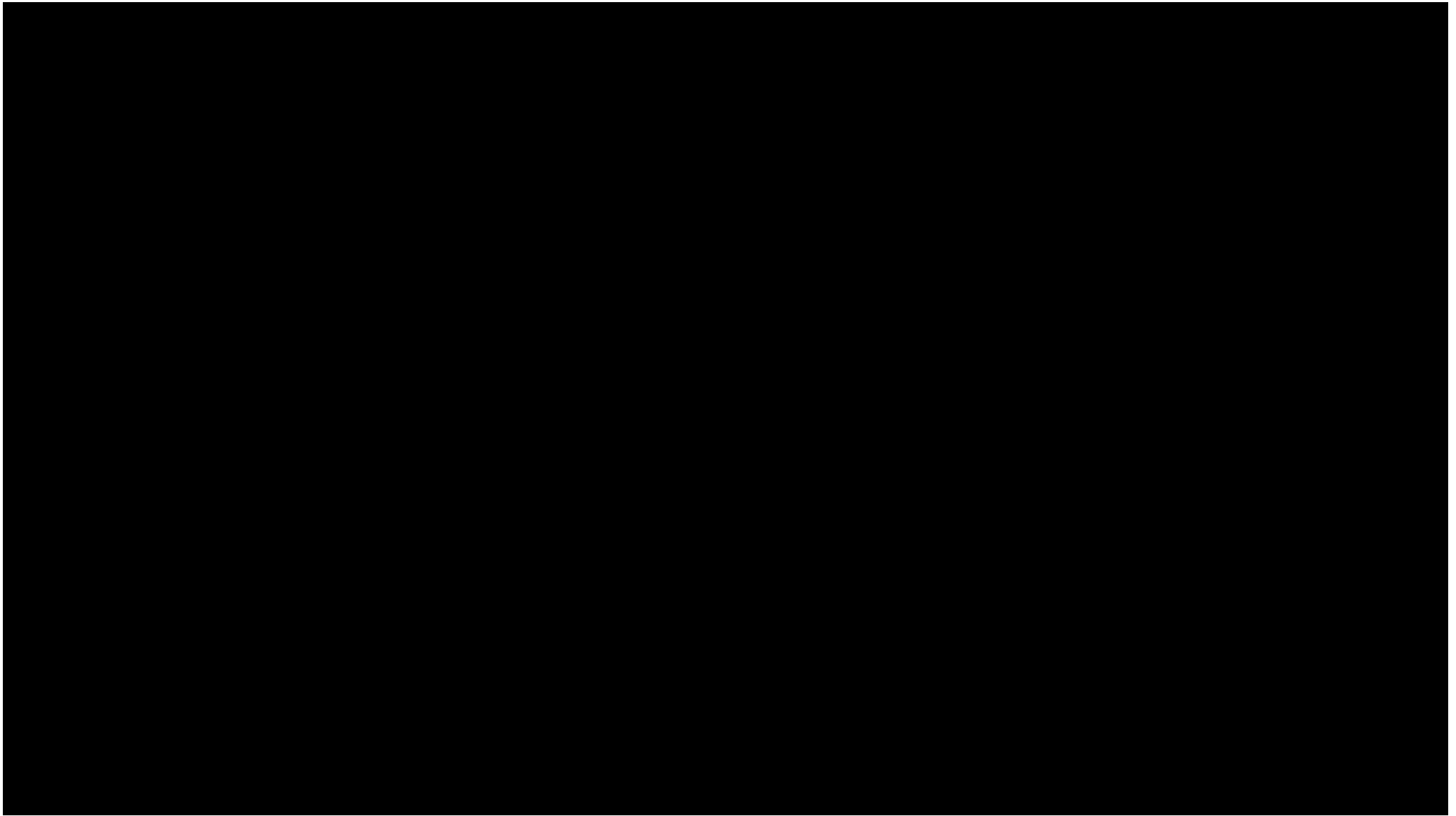




# Task Force Update

BrM User Group Meeting  
Boise, Idaho  
September 19, 2023

David Hedeem, P.E.  
BrM Task Force Chair  
Minnesota DOT | Bridge Office





# Who is the Task Force? – Craig Nazareth

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- BrM Task Force Member since 2016
- Rhode Island DOT
- *Was once the United States exchange Sailor with the Royal Swedish yacht club*



# Who is the Task Force? – Kent Miller

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- BrM Task Force Member since 2019
- Nebraska DOT
- *“I hitch-hiked from Mexico to Minnesota and slept under a few very fine bridges along the way.”*



# Who is the Task Force? – Justin Alamares

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- BrM Task Force Member since 2023
- California DOT (Caltrans)
- *“Once took a weekend job working at an Apple Store. Sometime after that, I worked as Project Management consultant for Apple’s Corporate Office.”*





# Who is the Task Force? – Emily Bickley

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- BrM Task Force Member since 2023
- South Carolina DOT
- *“I have spent almost 200 nights camping in the last 5 years, which is great since I love traveling.”*



# Who is the Task Force? – Jacob Armour

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- BrM Task Force Member since 2023
- Michigan DOT
- *“At 17 years old we took a motorcycle trip through Deals Gap in North Carolina/ Tennessee (318 turns in 11 miles)”*





# Who is the Task Force? – David Hedeem

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- BrM Task Force Member since 2019
- Minnesota DOT
- *“I obtained my pilots license at 18.”*



# Who is the Task Force? – Maybe you!

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- Current looking to fill one spot
- Former member had to resign as they left the DOT
- Look for an advertisement soon, or talk to a Task Force member for more information



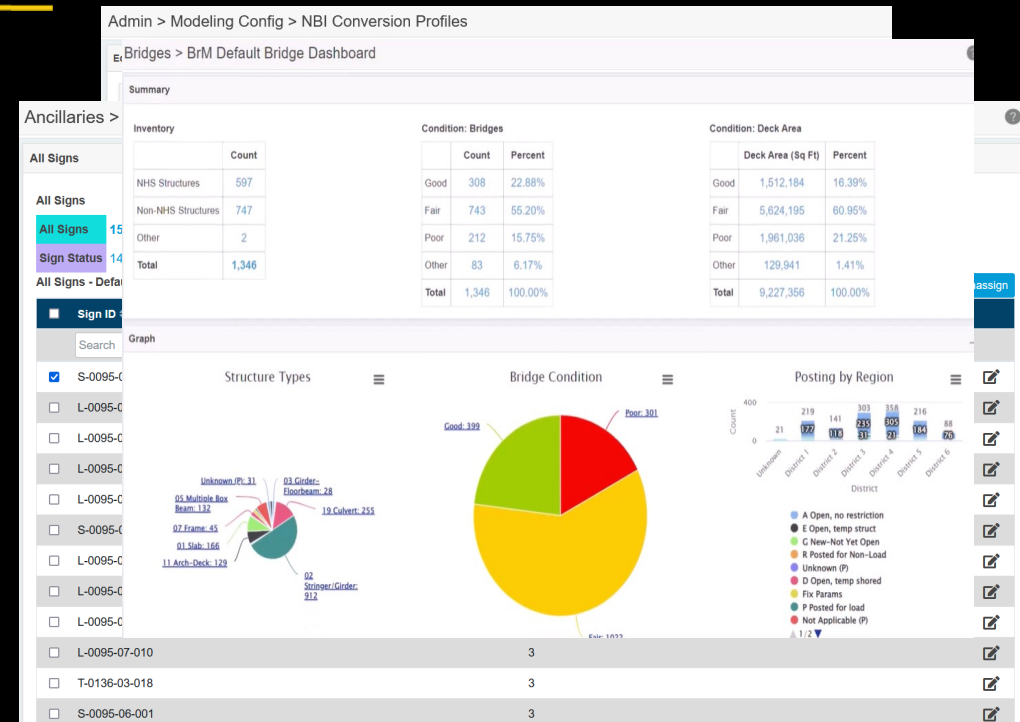
# What does the Task Force do?

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- Ensure that BrM is “The software for the states, by the states”
- Review work plans, functional design specifications
- Steer direction of the product, set priorities for the contractor
- Lead Technical Advisory Groups: Testing, Database and Optimizer
- Meet regularly:
  - Biweekly remotely
  - Quarterly in-person

# Where we've been - BrM 6.7 (March 2023)

- NBI Conversion Profiles
  - Ranked #1 in 2021 user priority
- Dashboards
  - Ranked #2 in 2021 priority
- Landing Pages
- Ancillary Asset Updates



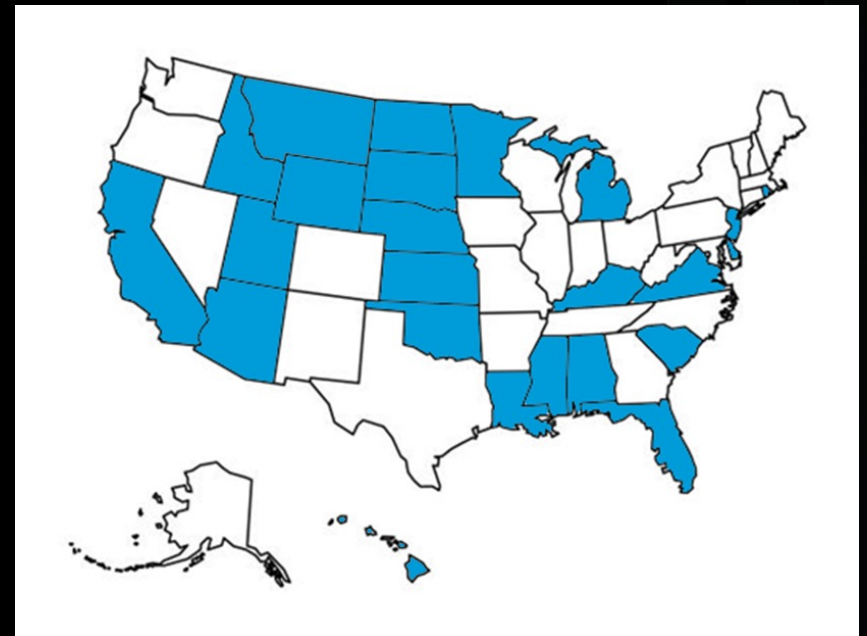
## Where we've been - Early 7.0

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- Special release of BrM only available to contributing agencies
- Early access for entry, training, testing of new SNBI fields
- Converting underlying bones off of old tech
  - ASP.NET webforms (20 years ago), ending support by Microsoft
  - Other older technologies like JQuery, Log4Net, Telerik
- Strong foundation to sustain BrM for years to come
- Still time to contribute!

# Contributing States – THANK YOU!!

- 22 States with Full Participation
- 2 Partial Contributions
- Alabama, Arizona, Caltrans, Delaware, Florida, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Montana, Nebraska, New Jersey, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Utah, Virginia, Wyoming





# Early 7.0 – Look and Feel

Admin > General Config > Parameters

**Parameters**

Table Name	Field Name	Active
inspevt	strating	X
inspevt	subrating	X
inspevt	suprating	X
inspevt	transratin	X
inspevt	underclr	X
inspevt	uvrinspreq	X
inspevt	wateradeq	X
load_rating_events	category	X
load_rating_events	second_software	X
load_rating_events	software	X
load_ratings	analysis	X
load_ratings	limit_state	X
multimedia	agencytype	X
multimedia	subcategory	X
params	admin_viewall_filters	X
params	apiacceptfiles	X
params	bridgegidcontinuouscrolling	X
params	cfaddressedemail	X
params	cfprojectvalidate	X
params	chworkcandvalidate	X
params	collapsemenuonload	X
params	copyelementnotes	X
params	copyinspectionnotes	X
params	default_all_structs	X
params	default_multimedia_layout	X
params	eleminspallowchdlytparent	X

**Add**

**Parameter Values and Labels**

Order	Value	Short Label	Description	Active
<input type="text"/>	DD	Design Document	Design Document Subcategory	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="text"/>	IP	Inspection Photo	Inspection Photo Design Document	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="text"/>	LRS	Load Rating Summary	Load Rating Summary Subcategory	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="text"/>	PL	Plans	Plans Subcategory	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="text"/>	BRF	BRF Files	BRF Files Subcategory	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="text"/>	HC	Hand Cakes	Hand Cakes Subcategory	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="text"/>	PS	Posting Signs	Posting Signs Subcategory	<input checked="" type="checkbox"/> <input type="checkbox"/>

Parameter Long description corresponding to the specified table, column and value.  
 Table & column name: paramtrs.longdesc  
 Datatype: varchar  
 Width: 2000  
 Decimal Places: 0  
 Allow null: Y  
 Unique key: N  
 Minimum: -1  
 Maximum: -1  
 Defaults: -1  
 NBS Code: -1  
 Conversion Paircode: -1  
 Metric units: -1  
 English units: -1  
 Validation Type: -1

**Add**

# Early 7.0 – Look and Feel

Admin > General Config > Parameters

Parameters

sup

Table Name ↕	Field Name ⇅		
inspevnt	suprating		
super_set	wearing		
super_set	span_type		
super_set	span_protect		
super_set	span_mat		
super_set	span_continue		
super_set	span_config		
super_set	deck_stay		
super_set	deck_rps		
super_set	deck_protect		

# Early 7.0 – New SNBI Fields

Inspection > Inventory > Identification

Inspection > Condition

Bridge 08

**Condition Ratings**

Deck (B.C.01):	6 Satisfactory	6	Validate
Superstructure (B.C.02):	5 Fair	6	Calculate NBI
Substructure (B.C.03):	7 Good	6	
Culvert (B.C.04):	N N/A (NBI)	N	
Bridge Cnd. Class. (B.C.12):			
Lowest Cnd. Rtg. Code (B.C.13):			
Railing (B.C.05):	null (FIX PARAM VALUE)	N	
Railing Transition (B.C.06):	null (FIX PARAM VALUE)	N	
Bearings (B.C.07):	null (FIX PARAM VALUE)	6	
Joints (B.C.08):	null (FIX PARAM VALUE)	6	

**Assigned NBI Conversion Profiles:**

Deck:	BrM Deck Default
Superstructure:	BrM Superstructure Default
Substructure:	BrM Substructure Default
Culvert:	BrM Culvert Default
Railing Transition:	BrM Railing Transition Default
Railing:	BrM Railing Default
Bearings:	BrM Bearings Default
Joints:	BrM Joints Default

**Other Condition Ratings**

Channel (B.C.09):	7 Minor Damage	Channel Protection (B.C.10):	null (FIX PARAM VALUE)
Scour (B.C.11):	null (FIX PARAM VALUE)	NSTM Insp.Cnd. (B.C.14):	null (FIX PARAM VALUE)
Underwater Inspection (B.C.15):	null (FIX PARAM VALUE)		

**Appraisal**

Approach Road Align. (B.AP.01):	null (FIX PARAM VALUE)	Overtopping Likelihood (B.AP.02):	null (FIX PARAM VALUE)
Scour Vulnerability (B.AP.03):	null (FIX PARAM VALUE)	Scour Plan of Action (B.AP.04):	null (FIX PARAM VALUE)
Seismic (B.AP.05):	null (FIX PARAM VALUE)		

**Element Conditions**

Hide Elem Inspection Details

Element [Elem # or Elem Desc] Struct. Unit: All Env: All Clear Filters

Quantity  Percent

Add Element

Arrow Key Grid Navigation Help

# Early 7.0 – Support for Additional Components

- Joints, Bearings, Railings, Railing Transitions

Generic Upper Limits

Method of CS Average: Element Weighting

NBI	Enabled	CS2 %	CS3 %	CS4 %
9	<input checked="" type="checkbox"/>	1	1	1
8	<input checked="" type="checkbox"/>	5	5	1
7	<input checked="" type="checkbox"/>	20	5	2
6	<input checked="" type="checkbox"/>		10	3
5	<input checked="" type="checkbox"/>		20	5
4	<input checked="" type="checkbox"/>			15
3	<input checked="" type="checkbox"/>			100
2	<input type="checkbox"/>			
1	<input type="checkbox"/>			

Admin > Modeling Config > NBI Conversion Profiles

NBI Conversion Profiles

Search

Name	Default	Resulting GCR
BrM Bearings Default	★	Bearings
BrM Culvert Default	★	Culvert
BrM Deck Default	★	Deck
BrM Joints Default	★	Joints
BrM Railing Default	★	Railings
BrM Railing Transition Default	★	Railing Transition
BrM Substructure Default	★	Substructure
BrM Superstructure Default	★	Superstructure

# Early 7.0 – Load Ratings

Inspection > Load Ratings

Bridge ID: 001A000350B Bridge Name (B.ID.2): Golden Bridge Bridge Nickname: Goldie

Edit Load Rating Event

Load Rating Event

\* Event Name: TEST EVENT \* Load Rating Date (B.LR.03): 02/02/2022

Report This Event:

Load Rater: Jon Smith Reviewer: Pam Smith

Software Used: Load Testing Secondary Software: Excel

Load Rating Method (B.LR.04): ASR - Allowable Stress Routine Permit Loads (B.LR.08): A - All Permit Loads

Notes: a couple notes

Wearing Surface / Fill Depth: 25 in Category: Routine

Load Ratings

Export

Vehicle (B.EP.01) ↓	Rating	Tons	Analysis Type	Limit State	Location	Notes	Inventory (B.LR.05)	Operating (B.LR.06)	Controlling Legal (B.LR.07)
EV3	92.34		Load Test	Strength I - Flexure	there	lots a notes	★		★
EV3	92.34		Load Test	Strength I - Flexure	there	lots a notes	★		★
HL-93 Inventory	2.34		Permit	Strength I - Shear	PGH	notes notes	★	★	
HL-93 Inventory	2.34		Permit	Strength I - Shear	PGH	notes notes	★	★	
Notational SHV	52.34		Design	Strength II - Flexure	road	more notes		★	★
Notational SHV	52.34		Design	Strength II - Flexure	road	more notes		★	★

# Early 7.0 – Load Posting Status

Inspection > Load Posting Status

Bridge ID: 087401      Bridge Name: Exchange Street      Bridge Nickname:

Create Load Posting Status

Load Posting Status

* Posting Status Change Date (B.PS.02):	06 / 01 / 2023
* Open/Posted/Closed:	Weight
* Permanent/Temp/Supported:	Permanent
Load Posting Status (B.PS.01):	PP



# Early 7.0 – Sets

Inspection > Design

Bridge 087401

Super Sets

Order |> Sp

Sub Sets

Order |> Su

Structure Units

### Add New Sub Set

* Name:	<input type="text"/>	* Order:	<input type="text" value="1"/>
* Description Code:	<input type="text"/>	Substructure Configuration Designation (B.SB.01):	<input type="text"/>
* Number of Substructure Units (B.SB.02):	<input type="text"/>	* Substructure Material (B.SB.03):	<input type="text"/>
* Substructure Type (B.SB.04):	<input type="text"/>	* Substructure Protective System (B.SB.05):	<input type="text"/>
* Foundation Type (B.SB.06):	<input type="text"/>	* Foundation Protective System (B.SB.07):	<input type="text"/>

Span Type (B.SP.06)

Substructure Type (B.SB.04)

# Early 7.0 – Features

Inspection > Inventory > Features ?

Bridge  Facility Carried (007): EXCHANGE ST

### Edit Feature

#### Feature Details

* Feature Name (B.F.03):	<input type="text" value="Exchange Street"/>	Feature Type (B.F.01):	<input type="text" value="Highway"/>
* Feature Location (B.F.02):	<input type="text" value="C - Carried on bridge"/>	Report to FHWA:	<input checked="" type="checkbox"/>
* Order:	<input type="text" value="1"/>		

#### Route Information

[+ Add New](#)

Designation (B.RT.01) <sup>⚡</sup>	Route Number (B.RT.02) <sup>⚡</sup>	Route Direction (B.RT.03) <sup>⚡</sup>	Route Type (B.RT.04) <sup>⚡</sup>	Service Type (B.RT.05) <sup>⚡</sup>
No records to display.				

#### Highway Information

LRS Route ID (B.H.06):	<input type="text"/>	LRS Data as of Date:	<input type="text" value="mm / dd / yyyy"/>
LRS Mile Point (B.H.07):	<input type="text"/>	Lanes on Highway (B.H.08):	<input type="text"/>
* Functional Classification (B.H.01):	<input type="text"/>	Urban Code (B.H.02):	<input type="text"/>
		National Highway Freight Network	<input type="text"/>

# Early 7.0 – User Defined Inspection Types

Admin > General Config > Inspection Types

Inspection Types

Search  [Export](#) [Add New](#)

Name	Show in Insp. Assign Module	Default Frequency (months)	NBI Reportable Insp. Type	Notes	Active	Updated By	Updated On	
Damage (No Qualifications)	F		Damage		T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Damage (w Qualification)	F		Damage		T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Damage	F				F	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Fracture Critical (obsolete)	T	24			F	USER, Pontis	04/24/2023	<a href="#">Edit</a> <a href="#">Copy</a>
In-Depth	T	24			T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Initial	F				T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
NTSM	T	24			T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Other Special (obsolete)	T				F	USER, Pontis	04/24/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Routine (obsolete)	T	24			F	USER, Pontis	04/24/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Routine Complex	T	24	Routine		T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Routine	T	24			T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Scour Monitoring	F				T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Service	F				T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Special	T	12			T	USER, Pontis	04/25/2023	<a href="#">Edit</a> <a href="#">Copy</a>
Underwater (obsolete)	T	60			F	USER, Pontis	04/24/2023	<a href="#">Edit</a> <a href="#">Copy</a>

1 2 16 items in 2 pages

# Early 7.0 – Inspection Assignments

Inspection Management > Inspection Assignments

**Unassigned Inspections**

Unassigned Inspections Due in Next 3 Months.

Search  [Export](#)

Due Date	Inspection Type	Bridge ID	District	County	Facility Carried	Feature intersected	Owner	Maint	Previous Group Assigned	Requested Reassignment	Reassignment Comment
5/17/2023	Routine Complex	9	District 1	Allegheny	-	-	Unknown (P)	Unknown (P)		F	
5/19/2023	Routine Complex	5	District 1	Allegheny	-	-	Unknown (P)	Unknown (P)		F	

2 items in 1 page

---

**Current Assignments**

Search  [Export](#) Show complete:  [Add New](#)

Name	All Inspections Performed By	All Reviews Complete By	User Group	Recurring Number of Months	Expected Cost	No. of Inspections	Not Started	Entered in BrM	In Review	Review Complete
April 2023 District 1	4/30/2023	6/30/2023	District 1 Inspectors			2	0	1	1	0
May 2023	5/31/2023	6/30/2023	District 1 Inspectors			7	7	0	0	0

2 items in 1 page

[Click to Manage Critical Findings](#)

# Early 7.0 – Inspection Review

Admin > General Config > Inspection Review

Inspection > My Pending Inspection Reviews

My In-Progress Inspection Reviews

Search  [Export](#)

Due Date for Review	Days Remaining for Review	Status	Bridge ID	District	County	Facility Carried	Feature Intersected	Inspector	Inspection Date	Previous Review Completed By
5/30/2023	34	QC Review	13	District 1	Allegheny	-	-	Inspector, Damage (No Quails)	4/25/2023	

« 1 » [Resume Inspection Review](#)

Inspections Pending Review

Search  [Export](#)

Due Date for Review	Days Remaining for Review	Status	Bridge ID	District	County	Facility Carried	Feature Intersected	Inspector	Inspection Date	Previous Review Completed By
6/30/2023	65	QC Review	10	District 1	Allegheny	-	-	User, Pontis	4/26/2023	

« 1 » 1 item in 1 page

## Where we're going – BrM 6.7.1

---

- Export/Import for Dashboards – Testing TAG
- Reset time in state after Optimizer sets same GCR – Connecticut
- Optimizer selecting Actions that do NOT meet Network Policy rules – Texas
- Cross Sections defaults to lowest offset instead of most current – Alabama
- API wrapper to accommodate AASHTO's OpenAPI
- Potential updates resulting from Truelight security scan



# Where we're going – The Next Generation of BrM: 7.0

---

- Database Overhaul
- NBIS Inspection Enhancements
  - Inspection module overhaul
  - Improved workflow and user experience
- Visual Forms Editor Overhaul
  - Built in mind to improve the user experience
  - Now using latest industry best practices
- BrM Sustainability
  - Continue efforts started with Early 7.0
  - Clear out old tech and bring in new
- Modernize look of the software

## Where we're going – BrM 7.1

---

- Update modeling and management modules to accommodate new fields & database updates.
- Modernize BrM with latest technologies to improve performance.
  - LCCA Engine
  - Projects Module
  - Optimizer
  - Network policies
  - Modeling settings
- Improved UI and workflow

# When we're going

BrM 6.7

March 2023

Spring 2025

(Last 1995 Coding Guide Submittal)

BrM 7.0

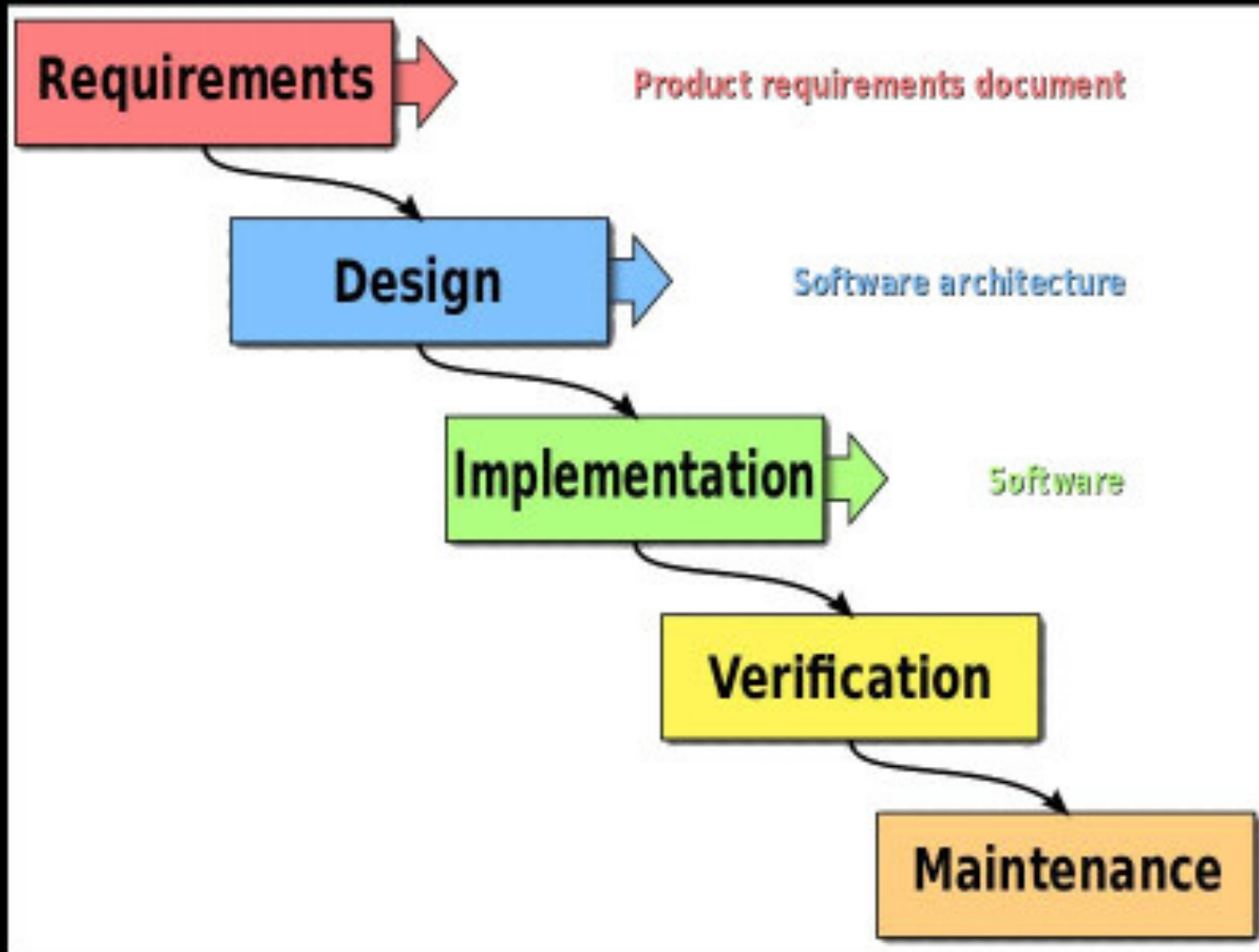
Fall 2024

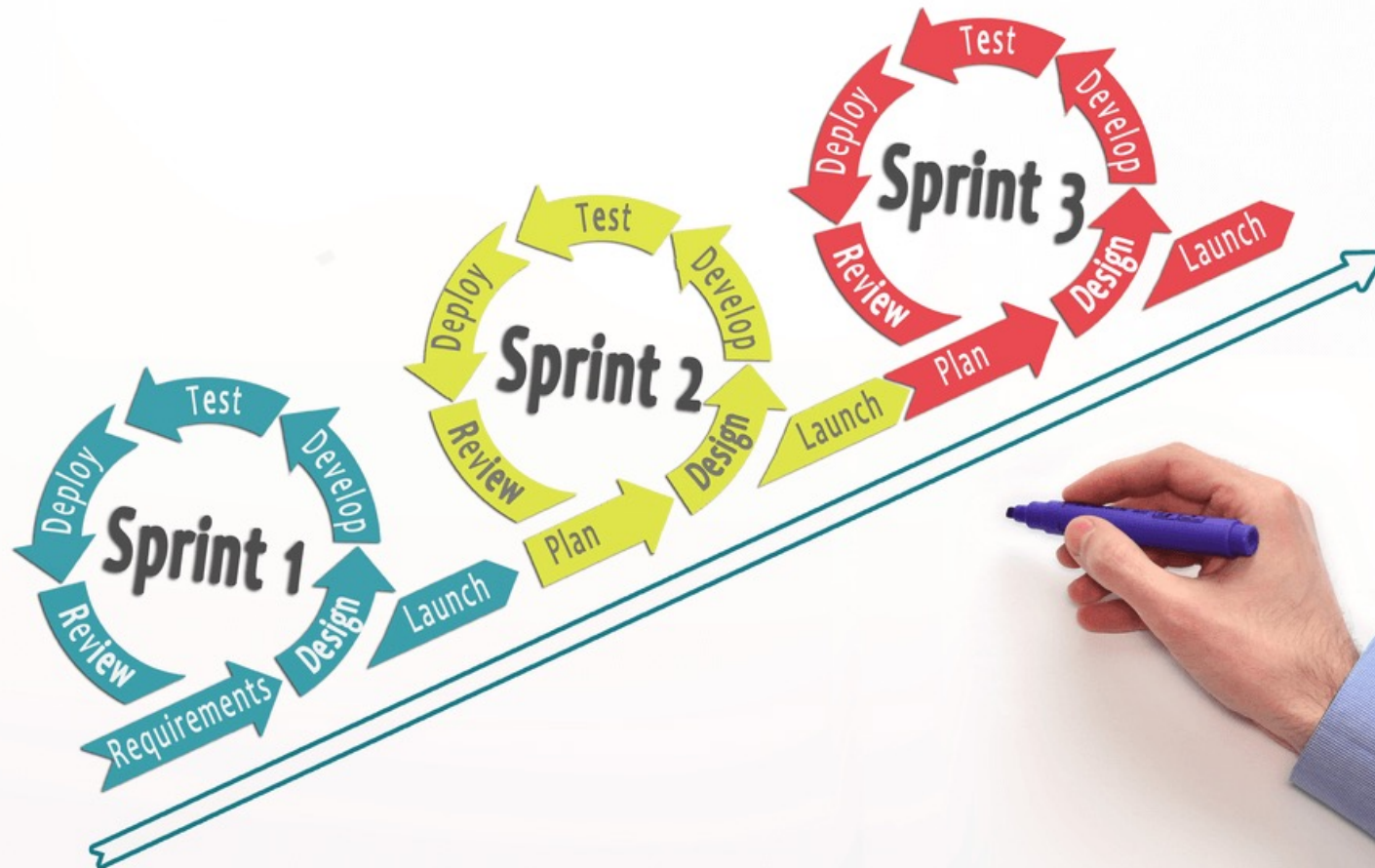
Summer 2026

(TAMP Due)

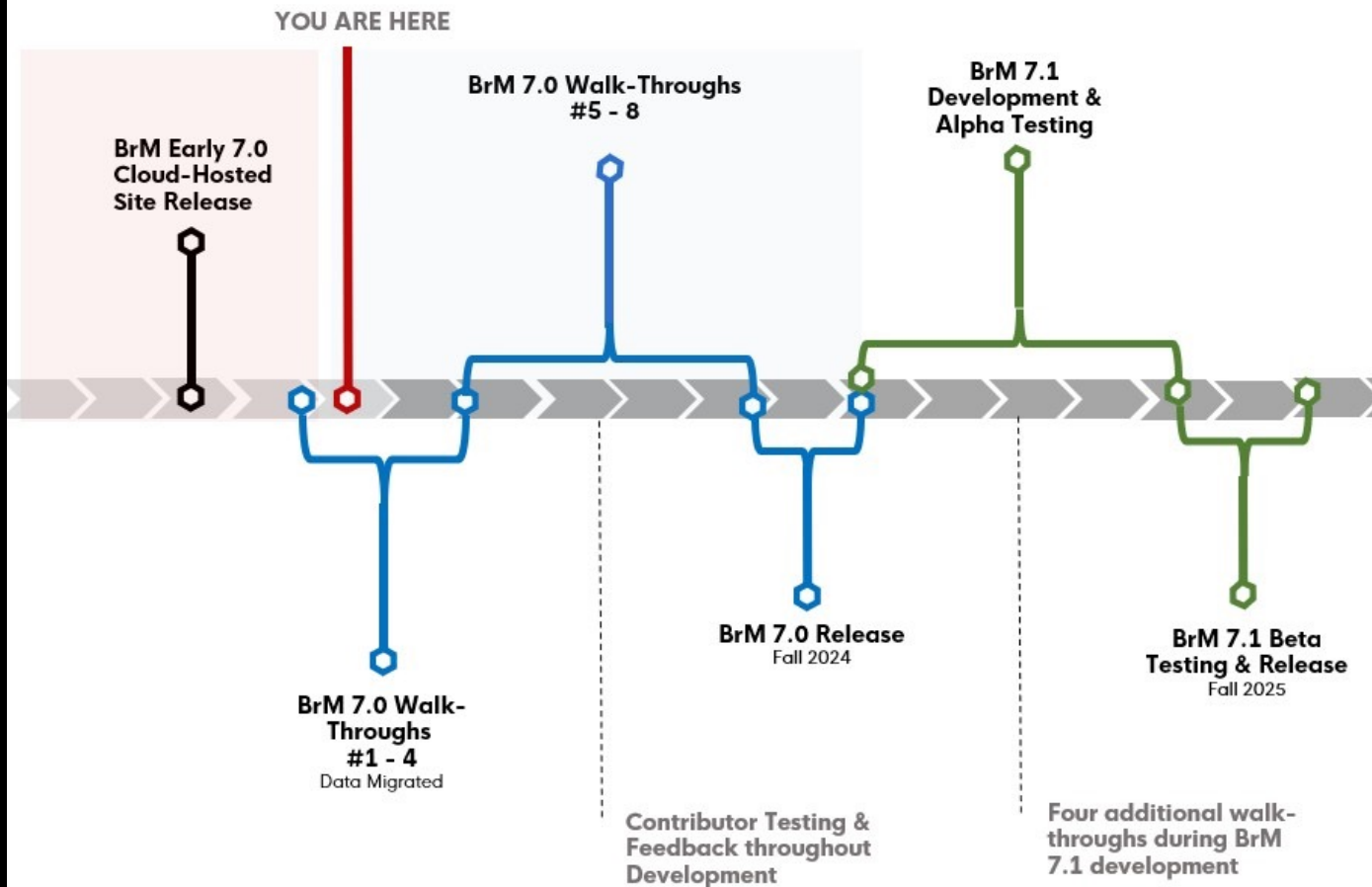
BrM 7.1

Fall 2025

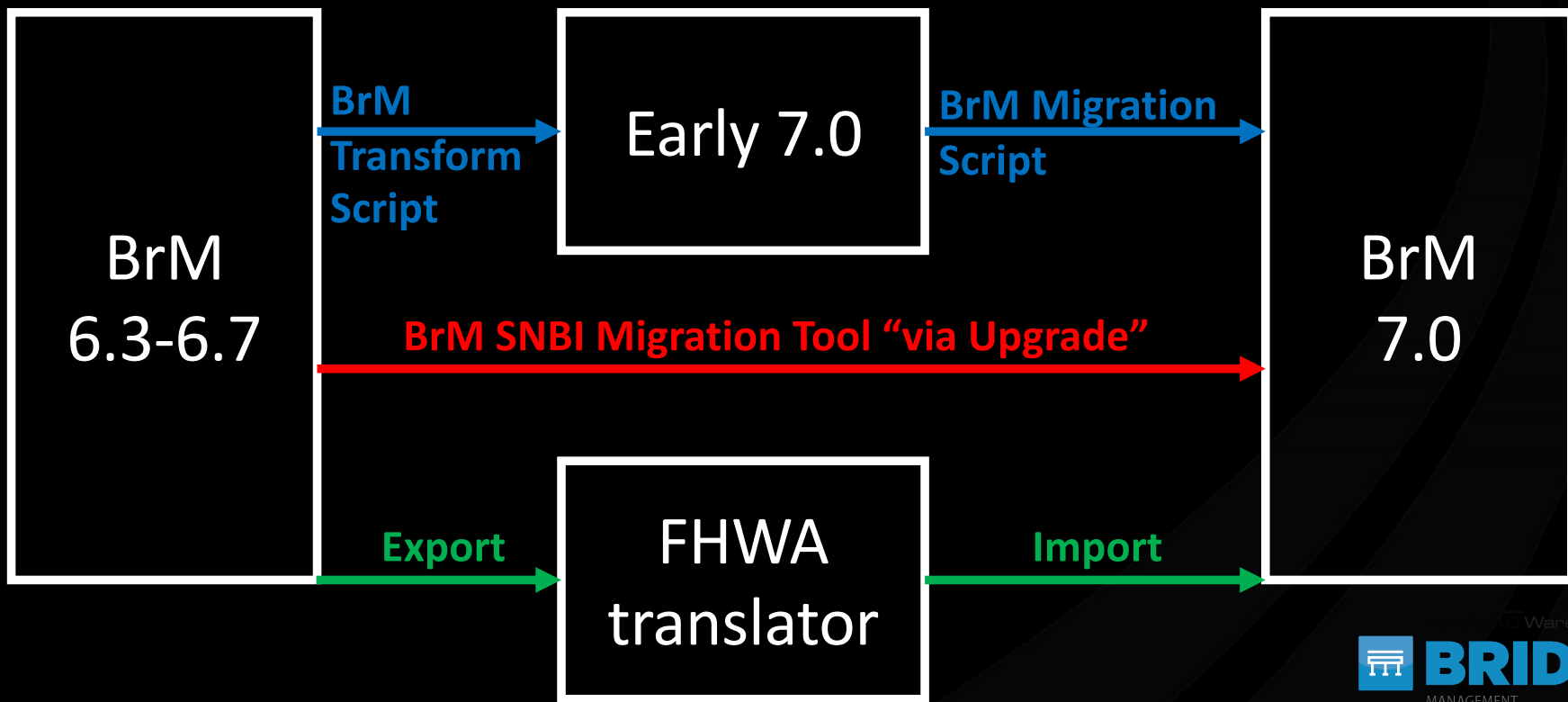




# BrM 7.0 / 7.1 High-Level Schedule



# Moving between versions





# Get involved!

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- Testing TAG
- Database TAG
- Optimizer TAG



# Task Force Update

BrM User Group Meeting  
Boise, Idaho  
September 19, 2023

David Hedeem  
BrM Task Force Chair  
Minnesota DOT | Bridge Office