

*AASHTOWare BrR 6.8*

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*Feature Tutorial*

*RATE2 – AASHTOWare Integration Example*

## RATE2 - AASHTOWare Integration Example

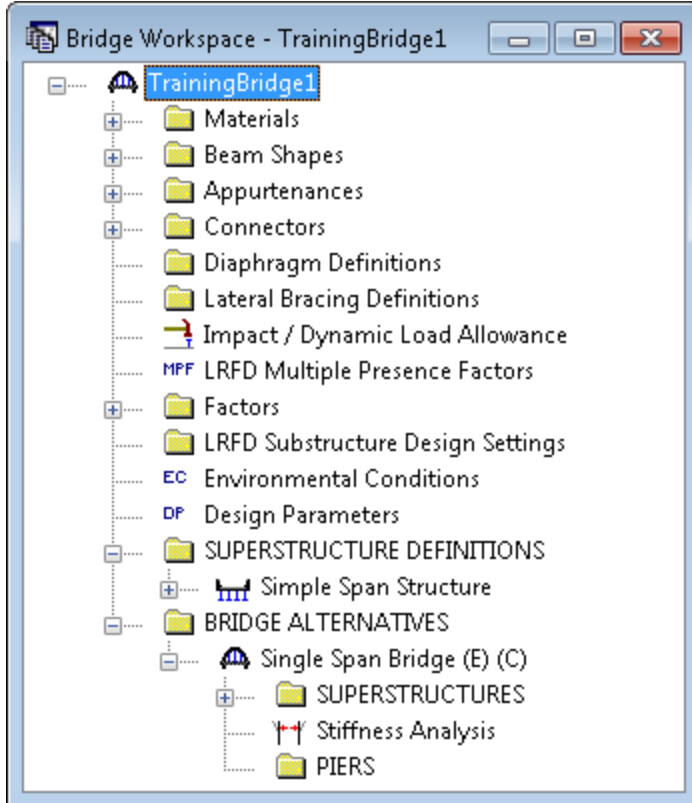
This example will illustrate the following topics for AASHTOWare Integration:

- AASHTOWare Association – Linking a BrD/BrR bridge to a BrM bridge.
- Assign vehicles from the BrD/BrR vehicle library to BrM NBI Load Rating Vehicles.
- AASHTOWare Rating – Perform a rating on a linked bridge and update the ratings in BrM.


Double-click TrainingBridge1 on the right portion of Bridge Explorer to bring up the Bridge Workspace.

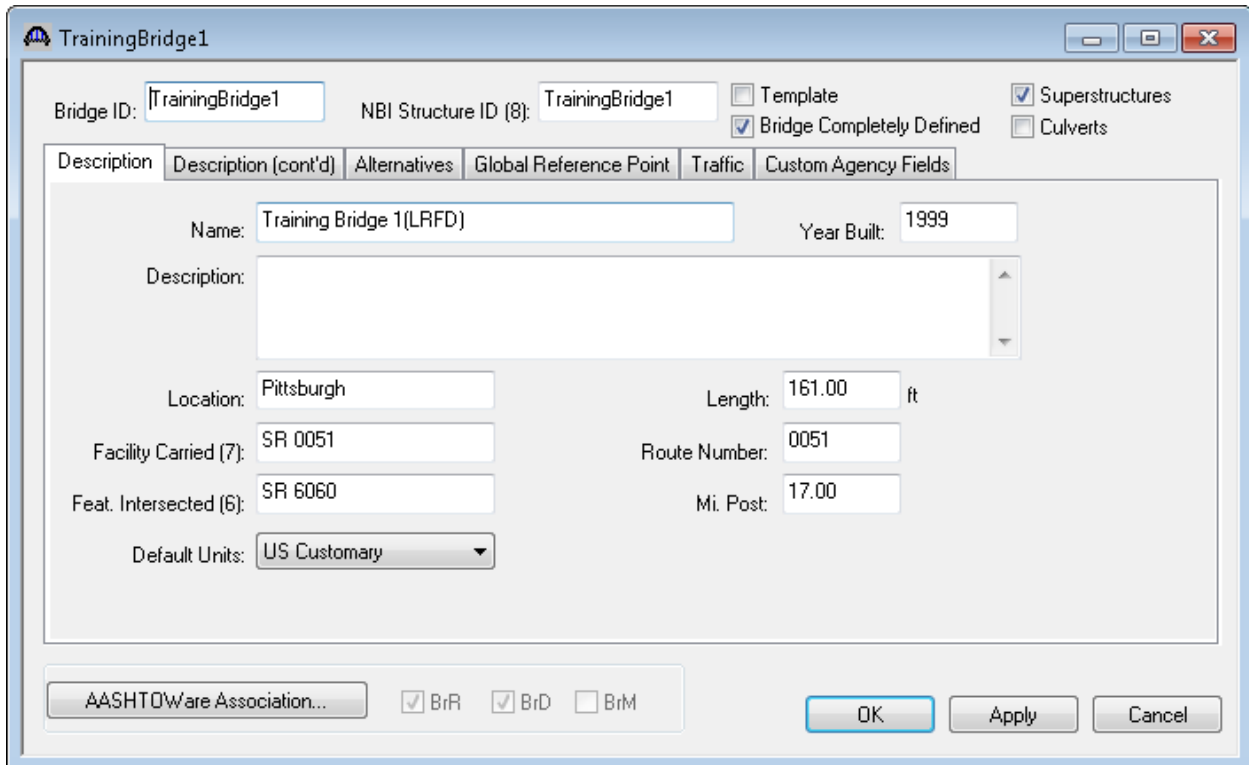
Bridge Explorer (9 Bridge Design/Rating bridges retrieved for the current folder, all rows retrieved)

	BID	Bridge ID	Bridge Name	District	County	Facility	Location	Route	Feature Intersect	Mile/Km Post	Owner	Maintainer	Area	Length (ft)	Year Built
	1	TrainingBridge1	Training Bridge 1(LRFD)	District		SR 005	Pittsburg	0051	SR 6060	17.00			902 -	161.00	1999
	2	TrainingBridge2	Training Bridge 2(LRFD)	Unkno	Unkn	N/A	N/A	-1	N/A		Unkno		901 -		1996
	3	TrainingBridge3	Training Bridge 3(LRFD)	District		I-79	Pittsburg	0079	Ohio Rive	125.00			901 -	455.00	1999
	4	PCITrainingBridge1	PCI TrainingBridge1(LFD)					-1					901 -		
	5	PCITrainingBridge2	PCITrainingBridge2(LRFD)					-1					901 -		
	6	PCITrainingBridge3	PCI TrainingBridge3(LFD)					-1					901 -		
	7	PCITrainingBridge5	PCI TrainingBridge5(LFD)					-1					901 -		
	8	PCITrainingBridge6	PCITrainingBridge6(LRFD)					-1					901 -		
	9	Example7	Example 7 PS (LFD)					-1					901 -		



## RATE2 - AASHTOWare Integration Example

Open Bridge Description window by double-clicking the bridge icon  on the root of the Bridge Workspace tree.



TrainingBridge1

Bridge ID: TrainingBridge1 NBI Structure ID (8): TrainingBridge1  Template  Superstructures  
 Bridge Completely Defined  Culverts

Description Description (cont'd) Alternatives Global Reference Point Traffic Custom Agency Fields

Name: Training Bridge 1(LRFD) Year Built: 1999

Description:

Location: Pittsburgh Length: 161.00 ft

Facility Carried (7): SR 0051 Route Number: 0051

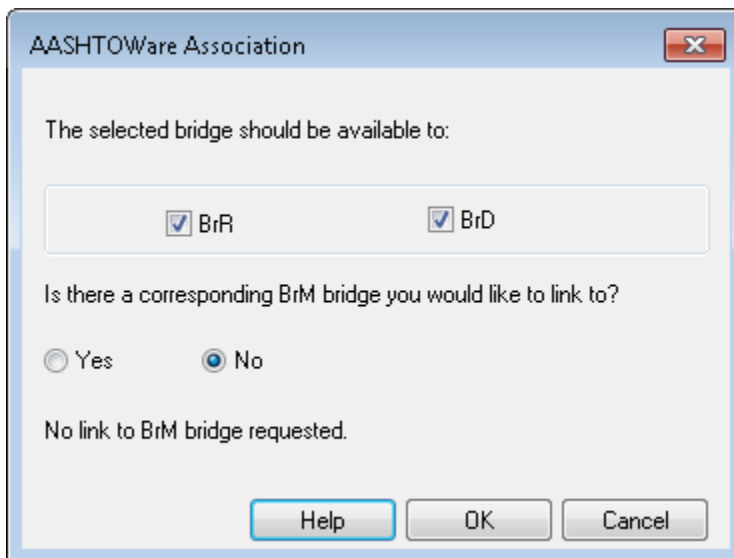
Feat. Intersected (6): SR 6060 Mi. Post: 17.00

Default Units: US Customary

AASHTOWare Association...  BrR  BrD  BrM

OK Apply Cancel

On the Bridge Description window, click AASHTOWare Association button to open the AASHTOWare Association window.



AASHTOWare Association

The selected bridge should be available to:

BrR  BrD

Is there a corresponding BrM bridge you would like to link to?

Yes  No

No link to BrM bridge requested.

Help OK Cancel

## RATE2 - AASHTOWare Integration Example

Select Yes to link to a BrM bridge.

AASHTOWare Association ✕

The selected bridge should be available to:

BrR  BrD

Is there a corresponding BrM bridge you would like to link to?

Yes  No

Please select the corresponding BrM bridge to link to.

Sort Option

Bridge ID  NBI Structure ID  Bridge Name

Search Criteria:

	Bridge Id	NBI Structure ID	Bridge Name
	04 0759	04 07598	Western Ca
	04 0760	04 07603	7TH STREET
	04 0787	04 07878	WASH CMP
	04 0793	04 07935	WASH RCB
	04 0800	04 08003	RID Canal Bri
	04 0850	04 08508	ARIZONA C
	04 0851	04 08511	SKY HARBO
	04 0852	04 08529	TERM 3-N P

## RATE2 - AASHTOWare Integration Example

Select the corresponding BrM bridge 0407598 to link to and click OK to establish the association.

Creating a link to a bridge in the BrM database will populate some bridge data fields in the BrD/BrR database such as the Bridge ID, NBI Structure ID, etc. Once a BrD/BrR bridge is linked to a BrM bridge, these data fields that are retrieved from the BrM database cannot be changed in BrD/BrR unless the link is broken by the user.

The screenshot shows a software window titled "04 07598". At the top, there are two text boxes: "Bridge ID: 04 07598" and "NBI Structure ID (8): 04 07598". To the right are checkboxes for "Template" (unchecked), "Bridge Completely Defined" (checked), "Superstructures" (checked), and "Culverts" (unchecked). Below this is a tabbed interface with tabs for "Description", "Description (cont'd)", "Alternatives", "Global Reference Point", "Traffic", and "Custom Agency Fields". The "Description" tab is active, showing a form with the following fields:


- Name: Western Canal Bridge
- Year Built: 1988
- Description: (empty text area)
- Location: Jesse Owens N Of Baseline
- Length: 42.00 ft
- Facility Carried (7): JESSE OWENS PKWY
- Route Number: 00000
- Feat. Intersected (6): WESTERN CANAL
- Mi. Post: 0.00
- Default Units: US Customary (dropdown menu)

At the bottom of the window, there is a button labeled "AASHTOWare Association..." and three checkboxes: "BrR" (checked), "BrD" (checked), and "BrM" (checked). On the far right are "OK", "Apply", and "Cancel" buttons.


Click OK to close the Bridge Description Window.

Select the Save menu item on the File menu to save the bridge.

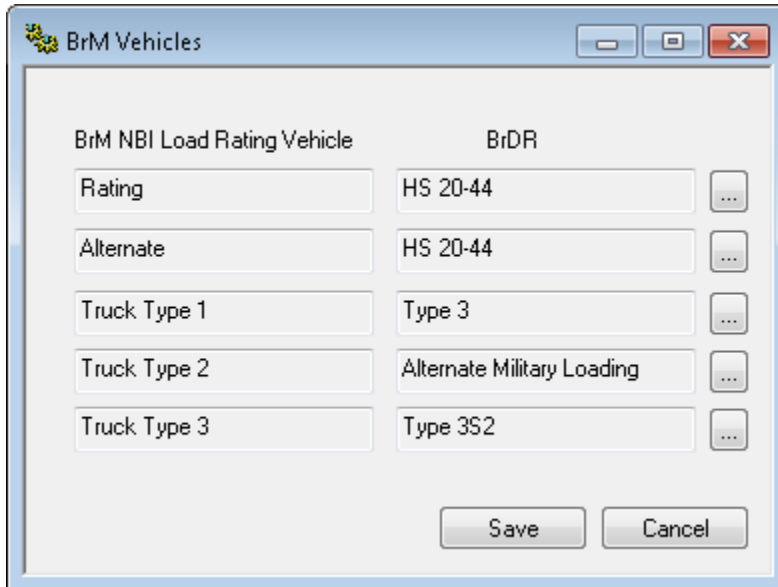
Close the Bridge Workspace.

Click the Refresh button  on the toolbar to refresh the right portion of the Bridge Explorer.

## RATE2 - AASHTOWare Integration Example

Open the Configuration Browser by clicking the Configuration Browser button  on the toolbar or selecting the Configuration Browser menu item on the Window menu.

Open the BrM Vehicles window by double-clicking the BrM Vehicles folder in the Configuration Browser.



BrM NBI Load Rating Vehicle	BrDR
Rating	HS 20-44
Alternate	HS 20-44
Truck Type 1	Type 3
Truck Type 2	Alternate Military Loading
Truck Type 3	Type 3S2

## RATE2 - AASHTOWare Integration Example

Click the ellipsis button next to the BrR vehicles to assign vehicles from the BrD/BrR vehicle library to BrM NBI Load Rating Vehicles.

Select HS 20-44 BrDR vehicle for BrM Rating vehicle.

Select HS 20-44 BrDR vehicle for BrM Alternate vehicle.

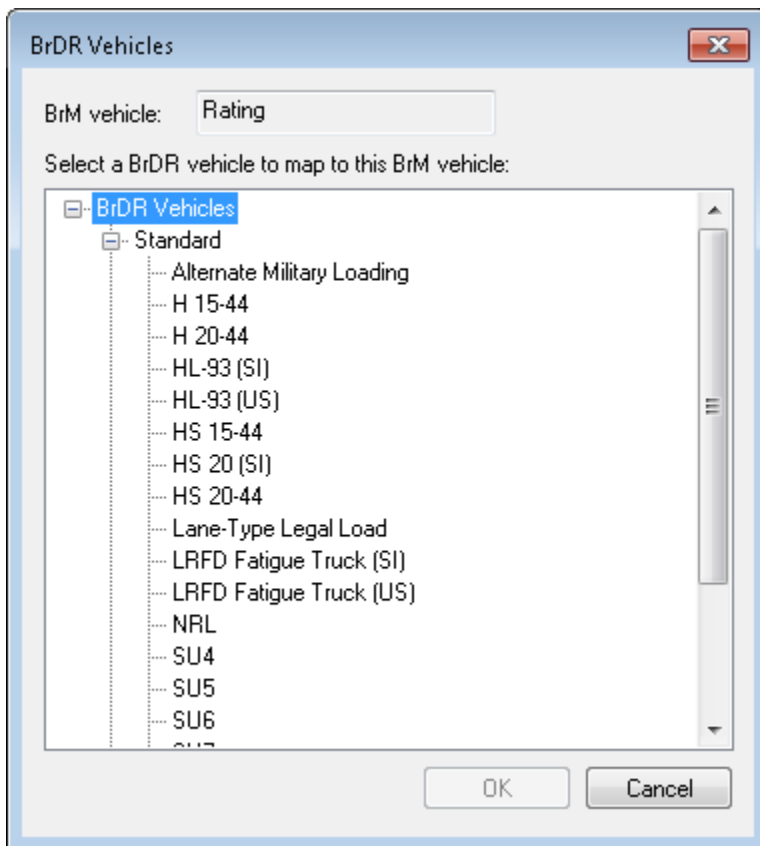
Select Type 3 BrDR vehicle for BrM Truck Type 1 vehicle.

Select Alternate Military Loading BrDR vehicle for BrM Truck Type 2 vehicle.

Select Type 3S2 BrDR vehicle for BrM Truck Type 3 vehicle.

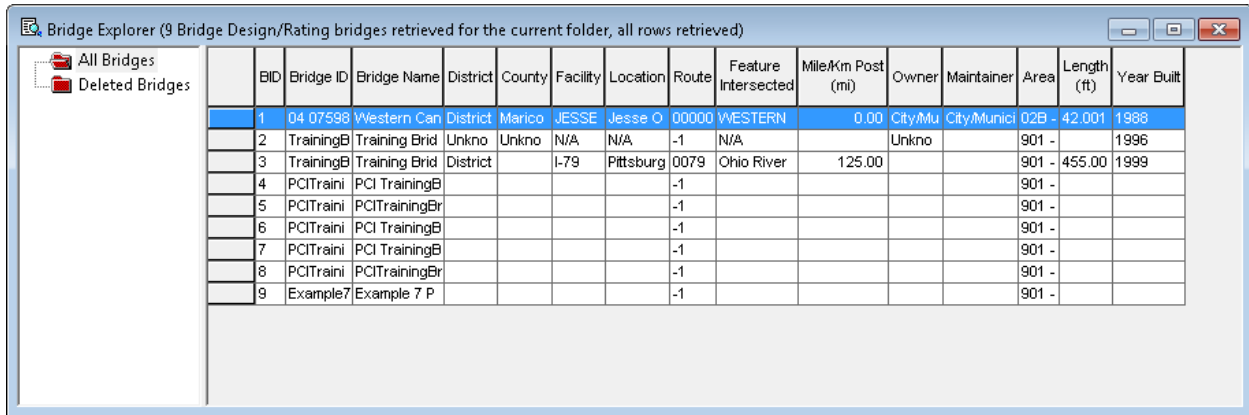
Click Save to save and close the BrM Vehicles window.

Close the Configuration Browser.




## RATE2 - AASHTOWare Integration Example

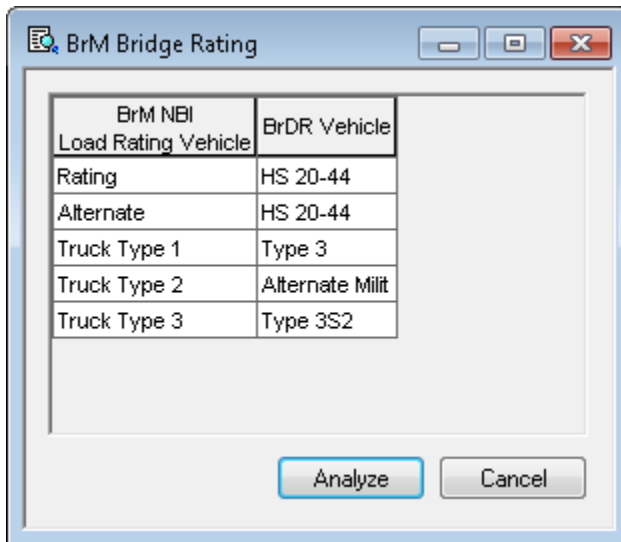
Select 0407598 on the right portion of the Bridge Explorer.



Bridge Explorer (9 Bridge Design/Rating bridges retrieved for the current folder, all rows retrieved)

	BID	Bridge ID	Bridge Name	District	County	Facility	Location	Route	Feature Intersected	Mile/Km Post (mi)	Owner	Maintainer	Area	Length (ft)	Year Built
	1	04 07598	Western Can	District	Marico	JESSE	Jesse O	00000	WESTERN	0.00	City/Mu	City/Municipi	02B -	42.001	1988
	2	TrainingB	Training Brid	Unkno	Unkno	N/A	N/A	-1	N/A		Unkno		901 -		1996
	3	TrainingB	Training Brid	District		I-79	Pittsburg	0079	Ohio River	125.00			901 -	455.00	1999
	4	PCITraini	PCI TrainingB					-1					901 -		
	5	PCITraini	PCITrainingBr					-1					901 -		
	6	PCITraini	PCI TrainingB					-1					901 -		
	7	PCITraini	PCI TrainingB					-1					901 -		
	8	PCITraini	PCITrainingBr					-1					901 -		
	9	Example7	Example 7 P					-1					901 -		

Open the BrM Bridge Rating window by clicking on the Update BrM Ratings button  on the toolbar or selecting the Update BrM Ratings menu item on the Bridge menu.



BrM Bridge Rating

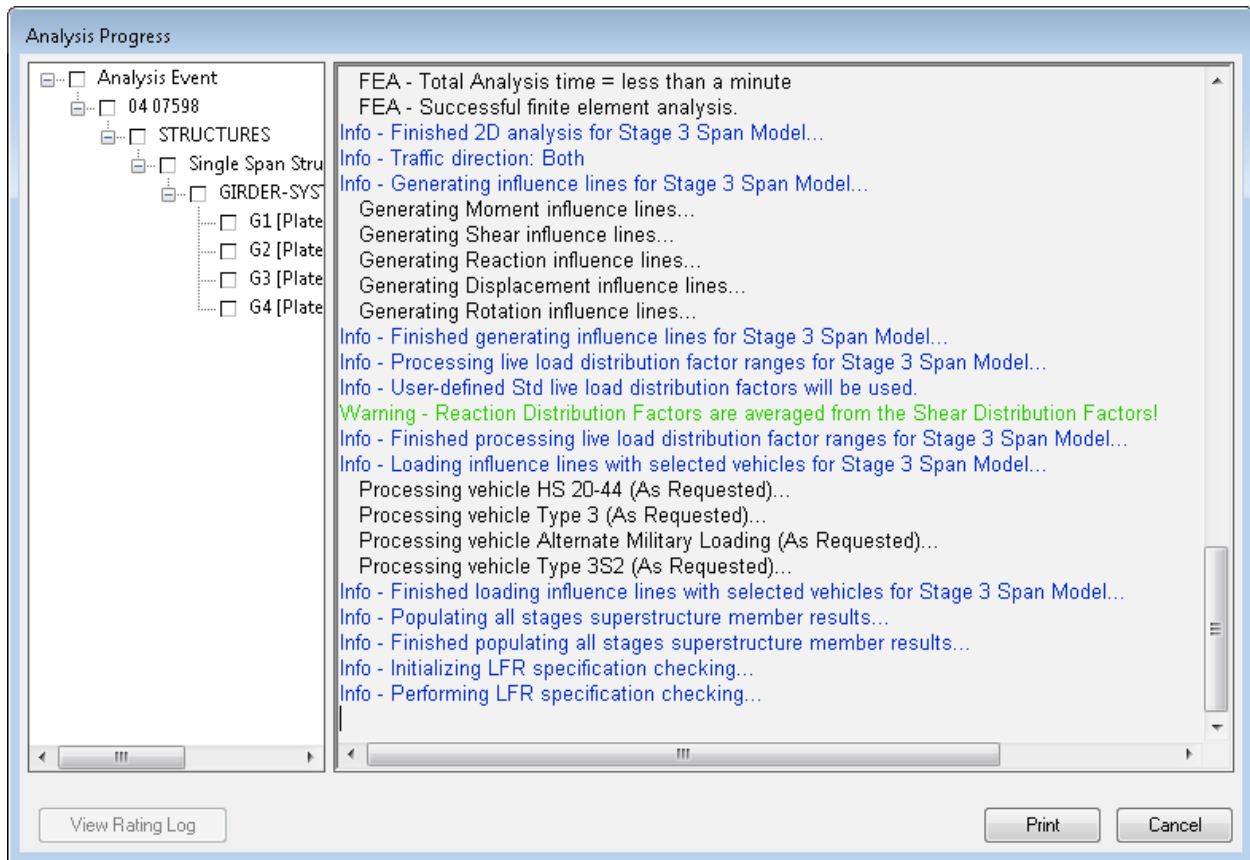
BrM NBI Load Rating Vehicle	BrDR Vehicle
Rating	HS 20-44
Alternate	HS 20-44
Truck Type 1	Type 3
Truck Type 2	Alternate Milit
Truck Type 3	Type 3S2

Analyze Cancel



## RATE2 - AASHTOWare Integration Example

Click Analyze to start rating 0407598 and the Analysis Progress window will open.



## RATE2 - AASHTOWare Integration Example

After the analysis is complete, click OK to close the Analysis Progress window and the BrM Rating Summary window will open.

For each of the five BrM NBI Load Rating Vehicles, the current BrM rating capacities and newly calculated BrR rating capacities are displayed. If the newly calculated BrR rating capacity differs from the current BrM rating capacity, the newly calculated BrR rating capacity is displayed in a red font.

BrM Rating Summary

BrDR Rated: Bridge BrDR Rating: Thursday, August 25, 2016 09:43:18 BrM Rater Initials:

Bridge Id	Bridge Completely Defined	Accept New Ratings	Rating						Alternate						Truck Type 1				Truck Type 2				Truck Type 3			
			Current BrM			Calculated BrM			Current BrM			Calculated BrDR			Current BrM		Calculated Br		Current BrM		Calculated Br		Current BrM		Calculated Br	
			Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating Method	Inv. Rating Method	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating Method	Inv. Rating Method	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)		
04 07598	<input checked="" type="checkbox"/>	<input type="checkbox"/>	60.74	36.38	LFD	LFD	52.70	31.56	-1.10	-1.10	LFD	LFD	52.70	31.56	54.01	31.97	55.11	33.00	82.67	48.50	52.19	31.25	104.72	62.83	60.94	36.49

View Rating Results... View Bridges Not Rated...

Accept Accept All Close

## RATE2 - AASHTOWare Integration Example

Select 0407598 and click on the View Rating Results button to open the Bridge Rating Results window.

Bridge Rating Results

System of Units:  US Customary  SI / Metric

Lane/Impact Loading Type:  As Requested  Detailed

Display Format: Multiple rating levels per row

	Bridge Id	Vehicle	Inventory Rating Factor	Operating Rating Factor	Legal Operating Rating Factor	Legal Rating Factor	Permit Inventory Rating Factor	Permit Operating Rating Factor
	04 07598	HS 20-44	0.877	1.464				
	04 07598	Type 3	1.320	2.204				
	04 07598	Alternate Military Loading	1.302	2.174				
	04 07598	Type 3S2	1.014	1.693				

Show up-to-date results only

View Structure Rating Results Save All Print Close

Click on the View Structure Ratings Results button to view the superstructure rating results.

Structure Rating Results

System of Units:  US Customary  SI / Metric

Lane/Impact Loading Type:  As Requested  Detailed

Display Format: Multiple rating levels per row

	Bridge Id	Structure	Vehicle	Inventory Rating Factor	Operating Rating Factor	Legal Operating Rating Factor	Legal Rating Factor	Permit Inventory Rating Factor	Permit Operating Rating Factor
	04 07598	Single Span Structure	HS 20-44	0.877	1.464				

Show up-to-date results only

View Member Rating Results Print Close

## RATE2 - AASHTOWare Integration Example

Click on the View Member Ratings Results button to view the member rating results.

The screenshot shows a window titled "Member Rating Results". At the top, there are three control groups: "System of Units" with radio buttons for "US Customary" (selected) and "SI / Metric"; "Lane/Impact Loading Type" with radio buttons for "As Requested" (selected) and "Detailed"; and "Display Format" with a dropdown menu set to "Multiple rating levels per row". Below these controls is a table with the following data:

	Bridge Id	Structure	Member	Vehicle	Inventory Rating Factor	Operating Rating Factor	Legal Operating Rating Factor	Legal Rating Factor	Permit Inver Rating Fac
	04 07598	Single Span Structure	G1	HS 20-44	1.376	2.297			
	04 07598	Single Span Structure	G2	HS 20-44	0.877	1.464			
	04 07598	Single Span Structure	G3	HS 20-44	0.877	1.464			
	04 07598	Single Span Structure	G4	HS 20-44	1.376	2.297			

Below the table is a horizontal scrollbar. At the bottom left, there is a checked checkbox labeled "Show up-to-date results only". At the bottom right, there are "Print" and "Close" buttons.

Click Close on the Member Rating Results window to return to the Structure Rating Results window.

Click Close on the Structure Rating Results window to return to the Bridge Rating Results window.

The Save All button on the Bridge Rating Results window saves all the rating results to the database.

Click Close on the Bridge Rating Results window to return to the BrM Rating Summary window.

## RATE2 - AASHTOWare Integration Example

Select the check box in the Accept New Ratings column.

Click the Accept button to update BrM ratings. The calculated BrDR rating values should now be saved to the BrM rating fields.

BrM Rating Summary

BrDR Rated:  Bridge:  BrDR Rating:  Thursday, August 25, 2016 15:10:59 BrM Rater Initials:

Bridge Id	Bridge Completely Defined	Accept New Ratings	Rating						Alternate						Truck Type 1				Truck Type 2				Truck Type 3			
			Current BrM		Calculated BrM				Current BrM		Calculated BrDR				Current BrM		Calculated BrDR		Current BrM		Calculated BrDR		Current BrM		Calculated BrDR	
			Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating Method	Inv. Rating Method	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating Method	Inv. Rating Method	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)	Opr. Rating (Ton)	Inv. Rating (Ton)
04 07598	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	52.70	31.56	LFD	LFD	52.70	31.56	52.70	31.56	LFD	LFD	52.70	31.56	55.11	33.00	55.11	33.00	52.19	31.25	52.19	31.25	60.94	36.49	60.94	36.49

View Rating Results... View Bridges Not Rated...

Accept Accept All Close