

Highway Safety Manual 2nd Edition

An overview of changes, additions, and related research



Agenda

- HSM Overview
- Content Comparison
- What's New
- New Research Resources
- Looking Forward



HSM Overview

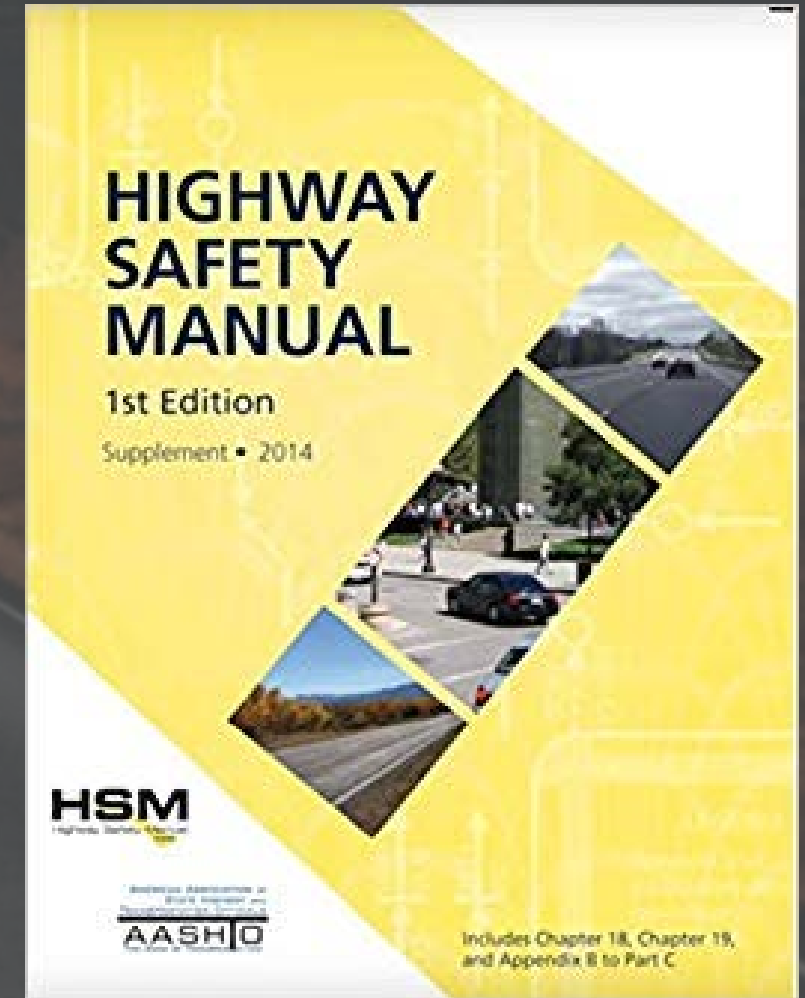
An overview of the new document being developed by AASHTO

HSM Background

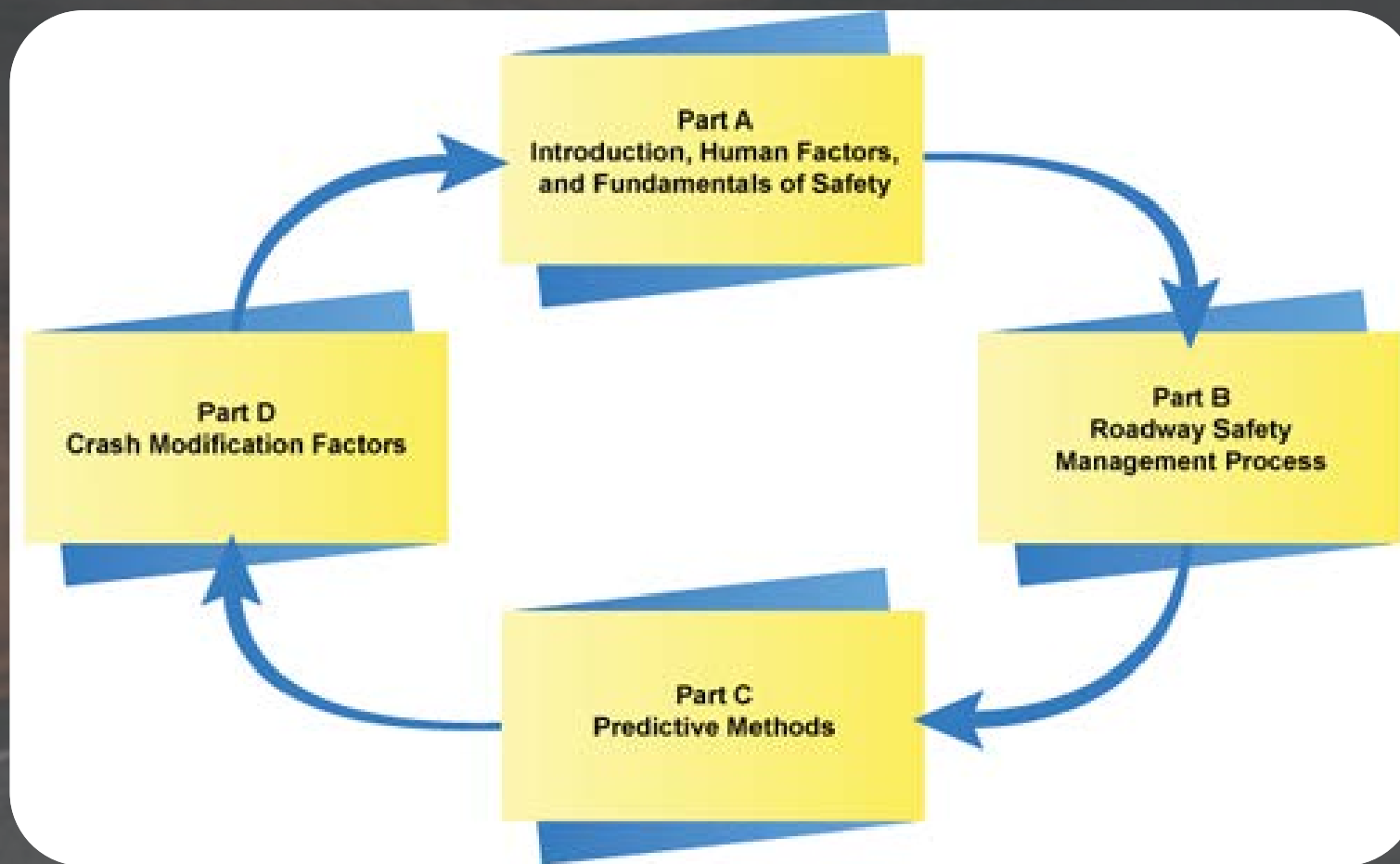
“The Highway Safety Manual (HSM) is the premier guidance document for incorporating quantitative safety analysis in the highway transportation project development process.”

HSM Background

- First Edition Published in 2010 by AASHTO
- Provides guidance on
 - Human Factors and safety fundamentals
 - Roadway Safety Management Process
 - Predictive methods for safety improvement project development
- All these elements will be enhanced in HSM2



HSM Background



Tools & Resources for Implementation

- Several software and online tools have been developed to support use of HSM methods
 - CMF Clearinghouse for CMF selection
 - IHSDM and HSM spreadsheets for crash prediction modeling
- Guidance, case study, FAQ, and other documents available
- Learn more at highwaysafetymanual.org



The HSM2 Will...

- ❖ **Expand** upon the methodologies in HSM1
- ❖ **Incorporate** new models and research completed since HSM1
- ❖ **Modify** practices based on user experiences and needs

Content Comparison

Differences in the HSM1 and the HSM2

HSM 2 Chapters: Part A

Part	Chapter Subject	Chapter Number (HSM1)	Chapter Number (HSM2)
A	Part A Intro	-	-
	Introduction & Overview	1	1
	Human Factors	2	2
	Fundamentals	3	3

HSM 2 Chapters: Part B

Part	Chapter Subject	Chapter Number (HSM1)	Chapter Number (HSM2)
B	Part B Intro	-	-
	Bicycle & Pedestrian	(new)	4
	Systemic Safety	(new)	5
	Network Screening	4	6
	Diagnosis	5	7
	Countermeasure Selection	6	8
	Economic Appraisal	7	9
	Prioritize Projects	8	10
	Safety Effectiveness Evaluation	9	11

HSM 2 Chapters: Part C

Part	Chapter Subject	Chapter Number (HSM1)	Chapter Number (HSM2)
C	Part C Intro	-	-
	SPF Calibration Procedure	(new)	12
	Rural Two-Lane Roads	10	13
	Rural Multilane Highways	11	14
	Urban & Suburban Arterials	12	15
	Freeways	18	16
	Ramps	19	17
	Appendix to Part C	-	-

HSM 2 Chapters: Part D

Part	Chapter Subject	Chapter Number (HSM1)	Chapter Number (HSM2)
D	<i>Roadway Segment CMFs</i>	13	<i>(removed)*</i>
	<i>Intersection CMFs</i>	14	<i>(removed)*</i>
	<i>Interchange CMFs</i>	15	<i>(removed)*</i>
	<i>Special Facility CMFs</i>	16	<i>(removed)*</i>
	<i>Road Network CMFs</i>	17	<i>(removed)*</i>
	Part D Intro	(new)	18
	Selecting CMFs	(new)	19
	Applying CMFs	(new)	20
	Developing CMFs	(new)	21
	Appendix to Part D	-	-

* Superseded by CMF Clearinghouse

What's New

What to expect in the HSM2

New: Bike & Pedestrian Safety

- Chapter 4
- Provide an overview of methods for incorporating bike & pedestrian considerations in safety management
- Bike & pedestrian predictive models will be in Part C



Systemic Safety

- Chapter 5
- Provides an introduction to the systemic safety method
- How to incorporate systemic safety in your roadway safety management program
- Includes systemic methods for pedestrian and bicycle application



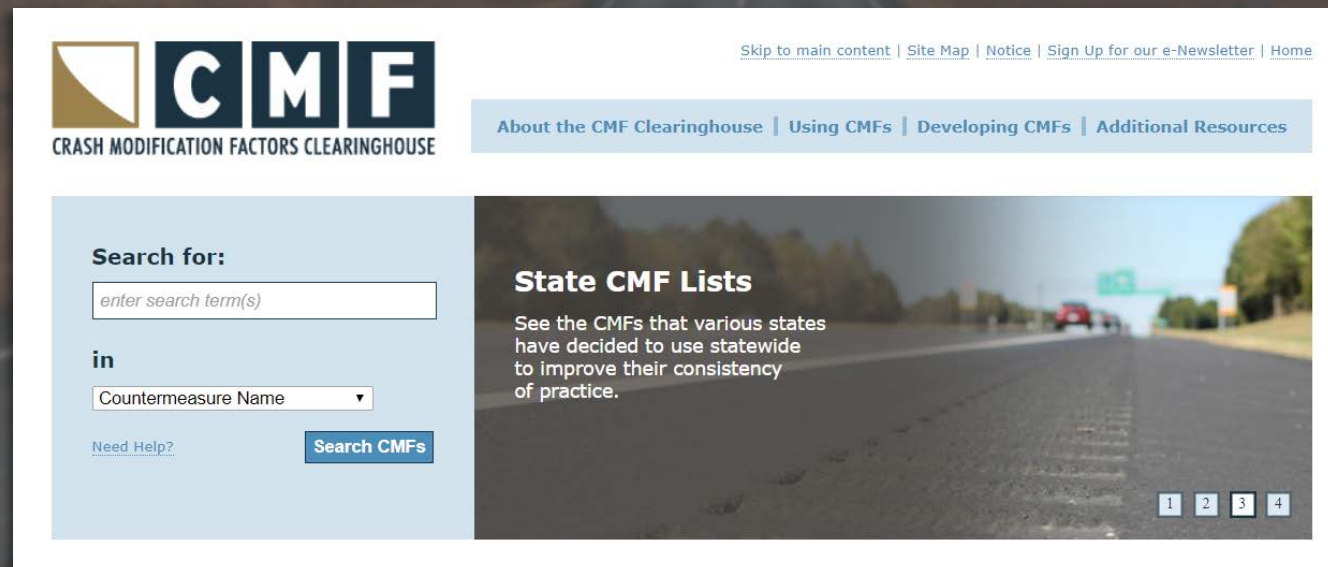
SPF Calibration

- Chapter 12
- Methods for calibrating safety performance functions with state/regional data
- The importance of calibration and when it is needed



Restructured Part D

- New chapters on selecting, creating, and using CMFs
- All CMFs will be housed on the CMF Clearinghouse website (www.cmfclearinghouse.org)



New Predictive Models

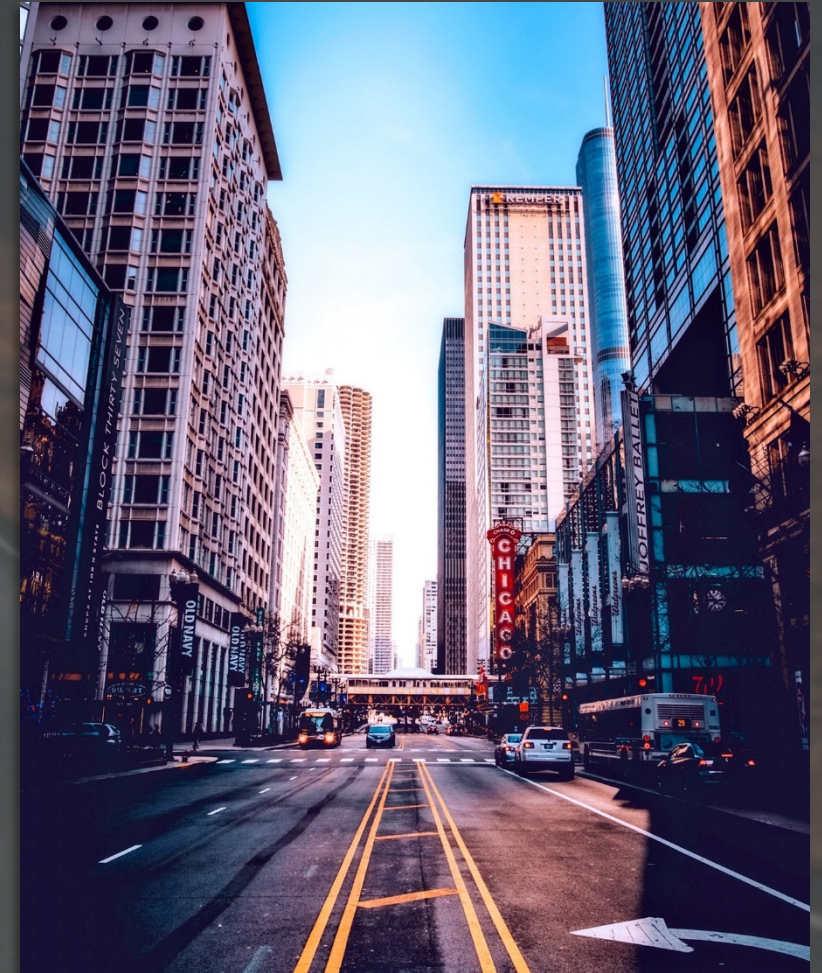
- Additional Intersections (NCHRP 17-78)
 - T Junctions
 - Rural Signalized
 - Major Stopped
 - High-Speed Expressways
 - Five legs
 - Innovative Interchanges

- Roundabouts (NCHRP 17-70)
 - Part B Planning Level SPFs
 - Part C Project SPFs



New Predictive Models

- New Arterial models (NCHRP 17-58)
 - Six and Eight lanes
 - One-Way
 - Associated Intersections

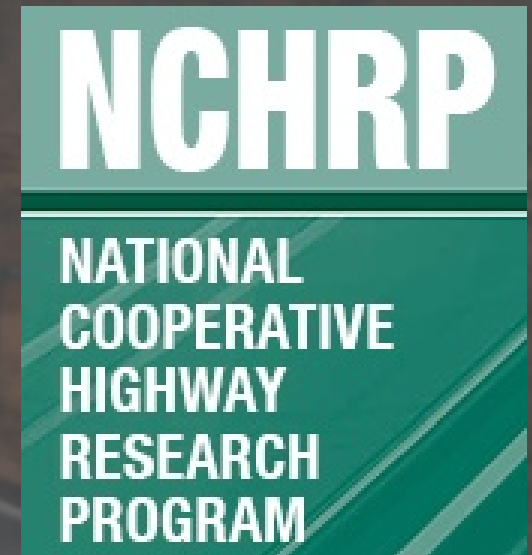


New Research Resources

How to access and implement new research going into the HSM2

New NCHRP Research

- 17-50: Lead States Initiative for Implementing the HSM
- 17-58: CPMs for Six-Lane and One-Way Urban and Suburban Arterials
- 17-62: Improved Prediction Models for Crash Types & Severities
- 17-63: Guidance for the Development and Application of CMFs
- 17-68: Intersection Crash Prediction Methods for the HSM
- 17-70: Development of Roundabout CPMs and Methods
- 17-71: Proposed AASHTO Highway Safety Manual, 2nd Edition
- 17-72: Update of Crash Modification Factors
- 17-73: Systemic Pedestrian Safety Analyses
- 17-77: Guide for Quantitative Approaches to Systemic Safety Analysis
- 17-78: Understanding and Communicating Reliability of CPMs
- 17-83: Briefings and Training Materials for Implementation
- 17-84: Pedestrian and Bicycle Safety Performance Functions



New Available Research Summary

- HSM2 Research Resources web page
 - Contains an index of research projects related to the Highway Safety Manual from NCHRP and FHWA
 - Research results may be included in HSM2 or future versions
 - highwaysafetymanual.org/Pages/ResearchResources.aspx



Looking Forward

When and where the HSM2 will be available

Publication Timeline

- Estimated HSM2 publication in late 2023
- For updates and additional information, visit www.highwaysafetymanual.org
- Questions? Contact Kelly Hardy at info@highwaysafetymanual.org

Questions?

Thank you for your attention.

For more information, please contact
Kelly Hardy at info@highwaysafetymanual.org