeting to perform testing on 7.0
- Discuss 7.0 testing strategies during the 2018 RADBUG meeting
- Document specific areas for testing to be performed (in coordination with the beta test plan)

**6d. FY2020, FY2021 Enhancements**

Baker presented a two year work plan for enhancement work to be completed in Fiscal Years 2020 and 2021. The enhancements presented included agency requested enhancements and Tier 1 Top 30 enhancements. Baker conveyed that Baker has the staff to support the development of all the enhancements included in the spreadsheet. The Task Force walked through the list and identified which enhancements will be included in version 7.1. Baker plans to have the final 7.1 work plan delivered to the Task Force in the June 2018 timeframe for execution in early FY2019.

The Task Force made the decision to include the following enhancements in BrDR release 7.1.

Include in 7.1 WorkPlan	Enhancement
Y	P/S Design Tool Phase 2
Y	Steel Design Tool
	<b>User Funded:</b>
Y	Rating Tool - Culvert
Y	Rating Tool - Floor system - LFR

Include in 7.1 WorkPlan	Enhancement
Y	Rating Tool - LRFR
Y	Rating Tool - LFR MCB
Y	BRDRSUP-1621 LLDF for one or two cell box girder bridges
Y	BRDRSUP-1622 Limiting lever rule on single lane
Y	BRDRSUP-1623 When extending range of app limit the values to lever rule
Y	BRDRSUP-1624 Establish LLDF using full box case to set Int. LLDF
	User Requested:
N	Rating Tool - Permit Analysis Settings
Y	BRDRSUP-936 Difference in skew between adj supports override
N	BRDRSUP-1636 Incorporate moment-curvature approach for shear capacity
Y	BRDRSUP-1626 Incorporate partial tension field approach for steel bridge shear capacity
N	BRDRSUP-1637 Introduce RF for bent caps (substructure)
N	BRDRSUP-1632 introduce advanced option of LLDF for MCB
N	BRDRSUP-1633 Iterative process when establishing RF for load dependent cases
N	BRDRSUP-937 MCB superstructure dynamically linked to substructure
N	BRDRSUP-1635 Minimum shear $A_v$ provided/ $A_v$ required = 0.9
N	BRDRSUP-939 Multiple post tension cable path for MCB
Y	BRDRSUP-1628 Report writer for stringer-floorbeam-girder system
Y	BRDRSUP-1625 Set password for all users
N	BRDRSUP-693, 745, 780 Update truss to handle both LFR and LRFR
N	BRDRSUP-1634 Use of corresponding $\mu$ or $V$ when establishing $V$ RF
Y	BRDRSUP-938 User defined load distribution (DC2) to MCB webs for sound walls
N	BRDRSUP-1631 Web line analysis for all MCB's where web lengths differ
Y	BrDRSUP-1627 Range of applicability for slabs
Y	BrDRSUP-1619 Develop RC I-section member alt, Rebar w/PT





Include in 7.1 WorkPlan	Enhancement
Y	BrDRSUP-1620 Phi factor for moment MCB PT
N	BrDRSUP-1629 Earth pressure on abut walls for structures framed into abuts
N	BrDRSUP-1630 MCB's framed into abuts using integral supports
N	BrDRSUP-1638 Include torsional effect for curved bridges
N	BrDRSUP-1306 (no estimate)
	<b>Tier 1 Top 30 Enhancements:</b>
Y	1 BRDRSUP-695 Analyze local web deformations
N	2 BRDRSUP-1068 Model varying number of girders
Y	3 BRDRSUP-1029 LLDF for steel beam-timber deck
Y	4 VI 9313 Steel channel for exterior girders
Y	5 BRDRSUP-581 Hinges in girder floor systems
Y	6 BRDRSUP-641 Model section loss in P/S girders
Y	7 BRDRSUP-728 Girder profile schematic for steel built-up members (combine with #15)
N	8 BRDRSUP-612 Dog-legged framing plan
Y	9 VI 11366 Cover plates on both surfaces of flange
Y	10 BRDRSUP-1444 Slab section schematic including reinforcing steel
Y	11 BRDRSUP-1431 Show PS strands on girder profile schematic
Y	12 BRDRSUP-1436 Option to account for 100% section loss
Y	13 BRDRSUP-97 Allow reduction due to low adtt
Y	14 BRDRSUP-732 Rate culverts with variable thickness slabs and walls
Y	15 BRDRSUP-1435 Schematic for cross-section based members (combine with #7)
N	16 VI 8179 Flr System - link stringer mbr to an identical stringer mbr
N	17 BRDRSUP-1426 Wizard-based user interface (SW-8a)
N	18 BRDRSUP-1437 Show bent and hook bars in reinforcement schematic
N	19 VI 8039 Cover plates with schedulr based input - steel girders

Include in 7.1 WorkPlan	Enhancement
N	20 BRDRSUP-1422 Store standard strand pattern with library beam shape
N	22 BRDRSUP-1114 Curved ratings of splayed girders
N	23 BRDRSUP-1113 Curved girder eccentric points of curvature (requires 1114)
N	24 VI 12764 Custom cross-section. Need to investigate
N	25 BRDRSUP-613 Post-tensioned precast RC I-beams
N	26 BRDRSUP-1299 Ability to enter multiple layers of wearing surface
N	27 BRDRSUP-1463 Create your own wizard - Need to investigate
N	28 VI 8989 Schedule-based reinforcement input for concrete I girder
N	29 VI 12352 Culvert - user defined DL
N	30 VI 8180 Flr System - link floorbeam mbr to an identical floorbeam mbr
	Task Force Enhancements:
Y	Timber Engine
N	Truss UI
Y	Reports

Baker has the development capacity to support the development of the following Rating Tool Enhancements for release concurrent with BrDR version 7.0. Work on these enhancements will begin in the summer of 2018. These enhancements will be incorporated into the BrDR Modernization Work Plan via a contract mod.

The Task Force also discussed their desire to identify enhancements which could be pursued via RIPI funding in FY2019 and/or FY2020.

### BrDR / BrM Integration

Baker advised that their approach to data integration between BrDR and BrM is to hold off on modernizing the legacy integration code and accomplish the integration via web services.



Baker will reach out to the states who are potentially currently using database integration services. Licensees who require database integration services prior to the availability of the completed web services integration will be supported on an as-needed basis. The Task Force supports this approach.

### LARS File Import

The Task Force discussed the fact that several states are using LARS and there is currently no input mechanism to support data transfer from LARS to BrDR. Bentley has a utility to pull data from BrDR to LARS; however, there is no such utility available to export from LARS to BrDR. Most of the states using LARS are using it for SuperLoad. If a state is interested in pursuing a LARS export to BrDR, the effort could be funded via a service unit project. Ping Lu and Mark Faulhaber will forward sample LARS bridge files to Baker to provide them with an understanding of the LARS files content.

### BRASS File Import

The Task Force discussed the fact that the WYDOT may longer be able to fund updates to their BRASS engine to work with new releases of BrDR. Their engine currently works with 6.8.2. If a state is interested in pursuing additional support for the BRASS engine, the effort could be funded via a service unit project.

### BAR7 / BARS File Import

If a state is interested in pursuing import/export functionality for BAR7 or BARS, the effort could be funded via a service unit project.

### 6e. April 2018 Quarterly BrDR Modernization Status Report

Baker presented the draft April 2018 BrDR Modernization Quarterly Status Report. The Task

Force suggested adding an additional comment to advise the users that beta testing has begun.

### Agenda Item 7: FY2019 Submission to SCOA

#### 7a. Catalog

Judy Tarwater reported that the recommended budget, license fees and FY2019 BrDR MSE Work Plan and Contract were approved by the SCOA.

License Type	2018	2019
BrD Unlimited – Member Agency	\$ 37,500	\$ 37,500
BrR Unlimited – Member Agency	\$ 37,500	\$ 37,500
BrD Unlimited – Non Member	\$ 37,500	\$ 50,000
BrR Unlimited – Non Member	\$ 37,500	\$ 50,000
BrD Workstation (1)	\$ 10,000	\$ 10,000
BrD Workstation (2+)	\$ 8,500	\$ 8,500
BrR Workstation (1)	\$ 10,000	\$ 10,000
BrR Workstation (2+)	\$ 8,500	\$ 8,500
BrD Consultant	\$ 4,600	\$ 5,000
BrR Consultant	\$ 4,600	\$ 5,000
BrD Agency Sponsored	\$ 90,000	\$ 90,000
BrR Agency Sponsored	\$ 90,000	\$ 90,000
Developers	\$ 500	\$ 500

### Agenda Item 8: Miscellaneous Topics

#### 8a. 2018 Newsletter

#### **Bridge Design-Rating Content**

- Letter from the Chair – **Todd Thompson**
- BrDR release roadmap FY18-20, including legacy system end-of-life information - **Baker**
- Spec update implementation decision – **Todd Thompson**
- Modernization performance and usability improvements - **Baker**
- Modernization adoption strategies / How the Regression Testing Tool can be used to support migration to new versions of the software - **Baker**
- Rating Tool enhancements in the 7.0 release - **Baker**
- 7.1 enhancements under consideration (PS Design Tool Phase 2 + top user priority enhancements + timber) – **Baker**



- Boiler plate information – **Judy Tarwater**

The Task Force members and contractors will draft their assigned newsletter articles and forward to Judy Tarwater by 05/11/18.

#### 8b. BrDR JIRA Users

Baker reported on BrDR JIRA account users.

- January 9, 2018 –174 BrDR JIRA users, 158 of which are active users, 16 inactive
- March 13, 2018 –178 BrDR JIRA users, 109 of which are active users, 69 inactive

Baker reached out to the BrDR inactive (180+ days) users. Based on the responses/non-response several user accounts were deactivated.

### **Agenda Item 9: Third Party Issues**

#### 9a. Long-term Strategy

The Task Force continues to take the stance that we will not actively pursue third party developers but will allow third parties to continue to secure the BrDR Developers license to support data interchange between systems.

#### 9b. BrDR IFC Export Utility

Baker expressed concerns that the BRIM consultant may not be mining data correctly from BrDR. He wants to ensure that they are getting their data thru API instead of getting it directly from the database or the .xml file. Baker contacted the BRIM consultant to discuss with him the importance of using the BrDR API to ensure the data extracted from or imported to BrDR is correct. They advised that they will take this into consideration.

Using the BrDR Domain API is the preferred method for accessing the database. We presume the converter uses the Entity Framework since Entity Framework libraries are included in the

converter distribution. Database access via the Entity Framework approach is a quick way to work with the data and is suitable when considering the objective of this project. When using database access through the Entity Framework for the reverse process (i.e. importing an IFC bridge), it would be very difficult to determine the default data needed to complete the BrR model since the data are initialized with default values when the BrR Domain API objects are created. BrDR Domain API also provides additional metadata and features for the model. For example, you can make API calls for retrieving development length of reinforcing steel and cut deteriorated cross section along the beam.

#### 9c. ProMiles Support Requests

The following agencies currently have executed Appendix A agreements with ProMiles.

- Colorado DOT
- Kansas DOT
- Mississippi DOT

ProMiles is currently active in the following states: Kansas, Texas, Colorado, North Dakota, New Mexico, Georgia, New York, Maine, Mississippi, Massachusetts, Indiana, and New Hampshire.

Baker will provide basic support to ProMiles under the Appendix A agreement with the associated state. Requests for support over and above the basic support provided to a licensed user will be provided via a service unit project established to provide the specific scope of work.

#### 9d. Simon Line girder analysis (NSBA's steel bridge design software)

AN NSBA representative met with Baker staff last week to preview the BrDR software. They have expressed an interest in developing import/export integration with BrDR. Michael



Baker has been hired to support their development activities and would be the entity tasked with developing the integration software. Simon is provided to DOTs free of charge; therefore, the Task Force supports partnering with NSBA to support the integration effort. Chris Garrell with NSBA will contact Judy Tarwater in the near future to discuss next steps.

#### 9e. Eriksson Software - ETCulvert

Todd Thompson and Baker received an email from Brian A. Barngrover of Eriksson advising of their interest in establishing a working relationship with BrDR.

#### 9f. Forterra (Concrete Pre-Casting)

Todd has had discussions with Forterra related to their desire to use BrDR to evaluate precast concrete designs to determine whether or not they meet AASHTO design requirements. The Task Force's initial reaction is to advise Forterra to pursue licensing options available to other consultant firms performing work for DOTs.

### **Agenda Item 10: User Group**

#### 10a. Summary Minutes from January Meeting

The summary minutes for the January BrDR Task Force meeting in Tampa, FL 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.

#### 10b. 2018 RADBUD Meeting Agenda

The Task Force discussed potential topics/speakers for inclusion on the 2018 RADBUD meeting agenda.

The AASHTOWare BrDR Technical update should be removed from the agenda. The following topics were suggested to be added:

- Training – Regression Testing Tool

- Training – Overview of the Modernized User Interface

Todd Thompson has extended an invitation to Shanon Murgotio to attend the June Task Force meeting to work with the Task Force to finalize the 2018 RADBUD agenda.

#### 10c. 2018 End User Survey

A BrDR End User Survey was conducted prior to the August 2017 RADBUD meeting. The Task Force made the decision to remain on the every other year survey cycle and not conduct an End User Survey prior to the 2018 RADBUD meeting.

#### 10d. Updated BrD/BrR Product Brochures

Judy Tarwater, with assistance from Baker staff, updated the BrD and BrR product brochures for distribution at the NBPPC Conference and COBS.

#### 10e. RADBUD SWAG Suggestions

The Task Force was asked to forward SWAG ideas to Judy Tarwater.

- Umbrella
- Portfolio with Zipper
- Nice Mechanical Pencil
- Mouse Pads
- Mouse Pad with Wrist support
- Popsockets
- Bridge stress reliever
- Bluetooth Speaker
- Pint glass
- Keychain bottle opener

### **Agenda Item 11: Work Plans**

#### 11a. Planning Estimates

The Task Force discussed enhancement estimates in depth under agenda item 5, and made decisions on which enhancements will be included in future releases of the product. Dean will make updates to the planning worksheet to



incorporate the changes discussed. The revised spreadsheet is stored on SharePoint at: [http://portal.aashtoware.org/bridgeware/br\\_design\\_rating/Planning%20Estimates/Summary%20of%20Estimates%20\(Current\)%20BrDR%2005-04-2018.xlsx](http://portal.aashtoware.org/bridgeware/br_design_rating/Planning%20Estimates/Summary%20of%20Estimates%20(Current)%20BrDR%2005-04-2018.xlsx)

**11b. Modernization Amendment for Rating Tool Enhancements**

Baker presented the draft BrDR Modernization Project Contract Mod #1 Work Plan for Task Force discussion. All of the fixed price development tasks included in contract mod #1 will be incorporated as enhancements to the Rating Tool and will be delivered concurrent with BrDR 7.0 in June 2019.

Task
FP 3.1 Rating Tool – Addition of Culvert
FP 3.2 Rating Tool – Addition of LFR Floor Systems
FP 3.3 Rating Tool – LFR for MCB
FP 3.4 Rating Tool – LRFR for MCB and Multi-Girder R/C, P/S, Steel Superstructures

**11c. 7.1 Draft Work Plan**

Details were discussed under agenda item 6d. Baker will finalize the 7.1 Draft Work Plan prior to the June Task Force meeting.

**11d. RIPI Funding Requests**

The Task Force discussed seeking RIPI funding to support the development cost for the proposed Steel Design Tool.

The Task Force will also request RIPI funding to support the BrDR component of the web services data exchange with BrM.

**Agenda Item 12: FHWA Update**

Tom Saad provided the following report: FHWA to host Northwest States Load Rating Program Peer Exchange this summer

The FHWA will host a load rating program peer exchange for nine Northwest States July 18-19, 2018 in Denver, Colorado. The exchange allows the opportunity for load rating specialists from

State Highway Agencies to share best practices in bridge load rating, posting and permitting and to discuss current challenges to load rating engineers. The FHWA has hosted 4 exchanges in the past 4 years with a total of 34 States participating. The States of Colorado, Idaho, Montana, Nebraska, North Dakota, South Dakota, Utah, Washington and Wyoming will participate in this exchange. FHWA provides travel funds for one participant from each State to attend. State participants develop an agenda for the face-to-face meeting via a pre-meeting webinar. The FHWA intends to host the Southwest States Peer Exchange next summer and include all States that have not yet had an opportunity to participate in the load rating peer exchanges.

**FHWA NHI Load Rating Training and new NHI course for Structural Engineers**

Over the next three months, the States of Virginia, Hawaii, Montana and Texas will be hosting the Nation Highway Institute (NHI) course 130092, LRFR for Highway Bridges. This course provides instruction on bridge load rating utilizing LRFR provisions contained in the MBE. If your agency has a need to train bridge design and analysis engineers in the state-of-the practice approach contained in the MBE you can sign up for current course offerings at <https://www.nhi.fhwa.dot.gov/home.aspx>.

FHWA has established three new NHI courses for bridge design and analysis engineers including course 130102, *Engineering for Structural Stability in Bridge Construction*, course 130122, *Design and Evaluation of Steel Bridges for Fatigue and Fracture* and course 130126, *Strut and Tie Modeling for Concrete Structures*. Reference Manuals that have been developed to provide additional guidance for NHI courses developed for bridge design engineers can be



downloaded, free of charge, at <https://www.fhwa.dot.gov/bridge/>.

#### FHWA issues updated Technical Advisory on the Use of Adhesive Anchors

FHWA has issued an update on Technical Advisory T 5140.30, dated March 21, 2008, which establishes the current stance on the use of adhesive anchors and the development of work that has been performed since the Technical Advisory was first issued. The advisory can be found at <https://www.fhwa.dot.gov/bridge/t514034.pdf>.

#### FHWA Load Rating Webinar No. 23: Load Rating of Complex Structures

FHWA hosted a webinar on the *Load Rating of Complex Structures* on February 20, 2018. The webinar includes excellent presentations by experts from three consulting firms with expertise in load rating steel arch structures and utilizing refined analysis methods. This webinar was recorded and can be viewed at your leisure, along with the 22 other webinars in this series, at <https://www.fhwa.dot.gov/bridge/loadrating/>

#### FHWA Updates Q&As for Load Rating the FAST Act Emergency Vehicles

FHWA has recently updated the Questions and Answers originally issued on April 19, 2017 for load rating of the FAST Act's Emergency Vehicles. The key revisions include the addition of Q&As #44 through #62 and a clarification of Question #41. If additional clarification or more information is needed, FHWA asks that you please contact Lubin Gao at (202) 366-4604 or [Lubin.Gao@dot.gov](mailto:Lubin.Gao@dot.gov). The Q&A Revision No. R01 can be found at [https://www.fhwa.dot.gov/bridge/loadrating/fast1410\\_qa.pdf](https://www.fhwa.dot.gov/bridge/loadrating/fast1410_qa.pdf)

#### **Agenda Item 13: Five Year Projection for BrDR**

Judy Tarwater presented the updated five year projection for BrDR with FY2018 license revenue committed through 02/28/18.

#### **Agenda Item 14: Licensing Issues**

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

Discussed under Agenda Item 9.

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

The Task Force made the decision to not move forward with independently bundling the Rating Tool. Bundling independent design tool modules may be considered in the future. This agenda item will be renamed in future meeting agendas to 'Design Tools'.

##### 14c. Options to prevent consultants from using Special Consultant Option Licenses outside of the Sponsoring Agency

Baker communicated the following options they are proposing

- Enforce stronger login language
- Require a key to be provided by the sponsoring agency before they can use the software
- Use JSON web tokens (embedded in the xml) to verify that the sponsoring agency is correct – Baker will set up a prototype to evaluate the details associated with putting this option into production (Baker will implement this solution on the modernized software but will not be ported back to the legacy software.)

##### 14d. Licensing BrR to Local Agencies

During the January 2018 Task Force Tom Saad asked about offering the Counties a reduced license fee based on their smaller inventory of bridges. The Task Force also discussed how we could set up a licensing model to help out the



counties and local agencies. Since Tom was not in attendance and the FY2019 Catalog has been finalized, the Task Force made the decision to continue this discussion during the June Task Force meeting.

**14e. Options for Virtual Workstation Installation of BrDR**

Workstation versions of BrDR cannot be installed in a virtual workstation environment to ensure the software is being used by only one user at a time. With the completion of Modernization, workstation users will be able to check out the one license for use (one user at a time). With the delivery of 7.0 planned for June 2019, the Task Force made the decision not to spend resources on making changes to support virtual workstation installations in the legacy system.

**Agenda Item 15: Marketing Activities**

Discussed during the joint Task Force meeting.

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

Judy Tarwater read the action items recorded during the meeting.

Baker presented a demo of the BrDR Modernized User Interface.

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

No Executive Session was held. The meeting adjourned Thursday, April 26, 2018 at 2:55 pm.

