



# Opening Remarks

Melissa Hennessy

**RADBUG President**

2025 Rating and Design User Group Meeting  
Boise, ID | August 12-13, 2025

## 2024 Upgraded Version

**BrR 7.2**



**BrR 7.5.1**



# ITD BrR Testing Program

- Extensive testing before changing to a new version
- Objective – To identify how new versions impact ratings
  - Need to explain Decrease/Increase in Route Capacity
- Pinpoint the reasons behind rating changes
  - + Change in AASHTO Codes
  - + Bug Fixed from Previous Versions
  - New Bug/Issue
- Use ArcTool to facilitate testing

# Evolving Program

- With upgrades to program, ITD has been able to model more bridges in BrR:
  - Steel Box Girders Bridges – **Presentation at 2:30 pm**
  - Metal culverts – **Presentation Wednesday at 3:30 pm**
  - Curved, flared, and complex multi-cell concrete box girders – Advanced Concrete Module

# Routing or Rating

Pennsylvania



Idaho



# Truck Factors / Bridge Factors

- Quick screening tool for Bridge Capacity and Truck Loads
  - Combines axle weights and spacing
- At ITD the truck factor is based on Federal Formula B

$$w = 500 \left( \frac{\ell n}{n-1} + 12n + 36 \right)$$

- $w$  = the maximum weight in pounds that can be carried on a group of two or more axles to the nearest 500 pounds (230 kg).
- $\ell$  = spacing in feet between the outer axles of any two or more consecutive axles.
- $n$  = number of axles being considered.

$$\frac{w}{\left( \frac{\ell n}{n-1} \right) + 12n + 36} = \text{Factor}$$

- Factor developed for all axle groupings use highest
- **Matt Farrar presenting on history and use of bridge factors Wednesday at 8am**

# ITD's Automated Permitting

- Starting August 4, 2021– All over-legal permits analyzed on every bridge on route. Truckers can create routes, and enter truck configurations. The full bridge analysis and self issue permits takes about 5 minutes.
- Current weekly average
  - 450 permits
  - 27,000 bridges analyzed
  - Bridge hours 20-30 hours

# ITD's Automated Permitting

- Load Rating Tool
- LFD Member Alternative
- LRFR
- 3D FEM
- Check Out To Run

# ITD's Automated Permitting

- Load Rating Tool
  - Uses pre-processed influence lines to quickly determine rating – 100 ratings / second
  - First included in 6.8.2 with limited capabilities
  - Starting with 7.2 includes LRFR

# ITD's Automated Permitting

- ITD updates bridge and load rating information quarterly
  - Backup of BrR database
  - Zip file of Load Rating Tool files
  - Spreadsheet with inventory information
- Able to make emergency changes via 511 restrictions system
- Can update bridge models and inventory information in between but testing is cumbersome

# ITD's Automated Permitting

- 121k Test – Run the 121k Truck over all State bridges through system. Match rating method and Operating Rating result.
- 240k Test – Run the 240k Truck over all State bridges through system. Match speed and lane requirements
- Side by Side (QA) - Run some permits manually and make sure they match bridges on route, ratings, and requirements. Check on all permits over 250k and truck factor over 800.

# AGENDA

## TUESDAY MORNING

7:00 a.m.–5:00 p.m.

### Registration

Landing, 2nd Floor

7:00 a.m.–8:00 a.m.

### Breakfast

Evergreen, 2nd Floor

8:00 a.m.–10:00 a.m.

### General Session

Aspen & Cedar, 2nd Floor

#### Welcome Remarks

Mike Johnson, *Idaho TD*

#### Opening Remarks

Melissa Hennessy, *User Group President, Idaho TD*

#### Introductions

All

#### AASHTOWare Overview

Ryan Fragapane, *AASHTO*

Shakita Battle-Morrow, *AASHTO*

#### AASHTOWare BrDR Task Force Update

Jennifer Hart, *Indiana DOT*

#### FHWA Update

Lubin Gao, *FHWA*

10:00 a.m.–10:30 a.m.

### Break

Landing, 2nd Floor

10:30 a.m.–Noon

### General Session (cont'd)

Aspen & Cedar, 2nd Floor

#### What's Coming in BrDR 7.7 and 7.8 & Beyond

Herman Lee, *ProMiles*

#### Railcars using BrR and MathCAD

Joffrey Easley, *Forte and Tablada*

#### Legal Load Rating of Bridges Using State-Specific Traffic Models

Ruben Boehler, *Illinois DOT*; and Sylwia Stawska, *Modjeski & Masters*

10:30 a.m.–Noon

### Ask the Experts

Ivy, 2nd Floor

10:30 a.m.–Noon

### Fundamentals Training Part 1

River Fork, 3rd floor

Daniel Antoniak and Mick Preston, *ProMiles*

Noon–1:00 p.m.

### Lunch

Evergreen, 2nd Floor

# AGENDA

## TUESDAY AFTERNOON

1:00 p.m.–3:00 p.m.

### **General Session** (cont'd)

Aspen & Cedar, 2nd Floor

#### **AASHTO Volunteer Survey Results & Strategic Plan**

Ryan Fragapane, *AASHTO*

#### **TAG Updates**

TAG Chairs & Vice Chairs

#### **Custom API Tool**

Sergey Markevich, *Caltrans*

#### **Steel Box Girders using BrR**

Peter Eschbacher and Katie Wisdom, *HDR*

1:00 p.m.–3:00 p.m.

#### **Ask the Experts**

Ivy, 2nd Floor

1:00 p.m.–3:00 p.m.

#### **Fundamentals Training Part 2**

River Fork, 3rd Floor

Daniel Antoniak and Mick Preston, *ProMiles*

3:00 p.m.–3:30 p.m.

#### **Break**

Landing, 2nd Floor

3:30 p.m.–5:00 p.m.

### **General Session** (cont'd)

Aspen & Cedar, 2nd Floor

#### **US-50 Blue Mesa Emergency Evaluation**

Jonathan Beckstrom and C.Y. Yong, *Michael Baker*

#### **Modeling and Verification of a High Skew Bridge in BrD 3D FEM**

Julianne Fuda and Kelsey Roman,  
*New York State DOT*

#### **Hosting with Kentucky TC**

Dora Alexander, KYTC and  
Geoffery Trees, *ProMiles*

3:30 p.m.–5:00 p.m.

### **API Forum**

Ivy, 2nd Floor

Moderators: Geoffrey Trees and Kyle Plummer,  
*ProMiles*

#### **API TAG Update**

Joe Barut, *Wisconsin DOT*

#### **Bridge Internal Redundant Member Analyzer Tool**

Chaz Kieffer, *Purdue*

#### **BrR Automation Tool Box**

Jenny Raines, Brett Mattas, and Ben Walter,  
*Michael Baker*; Shawn Sersland, *Iowa DOT*;  
Cindy Wang, *Ohio DOT*; and Rodrick Tucker,  
*South Carolina DOT*

5:00 p.m.

### **Adjourn for the Day**

# AGENDA

## WEDNESDAY MORNING

7:00 a.m.–8:00 a.m.

### Breakfast

Evergreen, 2nd Floor

8:00 a.m.–9:30 a.m.

### General Session (cont'd)

Aspen & Cedar, 2nd Floor

#### Gusset Plate Ratings in BrR

Adam Werntz, *WJE*

#### From Manual to Mastered: API-Powered QC at Scale for BrDR Models

Yun Lin, *Gresham Smith*

#### BrDR 7.5 and 7.6 Adoption

Mike Johnson, *Idaho TD*

8:00 a.m.–9:30 a.m..

#### Ask the Experts

Ivy, 2nd Floor

9:30 a.m.–10:00 a.m.

### Break

Landing, 2nd Floor

10:00 a.m.–11:00 a.m.

### AASHTOWare BrDR Spec Update Training

Aspen/Cedar, 2nd Floor

#### LRFD 10th Edition Spec Update—Lateral Torsional Buckling Example

Benjamin Flanagan, *ProMiles*

11:00 a.m.–Noon

### AASHTOWare BrR Spec Update Training

Aspen/Cedar, 2nd Floor

#### MBE 2024 Spec Interim Update—Truss Gusset Plate Example

Carolyn Kois, *ProMiles*

#### MBE 2024 Spec Interim Update—Permit Rating Example

Subhadeep Ghosh, *ProMiles*

11:00 a.m.–Noon

### AASHTOWare BrD Spec Update Training

Ivy, 2nd Floor

#### Steel Diaphragm Connection with Axial Rigidity Coefficient Example

Mick Preston, *ProMiles*

Noon–1:00 p.m.

### Lunch

Evergreen, 2nd Floor

# AGENDA

## WEDNESDAY AFTERNOON

1:00–1:30 p.m.

### **BrD/BrR Combined Business Meeting**

*Aspen/Cedar, 2nd Floor*

**Voting Members Only**

General Business Forum

1:30–3:00 p.m.

### **BrR Business Meeting**

*Aspen/Cedar, 2nd Floor*

**Voting Members Only**

Enhancement Voting & User Survey

*Igor Chernioglo, User Group Vice President BrR, Caltrans*

1:30–3:00 p.m.

### **BrD Business Meeting**

*Ivy, 2nd Floor*

General Business Forum

**Voting Members Only**

Enhancement Voting & User Survey

*Seth Webber, User Group Vice President BrD, Kansas DOT*

1:00–3:00 p.m.

### **Non-Member Discussion**

*River Fork, 3rd floor*

Staged Construction Ratings

*Alan Buehrig, Idaho TD*

Licensing Update/Catalog Changes

*Kyle Plummer, ProMiles, and Ben Sade, AASHTO*

AASHTOWare Alliance Program Update

*Shakita Battle-Morrow, AASHTO*

3:00 p.m.–3:30 p.m.

### **Break**

*Landing, 2nd Floor*

3:30 p.m.–5:00 p.m.

### **General Session (cont'd)**

*Aspen & Cedar, 2nd Floor*

Metal Culvert Ratings Demo  
and SSI Implementation Update

*Mark Mlynarski and Benjamin Flanagan, ProMiles*

BrDR Installation and Database Best  
Practices, Tips, and Tricks

*Kyle Plummer and Tony Baker, ProMiles*

Closing Remarks

*Melissa Hennessy, Idaho TD*

5:00 p.m.

**Meeting Adjourns**

# Enhancement Voting

- List of mini and small enhancements was emailed
- Large enhancement voting was last year
- Be ready to support your favorite enhancements

# Questions & Assistance

- RADBUG Officers
- AASHTO Staff
- Task Force
- ITD Staff
- Promiles Staff

# Special Thanks To

- Presenters
- Task Force Members
- Promiles Staff
- RADBUG Officers
- Ben, Ryan, Michele, and rest of AASHTO Staff who planned the meeting

# Introductions

- Name
- Agency
- Position

