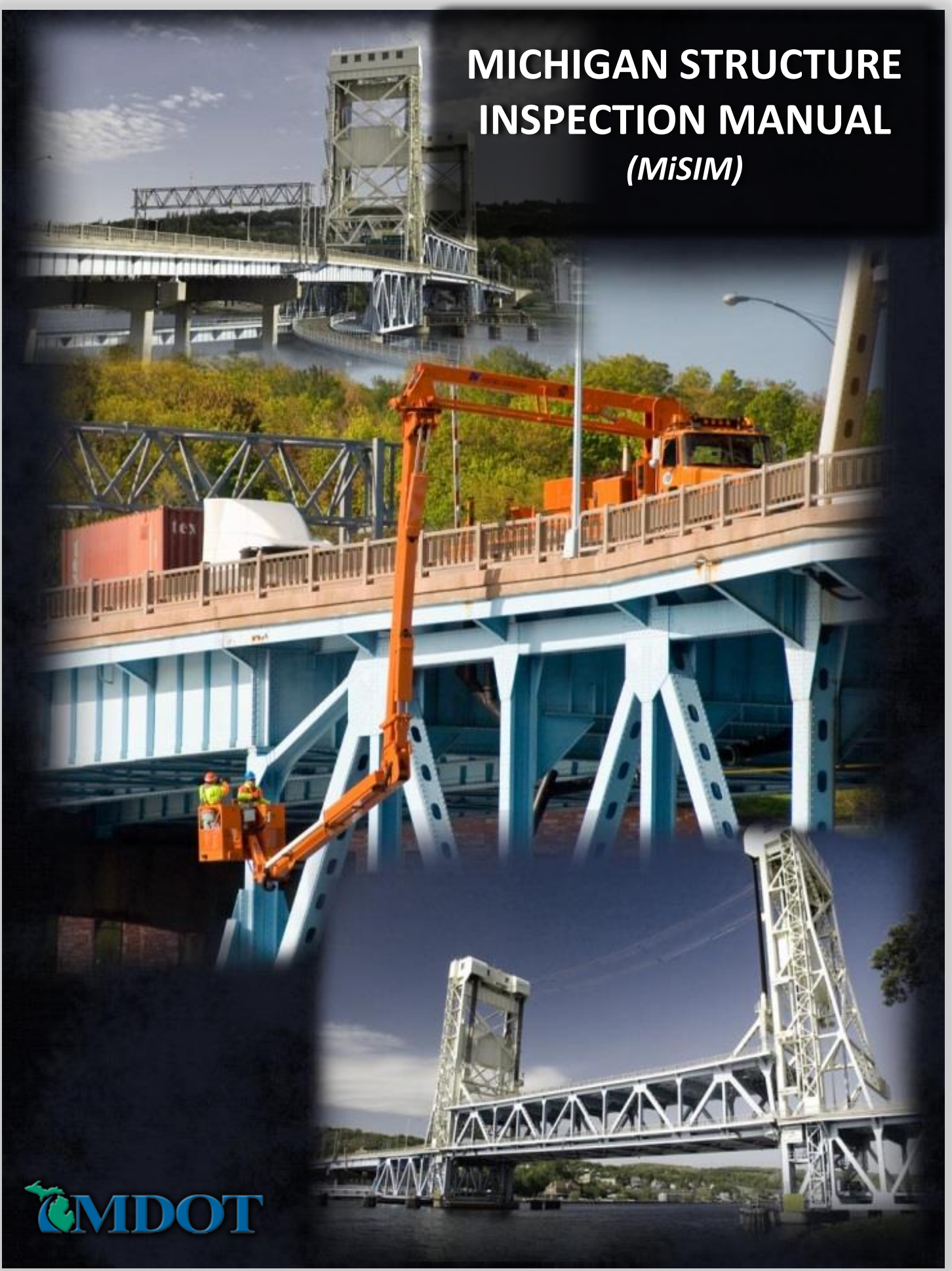
MICHIGAN STRUCTURE INSPECTION MANUAL

(MiSIM)



MDOT

PREFACE

Engineering Manual Preamble

This manual provides guidance to administrative, engineering, and technical staff. Engineering practice requires that professionals use a combination of technical skills and judgment in decision making. Engineering judgment is necessary to allow decisions to account for unique site-specific conditions and considerations to provide high quality products, within budget, and to protect the public health, safety, and welfare. This manual provides the general operational guidelines; however, it is understood that adaptation, adjustments, and deviations are sometimes necessary. Innovation is a key foundational element to advance the state of engineering practice and develop more effective and efficient engineering solutions and materials. As such, it is essential that our engineering manuals provide a vehicle to promote, pilot, or implement technologies or practices that provide efficiencies and quality products, while maintaining the safety, health, and welfare of the public. It is expected when making significant or impactful deviations from the technical information from these guidance materials, that reasonable consultations with experts, technical committees, and/or policy setting bodies occur prior to actions within the timeframes allowed. It is also expected that these consultations will eliminate any potential conflicts of interest, perceived or otherwise. MDOT Leadership is committed to a culture of innovation to optimize engineering solutions.

The National Society of Professional Engineers Code of Ethics for Engineering is founded on six fundamental canons. Those canons are provided below.

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform Services only in areas of their competence.
3. Issue public statement only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, reasonably, ethically and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

MICHIGAN STRUCTURE INSPECTION MANUAL
BRIDGE INSPECTION

Purpose

The Michigan Structure Inspection Manual (MiSIM) has been developed to provide bridge safety inspectors and bridge owners with guidance for meeting the requirements of the National Bridge Inspection Standards (NBIS) and Michigan's Bridge Inspection Program policies and procedures. This manual provides guidance for inspecting structures meeting the NBIS definition of a bridge and for non-NBI structures with span lengths less than 20 feet, pedestrian, and railroad structures.

The purpose of the MiSIM is to reinforce the policies and procedures of the Michigan Department of Transportation (MDOT), ensure statewide consistency with reference to completing and documenting the condition of structures, and to improve Federal Highway Administration (FHWA) compliance. The MiSIM is divided into multiple chapters containing applicable bridge inspection program information.

Goals/Objectives of this Manual

The most important goal of this manual is to clarify the minimum requirements, inspection procedures, and documentation for completing the safety inspections of in-service bridges and structures in the state of Michigan.

The specific objectives of this manual are outlined as follows:

- To assemble in one manual the primary instructions needed by bridge inspectors performing safety inspections of structures in Michigan that are supplementary to the various FHWA and AASHTO publications.

- To provide a document that is aimed towards improving the quality of inspections and clarifying inspection procedures. It is anticipated that this manual will help promote uniformity and consistency in inspections from inspector to inspector, from agency to agency, and from year to year.

- To provide guidance and advice for the most difficult inspection items, condition ratings and appraisals of structural components.

- To increase the overall understanding of Michigan's Structure and Bridge Inspection Program for all those responsible or involved with the management and safety of Michigan's structures and bridges.

References

There are a number of documents and manuals that are used as a reference throughout this manual. Several of these references provide the initial basis and background material for development of this manual.

Federal and National Manuals

- National Bridge Inspection Standards Federal Code of Regulations, 23 CFR 650 (NBIS)
- FHWA Recording and Coding Guide for SI&A of the Nations Bridges
- AASHTO Manual for Bridge Evaluation, Current Edition (MBE)
- AASHTO Manual for Bridge Element Inspection (MBEI)
- NHI Bridge Inspection Reference Manual, Current Edition (BIRM)

Michigan Specific Guides and Manuals

- MDOT Bridge Inspection Rating Guides
- Michigan Bridge Element Inspection Manual (MiBEIM)
- Michigan SI&A Coding Guide
- MDOT Bridge Inspection Frequency Guidelines
- MDOT Bridge Analysis Guide (Current Edition)

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BRIDGE INSPECTION

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