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Research Notes

Highway Safety Manual Implementation

Provide guidance on whether an agency should calibrate the Safety Performance Functions (SPFs) from the Highway Safety Manual (HSM) or develop jurisdiction-specific SPFs.

Safety

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Project Title: Highway Safety Manual Implementation

Task Number: 2318

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Task Manager:

Juan Esparza
Transportation Engineer (Electrical)
juan.esparza@dot.ca.gov

WHAT IS THE NEED?

The HSM 1st Edition, was published by American Association of State Highway and Transportation Officials (AASHTO) in 2010. The HSM provides the best factual information and tools in a useful form to facilitate roadway planning, design, operations, and maintenance decisions based on precise consideration of their safety consequences. The primary focus of the HSM is the introduction and development of analytical tools for predicting the impact of transportation project and program decisions on road safety. The AASHTO Standing Committee on Highway Traffic Safety has established a goal to institutionalize the AASHTO HSM and its associated analytical tools to make data-driven decisions advance the science of safety and to ultimately reduce fatalities and serious injuries.

WHAT ARE WE DOING?

This study would conduct research tasks and develop products that would enable States to accelerate their implementation of the HSM. The specific tasks and products would be identified and prioritized by a Technical Working Group consisting of one representative each from participating agencies. Specific tasks may include: (1) developing a calibration manual to accompany the HSM that provides practical advice and examples on how best to adapt HSM calibration procedures to meet the needs of a particular agency, (2) developing technical guidance for agencies on developing safety performance functions, and (3) developing guidance for agencies on assembling and managing the data needed for safety analyses.

The study would also facilitate Technical Working Group representatives' participation in peer exchanges and other forums through which agencies can exchange information, best practices, lessons learned, and remaining challenges in implementing the HSM appropriately into agencies'

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system planning, project planning, and preliminary engineering, design and construction, and operations and maintenance procedures and processes. These exchanges would feed an annual process through which the Technical Working Group identifies and prioritizes future tasks to be conducted under the study.

WHAT IS OUR GOAL?

The study's objectives are (1) to advance ongoing efforts by lead states to implement the HSM and (2) to expand implementation to all states. This study would be coordinated with other ongoing and planned implementation activities sponsored by AASHTO, Federal Highway Administration (FHWA), and Traffic Research Board, including NCHRP Project 17-50 "Lead States Initiative for Implementing the HSM." It will also be coordinated with projects that develop content for future editions of the HSM, including NCHRP Project 17-45 "Enhanced Safety Prediction Methodology and Analysis Tool for Freeways and Interchanges," NCHRP Project 17-54 "Consideration of Roadside Features in the HSM," and Transportation Pooled-Fund Study TPF-5(099) "Evaluation of Low-Cost Safety Improvements."

WHAT IS THE BENEFIT?

The HSM provides methods to integrate quantitative estimates of crash frequency and severity into planning, project alternatives analysis, and program development and evaluation, allowing safety to become a meaningful project performance measure. HSM will support states' progress toward federal, state, and local safety goals to reduce fatalities and serious injuries. As public agencies work toward their safety goals, the quantitative methods in the HSM can be used to evaluate which programs and project improvements are achieving desired results; therefore, agencies can reallocate funds toward those with the greatest benefit.

WHAT IS THE PROGRESS TO DATE?

A planning meeting was held for the Peer Exchange scheduled for later in 2024, with several representatives from pooled fund states in attendance. Additionally, FHWA and the contractor conducted a kickoff meeting for the 2023-11 Open-Source Tools and Processes project. Several pooled fund state representatives are participating in a focus group to guide the development of these resources. A quarterly meeting took place on November 19th, 2024, where FHWA provided updates on active tasks and discussed preparations for the upcoming Peer Exchange. Quarterly meetings are held on the third Tuesday of November, February, May, and August, from 11 a.m. to 12:30 p.m. ET. FHWA and the contractor also conducted a three-day Peer Exchange, which covered all four parts of the proposed Second Edition of the HSM, with 75 attendees from pooled fund states, AASHTO, and FHWA.

Work continued on the three main tasks of the Advancing Application of Data-Driven Safety Analysis (DDSA) project. FHWA and the contractor held a comment resolution meeting to discuss the final direction for Task 3. For the Communication Guide, the contractor is addressing the final direction from FHWA leadership and legal reviews, with plans for publication as soon as practicable. FHWA also reviewed technical memos for the Open-Source Tools and Processes and Data Dictionary projects, with several pooled fund state representatives participating in the focus group to guide the development of these resources.

A meeting was held on March 25th, 2025, where the contractor presented a summary of findings from Task 3's Informational Report on Predicting Crash Type and Severity. The states discussed updates on active tasks and potential projects from the project repository, including those addressed at the Peer Exchange in December. FHWA and the state representatives also reviewed the summary of the 2024 Peer Exchange. States began providing updated interest ratings for active project ideas

being considered for advancement to projects within the pooled fund.

Work on the Advancing Application of DDSA project continued, with FHWA securing a no-cost time extension to continue the task order.