

BUILDING THE NEXT GENERATION

AASHTOWare

# BRIDGE®

PRODUCT NEWSLETTER

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2019 • JUNE



# Letter from the Chair



Greetings from the AASHTOWare Bridge Task Force. We cannot accomplish what we do without the agencies' support and allowing their staff to work on these projects. Whether you are serving as a Task Force member, beta testing software, reviewing screen mockups, or participating in the annual user group meetings, it takes a lot of volunteer hands working together to produce the success we have achieved. Thanks to you and your agency for all of your contributions!

We want to welcome Mark Bucci from Louisiana DOTD and Michael Johnson from Idaho TD to the AASHTOWare Bridge Task Force. They are replacing Ping Lu, Iowa DOT, and Jeff Olsen, Montana DOT. Ping is now with FHWA and Jeff retired from Montana DOT. We thank

Ping and Jeff for all the work and time they devoted to the AASHTOWare Bridge Design and Rating product. Bruce Novakovich, Oregon DOT, and Mark Faulhaber, Kentucky TC, will be reaching the end of their terms on June 30, 2019. Thanks to Bruce and Mark for all their work on the AASHTOWare Bridge Management software. Replacing them will be Kent Miller, Nebraska DOT, and David Hedeem, Minnesota DOT, who will be starting new terms on July 1. We were very lucky to have so many wonderful and talented folks apply for task force positions this year; the quality of the candidates made our decisions difficult.

Bridge Management 6.0 was released in September 2018 and is the first patchable version of the BrM product. Patch 1 was released in December 2018 and Patch 2 is planned to be released in June 2019. The shift to a patchable product was a request from the user community to make it easier for agency IT departments to upgrade to the most recent release of the software.

Bridge Design and Rating 6.8.3 was released in July of 2018. This is the first release of the modernization project. It contains both the newly modernized engine and the legacy engine. This allows for agencies to run a bridge with both engines and feel comfortable with the results of the new engine. BrDR 6.8.3 also contained the AASHTO LRFD Specification updates (8th Edition) errata updates. We purposely did not include any new enhancements to make it easier for states to test the new engine and ease the transition between versions.

The beta testing TAG has been testing Bridge Design and Rating 6.8.4 and 7.0. BrDR 6.8.4 will be the last legacy version to be released and BrDR 7.0 will be the first fully modernized release of the product. Support for BrDR 6.8.4 will be sunsetted but allows agencies that are not ready to fully adopt 7.0 an opportunity to keep the legacy version going while they test the fully modernized product. The BrDR 6.8.4/7.0 release was originally scheduled for June 2019 but, due to the amount of beta testing required, delivery will likely slip to a little later in the summer.

Work is already underway on BrDR 7.1. Release 7.1 will include over \$2 million in enhancements and over 30 items. These enhancements will range from Phase 2 of the PS design tool, the steel design tool, updated reports, most of the top voted user group enhancements, and many more items.

We want to thank the Idaho TD and Shanon Murgoitio for hosting the 2018 RADBUG meeting that was held in Boise, ID last August. This year's user group meeting will be in Lake Tahoe, CA. Meeting details can be found in the newsletter and at the RADBUG website: <https://tinyurl.com/y6fyayy7>.

If you're looking for information related to AASHTOWare, check out the newly redesigned web site: <https://www.aashtoware.org/>. We hope you agree that it's much easier to find the information you might be looking for.

Again, I want to thank everyone who volunteers in any way to promote and advance the AASHTOWare products. Your help is greatly appreciated. We hope you find this newsletter to be informative. If you have any ideas for future newsletters, please let any of us know.

—Todd Thompson, PE • AASHTOWare Bridge Task Force Chair

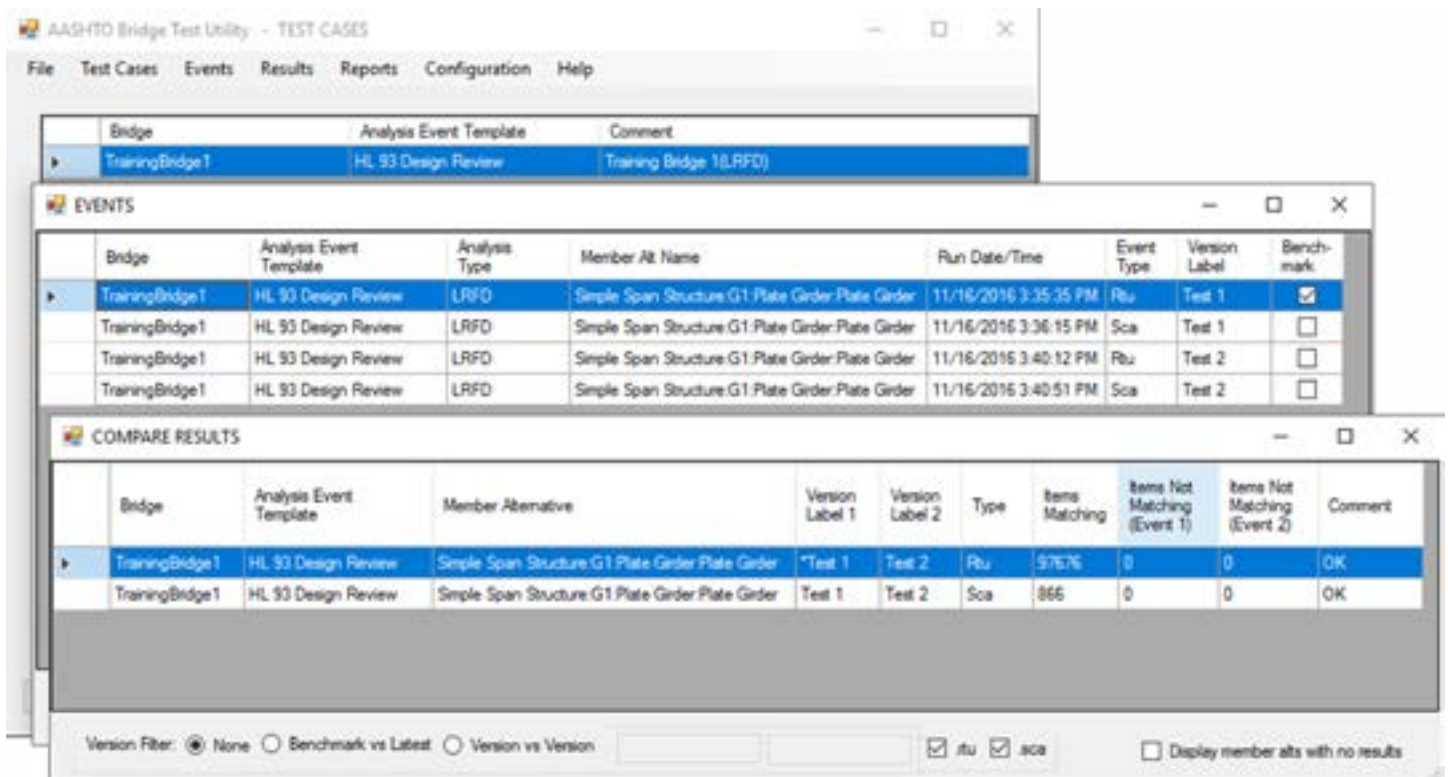
# Regression Comparison Tool for BrDR

Each new version of BrDR requires a significant amount of validation prior to the release of the software for the production environment. A large portion of that validation is comprised of regression testing, a form of testing that verifies that the work performed on the new version did not break or inappropriately alter the existing code, causing incorrect results or behavior.

The Regression Comparison Tool was first released with BrDR 6.8.2. This tool has been used by the development team and beta testers during alpha and beta testing of Versions 6.8.4 and 7.0 to ensure that the results produced by the modernized analysis engines match those of the legacy engines. The tool uses the regression data output files generated by AASHTO analysis engines. The two types of files, Regression Test Utility (RTU) and Specification Check Article (SCA) files, are generated for both the modernized and legacy engines and can be reviewed and compared using the Regression Comparison Tool. Getting Started manuals with step-by-step instructions on how to use the tool are provided with the BrDR installation. The manuals describe both the simplified and verbose versions of the tool.

The Regression Comparison Tool is essential for making a smooth transition to the modernized system. Three key activities are required to prepare the regression data necessary for the modernization upgrade:

1. Identify the bridges for a good representation of the inventory and any special bridges for regression testing,
2. Analyze the bridges in Version 6.8.3 with the “Regression Data” output option selected, and
3. Create the regression data baseline using the Regression Comparison Tool. Once the baseline is ready, regression testing can begin immediately following the modernized system release.



## Legacy System End of Life

# BrDR 6.8.4 Sunset Date: June 30, 2021

With the upcoming Versions 6.8.4 and 7.0 releases this year, there are multiple upgrade paths to the Version 7.0 modernized system. Version 6.8.4 is the last release of the legacy system, and maintenance, spec updates, and support will cease effective June 30, 2021. Only critical bug fixes will be incorporated into Version 6.8.4 going forward. The AASHTOWare Bridge Task Force and the development team strongly encourage users to start planning for the modernization upgrade as early as possible.

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## Online Technical Support, Tutorials, and User Resources

The web address of AASHTOWare Bridge Design and Rating Technical Support is <https://aashto.mbakercorp.com>. The main landing page provides navigation links to additional pages for News, Support, Training, and Downloads.

<a href="#">Support Center</a>	An issue tracking system to submit support requests, provide feedback, and log bug reports and enhancement requests (for registered users; login required). Read-only access* is available for licensees that don't have unlimited support.	<a href="#">* Contact</a>  <a href="mailto:BrDR@mbakerintl.com">BrDR@mbakerintl.com</a>  <a href="#">for login information.</a>
<a href="#">Technical Notes*</a>	Provides supplemental documentation, announcements of changes and critical bugs, frequently asked questions, and Maintenance releases for bug fixes to specific Technical Notes where applicable.	
<a href="#">Tutorials</a>	Provides tutorials and training handouts for learning how to use the software. 125 tutorials, some with accompanying BrDR model files, are available in 17 categories. The categories are organized based on bridge structure types (e.g. Culvert, Floor System, Prestressed Concrete), software features (e.g. 3D FEM Analysis, Library, Report) and specific interests (e.g. Bridge As-Built Plans and Models, Getting Started).	
<a href="#">Downloads*</a>	Provides Service Pack releases for minor enhancements.	
<a href="#">End-User Mailing List</a>	Subscribe to the End-User Mailing List to receive notification of critical bugs and also notifications of Releases and Service Packs and Technical Notes as they become available.	

## Design Tool Enhancements Coming Soon

# BrDR Design Tool Development Status

The Phase 2 development of the Prestressed Concrete Design Tool scheduled for Version 7.1 release is underway. Some of the significant features and capabilities are:

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

Development of the Steel Plate Girder Design Tool, also scheduled for Version 7.1 release, has started. The style and the capabilities of the user interface will be based off the Prestressed Concrete Design Tool. The steel girder design process will follow the steps laid out in the FHWA's LRF Design Example for Steel Girder Superstructure Bridge. Initial trial girder sections will be selected based on the user-entered minimum and maximum widths and thicknesses and the recommendations in the FHWA's Steel I-Girder Bridge design examples. In addition, guidelines provided by AASHTO/NSBA for constructability will be considered for initial trial girder sections and subsequent optimization cycles.

Murray Bridge.brd - AASHTOWare Bridge Design: Steel Design Tool

File Design Input Design

Project  
Geometry  
Deck  
Typical Section Loads  
**Beam Parameters** ! >>  
Lateral Support  
Member Loads X  
Control Options  
Input Report X

Validation: Error  
Validation: Warning

Validation on  
Validation On

Section Configuration

Web	Min (in)	Max (in)	Increment (in)
Depth	65	65	
Thickness	0.5	1	

Disabled  
Select from the Web Plate Thickness Table in the Library

Top Flange	Min (in)	Max (in)	Increment (in)
Width	20	24	1
Thickness	1	2	

Select from the Flange Plate Thickness Table in the Library

Bottom Flange	Min (in)	Max (in)	Increment (in)
Width	20	24	1
Thickness	1	2	

Disabled  
Thickness increment is based on the Plate Thickness Table

Use Transverse Stiffeners

Beam	One Sided	Max Spacing (in)
Exterior	<input checked="" type="checkbox"/>	190
Interior	<input type="checkbox"/>	190

Disable table if not selected

Structural Steel Materials

Top Flange: Grade 50W  
Bottom Flange: Grade 50W  
Web: Grade 50W  
Transverse Stiffener: Grade 50W  
Bearing Stiffener: ?

Message

Tooltip validation message

Back Forward

# BrDR 7.1 Enhancements

In addition to the enhancements listed below, Maintenance and User Group enhancements are being planned for the Version 7.1 release.

Description	Product
<b>Task Force Enhancement List</b>	
Prestressed Concrete Design Tool Phase 2	BrD
Steel Plate Girder Design Tool	BrD
AASHTO Timber Beam and Deck Rating Engine	BrR
Report TAG enhancement list	Both
BrM Web Service Integration	Both
Allow user to specify custom file paths for various output	Both
<b>Modernization Tier 1 Enhancements (based on voting results)</b>	
BRDRSUP-695 Analyze local web yielding and web crippling for steel beam ends	Both
BRDRSUP-1029 LLDF for steel beam-timber deck	Both
VI 9313 Steel channel for exterior girders	Both
BRDRSUP-581 Hinges in girder floor systems	BrR
BRDRSUP-641 Model section loss in prestressed girders	BrR
BRDRSUP-728 Girder profile schematic for steel built-up members	Both
VI 11366 Cover plates on both surfaces of flange	Both
BRDRSUP-1444 Slab section schematic including reinforcing steel	Both
BRDRSUP-1431 Show prestressed strands on girder profile schematic	Both
BRDRSUP-1436 Option to account for 100% section loss	BrR
BRDRSUP-97 Allow MPF reduction due to low ADTT	Both
BRDRSUP-732 Culverts with variable thickness slabs and walls	Both
BRDRSUP-1435 Schematic for cross section-based members	Both
<b>Caltrans Service Unit Enhancements</b>	
BRDRSUP-936 Difference in skew between adjacent supports override	Both
BRDRSUP-938 User-defined DC2 load distribution to multi-cell box webs	Both
BRDRSUP-1619 Schedule based reinforced concrete I beam with post tensioning	BrR
BRDRSUP-1620 Moment Phi factor for post-tensioned multi-cell box bridges	BrR
BRDRSUP-1621 LLDF for one- or two-cell box girder bridges	Both
BRDRSUP-1622 Limiting lever rule on single lane	Both
BRDRSUP-1623 Limit LLDF range of applicability to lever rule	Both
BRDRSUP-1624 Establish LLDF for exterior multi-cell box webs using interior webs	Both
BRDRSUP-1627 LLDF range of applicability for reinforced concrete slabs	Both
BRDRSUP-1628 Report writer for girder–floorbeam–stringer systems	BrR
<b>Illinois DOT Service Unit Enhancement</b>	
BRDRSUP-553 3D analysis for superstructure with hinges	Both
<b>Minnesota DOT Service Unit Enhancement</b>	
Load Rating Tool's Permit Analysis settings	BrR

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

# Letter from the Vice Chair

The AASHTOWare Bridge Management software continues to deliver new content and improve functionality as we move forward with a patchable version starting with the release of Bridge Management 6.0. The release of Bridge Management 6.0 included many new features to enhance the functionality of the software and will allow the software to be patched rather than requiring a complete reinstall for many software changes, including bug fixes. The Task Force hopes that this more targeted approach will allow agencies to more readily adopt new bug fixes and functionality available with each new patch.



In September of 2018 the 6.0 Version was released with the following key features:

- Patchable Version
- Mapping Feature Enhancements to reference the more precise latitude and longitude values
- NBE Import for the National Bridge Elements from the NBE file submitted to the FHWA
- Improved export for all screen lists and graphs
- Improved Reports
- In December of 2018 Patch 1 Release (6.1) included the following key features:
  - ◊ New Benefits Group Page to maximize efficiency when creating and modifying benefit groups
  - ◊ Various Bug Fixes/Minor Enhancements

Patch 2 Release (6.2) is planned for June 2019 with the following key features:

- Program Comparison Tool to compare programs and analyze the differences between the programs
- Automated Testing developed to run against future versions during every iteration of development
- Comprehensive BrDR Integration via purpose-built web services to exchange information between BrM and BrDR.
- Various Bug Fixes/Minor Enhancements

Version 6.3 is currently in development with a planned release in summer 2019 with the following key features:

- Component Level Deterioration updates to allow multiple deterioration profiles for each component
- Scheduled Processes to generate reports and run tasks/services at scheduled intervals
- Tunnel Work Candidates
- Inspection Assignment Module
- Various enhancements detailed in a featured article in this newsletter on Bridge Management 6.3
- Various Bug Fixes

We want to welcome David Hedeem from Minnesota DOT and Kent Miller from Nebraska DOT to the AASHTOWare Bridge Task Force. Their terms will begin on July 1, 2019, replacing Bruce Novakovich and Mark Faulhaber on the Bridge Management side. We would like to thank Bruce and Mark for all their hard work over the last six years. Their knowledge and expertise has played a valuable part in advancing the capabilities and functionalities of AASHTOWare Bridge Management. Thanks again for all of your time and efforts!

We want to thank New Mexico DOT for hosting last year's Bridge Management User Group (BrMUG) meeting in Santa Fe. Thanks to Jeff Vigil and the rest of the New Mexico DOT bridge folks for being such great hosts. The 2019 BrMUG meeting will be hosted by Kentucky, led by David Fuqua. The meeting will be held at the Seelbach Hotel in Louisville, Kentucky September 17–18, 2019. 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. Details on the 2019 BrMUG can be found at <https://tinyurl.com/y63s54p2>.

—Eric Christie, PE ● AASHTOWare Bridge Task Force Vice Chair

## AASHTOWare Bridge Integration through Web Services

AASHTOWare Bridge Management (BrM) contains a significant amount of structure information including location, condition, and current load ratings, and is considered the authoritative data on these subjects for reporting to FHWA. AASHTOWare Bridge



Design and Rating (BrDR) is the leading software for bridge design and load rating of the agency's bridge inventory.

Prior to the delivery of the centralized enterprise version of BrM, it was possible to have BrDR and BrM share database tables, which both could write on and read from. This highly coupled environment proved difficult to establish in production. The results left much to be desired, resulting in user feedback from both the Bridge Management User Group (BrMUG) and the Rating and Design Bridge User Group (RADBUG) requesting the Task Force pursue improved data linkages.

The redesigned data linkages are loosely coupled through an industry standard Representational State Transfer (REST) web services application programming interface (API). The implementation is separated into two phases and both are funded by the AASHTOWare Research, Innovation, and Product Improvement (RIPI) program. Phase 1 implemented the REST web service endpoints and was completed with the BrM 6.0 release. Phase 2 implements a REST client within BrDR to consume the REST web services provided by BrM 6.0. All the existing Bridge Integration features will be provided. The existing "Update BrM Rating Results" feature will be enhanced to support the agency's spectrum of vehicles and for all load rating types. In addition, the National Bridge Inventory (NBI) rating will be made available in BrDR for timely and accurate decisions on performing load rating. Phase 2 completion is slated for the BrDR 7.1 release in 2020.

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## New BrM Contractor: Mayvue LLC



In January 2019, Mayvue assumed responsibilities as the BrM contractor from Bentley Systems, Inc. who served as the contractor for approximately seven years, 2012–2018. The BrM team within Bentley Systems assisted in making significant strides within the software during their tenure under the parent company.

As you may be aware, this transition is unique in that all key personnel from the Bentley BrM team have transitioned to Mayvue. This is a significant benefit to the user community as it maintains consistency with support, development, and product releases, while also avoiding the inefficiencies typically experienced from a contractor change (e.g., loss of knowledge or lack of future planning).



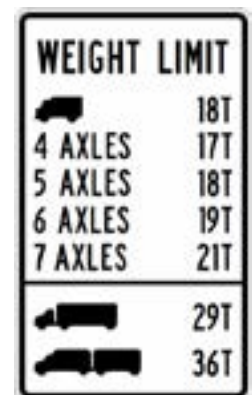
Mayvue is excited about the opportunity to support the BrM community as its own entity and looks forward to continuing the efforts to keep BrM as the leading inspection and management software for asset owners across the country.

There are a few minor changes the user community should be aware of regarding this transition:

- BrM support can be reached at [BrM@mayvue.com](mailto:BrM@mayvue.com) or by calling 1-888-44SUPPORT (447-8776).
- The sharefile location for all BrM installs has been relocated to <https://mayvue.sharefile.com/>.
- All other addresses and locations have remained the same including the Facebook user group meeting, YouTube URL, and <http://www.aashtowarebridge.com>.

## Timeline Requirement for Installing Posting Signs at Bridges: How BrM Can Help Agencies Comply

In April 2019, a memorandum was signed by the FHWA Director of Office of Bridges and Structures that clarified the expectations of installing load posting signs at bridges. The National Bridge Inspection Standards (NBIS) previously did not specify the timeframe for load posting bridges, while the National Tunnel Inspection Standards (NTIS) identified that tunnels shall be load posted as soon as possible but no later than 30 days after a load rating determined a need. FHWA has clarified the requirement for bridges, aligning it with the tunnels and requiring that bridge load postings must occur as soon as possible but no later than 30 days after a load rating determined a need. Since this update may require agencies to change current practices, the FHWA new requirement will go into effect October 1, 2019. While this requirement change is just a few months away, don't be concerned—BrM can help agencies meet this requirement in various ways. Here are some simple ways BrM can help:



1. Agencies can create a bridge list filter that identifies any bridges that need to be load posted. The filtered list can then be used to manage and coordinate the effort to post each required bridge.
2. Agencies can use Crystal Reports to design/create a report that identifies bridges that still need to be posted. Additionally, one agency has even created a custom report that will generate a standard letter to be sent to the local bridge owner and clearly identifies when the bridge must be load posted in order to be in compliance with the FHWA requirement.
3. Additionally, agencies can create a schedule process within BrM that checks for bridges that still need to be posted and sends the list along with other key information to designated users directly in the system.

If other agencies are using BrM to comply with this requirement in other ways, please feel free to share with the Task Force.

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### New Functionality: BrM 6.3

## Tunnel Work Candidates Coming Soon to BrM

The Tunnel work candidates page is planned for BrM 6.3, as it was identified as a high priority enhancement by several BrM agencies. The concept originated during the initial design of the Tunnel module. The page will function similarly to the Bridge work candidate page; however, the Tunnel work candidate page will use a multi-asset actions page. This

*(continued on page 13)*

## New Functionality: BrM 6.3

# BrM 6.3 Spotlight: Inspection Scheduler, Component Level Deterioration, Scheduled Processes, and Much More...

The AASHTOWare Bridge Task Force recently authorized the work plan for BrM Version 6.3, sending Mayvue off to develop exciting new enhancements prioritized by the user community. Scheduled for release later this year, BrM 6.3 will include an inspection scheduler feature, component level deterioration updates, scheduled processes functionality, and much more. The Task Force anticipates Version 6.3 to provide significant benefits to the user community that will not only improve the inspection program/workflow, but will also provide key benefits in the management decision making process. Below is a look at the functional overview of the noted key enhancements within BrM 6.3.

## Inspection Scheduler (New Functionality)

The Inspection Assignment module will enable a user to assign and manage upcoming inspections. Specifically, the module will highlight bridges which have inspections due within a defined range of time (e.g. 2 months, 7 months, or 12 months) that have not already been assigned. It will also allow managers of bridge inspection groups to more efficiently manage their groups, assigned bridges, and tasks through easy-to-use administrator functionality. Finally, this new functionality will improve the management of inspection teams and their workloads. The initial development for this enhancement was spearheaded by Rhode Island DOT, who is generously donating this customization for incorporation into the core product to the benefit of the entire BrM community.

The screenshot displays the BrM 6.3 Inspection Scheduler interface. The left sidebar contains navigation options: BRIDGES, TUNNELS, REPORTS, ADMIN, INSPECTION, GATEWAY, ANALYSIS, PROJECTS, and PROGRAMS. The main content area is divided into several sections:

- Filters:** A section at the top with a search bar and a 'Filter' button. An annotation points to it: "Filters".
- Group List:** A table listing inspection groups with columns for Group, NumBridges, and Teams. An annotation points to it: "List of structures assigned to the current group".
- Inspection Scheduler:** A section titled "Inspections" with a bar chart showing the number of inspections by type for each month from May 2017 to November 2017. An annotation points to it: "Chart showing number of inspections by type for each month".
- Structures in Group 13:** A table listing structures with columns for Structure ID, Str Name, Feet In, Last Insp Date, and Insp Due Date. An annotation points to it: "Opens window to add bridges to group".
- Teams Assigned to Group 13:** A table listing teams with columns for Team Name, Members, and Assigned. An annotation points to it: "Currently active team assignments to the current group".

Other annotations include: "Opens window to create new team and add users to it" pointing to a button, "Filter Chart" pointing to the chart's controls, "Show previous assignments" pointing to a button, and "Create new Assignment" pointing to a button.

(continued on page 11)

## Component Level Deterioration

An update to the Component Level Deterioration Module (formerly called “NBI Deterioration”) will allow users to evaluate multiple deterioration profiles for each component of a bridge (for example, different curves for steel and concrete culverts without using element data). This will be accomplished by allowing the user to add rows in the components grid in the Components Level Models task, with each new row added representing a new deterioration modeling profile. As with existing deterioration profiles, the user will have the ability to configure their own model parameters to create a custom profile that will be applied on a per bridge basis when modeling deterioration. This feature will add a lot more granularity to Component Deterioration. The development of this enhancement is being spearheaded by Michigan and Texas DOTs.

## Scheduled Processes

The Scheduled Processes functionality will allow users to schedule certain BrM services to be run at regularly scheduled intervals (on a weekly or monthly basis). The primary purpose is to run scheduled process-intensive tasks (e.g. Sufficiency Rating calculations, or reports) during off peak hours to minimize server load. When the specified date and time occurs, the desired process will run, and the designated personnel will be notified by email to confirm the successful completion of the process. The champions for this development are Alabama and Virginia DOTs.

The screenshot displays the 'Scheduled Processes' configuration interface. At the top, there is a 'Select Process' dropdown menu set to 'Report'. Below this, the 'Report' configuration panel includes a 'Select Report' dropdown (set to '23 Metric Report'), a 'Format' section with radio buttons for PDF, Text, Excel, RTF, Word, and HTML, an 'Add Email' input field, and a 'Recipients' field containing 'athomas@ABCDOT.gov, bwilliams@ABCDOT.gov'. The 'Arguments' section has radio buttons for 'Batch Key', 'All structures', '11460 structure(s) in the list', 'Filter: Brl - None', and 'Specific structure (enter its Bridge ID)'. A 'Schedule Process' button is located at the bottom right of the configuration area.

Below the configuration panels is a table showing the execution history of various processes. The table has columns for Process to Run, Parameters, Email Recipients, Run Schedule, Last Result, Created By, and Created Date. The '23 Metric Report' process is highlighted in red, indicating a failure.

Process to Run	Parameters	Email Recipients	Run Schedule	Last Result	Created By	Created Date	
Validation	All Structures	athomas@ABCDOT.gov, bwilliams@ABCDOT.gov	Sun 11:00 PM	8/29/17 SUCCESS	Campbell, Scott	7/28/17	✗
Config006_user_list	(none)	athomas@ABCDOT.gov, bwilliams@ABCDOT.gov	Sat 3:00 AM	8/29/17 SUCCESS	Campbell, Scott	7/28/17	✗
23 Metric Report	All Structures	athomas@ABCDOT.gov, bwilliams@ABCDOT.gov	Sat 3:00 AM	8/29/17 FAILED	Campbell, Scott	7/28/17	✗
Sufficiency Rating	All Structures	athomas@ABCDOT.gov, bwilliams@ABCDOT.gov	Sat 3:00 AM	8/29/17 SUCCESS	Campbell, Scott	7/28/17	✗

# BrM Contractor Hosting: Why It Might Be the Right Move for Your Agency



More and more agencies are taking an interest in having their BrM application hosted with Mayvue to take advantage of the numerous benefits the hosted environment offers. With an agency-hosted application, when an application performance issue arises, the BrM user must shift their focus from their daily tasks and work with their IT departments and Mayvue to troubleshoot and identify the cause and location of the issue. This causes a burden on the end user and for the agency's IT staff. With a simple migration to contractor hosting, your agency's BrM experience can be significantly improved, allowing the BrM user to focus on bridge inventory, inspection, and management efforts—not software upkeep.

Contractor hosting allows for faster support and better performance, and eliminates the need to focus on possible problems that could be, and often are, due to configuration issues existing within the agency-hosted environment. With a contractor-hosted solution, Mayvue does not have to acquire your database to ensure testing is completed in the current environment, significantly reducing the troubleshooting process. Additionally, it removes much of the back and forth communication between you, your IT staff, and Mayvue that often delays resolution. With a contractor-hosted environment, Mayvue can instantly begin troubleshooting and testing of the “fix” to ensure the resolution works properly with minimal distraction to the user.

Furthermore, contractor-hosted BrM clients can receive regular updates, at their discretion, eliminating all concerns from the agency about running the correct upgrade scripts, or if a patch was applied correctly. This ensures the users are taking advantage of the latest software features and functionalities without delay. Other changes, such as report updates, can be made by the contractor seamlessly within minutes without any downtime for the user. Secondary benefits also exist, such as the availability of a duplicate environment to test upcoming releases prior to production.

The AASHTOWare Bridge Task Force recognizes that each agency has different policies and requirements regarding its software and data, and hosting isn't one size fits all. Therefore, the Task Force and AASHTO have provided different hosting options including read-only and read-write database access, as well as APIs to transfer data and maintain BrM integrations with other data sources and programs. One of the Task Force's goals is to ensure the BrM software provides the best user experience possible, and contractor hosting is one of those areas that can significantly improve user experience. If interested, please reach out to Mayvue to discuss your questions and/or specific needs that could be addressed by a contractor-hosted environment.

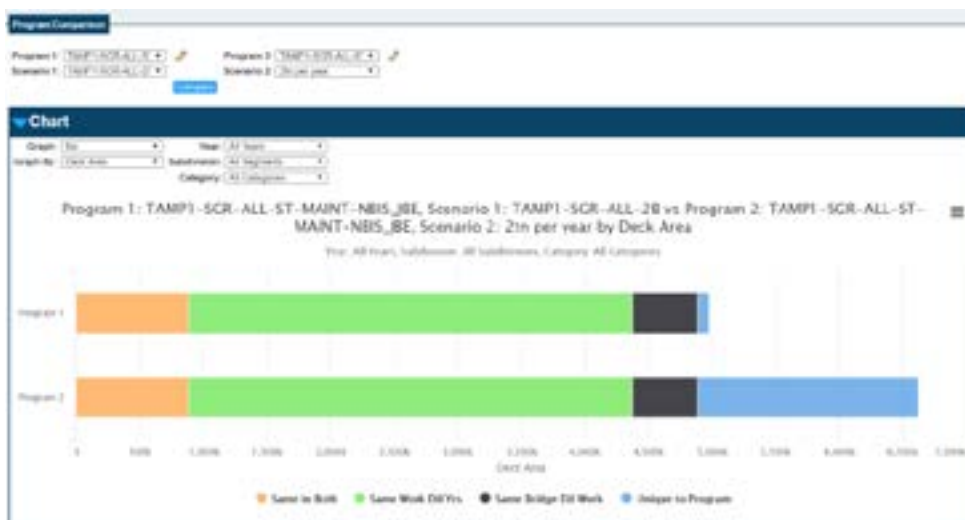
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## Program Comparison Tool Showcase

Created in response to the user's need to be able to quickly compare two large data sets that were produced by two separate program optimizations, the Program Comparison Tool determines what is the same, what is different, and how different are the selected programs. The analysis is comparable in list as well as through graphical output.

### How It Works

The user selects the first program using a dropdown, from which the list



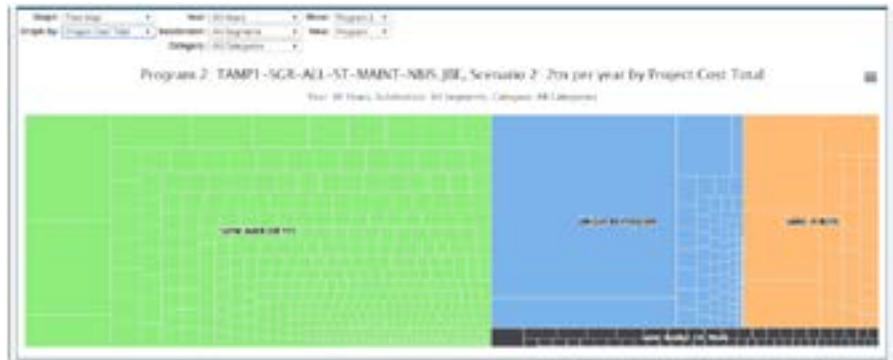
of scenarios related to the program will automatically populate. From there, the user selects the second program and clicks “Compare” to get a side-by-side comparison of the selected programs and scenarios.

The user can use filters and provide the exact information they are trying to compare. The graphical output is provided in three ways: (1) bar chart, (2) tree map, and (3) circle chart.

Users can graph by deck area, bridge count, project cost (total), and project cost (percent). The output can be displayed for all years, an individual year, or a time interval by start and end year for comparison.

The comparison data is also available in a filterable and sortable grid format. Tabs present an easy way to navigate between the available views. The views will display different columns to convey the relevant information for that type of analysis and include:

- Same in both programs,
- Same bridge and work, different years
- Same structure, different work
- Unique to Program 1



*(Tunnel Work, continued from page 9)*

enhancement is an important addition to BrM given the fact that it will be developed as a flexible enhancement that will support the inclusion of any other asset type (walls, signs, and pavements) that an agency would like to manage within BrM. This enhancement establishes the framework for the future of the BrM software, helping agencies manage all critical infrastructure.

Because tunnels are a component of the cross-asset framework and bridges are not for the present, a new page containing the multi-asset actions will be created as part of this enhancement. It will closely resemble the bridge action page that currently exists. Bridges will eventually be merged to the multi-asset new framework via a future release.

## Product Websites

Want additional information about AASHTOWare bridge products including general information, helpful links including the customer support centers, training tutorials, and technical support? Visit the product websites!

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

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

# 2019 AASHTOWare Bridge User Group Meetings

## Rating and Design Bridge User Group (RADBUG)

July 30–31, 2019  
Lake Tahoe Resort Hotel  
4130 Lake Tahoe Boulevard  
South Lake Tahoe, CA 96150

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

## Bridge Management User Group (BrMUG)

September 17–18, 2019  
The Seelbach Hilton Louisville  
500 Fourth Street  
Louisville, KY 40202

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).

# AASHTOWare Bridge Task Force

Todd Thompson—South Dakota DOT  
Chair, Bridge Products Task Force

Eric Christie—Alabama DOT  
Vice Chair/Task Force member, BrM

Beckie Curtis—Michigan DOT  
Task Force member, BrM

Craig Nazareth—Rhode Island DOT  
Task Force member, BrM

David Hedeem—Minnesota DOT  
Task Force member, BrM

Kent Miller—Nebraska DOT  
Task Force member, BrM

Derek Constable—FHWA  
Task Force FHWA Liaison, BrM

Dean Teal—Kansas DOT  
Task Force member, BrDR

Joshua Dietsche—Wisconsin DOT  
Task Force member, BrDR

Vinacs Vinayagamoorthy—California DOT  
Task Force member, BrDR

Mark Bucci—Louisiana DOTD  
Task Force member, BrDR

Michael Johnson—Idaho TD  
Task Force member, BrDR

Tom Saad—FHWA  
Task Force FHWA Liaison, BrDR

Judy Skeen Tarwater—AASHTO  
Project Manager

# AASHTOWare Bridge Product Contractors

## AASHTOWare Bridge Management

Mayvue LLC  
1501 Reedsdale Street, Suite 505  
Pittsburgh, PA 15233  
Contact: Josh Lang, AASHTOWare Bridge Management Development Manager  
Phone: 877-462-9883  
Email: BrM@mayvue.com

## AASHTOWare Bridge Design and Rating

Michael Baker International  
100 Airside Drive  
Moon Township, PA 15108  
Contact: Herman Lee, Project Manager  
Phone: 412-269-7920  
Email: BrDR@mbakerintl.com



# About AASHTOWare®

The AASHTOWare technical service program has a rich history of serving its customers and being a leader in bringing the power of technology through automation to the public sector transportation industry.

As we look to the future, it is important that we build on this rich and robust tradition to create the next generation of technology solutions and continuously improve service to our customers. Our success is based on the commitment of hundreds of volunteers, in partnership with the private community, to produce quality products that meet the common needs of our customers. The challenges we face now and into the future are increasingly more complex than in the past. To ensure continued success as we establish our next generation of products and services, we will clearly focus on a mutually agreed upon set of principles and values to drive our strategic plan, vision, mission, goals and objectives.



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