

**Summary Minutes Of The
AASHTOWare Bridge Design-Rating (BrDR) Task Force Meeting
January 13 – 14, 2021
Savannah, GA (Virtual)**

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

Date: Thursday, January 14, 2021

Participants:

AASHTO	Judy Tarwater	AASHTO	Project Manager
	Chui McConnell	AASHTO	Marketing Manager
SCOA	Tim Armbrecht	SCOA	SCOA Liaison
T&AA	Will Holmes	T&AA	T&AA Rep
BrDR Task Force	Todd Thompson	South Dakota DOT	Chair
	Mark Bucci	Louisiana DOTD	Bridge Rating (BrD)
	Michael Johnson	Idaho TD	Bridge Rating (BrR)
	Jeff Ruby	Kansas DOT	Bridge Design (BrD)
	Tom Saad	FHWA	FHWA Liaison
	Vinacs Vinayagamoorthy	California DOT	Bridge Rating (BrR)
BrDR Contractor	Herman Lee	ProMiles	BrDR Contractor
	Geoff Trees	ProMiles	BrDR Contractor
	Tim Pilcher	ProMiles	BrDR Contractor
	Krishna Kennelly	ProMiles	BrDR Contractor
	Subhadeep Ghosh	ProMiles	BrDR Contractor
	Hanjin Hu	ProMiles	BrDR Contractor

Notes Taker: Judy Tarwater and Jeff Ruby.

the development and delivery of the BrDR modernized system. Mike Johnson also conveyed his appreciation for the hard work and diligence of the members of the BrDR Testing TAG. Tim Armbrecht thanked everyone for their stewardship in shepharding this effort.

Agenda Item 0: Review Agenda/Assign Minutes

Recorder

Todd Thompson opened the meeting at 8:00am. The agenda was reviewed. Three agenda items were added.

- Item 4e: BrDR 7.0 Deployment
- Item 5d: Beta Testing TAG
- Item 6f: Caltrans Curve Box Girder Development.

Agenda item 7 (BrDR Strategic Directions) will be covered prior to agenda item 6 (Miscellaneous Topics).

Todd thanked the Task Force and ProMiles for all their hard work and dedication in seeing through

Chui McConnell, AASHTOWare Marketing Manager, joined the meeting to discuss potential options for webinars, video discussions, and linked-in posts.

Judy Tarwater forwarded the following BrDR Modernization project documentation to Chui:

- BrDR Modernization Project Solicitation Package
- BrDR Modernization Project Participants



ProMiles forwarded the 7.0 release letter to Chui McConnell and Judy Tarwater.

Vinacs suggested that Chui consider releasing marketing material which includes the BrDR Video presented during the 2020 RADBUG meeting.

Going forward, Judy Tarwater will include a standing item on quarterly task force meeting agendas to discuss marketing needs to be communicated to Chui McConnell.

Agenda Item 1: Prior Business

1a. Review October Meeting Minutes

Minutes from the October 26 – 27, 2020 Virtual Task Force Meeting (Secaucus, NJ) were reviewed. The meeting minutes were approved as-is.

1b. Review Action Items

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

Agenda Item 2: Financial Overview and Work Plan Summary

2a. Update of the FY2021 MSE Work Plan

ProMiles provided an update of the FY2021 MSE work plan budget as of 11/30/20. ProMiles suggested developing videos to support the release of 7.0, i.e., training, comparison with 6.8.4., etc.

2b. Update Modernization Phase 4 Work Plan

ProMiles provided an update of the BrDR Modernization work plan budget as of 11/30/20.

Agenda Item 3: Update on BrDR Licenses (FY2021)

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 01/05/21.

Item	FY19	FY20	FY21	
Bridge Design - 120-Day Evaluation License	2	4	2	
Bridge Design Developer License	1	2	2	
Bridge Design Educational License	12	9	10	
Bridge Design Single Workstation Option	4	7	8	
Bridge Design Special Consultant Option	31	35	35	
Bridge Design Unlimited Option (Members)	16	17	17	
Bridge Design Unlimited Option (Non-Members)	0	0	0	
Bridge Design/Rating Service Units	38	106	47	
Bridge Rating - 120-Day Evaluation License				
Bridge Rating - 120-Day Evaluation License	6	8	7	
Bridge Rating Agency Sponsored Consultant Licenses	4	4	4	ILDOT, MIDOT, OHDOT, VADOT
Bridge Rating Developer License	7	7	5	
Bridge Rating Educational License	13	9	11	
Bridge Rating Single Workstation Option	26	27	33	
Bridge Rating Special Consultant Option	358	382	339	
Bridge Rating Unlimited Option (Members)	35	37	38	
Bridge Rating Unlimited Option (Non-Members)	12	16	17	
Consultant/Developer Extended Support	0	0	1	Pickering Firm, Inc.



Item	FY19	FY20	FY21	
Sponsored Consultant Licenses (Bridge Rating) - No Fee	119	137	105	ILDOT
Sponsored Consultant Licenses (Bridge Rating) - No Fee	94	106	92	MIDOT
Sponsored Consultant Licenses (Bridge Rating) - No Fee	99	106	101	OHDOT
Sponsored Consultant Licenses (Bridge Rating) - No Fee	78	78	80	VADOT
PGSuper Professional	3	4	5	KDOT, MassDOT, ORDOT, Caltrans(2)
BridgeLink Professional	2	2	2	ITD, MSDOT

4b. Progress on Bug Resolution

ProMiles presented the BrDR Maintenance Progress Report. As of 01/12/21, 116 bugs have been reported in 6.8.4 and previous versions. ProMiles has started the process of going through the existing reported bugs to determine which bugs would still apply to the 7.0 release. Every reported bug will be reviewed and evaluated before taking action to maintain the bug as active or to close the bug (for those that are no longer applicable). Bugs reported within 6.8.4 will be tested in 7.0 to ensure the issue has been fixed in the modernized version. ProMiles reported that once bugs are closed within a development sprint, ProMiles closes the issue in Jira.

3b. Service Unit Report

ProMiles presented the service unit summary report. 47 new service units have been purchased in FY2021.

3c. Evaluation Software

The current summary of BrDR software evaluations was reviewed.

ProMiles also asked the Task Force for direction on how bug fixes should be presented to the Task Force going forward (at a more granular level).

The Task Force discussed the definitions of 'Bug', 'Maintenance', and 'Enhancement' and agreed that it is often difficult to determine the difference between a maintenance issue and an enhancement.

Agenda Item 4: Support and Maintenance Report

4a. Incident and Report Summary

ProMiles presented the Defect History Report through release 6.8.4. Eighteen (18) new defects have been added since the Task Force meeting in October 2020. The total number of defects reported were 2751. Currently, 2636 defects have been resolved; 175 defects are unresolved (106 are high priority, 9 are low priority). None of the unresolved issues are urgent or critical.

4c. Enhancement List Update

ProMiles presented an update on the Enhancement List.

Four (4) additional enhancements have been added to the BrDR Enhancement List since the October Task Force meeting.



Useability	BSSD-2692	Include warning for diaphragm entry with skewed bent
Useability	BSSD-2695	Add 'Create New' barmark from the Girder Profile > Reinforcement & Strip Profile windows
Technical	BSSD-2723	BrR Shear Reinforcement Spacing Issue
Technical	BSSD-2708	Allow the user to select which members are considered above/below and left/right w.r.t. gusset plate shear plane

ProMiles advised that maintenance items logged by the beta testers for the 7.0 will be moved from the testing service desk to the support service desk.

4d. Maintenance Issues

ProMiles presented the following issue for Task Force direction.

- BSSD-2730 – Load Rating tool needs to consider pedestrian load (affects 6.8.4 maintenance release 1) Load rating tool needs to consider pedestrian load when loading influence line for permit trucks. This is an issue for a bridge model which has pedestrian load defined.

ProMiles also presented a list of BSSD Maintenance Items to be considered for development under the FY2022 MSE TM8 Maintenance Tasks. ProMiles advised that they need to go through the BSSD Maintenance Items list to remove the requests that have been addressed in the 7.0 release.

4e. 7.0 Deployment

The Task Force discussed the fact that a majority of the BrDR testing was performed on workstations to alleviate the need to migrate the

agency database on the server. In the Idaho TD, with the server database migrated and application pointed to the server database, they are now experiencing long delays in getting the server database to respond. ProMiles advised that this issue can be resolved with minimal effort. ProMiles also suggested that in future releases, they recommend uploading agency databases to the VM testing environment to allow agency server database functionality to be tested prior to the release of the product.

The Alabama DOT also reported a 7.0 post-release issue BSSD-2734 (floor truss issue) was existing in 6.8.4 and is still existing in 7.0.

The Task Force discussed the possibility of releasing a 7.0 hot fix or patch depending on other bugs found during the warranty period ending in March.

Agenda Item 5: TAG Updates

5a. Modernization TAG

No Discussion.

5b. Culvert TAG

Discussed under agenda item 6e. CMP Culvert Implementation.

5c. Reports TAG

Discussed under agenda item 6c. Subsystem to Modernize Report Tool.

5d. Beta Testing TAG

No Discussion.



Agenda Item 6: Miscellaneous Topics

6a. Process to Manage BrDR Enhancement Requests

Mark Bucci presented a proposal for managing BrDR enhancement requests going forward. The Task Force made the decision to include the appropriate portions of the existing BrDR Issue Policy into Mark Bucci's proposed process.

The Task Force made the decision to establish a BrDR Jira TAG (led by Mark Bucci and Jeff Ruby) once the Task Force has memorialized BrDR directions for addressing Jira enhancement

requests. TAG members should include a few existing BrDR Testing TAG members, Jeff Olsen, and Dean Teal. All Task Force members are welcome to join. ProMiles will also be available to participate as needed. Keeping the group to a maximum of ten (10) would probably be optimal. The Jira TAG will be tasked with making decisions on the massive number of existing Jira tickets, in line with the documented process.

6b. BSSD Reporting

ProMiles provided an overview of the current BSSD tickets and Service Desk Workflow.

BrDR - Service Desk Workflow



1. Report - All open enhancements
issuetype = Enhancement AND "Request Type" = "Suggestion, Idea or Feature Request (BSSD)" AND status not in ("Client Review", Closed) ORDER BY key DESC
2. Report - All open maintenance
issuetype = Maintenance AND "Request Type" = "Maintenance (BSSD)" AND status not in ("Client Review", Closed) ORDER BY key DESC
3. Report - All open support
issuetype = Support AND "Request Type" = "Technical Support (BSSD)" AND status not in ("Client Review", Closed) ORDER BY key DESC
4. Report - All open bugs
issuetype = Bug AND "Request Type" = "Report a bug (BSSD)" AND status not in ("Client Review", Closed) ORDER BY key DESC



The goal of the BSSD reports is to provide additional information on the status of the bugs that are existing in Jira as well as additional information on open support tickets.

6c. Subsystem to Modernize Report Tool

ProMiles provided background information on updates that ProMiles has identified that will be necessary to support the development of a BrDR Report Tool.

Vinacs advised that the Report TAG met four times and developed the requirements for the development of a Reports Tool. The requirements were forwarded to ProMiles for feedback on the possible scope of the development, i.e. potential cost to move the project forward.

Vinacs walked the Task Force through the use of a reporting tool which functions similarly to the Reporting Tool being proposed for BrDR. The tool uses tabular forms to effectively support the export of data into Excel.

The BrDR Reporting Tool will include the following.

- New Ribbon to generate Standard REPORT - This ribbon will centralize all necessary features for generating reports.
 - Currently software has WORKSPACE, TOOLS, VIEW, ANALYSIS. We will add REPORT as new ribbon.
 - Default setting of reports will be provided and agencies can modify and save their settings to create their standard report formats.
 - REPORT Settings. Agency should be able adjust REPORT settings so that

Agency preferred standard can be developed.

- Agency should be able save modified settings as a template(s) and will be able to share with other users by exporting and importing.
- Reports should be broken into six groups – General Bridge data, Input Data, Analysis (used during modeling), Design Report, Load Rating Report, and Report Creation Tool. Options allow to print one or all at the same time.
- For each type of report, GUI should display tree of what will be included in report before generation of report. Each item on tree should have option to be turned on or off as desired. An option to provide user ability to move items up and down the tree for reporting purposes is desirable. (different concept is currently being looked into)
- If reporting is activated using ribbon, all elements in model will be available for selection of generating report.
- The options available in Ribbon menu will be available by right clicking an item in the BrDR tree but will be limited to that level of tree. For example, right clicking a superstructure will provide menu options to generate report for that superstructure.
- In order to minimize white spaces in the reports and to make the reports can be brought in Excel, It is recommended to utilize Tabular forms whenever possible. These tables and graphs can be either selected or dragged into Reports to generate custom reports.



ProMiles advised that the first step will be to modularize the engine to serialize the data. The development of the Report Tool (to include the user interface) will be a second effort. Once complete, adding structure types will be a minimal effort. It was also mentioned that spec article data is not serialized so the spec article reporting may be more difficult.

ProMiles advised that 3D (developed in C#), the spec article module (developed in .NET / C#), and the migration wizard (C++) were not included in the scope of the BrDR Modernization project; therefore, these portions of the code was not rewritten. Versions 2.0 of all of these need to be developed to get this code up to date with the code for the remainder of the system. Vector graphics updates can probably be 'kicked down the road' for the foreseeable future.

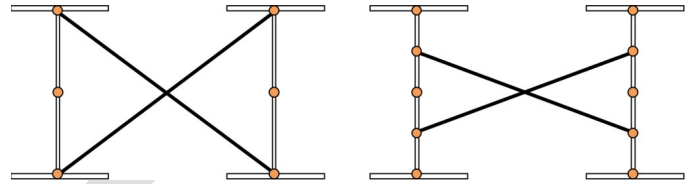
Version 2.0 of the spec article module would include options to support user revisions (at a super user level) and data serialization to support the planned Report Tool functionality. ProMiles will also evaluate opportunities to parallelize the data.

6d. 3D Analysis Improvements

ProMiles presented the results of ProMiles' research on modeling diaphragm linkages in a 3D FE model for highly skewed bridges. This research included contacting Frank Russo (Michael Baker International) to discuss in-service highly skewed bridges that were designed using a 3D model

Discussion with Frank Russo, of Michael Baker International, regarding diaphragm attachment to girders:

BrDR currently attaches diaphragm members directly to the web shell nodes as shown below:



- Frank recommends that this attachment be revised as follows:
At diaphragm locations, create a beam element connecting the top and bottom flange nodes and having the same number of nodes as the web. Diaphragm members are then attached to the nodes in this beam element, not the web as currently modeled. This beam element between the flanges will provide a source of stiffness to attach the diaphragm members to.
- Frank also noted that Todd Helwig at UT Austin has ongoing research on the prediction of forces in the crossframes for NCHRP and we may want to contact Mr. Helwig regarding how his research may impact the modeling of crossframes.
- Frank can provide some 3D FE models of in-service highly skewed bridges if the Task Force desires. He also noted that Don White of Georgia Tech recently finished research comparing line girder analysis to 3D analysis of skewed bridges and he may have some FE models and results as well.

Additional suggestions to enhance the 3D analysis in BrDR:

- Reduced stiffness for single angles and WT's
 - LRFD C4.6.3.3.4 recommends using a reduced stiffness (0.65) for the AE of certain single

angles and WT's. (see below)

In addition, the axial rigidity of single-angle members and flange-connected T-section cross-frame members is reduced due to end connection eccentricities (Wang et al., 2012). In lieu of a more accurate analysis, $(AE)_{eq}$ of equal leg single angles, unequal leg single angles connected to the long leg, and flange-connected T-section members may be taken as $0.65AE$.

- This suggestion in the commentary can be implemented in one of 2 possible ways:
 - Girder System Superstructure Def: Analysis tab
 - A checkbox to use a stiffness adjustment factor for these types of members. This should default to true.
 - An edit control to accept a user input adjustment factor. The value in the UI should default to 0.65.
 - Or add a column on the Diaphragm Definition: Members tab where the user can input a stiffness adjustment factor for each member in a diaphragm.
- Investigate mesh generation improvements
 - Reduce the number of nodes in skewed and curved structures where the diaphragms don't line up exactly or radially. This should be a priority. In general, skewed and curved models in BrDR tend to have many small elements in these regions.
 - Investigate a way for users to modify the FE model generated by BrDR.
- Reduce analysis time, memory usage and disk space usage

- Improve influence surface loading to reduce analysis time
- Investigate how to make results more efficient.
- Publish several case studies to give users confidence in the product. The case studies would involve comparing the BrDR 3D FEA results to published results. The following are possibilities for case studies:
 - Manual for Refined Analysis in Bridge Design and Evaluation, FHWA-HIF-18-046 (<https://www.fhwa.dot.gov/bridge/pubs/hif18046.pdf>) contains the FE results for the following:
 - Example 2 is a straight, nonskewed steel bridge.
 - Example 3 is curved with skewed supports. This is the bridge that Krisha Kennelly presented at TRB 2019.

6e. CMP Culvert Implementation

The current members of the Culvert TAG are as follows:

Johnson, Michael	Idaho TD, Chair	michael.johnson@itd.idaho.gov
Boehler, Ruben	Illinois DOT	Ruben.boehler@illinois.gov
Curtis, Beckie	Michigan DOT	Curtisr4@michigan.gov
Michael Hagos	Manitoba	Michael.hagos@gov.mb.ca
Jones, Daniel	Alabama DOT	jonesdan@dot.state.al.us
Silverstrim, Damian	AI Engineers	dsilverstrim@aiengineers.com
Stauts, Darren	California DOT	Darren.r.stauts@dot.ca.gov

The Task Force made the decision to add the following additional members: Cindy Wang (Ohio DOT), Amjad Waheed (Ohio DOT), Mike Wall (Alabama DOT), and Mark Mlynarski (Michael Baker).



6f. Caltrans Curve Box Girder Development

Vinacs presented the estimate for the BrR enhancement to support Curved MCB which was prepared in 2018. Caltrans is interested in expanding the estimate to also include the design features for the straight girder box and the curved girder box. Caltrans is interested in providing funding for the current scope and may also be interested in funding the proposed design functionality. Caltrans would like to have the enhancement considered for inclusion in 7.3.

6g. Active Directory Support for BrDR

ProMiles discussed the implications of establishing ODBC connections to BrDR, including the possibility that users would have the ability to access BrDR from a user account that did not actually have BrDR access without a password. (This applies to the legacy system). This 'back door' access has been disabled in the modernized system.

The Task Force made the decision to add the BrDR Active Directory enhancement to the BrDR 7.1 work plan.

6h. ProMiles New Hires

ProMiles reported that the ProMiles team has recently brought on three new hires.

ProMiles is also currently looking to hire one additional team member.

Agenda Item 7: BrDR Strategic Directions

The Task Force discussed BrDR strategic directions and the need to balance new feature enhancements with maintaining the system, addressing bugs, and addressing (and not

incurring new) technical debt. Mark Bucci presented the following as a starting point.

- AASHTOWare BrDR Mission Objectives
 - i. Provide the means to efficiently meet state and federal requirements for design, load rating and permitting.
 1. Design
 - a. Provide a design solution that can design the most common superstructure and substructure types
 - i. Steel Girders, Prestressed Girders, RC Beams, Slab Bridges
 - ii. Concrete Column Bents, Concrete Pile Bents
 2. Load Rating
 - a. Capable of rating most common bridge types
 - b. Utilize database to provide mechanism to update structure model over the life of the asset
 3. Permitting
 - a. Utilize bridge database to facilitate the evaluation of permit vehicles and permit routing
 - ii. Provide solutions that wouldn't otherwise exist at the quality/level needed or can be produced outside of a pooled fund effort
 1. Facilitate software improvements to meet needs of various states through collaborative means.
 - iii. DOT driven software
 1. User group driven solutions escalated at RADBUG Meetings



- iv. Provide consistent approach with the flexibility required to meet state specific needs while maintaining alignment with federal requirements.
 1. Provide flexibility to use agency defined features and elements in bridge model
- Strategic Direction
 - i. Establish Long Range Planning Objectives (5 years)
 - ii. Add New Features
 1. AASHTOWare Software Integration
 2. Analysis Engine
 - a. Timber AASHTO Engine
 - b. Optimize/Improve Analysis Speed
 - c. DOT Specific Code Checking
 3. BRIM
 4. Cloud Services
 - a. Hosting
 - b. Web Based Analysis
 5. Design Features
 - a. Steel Design
 - b. Splice Design
 - c. Reinforced Concrete Superstructure Design
 - d. Integrate design modules into BrD
 6. Substructure Rating
 7. Unsupported Bridge Types
 - iii. Enhance Existing Features
 1. Additional Testing
 2. Graphics/Schematics/Visualization
 3. Missed Functionality
 4. Reporting
 5. User Interface
 6. User Support

- a. Training Tools/Examples
- b. Improve Help Documentation

The Task Force will review and add additional detail to the strategic plan to incorporate areas that need to be included.

Agenda Item 8: Proposed BrDR SaaS Offering

ProMiles presented a proposal for a Cloud Based Service for BrDR Data (to store and access bridge data). REST services, including service versioning, would be used in the offering and the offering would be consistent with T&AA recommendations for this service. Hosting costs will likely be based on the number of bridge assets in the user’s inventory.

The Task Force discussed several aspects of the proposed service, including

- How to effectively price the services
- How to ensure the bridge data (database) is secure and accessible only to approved users

Agenda Item 9: Enhancements

9a. Analysis Results Comparison Tool

ProMiles presented the estimate for developing a results comparison tool which can be used for regression testing between different versions of BrDR, results comparison between the same or different versions between different analysis types, analysis modules, specification versions and specification factors.

ProMiles provided an overview of details to explain how the results will be compared.

9b. BrDR IFC 4.3 Implementation

ProMiles presented the proposed RIPI request to commit the AASHTOWare Bridge Design and



Rating (BrDR) software products to the AASHTO Administrative Resolution AR-1-19 Title: “Adoption of Industry Foundation Classes (IFC) Schema as the Standard Data Schema for the Exchange of Electronic Engineering Data”.

The objective of this enhancement is to provide the ability to export BrDR bridge model data into IFC 4.3 bridge model file and import IFC 4.3 bridge model file into BrDR. This new feature in BrDR would allow agencies to exchange BrDR bridge model data in a non-proprietary and vendor-neutral data format with other software that supports IFC based data exchange.

Implementation of this Product Improvement will begin when approved and funded, and end approximately 8-10 months later corresponding to the delivery of the BrDR 7.2 software under the BrDR 7.1 Project Work Plan. Development will begin with the latest version of IFC 4.3 and testing will be coincided with the BrDR 7.2 testing schedule.

9c. Load Rating Tool Enhancements

Eight (8) states have agreed to donate a total of 27 service units to support the development of the LRFR enhancement to the load rating tool. This includes enhancements for the following:

- LRFR MCB, LRFR Multi-Girder (R/C, P/S, Steel)
- Slab System LFR and LRFR

Notes: Main Truss (with counters)- Not influence line based LL analysis
3D Straight Multi-girder- Need to upgrade live load analysis module
3D Curved Steel Multi-girder - Need to upgrade live load analysis module

Timber Beam and Deck- Not supported by AASHTO Engine Corrugated Metal Deck - Not estimated

Agenda Item 10: User Group

10a. Summary Minutes from the October Task Force Meeting

The summary minutes for the October BrDR Task Force Virtual (Secaucus, NJ) 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 (RADBUG Secretary) for posting on the RADBUG website.

10b. BrDR Survey Responses – Open Discussion

The Survey was open to the BrDR community July 1 – 17, 2020. 135 responses were received, 70 member state agencies (from 29 different member states), 9 local agencies, 0 U.S. agencies, and 56 consultants.

The Task Force discussed the survey responses in general. ProMiles suggested adding a Help ‘button’ to the ribbon. Help responses could be saved and added to the help response library as they are developed. The Engine Help section may need to be looked at for potential changes.

Agenda Item 11: FHWA Update

Tom Saad provided the following FHWA update.

A FY21 omnibus appropriations bill was enacted into law on December 27, 2020. The omnibus provides a full-year obligation limitation of \$46.4 billion for the Federal-aid Highway Program plus \$2 billion in General Funds for Highway Infrastructure Programs. In addition, the COVID-19 supplemental appropriation provides \$10



billion in supplemental Highway Infrastructure Programs funding. Prior to the obligation limitation and funding being distributed, the Office of Management and Budget (OMB) must provide approval and Notices must be prepared and signed by the FHWA Administrator. It is expected that obligation limitation and funding under the Omnibus and COVID-19 Supplemental will start being distributed in the coming weeks, and more information about the bills specific items will be forthcoming.

FHWA Office of Bridges and Structures has just notified Division Offices of the annual calls for the update of the National Bridge Inventory and NHS Element Level Data, update of the National Tunnel Inventory, and the 2020 Bridge Replacement Unit Costs. State DOTs are asked to provide NBI and NTI data by March 15, 2021 and the bridge unit replacement costs by April 1, 2021. The FHWA Division offices will be requesting this information. Questions should be directed to your respective Division Bridge Engineer.

FHWA launched the Bridge and Tunnel Inspection Critical Finding Databases (CFD), required by 23 U.S.C. 144(h), in June of this year. Reporting is due April 30, July 31, October 31 and January 31 each CY. While the responsibility for reporting critical bridge and tunnel findings and dispositions in the responsibility of FHWA Division Bridges Engineers, each Division works closely with their State DOT partners in defining the critical deficiencies that are being tracked. It is anticipated that this database will assist in identifying common challenges in maintaining highway bridges that can be addressed by

modifying design, construction and operations practices.

FHWA has recently updated the National Highway Institute (NHI) Course No. 130092, *Load and Resistance Factor Rating of Highway Bridges*, to bring the course up-to-date with MBE revisions that have been adopted in recent years and to add content on gusset plate, culvert and timber bridge load ratings, among other content. With travel restrictions due to COVID19, NHI has postponed the delivery of a number of these 4-day instructor led courses. In the meantime, NHI is offering the course, virtually, if States request the training in a virtual format. Please contact Thomas.saad@dot.gov if your agency is interested in hosting this 4-day course, virtually. You may track the availability of courses and open seats at <https://www.nhi.fhwa.dot.gov/course-search?tab=0&key=130092&res=1>. Additionally, you can find excellent Reference Manuals that coincide with many of the FHWA NHI Course curriculum for bridge design and analysis engineers at <https://www.fhwa.dot.gov/bridge>.

The FHWA Office of Bridges and Structures hosted a load rating webinar on November 12, 2020. The title for this webinar was 'Recent Researches to Support Improvement to VDOT's Bridge Load Rating Program'. Virginia DOT presented recent research developments that support and improve bridge load rating results and use. This webinar, along with 30 previously recorded webinars are available for review at <https://www.fhwa.dot.gov/bridge/loadrating/>

In late December, the FAA announced final rules for Unmanned Aircraft (UA), commonly known as



drones. The new rules require Remote Identification (Remote ID) of drones and allow operators of small drones to fly over people and at night under certain conditions. Drones are the fastest-growing segment in the transportation sector. There are over 1.7 million drones registered in the U.S. and 203,000 FAA-certificated remote pilots. These final rules carefully address safety, security and privacy concerns while advancing opportunities for innovation and utilization of drone technology. Remote ID is a major step toward the full integration of drones into the national airspace system, providing identification of drones in flight as well as the location of their control stations. Additional information can be found at https://www.faa.gov/news/press_releases/news_story.cfm?newsId=25541&omniRss=press_releasesAoc&cid=102_P_R

Agenda Item 12: Licensing Issues

12a. Third-party Add-ons

ProMiles advised that the current developer licensees are working to make changes to their code to allow it to work with BrDR 7.0. There is some concern that the Wyoming DOT is not willing to fund BRASS updates for 7.0; therefore, Brian Goodrich is looking for alternate funding sources (i.e. state DOTs).

12b. Design Tools

No Discussion.

12c. AASHTOWare License Fee Strategies and Customer Success Roadmap

The Task Force discussed using the AASHTOWare License Fees Strategies and Customer Success Roadmap document as a reference on an

ongoing basis to support future licensing directions.

Agenda Item 13: FY2022 – Finalize

Documentation

13a. Catalog Updates / 2022 License Fees

Judy Tarwater presented proposed changes to the catalog language, including minor changes to the verbiage and updates to the licensing fees for FY2022. No changes were made to the hardware requirements, software requirements, or databases supported sections. The section on ‘Import and Rating Features’ was removed since this functionality is not supported in BrDR 7.0.

As the successor to the Bridge Analysis and Rating Systems (BARS), AASHTOWare Bridge Rating import existing BARS data files. Existing BRASS and BAR7 data files are also supported by the import feature.

AASHTOWare Bridge Rating provides flexure and shear ratings, computes dead loads and distribution factors if they are not manually input, and analyzes deteriorated sections. Data can be provided in either cross-section or schedule-based forms.



Proposed license fees for FY2022 are as follows:

License Type	2021	2022
BrD Unlimited (AASHTO Member Agency)	\$ 39,500	\$ 40,700
BrD Unlimited (Non AASHTO Member)	\$ 52,500	\$ 54,100
BrR Unlimited (AASHTO Member Agency)	\$ 39,500	\$ 40,700
BrR Unlimited (Non AASHTO Member)	\$ 52,500	\$ 54,100
BrD Workstation (1)	\$ 10,500	\$ 10,800
BrD Workstation (2+)	\$ 9,000	\$ 9,300
BrR Workstation (1)	\$ 10,500	\$ 10,800
BrR Workstation (2+)	\$ 9,000	\$ 9,300
BrD Consultant	\$ 5,500	\$ 5,600
BrR Consultant	\$ 5,500	\$ 5,600
BrD Agency Sponsored	\$ 94,500	\$ 97,000
BrR Agency Sponsored	\$ 94,500	\$ 97,000
Developers	\$ 2,000	\$ 2,000

No additional changes were made to the FY2022 BrDR catalog language.

13b.FY2022 Work Plan

The Task Force made the decision to rename the currently referenced 7.1.1 release version name to 7.2. This change will be included in the planned BrDR 7.1 contract modification.

13c. FY2022 BrDR Strategic Directions

Judy Tarwater presented the proposed Strategic Directions document for inclusion in the FY2022 submission to SCOA. The Task Force approved the document. Judy to also advise SCOA that the Task Force is actively working on changes to their five year strategic plan.

The Task Force made the decision to add the following bullet under Expedited Releases:

- Deliver an analysis results comparison tool to support state acceptance of new releases.

Agenda Item 14: Five Year Projection for BrDR

Discussed during executive session.

Agenda Item 15: BrDR Modernization Project Final Report

ProMiles presented the draft BrDR Modernization Quarterly Status Report. The Task Force approved the Final BrDR Modernization Quarterly Status Report as-is.

Agenda Item 16: Review Action Item list from this meeting

Judy Tarwater read the action items recorded during the meeting.

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

Executive Session was held Friday, January 15 (11:50am – 12:10pm). Meeting was adjourned at 4:20pm.

