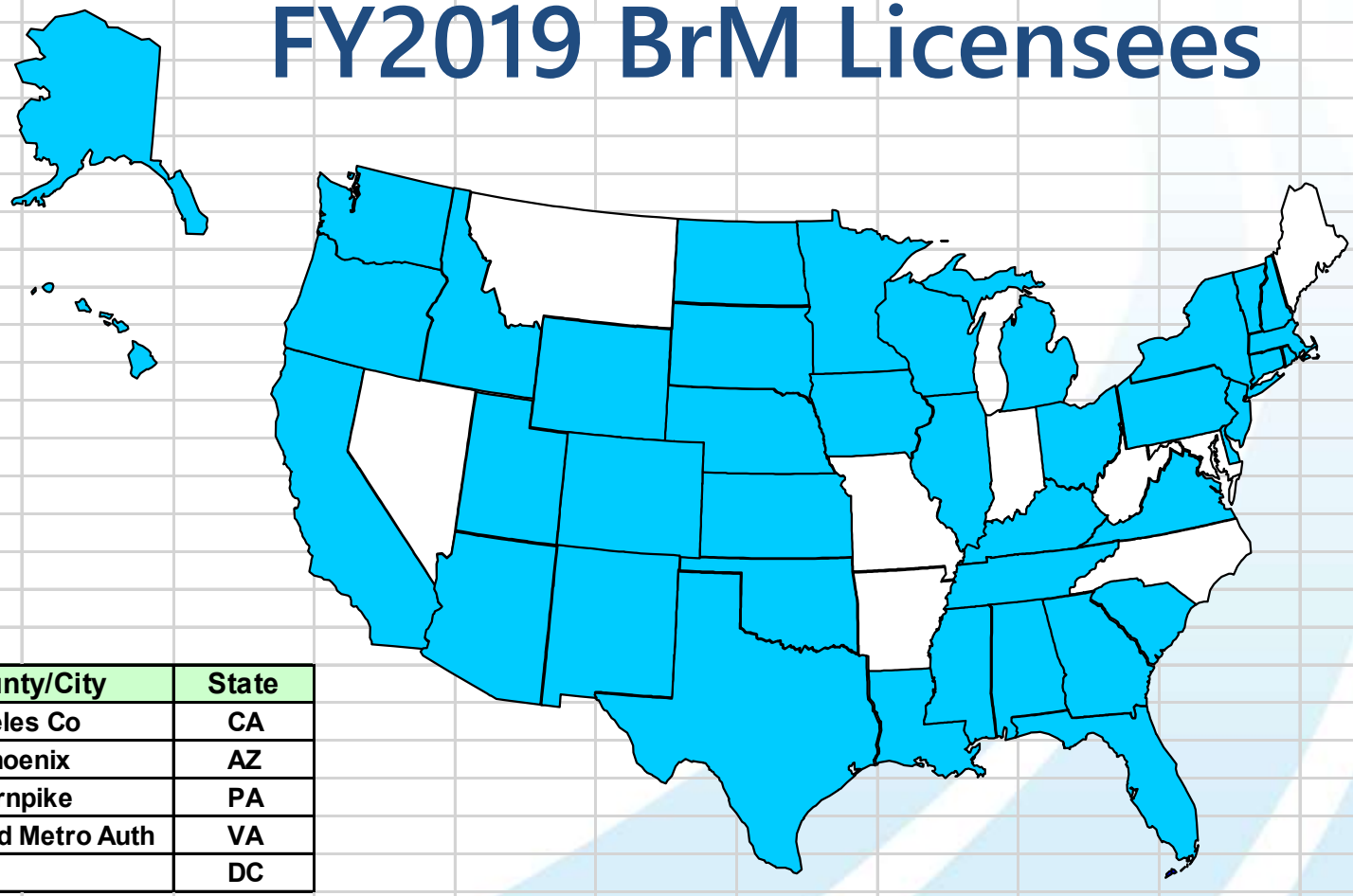
AASHTOWare Bridge Management Update

FY2019 BrM Licensees



County/City	State
Los Angeles Co	CA
City of Phoenix	AZ
Penn. Turnpike	PA
Richmond Metro Auth	VA
FHWA	DC

42 State Departments of Transportation
+ District of Columbia & Puerto Rico

Map Key	
	Non- Licensee
	Licensee

User Group Priorities

2018 User Priority Enhancement List Updates									
Count	Item	Total Agency Votes	Ballot Totals	Estimate Level of Effort	FDS Status	Funding Status	Commitments	2018 Champion Agency	8/30/2019
1	LCCA, Bridge by Bridge	28	580	Extra Large	Complete	Fully Funded	!PI Funds ($300,000) Task Force Illinois Idaho Hawaii	Illinois	The final FDS was presented to the user community. The Task Force anticipates SCOA approval by 9/13/2019. The LCCA enhancements will be included and developed in the next work plan.
2	QA/QC Module	26	519	Large	Draft	Partial	Kentucky Hawaii Idaho Rhode Island Utah	Kentucky	A draft FDS has been created. The next step is to finalize the FDS with user input. It is noted that the Task Force may consider funding this enhancement into the 6.4 release or a future release.
3	Expanded Export/Import Options	21	359	Small	Draft	None	N/A	N/A	A draft FDS has been created and some of the Excel export functionality has already been added to the software. The next step is to finalize the FDS (specifically for importing abilities), with the input of a champion. It is noted that the Task Force may consider funding this enhancement in the 6.4 release or a future release.
4	Training Videos	15	257	Small	N/A	None	N/A	California	The Task Force is awaiting the training video list recommendation from the user group.
5	Clearance Tab	18	244	Medium	Complete	Partial	Idaho Rhode Island Kentucky	Kentucky	A draft FDS is complete. The next step is to finalize the FDS. It is noted that the Task Force may consider funding this enhancement in the 6.4 release or a future release.
6	**Work Candidates for Tunnels**	**11**	**244**	**-**	**Complete**	**Fully Funded**	**-**	**Oregon**	**This is developed and being tested as part of the BrM 6.3 release. This functionality will be available in the upcoming release.**
7	Multimedia Interface	15	210	TBD	Draft	Partial	Kentucky Alabama Hawaii Idaho Rhode Island South Carolina (Interested)	Kentucky	A draft FDS was initially created; however, an agreement from the contributors must be reached on the requirements so the estimate and remaining funding amount can be established.
8	General Dashboards	18	162	Medium	Not Started	None	N/A Michigan (Interested)	N/A	A champion or champions are needed to define the requirements for General Dashboards. This can be a wide range of functionality/visuals. Mayvue can create general dashboards; however, this needs to be aligned with the expectations of the users.
9	Utility Value and Health Index	18	160	Small	Draft	None	N/A	Hawaii	A champion or champions are needed to define the requirements for Utility Value and Health Index. Several concepts for this page have been discussed including a light version and a more complex version.
10	Maintenance Records Module	9	156	TBD	Draft	None	N/A	N/A	A mockup FDS was created; however, a champion is needed to define the requirements for this module.
11	**Task Scheduler**	**14**	**135**	**-**	**Complete**	**Fully Funded**	**-**	**Alabama Virginia**	**This is developed and being tested as part of the BrM 6.3 release. This functionality will be available in the upcoming release.**

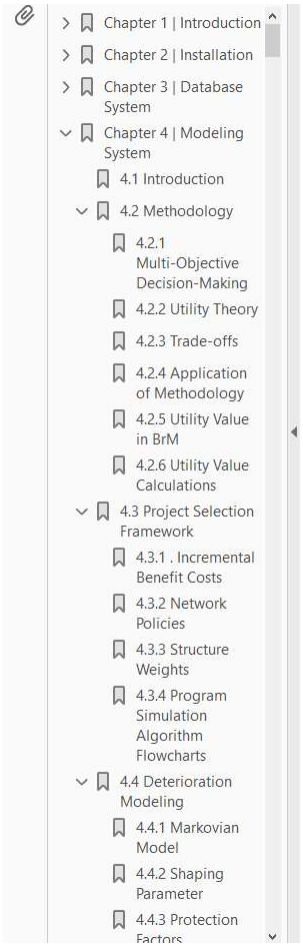
User Group Priorities

2018 User Priority Enhancement List Updates										
Count	Item	Total Agency Votes	Ballot Totals	Estimate Level of Effort	FDS Status	Funding Status	Commitments	2018 Champion Agency	8/30/2019
12	More Finite Control of Fields (Security by Role)	3	116	TBD	Not Started	None	N/A	N/A	
13	**Inspection Scheduling Module**	**10**	**108**	**-**	**Complete**	**Fully Funded**	**-**	**Rhode Island**	**This is developed and being tested as part of the BrM 6.3 release. This functionality will be available in the upcoming release. High-level - this functionality will enable users to assign and manage upcoming inspections and will highlight bridges which have inspections due within a defined range of time (e.g. 2 months, 7 months, or 12 months).**
14	Tool-Tip Functional Update	12	105	Medium	Not Started	None	N/A	N/A	A draft FDS could be created to support this enhancement. However, it is the Task Force and Mayvue's recommendation to handle tool-tip functionality updates with the future release of the new coding guide. This will be more cost-effective and will avoid potential rework.
15	Detailing Results by Optimization	6	90	TBD	Not Started	None	N/A	Massachusetts	The Program comparison tool in version 6.2 provides some of the functionality of this enhancement. The 6.3 release will provide even more functionality and achieve the desired outcome of this enhancement. If additional functionality is requested a champion will be needed to define.
16	Project Workflow	5	89	TBD	Not Started	None	N/A Michigan (Interested)	California	
17	Mobile Inspection	6	83	TBD	-	-	N/A	Hawaii	Mayvue is currently working on the development of a mobile BrM application at the direction of the Task Force. A demo will be provided at the 2019 BrMUG and states will be able to sign up in the near term to beta test the functionality.
18	**Enhanced NBI Deterioration Modeling**	**8**	**67**	**-**	**Complete**	**Fully Funded**	**-**	**Michigan Texas**	**This is developed and being tested as part of the BrM 6.3 release. This functionality will be available in the upcoming release.**
19	Enhancing Mapping User Interface (Bounding Boxes, GIS Friendly)	1	50	TBD	Not Started	None	N/A Michigan (Interested)	N/A	
20	3D Inspection	6	48	TBD	Not Started	None	N/A	Michigan	
21	Funding by Allocation Project Category	2	45	TBD	Not Started	None	N/A	Georgia Virginia	
22	Linked Element Deterioration	2	45	TBD	Not Started	None	N/A	Nebraska	
23	Batch File for Optimizer Configurations & Tools for	3	30	TBD	Not Started	None	N/A	Hawaii	
24	**Enhance Metric Reports**	**3**	**26**	**-**	**Complete**	**Fully Funded**	**-**	**Virginia**	**This was delivered with the BrM 6.2 release.**
25	Report Elements from Optimizer results	3	25	TBD	Not Started	None	N/A	Nebraska	

User Group Priorities

2018 User Priority Enhancement List Updates									
Count	Item	Total Agency Votes	Ballot Totals	Estimate Level of Effort	FDS Status	Funding Status	Commitments	2018 Champion Agency	8/30/2019
26	Performance Measures by Formula	2	12	TBD	Not Started	None	N/A Michigan (Interested)	Virginia	
27	Allow Multiple Report Writers	2	11	TBD	Not Started	None	N/A	District of Columbia	
28	Multimedia for Tunnels	2	8	TBD	Not Started	None	N/A	Connecticut	
29	Project Completion Date by Year, More Detail, Open to Traffic	1	5	TBD	Not Started	None	N/A	Connecticut	
30	Ability to Activate/Deactivate Elements	2	5	TBD	Not Started	None	N/A	Wisconsin	
31	**Any Number of User Tables for Bridges**	**1**	**2**	**-**	**Complete**	**Fully Funded**	**-**	**Oklahoma California**	**This is developed and being tested as part of the BrM 6.3 release. This functionality will be available in the upcoming release.**
32	Need a Way for Admin. to View Current Users	1	1	TBD	Not Started	None	N/A	California	

Technical Manual



Bridge Management 6.1 (First Patch)

- Released December 2018
- Key Features
  - Actions can have the cost vary by condition state
  - Network Policies can have rules on a combination of condition states
  - Lifecycle Policies can have rules on a combination of condition states
  - Benefits Page overhaul (Usability Enhancement)

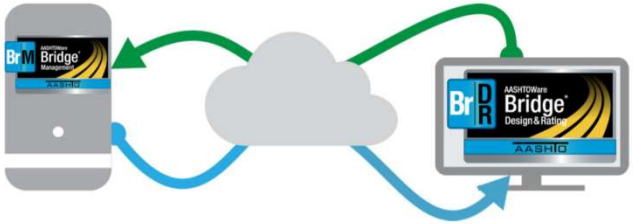
Bridge Management 6.1 (First Patch)

- Key Features
  - Optimizer Work Repetition exclusion rule
  - Analysis page dealing with work candidates whose date has passed
  - Item 10 and 47 conversion errors over 100 feet
  - Show/Hide inactive benefits
  - Various bug fixes and miscellaneous items

Bridge Management 6.2 (Second Patch)

- Released July 2019
- Key Features
  - Added Web Services functionality for future communication and data sharing with AASHTOWare Bridge Rating (BrR)
  - Added Program Comparison tool for comparing similarities and differences of the two programs.
  - Added the “23 Metric Report – As of Date”
  - Various bug fixes and miscellaneous items

AASHTOWare Bridge Integration through Web Services

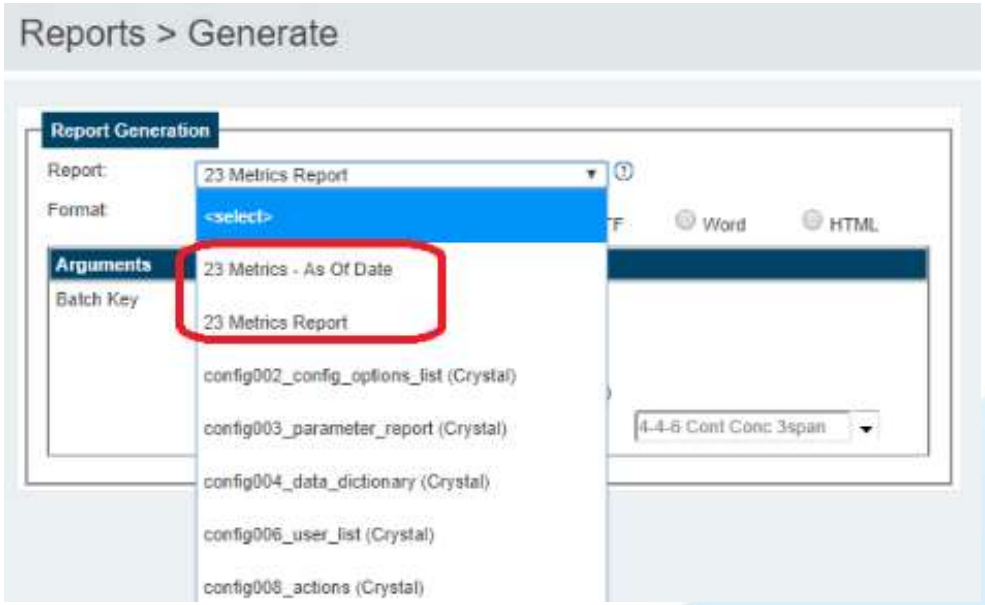


- Funded by the AASHTOWare Research, Innovation, and Product Improvement (RIPI) Program
- **Phase 1** complete with BrM 6.0 release
  - Framework ready and available within BrM.
  - BrM has ability to send and receive load rating information to and from BrDR.
- **Phase 2** planned for completion with BrDR 7.1 release in 2020
  - Complete the same framework in the BrDR software as already completed in BrM.
  - Will have the interface and ability to send and receive load rating information to and from BrM.

Program Comparison Tool

- Allows users to quickly compare two large data sets that were produced by two separate program optimizations
- Determines what is the same, what is different, and how different are the selected programs
- Analysis is provided and comparable in list as well as graphical output

23 Metric Report – As of Date



Determines the level of FHWA compliance for each selected bridge as of the selected date

Bridge Management 6.3 Release

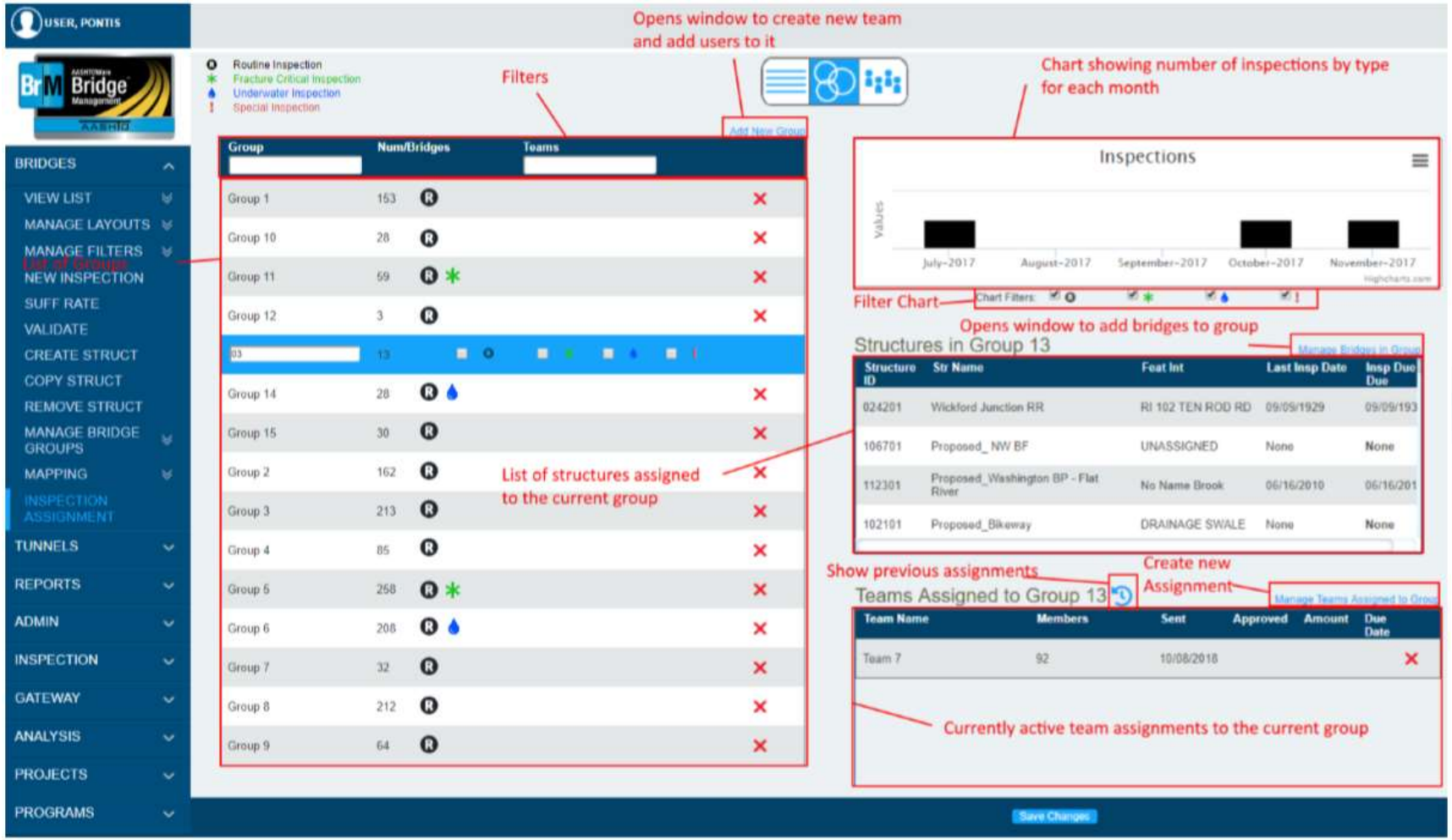
- Planned for Fall 2019

- Key Features
  - Inspection Scheduler
  - Component Level Deterioration
  - Scheduled Processes
  - Tunnel Work Candidates

BrM 6.3 Release – Inspection Scheduler

- Assign and manage upcoming inspections
- Highlight which bridges have inspections due within a defined range of time (e.g. 2 months, 7 months, or 12 months)
- Allows managers to more efficiently manage their groups, assigned bridges, and tasks

BrM 6.3 Release – Inspection Scheduler Continued



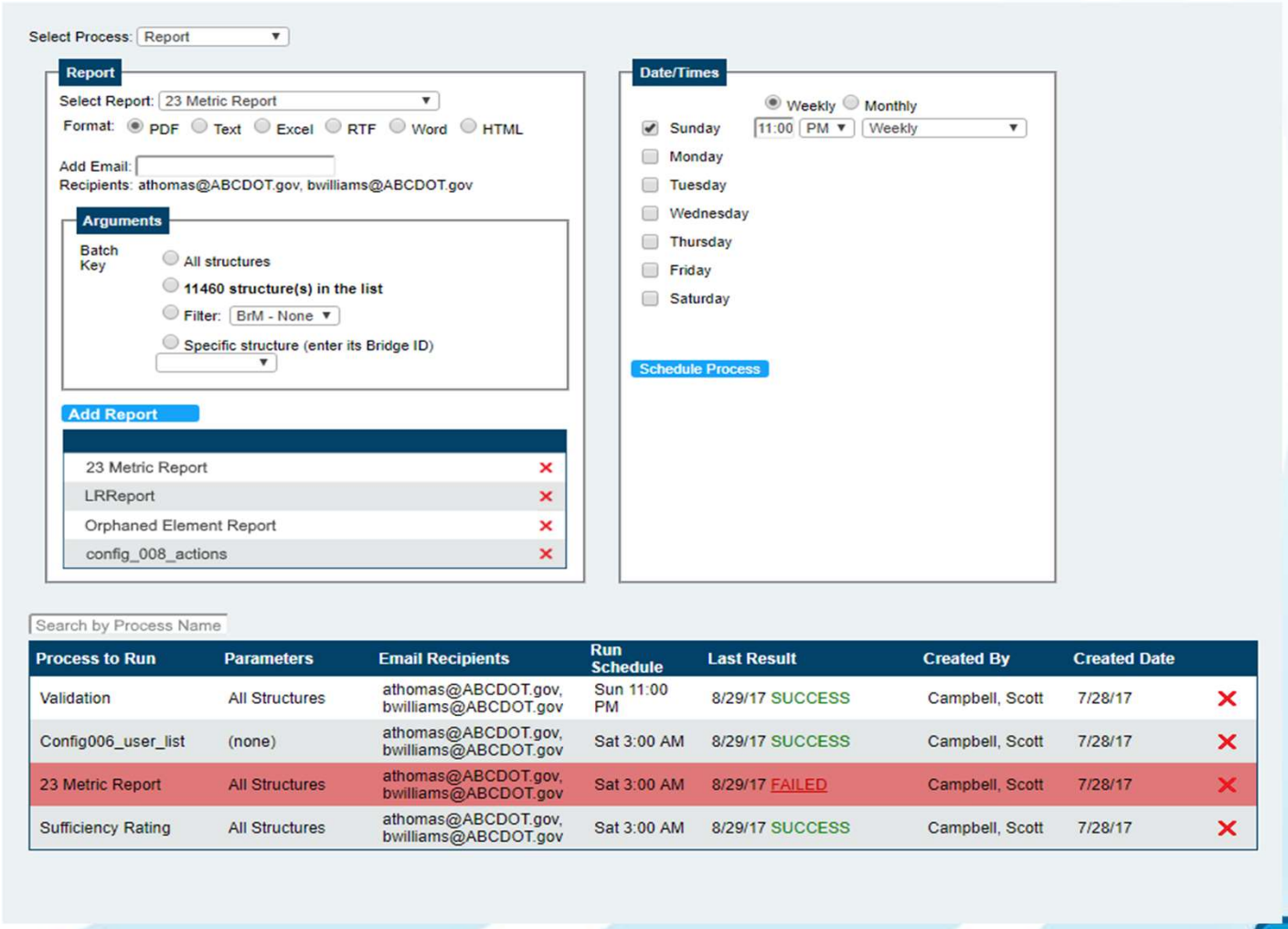
BrM 6.3 Release – Component Level Deterioration

- Formerly called NBI Deterioration
- Allows users to evaluate multiple deterioration profiles for each component of a bridge
- Users can configure their own model parameters to create a custom profile that will be applied on a per bridge basis when modeling
- Development of this enhancement is being spearheaded by Michigan and Texas DOTs

BrM 6.3 Release – Scheduled Processes

- Schedule certain BrM services to be run at regularly scheduled intervals (e.g. weekly or monthly)
- Run scheduled process-intensive tasks (e.g. sufficiency rating calculations) during off peak hours
- Designated personnel will be notified by email confirming successful completion of the process
- Champions are the Alabama and Virginia DOTs

BrM 6.3 Release – Scheduled Processes Continued



BrM 6.3 Release – Tunnel Work Candidate

- High priority enhancement identified by multiple states
- Functions similar to the Bridge work candidate page, but will use multi-asset actions
- Establishes the framework for the future state of BrM where other asset types can easily be included (e.g. walls and signs)

BrM Configuration and Setup

Adding Line Item in AASHTOWare Catalog to include:

- 2-day remote training focused on how the BrM Optimization works
- work with the agency to elicit the various settings within BrM including utility, benefits, actions, network policies, and lifecycle policies
- dive into the agency's historical data and find the curves that best match your agency's experience for NBI Deterioration, Element Deterioration, and NBI Conversion Profiles
- provide report with all of the settings for each page of the software
- provide a portable set of XML files with all of the settings defined for the agency
- provide a 3-day onsite training session geared towards the agency's end-users

BrM Hosting

A hosted BrM application improves the user experience by:

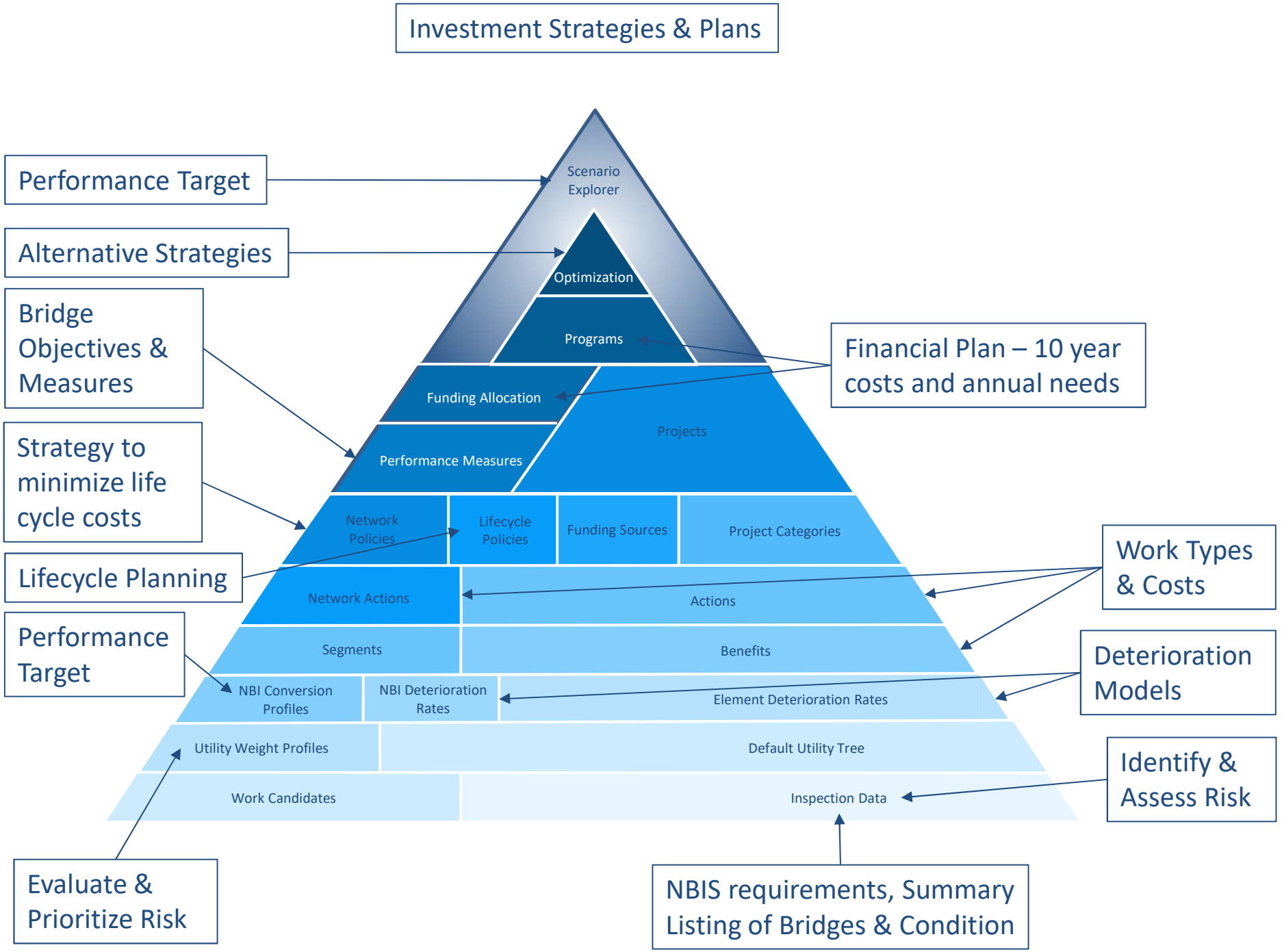
1. Allowing BrM users to focus on asset management, not software upkeep;
2. Generating faster support and resolution of issues as Mayvue doesn't have to acquire the state's database to begin troubleshooting;
3. Testing the BrM site in your State's exact environment (shared workspace);
4. Receiving regular software updates allowing States to take advantage of latest software features / functionalities without delay;
5. Allowing experts to ensure your site is running at its optimal performance.

Future Bridge Management Releases

- BrM 6.4/6.5 Planned???
- Next work plan will include LCCA
  - 1.5 year+ effort
- Capacity for other development in parallel

Future Bridge Management Releases

- Planning for BrM 7.0
  - Significant changes to comply with new NBI coding guide
    - Removing the culvert structure type
    - Several Levels of many to one relationships
  - Deferred Maintenance Items and New Functionality
    - Deferred Database Maintenance
    - Merge Bridge into Cross-asset
    - Multi-thread optimization process
    - New multimedia
    - Tracking historical changes on a granular level
    - Workflow improvements
    - Dashboards


Investment Strategies & Plans
Performance Target
Alternative Strategies
Bridge Objectives & Measures
Strategy to minimize life cycle costs
Lifecycle Planning
Performance Target
Evaluate & Prioritize Risk
Scenario Explorer
Optimization
Programs
Funding Allocation
Performance Measures
Projects
Network Policies
Lifecycle Policies
Funding Sources
Project Categories
Network Actions
Actions
Segments
Benefits
NBI Conversion Profiles
NBI Deterioration Rates
Element Deterioration Rates
Utility Weight Profiles
Default Utility Tree
Work Candidates
Inspection Data
Financial Plan – 10 year costs and annual needs
Work Types & Costs
Deterioration Models
Identify & Assess Risk
NBIS requirements, Summary Listing of Bridges & Condition

Questions?