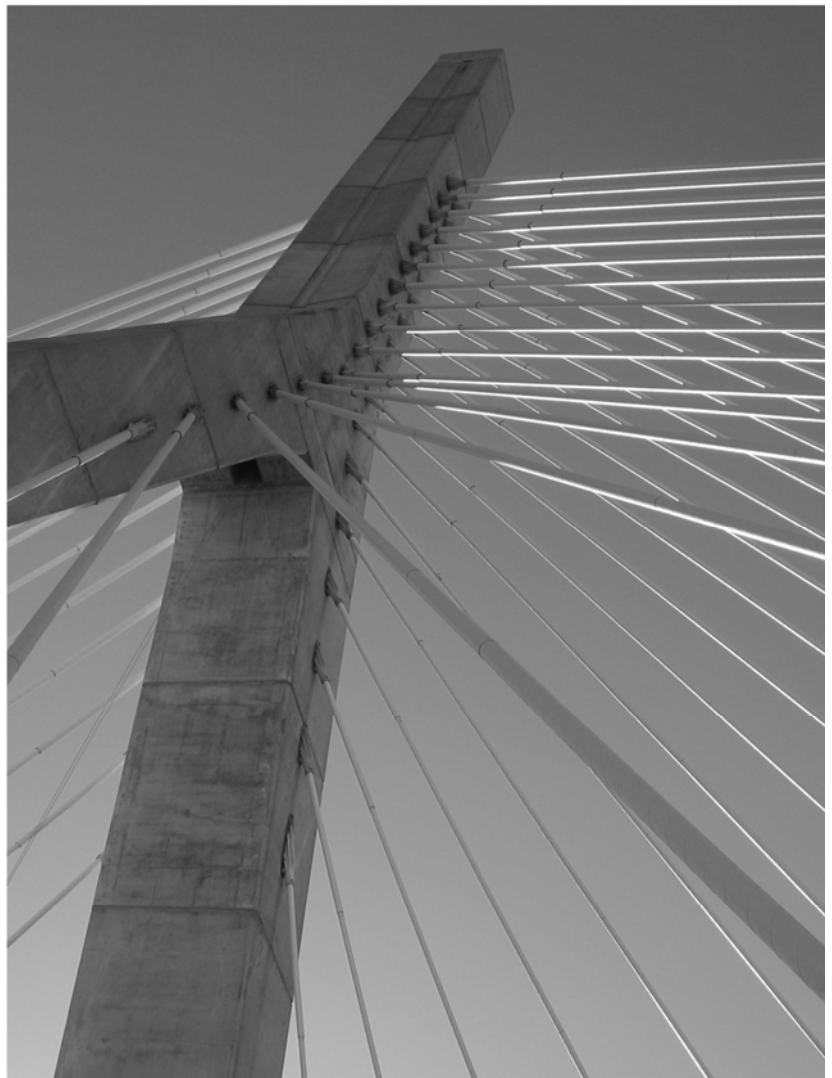


# THE MANUAL FOR BRIDGE EVALUATION



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AMERICAN ASSOCIATION  
OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS  
**AASHTO**

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American Association of State Highway and Transportation Officials  
444 North Capitol Street, NW, Suite 249  
Washington, DC 20001  
202-624-5800 phone/202-624-5806 fax  
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Cover photos: **Top Left:** Photo of a demonstration of Olson Instruments Bridge Deck Scanner system on a bridge taken by Larry Olson, Olson Engineering, Inc. **Second Left:** Photo of a through truss bridge taken by Thomas Drda, FHWA. **Third Left:** Photo courtesy of Idaho Department of Transportation. **Bottom Left:** Photo of an inspection of a deck truss bridge using an under bridge inspection truck. Taken by John Thiel, FHWA. **Right:** Leonard P. Zakim Bunker Hill Bridge in Boston, MA. Courtesy of Shay Burrows, FHWA.

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## FOREWORD

*The Manual for Bridge Evaluation* (MBE) was first adopted by the AASHTO Highways Subcommittee on Bridges and Structures in 2005. The MBE combined the *Manual for Condition Evaluation of Bridges* with the *Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges* to provide owners with a single document for evaluating and load rating bridges.

*The Manual for Bridge Evaluation*, Third Edition incorporates the Interim Revisions issued to the Second Edition, as well as many other improvements. In order to better address the evolving requirements and technology related to bridge management systems, Section 3: Bridge Management Systems has been completely revised and updated.

AASHTO Highways Subcommittee on Bridges and Structures



## PREFACE

*The Manual for Bridge Evaluation* (MBE) offers assistance to Bridge Owners at all phases of bridge inspection and evaluation. An abbreviated table of contents follows this preface. Detailed tables of contents precede Sections 1 through 8.

Appendix A includes nine illustrative examples (A1 through A9), previously in the *Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges*, and two more (A10 and A11) that were added in the Interim Revisions for the Second Edition of this title. All examples are rated using the LRFR method. In addition, Examples A1 and A2 are also rated using the ASR and LFR methods, A4 is also rated using the ASR method, and A11 is also rated using the LFR method. To clarify which rating method is being illustrated, examples using multiple methods are generally divided into Parts A through C and their articles are numbered accordingly as follows:

- Part A, LRFR;
- Part B, ASR and LFR; and
- Part C, example summary.

For ease of reference, the table of contents for Appendix A includes a summary table of the bridge types, rated members, rating live loads, limit states for evaluation, and rating methods, with the starting page number for each example and, in the case of Examples A1, A2, A4, and A11, for each rating method. The typical detailed table of contents follows this summary table.

Appendix A includes numerous citations of other AASHTO bridge publications. To save space, the following shorthand has been adopted:

- “AASHTO Standard Specifications” refers to the current edition of the *AASHTO Standard Specifications for Highway Bridges*, 17th Edition, HB-17,
- “LRFD Design” refers to the current edition of the *AASHTO LRFD Bridge Design Specifications*, Eighth Edition, LRFD-8, and
- “MBE” refers to this publication, *The Manual for Bridge Evaluation*, Third Edition, MBE-3.

AASHTO Publications Staff

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