Safety Performance Management
achieved through Predictive Methods

Today’s Presenters

Esther Strawder
FHWA-Office of Safety
Safety Specialist
Esther.Strawder@dot.gov
Transportation Performance Management and the HSM

TPM benefits:
• Provides a means to **more efficient investment** of Federal transportation funds
• Focuses on **national transportation goals, increasing the accountability** and transparency of the Federal highway programs
• Improves transportation **investment decision-making** through **performance-based planning and programming**

HSM benefits:
• Enables better targeted **safety investment** and more informed decision making
• Supports **improved safety outcomes** i.e. reduction in fatal and serious injury crashes
• Applies to all phases of the project development process including **planning and programming**
Highway Safety Manual

What can the HSM do for you?

• Provides practitioners with the best factual information and scientific methods for safety analysis

• Enables user to quantify safety performance

• Introduces analysis and evaluation methods that lead to more reliable selection of projects
How does the HSM help manage performance?

- Presents alternative performance measures to quantify safety

- Identifies strengths and limitations of traditional and new alternative performance measures

- Shows users how to predict a project’s safety performance
Highway Safety Manual

• Roadway Safety Management Process
  – Network Screening
  – Diagnosis
  – Select Countermeasures
  – Economic Appraisal
  – Prioritize Projects
  – Safety Effectiveness Evaluation
Highway Safety Manual

• Predictive Methods – Estimates expected average crash frequencies by facility type:
  – Rural 2-lane, 2 way
  – Rural multi-lane highways
  – Urban and suburban Arterials

• Safety Performance Functions (SPFs) equations that estimate expected crash frequency based on data

• Crash Modification Factors (CMFs) factor that estimates the potential changes in crash frequency for selected countermeasures
HSM-related Analysis Tools

Network–level Analysis

- **SafetyAnalyst** (AASHTOWare)–network-level safety management software ([www.safetyanalyst.org](http://www.safetyanalyst.org))

Project-level Analysis

- **Interactive Highway Safety Design Model (IHSDM)** –Faithful implementation of Predictive Methods (Part C) for project-level analyses ([www.ihsdm.org](http://www.ihsdm.org))
- **CMF Clearinghouse** (FHWA)–searchable database of 4,000+ CMFs, including, but not limited to, HSM Part D CMFs ([cmfclearinghouse.org](http://cmfclearinghouse.org))
- **HSM Part C Spreadsheets** (Various)—Facilitate Predictive Methods calculations