Evaluation of Overweight Loads on Local Bridges

Wisconsin DOT

Bureau of Structures

April 22, 2026

Agenda

1	Background & Requirements
2	Survey Results
3	Load Rating Basics
4	Using HSI Data
5	Overweight Permit Bridge Evaluation Aid
6	When to Contact BOS
7	Sample Documentation
X	***Not covered in this training:*** *Specific Permit Types, Clearance Issues, Enforcement, Pavement Analysis*

BUREAU OF STRUCTURES

Background & Requirements

Federal regulations, documentation expectations and applicability

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Oversize/Overweight Loads

- Truck loads are getting heavier and more frequent
- Economic Importance vs. Infrastructure Risk
- OSOW Permits help…
  - Protect Wisconsin's roads and bridges
  - Keep the traveling public safe
  - Collect fees for increased wear on the system

When is a permit required?

Dimensions		
Width		8’-6”
Height		13’-6”
Length	Single Vehicle & Load	45’-0”
	Combination of 2 Vehicles	70’-0”
	Truck/Tractor & Semi Trailer	75’-0” (some exceptions)
Weights		
Any one wheel or wheels supporting one end of axle		11,000 lbs
Truck tractor steering axle		13,000 lbs
Single axle		20,000 lbs
Tandem axles		34,000 lbs
Gross weight on all axles		80,000 lbs
Additional axle weight & spacing limits		SP4075, Wis. Stats. Ch. 348

Legal Loads vs. Permit Loads

- How much weight can a bridge carry?
- If a bridge is posted at 5 tons, you know the limit is 5 tons.
- If it's posted at 40 tons, you know the limit is 40 tons.
- What if it's not posted? Can you cross it with unlimited load?
  - It can at least the legal load, but not unlimited permit loads
  - Some bridges are barely strong enough for an 80,000-lb semi
  - Others are extremely strong and can carry > 300,000-lb loads
  - A 200,000-lb permit load may be OK for some bridges on route, but not all

Who issues permits?

- Permits are issued by the authority responsible for maintenance of the highway.
  - Wisc. Statutes 348.27, 348.27, Trans 254
  - Interstate Highways, State Trunk Highways, U.S. Highways
    - WisDOT
  - Local Highways
    - “Officer in charge of maintenance” varies from jurisdiction to jurisdiction
    - May include county highway commissioner; the city, town or village engineer; the head of a city, town or village transportation or public works department; or other person

Code of Federal Regulations – 23 CFR 650.313(k)(3)

"Analyze routine and special permit loads for each bridge that these loads cross to verify the bridge can safely carry the load."

What this means for local agencies:

- Bridges must be identified and evaluated for single-trip overweight permits
- Compliance is reviewed by WisDOT BOS and FHWA during Quality Assurance (QA) reviews
- QA reviewers may request documentation for any single-trip overweight permits issued in the past year for bridges in the QA random sample
- Local agencies with permitting authority are responsible for maintaining this documentation

Routine vs. Special Permit Loads

*"Analyze **routine** and special permit loads for each bridge that these loads cross to verify the bridge can safely carry the load."*

- **Routine** permits, a.k.a. "Multi-Trip"
  - Many different types, valid 3 to 12 months, unlimited trips
  - Process for local permits varies from jurisdiction to jurisdiction
  - For permits allowing loads up to 98k-on-6, postings cover it
  - Some multi-trip permits can be up to 170,000 lbs.
  - HSI indicates max allowable load on bridges for multi-trip permits
    - **The analysis has already been done!**
      - *Exception: Implements of Husbandry (multi-trip permit, but load + route analysis required)*

Routine vs. Special Permit Loads

*"Analyze routine and **special** permit loads for each bridge that these loads cross to verify the bridge can safely carry the load."*

- **Special** permits, a.k.a. "Single-Trip"
  - Valid for 14 days, 1 trip only
  - Load and route are specified and submitted for review
  - No maximum weight
  - Evaluation of specific load and bridges required
    - HSI can be useful, but additional engineering evaluation often needed

Applicability – Which Permits Require Documentation?

✓ APPLIES TO	✗ DOES NOT APPLY
Single-Trip (Special) Overweight Permits	Size-Only Permits (length, width, height)
Bridge-Length Structures (> 20 ft)	Multi-Trip (Routine) Permits
	Non-Bridge-Length Structures (≤ 20 ft)

Documentation Requirements

From the March 2026 Policy Memo:

Minimum for tabulated report	1. Identification of the permit (permit number or other unique ID) 2. Date permit was issued or date of evaluation 3. Gross vehicle weight
May be in report or within stored documents linked each Permit ID	4. Bridges crossed 5. Vehicle configuration (axle count, weights, spacings) 6. Travel restrictions (lanes, speed limits, escort requirements) 7. Responsible party who performed the evaluation

Meeting the Requirement – Two Acceptable Methods

Method A:
Automated Permitting System

Agencies with high permit volume may already be using an automated routing / permitting system or digital database.

System must allow reports searchable by Bridge ID and date range, while recording other required info with each permit.

Method B:
Manual Spreadsheet Log

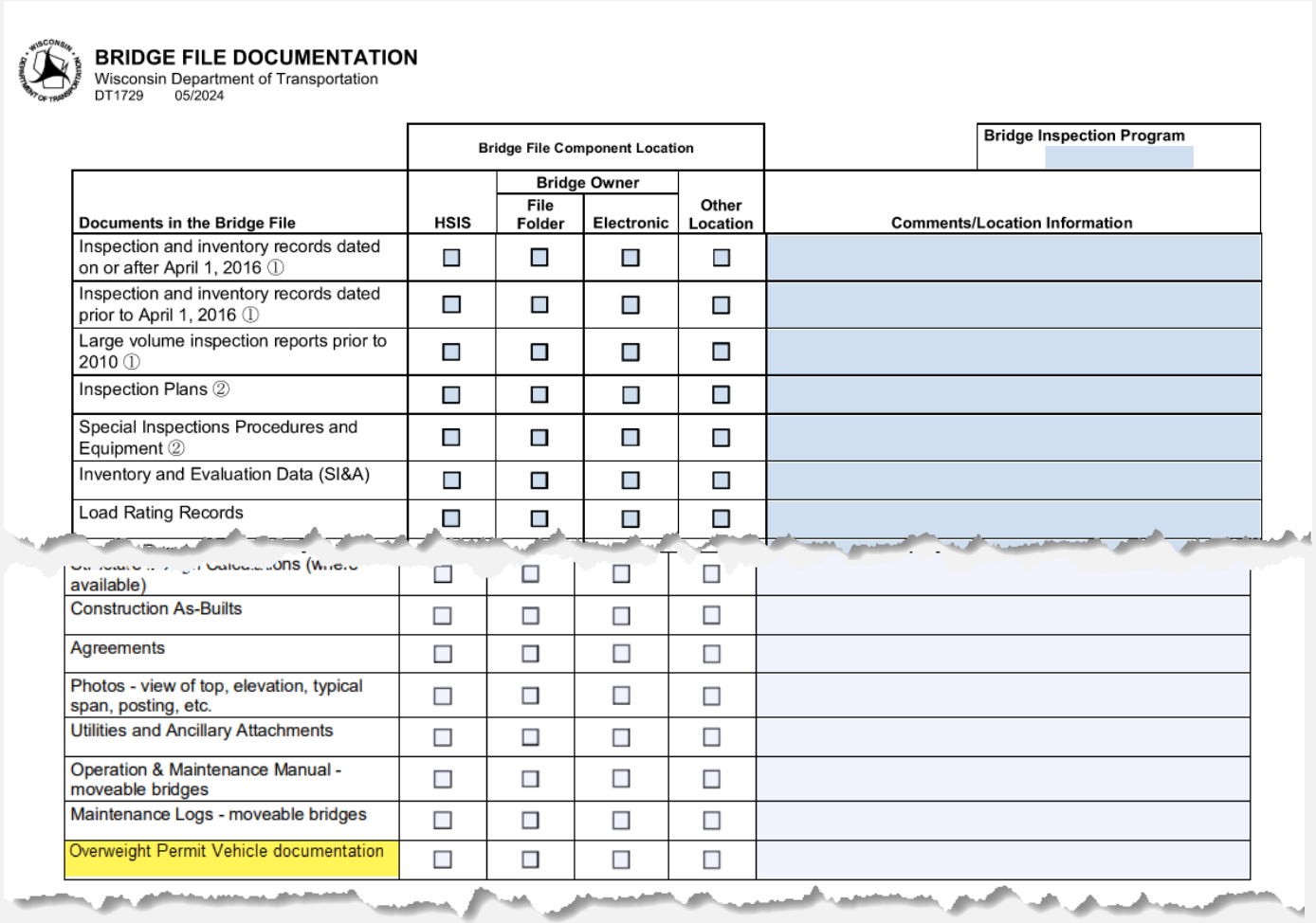
Maintain a manual log using spreadsheet software (e.g., Microsoft Excel).

Must be organized so a specific bridge can be readily searched for permits issued over that bridge.

Bridge Documentation – Form DT1729

During QA reviews, WisDOT / FHWA will ask where permit documentation is kept.

This should be recorded on WisDOT **Form DT1729** (Bridge File Documentation).



BRIDGE FILE DOCUMENTATION
Wisconsin Department of Transportation
DT1729 05/2024

Documents in the Bridge File	Bridge File Component Location: HSIS	Bridge Owner: File Folder	Bridge Owner: Electronic	Other Location	Bridge Inspection Program: Comments/Location Information
Inspection and inventory records dated on or after April 1, 2016 ①	☐	☐	☐	☐	
Inspection and inventory records dated prior to April 1, 2016 ①	☐	☐	☐	☐	
Large volume inspection reports prior to 2010 ①	☐	☐	☐	☐	
Inspection Plans ②	☐	☐	☐	☐	
Special Inspections Procedures and Equipment ②	☐	☐	☐	☐	
Inventory and Evaluation Data (SI&A)	☐	☐	☐	☐	
Load Rating Records	☐	☐	☐	☐	
[illegible] available)	☐	☐	☐	☐	
Construction As-Builts	☐	☐	☐	☐	
Agreements	☐	☐	☐	☐	
Photos - view of top, elevation, typical span, posting, etc.	☐	☐	☐	☐	
Utilities and Ancillary Attachments	☐	☐	☐	☐	
Operation & Maintenance Manual - moveable bridges	☐	☐	☐	☐	
Maintenance Logs - moveable bridges	☐	☐	☐	☐	
Overweight Permit Vehicle documentation	☐	☐	☐	☐	

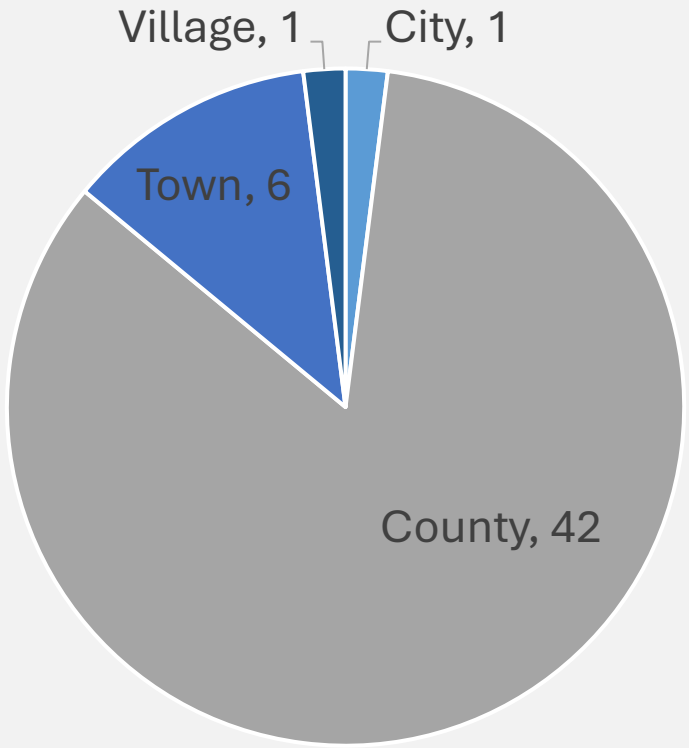
Survey Results

What WisDOT learned from local agencies in its 2025 OSOW permitting survey

2

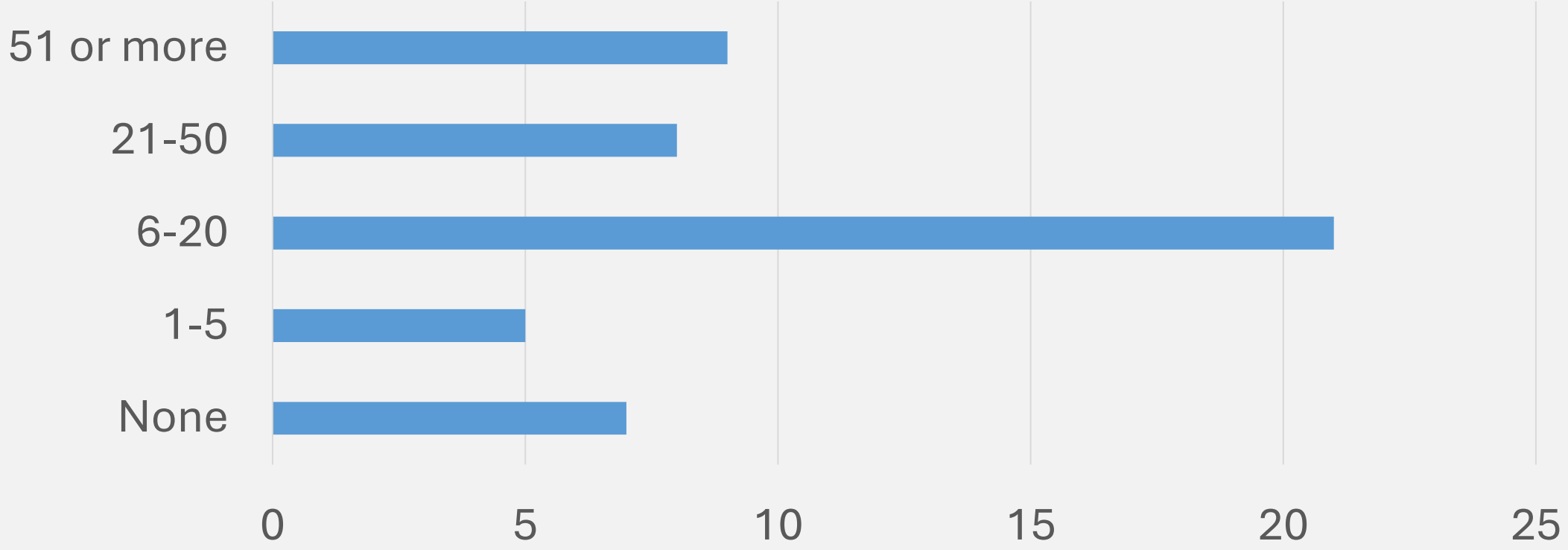
Local Agency OSOW Permitting Survey

- Survey emailed in Summer 2025 to County Highway Commissioners
  - 50 responses



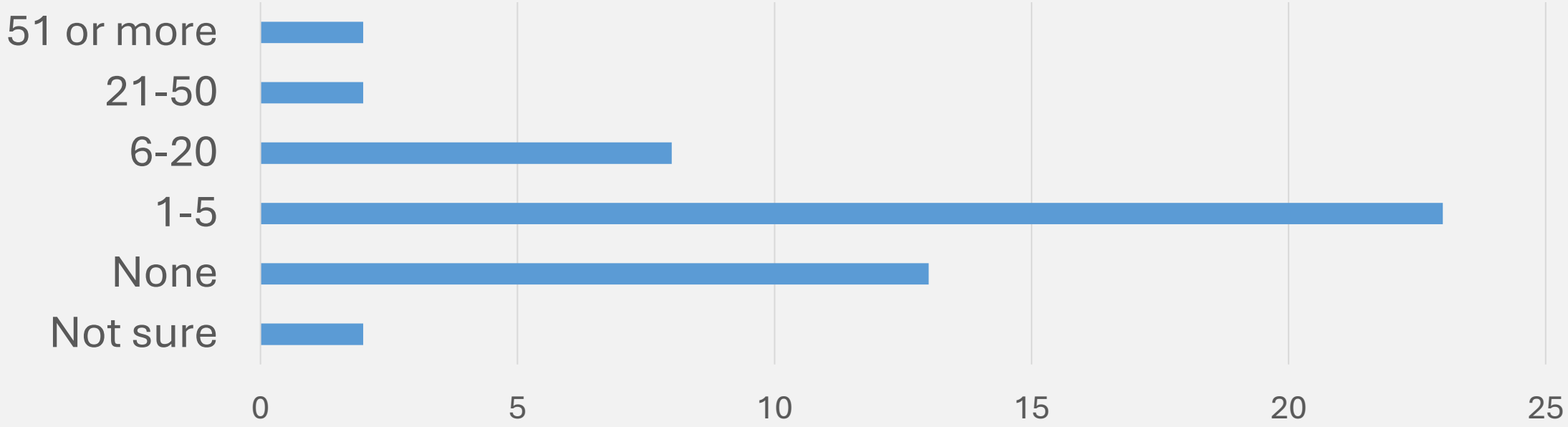
Local Agency OSOW Permitting Survey

Approximately how many single-trip OSOW applications does your agency receive annually?



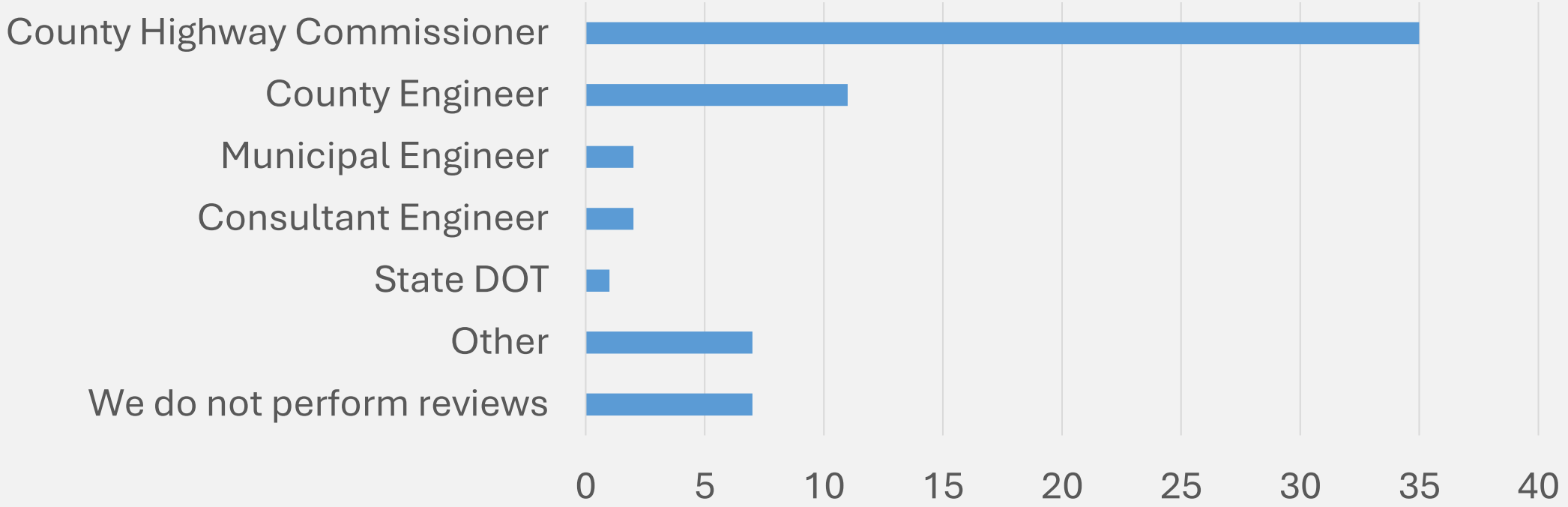
Local Agency OSOW Permitting Survey

Approximately how many single-trip OSOW permit applications does your agency receive annually with gross vehicle weights exceeding 170,000 lbs.?



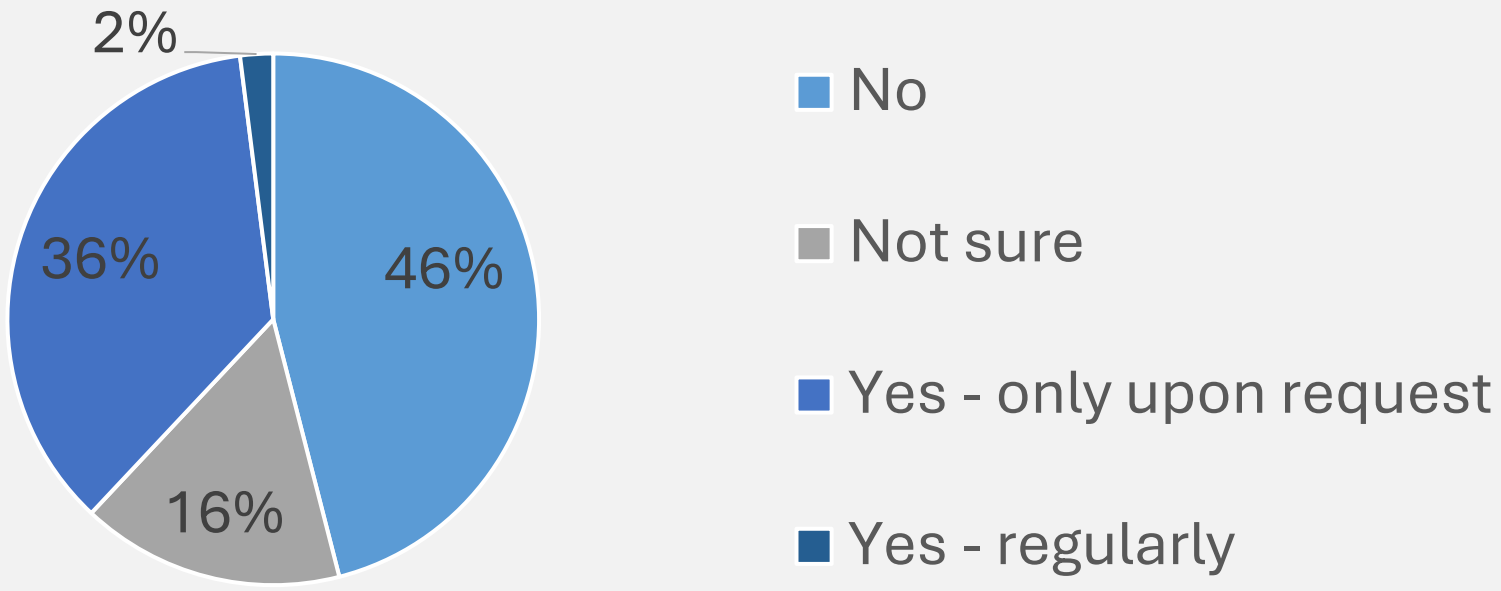
Local Agency OSOW Permitting Survey

Who is responsible for reviewing OSOW applications involving bridges within your jurisdiction?



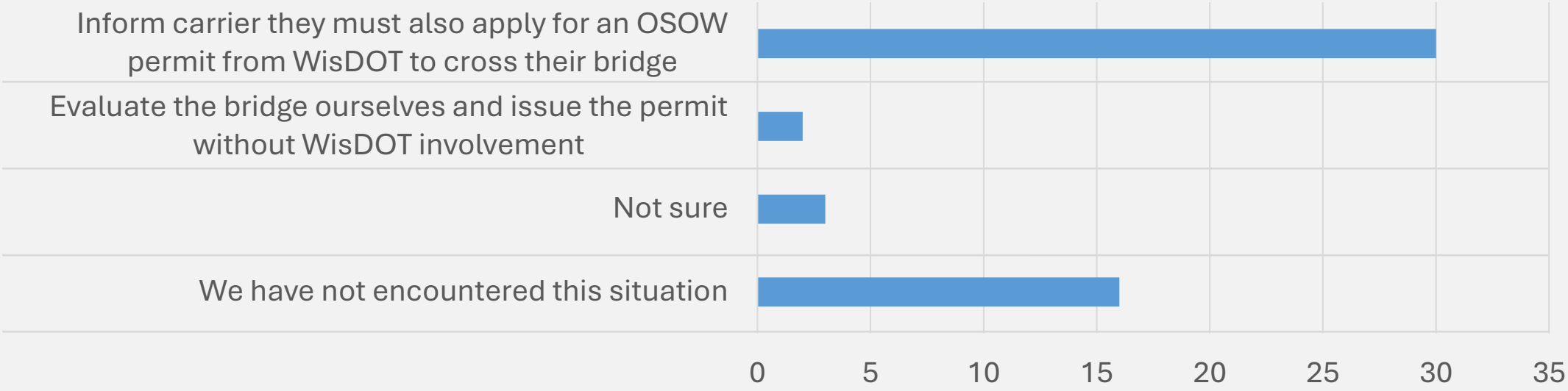
Local Agency OSOW Permitting Survey

Has WisDOT assisted with evaluating OSOW loads on your bridges?



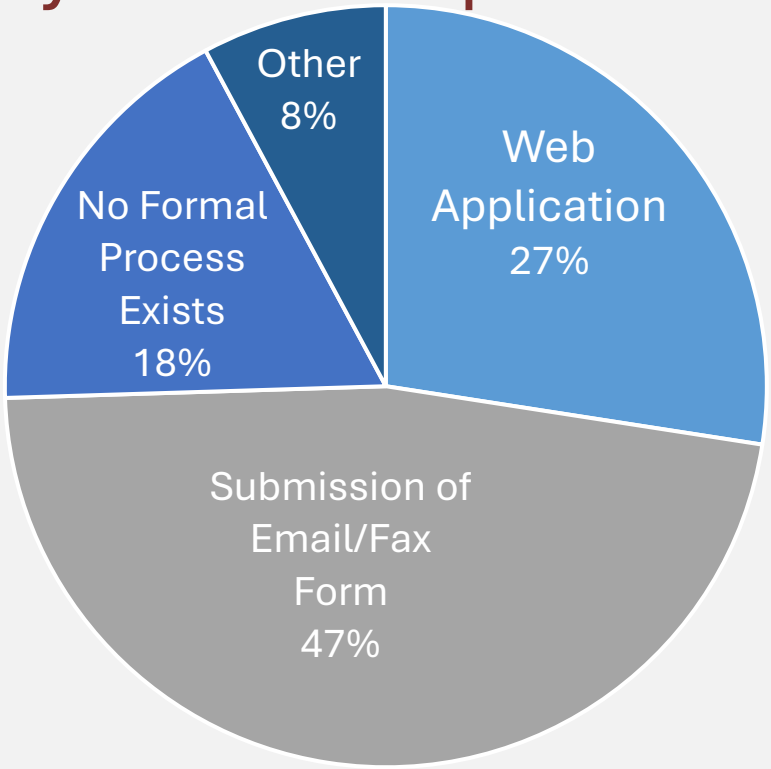
Local Agency OSOW Permitting Survey

For OSOW loads on local roads traveling over IH, STH, or USH (state-owned bridges), what is your agency's process for evaluating the bridge and issuing the permit?



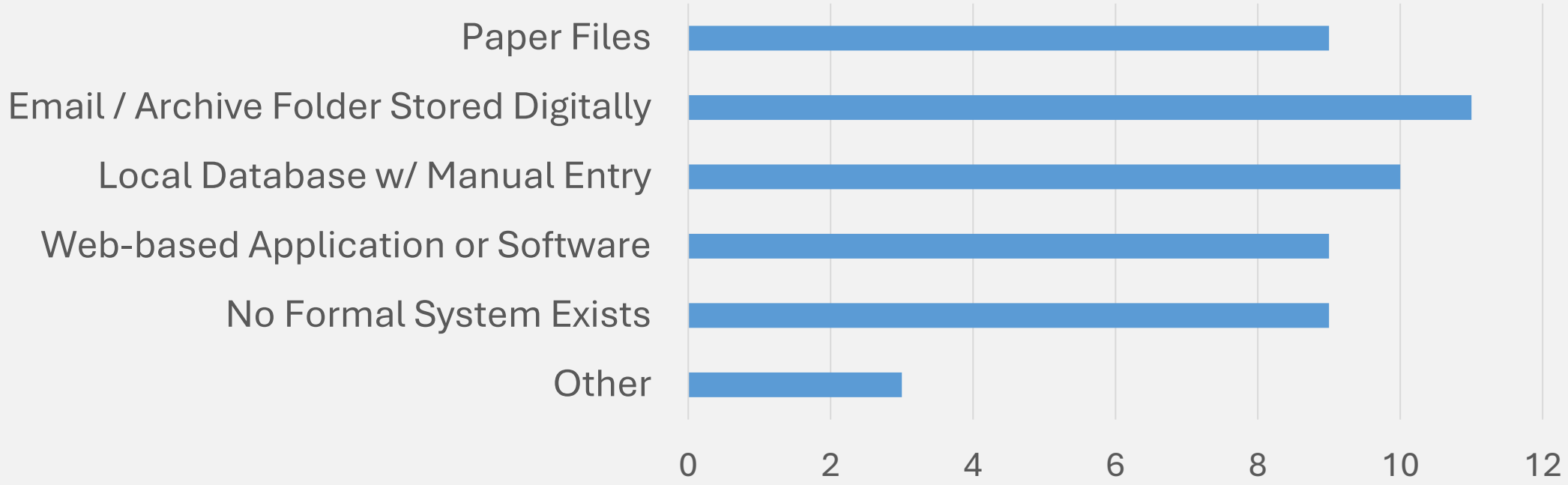
Local Agency OSOW Permitting Survey

How do carriers apply for OSOW permits within your agency?



Local Agency OSOW Permitting Survey

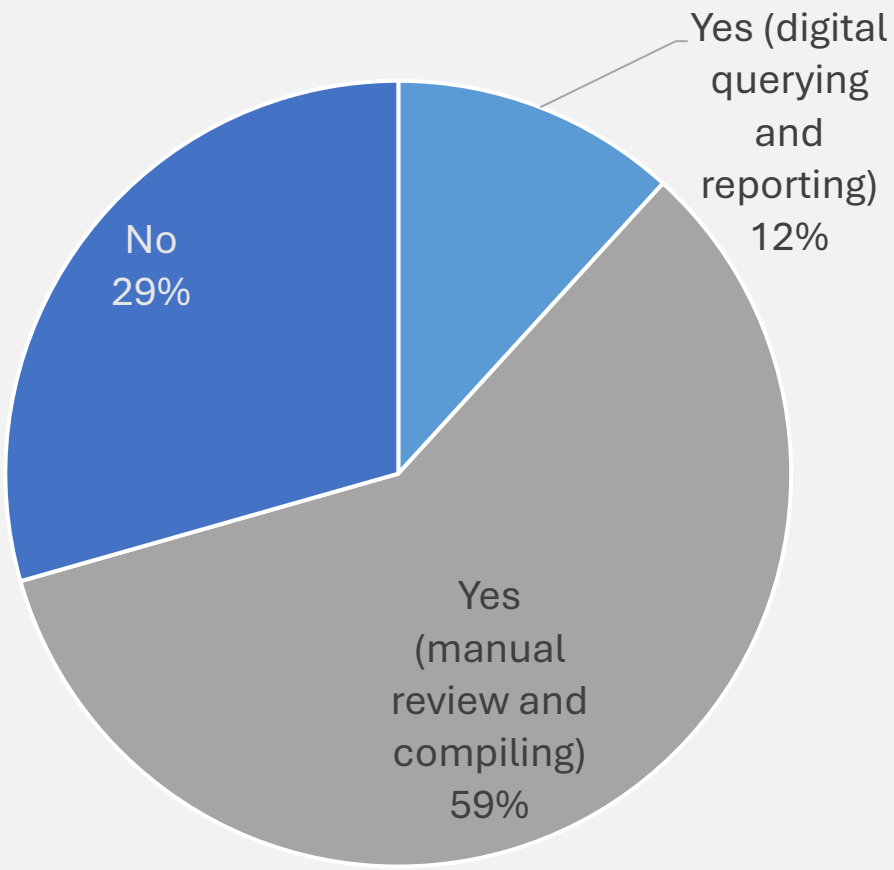
How does your agency document and retain records of OSOW permits involving bridges?



Local Agency OSOW Permitting Survey

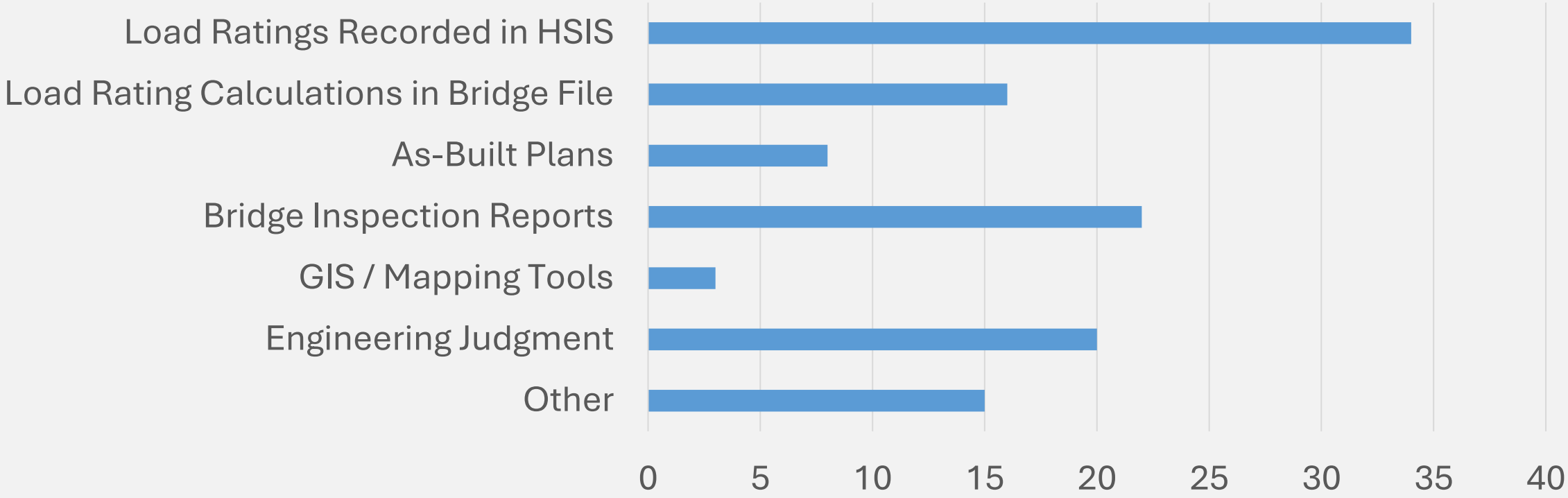
If requested, can your agency provide documentation for single-trip OSOW permits issued for a given bridge and time period?

(Permit IDs, dates, gross vehicle weights, and bridges crossed)



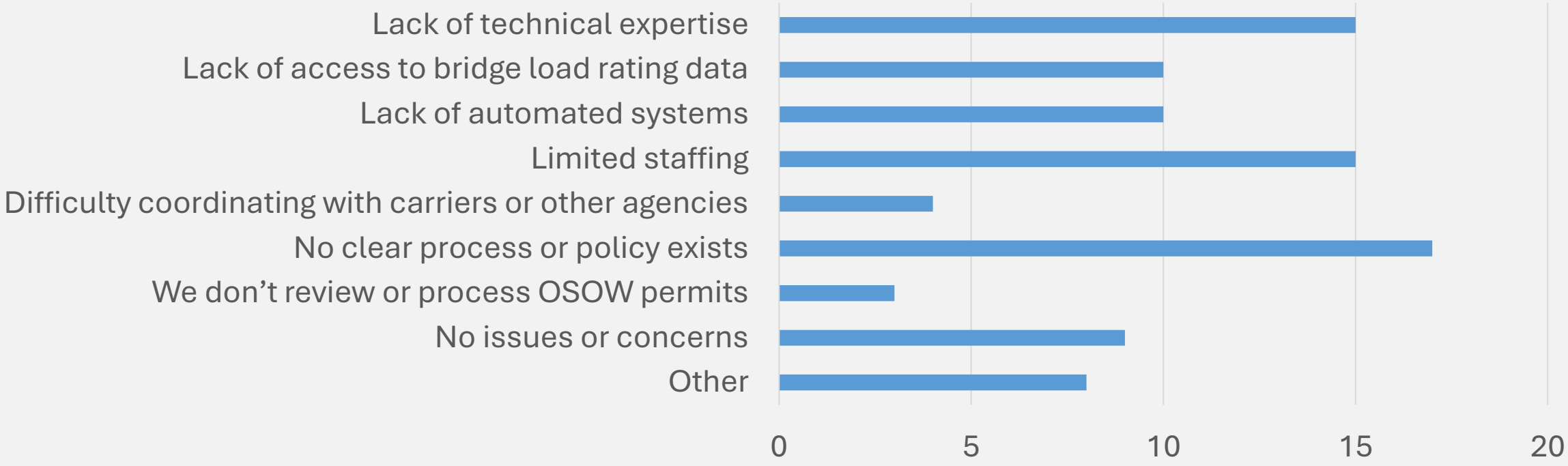
Local Agency OSOW Permitting Survey

What resources do you use to evaluate whether an overweight permit can be issued when it involves bridges?



Local Agency OSOW Permitting Survey

What are the biggest challenges your agency faces when reviewing or processing OSOW permits involving bridges?



Local Agency OSOW Permitting Survey

What additional resources or support would help your agency better manage OSOW permits involving bridges?

- Training
  - Processes / Guidelines
  - Load Ratings
  - Posted Limits vs. Permit Limits
  - Axle Weights & Spacing
  - State-Owned Bridges on Local Roads
  - Contacts for Assistance
- Automated / Web-Based System
- Web App w/ Map + Load Ratings
- Law Enforcement Training
- Height / Width Clearance Issues
- None - No Bridges / Class B Roads Only

Load Rating Basics

How to find load ratings and use them for overweight permit evaluations

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What is a Bridge Load Rating?

A **load rating** is an expression of a bridge's live load carrying capacity, or how much traffic load a bridge can safety support beyond its own weight.

- Determined by licensed engineers, per AASHTO and FHWA requirements
- Based on reference vehicle configurations (not a simple tonnage limit)
- Load ratings are stored in WisDOT's Highway Structures Information System (HSI)
- Load ratings change due to deterioration, inspection findings, or rehabilitation

Why Load Ratings Matter

Heavier Vehicles on Older Bridges

Posting and Restrictions

Maintenance and Rehab Needs

Issuing OSOW Permits

Inventory & Operating Rating

- Inventory Rating
  - Load that can safely utilize the bridge for an indefinite period
- Operating Rating
  - Maximum permissible live load that can be placed on the bridge
  - More frequent loads allowed at operating level may shorten lifespan of the bridge
  - **Used for permit evaluation**

Rating Factors

LRFR

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_P)(P)}{(\gamma_{LL})(LL + IM)}$$

LFR

$$RF = \frac{C - A_1 D}{A_2 L(1+I)}$$

ASR

$$RF = \frac{C - D}{L(1+I)}$$

RF = (Capacity – Dead Load Effect) / (Live Load Effect)

"Remaining Capacity" ***"What You're Trying to Carry"***

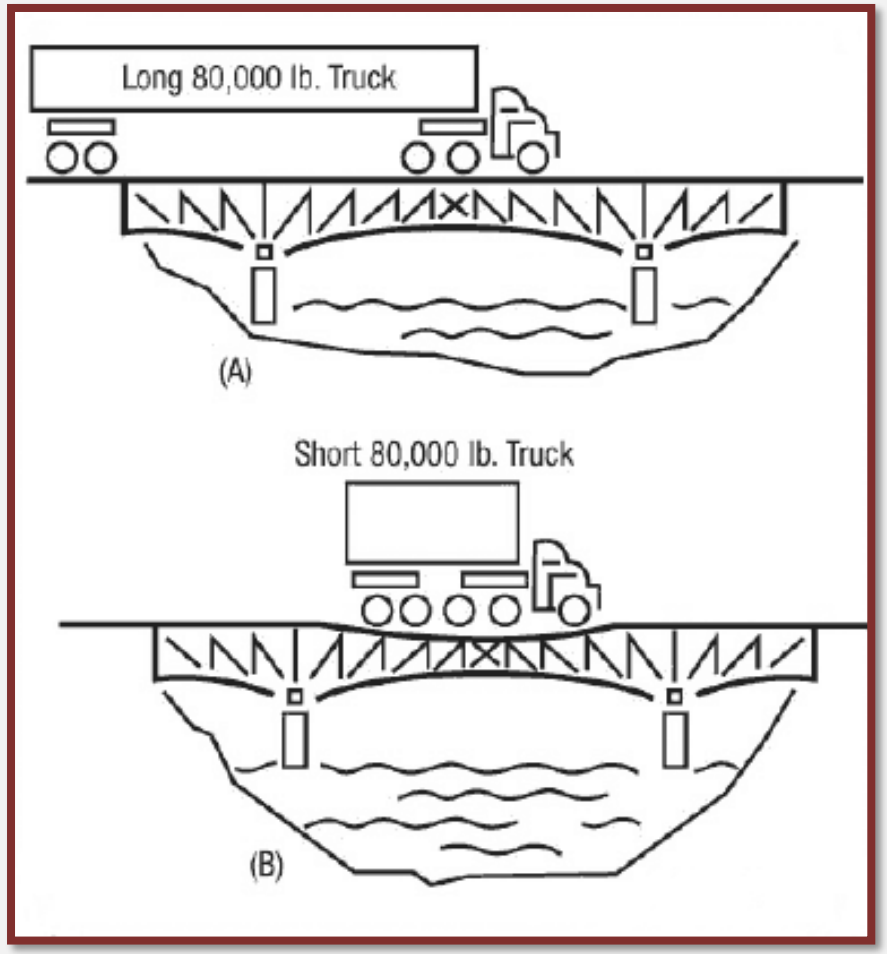
RF > 1.0 → Load can safety cross

- Remaining capacity is greater than load you're trying to carry

RF < 1.0 → Load must be denied or re-routed

- Remaining capacity is less than the load you're trying to carry

Configuration & Rating Factors



Rating Factors are specific to a vehicle configuration.

It's not just total weight that matters.

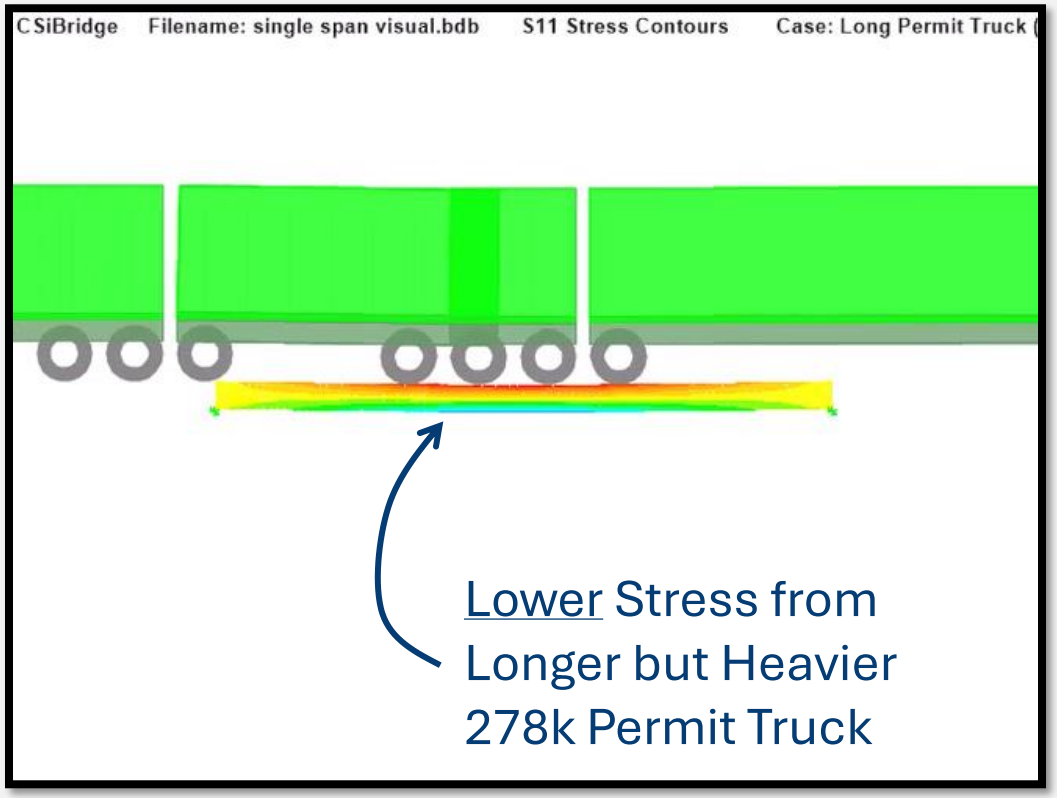
Weight per axle, number of axles, and spacing between axles matter too.

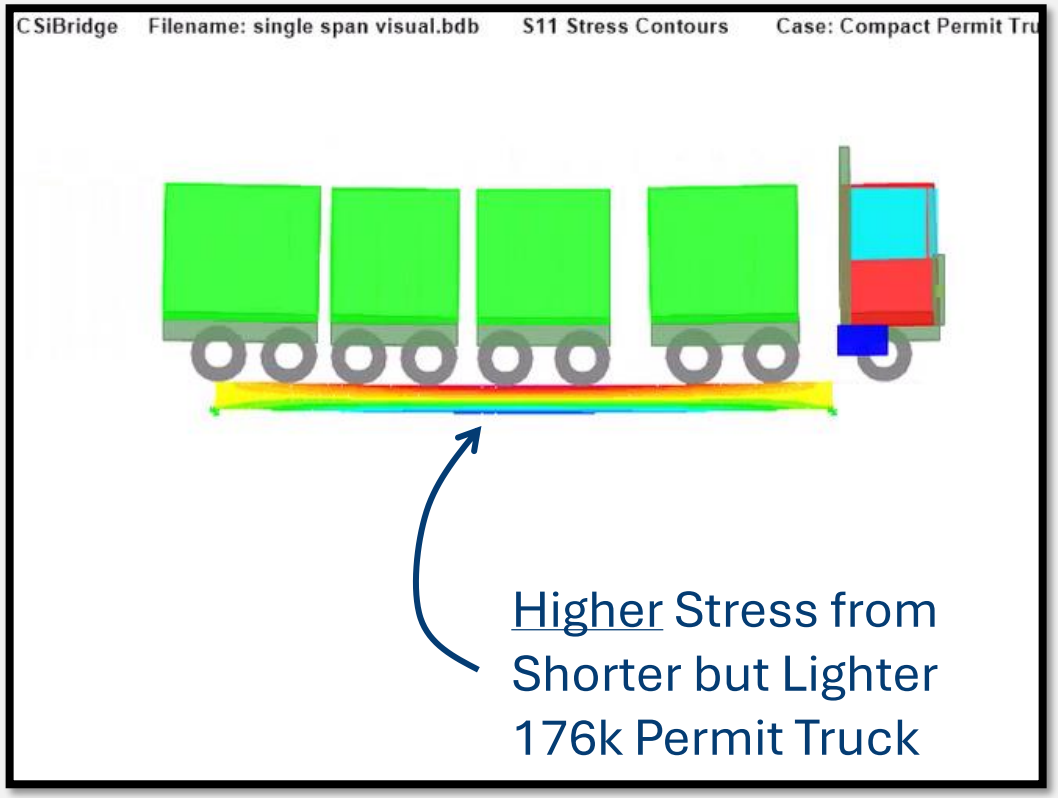
In general, the more the load is spread out, the less stress it puts on the bridge, resulting in a higher rating factor.

RF (long truck) > RF (short truck)

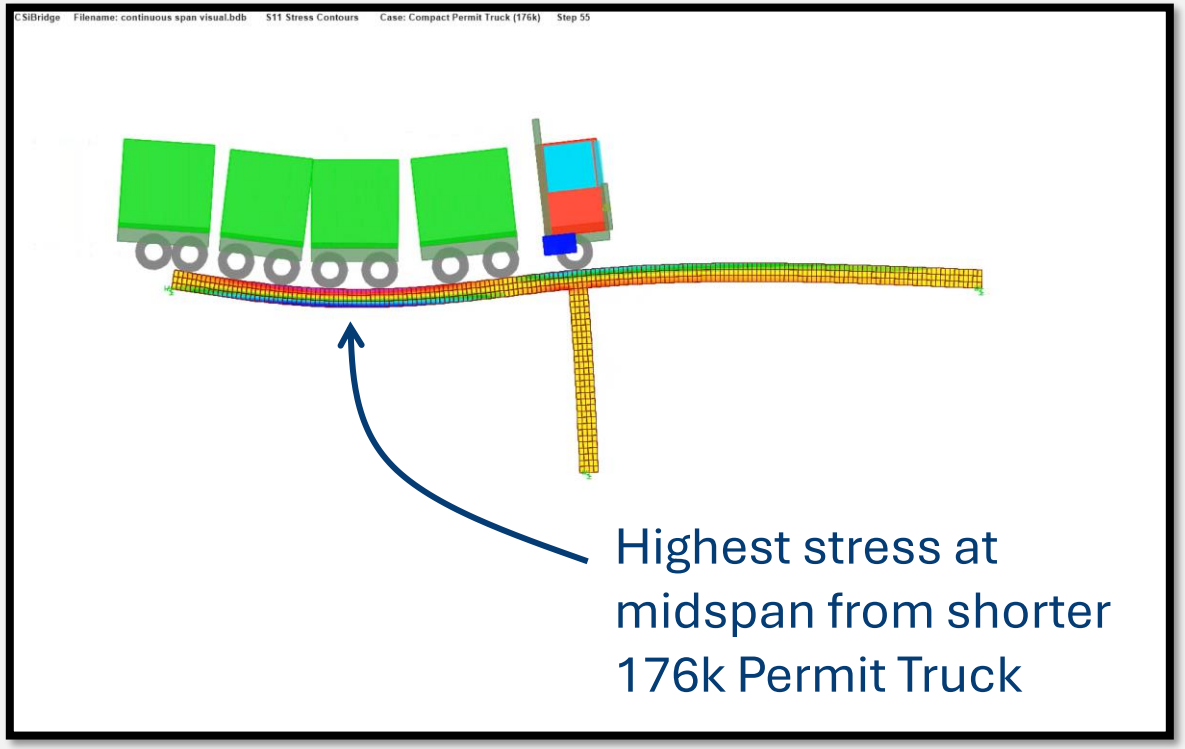
Typically true for simple spans, less certain for continuous spans

Configuration & Rating Factors

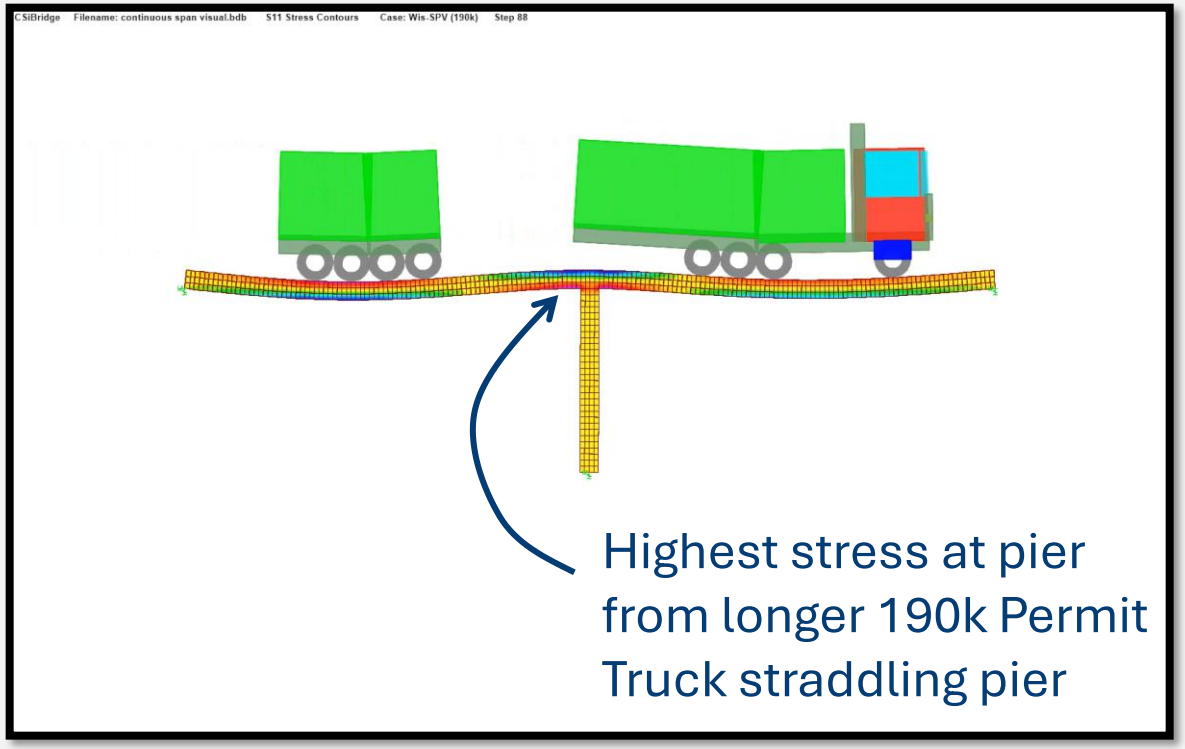




Configuration & Rating Factors

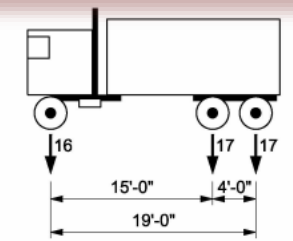


Highest stress at midspan from shorter 176k Permit Truck

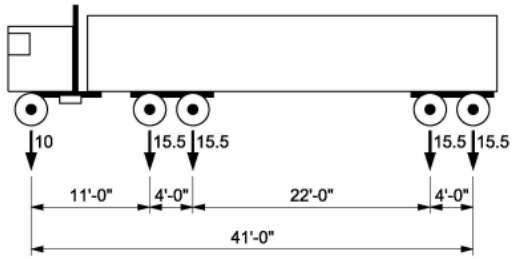


Highest stress at pier from longer 190k Permit Truck straddling pier

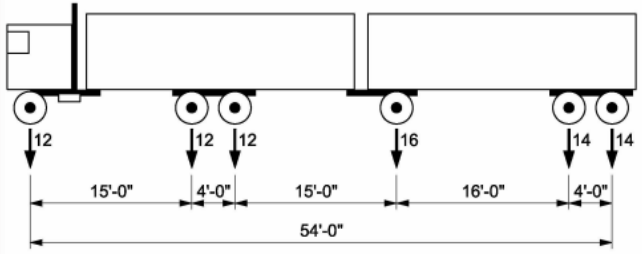
Standard Load Rating Vehicles



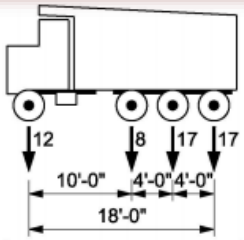
Type 3 Unit Weight = 50 Kips (25 tons)



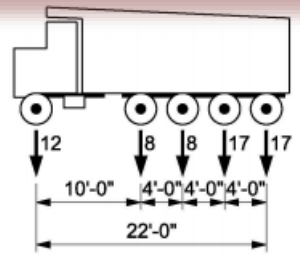
Type 3S2 Unit Weight = 72 Kips (36 tons)



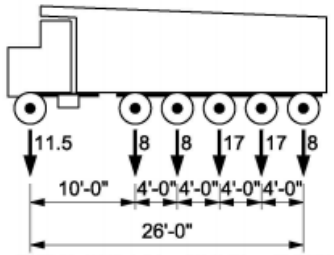
Type 3-3 Unit Weight = 80 Kips (40 tons)



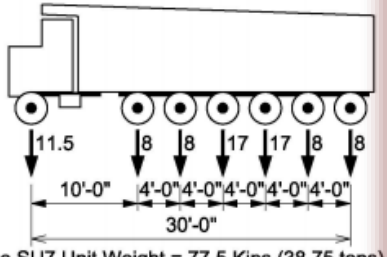
Type SU4 Unit Weight = 54 Kips (27 tons)



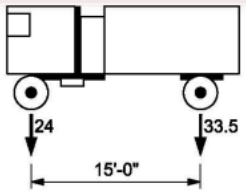
Type SU5 Unit Weight = 62 Kips (31 tons)



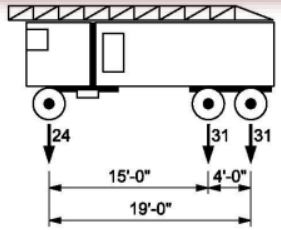
Type SU6 Unit Weight = 69.5 Kips (34.75 tons)



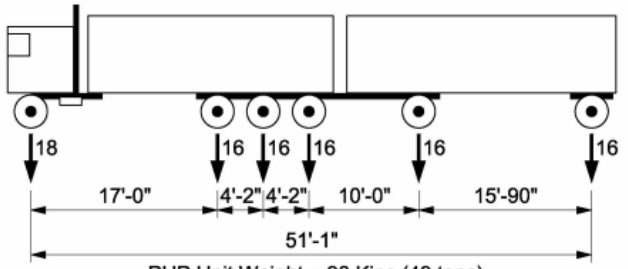
Type SU7 Unit Weight = 77.5 Kips (38.75 tons)



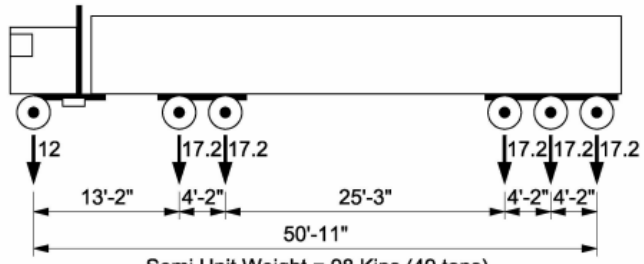
EV2 Unit Weight = 57.5 Kips (28.75 tons)



EV3 Unit Weight = 86 Kips (43 tons)

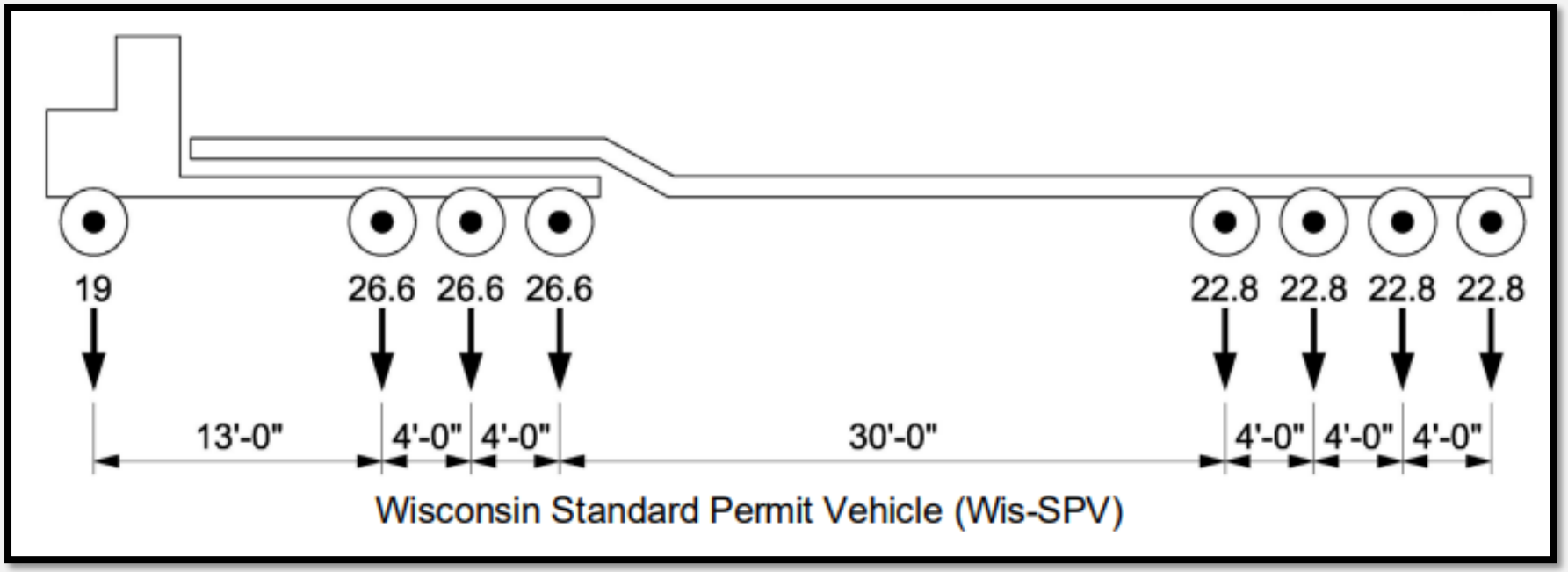


PUP Unit Weight = 98 Kips (49 tons)



Semi Unit Weight = 98 Kips (49 tons)

Wisconsin Standard Permit Vehicle



Wisconsin Standard Permit Vehicle (Wis-SPV)

Refined Analysis & Travel Conditions

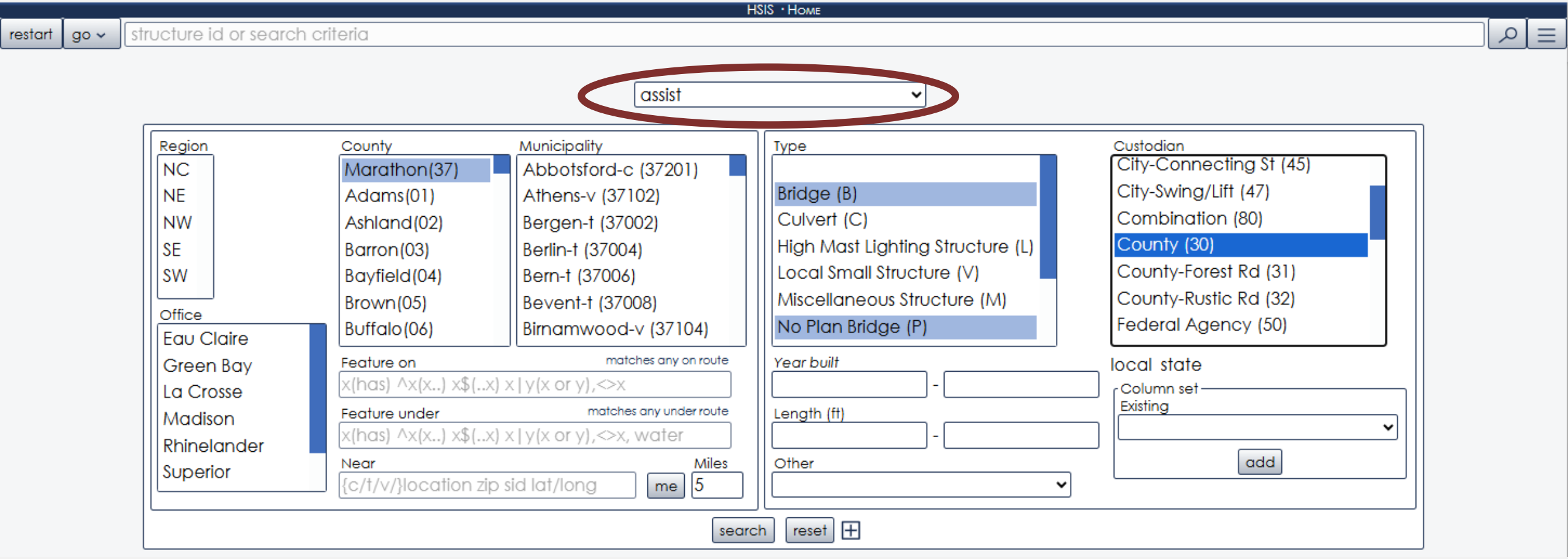
- When a first-pass analysis fails, consider…
- Travel Restrictions
  - Slow down to 5 mph (removes ~1.3 “impact factor”)
  - Center the load on the bridge
  - Escort the load, ensuring only the permit truck is on bridge
- Refined Analysis
  - 3D modeling of the bridge
  - Consideration of wider truck loads (12’ to 18’ wide mega-loads)

Using HSI Data

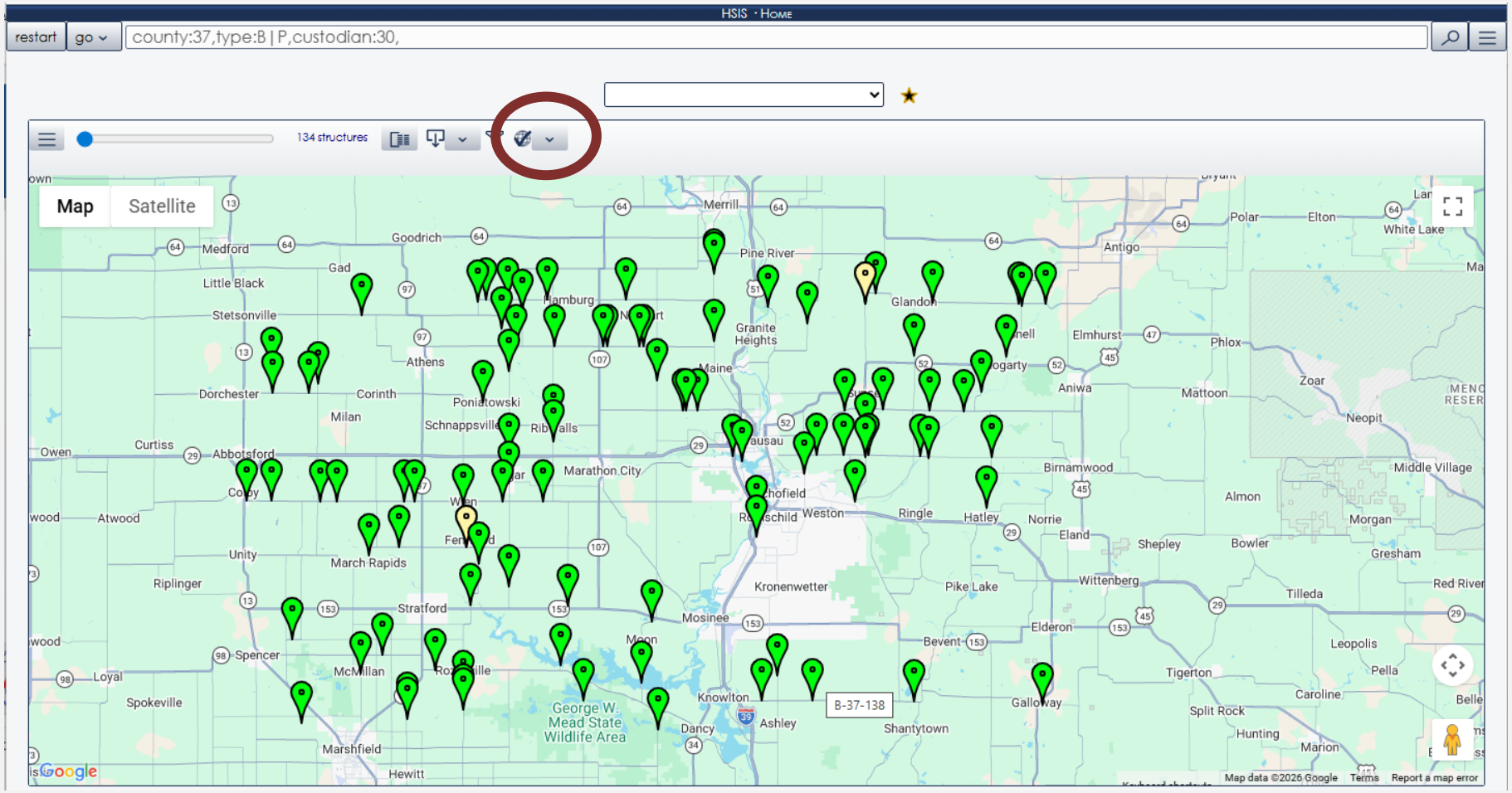
Bridge identification, location, and load ratings

4

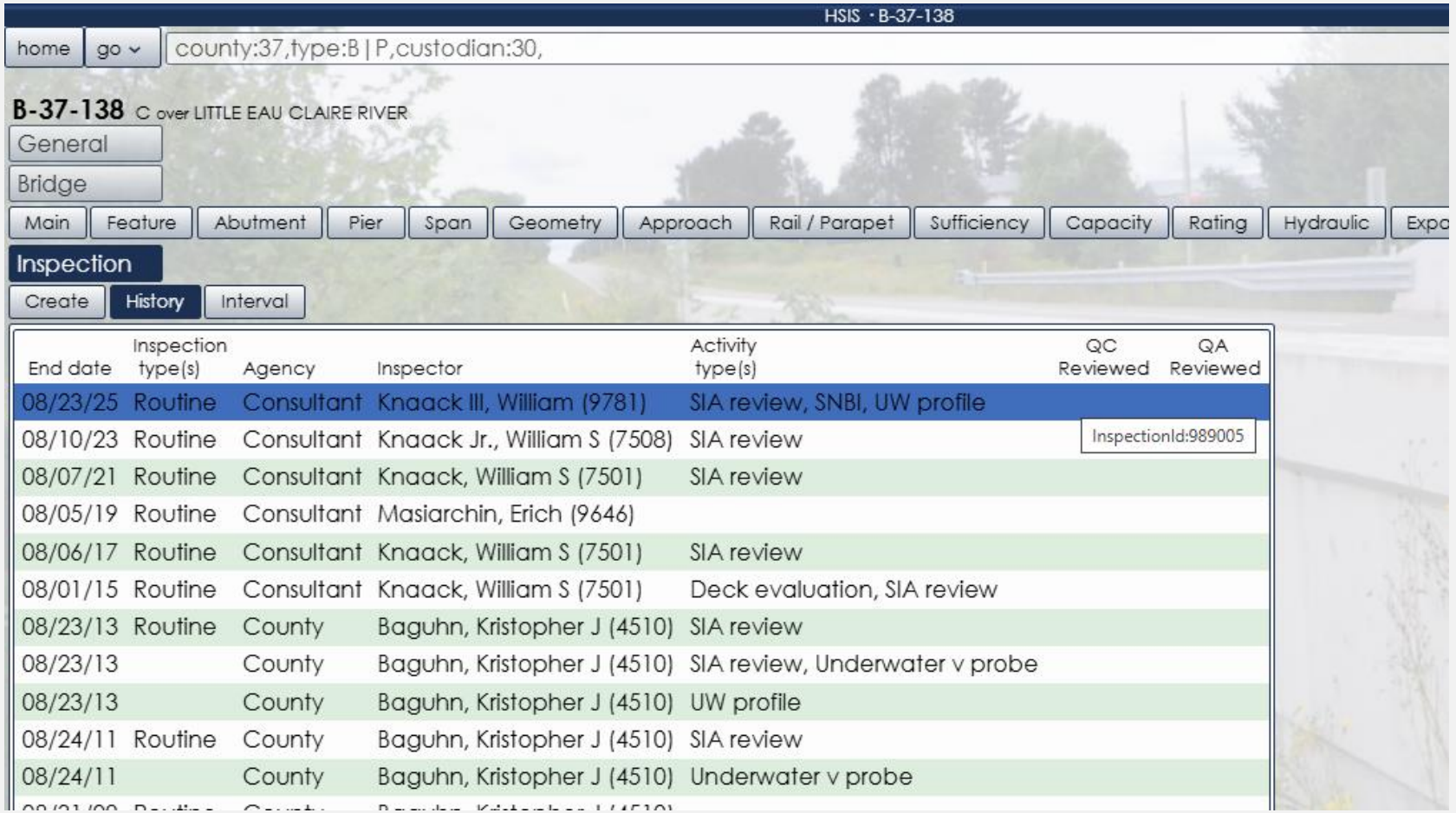
“Assist” Search Tool



Select Bridges via Map

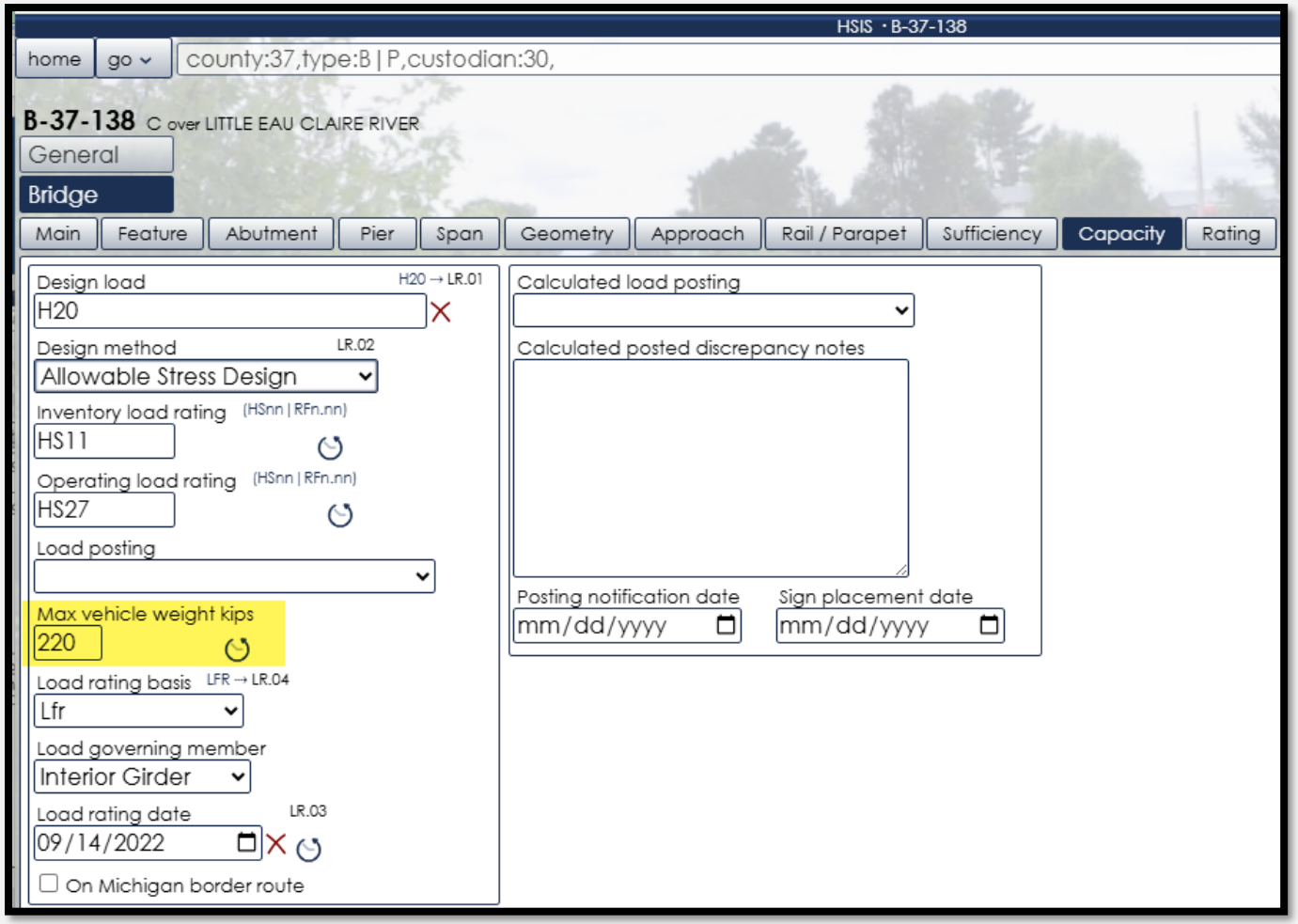


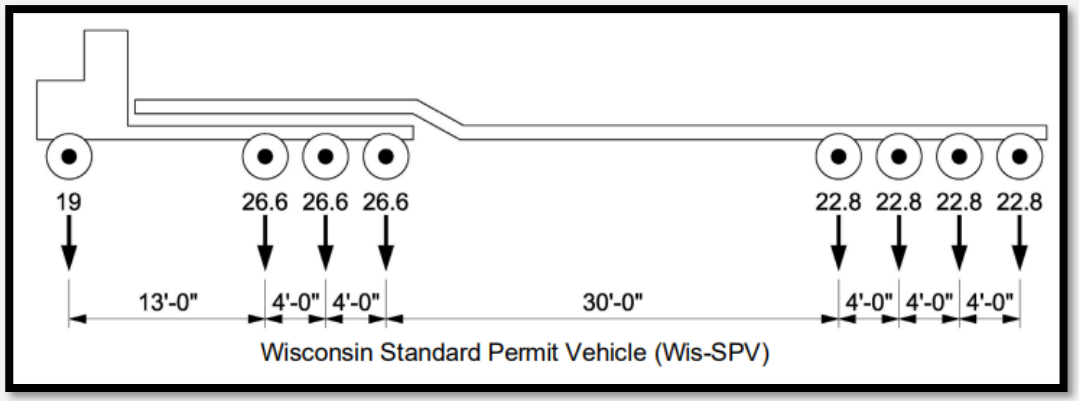
Inspection Reports



End date	Inspection type(s)	Agency	Inspector	Activity type(s)	QC Reviewed	QA Reviewed
08/23/25	Routine	Consultant	Knaack III, William (9781)	SIA review, SNBI, UW profile		
08/10/23	Routine	Consultant	Knaack Jr., William S (7508)	SIA review		
08/07/21	Routine	Consultant	Knaack, William S (7501)	SIA review		
08/05/19	Routine	Consultant	Masiarchin, Erich (9646)			
08/06/17	Routine	Consultant	Knaack, William S (7501)	SIA review		
08/01/15	Routine	Consultant	Knaack, William S (7501)	Deck evaluation, SIA review		
08/23/13	Routine	County	Baguhn, Kristopher J (4510)	SIA review		
08/23/13		County	Baguhn, Kristopher J (4510)	SIA review, Underwater v probe		
08/23/13		County	Baguhn, Kristopher J (4510)	UW profile		
08/24/11	Routine	County	Baguhn, Kristopher J (4510)	SIA review		
08/24/11		County	Baguhn, Kristopher J (4510)	Underwater v probe		

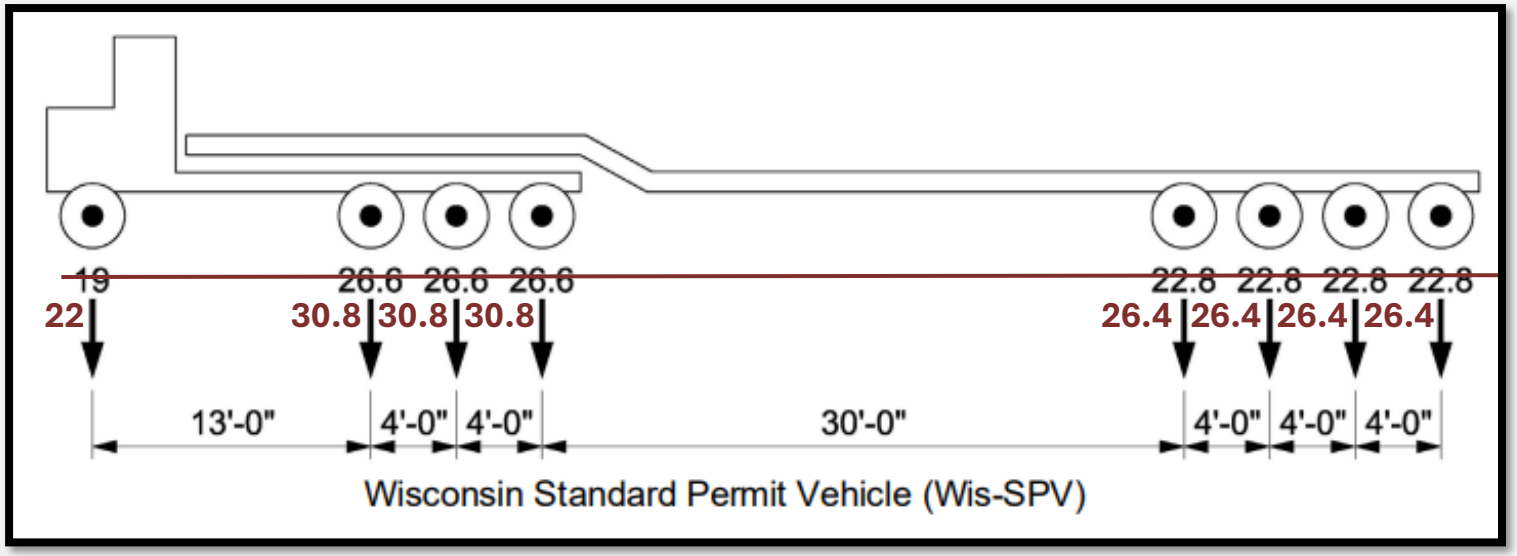
Capacity Tab





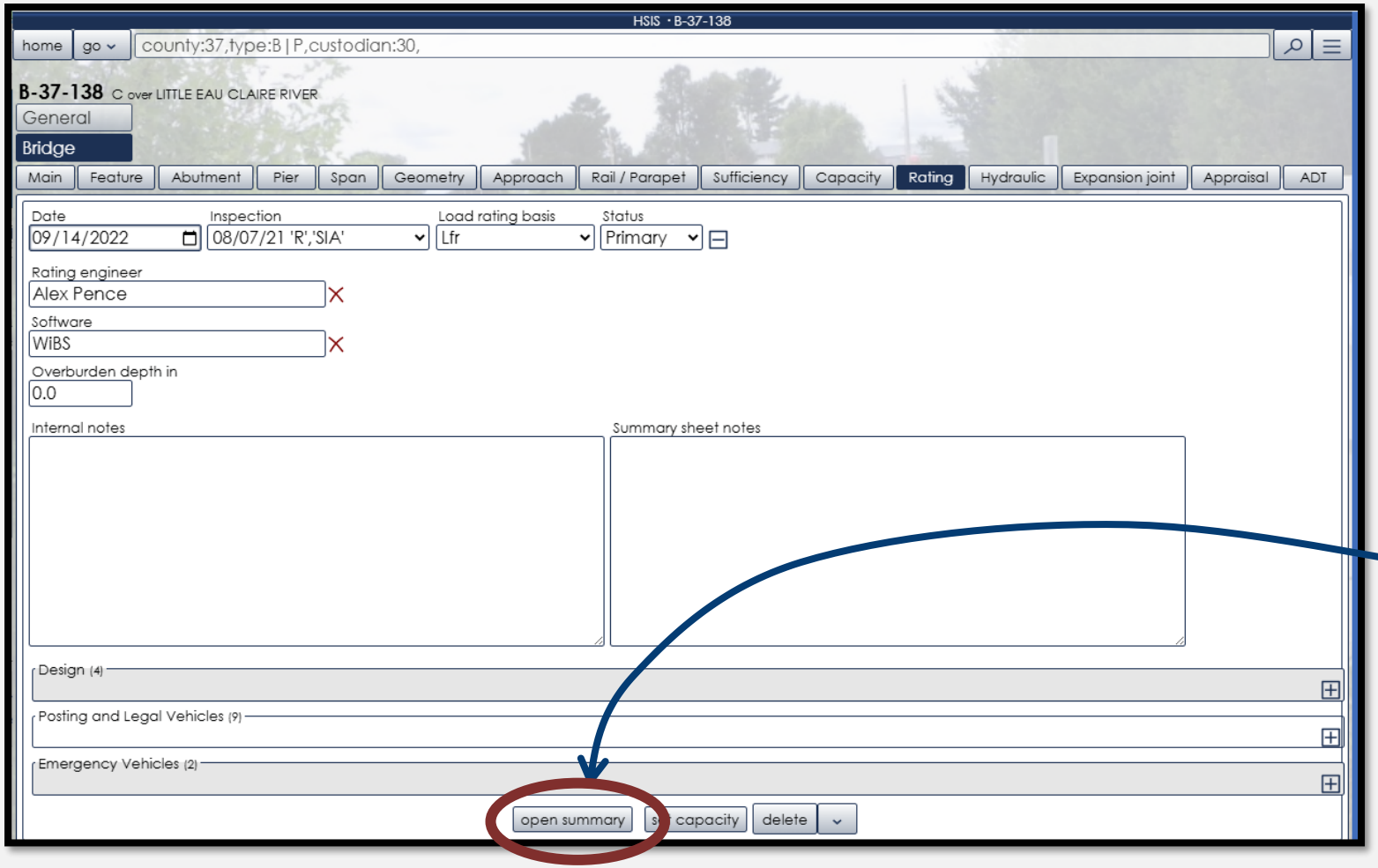
Capacity Tab

- "Max Vehicle Weight" based on Wis-SPV
- **220 kips** means…
  - Wis-SPV base configuration is 190 kips, but 220 kips indicates the bridge has a Rating Factor of (220 / 190) = 1.158



Each axle can weigh 15.8% more with same spacing and bridge is OK for this load

Rating Tab



- Does not yet have data for every bridge
- Click on “Open Summary” for Rating Summary Form

Rating Summary Form

Wisconsin Special Permit Vehicles	MVW (kips)
Single lane (w/o FWS):	222
Multi lane (w/o FWS):	174

Load Posting Analysis (when required per Wisconsin Bridge Manual, Chapter 45)

Posting Vehicle		GVW (kips):	Rating Factor:	Weight
AASHTO Legal Vehicles	Type 3	50.0	1.87	N
	Type 3S2	72.0	1.82	N
	Type 3-3	80.0	1.94	N
	SU4	54.0	1.67	N
	SU5	62.0	1.51	N
	SU6	69.5	1.35	N
	SU7	77.5	1.24	N
WisDOT Spec.	PUP	98.0	1.61	N
	Semi	98.0	1.97	N
FAST Act EVs	EV2	57.5	1.65	N
	EV3	86.0	1.06	N

Bridge Data

Structure Id: B-37-138	Traffic Count: 495 / Truck Traffic %: 0
Owner: COUNTY	Overburden Depth (in): 0 / Design Load Rating: H20
Municipality: Guenther-t (37032)	Inspection Date: 07-Aug-2021
Feature On: C	
Feature Under: LITTLE EAU CLAIRE RIVER	

NBI Condition Ratings

Deck:	Superstructure:	Substructure:	Culvert:
8	7	7	N

Spans

#:	Material:	Configuration:	Length (ft)
1	PREST CONCRETE	Girder/Beam - I-Shaped Spread	62

Construction History:

Year:	Work Performed:
1969	New Structure
2021	New Deck

Load Rating Summary

Load Rating Basis:		Value:	Load Governing Member:	Rating Force Effect:	LLDF:
LFR	Inventory:	HS11	Interior Girder	Positive Moment	1.364
	Operating:	HS27	Interior Girder	Positive Moment	1.364

Wisconsin Special Permit Vehicles	MVW (kips)	Load Governing Member:	Rating Force Effect:	LLDF
Single lane (w/o FWS):	222	Interior Girder	Positive Moment	1.072
Multi lane (w/o FWS):	174	Interior Girder	Positive Moment	1.364

Load Posting Analysis (when required per Wisconsin Bridge Manual, Chapter 45)

Posting Vehicle		GVW (kips):	Rating Factor:	Weight Limit (T):	Load Governing Member:	Rating Force Effect:	LLDF
AASHTO Legal Vehicles	Type 3	50.0	1.87	N/A	Interior Girder	Positive Moment	1.364
	Type 3S2	72.0	1.82	N/A	Interior Girder	Positive Moment	1.364
	Type 3-3	80.0	1.94	N/A	Interior Girder	Positive Moment	1.364
	SU4	54.0	1.67	N/A	Interior Girder	Positive Moment	1.364
	SU5	62.0	1.51	N/A	Interior Girder	Positive Moment	1.364
	SU6	69.5	1.35	N/A	Interior Girder	Positive Moment	1.364
	SU7	77.5	1.24	N/A	Interior Girder	Positive Moment	1.364
WisDOT Spec.	PUP	98.0	1.61	N/A	Interior Girder	Positive Moment	1.072
	Semi	98.0	1.97	N/A	Interior Girder	Positive Moment	1.072
FAST Act EVs	EV2	57.5	1.65	N/A	Interior Girder	Positive Moment	1.364
	EV3	86.0	1.06	N/A	Interior Girder	Positive Moment	1.364

Posting for Legal/Specialized Permit Vehicles:

Weight Limits for Emergency Vehicles:

Software and version used: WiBS

Rating Engineer: Alex Pence

Additional Remarks:

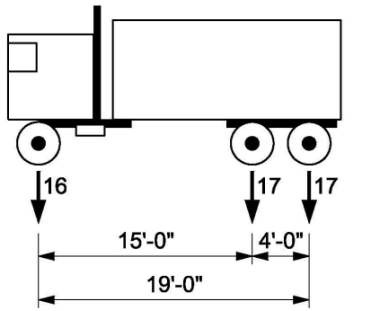
Date: 14-Sep-2022

Rating Summary Form

Wisconsin Special Permit Vehicles	MVW (kips)
Single lane (w/o FWS):	222
Multi lane (w/o FWS):	174

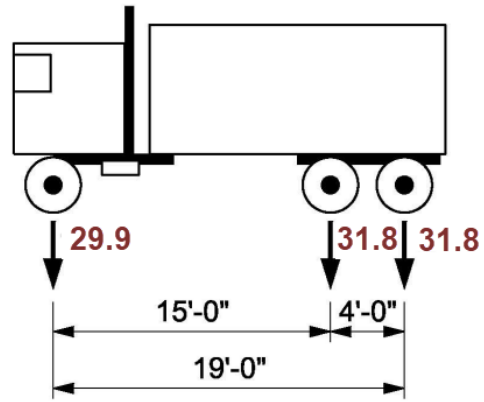
Load Posting Analysis (when required per Wisconsin Bridge Manual, Chapter 45)

Posting Vehicle		GVW (kips):	Rating Factor:	Weight
AASHTO Legal Vehicles	Type 3	50.0	1.87	N
	Type 3S2	72.0	1.82	N
	Type 3-3	80.0	1.94	N
	SU4	54.0	1.67	N
	SU5	62.0	1.51	N
	SU6	69.5	1.35	N
	SU7	77.5	1.24	N
WisDOT Spec.	PUP	98.0	1.61	N
	Semi	98.0	1.97	N
FAST Act EVs	EV2	57.5	1.65	N
	EV3	86.0	1.06	N



Type 3 Unit Weight = 50 Kips (25 tons)

x 1.87 =



Type 3 Unit Weight x 1.87 = 93.5 kips

HSI Capacity Tab vs. Rating Tab

Capacity Tab

- ✅ Has Load Ratings recorded for all bridges
- ⚠️ Only Wis-SPV
  - Useful for multi-trip permits, but not necessarily single-trip permits
- ⚠️ Wis-SPV maximum value = 250 kips

Rating Tab

- ✅ Includes additional load rating vehicles
- ✅ Has the true calculated maximum for the Wis-SPV (e.g.,> 250 kips)
- ⚠️ Not yet populated for all bridges
  - Contact BOS to request prioritization

Overweight Permit Bridge Evaluation Aid

A BOS tool for screening and simple evaluations

5

Overweight Permit Bridge Evaluation Aid

WisDOT Bureau of Structures has developed a Microsoft Excel-based tool to help local agencies quickly screen overweight permit requests against bridge load ratings.

1. Enter overweight vehicle configuration (weight per axle and axle spacings)
2. Look up bridge load rating from HSI
3. Visually compare the permit vehicle to allowable loads for standard load rating configurations
4. Determine if load is clearly acceptable or potentially problematic (requiring further evaluation or denial)

Overweight Permit Bridge Evaluation Aid

Overweight Permit Bridge Evaluation Aid

Overweight Permit Bridge Evaluation Aid

v.2026.03.25

Disclaimer: This worksheet is provided by WisDOT Bureau of Structures as a screening and documentation tool for local agencies to evaluate overweight permit loads on bridges. Users of this tool should check the WisDOT Bureau of Structures website regularly for updated versions. It enables visual comparison of the permit vehicle to standard vehicle load ratings recorded in the Highway Structure Information System (HSIS). Load ratings recorded in HSIS are based on latest inspection and construction information provided to the Bureau of Structures. A delay may exist from the most recent inspection or construction until HSIS is updated (typically up to three months). Final decisions on all permit approvals are the responsibility of the bridge owner or its delegate.

Permit ID:		**Evaluated By:**	
Date:		**Agency:**	

Permit Truck Axle Weights and Spacing (Step 1)

Axle No.	Axle Weight (kips)	Axle Spacing (ft)	Axle Location (ft)
1		---	0
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
TOTAL	**0.0**	**0.0**	

Instructions:

1. Enter Permit Truck Axle Weight and Axle Spacing
2. Enter Bridge IDs and Load Rating Data. Examples using two HSIS data sources are shown in additional tabs.
3. Review Truck Comparison Chart below to view the Permit Vehicle configuration compared to the Wisconsin Standard Permit Vehicle (Wis-SPV) and other load rating trucks. Use the "Include?" column in Step 2 to include or omit any truck from the chart.
4. Record final decisions for approval, denial, or travel restrictions (if applicable).
5. If the comparison does not provide sufficient confidence in approval, or if load rating information available in HSIS appears to be outdated or inadquate for evaluation, Bureau of Structures Load Rating Unit may be contacted for assistance (**bridge.ratings@dot.wi.gov**).

			HSIS Load Rating Data for Bridges (Step 2)									
Truck	**Include?**	**Min.**	**B-XX-XXX**									
Wis-SPV	Yes	0										
Type 3	No											
Type 3S2	No											
Type 3-3	No											
SU4	No											
SU5	No											
SU6	No											
SU7	No											
PUP	No											
Semi	No											

Bridge Evaluation Determination (Step 4)

Truck Comparison Chart (Step 3)

Example 1

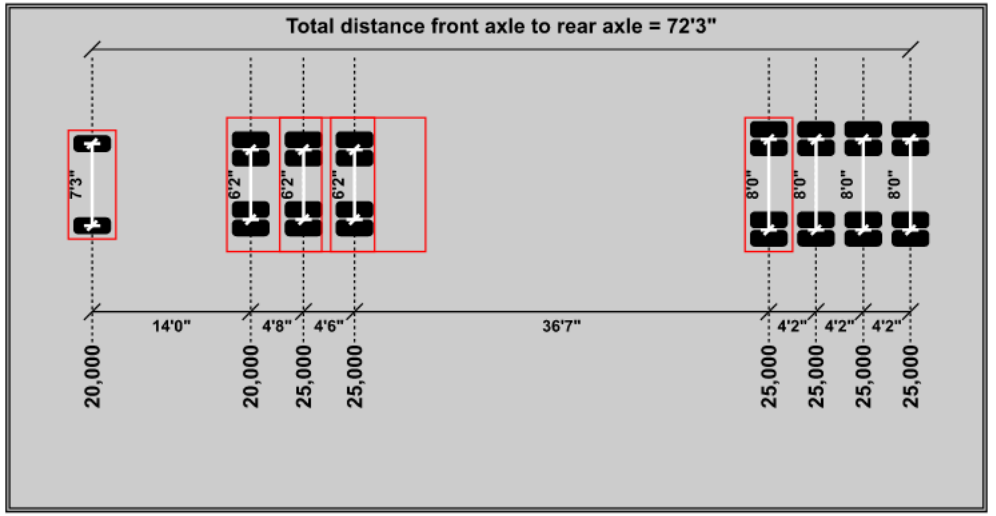
Step 1: Permit Truck Axle Weights and Spacing

Permit Truck Axle Weights and Spacing (Step 1)			
Axle No.	**Axle Weight (kips)**	**Axle Spacing (ft)**	**Axle Location (ft)**
1	20.0	---	0
2	20.0	14	14
3	25.0	4.67	19
4	25.0	4.5	23
5	25.0	36.58	60
6	25.0	4.17	64
7	25.0	4.17	68
8	25.0	4.17	72
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
TOTAL	**190.0**	**72.3**	

3/19/26, 3:29 PM Dane County Permitting

Axle Information

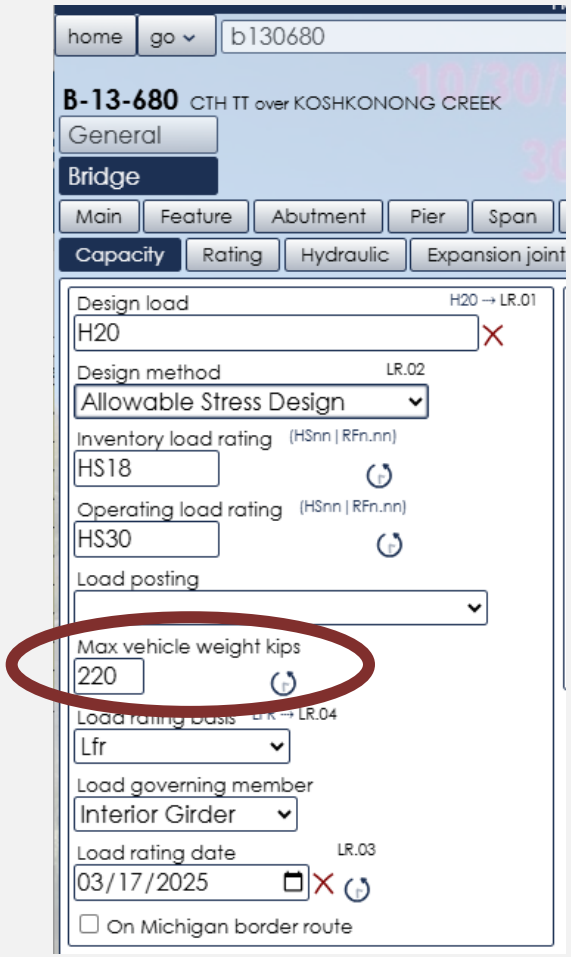
Axle(s) Information:



Example 1

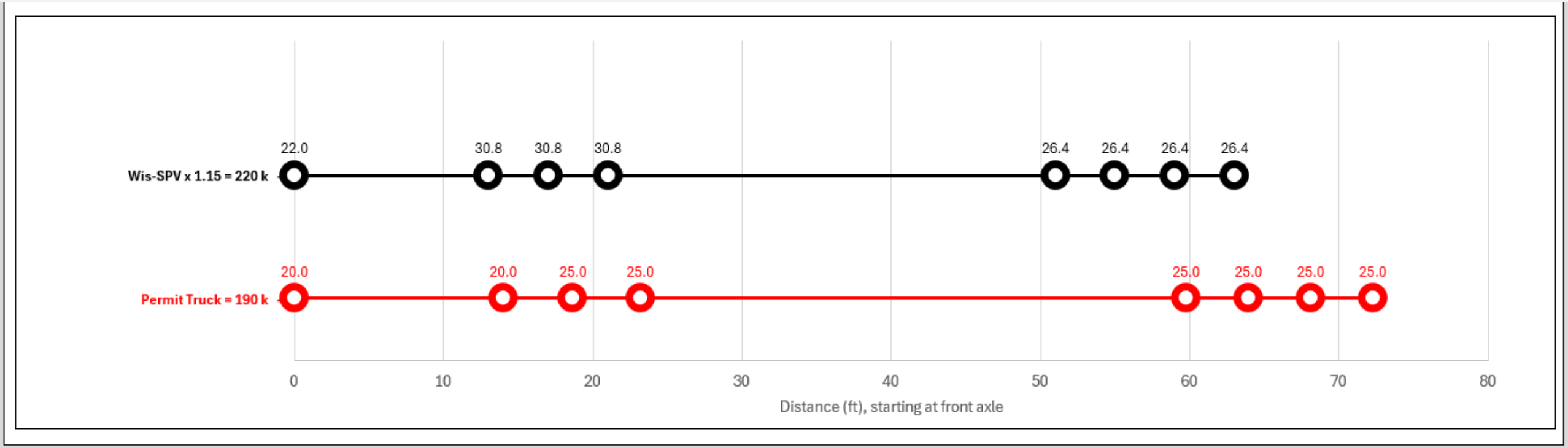
Step 2: Bridge Load Rating Data
(Using HSI Capacity Tab)

			Bridges and Load Rating Data (Step 2)							
Truck	**Include?**	**Min.**	**B-13-680**							
Wis-SPV	Yes	220	220							
Type 3	No									
Type 3S2	No									
Type 3-3	No									
SU4	No									
SU5	No									
SU6	No									
SU7	No									
PUP	No									
Semi	No									



Example 1

Step 3: Comparison Chart



Example 1

Step 4: Evaluation Determination

Bridge Evaluation Determination (Step 4)
Approved

Example 2

Step 1: Permit Truck Axle Weights and Spacing

Permit Truck Axle Weights and Spacing (Step 1)			
Axle No.	**Axle Weight (kips)**	**Axle Spacing (ft)**	**Axle Location (ft)**
1	28.6	---	0
2	28.3	5.42	5
3	28.3	5.42	11
4	27.5	12.5	23
5	27.5	5.42	29
6	27.5	5.42	34
7	26.0	8	42
8	26.0	5.42	48
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
TOTAL	**219.7**	**47.6**	

Example 2

Step 2: Bridge Load Rating Data
(Using HSI Rating Tab)

			Bridges and Load Rating Data (Step 2)							
Truck	**Include?**	**Min.**	**B-13-486**							
Wis-SPV	Yes	343	343							
Type 3	No		2.34							
Type 3S2	Yes	2.43	2.43							
Type 3-3	Yes	2.88	2.88							
SU4	No		1.93							
SU5	No		1.84							
SU6	No		1.66							
SU7	No		1.57							
PUP	Yes	2.94	2.94							
Semi	Yes	2.89	2.89							

Spans

#:	Material:	Configuration:	Length (ft)	Construction Year:
1	CONCRETE	Slab - Solid - Flat	34.4	1998

Load Rating Summary

Load Rating Basis:		Value:	Load Govern
LFR	Inventory:	HS21	Slab
	Operating:	HS36	Slab

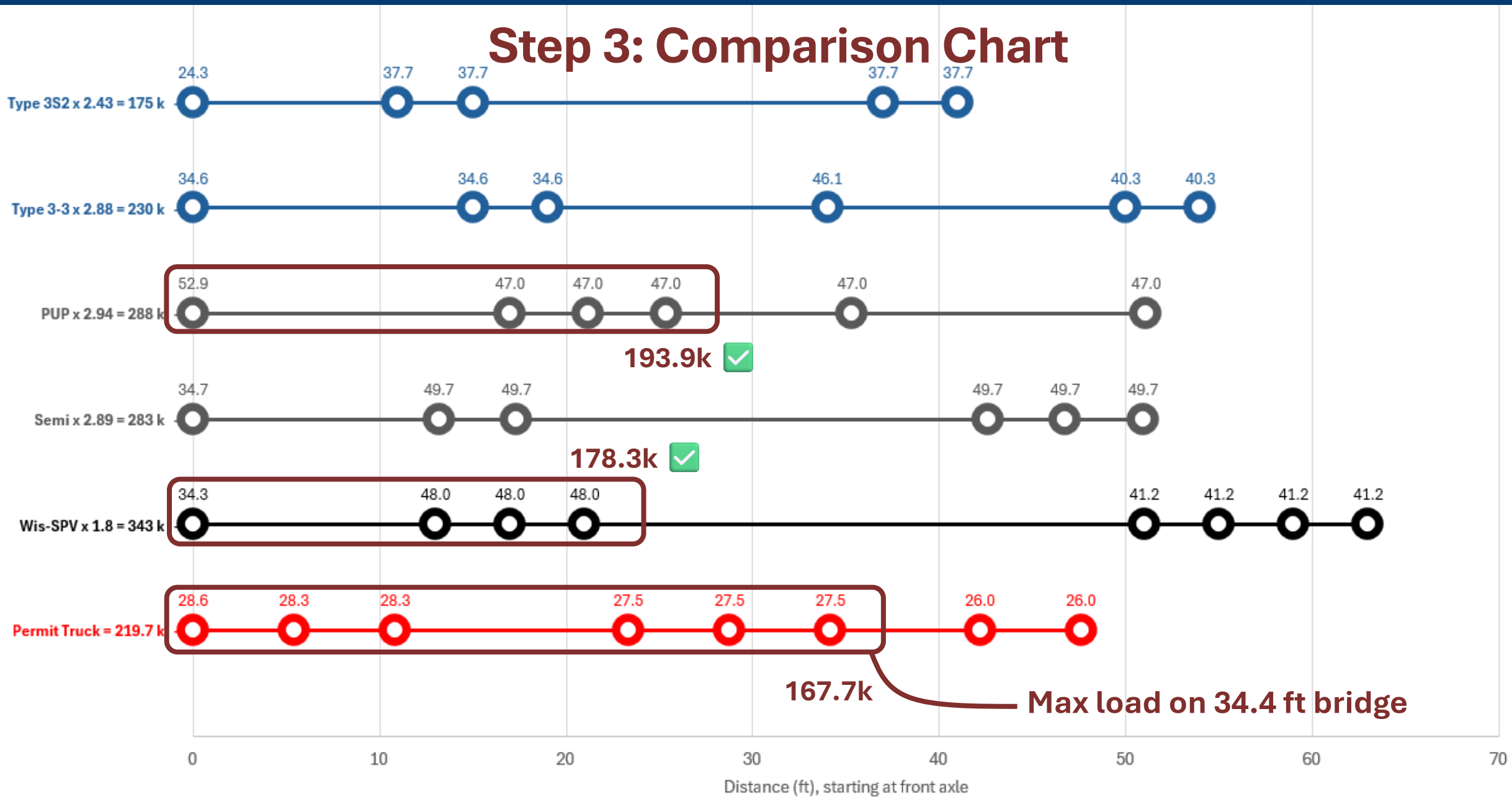
Wisconsin Special Permit Vehicles	MVW (kips)	Load Govern
Single lane (w/o FWS):	343	Slab
Multi lane (w/o FWS):	200	Slab

Load Posting Analysis (when required per Wisconsin Bridge Manual, Chapter 45)

Posting Vehicle		GVW (kips):	Rating Factor:	Weight Limit (T):	Load Govern
AASHTO Legal Vehicles	Type 3	50.0	2.34	N/A	Slab
	Type 3S2	72.0	2.43	N/A	Slab
	Type 3-3	80.0	2.88	N/A	Slab
	SU4	54.0	1.93	N/A	Slab
	SU5	62.0	1.84	N/A	Slab
	SU6	0.0	1.66	N/A	Slab
	SU7	77.5	1.57	N/A	Slab
WisDOT Spec.	PUP	98.0	2.94	N/A	Slab
	Semi	98.0	2.89	N/A	Slab
FAST Act EVs	EV2	57.5	2.03	N/A	Slab
	EV3	86.0	1.29	N/A	Slab

Example 2

Step 3: Comparison Chart



Example 2

Step 4: Evaluation Determination

Bridge Evaluation Determination (Step 4)
Approved. Consulted with Bureau of Structures for confirmation.

When to Contact BOS

Assistance requests and processes for state-owned bridges

6

Requesting BOS Assistance

- Local agencies may request BOS engineering assistance for overweight permits
  - Overweight load with unique vehicle configurations
  - Very heavy loads when the bridge's capacity is uncertain
  - Load rating information available in HSI is insufficient
  - When the Evaluation Aid indicates a marginal or problematic result
  - When the evaluation is otherwise uncertain of the bridge's capacity

CONTACT:
bridge.ratings@dot.wi.gov

RESPONSE TIME:
Allow up to 3 business days for most requests, expedited responses possible if needed

CAPABILITY:
BOS has load rating models for most common bridge types (enabling quick analysis)

AUTHORITY:
Local agency retains final approval/denial authority on local routes.

Alternative Options

- On some occasions, BOS may not be able to assist
  - Resource availability
  - Lack of adequate information or load rating model for bridge
  - Complex load or complex bridge

- Local agencies have other evaluation options
  - Hire an engineering consultant to assist
  - Require hauler to submit engineering evaluation
  - Deny / re-route

Special Case: State-Owned Bridge Carrying Local Road

For single-trip permits crossing state-owned bridges (over Interstate, U.S. Highway, or State Highway) – **Consult with BOS for permit approval**

- **Local agency** is still the permitting authority (issues the permit)
- **WisDOT Bureau of Structures (BOS)** is responsible for bridge evaluation
- Contact BOS via **bridge.ratings@dot.wi.gov**
  - Not necessary to involve WisDOT OSOW Permitting Office
  - BOS will give approvals/denials to local agency only. If carrier contacts us for permission, we will direct decisions to the local agency with permitting authority.
- For frequent requests on a particular bridge, BOS may give "auto-approval" criteria
  - Example: "Local agency may approve any overweight permits up to 250,000 lbs."

Special Case: State-Owned Bridge Carrying Local Road

For single-trip permits crossing state-owned bridges (over Interstate, U.S. Highway, or State Highway) – **Consult with BOS for permit approval**

- We may be able to work with local agencies that prefer alternative processes
  - Auto-approval criteria
  - Document evaluation responsibility and communication chains
- **What must be avoided:**
  - Local agency assumes carrier is getting separate permit from the state for the bridge, and
  - Carrier assumes a permit issued by the local agency applies to the bridge, but
  - *No one has checked the bridge!*

Sample Documentation

Examples of logging OSOW loads on bridges

7

Documentation Requirements

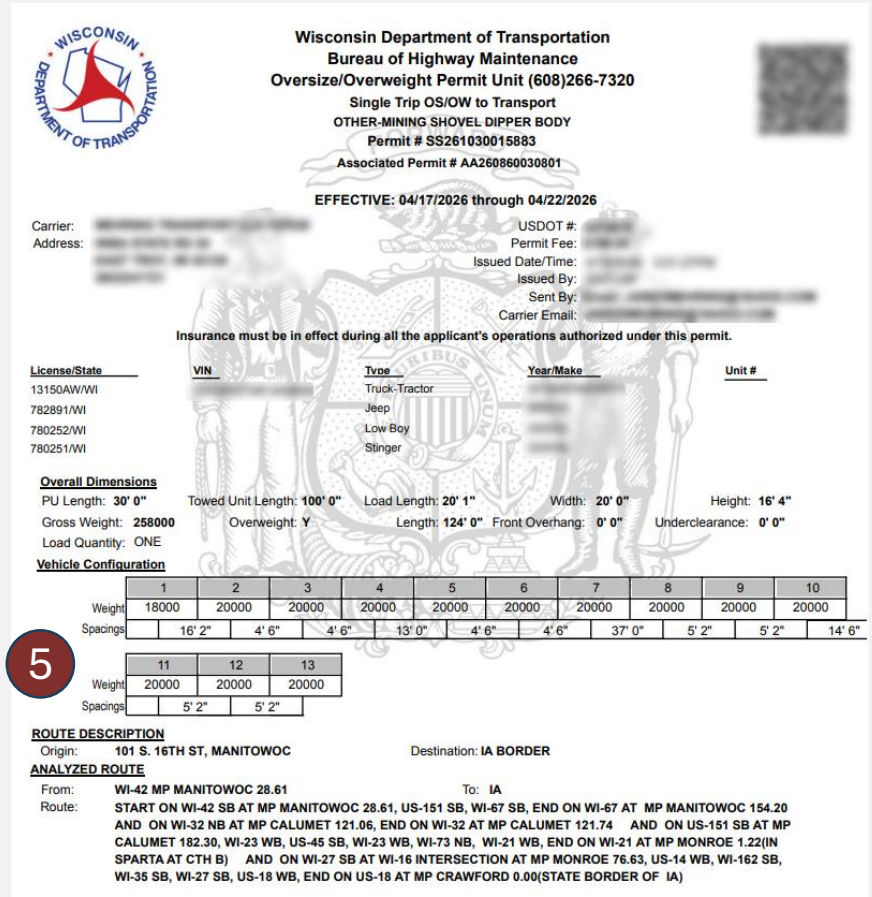
What must be recorded:

Minimum for tabulated report	1. Identification of the permit (permit number or other unique ID) 2. Date permit was issued or date of evaluation 3. Gross vehicle weight
May be in report or within stored documents linked each Permit ID	4. Bridges crossed 5. Vehicle configuration (axle count, weights, spacings) 6. Travel restrictions (lanes, speed limits, escort requirements) 7. Responsible party who performed the evaluation

Sample Log – Basic w/ Linked Permits

1 2 3

Application ID	Date Issued	GVW (kips)
512779	4/6/26	214
512923	4/8/26	231
513186	4/9/26	239
513213	4/13/26	258



Wisconsin Department of Transportation
Bureau of Highway Maintenance
Oversize/Overweight Permit Unit (608)266-7320
Single Trip OS/OW to Transport
OTHER-MINING SHOVEL DIPPER BODY
Permit # SS261030015883
Associated Permit # AA260860030801

EFFECTIVE: 04/17/2026 through 04/22/2026

Carrier:
Address:
USDOT #:
Permit Fee:
Issued Date/Time:
Issued By:
Sent By:
Carrier Email:

Insurance must be in effect during all the applicant's operations authorized under this permit.

License/State	VIN	Type	Year/Make	Unit #
13150AW/WI		Truck-Tractor		
782891/WI		Jeep		
780252/WI		Low Boy		
780251/WI		Stinger		

Overall Dimensions
PU Length: 30' 0" Towed Unit Length: 100' 0" Load Length: 20' 1" Width: 20' 0" Height: 16' 4"
Gross Weight: 258000 Overweight: Y Length: 124' 0" Front Overhang: 0' 0" Underclearance: 0' 0"
Load Quantity: ONE

Vehicle Configuration

	1	2	3	4	5	6	7	8	9	10
Weight	18000	20000	20000	20000	20000	20000	20000	20000	20000	20000
Spacings		16' 2"	4' 6"	4' 6"	13' 0"	4' 6"	4' 6"	37' 0"	5' 2"	5' 2"	14' 6"

	11	12	13
Weight	20000	20000	20000
Spacings		5' 2"	5' 2"

ROUTE DESCRIPTION
Origin: 101 S. 16TH ST, MANITOWOC Destination: IA BORDER

ANALYZED ROUTE
From: WI-42 MP MANITOWOC 28.61 To: IA
Route: START ON WI-42 SB AT MP MANITOWOC 28.61, US-151 SB, WI-67 SB, END ON WI-67 AT MP MANITOWOC 154.20 AND ON WI-32 NB AT MP CALUMET 121.06, END ON WI-32 AT MP CALUMET 121.74 AND ON US-151 SB AT MP CALUMET 182.30, WI-23 WB, US-45 SB, WI-23 WB, WI-73 NB, WI-21 WB, END ON WI-21 AT MP MONROE 1.22(IN SPARTA AT CTH B) AND ON WI-27 SB AT WI-16 INTERSECTION AT MP MONROE 76.63, US-14 WB, WI-162 SB, WI-35 SB, WI-27 SB, US-18 WB, END ON US-18 AT MP CRAWFORD 0.00(STATE BORDER OF IA)

5

4

Structure	Pass/Fail	Status
B360211	PASS	OK
B360075	PASS	OK
B200112	PASS	OK
B200053	PASS	OK
B200046	PASS	OK
B200178	PASS	OK
B200023	RESTRICTED2	SLOW DOWN TO 5 MPH
B240009	PASS	OK
B240014	RESTRICTED2	SLOW DOWN TO 5 MPH
B240028	PASS	OK
B390047	PASS	OK
B690048	P	OK

6

PERMIT APPROVED WITH THE FOLLOWING RESTRICTIONS:
- SLOW DOWN TO 5 MPH OVER: As noted above.

KCT, 4/7/26

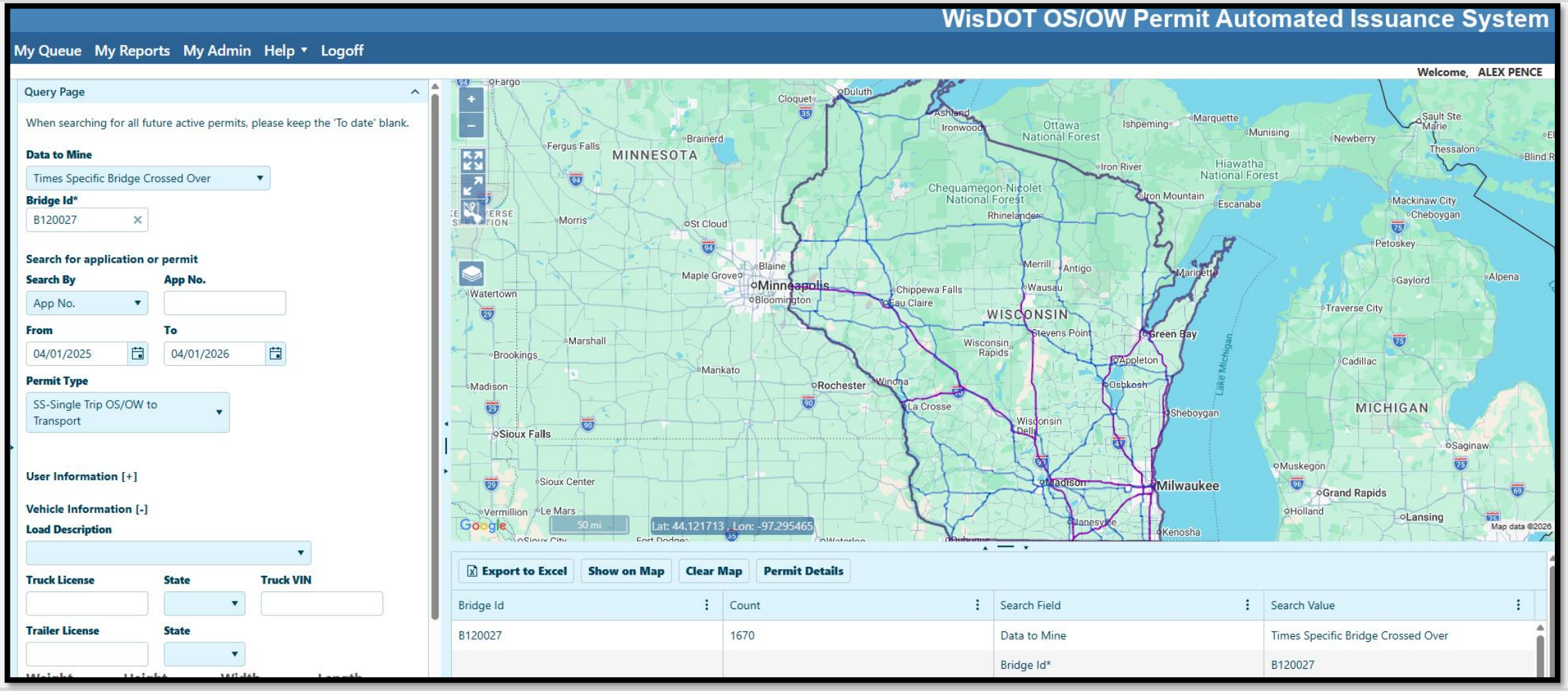
7

Sample Log – Expanded

1 2 3 4 5 6 7

Permit ID	Date Issued	GVW (kips)	Bridge(s) Crossed	Axle Weights (kips)	Axle Spacings (ft)	Restrictions	Evaluator
83125	3/15/26	147	B990105	13, 18, 18, 18, 20, 20, 20, 20	12, 5, 5, 28, 5, 5, 5		CSW
83126	4/2/26	227	B990105, B990106	16, 16, 20, 20, 20, 20, 23, 23, 23, 23, 23, 23	5.5, 10, 5, 5, 5, 30, 5.1, 5.1, 5.1, 5.1	SLOW DOWN TO 5 MPH over B990105	CSW
83127	4/15/26	181	B990073	15, 18, 18, 18, 16, 16, 16, 16, 16, 16, 16	14, 4.8, 4.8, 35, 4.8, 4.8, 4.8, 4.8, 4.8, 4.8		CSW

Automated System Report



Automated System Report

App Id	Gross Weight	Axle Loads	Axle Spacing
417892	80000		
417999	115000	13000,21000,21000,20000,20000,20000	14' 6",4' 4",42' 0",4' 6",4' 6"
418210	138000	18000,20000,20000,20000,20000,20000,20000	14' 6",4' 7",4' 6",39' 0",4' 7",4' 6"
418477	144000	18000,18000,18000,18000,18000,18000,18000,18000	15' 7",4' 8",4' 4",48' 1",4' 8",4' 8",4' 8"
418903	158000	18000,20000,20000,20000,20000,20000,20000,20000	14' 7",4' 7",4' 6",39' 0",4' 7",4' 6",12' 10"
419220	20000		
420863	124000	14000,18333,18333,18334,18333,18333,18334	16' 4",4' 6",4' 6",39' 10",4' 3",4' 8"
405107	80000		
418527	135000	15000,20000,20000,20000,15000,15000,15000,15000	15' 1",4' 6",4' 6",60' 3",4' 6",4' 6",4' 6"
418627	224000	18000,20000,20000,20000,23000,23000,20000,20000,20000,20000,20000	17' 10",4' 6",4' 6",16' 0",5' 0",61' 6",5' 0",7' 1",7' 1",5' 0"
419783	107000	16000,20000,20000,17000,17000,17000	13' 11",4' 6",52' 0",4' 6",4' 6"
419894	236000	17000,17333,17334,17333,18334,18333,18333,18667,18666,18667,18667,18666,18667	16' 1",4' 5",4' 5",15' 3",5' 0",5' 0",60' 6",5' 0",5' 0",15' 0",5' 0",5' 0"
419927	100000	14000,20000,20000,15333,15333,15334	13' 11",4' 6",52' 0",4' 6",4' 6"
420087	187000	15000,13000,13000,13000,13000,13000,13000,20000,20000,20000,17000,17000	17' 8",4' 8",4' 6",15' 0",4' 7",4' 6",36' 6",4' 7",4' 6",15' 0",4' 6"
417906	58000	20000,19000,19000	18' 8",4' 8"
418182	135000	15000,20000,20000,20000,15000,15000,15000,15000	15' 1",4' 6",4' 6",60' 3",4' 6",4' 6",4' 6"
418719	258000	18000,20000,20000,20000,20000,20000,20000,20000,20000,20000,20000,20000,20000	17' 2",5' 0",5' 0",17' 0",5' 0",5' 0",61' 2",5' 0",5' 0",14' 6",5' 0",5' 0"
419335	124000	16000,19000,19000,19000,17000,17000,17000	14' 8",4' 3",4' 3",70' 0",4' 4",4' 4"
419864	115000	16000,19000,19000,19000,21000,21000	16' 1",4' 6",4' 6",67' 6",4' 1"
419946	158000	15000,13000,13000,13000,13000,13000,13000,13000,13000,13000,13000,13000	17' 8",4' 8",4' 6",15' 0",4' 7",4' 6",36' 6",4' 7",4' 6",15' 0",4' 6"
420869	80000		
421552	248000	14000,19500,19500,19500,19500,19500,19500,19500,19500,19500,19500,19500,19500	13' 3",5' 0",5' 0",14' 6",5' 0",5' 0",40' 4",5' 0",5' 0",19' 6",5' 0",5' 0"

WisDOT / BOS Resources for Local Agencies

Policy Memo & Form DT1729

The Bridge File Documentation Form records storage location for permits alongside inspection data to submit with QA reviews.

Training

This training is recorded and posted to the BOS website. Additional training related to load rating and permitting may be available upon request.

HSI - Load Rating & Mapping Data

Access bridge inventory, load ratings, inspection reports, and location maps.

BOS Engineering Assistance

Email **bridge.ratings@dot.wi.gov** for permit evaluation assistance or for overweight loads crossing state-owned bridges.

Overweight Permit Bridge Evaluation Aid

Microsoft Excel tool for visual screening of permit vehicle configuration against load ratings.

Local Bridge Load Rating Program

BOS maintains load rating models for most common bridge types on the local system and updates load ratings on HSI for local bridges.

Evaluation of Overweight Loads on Local Bridges

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