



HSM2 Development Update

AASHTO Committee on Traffic Engineering

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HSM2 Development Update

- ▶ Overview of Second Edition
- ▶ New Content
- ▶ Process and Schedule
- ▶ Training
- ▶ Other Activities

Highway Safety Manual 2nd Edition

- ▶ Updating the original HSM with contemporary research and practices - NCHRP Project 17-71
 - ▶ Not a re-write (except for Part D)
 - ▶ Expected publication in Fall 2019

New Content for the HSM2

- ▶ Predictive Models:
 - ▶ Roundabouts
 - ▶ Additional intersection configurations
 - ▶ Six-plus lane and one-way urban arterials
 - ▶ Roadside
 - ▶ Crash types and severities
- ▶ Other:
 - ▶ Crash modification factors
 - ▶ Sample Problems
 - ▶ Ped/bike information

Roadside Models

- ▶ NCHRP 17-54
 - ▶ Models have been developed
 - ▶ NCHRP Final Report is nearing completion
- ▶ AASHTO Steering Committee Pilot Testing
 - ▶ Several states have volunteered to pilot test the models
 - ▶ Results will be compared to previous models/methods
 - ▶ Testing is ongoing
- ▶ Discussion on reconciling differences between the roadside models and the existing HSM models is ongoing

Crash Modification Factors - Part D

- ▶ CMFs will be housed on the FHWA CMF Clearinghouse
 - ▶ Periodically a PDF list of “HSM-Approved” CMFs will be published
- ▶ New Part D Outline:
 - ▶ 1. Introduction
 - ▶ 2. Selecting CMFs
 - ▶ 3. Applying CMFs
 - ▶ 4. Developing CMFs

Ped/Bike Materials

- ▶ NCHRP 17-71: “primer”
 - ▶ Guiding principles of ped and bike safety
 - ▶ Factors contributing to crashes
 - ▶ Data - crashes, surrogates, exposure, challenges
 - ▶ Systemic safety analysis
 - ▶ Etc.

NCHRP 17-84: predictive methods

- ▶ Work Plan A - Develop pedestrian and bicyclist SPFs using available exposure
- ▶ Work Plan B - Develop and test an alternative risk-based approach to pedestrian and bicycle crash prediction based on road assessment program (RAP) models
- ▶ Work Plan C - Develop risk-based models for pedestrians and bicycles based on crash data

FHWA Crash Costs Report

- ▶ Guides agencies in developing state-specific, year-specific crash costs
- ▶ Presents national crash costs which can be adjusted by states using supplied and developed factors
- ▶ HSM2 will include guidance for developing state-specific crash costs, may include recommended values

Severity	Comprehensive Crash Unit Cost
K	\$11,533,700
A	\$1,422,600
B	\$406,100
C	\$197,100
O	\$32,900

Review Process

Part A - Introduction, Human Factors, and Fundamentals

- ▶ Chapter 1 - Introduction and Overview
- ▶ Chapter 2 - Human Factors
- ▶ Chapter 3 - Fundamentals

Part B - Roadway Safety Management Process

- ▶ Chapter 4 - Network Screening
- ▶ Chapter 5 - Diagnosis
- ▶ Chapter 6 - Select Countermeasures
- ▶ Chapter 7 - Economic Appraisal
- ▶ Chapter 8 - Prioritize Projects
- ▶ Chapter 9 - Safety Effectiveness Evaluation

Part C - Predictive Method

- ▶ Chapter 10 - Rural Two-Lane Roads
- ▶ Chapter 11 - Rural Multilane Highways
- ▶ Chapter 12 - Urban and Suburban Arterials
- ▶ Chapter 18 - Freeways
- ▶ Chapter 19 - Ramps

Part D - Crash Modification Factors

- ▶ Chapter 13 - Roadway Segments
- ▶ Chapter 14 - Intersections
- ▶ Chapter 15 - Interchanges
- ▶ Chapter 16 - Special Facilities
- ▶ Chapter 17 - Road Networks

Draft 1

Draft 2

HSM2 Reviews - Thanks for your help!

- ▶ Being reviewed by over 140 volunteers
 - ▶ Drawn from AASHTO HSM Steering Committee, TRB Highway Safety Performance Committee (ANB25), FHWA staff and more
 - ▶ Representing over 30 states
 - ▶ Representation from research, local, state, and federal agencies, and industry

HSM2 Training and Tools

- ▶ NCHRP 17-83 will develop training materials and tools to support implementation of the HSM2
 - ▶ Consideration of various users
 - ▶ Spreadsheets and other electronic analysis tools
 - ▶ Sample problems obtained from HSM users

Other Activities

- ▶ Strategic Plan for Future Editions (SPFE)
 - ▶ Documents guiding principles, methods, research standards, & expectations for the development of future editions of the HSM
 - ▶ Alleviates issues with loss of institutional knowledge
- ▶ Updates to highwaysafetymanual.org
 - ▶ Solicited comments for short, mid, long-term updates
 - ▶ Developing a wish list and a cost proposal.

Questions?