



## A Letter from the Chair – Todd Thompson, PE



Greetings from the AASHTOWare Bridge Task Force. It's been another busy year for both products. This has kept the Task Force members and contractors busy. We could not accomplish what we have without the support of the agencies and supervisors of these task force members. I do want to personally thank Amjad Waheed, Ohio DOT, and Thomas Martin, Minnesota DOT, who will be leaving our Task Force at the end of June. They have both done a tremendous job in promoting and advancing our software products. They have devoted their time and talents to ensure our software products meet the needs of our users and follow the software standards. We are excited to welcome Ping Lu, Iowa DOT (BrDR) and Craig Nazareth, Rhode Island DOT (BrM) to the Task Force effective July 1, 2017.

Bridge Management 5.2.3 was released in December 2016, concluding the project solicitation. This release included many new features and enables to agencies to comply with MAP-21 and FAST Act regulations related to Bridge Management. This version also provides the ability to include tunnels and for agencies to be able to collect their tunnel inspection and inventory. Bridge Management 5.3 is currently in Beta testing with plans to release in early summer. Additional features on BrM 5.3 can be found on Page 9.

Bridge Design and Rating 6.8.0 was released in July of 2016 and included the following enhancements:

- AASHTO LRFD Specification updates (7th Edition with 2016 Interim)
- AASHTO Manual for Bridge Evaluation Specification updates (2nd Edition with 2016 Interim)
- LRFD design review and LFR and LRFR analyses of steel diaphragms and lateral bracing
- Reinforced concrete box culvert enhancements
- User Group enhancements
- LFR analysis of reinforced concrete multi-cell box beams
- LFR analysis of post-tensioned multi-cell box beams
- Ability to perform Line Girder analysis for dead load and/or live load only
- Ability to perform Line Girder and 3D analyses for specification checking only
- 2016 AASHTO specifications update.

## CHAIR LETTER CONTINUED

Bridge Design and Rating 6.8.1 was released in October of 2016 and included the following enhancements:

- Load Rating Tool
- Regression Tool
- Bridge Copy/Delete/Replace utility
- Resolution of issues reported in 2016

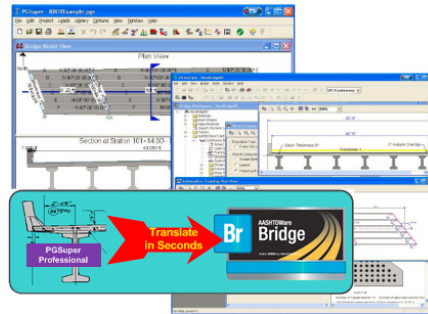
Bridge Design and Rating has dual development currently underway. Design and Rating 6.8.2 is currently in Beta testing with plans to release in early summer. This release will include AASHTO specifications updates, along with bug fixes and a few minor enhancements. During this same period, the first year of development of the Design and Rating Modernization began. The Modernization TAG was busy last fall and winter reviewing the many GUI mockup screens. This winter a portion of the Modernization TAG met at Michael Baker's office to review the mockup comments that were previously submitted by the TAG. The first release of the modernized product is still on track to be released in June 2018.

We want to thank Illinois DOT and Phil Litchfield for hosting the 2016 RADBUG meeting that was held in Chicago, Illinois last August. We had record attendance at this meeting and attendees continue to build on the success of the product and work to improve the product in the future. This year's user group meeting will be in Kansas City, KS and details can be found at the [RADBUG website](#).

I again want to thank everyone whom volunteers in any way to promote and advance the AASHTOWare products. Your help is greatly appreciated.

## Announcing the Special Licensing Agreement for PGSuper Professional & BridgeLink Professional

**AASHTO and BridgeSight have entered into a special licensing agreement whereby customers may obtain and/or renew licenses for the PGSuper Professional and the BridgeLink Professional products directly from AASHTO along with the AASHTOWare Bridge products.**



PGSuper Professional models simple and continuous span conventional pretensioned precast/prestressed bridge girder structures. It designs, performs specification checks, and load rates in

accordance with AASHTO LRFD, AASHTO LRFR, and DOT agency-specific criteria. PGSuper Professional adds over a dozen enhancements to the basic PGSuper software including the ability to translate bridge models from PGSuper to the AASHTOWare Bridge Design &

BridgeLink Professional includes PGSuper Professional and adds several other bridge design tools including PGSplice Professional, software for modeling, analyzing, and load rating continuous post-tensioned precast-prestressed spliced girder structures.

If you wish to learn more about the PGSuper Professional and BridgeLink products, please obtain the FY 2018 catalog from [our website](#) or scan the QR code.



## NEW FEATURES

### AASHTOWare Bridge Design and Rating Version 6.8.2

**While the development of the multi-year AASHTOWare Bridge Design and Rating Software Modernization Project is moving ahead at full speed, the AASHTOWare Bridge Design and Rating 6.8.2 in FY2018 is being prepared as a maintenance release of the legacy system.**

Highlights of AASHTOWare Bridge Design and Rating 6.8.2 include:

- AASHTO LRFD Bridge Design Specifications updates (8th Edition)
- AASHTO Manual for Bridge Evaluation updates (3rd Edition)
- Standard library items for FAST Act's emergency vehicle Type EV2 and EV3
- Supported on Windows 10 with the Edge browser
- Supported on Microsoft SQL Server 2014 and Oracle 12c (non-container database)

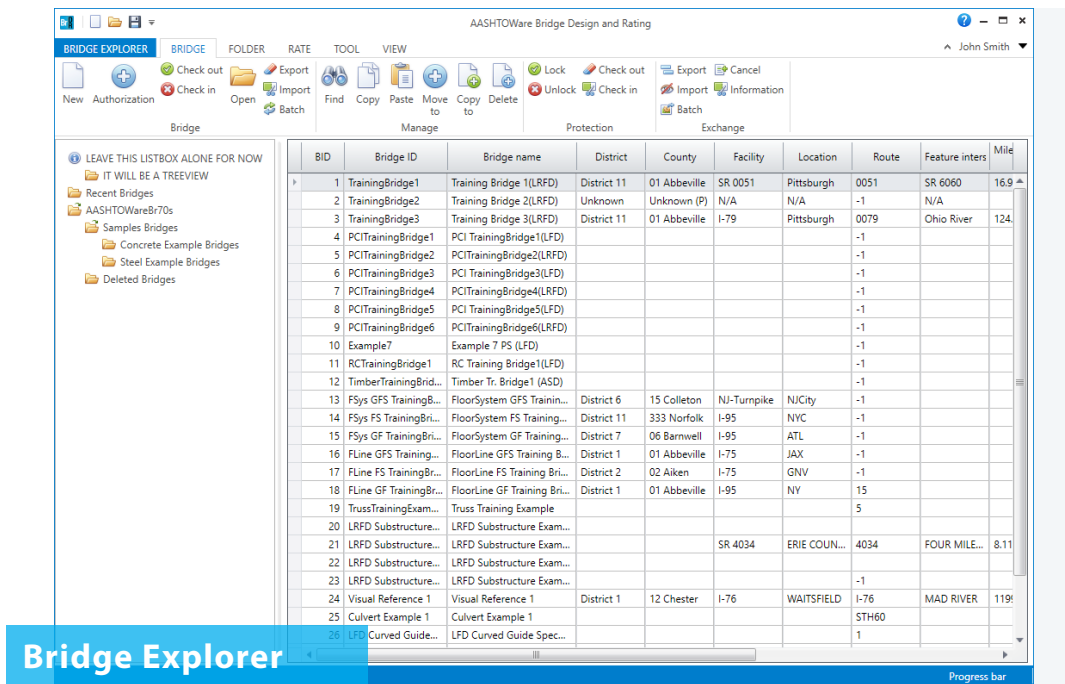
# Modernization Development Status

*Moving towards better performance, security, & usability*

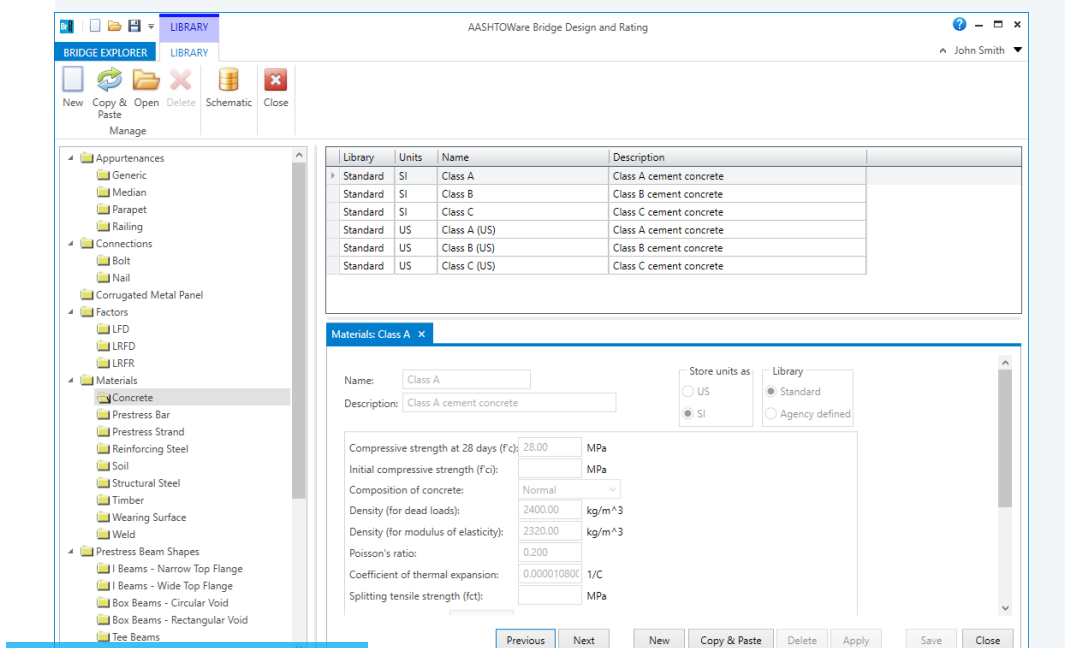
**Modernization of AASHTOWare Bridge Design and Rating started in July 2016 to provide users with an improved tool that works in today's environment. Here's a look at what we've been working on:**

## User Interface Design and Development

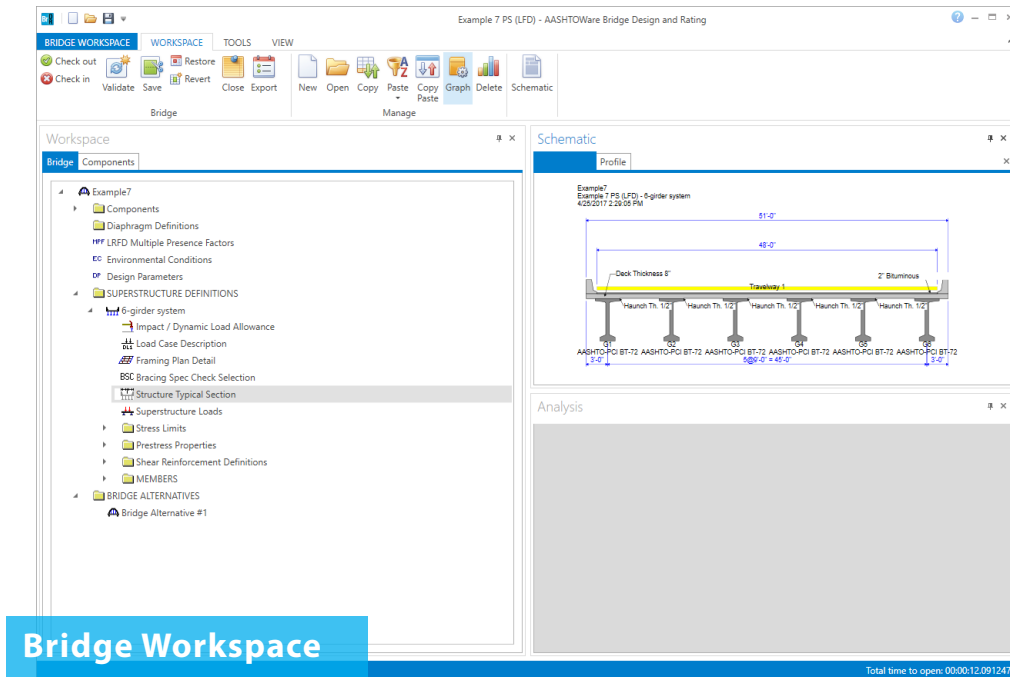
- Identified the windows to be redesigned. All remaining windows (approximately 90%) look and behave as close as possible to the Legacy system.
- Prepared detailed user interface mockups of the windows to be redesigned for review and approval by the Modernization Technical Advisory Group and Task Force.
- Prepared summary user interface mockups of the windows that will not be changed for the modernization.



Bridge Explorer



Library Explorer



## Analysis Engine Development

- The engine development is based on the pattern established for the Prestressed Concrete Design Tool released with 6.8.0.
- The development has focused on implementing rating (LRFR) and spec checking (LRFD), first for prestressed concrete and more recently for reinforced concrete and steel multi-girder systems.

## CURRENT INITIATIVES

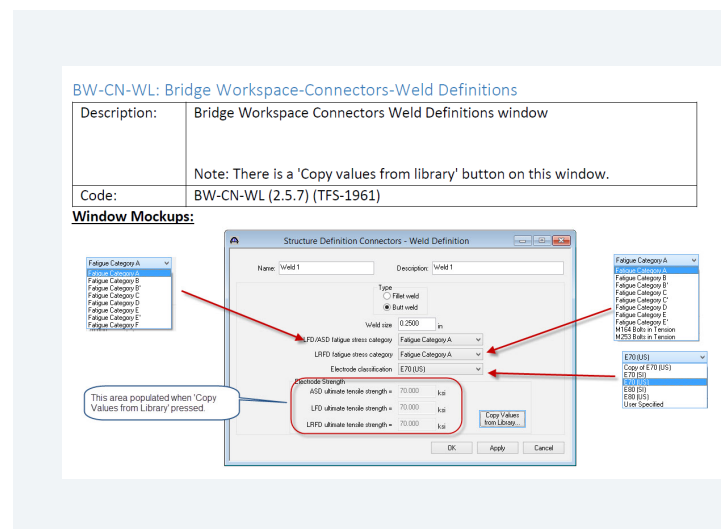
- Providing feedback to the user during analysis and validation
- Connecting the AASHTO engine and 3rd-party engines to BrDR
- Customizing 3rd-party grid control
- Establishing development standards and guidelines to insure uniformity and consistency of appearance within the user interface and the source code

# Mockup Review Process

The Technical Advisory Group (TAG) participated in the review of over 800 modernized mockups.

- Mockups were prepared of all windows currently present in BrDR 6.8.1. Mockups for most of the windows are generally based on the current functionality of the legacy system.
- Mockups were logged and labeled in a database to track progress of the completion of the windows.
- Using the database, mockup documents were generated and provided to the TAG for review. Any deviation from the existing legacy windows were noted and the TAG provided comments.
- The TAG and Michael Baker staff met to discuss and resolve all final comments.

Currently, all of the window mockups for the modernized system have been reviewed by the TAG and comments provided to the contractor.





## Modernization Project Solicitation Update

**In September 2015, the AASHTOWare Bridge Task Force distributed the Modernization project proposal to solicit funds that would enable an upgrade of the core technology to a modern software architecture that better utilizes current and future hardware, and the latest software development technologies.**

To successfully fund the project, a minimum of twenty volunteer member agencies need to contribute \$740,000 each, for a total project cost of \$14.8M. The \$14.8M represented the funding needed to support the code modernization phases of the project (Phases 1 and 2 over the first three years of the project), while license fee revenue collected over the four years the modernization was underway would be set aside to support functionality enhancements in the fourth year of the project (Phase 3).

To date, we have received formal commitments from thirteen agencies. Nine of the twelve participating agencies have committed the full \$740,000 contribution. Three additional agencies have expressed an interest in the project, with verbal commitments from one; however, AASHTO has not yet received their official project commitment form.

The future of BrDR depends on the modernization effort, and this project will supporting numerous benefits:

- Faster analysis performance with code modernization. This will allow the application to take advantage of the latest hardware and software advances, primarily parallelization by using the multi-threading capabilities of the new processors and the latest parallel task libraries (i.e. running multiple tasks simultaneously).
- Improvements to the user interface to better support novice users while maintaining modeling flexibility and robustness for advanced users.
- Application reporting capabilities improvements.
- Reduced future development and maintenance costs.
- Faster implementation times for new features.

Because the current product is supported by an outdated architecture and code base, it's not feasible to continue to incorporate functionality enhancements.

Doing so would only ensure product obsolescence in the near future, as the execution time for the analysis of 3D models, for example, continues to be unacceptable.

For these reasons, the Task Force made the decision to move forward with alternate funding strategies to fully fund the BrDR Modernization Project.

Given the current project funding shortfall situation, BrDR licensing fees over the four years of the project, originally planned to be banked and used to support enhancements in Phase 3, will be used to supplement the funding short-fall for Phases 1 and 2.

In addition, the Task Force has secured a funding commitment from the AASHTOWare Program Development Pool from the Special Committee on AASHTOWare to support moving this project forward. While this approach will result in a reduction in the funding available to support product enhancements in Phase 3, this decision has allowed the project to move forward despite the current project solicitation funding shortfall.

Should additional AASHTO member agencies make the decision to support this effort, their project contributions will help close the gap in the project shortfall. The result would be the ability to more fully fund Phases 1 and 2 of the project, and an increase in the funding available to support product enhancements in Phase 3.

If you have not already made the decision to commit to support this important project, please consider doing so. In addition to providing much needed financial support for product enhancements in Phase 3, participating agencies will be afforded an opportunity to appoint a representative for membership on the Bridge Design/Rating Modernization Technical Advisory Group.



**If additional states participate and contribute funding, many more of the numerous enhancements requested by the user community can be included!**

Release Date	Release Description	Funding
Phase 1 – June 2018	Analysis Engine -- A fully modernized analysis and spec-checking engine in the existing system along with the existing engine. Users will have the ability to make comparisons between the existing engine and the modernized engine analysis results. This approach simplifies regression comparisons between the modernized engine and the existing engine.	Modernization Project Solicitation
Phase 2 – June 2019	User Interface and the remainder of the system.	Modernization Project Solicitation
Phase 3 – June 2020	Enhancements -- User-requested enhancements to be prioritized by the Task Force with the help of the RADBUG and various BrDR Technical TAGs for inclusion in the modernized system in the third release.	Product License Fees

# BrR

## Load Rating Tool

The 6.8.1 release of Bridge Rating (BrR ) included a new process for quickly computing load ratings. To the extent possible, data required for computing a load rating is processed and saved in advance of the request for a load rating, greatly reducing the computation time when a load rating is requested. This technique is implemented in a new rating tool that can be used by BrR users to quickly compute load ratings based on a vehicle description and a list of bridges. This enhancement is not a permitting system and will not provide the user with a selected route or generate a list of bridges along a route. It uses a list of bridges selected by the user and rates those bridges that are available in the rating repository.

There are two parts to this enhancement:

- Part 1 adds the ability to generate and save or update pre-computed data for bridges contained within the agencies' BrDR database. When the bridge description changes, the pre-computed data must be updated by the user.
- Part 2 adds a new rating tool (within BrR) that uses the pre-computed data to calculate load ratings for specified live load vehicles.

### Part 1 Precomputed Data

The BrR user interface was modified to enable the user to generate precomputed data required by the new rating tool. The user interface was enhanced to enable a user to select a group of bridges and use the new rating tool to perform load ratings for the selected bridges. The target structure types for the first release consist of prestressed and reinforced concrete, and steel multi-girder superstructures.

The user interface for triggering a rating analysis is based on the "Open Route" feature in BrR.

### Part 2 Rating Tool

Part 2 consists of a new tool for performing load rating, which is separate from the main BrR product. The primary requirement that guided the development for the tool was that it be optimized for speed and produce the same rating results as BrR. An xml report similar to the one produced by a BrR "Routing" analysis is produced by the tool.

The user may use the new BrR user interface capabilities to select the bridges and vehicles to be rated using the rating tool. Only bridges with descriptions in the precomputed database can be rated by the rating tool. For bridges that are not available in the precomputed database the normal BrR rating is performed. The rating results are displayed in the user interface as they have been in the past.

This tool includes modifications to the Analysis Application Program Interface (API) to enable 3rd-party permit/routing systems to use BrR as a rating engine. The Analysis API has been enhanced to include a web service component. A permitting system can call the BrR Analysis API which will iterate the list of bridges. For each bridge, the API determines if the bridge is contained in the precomputed database or not. If it is and the data is suitable for the type of rating requested, the rating tool will be used to perform the rating. If the data is not suitable, BrR is called to perform the rating.

Future plans for the tool include support for additional structure types such as reinforced concrete culverts, steel floor systems and support for LRFR.

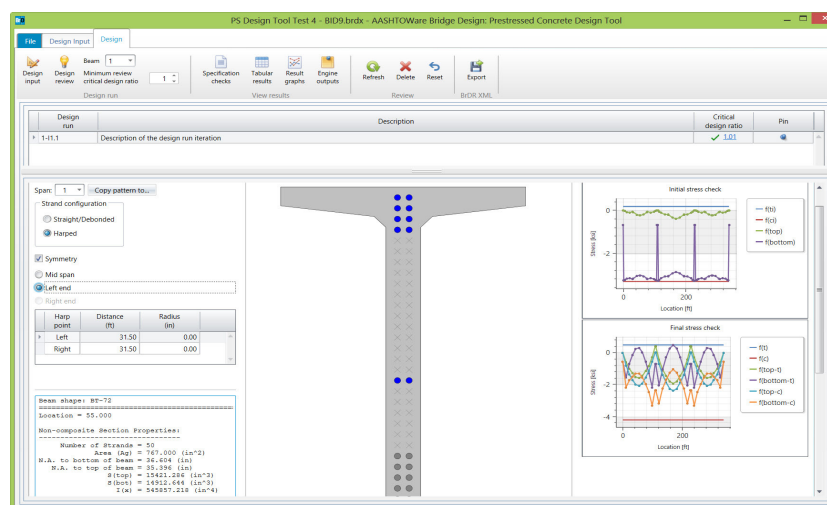
# BrD

## Prestressed Concrete Design Tool Development Status

**Phase 1 of the development and release of the Prestressed Concrete Design Tool is complete and was distributed with the AASHTOWare Bridge Design and Rating 6.8.0 release in July 2016 to all licensees.**

The Prestressed Concrete Design Tool distributed with the AASHTOWare Bridge Design and Rating 6.8.2 release in 2017 will add AASHTO LRFD Bridge Design Specifications 7th Edition (with 2016 Interim) and 8th Edition to the supported specifications.

Phase 1 provides a new stand-alone prestressed concrete design tool capable of performing basic design of a single prestressed concrete beam. The user describes the overall bridge geometry (framing plan), specifies design parameters, such as a range for the beam depth, and the tool will compute live load distribution factors, dead loads and live loads. The tool will then determine a strand pattern that satisfies the AASHTO LRFD Specifications for either harped strands or debonded strands as specified by the user and will generate a shear reinforcement design.



Phase 2 planning is underway. Some of the highly sought-after features and capabilities include:

- Design all the beams in the cross section with additional design parameters like iteration on number of beams
- Line definition entry with user-defined live load distribution factors and dead loads
- Provide structural framing plan, typical section and beam profile schematics
- Create a camber table that includes the PCI multipliers
- Compute stability checks for transport



# A Letter from the Vice- Chair

## – Eric Christie, PE

The AASHTOWare Bridge Management software reached a significant milestone over the past year with the release of BrM 5.2.3 in December 2016. This release marks the end of our very successful, multi-year Pontis/BrM 5.2 project to develop the next generation of bridge management software. With this release, AASHTOWare Bridge Management satisfies FHWA Asset Management Plan regulatory requirements for management systems by:

- Collecting, processing, storing, and updating data
- Forecasting deterioration
- Determining benefit-cost over the life cycle of assets to evaluate alternative actions
- Identifying short and long-term budget needs
- Determining strategies for identifying projects that maximize benefits
- Recommending work programs and implementation schedules
- Supporting plan components such as investment strategy investigation, establishing performance measures, projecting outcomes, setting targets, and provides the framework for risk management.



On behalf of the AASHTOWare Bridge Task Force, I would like to thank the many volunteers who supported the development effort through their active participation as Technical Review Team and Technical Advisory Group members. This project would not have been possible without this huge commitment from the AASHTO bridge community.

In December 2016, the 5.2.3 version was released with the following key capabilities:

- Life cycle cost analysis
- Network level analysis
- Support tracking and reporting of FHWA's 23 Metrics
- Dashboards for easy data visualization and tracking performance measures
- Tunnels Module to collect and report data required for the National Tunnel Inventory
- New Forms Designer to allow agencies an easier method to build custom screens

In March 2017, an additional release of Version 5.2.3 (BrM 5.2.3 Release 3) became available. Along with various minor enhancements and bug fixes, the release also featured the following key updates:

- Tunnel Defects expanded to better align with the Specifications for the National Tunnel Inventory
- Rating Factor of 9 correctly exports to the NBI file
- USERINSP table copies over when creating a new inspection

Version 5.3 is currently in Beta testing with a planned release in Summer 2017. Read more about 5.3 features on Page 9.

We want to thank the Texas DOT for hosting last year's Bridge Management User Group meeting. Thanks to Tom Yarbrough and the rest of the Texas DOT bridge folks for being such great hosts. The 2017 BrMUG meeting will be hosted by the Virginia DOT, led by Richard Thompson, this September. Participation in the user group meeting helps shape the future of the product and whether you are a beginner or an expert, you will have the opportunity to learn from industry leaders and technical experts, as well as hear and provide feedback on the roadmap for the future. Check out [more information](#) on the 2017 BrMUG!

We encourage agencies to participate in the user group meeting to help shape the future of the product and to learn what is new with the product since the last year's meeting.



# Upcoming Features in AASHTOWare BrM 5.3

The AASHTOWare Bridge Task Force has identified the following enhancements to be included in the next release:

- **Load Rating Module**  
Record custom vehicle ratings and to track load rating history
- **Cassini Re-Write/Update**  
Improve the workstation version of BrM
- **Condition Grid Re-Write Update**  
Improve workflow and performance of the Condition Grid
- **Enhanced Network Policy Rule Builder**
- **Cross Section Module**  
Plot and review streambed cross sections
- **Error Check Pre-Script and Default Data Script**  
Improve installation process

It's important to keep current, and the **Pavement and Bridge Condition Performance Measures Final Rule** changes how bridges are classified as structurally deficient.

BrM 5.3 will address this through a new feature that will allow agencies to use the old or new definition to determine if a bridge is structurally deficient.

Finally, BrM 5.3 will include a new cross section module that will allow agencies to track and edit, view, and create reports of channel cross sections. This enhancement started as a service unit project, and is being included in BrM 5.3 because the Task Force has determined that this concept was of high value to the entire user base. The Task Force would like to thank the Alabama DOT for their contribution to enhancing the core product. Other states are encouraged to do the same if they feel their service unit work would be a benefit for the entire user base.

## BrM 5.3 HIGHLIGHT: ELEMENT CONDITION GRID

*You asked, we delivered!*

Since we rolled out BrM 5.2.3, a number of our users have come to us with ideas for more features! One of the most requested is to improve the performance of the 'inspection' page. The Task Force has decided to prioritize this request and include it in BrM 5.3. The general functionality of the grid remains the same, however the code has been entirely re-written. **Notable items include:**

- Significant performance/speed improvements, which will be noticeable on most structures, but will really stand out for larger bridges. Much of this improvement is due to performing error checks without post backs, which means that the users will no longer have to wait for the screen to update each time data is entered.
- Multi-sorting and new search capabilities that allow the user to enter partial element names in the search bar to be directed to the individual element
- Element notes are displayed next to the element quantity, allowing the user to input notes without scrolling to the bottom. When a defect is selected, the associated notes field is opened.
- An update of SHOULD/SHALL for defect quantities being set as a COPTION (in compliance with T-18 directive), which will allow agencies to relax defect quantity rules to match their agency's rules.
- Improved validation and warning/error messages. For example, errors will highlight the parent elements when the its collapsed child element contains the problem.

The screenshot displays the 'Inspection > Condition' grid in the software. At the top, there are 'Condition Ratings' for Deck (5 Fair), Superstructure (7 Good), and Substructure (7 Good). Below this is a table of 'Element Conditions' with columns for Element, Str. Unit, Env., Element Description, Tot. Qty, Units, Qty1, Qty2, Qty3, and Qty4. The table lists various elements such as Steel Paint, Steel Floor Beam, Re Conc Column, and Re Conc Abutment. At the bottom, there is a 'Notes' section for element 192, which reads: 'Deck replaced in 1992 by F.E. Ward. Sealed (urethane) by bridge crew in 6/04. Excessive transverse and longitudinal plastic shrinkage cracking in 1. [edit]'. The interface also includes buttons for 'Update', 'Calculate SP', and 'Calculate NBI'.

# SPOTLIGHT

## on Alabama DOT's Cross-Section Module

Alabama self-funded a Cross-Section module. Given that this functionality meets the needs of the user community the Task Force has decided to incorporate it into BrM 5.3. This module is essentially a rewrite of their existing in-house cross-section module.

Draw the original structure in detail, including culverts, cambered beams and arches. This is not required to make the graphs function.

Inspection > Cross Sections

Cross Sections  
Bridge: 007641

Bridge Details  
Facility Carried (007): US 82 MP 239.816 Type: Underswater  
Feature Intersected (006A): CHATTAHOOCHEE RIVER Milepost (011): 239.816

Graph

View  
Orientation: Left View

Streambed Cross Sections  
Month/Year: 07/1994    Offset: 32.9724

Scour Items  
Station EQ: 0 + 0 = 0 - 06.5992 Elev. EQ: 0 = 0  
Snd/Elev Indicator: Elevations Location of BM: Plans  
Offset Remark: FROM C/L Elev Basis: Plans  
Water Surface:

Line Settings  
Name: Streambed Cross-Section  
Color: Red  
 Show in Legend  
 Visible

Station	Sounding/Elev	Remarks	Act
0 + 0	261.7126	AB-1	X
0 + 5	261.7126		X
0 + 58.993	245.8005	B-2	X
0 + 62.9987	242.1916		X
1 + 0	225		X
1 + 20	216.2073		X
1 + 37.9987	213.6155		X
1 + 50	207.9068		X
1 + 57.9987	165.0919		X
1 + 67.9987	165.0919		X
1 + 77.9987	161.0892		X
2 + 2.9987	144.0945	B-3	X

Scour Potential Evaluation  
Structure Detail  
Original Streambed Elevations  
Scour Resistant Layer

Draw multiple stream measurement lines, and turn these layers on and off at will. These graphs update as the data is entered.

Inspection > Cross Sections

Cross Sections  
Bridge: 007641

Bridge Details  
Facility Carried (007): US 82 MP 239.816 Type: Underswater  
Feature Intersected (006A): CHATTAHOOCHEE RIVER Milepost (011): 239.816

Graph

View  
Orientation: Left View

Streambed Cross Sections  
Month/Year: 07/1994    Offset: 32.9724

Scour Potential Evaluation  
Structure Detail

Scour Items  
Highwater Elev: 0 Highwater Year: 0 (INVALID YEAR VALUE)  
Upstream Side: Left Downstream Side: Right  
Station EQ: 0 + 0 = 0 - 06.5992 Elev. EQ: 0 = 0  
Station Direction: Increasing Location of BM: Top of rail  
Bent Direction: Increasing Elev Basis: Plans  
Data Source: PLANS

Line Settings  
Name: Structure Details  
Style: Solid  
Color: Green  
 Show in Legend  
 Visible

Station	Ref Curb/Trail	Deck	Bot FTG	Crit Pier Scour Depth	Pile Tip	FTG	Super Thick	Remarks	Act
0 + 0	267.0013	267.0013			200.6693	Pile Bent	3.501	ABUT 1	X
0 + 58.993	266.9193	266.9193	196.2795			Spread Footing	3.501	B-2	X
0 + 59.101	266.9193	266.9193	196.2795			No F. Footing	IS		X
0 + 77.0013	266.7815	266.7815				No F. Footing	5.098		X
0 + 95	266.6404	266.6404				No F. Footing	5.499		X
1 + 12.9987	266.4993	266.4993				No F. Footing	6.099		X
1 + 31.0007	266.3615	266.3615				No Footing	6.801		X
1 + 49.9993	266.2196	266.2196				No Footing	7.799		X
1 + 67.0013	266.0597	266.0597				No Footing	9.101		X
1 + 85	265.9088	265.9088				No Footing	10.699		X
2 + 2.9993	265.7612	265.7612				No Footing	12.001		X
2 + 2.9987	265.7612	265.7612	110.9514		98.1214	Pile Footing	12.001	B-3	X

Original Streambed Elevations  
Scour Resistant Layer

Pier and contraction scour can be associated with the data it was based off.

Inspection > Cross Sections

Cross Sections  
Bridge: 007641

Bridge Details  
Facility Carried (007): US 82 MP 239.816 Type: Underswater  
Feature Intersected (006A): CHATTAHOOCHEE RIVER Milepost (011): 239.816

Graph

View  
Orientation: Left View

Streambed Cross Sections  
Month/Year: 07/1994    Offset: 32.9724

Scour Potential Evaluation  
Structure Detail  
Original Streambed Elevations  
Scour Resistant Layer

Graph Parameters  
Orientation: Left View  
Background Color: Black  
Lines to Draw: Water Surface  
 1964 Sounding (33 R L T)  
 08/15 Sounding (33 R L T)  
 08/13 Sounding (33 R L T)  
 08/11 Sounding (33 R L T)  
 08/09 Sounding (33 R L T)

Score Box  
100

Scale  
Sta: 150' R/L  
Elev: 50' R/L

Range  
Sta. Min: 0.10 Sta. Max: 11.87   
Elev. Min: 70 Elev. Max: 270

BRIDGE ID: 007641  
DIVISION: 07, DISTRICT: 06  
EUFALA-CAS ST LINE  
CHATTAHOOCHEE RIVER  
BARBOUR COUNTY  
LEFT SIDE OF THE BRIDGE - UPSTREAM  
DATA SOURCE: PLANS  
DRAW STATIONS FROM: 36.51 R TO: 1169.51 R  
STATION SCALE 150 FT 1 in ELEVATION SCALE 50 FT 1 in

ESTIMATED SCOUR	3	4	5	6	7	8	9
PIER NUMBER	3	4	5	6	7	8	9
CONTRACTUAL SCOUR (FT)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PIER SCOUR (FT)	16.0	23.0	21.0	7.0	7.0	6.0	4.0
TOTAL SCOUR (FT)	16.0	23.0	21.0	7.0	7.0	6.0	4.0

Legend:  
 1964 Original Ground (LT)  
 Scour Evaluation (LT) 100  
 Drilled Shaft  
 Pile  
 Pile Footing  
 Spread

Support for multiple cross sections per structure and different z-axis measurements.

Inspection > Cross Sections

Cross Sections  
Bridge: 007641

Bridge Details  
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Streambed Cross Sections  
Month/Year: 07/1994    Offset: 32.9724

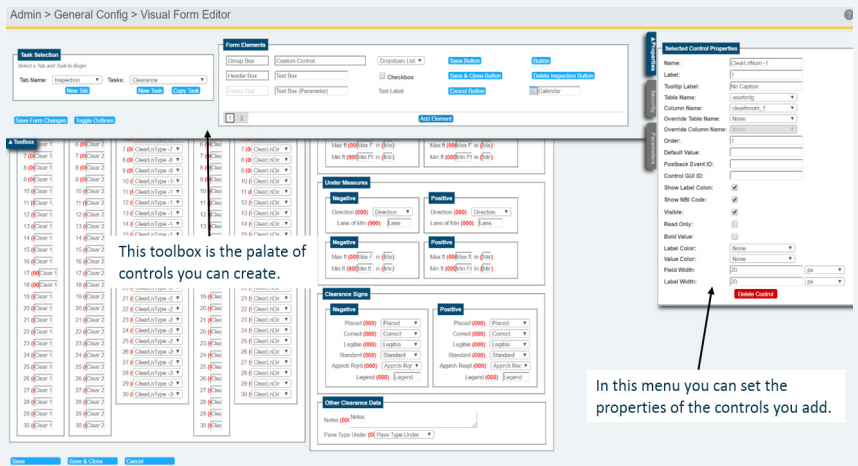
Scour Potential Evaluation  
Structure Detail  
Original Streambed Elevations  
Scour Resistant Layer

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BrM Version 5.2.3 (Build Date: Monday December 5, 2016)  
https://aashtoware.org | AASHTO Publications

BrM 5.2.3's new Visual Forms Editor feature follows a "what you see is what you get" approach. When the user makes changes to a form or page – they get to see the effects right away.

The user can use the menu at the top to select the page to edit or create new pages. Then from that toolbox users can add groups (the organizational boxes), buttons and fields.

The menu on the side allows users to configure the properties of the control or group selected, such as attaching the data to a field in the database. The menu also allows the user to edit security settings and link parameters to fields in the database.



In this menu you can set the properties of the controls you add.

## See Changes Instantly

# BrM Load Rating Module

The load rating module, a new enhancement highly demanded by the BrM user community, meets federal requirements for a load rating summary of all structures, and tracks and compares multiple load ratings of a given structure.

### How does it work?

The first feature is the replication of the New Load Rating Needed field which also appears on the Inspection > Appraisal page. This field is useful for security settings, allowing agencies the ability to make load ratings read-only for inspectors. Users can check this box to flag that conditions have changed and a re-evaluation is necessary.

The Open/Posted/Closed, an inspection field, will be read-only by default and will reflect the value of the latest inspection for the structure.

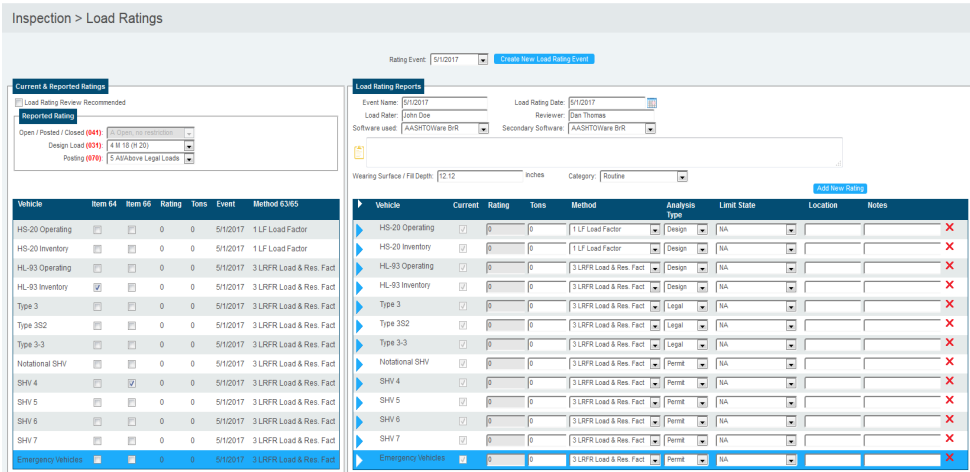
The load rating grid lists all the vehicles for which there are load ratings for a given structure; including their active rating as a factor or tons, the name of the rating event, and the rating method used.

In addition, there are check boxes for the load rater to identify which of these ratings should be reported for the Operating Rating (NBI Item 64) and the Inventory Rating (NBI Item 66). The Rating Methods (NBI Items 63 and 65) are populated with the corresponding selected ratings.

The rating events contain information on the set of load ratings, including who performed and reviewed the load rating, what software and secondary software was used, notes to the load rating event, and a category field for users to identify types of load ratings.

To compare all the load ratings for a vehicle against each other, the user can expand a vehicle and see the other load ratings for that vehicle for that structure. At the top, there are also links to expand or collapse all the historical values.

The user can choose from the standard (federal and agency) vehicles, or to add custom agency vehicles. Ratings performed for permit vehicles can be stored in the load rating module without having to add the permit vehicle to the standard vehicles.



# Product Websites

Want additional information about AASHTOWare Bridge™ products including access to technical support, general information, helpful links including the customer support centers, and access to an end user mailing list? Visit the product websites and join the mailing list to receive the most current product news!

**AASHTOWare Bridge Management™:**  
<http://aashtowarebridge.com>

**AASHTOWare Bridge Design and Bridge Rating™:**  
<https://aashto.mbakercorp.com>

## 2017 AASHTOWare Bridge User Group Meetings

### Rating and Design Bridge User Group (RADBUG)

August 15 – 16, 2017

Great Wolf Lodge

10401 Cabela Drive,

Kansas City, KS 66111

RADBUG website: [www.aashtobr.org](http://www.aashtobr.org)

### Bridge Management User Group (BrMUG)

September 12 – 13, 2017

Hilton Alexandria Old Town

1767 King Street,

Alexandria, VA 22314

BrMUG website: [www.brmug.com](http://www.brmug.com)

For additional information on the bridge product user group meetings, please email [jtarwater@ashto.org](mailto:jtarwater@ashto.org).

## Contractors for AASHTO Bridge Products

### AASHTOWare Bridge Management

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Pittsburgh, PA 15212

Contact: Jeremy Shaffer, VP - OpenRail & AssetWise Transportation

Phone: 877-913-1550

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## AASHTOWare Bridge Task Force

**Todd Thompson - South Dakota DOT**  
Chairman Bridge Products Task Force

**Eric Christie – Alabama DOT**  
Vice-Chairman/Task Force member - BrM

**Mark Faulhaber – KY Transp. Cabinet**  
Task Force member - BrM

**Bruce Novakovich – Oregon DOT**  
Task Force member - BrM

**Beckie Curtis – Michigan DOT**  
Task Force member - BrM

**Thomas Martin – Minnesota DOT**  
Task Force member - BrM

**Derek Constable - FHWA**  
Task Force FHWA Liaison - BrM

**Dean Teal – Kansas DOT**  
Task Force member - BrDR

**Amjad Waheed - Ohio DOT**  
Task Force member - BrDR

**Jeff Olsen – Montana DOT**  
Task Force member - BrDR

**Joshua Dietsche – Wisconsin DOT**  
Task Force member - BrDR

**Tom Saad - FHWA**  
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Project Manager

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