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AASHTO Highway Safety Manual Second Edition Updates

An Overview of Resources, Updates, and Plans for the Next Edition

June 24, 2024

Highway Safety Manual 2nd Edition

- Background
- Highlights of HSM2 New Content
  - Part A: Fundamentals
    - Human Factors
    - Pedestrians and Bicyclists
  - Part B: Roadway Safety Management
    - Areawide Approach
    - Systemic Approach
  - Part C: Predictive Methods
    - Calibration
    - Additional Facility Types
    - Pedestrians and Bicyclists
  - Part D
    - Applying and Selecting CMFs
- New Applications Across the Project Lifecycle
- Looking Forward
  - Review and Balloting
  - Implementation Support
  - Future Research

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HSM Background

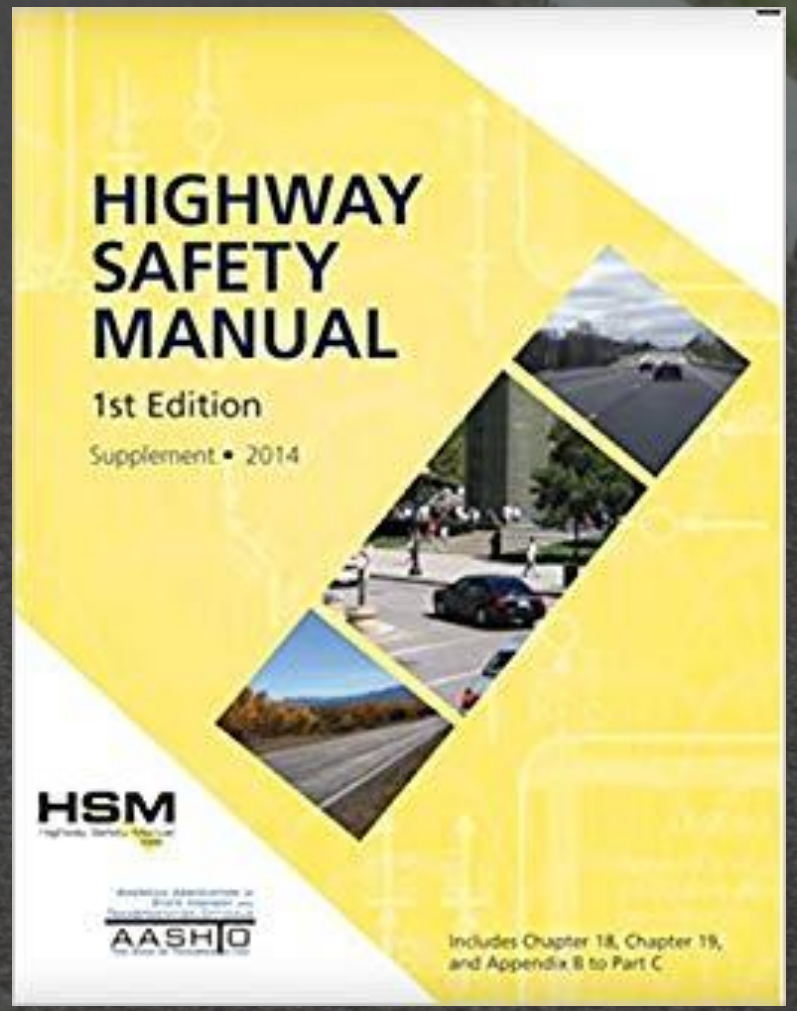
An overview of the manual developed by AASHTO

HSM Background

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

HSM Background

- First Edition Published in 2010 and 2014 by AASHTO
- Provides guidance on
  - Human factors and safety fundamentals
  - Roadway Safety Management Process
  - Predictive methods for roadway improvement project development
- All these elements will be enhanced in HSM2



HSM2 Chapter Overview

Part A - Fundamentals

- Ch 1 – Intro and Overview to HSM
- Ch 2 - Road Safety Principles
- Ch 3 - Human Factors
- **Ch 4 - Pedestrians & Bicyclists**

Part B – Roadway Safety Management

- **Ch 5 - Areawide Planning**
- Ch 6 - Network Screening
- Ch 7 - Diagnosis
- Ch 8 - Countermeasure Selection
- Ch 9 - Economic Appraisal
- Ch 10 - Project Prioritization
- Ch 11 - Safety Effectiveness Evaluation
- **Ch 12 - Systemic Safety Management**

Part C – Predictive Methods

- **Ch 13 – General Concepts for Applying the Part C Predictive Methods**
- Ch 14 - Rural Two-Lane Roads
- Ch 15 - Rural Multilane Highways
- Ch 16 - Urban & Suburban Arterials
- Ch 17 - Freeways
- Ch 18 – Ramps

Part D – Crash Modification Factors

- **Ch 19 - Selecting CMFs**
- **Ch 20 - Applying CMFs**

NEW HSM2 CHAPTERS

Part A – Fundamentals Updates

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Human Factors

Updated Content for HSM2

Human Factors Chapter (Chapter 3)

- Expanded human factors focus:
  - Human factors issues vs aberrant driver behaviors
  - The demands of the driving task
  - The capabilities of road users

Key Human Factors Contributors to Crashes

- Driver Expectations
- Visibility
- Driver Workload
- Perception-Reaction Time

Driver Workload

Reduce the number or complexity of roadway design elements and traffic control while increasing the visibility of roadway geometrics, signing, marking and signals

Countermeasure Selection for Human Factors and Driver Behavior

- Pedestrian Collisions
- Work Zone Crashes
- Intersection Crashes
- Roadway Departure Crashes

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Pedestrians and Bicyclists

New HSM2 Content

New Pedestrian and Bicycle Chapter (Chapter 4)

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- Integrating pedestrian and bicycle considerations into roadway safety management and predictive methods
- Special considerations:
  - School transportation
  - Accessibility compliance

New Chapter 4

- Outlines factors contributing to pedestrian and bicycle collisions

Intersection and Traffic Control Characteristics

Human Factors and Aberrant Behaviors

Roadway Geometric Characteristics

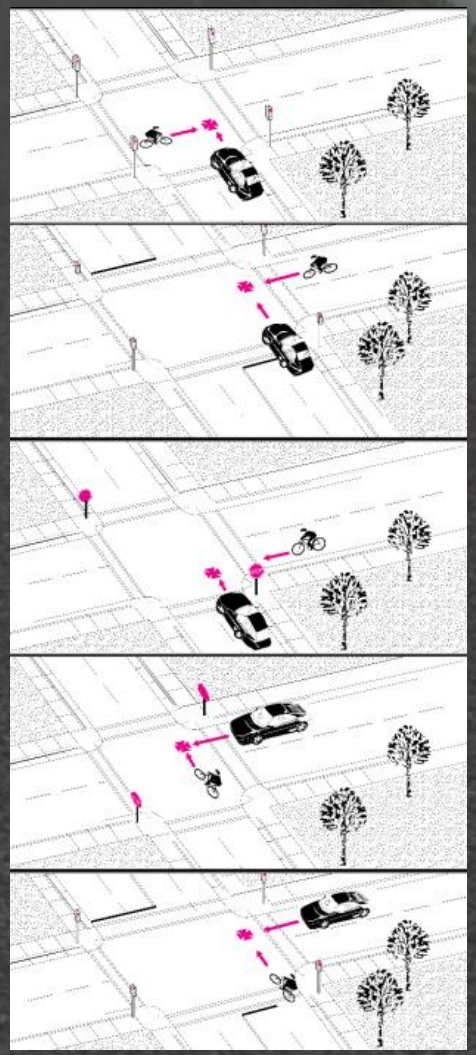
Land-Use and Socioeconomic Characteristics

Maintenance Factors

Weather and Environmental Factor

New Chapter 4

- Ped/Bike Crash Data
  - Discussion on data quality and underreporting
  - Pedestrian and bicycle crash typing



New Chapter 4

- Indirect safety measures for pedestrians and bicyclists
  - Behavioral
  - Operational

Time-to-Collision

Speed

Bicycle Level of Traffic Stress

Gap Time

Compliance with Traffic Signals

Part B — Road Safety Management Updates

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Areawide Approach

New HSM2 Content

Roadway Safety Management Process

New!

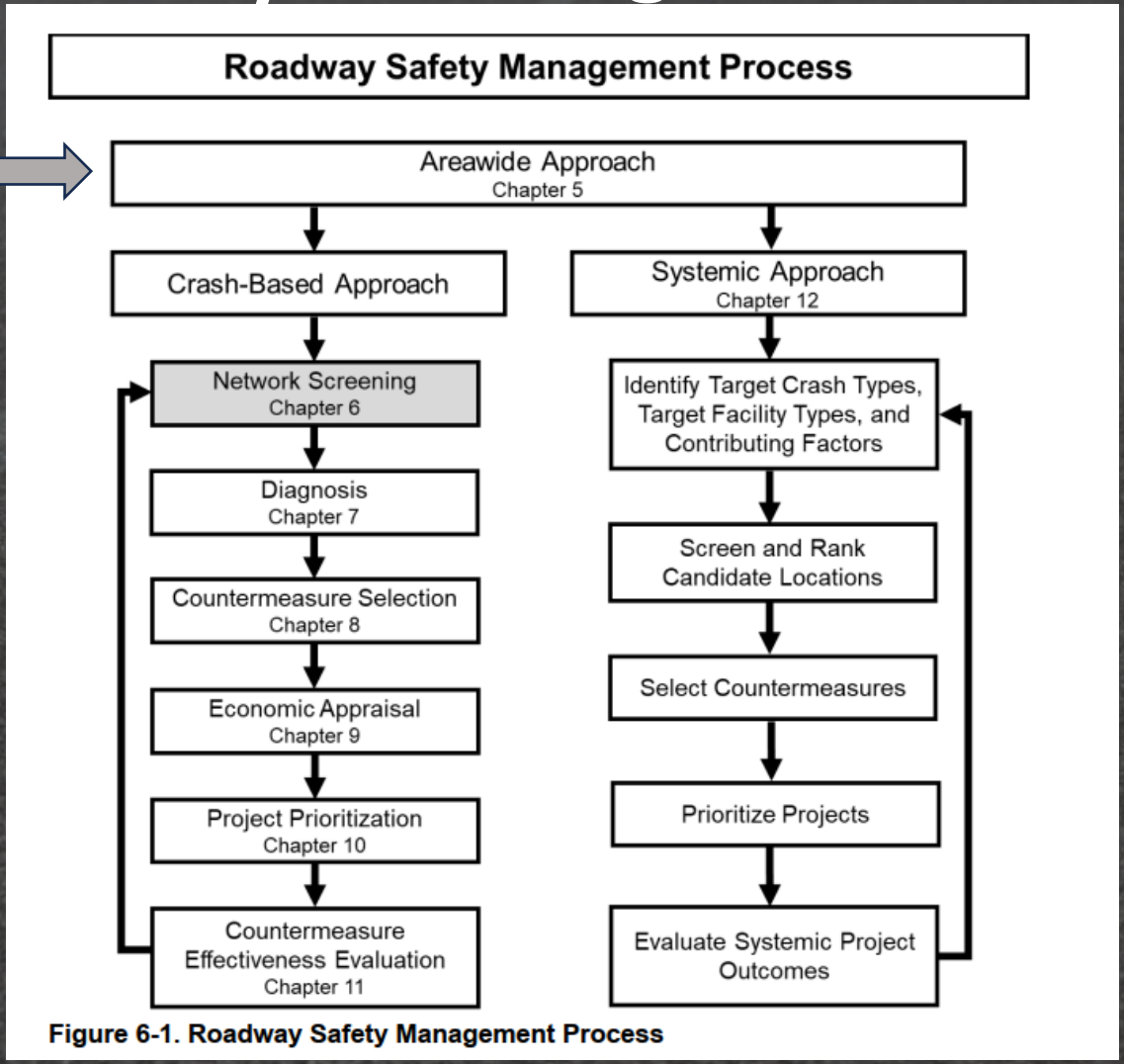

Figure 6-1. Roadway Safety Management Process

Areawide Approach (Chapter 5)

- Macro-Level Crash Prediction Models (CPMs)
- Predictive Method for…
  - All Crash Types
  - Bicyclists and Pedestrians
- Two Categories…
  - Metropolitan Planning Organization (MPO)-Level CPMs
  - State-Level CPMs

Areawide Approach - Applications

- Comparing alternative growth scenarios (scenario planning)
- Setting safety targets based on population growth/land use changes
- Assess the safety impacts of large-scale development

Areawide Approach Example

- What are the safety impacts of the construction of a large-scale development in an MPO?
- Data Inputs Needed:
  - Total daily VMT for public roads
  - Median income in dollars
  - Total Intersections
  - Total Area

Areawide Approach Example

- New Development

	Current Conditions	Future Conditions
Daily VMT	4,778 people	**5,638 people**
Median Income	$42,008	**$45,610**
Total Intersections	107	**115**
Total Area	10.2	**12.2**
Total Crashes	**9.07**	**10.15**

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Systemic Approach

New HSM2 Content

Roadway Safety Management Process

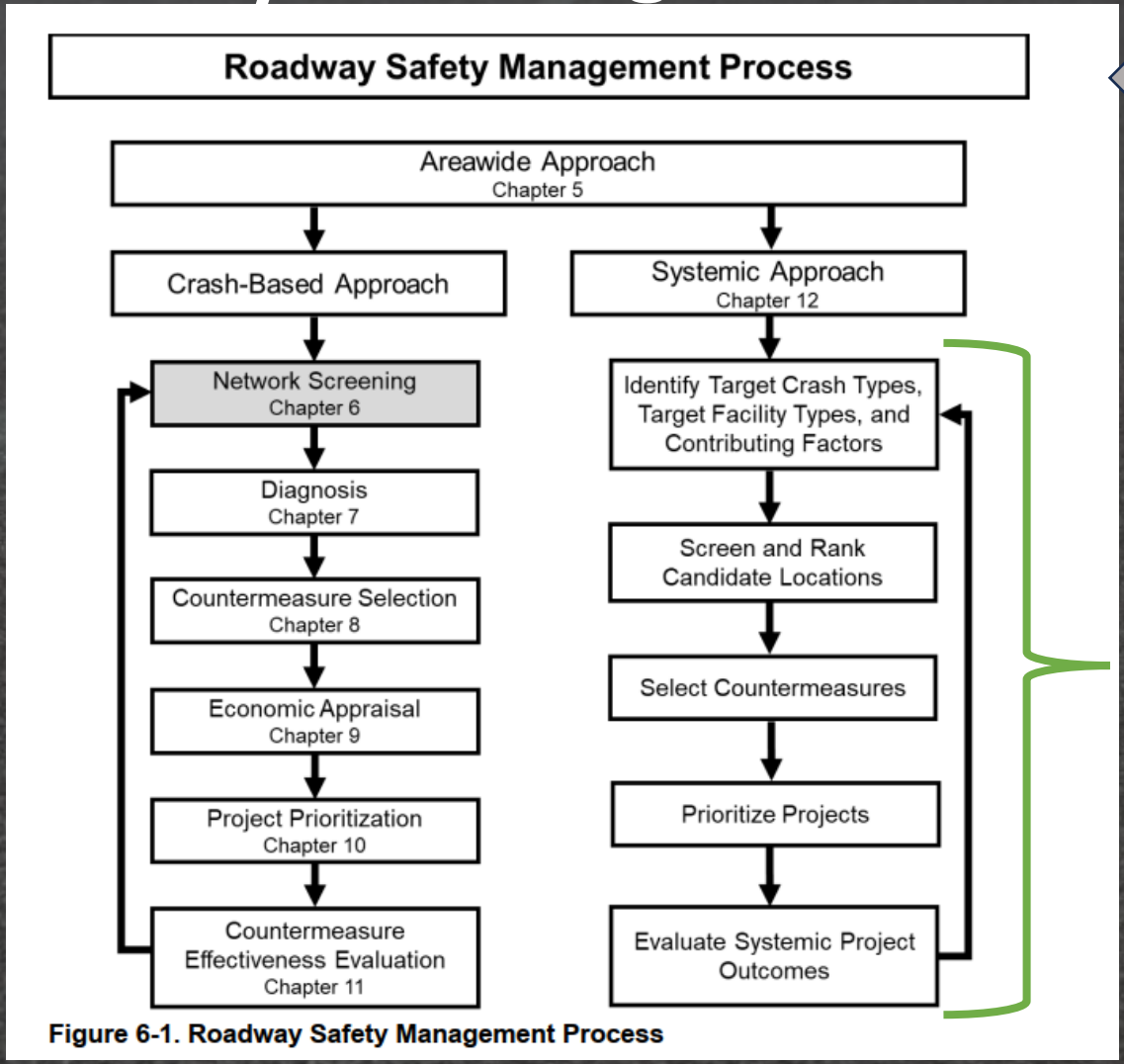
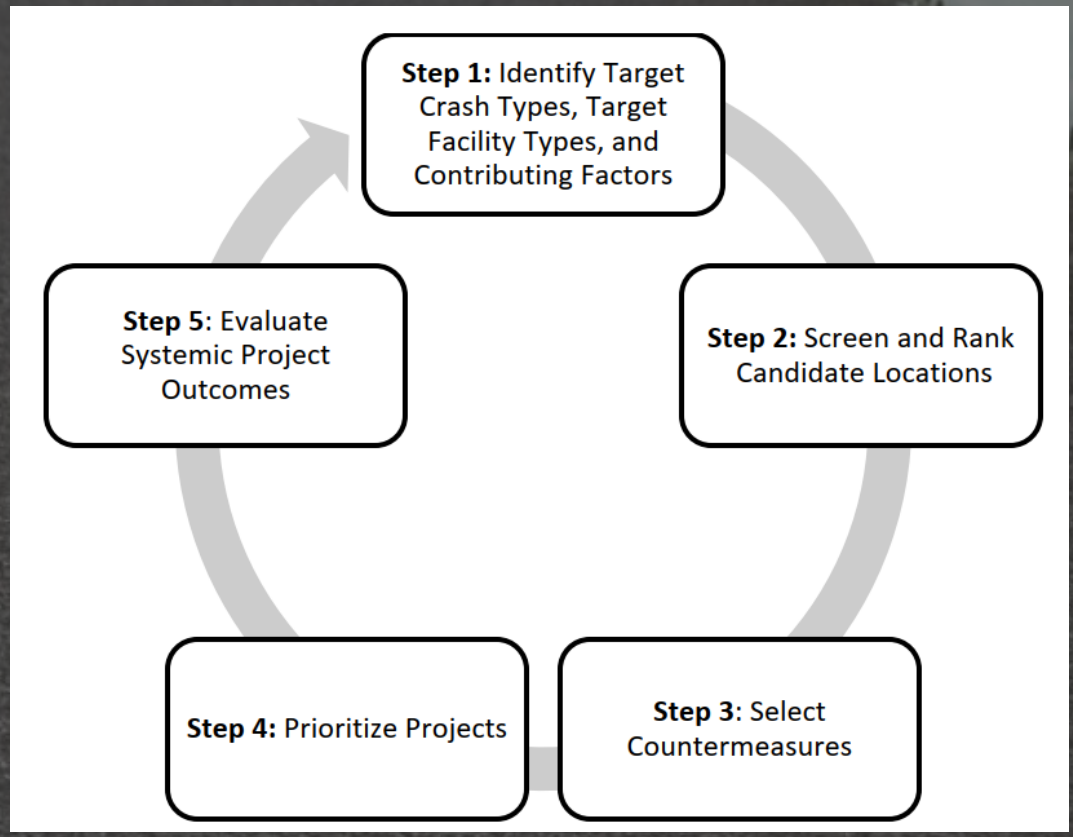


Figure 6-1. Roadway Safety Management Process

New!

Systemic Safety (Chapter 12)

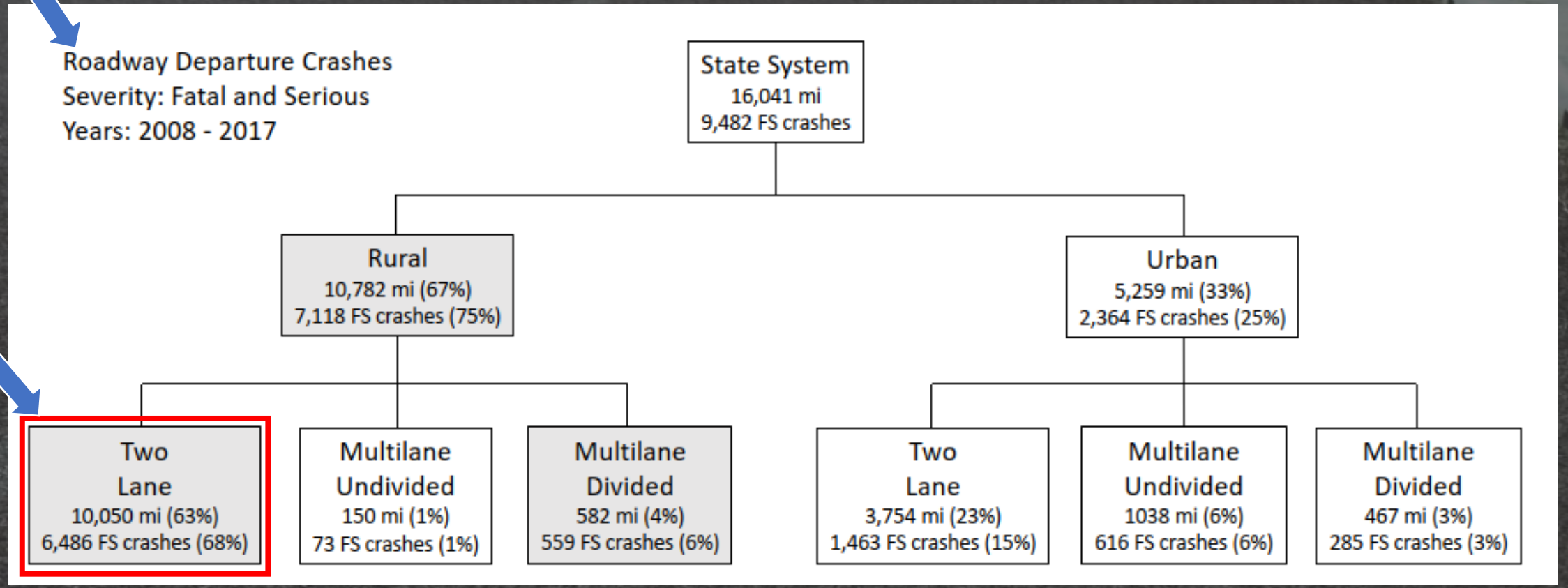
- Data-Driven Approach
- Proactive Approach
- Focuses on identifying and treating sites with similar characteristics based on their crash potential



Systemic Crash Tree Diagram Example

Target Crash Type

Target Facility Type



Systemic Safety Example (Ch 12)

- Ranking Sites based on Contributing Factors

Table 12-1. Site Ranking Based on Presence of Contributing Factors to Roadway Departure Crashes

Site ID	Contributing Factors				Number of Contributing Factors Present	Rank
	Outside Shoulders <4 ft	Posted Speeds >40 mph	Presence of Horizontal Curve(s)	Presence of Fixed Object(s) within the Clear Zone		
Site A		X	X		2	3
Site B	X	X	X	X	4	1
Site C	X		X	X	3	2
Site D	X	X			2	3
Site E				X	1	5

- Next Steps – Select Countermeasures and Prioritize Projects

Systemic - Countermeasures

- Rank #1 - Rural Two-Lane Roadways with…
  - Outside shoulder less than 4 ft
  - Post speed greater than 40 mph
  - Presence of Horizontal Curves
  - Fixed Objects in Clear Zone
- Apply proven countermeasures such as improved curve delineation
  - Chevron Signs
  - Improved Pavement Markings

Systemic Pedestrian and Bicycle Safety

New HSM2 Content

Systemic Safety (Ch 12)

- Systemic methods can be used for pedestrian and bicycle application
- Example:

- High Priority Locations
  - Urban-suburban
  - Four-leg signalized intersections
  - 35 mph roadways
- Crash Type
  - Pedestrian collisions

→

- Countermeasures
  - Pedestrian Countdown and Leading Interval
  - Longer Pedestrian Phases

Areawide Approach

- MPO and State-Level P/B Crash Prediction Models CPMs
- Data Inputs:

Table 5-3. Data Inputs for State-Level CPMs

Crash Severity	Pedestrian/Bicyclist
K	
KA	• Total Population + Employment • Intersection density • Median income in dollars per annum ($2017)
KABC	
KABCO	• Total Population + Employment • Intersection density • Median income in dollars per annum ($2017) • Urban area indicator

Table 5-2. Data Inputs for MPO-Level CPMs

Crash Severity	Pedestrian/Bicyclist
K	
KA	• Total daily VMT for public roads in the SAZ • Median income in dollars per annum ($2017) • Total population • Total employment • Transit stop density • Total walk, bicycle, and transit commuting proportion • Total Area
KABC	
KABCO	• Total daily VMT for public roads in the SAZ • Median income in dollars per annum ($2017) • Total population • Total employment • Transit stop density • Total walk, bicycle, and transit commuting proportion • Total Area

- Outputs: Areawide Crash Prediction

Using Areawide Approach – Scenario Planning Example

- New MPO Development – All Crash Severities

Table 5-2. Data Inputs for MPO-Level CPMs

Crash Severity	Pedestrian/Bicyclist
KABCO	• Total daily VMT for public roads in the SAZ • Median income in dollars per annum ($2017) • Total population • Total employment • Transit stop density • Total walk, bicycle, and transit commuting proportion • Total Area

	Current Conditions	Future Conditions	Future Conditions
Total Population	1,735 people	+400 people	2,135 people
Total Employment	153 people	+300 people	453 people
Total walk, bicycle, and transit commuting proportion	4.9%	+5%	9.9%

What is the change in predicted average pedestrian and bicycle frequency from current conditions to the future development scenario?

	Current Conditions	Future Conditions
Total Population	1,735 people	2,135 people
Total Employment	153 people	453 people
Total walk, bicycle, and transit commuting proportion	4.9%	9.9%
Pedestrian/Bicycle crashes per year	**0.35**	**0.54**

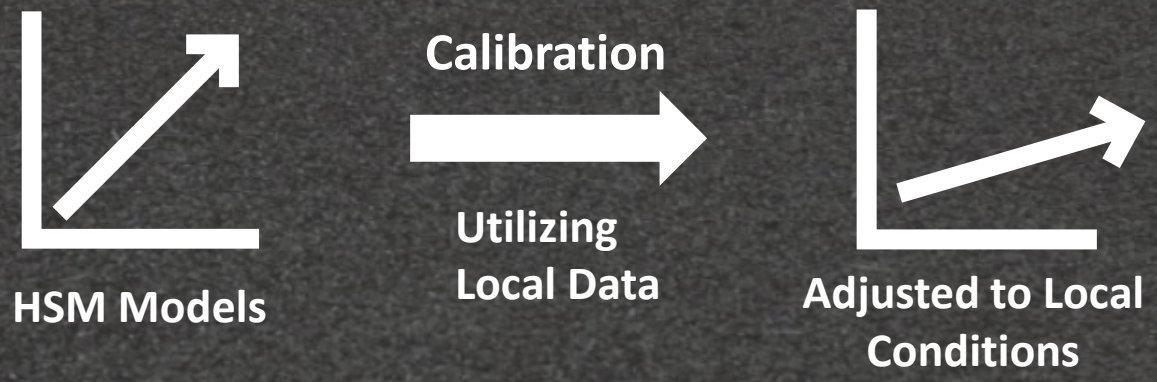
Part C — Predictive Methods Updates

Calibration

Updated Content for HSM2

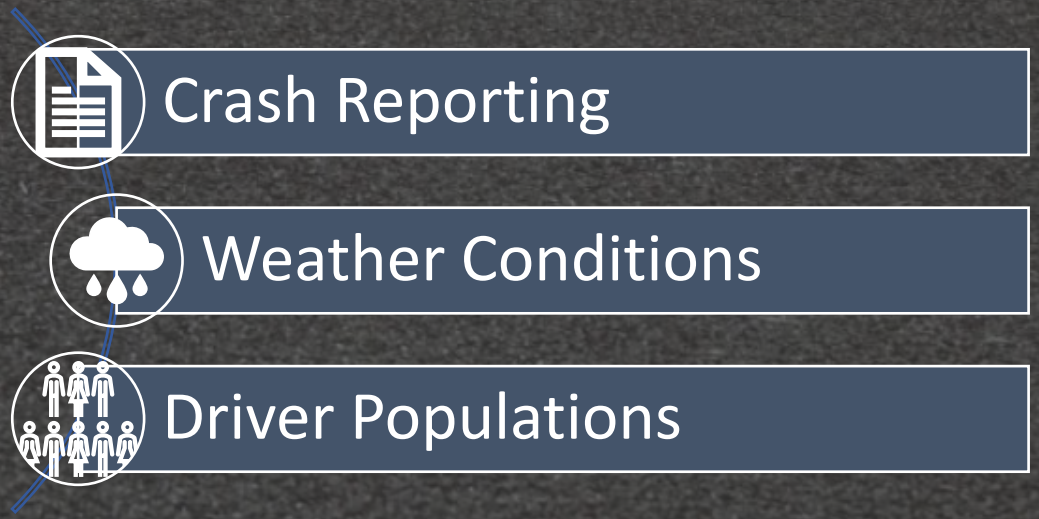
Introduction to Calibration

- Calibration is used to adjust crash frequency estimates produced from a safety prediction models to better approximate local conditions
- New Updates to Chapter 13



Importance of Calibration

- Models in the HSM were developed based on the most complete and consistent available data sets
- Crash frequencies can vary in different jurisdictions based on factors such as…



Calibration Example

- Using HSM Rural Two-Lane Segment Model Prediction = 5.6 total crashes per year
- Calibration Factor for Local Conditions = 1.2

5.6 x 1.2 = 6.72 total crashes per year

HSM Model Crash Prediction

Calibration Factor

Adjusted to Local Conditions

Chapter 13

- Includes detailed discussion concerning calibration of SPFs
- Includes overview of developing jurisdiction-specific SPFs

Calibrating Existing SPFs

More Reliable Results!

Developing Jurisdiction-Specific SPFs

For reliable results in your jurisdiction…

Adjust to Local Conditions!

- Calibrated SPFs and Jurisdiction-Specific SPFs are more meaningful and accurate for the jurisdiction
- Update every one to three years

What do we need to calibrate?

- Traffic Volumes
- Annual Crash Data Sets
- Roadway Inventory
  - High vs low relative effect on crash occurrence

Data Element (AF Number Used in Chapter 15)	Relative Effect on Crash Occurrence	
	High	Low
Segment length	X	
Annual average daily traffic (AADT)	X	
AF_{1ru} / AF_{1rd}. Lane width	X	
AF_{2ru} / AF_{2rd}. Shoulder width	X	
AF_{4ru} / AF_{4rd}. Presence of lighting		X
AF_{5ru} / AF_{5rd}. Use of automated speed enforcement		X
AF_{3ru}. Sideslope	X	
AF_{3rd}. Median width	X	

Note: HSM2 will use Adjust Factors (AF) for SPF based crash predictions and Crash Modification Factors (CMF) for those ratio of data element effects not developed from SPF base conditions

Sample Size

- Number of sites
  - Example site: rural two-lane two-way roadways
  - Minimum recommended: 30 to 50 sites
- Number of crashes
  - Minimum recommended: at least 100 crashes in the entire site type group
- See Chapter 13 in the HSM2 for more detailed sample size information

Additional Facility Types

New HSM2 Content

Ch 14. Rural Two-Lane, Two-Way Roads

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New Intersection Types

- 3-leg turning (3STT)
- 3-leg signal control (3SG)
- 4-leg all-way stop control (4aST)

Roundabout Intersections

- 3-leg single-lane roundabout (31R)
- 3-leg two-lane roundabout (32R)
- 4-leg single-lane roundabout (41R)
- 4-leg two-lane roundabout (42R)

Ch 15. Rural Multilane Highways

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New Intersection Types

- 3-leg signal control (3SG)
- 3-leg single-lane roundabout (31R)
- 3-leg two-lane roundabout (32R)
- 4-leg single-lane roundabout (41R)
- 4-leg two-lane roundabout (42R)

Ch 16. Urban and Suburban Arterials

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New Roadway Segment Types

- 6-lane undivided (6U)
- 6-lane divided (6D)
- 7-lane with center TWLTL (7T)
- 8-lane divided (8D)
- 2-lane one-way (2O)
- 3-lane one-way (3O)
- 4-lane one-way (4O)

Ch 16. Urban and Suburban Arterials

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New 3-leg Intersection Types

- Minor-road stop control, high speed (3ST-HS)
- All-way stop control (3aST)
- Turning (3STT)
- Signal control, high speed (3SG-HS)
- Single-lane roundabout (31R)
- Two-lane roundabout (32R)

New 4- and 5-leg Intersection Types

- Minor-road stop control, high speed (4ST-HS)
- All-way stop control (4aST)
- Signal control, high speed (4SG-HS)
- Single-lane roundabout (41R)
- Two-lane roundabout (42R)
- Signal control (5SG)

Ch 17 & 18 Freeways and Ramps

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Urban Freeways

- 4-lane
- 6-lane
- 8-lane
- 10-lane

Ramp Terminal Intersections

- Single-point diamond interchanges (SP)
- Tight diamond interchanges (TD)

➡ HSM2 freeway models will be directional

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Pedestrian and Bicyclist Models

New HSM2 Content

Pedestrian and Bicyclist Methods

- New pedestrian and bicycle crash prediction methodology
- Sample problems included
- Located in:
  - Chapter 14 – Rural Two-Lane
  - Chapter 15 – Rural Multilane
  - Chapter 16 – Urban Suburban Arterials

Ped/Bike Count Data Needs (Ch 14 - 16)

- Pedestrians
  - Pedestrian movements along the road – left side
  - Pedestrian movements along the road – right side
  - Pedestrian crossing movements – midblock
  - Pedestrian crossing movements – intersections
- Bicycles
  - Bicycle movements along the road
  - Bicycle movements through intersections

Other Ped/Bike Data Needs

Example: Adjustment Factors for Urban and Suburban Arterials (Ch 16)

- Sidewalk or Paved Shoulder
- School Zone Warning
- Lane Width
- Horizontal Curve Radius
- Advance Visibility of Curve
- Percent Grade
- Delineation
- Shoulder Rumble Strips
- Vehicle Parking
- Street Lighting
- School Zone Warning
- Crossing Facility Type
- Advance Visibility of Crossing
- Pedestrian Fencing
- Vehicle Parking
- Number of Traffic Lanes
- Median Type

Ped/Bike Quantitative Results Available from Crash Prediction Method

- Pedestrians & Bicyclists Outputs:
  - Number of pedestrian and bicycle crashes based on proportions:
    - Fatal (K); A injury; B injury; C injury
  - Number of pedestrians and bicyclists injured based on injuries per crashes
    - Also by KABCO scale

Ped/Bike Crash Prediction Example

INPUTS

- Urban Suburban Arterial
- 3-Lane with a two-way left-turn lane (TWLTL)
- 1.5 mile length
- 11,000 vehs/day
- 11 ft lane width
- 1.0 mi of parallel on-street commercial parking
- 30 driveways
- 10 roadside fixed objects per mile
- 6-ft offset to roadside fixed objects
- Lighting present
- Sidewalks present
- No school zones
- On marked midblock crossing is present
- Mean speed of 40 mph
- Landscaping barrier is present on both sides of the road that prevents pedestrians from entering the traveled way except at designated crossings
- Peak-hour pedestrian flow:
  - Left side of the road (75 ped/hr)
  - Right side of the road (150 ped/hr)
- Peak-hour bicycle flow (50 bike/hr)

Ped/Bike Crash Prediction Example

- OUTPUT

Crash Type	Predicted Number of Crashes
Total Pedestrian Crashes	0.002
Total Bicycle Crashes	0.103

Ex.) Approximately one bicycle crash is predicted every 10 years

Part D — Crash Modification Factors Updates

Selecting and Applying CMFs

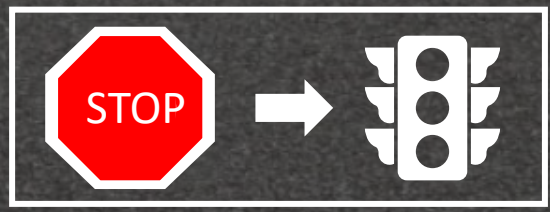
New HSM2 Content

What is a Crash Modification Factor?

- A Crash Modification Factor (CMF) estimates a safety countermeasure's ability to reduce crashes and crash severity
  - Provides a quantitative estimate of the effectiveness of a countermeasure
  - Not typically determined from SPF development for Part C CPMs
- New CMF Chapters
  - Selecting CMFs – Chapter 19
  - Applying CMFs – Chapter 20

Basic Application of CMFs

- A stop-controlled intersection is expected to experience 5.2 total crashes per year
- The CMF for installing a traffic signal is 0.56* for all crashes
- After installing the signal:



5.2 x 0.56 = 2.9 total crashes per year

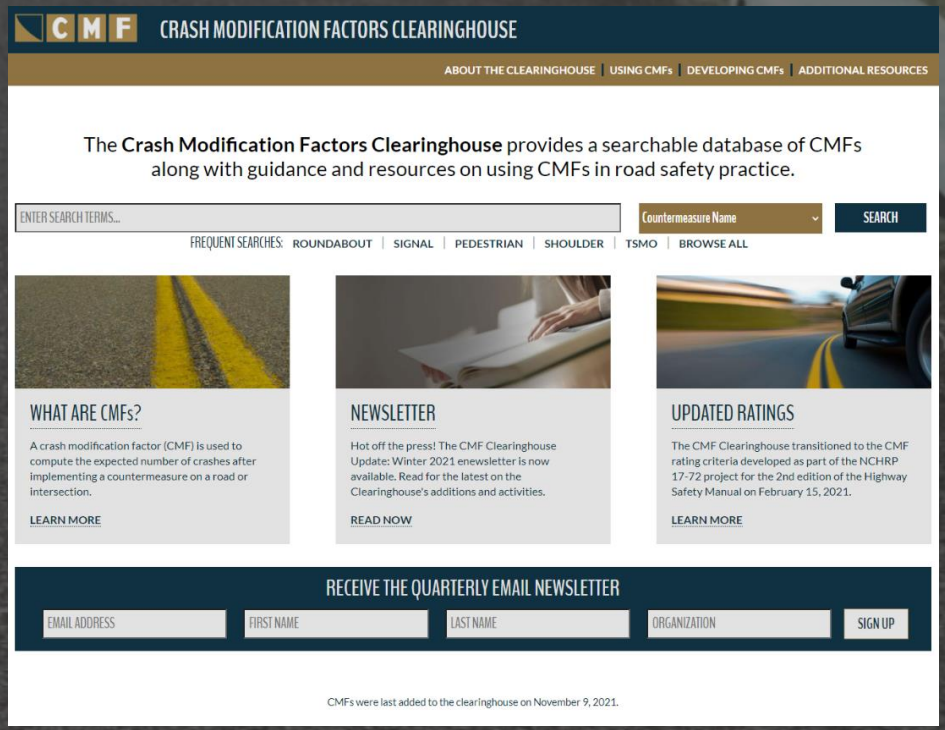
* CMF ID: 325

Example Applications of CMFs

- Identify the most cost-effective strategy considering various countermeasures
- Prioritize projects as part of the roadway safety management process
- Estimate impacts of proposed design exceptions
- Development and analysis of alternatives

Where can you find CMFs?

- Use the Crash Modification Factor (CMF) Clearinghouse!
- Searchable database of research-driven Crash Modification Factors
- Provides guidance and resources for using CMFs in practices
- CMFs are rated based on quality to help users find the most appropriate values
  - New Star Rating
- Visit http://cmfclearinghouse.org/



Ch 19. Selecting CMFs

Example:

Different CMFs for the Same Countermeasure Name

- Make Sure the Following Align to Your Site:
  - Collision Type
  - Area Type
  - Road Type
  - Lane Number
  - AADT

Table 19-11. CMF Comparison for Centerline and Shoulder Rumble Strips

Countermeasure Name	Install Centerline and Shoulder Rumble Strips	Install Centerline and Shoulder Rumble Strips	Install Centerline and Shoulder Rumble Strips	Install Centerline and Shoulder Rumble Strips	Install Centerline and Shoulder Rumble Strips	Install Centerline and Shoulder Rumble Strips
CMF ID	1	2	3	4	5	6
CMF	0.82	1.21	0.80	0.77	0.81	0.83
Study Reference	A	B	C	C	C	D
CMF St. Err.		0.35	0.03	0.03	0.09	< 0.01
Crash Type	All	All	All	All	All	All
Crash Severity	Fatal, Serious injury	Serious injury, Minor injury	All	Fatal, Serious injury, Minor injury	Fatal, Serious injury, Minor injury	All
Area Type	Rural	Rural	Rural	Rural	Rural	Rural
Road Division	All	Undivided	Undivided	Undivided	Undivided	Undivided
Road Type	Principal Arterial Other	Not Specified	Not Specified	Not Specified	Not Specified	Principal Arterial Other
Lanes	2 to 4	2	2	2	2	2
Study Type	Before/after using EB or full Bayes	Simple before/after	Before/after using EB or full Bayes	Before/after using EB or full Bayes	Before/after using EB or full Bayes	Before/after using EB or full Bayes
Min AADT			154	154	1,282	
Max AADT			25,796	25,796	20,433	
Avg AADT					6,101	5,092
State of Origin	Not USA	ND	KY, MO, PA	KY, MO, PA	KY	MI

Ch 20. Applying CMFs

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Example

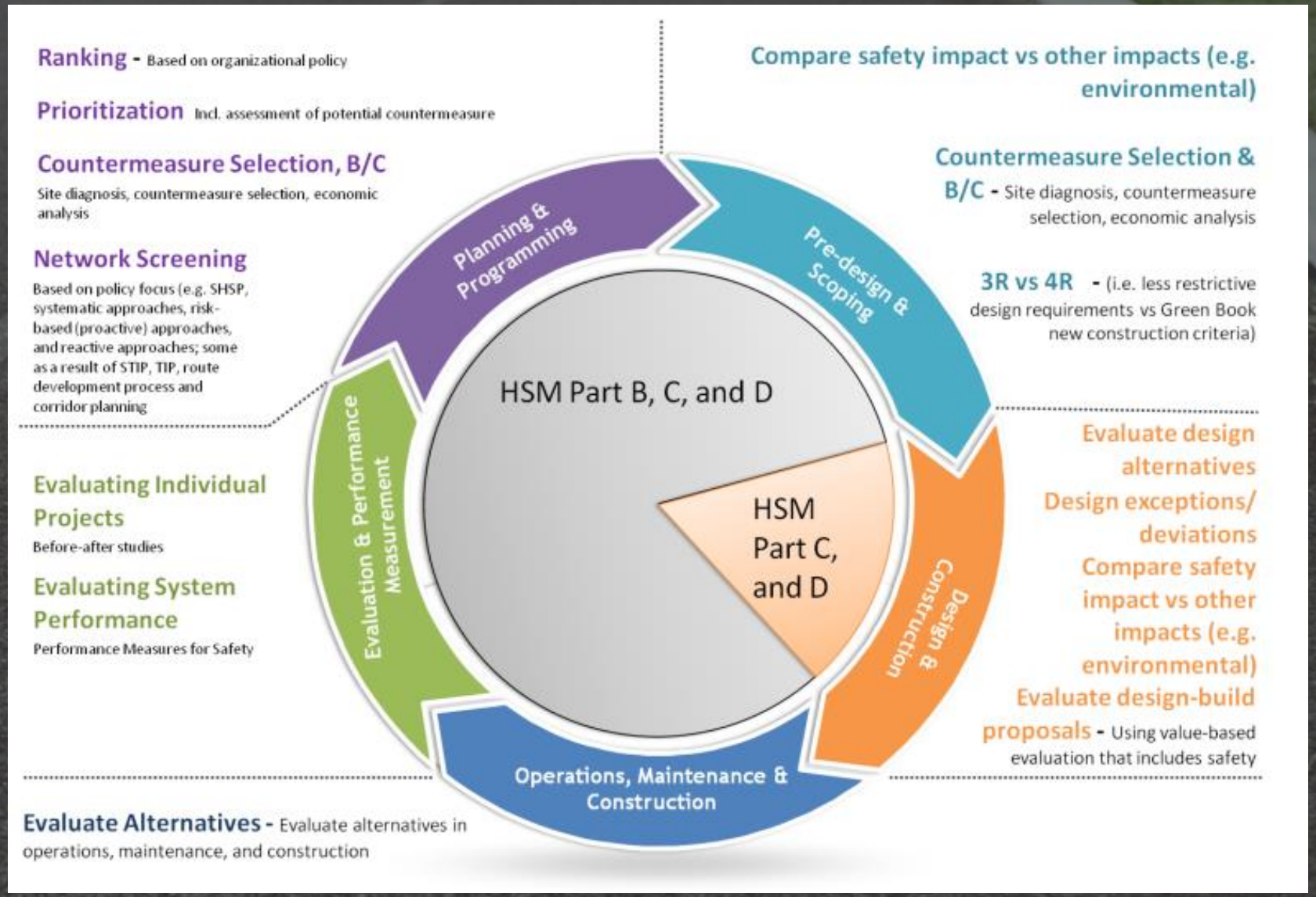
Table 20-21. Example Application of CMFs in Design Decisions and Exceptions

Scenario	Estimated Baseline Crashes (without Counter-measure)	CMF	Estimated Crashes with Counter-measure	Estimated Reduction in Crashes	Estimated Monetary Benefit	Present Value Benefit	Benefit –Cost Ratio
Convert 0-ft shoulders to 2-ft shoulders	3.2 crashes per mile per year	0.87	2.78 crashes per mile per year	0.42 crashes per mile per year	$39,686 per mile per year	$351,747 per mile	1.76
Convert 0-ft shoulders to 4-ft shoulders	3.2 crashes per mile per year	0.77	2.46 crashes per mile per year	0.74 crashes per mile per year	$70,214 per mile per year	$622,321 per mile	1.24

New Applications

Using New HSM2 Methods Across the Project Lifecycle

HSM Supports Transportation Safety Decisions



Source: FHWA HSM Implementation Guide for Managers, September 2011

Roadway Lifecycle

New! Areawide Planning (Ch 5)
Systemic Safety (Ch 12)

Planning & Programming
- Network screening
- Diagnosis
- Countermeasure selection
- Economic Analysis
- Evaluation

New! Developing, calibrating, and using SPFs (Ch 13)

Evaluation and Performance Management
- Evaluate effectiveness of individual projects and treatments (e.g. before-after studies)
- Evaluating system performance

Understanding Transportation Safety
- Improves overall understanding of transportation safety
- Expanded human factors focus
- Pedestrian and bicyclist safety principles and practice

Pre-Design & Scoping
- Compare safety impacts of alternatives (e.g, SPICE)
- Countermeasure selection and diagnosis
- Alternatives and design scoping
- Design decision making
- 3R versus 4R

New! Bicyclist & Pedestrian (Ch 4)

New! Part D Crash Modification Factors (CMFs) (Ch 19 & 20)

Operations & Maintenance
- Evaluate operations and maintenance options (Road Safety Inspections)
- Improve decision making to optimize operations

Design & Construction
- Evaluate design alternatives
- Compare impacts of alternatives
- Design exceptions and deviations
- Evaluate design build

Expanded Crash Prediction Chapters

New Applications: Understanding Transportation Safety

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HSM2 Applications: Part A

- Improves overall understanding of transportation safety
- Expanded human factors focus
- Pedestrian and bicyclist safety principles and practice

- Bicyclist & Pedestrian (Chapter 4)
  - Provides an overview of methods for incorporating bike & pedestrian considerations in safety management

New Applications: Planning and Programming

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HSM2 Applications: Parts B, D

- Network screening
- Diagnosis
- Countermeasure selection
- Economic analysis
- Evaluation

- Areawide planning (Chapter 5)
  - Overview of macro-level quantitative safety planning
  - Considers demographics, geography, land use, and more
- Systemic safety analysis processes (Chapter 12)
  - Introduces the systemic safety method
  - How to incorporate systemic safety in your roadway safety management program
  - Includes systemic methods for pedestrian and bicycle application

New Applications: Pre-Design & Scoping

HSM2 Applications: Parts B, C, D

- Compare safety impacts of alternatives (e.g., SPICE)
- Countermeasure selection and diagnosis
- Alternatives and design scoping
- Design decision making
  - 3R versus 4R

- Developing, calibrating and using safety performance functions (SPFs) (Chapter 13)
  - Methods for calibrating safety performance functions with state/regional data
  - Importance of calibration, when it is needed

New Applications: Design & Construction

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HSM2 Applications: Parts C, D

- Evaluate design alternatives
- Compare impacts of alternatives
- Design exceptions and deviations
- Evaluate design build

- Expanded crash prediction
  - Bicyclist and pedestrian
  - 3-leg intersections
  - Roundabouts
  - 6 & 8-lane divided, undivided
  - 7-lane with center TWLTL
  - 2-, 3-, 4-lane one-way
  - 4-, 6-, 8-, 10-lane freeway – by direction
  - Single point and tight diamond interchanges
- Uses Adjustment Factors/Functions for Part C SPFs versus CMF for average conditions

New Applications: Operations and Maintenance

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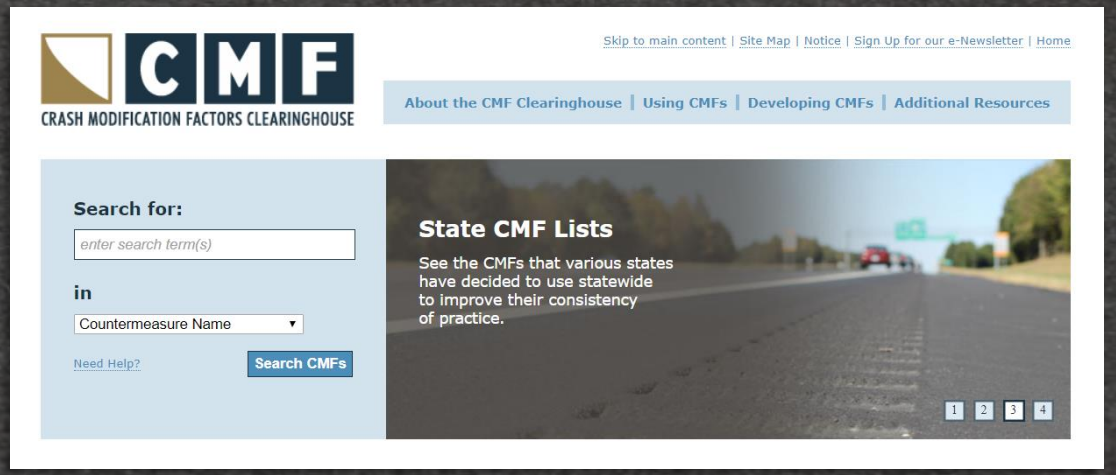
HSM2 Applications: Parts B, C, D

- Evaluate operations and maintenance options (Road Safety Inspections)
- Improve decision making to optimize operations

- Part D crash modification factors (CMFs)
  - Refer to the CMF Clearinghouse with new star rating
  - Focus on selecting and applying CMFs



New Applications: Evaluation & Performance Management

HSM2 Applications: Parts B, C, D

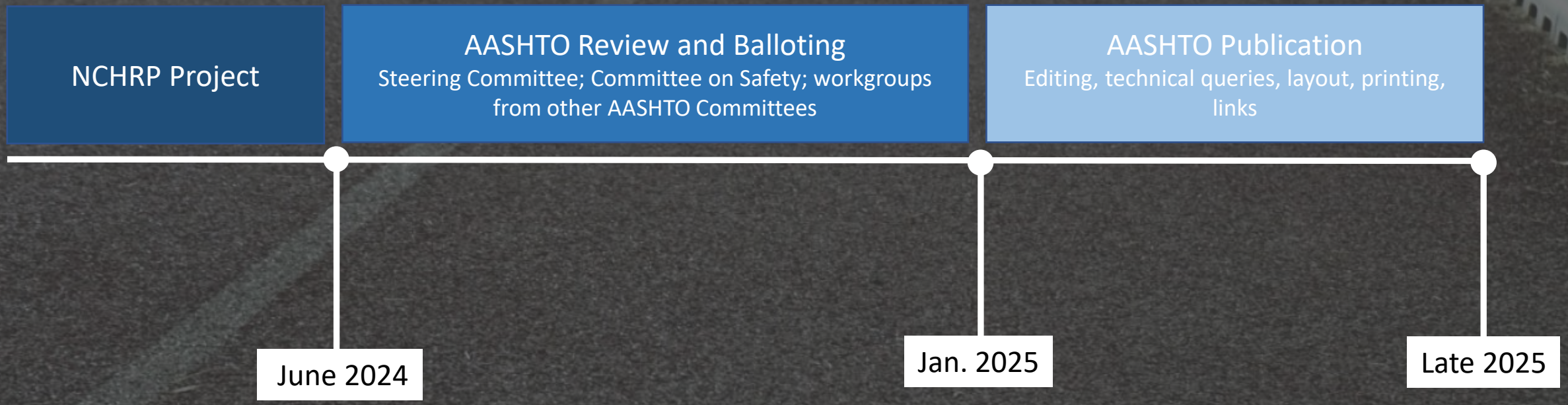
- Evaluate effectiveness of individual projects and treatments (e.g. before – after studies)
- Evaluating system performance

- Chap 11 Effectiveness Evaluation
  - Moved Appendices into Chapter
  - Updated information from recent publications

Looking Forward

Reviews, Balloting, Publication, Implementation

Publication Timeline



As of 5/1/24

HSM Implementation Support

- Website: www.highwaysafetymanual.org
- Webinars, including:
  - Exploring Highway Safety Manual Crash Prediction Calculation Tools
    - DOTs have developed HSM crash prediction calculation tools to fit the specific needs of their states.
    - Review customized HSM crash prediction tools created by North Carolina and Pennsylvania Departments of Transportation.
    - Best practices in crash prediction tool creation will be shared.

HSM Implementation Support

- We Are Looking for Input on HSM2 Needs:
  - Outreach
  - Training
  - Tools
  - Noteworthy Examples
  - Etc.

Future Research

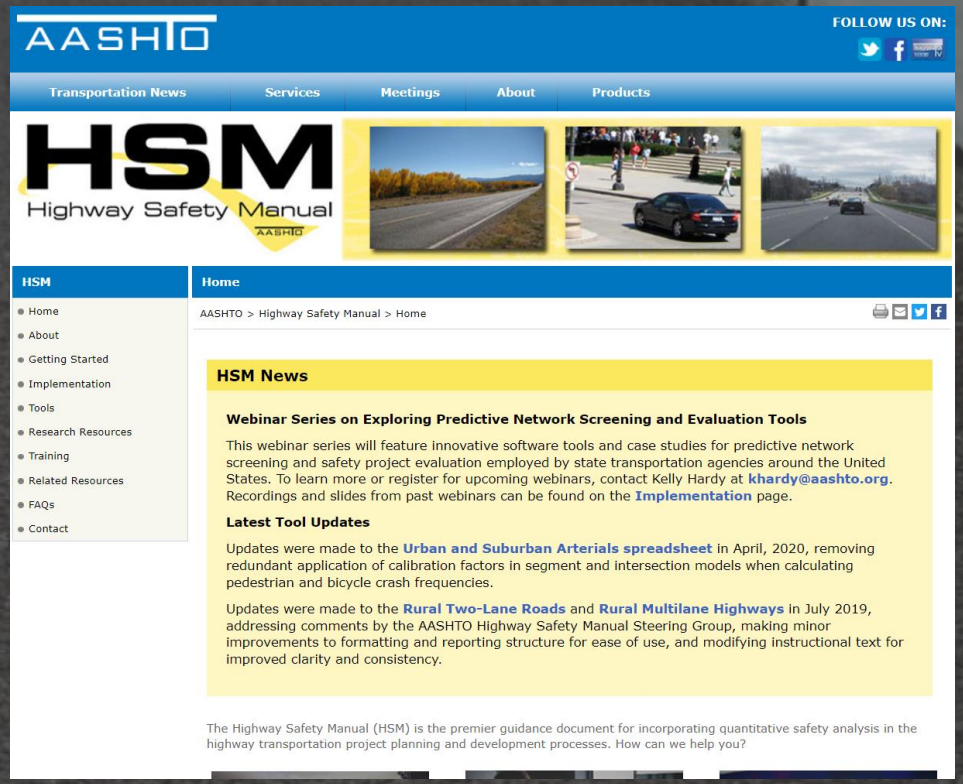
- NCHRP Research
  - 17-104: Enhancement of Roadside Design Safety Prediction Models for the Highway Safety Manual
  - 17-126: Intersection Crash Prediction Models for Future Editions of the Highway Safety Manual
  - 17-127: Practitioner's Application Guide to the Highway Safety Manual
  - 20-123 (17): Highway Safety Manual Development and Roadmap
- Roadmap project and TRB ASC20 committee will support prioritizing new research.
- Continued coordination with FHWA and ITE safety partners to identify HSM2 training and support

Future Research

- Guide for Research Resulting in Practical Implementation of the HSM
  - Compatibility with existing research
  - Model scope, sensitivity testing and edge cases
  - Pilot testing of models and tools
  - Frequently asked questions
  - Implementation planning
- Posted on www.highwaysafetymanual.org

Highway Safety Manual Website

- Resources can be found on the Highway Safety Manual website
- highwaysafetymanual.org



Questions?

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