

# Manual for Bridge Element Inspection | 2



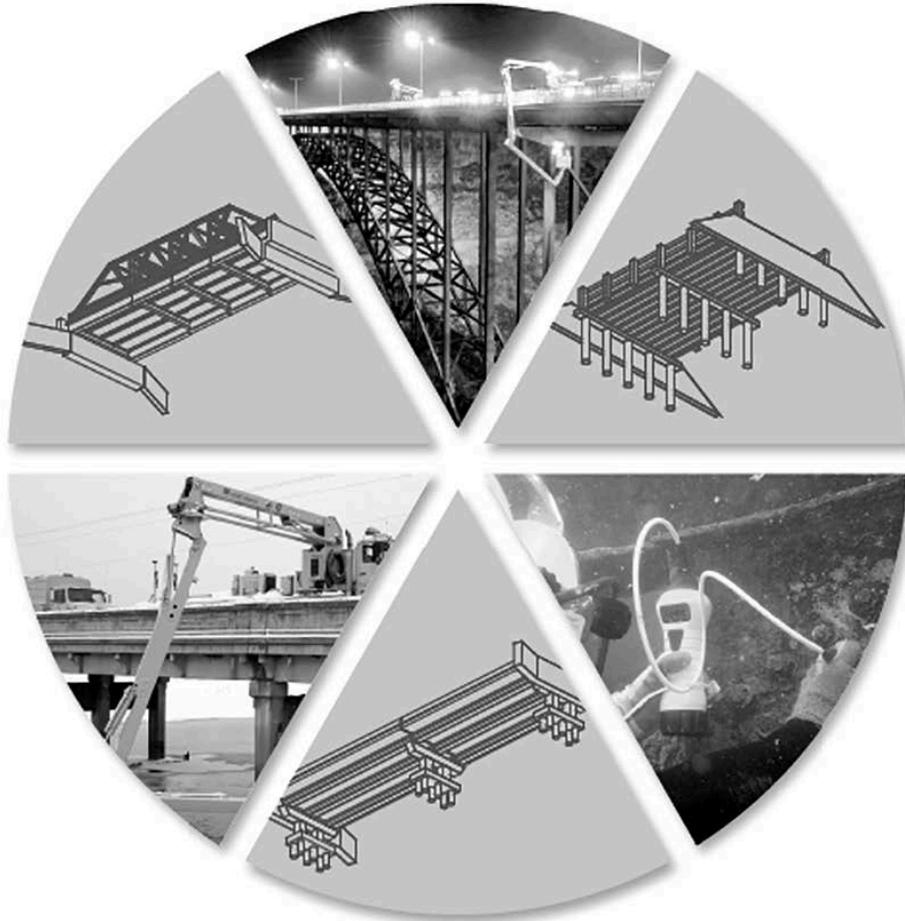
Second Edition, 2019

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**AASHTO**

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# PREFACE

This Manual incorporates suggested changes that were submitted by many inspecting agencies, consultant inspection firms, and training instructors that helped improve this updated version. AASHTO would like to thank member agencies for their continued dedication to improving bridge inspection in the United States.

AASHTO also would like to recognize the dedication and tireless efforts of the following technical team members who worked together to develop the First Edition of this Manual:

Name	Agency	Role
Michael B. Johnson	California Department of Transportation (Caltrans)	Team Lead
Wade Casey	Federal Highways Administration (FHWA)	Technical Team Member
Larry O'Donnell	FHWA	Technical Team Member
Derek Soden	FHWA	Technical Team Member
Paula Allec	Caltrans	Technical Support
Allen R. Marshall	Allen R. Marshall Consulting LLC	Manual Development Consultant

As a result of NCHRP 12-104, Guidelines to Improve the Quality of Element-Level Bridge Inspection, a new *Manual for Bridge Element Inspection* (MBEI), 2<sup>nd</sup> Ed. was developed. Section 3 of the MBEI was reorganized to list elements by material. Other revisions include:

- A new introduction was developed for Section 3.
- Visual guide sections were added to defect tables for Concrete, Prestressed Concrete, Steel, Joints, and Bearings.
- The “Condition State” header was removed from the tables and replaced with CS 1, CS 2, CS 3, and CS 4 nomenclature in the tables showing defects and defect descriptions.
  - The defect descriptions themselves were not changed in any way.
- Crack pattern and crack width measurement guides were added to Article 3.3.
- Spatial estimating guides were added in Article 3.12. These guides provide assistance to an Inspector for estimating areas (ft<sup>2</sup>) and length (ft) of damage.
- Element commentary (Article 3.2) was revised as follows:
  - The element commentary was previously included with each element, resulting in repetition. For example, every concrete element included commentary regarding the width of cracks, meaning the same element commentary appeared in at least 17 places in Section 3. Element commentary has been consolidated into a single section to reduce repetition. In some cases, this required minor rewording to make the element commentary more general. For example, the “Other” elements each had a unique description that indicates the element type (e.g., “other deck” or “other column”). This was reworded to remove the specific reference such that one explanation of the “other” materials was applicable to all elements so described.
  - The concrete and prestressed concrete commentary regarding crack widths were stated in a table to improve readability.
  - Element commentary that was unique to a single element was maintained with the element in the listing of Article 3.1, and stated as a note. Typically, these notes are enhancements to the element description.
  - There were no intentional changes to the element commentary, although some rewording was done for grammatical purposes.
- A single, comprehensive listing of all elements documenting the element description, quantity calculation, unit of measure, and classification was developed and included in Article 3.1. This section was organized by material. Within each material, components and subcomponents are identified (such as deck, railing, superstructure, substructure, joints, etc.)
  - Subsections within general classes of components that did not provide different information than the subsection heading were eliminated. For example, the subsection 3.5.1 Columns/pier walls read “(1) This article covers supporting elements of the structure. (2) These items include columns and pier walls.” (1) is redundant with the main heading, and (2) is a repeat of the subsection heading. In cases like these, the subsection text was omitted. This included Articles 3.5.1, 3.5.2, 3.5.3, and others.

- Section 3 has gone from 186 pages to 76 pages. This number of pages would increase with the inclusion of additional visual guides, but still be reduced relative to the previous versions of the MBEI.

# TABLE OF CONTENTS

AASHTO EXECUTIVE COMMITTEE, 2018–2019.....	i
AASHTO COMMITTEE ON BRIDGES AND STRUCTURES, 2018 .....	iii
PREFACE .....	v
INTRODUCTION .....	xi
SECTION 1: BACKGROUND.....	1-1
1.1—Condition Assessment Philosophy: Multipath and Defect Concepts .....	1-1
1.2—National Bridge Elements .....	1-1
1.3—Bridge Management Elements .....	1-1
1.4—Agency-Developed Elements.....	1-1
1.5—How to Use This Manual .....	1-2
1.6—Organization.....	1-2
SECTION 2: ELEMENT LOCATION MATRIX .....	2-1
2.1—National Bridge Elements .....	2-1
2.1.1—Decks and Slabs .....	2-1
2.1.2—Railings .....	2-1
2.1.3—Superstructure .....	2-2
2.1.4—Bearings .....	2-2
2.1.5—Substructure .....	2-3
2.1.6—Culverts.....	2-3
2.2—Bridge Management Elements .....	2-3
2.2.1—Joints .....	2-3
2.2.2—Approach Slabs .....	2-4
2.2.3—Wearing Surfaces, Protective Coatings, and Concrete Reinforcing Steel Protective System.....	2-4
SECTION 3: DETAILED ELEMENT DESCRIPTIONS .....	3-1
3.1—Element Listing by Material .....	3-2
3.1.1—Reinforced Concrete .....	3-2
3.1.2—Prestressed Concrete .....	3-5
3.1.3—Steel .....	3-7
3.1.4—Timber.....	3-10
3.1.5—Masonry .....	3-12
3.1.6—Other Materials .....	3-13
3.1.7—Bearings .....	3-15
3.1.8—Joints .....	3-16
3.1.9—Wearing Surfaces, Protective Coatings, and Concrete Reinforcing Steel Protective Systems .....	3-17
3.2—Element Commentary .....	3-18
3.2.1—General Commentary .....	3-18
3.2.2—Decks and Slabs .....	3-18
3.2.3—Railings.....	3-18
3.2.4—Superstructure .....	3-19
3.2.5—Bearings .....	3-19
3.2.6—Substructure Elements .....	3-19