

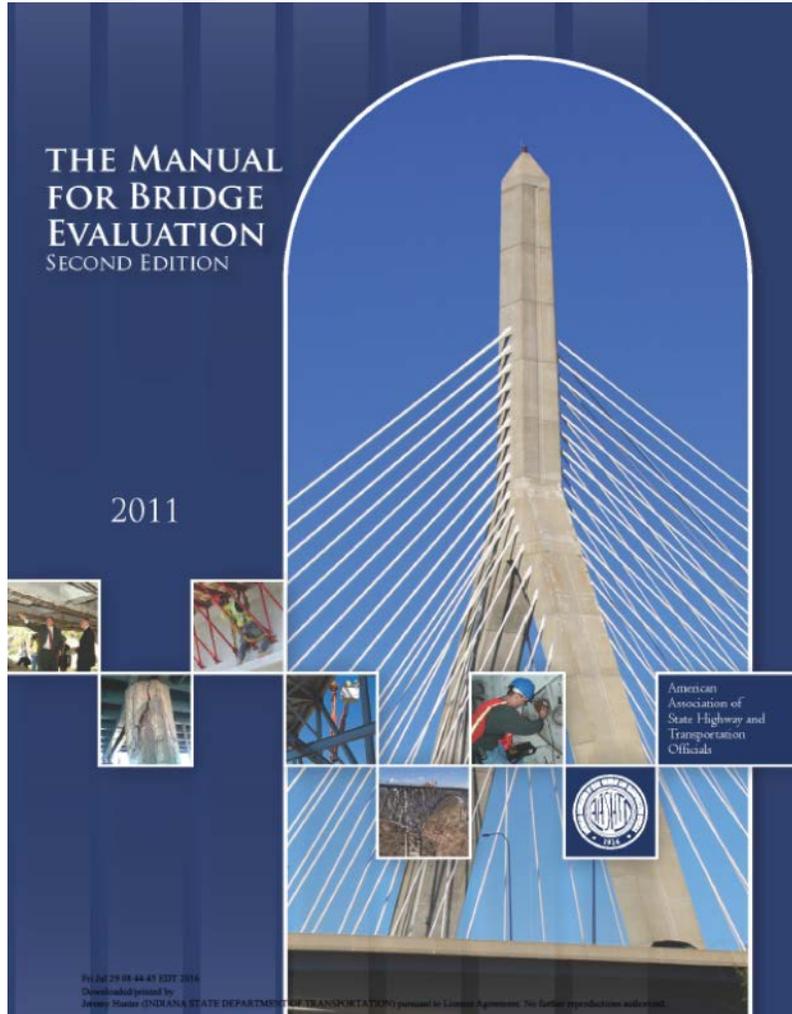
Indiana Bridge Load Rating

Jeremy Hunter

INDOT Bridge Design Manager

Indiana Bridge Load Rating Requirements

- AASHTO Manual For Bridge Evaluation 2nd Edition



- Defines requirements for:
 - Bridge Records
 - Bridge Management
 - Bridge Inspection
 - Bridge Material Testing
 - Bridge Load Rating

Indiana Bridge Load Rating Requirements

- All bridges must be evaluated for **Legal Loads**
- What are Legal Loads
 - Legally Defined Vehicle Weight Limitations
 - Code of Federal Regulations
 - US Code Title 23
 - Indiana Code 9-20-4
- How do I evaluate a bridge for Legal Loads
 - AASHTO Manual For Bridge Evaluation, Chapter 6
 - Indiana Bridge Inspection Manual, Part 3

Bridge Load Rating Defined

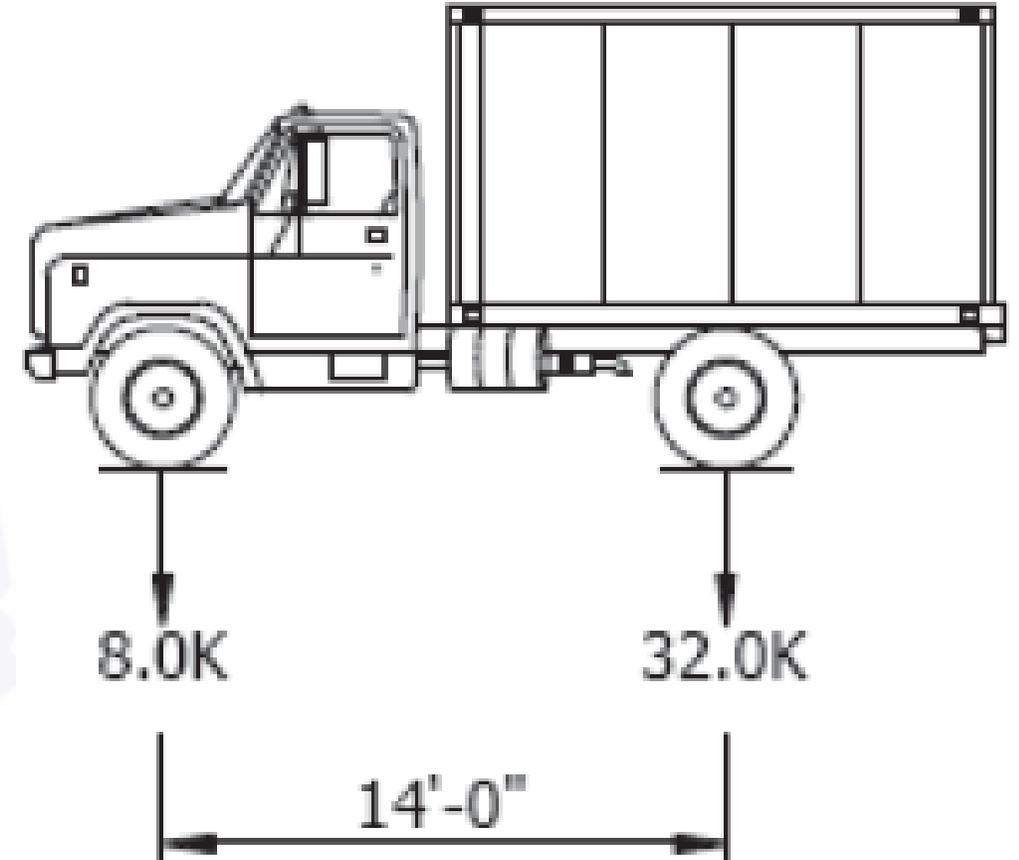
- AASHTO Manual For Bridge Evaluation 2nd Edition
 - *“Bridge load rating provides a basis for determining the safe load capacity of a bridge. Load rating requires engineering judgment in determining a rating value that is applicable to maintaining the safe use of the bridge and arriving at posting and permit decisions.”*
 - *“The specific load ratings are used in identifying the need for load posting or bridge strengthening and in making overweight-vehicle permit decisions. Load ratings are routinely reported to the NBI for national bridge administration and are also used in local bridge management systems.”*
- Analytical methods of analysis
- Engineering judgment
- Posting and permit decisions performed by competent engineer and supported by appropriate documentation

Load Rating Requirements

- AASHTO Manual For Bridge Evaluation 2nd Edition
 - *“The load rating of a bridge is based on existing structural conditions, material properties, loads, and traffic conditions at the bridge site. To maintain this capacity, the bridge is assumed to be subject to inspections at regular intervals”*
 - *“Changes in existing structural conditions, material properties, loads, or site traffic conditions could require re-evaluation.”*
- The capacity of a bridge may reduce over time due to deterioration or damage
 - Requires routine evaluation
 - Requires engineering judgment

Load Rating Policy Updates

- Old Policy
 - Evaluate using H-20 Inventory Rating
 - H-Truck does not encompass all legal loads
 - Inventory Rating Includes Serviceability Criteria
 - Can be overly conservative for posting decisions



Load Rating Policy Updates

- New Policy
 - Evaluate all Legal Loads
 - Summary of Legal Loads

Truck Configuration	LRFR Subcategory
H-20	Routine Commercial Traffic
HS-20	Routine Commercial Traffic
Alternate Military	Routine Commercial Traffic
AASHTO Type 3	Routine Commercial Traffic
AASHTO Type 3S2	Routine Commercial Traffic
AASHTO Type 3-3	Routine Commercial Traffic
Lane-Type*	Routine Commercial Traffic
EV2	Routine Commercial Traffic
EV3	Routine Commercial Traffic
NRL**	Specialized Hauling
SU4	Specialized Hauling
SU5	Specialized Hauling
SU6	Specialized Hauling
SU7	Specialized Hauling

* Load and Resistance Factor Rating (LRFR) only

** Not to be used for load posting

Figure 3-4.2 Required Legal Vehicles

Load Rating Policy Updates

- New Policy: Evaluate all Legal Loads
 - Available Tools
 - AASHTOWare BrR
 - Once models are created, they become part of the bridge file
 - only quick review and updates for changing conditions required (thus 1 time cost for model development)
 - INDOT Bridge Inspection Manual, Part 3
 - Requirements and recommendations for bridge evaluation
 - INDOT Bridge Design Aids Website
 - Tools for load raters
 - Presentations
 - INDOT and Consultant Load Rating Engineers Guidance

Jeremy Hunter
INDOT Bridge Design Manager

jhunter@indot.in.gov

(317) 233-2997