

Features

- ✓ Superstructure load rating in accordance with the AASHTO Manual for Condition Evaluation of Bridges, AASHTO Manual for Bridge Evaluation, AASHTO Standard Specifications for Highway Bridges, and AASHTO LRFD Bridge Design Specifications
- ✓ Supports two or three dimensional bridge descriptions
- ✓ 3-D description allows for the analysis of special vehicle configurations

AASHTOWare® Goals/Benefits

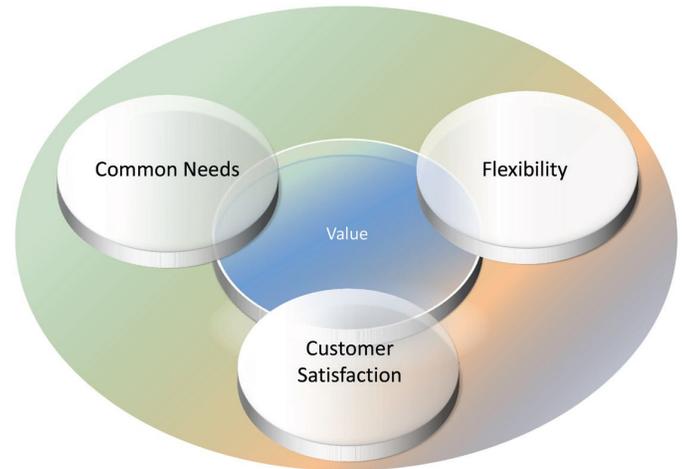
- ✓ Pooling resources to produce significant cost savings
- ✓ DOT-Driven software
- ✓ Best practices approach
- ✓ Focus on universal requirements – meet 90% of common needs
- ✓ Built in flexibility – allows software customization to meet unique needs (i.e. the remaining 10%)

Who uses AASHTOWare Bridge Rating software?

State DOTs, Local Agencies, plus District of Columbia, Puerto Rico, FHWA, Canadian Provinces, bridge rating consultants, and educational institutions within the jurisdiction of AASHTO Member and Associate Member Departments

About the Software

AASHTOWare Bridge Rating uses a common database with AASHTOWare Bridge Design to allow an organization to store a detailed description of each bridge, which is independent of the analytical engine, method of analysis, and rating method. Among the benefits are:



- ✓ Rating a bridge using multiple analysis programs and specifications from the same description and input
- ✓ Software framework facilitates the upgrading and/or replacing components of the system, including the structural analysis engine, specification checking software, and user interface while preserving the basic bridge data
- ✓ Bridge data may be easily linked to other related software systems, including bridge management systems such as AASHTOWare Bridge Management

The new, modernized AASHTOWare Bridge Rating 7.0, scheduled to be released in December 2020, will significantly upgrade the core technology to a modern software architecture that will fully utilize current and future hardware, and the latest software development technologies. The primary benefits will be realized in the modernized AASHTO analytical engine for bridge design and rating. The modernized engine improves on the analysis runtime performance of all structure types. In addition to the modernized engine, the modernized system will feature an improved and simplified user interface that is easier to use for beginners without losing modeling flexibility and robustness for advanced users.

The AASHTOWare Bridge Rating 6.8.4 is the last release of the legacy system. Functionality enhancements and maintenance going forward will be incorporated into the modernized system. Standalone tools delivered with AASHTOWare Bridge Rating 6.8.4 and 7.0:

- ✓ Load Rating Tool
- ✓ Prestressed Concrete Design Tool
- ✓ Regression Comparison Tool

Product Information

- ✓ AASHTOWare Bridge Design & Rating Technical Support - <https://www.aashtowarebridge.com/bridge-rating-and-design/>
- ✓ Rating & Design Bridge User Group (RADBUG) - <http://aashtobr.org>
- ✓ AASHTOWare - <https://www.aashtoware.org>
- ✓ AASHTOWare FY2021 Catalog - https://www.aashtoware.org/wp-content/uploads/2020/05/FY_2021_AASHTOWare_Catalog.pdf

Current Features

Bridge Load Rating System

- ✓ AASHTO analytical engine for load and resistance factor rating (LRFR), load factor rating (LFR), and allowable stress rating (ASR)
- ✓ Integrated database where bridge models and rating results can readily be stored, reviewed, and re-used
- ✓ A 3-D description of a bridge superstructure can also be used by a variety of line-girder, 2-D or 3-D analysis packages, permit/routing systems, and other third-party produced applications.

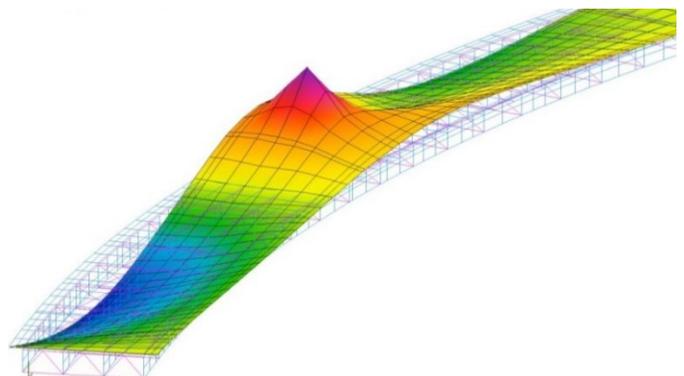
Bridge Configurations and Capabilities

- ✓ Reinforced concrete tee beams, slabs, I-beams, and multi-cell box beams
- ✓ Reinforced concrete box culverts
- ✓ Prestressed concrete box, I, tee, and U-beams (precast, pretensioned, continuity for live load, harped strands, and de-bonded strands)
- ✓ Steel rolled beams (including cover plates)
- ✓ Steel built-up plate I-girders

- ✓ Steel welded plate I-girders (including hybrid)
- ✓ Steel trusses and floor systems
- ✓ Timber beams and decks
- ✓ Corrugated metal decks
- ✓ Simple spans, continuous spans, hinges (steel and reinforced concrete)
- ✓ Parallel and flared girder configurations
- ✓ Parallel, tapered, parabolic, and circular webs
- ✓ Transverse and longitudinal stiffened
- ✓ Frame structure simplified definition
- ✓ Girder-line and 3D-FEM analyses
- ✓ 3-D analysis of steel and concrete multi-girder superstructures
- ✓ 3-D analysis of curved steel multi-girder superstructures
- ✓ U.S. customary and S.I. units

Load Rating Features

- ✓ Load rate girder-floor beam-stringer configurations
- ✓ Load rate truss-floor beam-stringer and floor-truss configurations
- ✓ Load rate timber and corrugated metal decks
- ✓ Load rate gusset-plate connections and splice connections
- ✓ Load rate various structure units within a bridge
- ✓ Load rate various members, diaphragms and lateral bracing within a structural unit
- ✓ Input definition and rating of deteriorated sections
- ✓ Rate a user-defined group of bridges
- ✓ Review of rating history for groups of bridges and routing applications
- ✓ Permit rating with routine traffic in adjacent lane
- ✓ Rating of non-standard gage vehicles by loading a 3-D influence surface
- ✓ A vehicle library capable of defining any number of wheels on any number of axles
- ✓ AASHTO engine for LRFR/LFD/ASD rating



Bridge Load Rating and Permit Vehicle Analysis

Database

- ✓ Bridges along a route can be placed into folders, so that an entire route can be rated for a permit vehicle in a single step
- ✓ Permit analysis includes sophisticated 3-D analysis to consider load effects due to a specific vehicle traveling along a user-defined path on a structure
- ✓ Complies with corporate database management standards by supporting the widely used Oracle and Microsoft SQL Server databases, including their data sharing and security features

Graphical Features and Customizable Libraries

- ✓ Libraries of standard and user-defined vehicles, loads, steel and prestressed shapes, load and resistance factors, materials, parapets, and other bridge components allow bridge models to be built quickly in a drag-and-drop manner
- ✓ All or part of a bridge can quickly be copied to another bridge
- ✓ As a bridge model is constructed, a framing plan, elevation view, cross-section view, and other schematics provide feedback and reveal modeling errors

Import and Rating Features

As the successor to the Bridge Analysis and Rating Systems (BARS), AASHTOWare Bridge Rating 6.8.4 can import BARS, BRASS, and BAR7 data files using the import feature.

- ✓ Supports flexure and shear ratings, computes dead loads and distribution factors if they are not manually input, and analyzes deteriorated sections
- ✓ Data can be input using cross-section or schedule-based formats

Architectural Support for Third-Party Customization and Add-ons

Since a bridge structural model can be complex, AASHTOWare Bridge Rating provides a simplified object model that ties the modules of the system together and makes the software open to expansion by experienced users and third-party developers. The AASHTOWare Bridge Design and Rating .NET Application Program Interface makes it possible to access the system's data and functionality from many commercial software packages, including Visual Basic®, Excel®, AutoCAD®, and even Microsoft Word®. AASHTO encourages third-party

developers to market add-on features, which enhance the core capabilities of the system.

Licensing

Description	Annual License Fee (Effective July 1, 2020)
Single Workstation	\$ 10,500 (first copy) \$ 9,000 (copies 2+)
Unlimited Users	
• AASHTO Member	\$ 39,500
• Non-Members	\$ 52,500
Special Consultant Option	\$ 5,500 per copy
Agency Sponsored	\$ 34,700 (10)
Consultants	\$ 63,000 (20) \$ 94,500 (30+)
Developer	\$ 2,000
Educational (classroom instruction)	FREE

The complete list of licensing options with full explanation can be found at <https://www.aashtoware.org/products/bridge/bridge-ordering>

Service Units are optional fixed-fee units of contractor-provided service offered to licensees for consultation and support to assist in implementation or customization of the software. Examples of services provided:

- ✓ Preparing and importing data
- ✓ Specialized software training
- ✓ Agency-specific modifications and validations
- ✓ Agency-customized reports

Contacts



Judy Skeen Tarwater, P.E.
AASHTO Project Manager
555 12th Street NW, Suite 1000
Washington, D.C. 20004
Phone: 512-963-1465
jtwater@ashto.org

Herman Lee, P.E.
PSDC Project Manager
ProMiles Software Development Corp
1900 Texas Avenue
Bridge City, TX 77611
Phone: 412-509-0587
BrDR@promiles.com