

# An Overview of the HIGHWAY SAFETY MANUAL

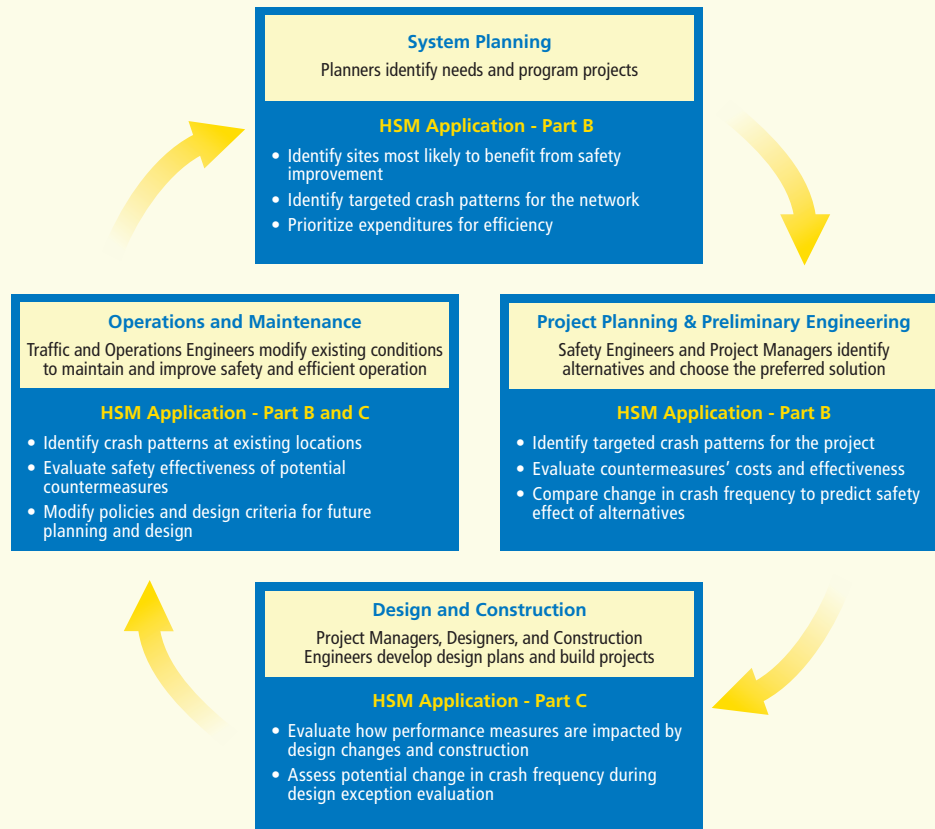
## What is its purpose?

The purpose of the Highway Safety Manual (HSM) is to provide the best factual information and proven analysis tools for crash frequency prediction. The HSM will facilitate integrating quantitative crash frequency and severity performance measures into roadway planning, design, operations, and maintenance decisions. The primary focus of the HSM is the increased application of analytical tools for assessing the safety impacts of transportation project and program decisions.

## What are its uses?

- Identify sites with the most potential for crash frequency or severity reduction.
- Identify factors contributing to crashes and associated potential countermeasures to address these issues.
- Evaluate the crash reduction benefits of implemented treatments.
- Conduct economic appraisals of improvements to prioritize projects.
- Calculate the effect of various design alternatives on crash frequency and severity.
- Estimate potential crash frequency and severity on highway networks, and the potential effects of transportation decisions on crashes.

## How does the HSM apply to the Project Development Process?



## Overview of HSM chapters

### 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

### Part D - Crash Modification Factors

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

## HOT TOPICS OF THE HSM

### What about tort liability and risk management?

The HSM is designed to support practitioners in managing risk. The quantitative analysis of safety data provides protection to public agencies concerned about risk. The HSM is neither intended to be, nor does it establish, a legal standard of care for users or professionals. No standard of conduct or any duty toward the public or any person shall be created or imposed by the publication and use or nonuse of the HSM. Documentation used, developed, compiled or collected for analyses conducted in connection with the HSM may be protected under Federal law (23 USC 409).

### What training is available to assist me in using the HSM?

Step by step procedures with examples are included in the HSM to assist practitioners. Additionally, training courses are available through the National Highway Institute at <http://nhi.fhwa.dot.gov>.

- New Approaches to Highway Safety Analysis (NHI-380075)
- HSM Practitioners Guide to Two-Lane Rural Roads (NHI-380070A)
- HSM Practitioners Guide to Multilane Urban/Suburban Highways (NHI-380070B)
- HSM Application to Intersections (NHI-380105\*)
- HSM Workshop (NHI-380106\*)
- Application of Crash Reduction Factors (NHI-380093)
- Science of Crash Reduction Factors (NHI-380094)
- Interactive Highway Safety Design Model (IHSDM) (NHI-380071, NHI-380100\* web-based)

*\*Course under development*

### How much does it cost? Can I buy it online?

The HSM is currently available for purchase from AASHTO for \$325 for AASHTO members and \$390 for non-members. Discounts are available for those states taking HSM training. Both hard copy and electronic versions are available. To purchase, visit <http://bookstore.transportation.org> and search under code HSM-1.

### What data are needed?

Three types of data are needed to apply the HSM safety prediction methodologies: site characteristics data, traffic volume data, and crash data. Details are available in the Highway Safety Manual Data Needs Guide, available here: [www.trb.org/Publications/Blurbs/Highway\\_Safety\\_Manual\\_Data\\_Needs\\_Guide\\_159984.aspx](http://www.trb.org/Publications/Blurbs/Highway_Safety_Manual_Data_Needs_Guide_159984.aspx)



### Is software support available?

**Yes.** HSM methodologies will be supported by the following software programs:

- **SafetyAnalyst** is a suite of analytical tools for guiding the decision-making process to identify safety improvement needs and develop a system-wide program of site-specific improvement projects. SafetyAnalyst supports Part B of the HSM. [www.safetyanalyst.org](http://www.safetyanalyst.org)
- The **Interactive Highway Safety Design Model (IHSDM)** is a suite of software analysis tools for evaluating safety and operational effects of geometric design decisions. It performs the predictive method for the facilities in Part C of the HSM. [www.tfhrc.gov/safety/ihsdm/ihsdm.htm](http://www.tfhrc.gov/safety/ihsdm/ihsdm.htm)
- The **Crash Modification Factors Clearinghouse** houses a web-based database of CMFs along with supporting documentation to help transportation engineers identify the most appropriate countermeasure for their safety needs. The CMF Clearinghouse supports Part D of the HSM. [www.cmfclearinghouse.org](http://www.cmfclearinghouse.org)

### Where can I find more information?

The most up-to-date information on the HSM can be found here: [www.highwaysafetymanual.org](http://www.highwaysafetymanual.org)