



Highway Safety Improvement Program  
*Data Driven Decisions*

# Highway Safety Improvement Program

## 23 CFR Parts 924 and 490 Subpart B Implementation Guidance

April 22, 2016



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## Acronyms

The following is a list of the acronyms and abbreviations used in this document:

AAA	American Automobile Association
AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ARF	Annual Report File
CDIP	Crash Data Improvement Program
CFR	Code of Federal Regulations
CMF	Crash Modification Factor
CVSP	Commercial Vehicle Safety Plan (FMCSA)
CY	Calendar Year
DOT	Department of Transportation
FARS	Fatality Analysis Reporting System
FAST Act	Fixing America's Surface Transportation Act
FDE	Fundamental Data Elements
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FMIS	Financial Management Information System (FHWA)
FRA	Federal Railroad Administration
GHSA	Governors Highway Safety Association
HPMS	Highway Performance Monitoring System
HSIP	Highway Safety Improvement Program
HSM	Highway Safety Manual
HSP	Highway Safety Plan (NHTSA)
IHSDM	Interactive Highway Safety Design Model
MAP-21	Moving Ahead for Progress in the 21 <sup>st</sup> Century Act
MIRE	Model Inventory of Roadway Elements
MMUCC	Model Minimum Uniform Crash Criteria
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices

NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
RHCP	Railway-Highway Crossing Program
RDIP	Roadway Data Improvement Program
RSA	Road Safety Audits
SHSP	Strategic Highway Safety Plan
SHSO	State Highway Safety Office
SPF	Safety Performance Function
STIP	Statewide Transportation Improvement Program
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TRCC	Traffic Records Coordinating Committee
U.S.C.	United States Code
usRAP	United States Roadway Assessment Program
VMT	Vehicle Miles Traveled

## Chapter 1: Introduction

The purpose of the Highway Safety Improvement Program (HSIP) implementation guidance is to support implementation of the HSIP and Safety Performance Management Measures (Safety PM) Final Rules following changes Congress made to the program in the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST Act). The Federal Highway Administration (FHWA) published the HSIP and Safety PM Final Rules in the Federal Register on March 15, 2016 with an effective date of April 14, 2016. This HSIP implementation guidance relates existing guidance and information resources to the various elements of the HSIP and Safety PM Final Rules and establishes further guidance.

### 1.1 Background

#### What is the HSIP?

The HSIP is a core Federal-aid highway program, the purpose of which is to achieve a significant reduction in fatalities and serious injuries on all public roads. The HSIP is a Federally-funded, State-administered program that is legislated under 23 U.S.C. 148, 23 U.S.C. 150, and 23 U.S.C. 130 and regulated by 23 CFR Parts 924 and 490.

#### Where can I find the HSIP legislative and regulatory requirements?

“Highway Safety Improvement Program.” Title 23 U.S.C. 148.

<http://uscode.house.gov/browse/prelim@title23&edition=prelim>

“Highway Safety Improvement Program.” Title 23 CFR 924.

<https://www.federalregister.gov/articles/2016/03/15/2016-05190/highway-safety-improvement-program>

“National Goals and Performance Management Measures.” Title 23 U.S.C. 150.

<http://uscode.house.gov/browse/prelim@title23&edition=prelim>

“National Performance Management Measures.” Title 23 CFR 490.

<https://www.federalregister.gov/articles/2016/03/15/2016-05202/national-performance-management-measures-highway-safety-improvement-program>

“Railway-Highway Crossings.” Title 23 U.S.C. 130.

<http://uscode.house.gov/browse/prelim@title23&edition=prelim>

## **1.2 How to Use this Document**

This HSIP implementation guidance is organized around the main sections of the HSIP regulation under 23 CFR Part 924 and the Safety PM section of 23 CFR Part 490. Table 1 summarizes the information contained in these sections as well as the relationship between the HSIP and Safety PM regulations and the contents of the HSIP implementation guidance.

**Table 1. Organization and Content of HSIP Implementation Guidance**

HSIP & Safety PM Regulation Section	Content	Corresponding HSIP Implementation guidance Chapter
<b>924.1 Purpose</b>	States purpose of HSIP regulation.	N/A
<b>924.3 Definitions</b>	Defines terms used in 23 CFR 924.	N/A
<b>924.5 Policy</b>	Requires States to establish an HSIP. Describes eligible use of HSIP funds.	<a href="#">Chapter 2</a>
<b>924.7 Program Structure</b>	Presents primary components of HSIP. Requires States to develop HSIP processes.	<a href="#">Chapter 3</a>
<b>924.9 Planning</b>	Describes process requirements for: <ul style="list-style-type: none"> <li>• Data collection and maintenance;</li> <li>• Capabilities for data collection and analysis;</li> <li>• SHSP updates;</li> <li>• Safety data analysis;</li> <li>• Engineering studies; and</li> <li>• Project prioritization.</li> </ul> Addresses other planning requirements.	<a href="#">Chapter 4</a>
<b>924.11 Implementation</b>	Describes implementation requirements for: <ul style="list-style-type: none"> <li>• MIRE FDE;</li> <li>• SHSP Action Plans; and</li> <li>• RHCP Special Rule.</li> </ul>	<a href="#">Chapter 5</a>
<b>924.13 Evaluation</b>	Describes process requirements for: <ul style="list-style-type: none"> <li>• Project and program evaluation; and</li> <li>• SHSP evaluation.</li> </ul> Explains how evaluation results must be used.	<a href="#">Chapter 6</a>
<b>924.15 Reporting</b>	Defines HSIP reporting cycle. Describes content and structure of HSIP and RHCP reports. Clarifies Section 508 requirements.	<a href="#">Chapter 7</a>
<b>924.17 MIRE FDE</b>	Presents MIRE FDE.	<a href="#">Chapter 8</a>
<b>490.201 Purpose</b>	States the purpose of the regulation.	N/A
<b>490.203 Applicability</b>	Describes the applicability of HSIP performance measures.	N/A
<b>490.205 Definitions</b>	Defines terms used in 23 CFR 490 Subpart B.	N/A
<b>490.207 National performance management measures for the Highway Safety Improvement Program</b>	Defines the HSIP performance measures. Explains how the performance measures are calculated. Describes transition requirements for serious injury definition.	<a href="#">Chapter 9</a>
<b>490.209 Establishment of</b>	Describes requirements for State DOTs and	<a href="#">Chapter 10</a>

HSIP & Safety PM Regulation Section	Content	Corresponding HSIP Implementation guidance Chapter
<b>performance targets</b>	MPOs to establish safety performance targets.	
<b>490.211 Determining whether a State department of transportation has met or made significant progress toward meeting performance targets</b>	Describes data sources that will be used to determine progress. Explains how and when FHWA will evaluate progress. Describes penalties for failing to meet or make significant progress.	<a href="#">Chapter 11</a>
<b>490.213 Reporting of targets for the Highway Safety Improvement Program</b>	Describes how State DOTs and MPOs report targets.	<a href="#">Chapter 12</a>
<b>FDE = fundamental data elements</b> <b>HSIP = Highway Safety Improvement Program</b> <b>MIRE = Model Inventory of Roadway Elements</b>	<b>RHCP = Railway-Highway Crossing Program</b> <b>Safety PM = Safety Performance Measures</b> <b>SHSP = Strategic Highway Safety Plan</b>	

The HSIP implementation guidance presents regulatory language in **bold text highlighted in gray** boxes. It presents regulatory references in [brackets] for clarity and future reference.

## Chapter 2: Policy [23 CFR 924.5]

The Highway Safety Improvement Program (HSIP) policy states:

**Each State shall develop, implement, and evaluate on an annual basis an HSIP that has the objective to significantly reduce fatalities and serious injuries resulting from crashes on all public roads. [23 CFR 924.5(a)]**

The HSIP regulation under 23 CFR Part 924 prescribes the requirements for the development, implementation, and evaluation of an HSIP in each State. To obligate HSIP funds, each State must meet these requirements to be consistent with the objective of the program – to significantly reduce fatalities and serious injuries on all public roads.

**HSIP funds shall be used for highway safety improvement projects that are consistent with the State’s SHSP. HSIP funds should be used to maximize opportunities to advance highway safety improvement projects that have the greatest potential to reduce the State’s roadway fatalities and serious injuries. [23 CFR 924.5(b)]**

### Can I use HSIP funds for my project?

To be eligible for HSIP funds, all highway safety improvement projects must:

1. Address a Strategic Highway Safety Plan (SHSP) priority,
2. Be identified through a data-driven process, and
3. Contribute to a reduction in fatalities and serious injuries.

In addition, all highway safety improvement projects are subject to general requirements under title 23 of the United States Code.

### What does it mean to be consistent with the SHSP?

Highway safety improvement projects are considered consistent with a State's SHSP if they logically flow from identified SHSP emphasis areas and strategies. The SHSP emphasis areas should guide HSIP problem identification, and SHSP strategies should influence countermeasure identification and HSIP project selection.

### Can the State use HSIP funds for non-infrastructure projects?

A State may use HSIP funds for projects specified in 23 U.S.C. 148(a)(4)(B). Non-infrastructure projects are those that do not result in construction. In general, non-infrastructure projects that promote the awareness of the public and educate the public concerning highway safety matters or enforce highway safety laws are not eligible for HSIP funds. However, eligible non-infrastructure projects include road

safety audits, improvements in the collection and analysis of data, or transportation safety planning activities.

### **Can the State use HSIP funds for safety features on larger capital projects?**

**Safety improvements that are provided as part of a broader Federal-aid project should be funded from the same source as the broader project. [23 CFR 924.5(c)]**

HSIP-funded projects are typically stand-alone safety projects. However, there may be times when safety improvements made in conjunction with larger road projects would utilize HSIP funds while the rest of the project uses other funds. These situations must still meet the general HSIP eligibility criteria and may include the following scenarios:

- When introducing a safety countermeasure and the HSIP funds would be used for a limited time to advance the rollout of an innovative countermeasure until the feature is incorporated into the standard practices of the State.
- When a location identified through the program of highway safety improvement projects overlaps with a standard road project.
- When implementing road safety audit recommendations through a resurfacing program.

Well-proven safety countermeasures such as guardrail, pavement markings, or shoulder rumble strips that have been included as components of projects for many years should be included in the standard Federal-aid project and funded with the funds that are used for the project. The goal is for well-proven safety countermeasures to become standard procedures and included in the standard project development process.

### **Where can I find additional information about HSIP eligibility?**

FHWA, *Construction Program Guide*.

<http://www.fhwa.dot.gov/construction/cjit/>

FHWA, *Federal-aid Highway Policy and Guidance Center*.

<http://www.fhwa.dot.gov/pgc/>

FHWA, *HSIP Eligibility Guidance*, February 26, 2016.

<http://safety.fhwa.dot.gov/legislationandpolicy/fast/guidance.cfm>

“Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.”  
Title 2 CFR 200.

[http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title02/2cfr200\\_main\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title02/2cfr200_main_02.tpl)



## Chapter 3: Program Structure (23 CFR 924.7)

The Federal Highway Administration (FHWA) defines the components of the Highway Safety Improvement Program (HSIP) and establishes requirements for States to develop HSIP processes for each of the components in this section. The following section describes the relationship between the HSIP components and provides additional considerations for developing HSIP processes.

### 3.1 Program Structure

**The HSIP shall include:**

- **Strategic Highway Safety Plans;**
- **Railway-Highway Crossing Program; and a**
- **Program of Highway Safety Improvement Projects.** [23 CFR 924.5(a)]

#### What is the relationship between the various HSIP components?

The HSIP, as defined in 23 CFR Part 924, consists of the three primary components referenced above. Under 23 U.S.C. 148, the SHSP provides the strategic direction for the State's HSIP and drives the development of the program of highway safety improvement projects. The RHCP also generates a program of highway safety improvement projects at railway-highway crossings, which are funded via a set-aside from the HSIP apportionment. (23 U.S.C. 130(e)(1)). The RHCP exists under 23 U.S.C. 130; therefore, 23 U.S.C. 148 requirements do not apply unless the State DOT uses HSIP funds for the RHCP projects.

### 3.2 Highway Safety Improvement Program (HSIP) Processes

**The HSIP shall address all public roads in the State and include separate processes for the planning, implementation, and evaluation of the HSIP components described in section 924.7(a). These processes shall be developed by the States in cooperation with the FHWA Division Administrator in accordance with this section and the requirements of 23 U.S.C. 148. Where appropriate, the processes shall be developed in consultation with other safety stakeholders and officials of the various units of local and Tribal governments.** [23 CFR 924.7(b)]

#### What processes are required for the various HSIP components?

##### *Strategic Highway Safety Plans*

States must document their SHSP update process per 23 CFR 924.9(a)(3)(iii). To fulfill this requirement, each State must provide a detailed description of the process it used to update the plan, including a description of its consultation and coordination approach, data-driven and performance-based process,

and strategy selection. The description also should discuss the evaluation and update approach and schedule. A State should include this description as a section, chapter, or appendix in the SHSP. Attachment B in the *SHSP Guidance* provides samples and additional information.

#### *Railway-Highway Crossing Program*

States must establish processes for analyzing safety data to develop a Railway-Highway Crossing Program [23 CFR Part 924.9(a)(4)(ii)]. States must develop these processes in coordination with FHWA and document them in a manual or other similar procedure document. [23 CFR Part 924.7(b)] The manual should also include processes for conducting engineering studies at railway-highway crossings, prioritizing projects for implementation, and evaluating the effectiveness of completed projects. These processes can then be used to develop a State railway-highway grade crossing action plan.

Under 49 CFR 234.11, the 10 States with the highest number of grade crossing collisions on average during calendar years 2006, 2007, and 2008 are required to develop a State railway-highway grade crossing action plan. The requirements of the action plans are described under 49 CFR 234.11(c)(2):

#### **A State railway-highway grade crossing action plan shall:**

- i. Identify specific solutions for improving safety at crossings, including [railway-highway] grade crossing closures or grade separations;**
- ii. Focus on crossings that have experienced multiple accidents or at high risk for such accidents; and**
- iii. Cover a five-year time period.**

The 10 States' Safety Action Plans are available on the Office of Safety HSIP website under the [RHCP](#). Other States may also choose to develop a State railway-highway grade crossing action plan to support implementation of their RHCPs.

#### *Program of Highway Safety Improvement Projects*

States must develop processes for the planning, implementation and evaluation of the program of highway safety improvement projects [23 CFR Part 924.7(b)]. Many States have developed HSIP manuals or similar documentation describing these processes. The processes may incorporate a range of procedures appropriate for the administration of an effective program of highway safety improvement projects on individual highway systems, portions of highway systems, and in local political subdivisions, so that when combined, they cover all public roads in the State. The *HSIP Manual* and Part B of the *Highway Safety Manual* (HSM) provide technical guidance and examples for consideration in the development of these processes. Examples of State HSIP manuals are linked from the FHWA Office of Safety website under [HSIP Resources](#). Appendix A also provides a template to support the development of a State HSIP Manual.

**Where can I find more information to support the development of HSIP processes?**

AASHTO, Highway Safety Manual (Part B), 2010.

<http://www.highwaysafetymanual.org/Pages/default.aspx>

FHWA, *Highway Safety Improvement Program Manual*, FHWA-SA-09-029, January 2010.

<http://safety.fhwa.dot.gov/hsip/resources/fhwasa09029/>

FHWA, *Railroad-Highway Grade Crossing Handbook*, FHWA-07-010, August 2007.

[http://safety.fhwa.dot.gov/xings/com\\_roaduser/07010/tech.cfm](http://safety.fhwa.dot.gov/xings/com_roaduser/07010/tech.cfm)

FHWA, *Strategic Highway Safety Plan I Guidance*, March 14, 2016.

[http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp\\_guidance.cfm#top](http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp_guidance.cfm#top)

## Chapter 4: Planning (23 CFR 924.9)

The Highway Safety Improvement Program (HSIP) planning component includes a process for collecting and maintaining safety data, advancing safety data collection and analysis capabilities, updating the Strategic Highway Safety Plan (SHSP), analyzing available safety data, conducting engineering studies, and prioritizing projects for implementation. The following sections describe considerations for each of these processes with links to relevant guidance and information resources.

### 4.1 Collecting and Maintaining Safety Data

**Each State’s HSIP planning process shall incorporate a process for collecting and maintaining safety data on all public roads. [23 CFR 924.9(a)(1)]**

#### How does the regulation define safety data?

##### Strategic Highway Safety Plans (SHSP) and Program of Highway Safety Improvement Projects

For SHSPs and HSIP projects, safety data is defined as crash, roadway and traffic data on all public roads [23 CFR 924.3]. Crash data should be consistent with the *Model Minimum Uniform Crash Criteria* (MMUCC). MMUCC is a guideline to identify a minimum set of crash data elements that should be collected for describing motor vehicle crashes and the vehicles, persons and environment involved in crashes. Roadway and traffic data should be consistent with *Model Inventory of Roadway Elements* (MIRE). MIRE is a recommended listing of roadway inventory and traffic elements critical to safety management. **Roadway data shall include, at a minimum, the MIRE fundamental data elements, as established in 23 CFR 924.17** [23 CFR 924.9(a)(1)]. The definition of “all public roads” includes non-State-owned roads, unpaved roads and roads on tribal land. The *State Safety Data Systems Guidance* provides additional information on State safety data systems capabilities and safety data activities eligible for HSIP funds.

##### Railway-Highway Crossing Program

For railway-highway crossings, safety data also include the characteristics of highway and train traffic, licensing and vehicle data. **Railway-highway grade crossings data shall include all fields from the U.S. DOT National Highway-Rail Crossing Inventory** [23 CFR 924.9(a)(1)]. The Federal Railroad Administration (FRA) maintains the National Highway-Rail Crossing Inventory. The purpose of the National Highway-Rail Crossing Inventory Program is to provide a uniform national inventory database that can be applied to the improvement of safety at railway-highway intersections. The crossing inventory contains information about the physical and operating characteristics of crossings such as daily train movements, train speeds, signage, signals, and highway information.

FRA also maintains a “Rail Crossings Locator Mobile Application” for mobile devices that provides users access to the grade crossing database and map features. The tool allows users to locate crossings by the

DOT Crossing Identification Number, address or geo-location; access inventory records submitted by roadway owners and railroads; and view crash history. The information can be used for planning and implementation of crossing improvement programs by public and private agencies responsible for railway-highway crossing safety, as described below under *Analyzing Available Safety Data*.

**What methods should transportation agencies use to collect MIRE data?**

The *MIRE Data Collection Guidebook* presents suggested data collection methods for specific MIRE data elements, and specific guidance on how the elements can be collected and considerations for collection. However, State DOTs have the flexibility to choose the method that best meets the needs of their program.

**What method should transportation agencies use to maintain MIRE data?**

The MIRE data collected by States should be linkable by geolocation with crash data. The FHWA Office of Highway Policy Information and Office of Planning, Environment, and Realty issued the Memorandum on *Geospatial Network for All Public Roads* on August 7, 2012. This Memorandum required States to update their linear referencing system (LRS) to include all public roads in the State. This LRS provides a means to geolocate all safety data on a common basemap that is inclusive of all public roads. The FHWA's *Development of a Structure for a MIRE Management Information System* provides information on MIRE data handling, storage and file structure and the FHWA's, *Performance Measures for Roadway Inventory Data*, provides information on issues related to roadway data quality.

**Where do I find more information to support safety data collection and maintenance efforts?**

FHWA, *Development of a Structure for a MIRE Management Information System*, FHWA-SA-13-007  
[http://safety.fhwa.dot.gov/rsdp/mire\\_mis\\_structure.cfm](http://safety.fhwa.dot.gov/rsdp/mire_mis_structure.cfm)

FHWA, *Guidance on State Safety Data Systems*, March 15, 2016.  
[http://safety.fhwa.dot.gov/legislationandpolicy/fast/ssds\\_guidance.cfm](http://safety.fhwa.dot.gov/legislationandpolicy/fast/ssds_guidance.cfm)

FHWA, *Model Inventory of Roadway Elements, Version 1*, FHWA-SA-10-018, October 2010.  
[http://safety.fhwa.dot.gov/tools/data\\_tools/mirereport/](http://safety.fhwa.dot.gov/tools/data_tools/mirereport/)

FHWA, *MIRE Data Collection Guidebook*, FHWA-SA-13-009, June 2013.  
<http://safety.fhwa.dot.gov/rsdp/downloads/datacollectionguidebook.pdf>

FHWA, *Performance Measures for Roadway Inventory Data*, FHWA-SA-12-036.  
<http://safety.fhwa.dot.gov/rsdp/downloads/performanceasures.pdf>

Federal Railroad Administration, U.S. DOT National Highway-Rail Crossing Inventory Overview.  
<https://www.fra.dot.gov/Page/P0111>

Governors Highway Safety Association, *Model Minimum Uniform Crash Criteria, 4<sup>th</sup> Edition*, 2012.  
<http://www.mmucc.us/>

## 4.2 Advancing the State's Capabilities for Safety Data Collection and Analysis

**Each State's HSIP planning processes shall incorporate a process for advancing the State's capabilities for safety data collection and analysis by improving the timeliness, accuracy, completeness, uniformity, integration, and accessibility of its safety data on all public roads. [23 CFR 924.9(a)(2)]**

### **Why do I need to advance my data collection and analysis capabilities?**

Complete safety data systems improve a State's ability to apply more advanced safety analysis methods. Advanced safety analysis methods apply appropriate statistical techniques for crashes as rare and random events, account for regression to the mean, account for the non-linear effect of changing traffic volumes on crash frequency, and account for the effect of roadway design and condition on crash frequency.

### **What tools are available to support an assessment of my data collection and analysis processes?**

NHTSA's *Traffic Records Program Assessment* is a useful tool for identifying a State traffic records system's functional capabilities as well as opportunities for improvement. States must conduct or update a Traffic Records Program Assessment every 5 years to be eligible for NHTSA's State Traffic Safety Information System Improvements Grants under 23 U.S.C. 405. In addition, the Crash Data Improvement Program (CDIP) through NHTSA and the FHWA Roadway Data Improvement Program (RDIP) are available to help States measure the performance and quality of the information within their crash and roadway databases, respectively. The *Performance Measures for Roadway Inventory Data* report provides guidance on how to assess the quality of roadway data.

FHWA also conducted a capabilities assessment to assess the collection, management, and use of roadway safety data. The 2012 *United States Roadway Safety Data Capabilities Assessment* final report provides an overview of the findings based on the assessment of the 50 States and the District of Columbia.

### **What resources are available to improve my data collection and analysis processes?**

FHWA offers State and local agencies specific safety data and analysis technical assistance through the [Roadway Safety Data Program](#). This effort provides a variety of customizable technical assistance approaches such as training local agencies how to conduct analysis of their crash and roadway data, providing technical assistance to support State and local roadway data integration efforts, or developing action plans to implement RDIP recommendations. Finally, under the Roadway Data Extraction Technical Assistance Program, FHWA is developing procedures to assist State and local agencies to expand their

roadway inventories. This program will provide a means to develop or expand a roadway inventory by identifying and recording MIRE data elements.

### **Should my State have a Traffic Records Strategic Plan?**

All States should have a Traffic Records Strategic Plan approved by the State Traffic Records Coordinating Committee and submitted to NHTSA. The Traffic Records Strategic Plan describes specific traffic records efforts and measurable anticipated improvements in the State's core safety databases. NHTSA's *Model Performance Measures for State Traffic Records Systems* provides information on measures intended for use by Federal, State, and local governments to monitor the development and implementation of traffic record data systems, strategic plans, and data improvement grant processes. A list of State TRCC chairs and coordinators is available on the [USDOT TRCC website](#).

### **What is an example of an advanced safety analysis method?**

An example of an advanced safety analysis method is the Empirical Bayes method, which uses Safety Performance Functions (SPF) and crash history data to estimate the expected crash frequency at a location. An SPF is an equation used to predict the average number of crashes per year at a location as a function of exposure and, in some cases, intersection and roadway characteristics. Agencies may choose to develop State-specific SPFs to advance safety analysis capabilities or calibrate national SPFs to local conditions. The *Introduction to SPFs* provides general information related to the application and calibration of SPFs. There are also several resources available to support the development and calibration of SPFs, including, the *SPF Development Guide: Developing Jurisdiction-Specific SPFs*, the *SPF Decision Guide: SPF Calibration vs. SPF Development* and the NCHRP *User's Guide to Develop HSM SPF Calibration Factors*.

### **Where can I find more information to enhance my data collection and analysis capabilities?**

FHWA, *Crash Data Improvement Program Guide*, April 2010.

<http://safety.fhwa.dot.gov/cdip/>

FHWA, Roadway Data Improvement Program: Supplemental Information Resource, 2012.

[http://safety.fhwa.dot.gov/rsdp/downloads/rdip\\_final061312.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/rdip_final061312.pdf)

FHWA, *Performance Measures for Roadway Inventory Data*, FHWA-SA-12-036, February 2013.

<http://safety.fhwa.dot.gov/rsdp/downloads/performanceasures.pdf>

FHWA, *United States Roadway Safety Data Capabilities Assessment*, FHWA-SA-12-028, July 2012.

[http://safety.fhwa.dot.gov/rsdp/downloads/rsdp\\_ursdca\\_final.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/rsdp_ursdca_final.pdf)

FHWA, *Introduction to Safety Performance Functions*, FHWA-SA-13-016.

[http://safety.fhwa.dot.gov/tools/crf/resources/cmfs/docs/safety\\_performance\\_funtions.pdf](http://safety.fhwa.dot.gov/tools/crf/resources/cmfs/docs/safety_performance_funtions.pdf)

FHWA, *Safety Performance Function Development Guide: Developing Jurisdiction Specific SPFs*, FHWA-14-005, September 2013. [http://safety.fhwa.dot.gov/rsdp/downloads/spf\\_development\\_guide\\_final.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/spf_development_guide_final.pdf)

FHWA, *Safety Performance Function Decision Guide: SPF Calibration vs. SPF Development*, FHWA-SA-14-004, September 2013. [http://safety.fhwa.dot.gov/rsdp/downloads/spf\\_decision\\_guide\\_final.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/spf_decision_guide_final.pdf)

Federal Railroad Administration, *Rail Crossing Locator Mobile Application*.  
<https://www.fra.dot.gov/Page/P0703>

Federal Railroad Administration, U.S. DOT National Highway-Rail Crossing Inventory.  
<http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/downloaddbf.aspx>

National Cooperative Highway Research Program, *User's Guide to Develop Highway Safety Manual Safety Performance Function Calibration Factors*, HR 20-7 (332), January 2014.  
[http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07\(332\)\\_FinalGuide.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07(332)_FinalGuide.pdf)

NHTSA, *Model Performance Measures for State Traffic Records Systems*, DOT HS 811 441, February 2011. <http://www-nrd.nhtsa.dot.gov/Pubs/811441.pdf>

NHTSA, *Traffic Records Program Assessment Advisory*, DOT HS 811 644, July 2012.  
<http://www-nrd.nhtsa.dot.gov/Pubs/811644.pdf>

### 4.3 Updating the Strategic Highway Safety Plan (SHSP)

**The HSIP planning process shall incorporate a process for updating the SHSP that identifies and analyzes highway safety problems and opportunities in accordance with 23 U.S.C. 148. [23 CFR 924.9(a)(3)]**

#### What is an SHSP?

The SHSP is a data-driven, multi-year plan that establishes statewide goals, objectives, and key emphasis areas and uses a comprehensive approach when addressing safety priorities and strategies (i.e., integrates the four E's of highway safety – engineering, education, enforcement and emergency medical services (EMS)). The State Department of Transportation is responsible for the development of the SHSP in consultation with Federal, State, tribal and local safety stakeholders. The SHSP allows highway safety programs and partners in the State to work together in an effort to align goals, leverage resources, and address the State's safety challenges collectively. The SHSP is approved by the Governor of the State or a responsible State agency official, while the SHSP update process is approved by the FHWA Division Administrator.



### **What data are used for SHSPs?**

The SHSP must analyze and make effective use of safety data to address safety problems and opportunities on all public roads and for all road users [23 CFR Part 924.9(a)(3)(vi)]. In addition to safety data, other data (e.g. EMS, hospital, licensing, citations, and court dispositions) may also provide insights to safety problems and opportunities. SHSP emphasis areas and strategies must also consider additional safety factors, including, but not limited to, the findings of road safety audits (RSA), locations of fatalities and serious injuries, or locations that have risk factors for potential crashes.

### **How can I make sure the SHSP is performance-based?**

SHSPs must adopt performance-based goals that are consistent with the safety performance measures established by FHWA in accordance with 23 U.S.C. 150 and must be coordinated with other State highway safety programs [23 CFR 924.9(a)(3)(v)]. Further information on a performance-based SHSP can be found in the SHSP Guidance.

### **Is there a relationship between the SHSP's performance-based goals and HSIP annual targets?**

As part of the performance-based program, States are also required to set annual targets for safety performance measures to carry out the HSIP [23 U.S.C. 150(d)(1)]. The SHSP goals are not the same as the HSIP targets. However, SHSPs typically establish measurable multi-year objectives as well, which provides a valuable opportunity to align the the annual targets with the SHSP objectives. This provides consistency and direction across all safety plans and programs. To establish consistency between SHSP objectives and annual targets, States should ensure that the agencies involved in the development of annual targets for the HSP and HSIP are also involved in developing the multi-year SHSP objectives. Further information on the relationship between SHSP multi-year goals and objectives and annual targets can be found in the *SHSP Guidance*.

### **What is the required SHSP update cycle?**

States must complete an SHSP update no later than 5 years from the previous approved version.

### **How is the SHSP process approved?**

A State must seek approval of its process for updating the SHSP as described in 23 U.S.C. 148(d)(2). To fulfill these requirements, a State must submit to the FHWA Division Administrator its updated SHSP along with a detailed description of the process it used to update the plan. The FHWA Division Administrator will notify the State when its updated SHSP process has been approved.

A State's SHSP update process will be approved if: (1) the SHSP is consistent with 23 U.S.C. 148(d) and 148(a)(11); and (2) the process the State used to update the SHSP is consistent with the requirements of section 148. Detailed information on compliance with SHSP update requirements is outlined in the *SHSP Guidance*.

### **What is the penalty for failing to have an updated SHSP?**

If a State fails to have an updated SHSP by August 1, 2017 with a process approved by the FHWA Division Administrator, the State will not be eligible to receive additional formula obligation limitation during the annual redistribution of one-year obligation limitation of Federal-Aid Highway Program funds, which is referred to as "August Redistribution." The penalty will remain in effect for each succeeding fiscal year until the fiscal year during which the plan has an approved process, which must be by August 1 to avoid the penalty that year. Further details on the penalty can be found in the SHSP Guidance.

### **How do the *Special Rules* apply to SHSP updates?**

As part of the SHSP Update, States are also required to define "High Risk Rural Road" consistent with the *MAP-21 High Risk Rural Roads Guidance*. In addition, if there has been an increase in fatalities and serious injuries to older drivers and pedestrians, States must include strategies to address those increases in the subsequent SHSP update, consistent with the Older Drivers and Pedestrians Special Rule interim guidance.

### **Where can I find additional information to support SHSP updates?**

FHWA, *Highway Safety Improvement Program MAP-21 High Risk Rural Roads Guidance*, December 27, 2012. <http://www.fhwa.dot.gov/map21/guidance/guidehrrr.cfm>

FHWA, *Section 148: Older Drivers and Pedestrians Special Rule Interim Guidance*, February 13, 2013. <http://www.fhwa.dot.gov/map21/guidance/guideolder.cfm>

FHWA, *Strategic Highway Safety Plans: A Champion's Guidebook to Saving Lives, Second Edition*, FHWA-SA-12-034, October 2012. <http://safety.fhwa.dot.gov/hsip/shsp/guidebook/>

FHWA, *Strategic Highway Safety Plan Evaluation Process Model*, FHWA-SA-12-035, March 2013. <http://safety.fhwa.dot.gov/hsip/shsp/epm/>

FHWA, *Strategic Highway Safety Plan Guidance*, March 15, 2016. [http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp\\_guidance.cfm](http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp_guidance.cfm)

National Cooperative Highway Research Program, *Safety Data Analysis in Developing Emphasis Area Plans*, NCHRP Report 500, Volume 21, 2008. [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_500v21.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v21.pdf)

## 4.4 Analyzing Safety Data

**Each State's HSIP planning process shall incorporate a process for analyzing available safety data to develop a program of highway safety improvement projects and a Railway-Highway Crossing Program (RHCP). [23 CFR 924.9(a)(4)]**

### **Program of Highway Safety Improvement Projects**

A comprehensive program of highway safety improvement projects includes both systemic and spot safety improvement projects [23 CFR 924(a)(4)(i)]. A spot safety improvement is an improvement or set of improvements that is implemented at a specific location on the basis of location-specific crash experience or other data-driven means, whereas a systemic safety improvement is defined as one or more proven safety countermeasures that are widely implemented based on high-risk roadway features that correlate with particular severe crash types [23 CFR 924.3].

#### **What analysis methods and tools should I use to identify potential highway safety improvement projects?**

Many safety analysis methods may be used to identify locations for spot safety improvements, as defined in the *HSIP Manual* and *HSM*. States should use the most reliable safety analysis methods possible based on the availability of data and other resources. Tools<sup>1</sup> available to support the use of advanced safety analysis methods include: AASHTOWare Safety Analyst™, DiExSys™ Roadway Safety Systems, AgileAssets® Safety Analyst™, and State-specific tools. Tools available to support implementation of a systemic, or risk-based approach to safety management include the *Systemic Safety Project Selection Tool* and *usRAP*.

Many States identify groups of similar types of projects for HSIP implementation. Projects may be grouped by crash type (e.g., roadway departure) or countermeasure category (e.g., median barrier). The specific methods and criteria used may vary for each group of similar types of projects and should be described in the State HSIP manual or similar documentation.

#### **What is the best approach to funding highway safety improvement projects?**

The distribution of safety investments between spot and systemic safety improvements will vary by State and even by region within a State. All projects, when combined, should maximize the opportunity to reduce fatal and serious injury crashes on all public roads within a State [23 CFR Part 924.5(b)]. The program of highway safety improvement projects should contain projects for the upcoming 3- to 4-year

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<sup>1</sup> FHWA cites specific tools as examples of ways to implement predictive and systemic safety analysis approaches, not as an endorsement of these tools over others.

horizon. This program of projects helps ensure that adequate funding is identified and secured in the early stages of project development and provides transparency to offices and staff outside the program. This practice demonstrates that HSIP funds have been directed to specific projects based on established criteria and prioritization; however, it should not preclude a State from addressing new or urgent safety needs that may arise during that 3- to 4-year timeframe. The 3- to 4-year timeframe also aligns with the Statewide Transportation Improvement Program (STIP), which covers a period of 4 years, and establishes a backlog of projects that are ready to go if additional funding becomes available.

### **Where can I find additional information to support the development of a program of highway safety improvement projects?**

AAA Foundation for Traffic Safety, Unites States Road Assessment Program.

<http://www.usrap.us/home/>

AASHTO, *Highway Safety Manual* (Part B), 2010.

<http://www.highwaysafetymanual.org/Pages/default.aspx>

FHWA, *Highway Safety Improvement Program Manual*, FHWA-SA-09-029, January 2010.

<http://safety.fhwa.dot.gov/hsip/resources/fhwasa09029/>

FHWA, *Systemic Safety Project Selection Tool*, FHWA-SA-13-019, July 2013.

<http://safety.fhwa.dot.gov/systemic/fhwasa13019/>

### **Railway-Highway Crossings Program**

**The State must develop a Railway-Highway Crossing Program (RHCP) that considers the relative hazard of public railway-highway grade crossings, includes an onsite inspection of public grade crossings and results in a program of highway safety improvement projects at railway-highway crossings. [23 CFR 924.9(a)(4)(ii)]**

### **How do I identify potential railway-highway crossing projects?**

A hazard index formula is used to estimate the relative hazard of public railway-highway crossings. The simplest hazard index formula measures the exposure at the crossing by taking into account the average number of trains, average number of vehicles, and the type of protective device. The hazard index formula may also consider the potential danger to large numbers of people at public grade crossings used on a regular basis by passenger trains, school buses, transit buses, pedestrians, bicyclists, or by trains and motor vehicles carrying hazardous materials. The hazard index formula generates a priority list of crossings needing improvements. The *Railroad-Highway Grade Crossing Handbook* presents examples of hazard index formulas used by the States.

In addition, the FRA maintains the Web-Based Accident Prediction System (WBAPS). The WBAPS generates reports listing public railway-highway intersections for a State, county, city or railroad ranked by predicted collisions per year. These reports include brief lists of the current inventory record and the number of collisions over the last 10 years along with a list of contacts for further information.

#### **On which projects can Section 130 funds be used?**

Section 130 funds can be used at any public crossing, including public trails and paths used by non-motorized users [49 U.S.C. 20160(d)(1)]. Fifty percent of the funds must be used on protective devices [23 U.S.C. 130(e)(1)(B)]. The remaining funds can be used for any hazard elimination project such as protective devices; improving sight distance; eliminating humped crossings; crossing closures; pedestrian treatments; and eliminating hazards due to crossings blocked by idling trains.

Section 130 funds can also be used:

- for incentive payments for local agencies to close crossings [23 U.S.C. 130(i)];
- as matching funds for local agencies on State-funded project [23 U.S.C. 130(i)];
- to compile data for the annual report (up to 2% of a State's apportionment) [23 U.S.C. 130(k)]; and
- to create or update the State Action Plan [Section 11401(d) of the FAST Act].

#### **Are there special requirements for railway-highway crossing projects?**

The resulting program of highway safety improvement projects at railway-highway grade crossings must give special emphasis to the statutory requirement that all public crossings be provided with standard signing and markings, consistent with the *Manual on Uniform Traffic Control Devices (MUTCD)*. The RHCP sets aside 50 percent of each State's apportionment for projects that must be used on protective devices. States should consider this in the formulas used to prioritize projects.

#### **Where can I find additional information to support the development of a RHCP?**

FHWA, *Manual on Uniform Traffic Control Devices, 2009 edition*. May 2012.

<http://mutcd.fhwa.dot.gov/>

FHWA, *Railroad-Highway Grade Crossing Handbook*, FHWA-07-010, August 2007.

[http://safety.fhwa.dot.gov/xings/com\\_roaduser/07010/tech.cfm](http://safety.fhwa.dot.gov/xings/com_roaduser/07010/tech.cfm)

Federal Railroad Administration, *Web-based Accident Prediction System*.

<https://www.fra.dot.gov/Page/P0114>

## 4.5 Conducting Engineering Studies

**The HSIP planning process shall incorporate a process for conducting engineering studies (such as road safety audits and other safety assessments or reviews) to develop highway safety improvement projects. [23 CFR 924.9(a)(5)]**

### **What is a safety engineering study?**

A safety engineering study is a comprehensive analysis and evaluation of available, pertinent information to diagnose safety concerns combined with the identification of appropriate countermeasures and strategies to reduce fatalities and serious injuries at locations with the potential for safety improvement.

### **What information can be used to support a safety engineering study?**

A safety engineering study consists of an analysis and evaluation of information, including safety data from at least the most recent 3-year period; input from partners in highway safety including, but not limited to, police, emergency responders, maintenance, schools, and local businesses; and site visits to understand specific site conditions such as sight lines, physical limitations, traffic movements, and adjacent land uses. The safety data review may include an analysis of descriptive crash statistics, statistical tests for overrepresented crash types, or collision and condition diagrams. Further, advancements in technology allow virtual site visits using video logs and aerial imagery through programs such as Bing™ or Google Earth™ and Street View™; virtual site visits may be a suitable alternative to a physical visit in some, but likely not all, cases. In addition to the analysis of safety data, input from partners and the field visit, a safety engineering study may also review traffic and operations data, pavement data (e.g. skid resistance studies) and other relevant planning studies.

### **Who conducts a safety engineering study?**

The road owner typically conducts the safety engineering study. If the road owner does not have an engineer on staff, it should seek engineering assistance from others, such as the State transportation agency, the County, a nearby large City, or a traffic engineering consultant. The road owner may also seek input from a multi-disciplinary investigation team via a road safety audit (RSA) or a diagnostic team review.

#### *Road Safety Audits*

The RSA brings together a multidisciplinary, independent team of safety professionals (engineering, police, EMT, education, health, maintenance, planning, etc.) to review the data and conduct the site visit. An RSA may be performed on selected projects due to complexity, although some States require RSAs for all identified locations with the potential for safety improvement. The *Road Safety Audit Guidelines* include prompt lists to help an RSA team identify potential safety issues. State agencies can

use their own forces to conduct engineering studies and RSAs, or they can contract the effort out to consultant engineering firms with experience in highway safety analysis and reviews.

#### *Diagnostic Team Review*

For highway safety improvement projects at railway-highway crossings, a diagnostic team may conduct the engineering study. The purpose of the study is to review the crossing and its environment, identify any problems, and recommend alternative improvements. The diagnostic team should be interdisciplinary and representative of all groups having responsibility for the safe operation of the crossings. The *Railway-Highway Grade Crossing Handbook* provides examples of elements that should be studied and observed along with sample evaluation sheets.

#### **What is the outcome of a safety engineering study?**

After the subject matter experts identify potential safety issues from the data analysis and site visits, they identify countermeasures for each location (i.e., spot safety improvement) or groups of similar locations (i.e., systemic safety improvements). Countermeasures should be evaluated based on implementation costs, safety effectiveness, and an agency's experience, policies, and practices. The safety effectiveness of a particular countermeasure can be estimated using the appropriate crash modification factor (CMF). The *CMF Clearinghouse* includes a web-based database of CMFs along with supporting documentation to help users identify the most appropriate countermeasure for their safety needs.

#### **Do I have to conduct a safety engineering study for systemic safety improvements, too?**

Agencies should also conduct engineering studies for systemic safety improvements, with data investigations and field reviews being performed at all the locations to be included in the larger systemic project. This may involve less time per site than a spot location visit. Engineering studies may be also accomplished via a construction contract.

#### **Can a safety engineering study also recommend non-infrastructure solutions?**

Countermeasures should address the identified safety issue and may be infrastructure or non-infrastructure in nature. Along with roadway infrastructure countermeasures, locations of safety concerns may benefit from countermeasures that attempt to adjust driver behavior. Non-infrastructure factors of interest include: drunken and drugged driving; safety belt use; aggressive driving; distracted or drowsy driving; and behaviors that affect the safety of motorcyclists, young drivers, older drivers, pedestrians, and bicyclists. It is generally good practice to include non-infrastructure safety specialists when diagnosing safety concerns and developing potential countermeasures, but this is especially important when behavioral factors are the predominant concern for a particular location or area.

### Where can I find additional information to support engineering studies?

AASHTO, Highway Safety Manual (Chapter 5 and 6), 2010.  
<http://www.highwaysafetymanual.org/Pages/default.aspx>

FHWA, *Crash Modification Factors in Practice*, FHWA-SA-13-10 through FHWA-SA-13-14.  
<http://safety.fhwa.dot.gov/tools/crf/resources/cmfs/>

FHWA, *Introduction to Crash Modification Factors*, FHWA-SA-13-015.  
<http://safety.fhwa.dot.gov/tools/crf/resources/cmfs/docs/intro.pdf>

FHWA, *Railroad-Highway Grade Crossing Handbook*, FHWA-07-010, August 2007.  
[http://safety.fhwa.dot.gov/xings/com\\_roaduser/07010/tech.cfm](http://safety.fhwa.dot.gov/xings/com_roaduser/07010/tech.cfm)

FHWA, *Road Safety Audit Guidelines*, FHWA-SA-06-06. <http://safety.fhwa.dot.gov/rsa/guidelines/>

FHWA, *Crash Modification Factors Clearinghouse*, 2010. <http://www.cmfclearinghouse.org/>

NHTSA, *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices*, 7<sup>th</sup> Edition, Published 2013. <http://www.ghsa.org/html/publications/countermeasures.html>

## 4.6 Establishing Priorities for Implementing Highway Safety Improvement Projects

**Each State's HSIP planning process shall incorporate a process for establishing priorities for the implementation of highway safety improvement projects, considering the potential reduction in the number and rate of fatalities and serious injuries, the cost effectiveness of the projects and the resources available and the priorities in the SHSP. [23 CFR 924.9(a)(6)]**

### Can I consider additional criteria for HSIP project prioritization?

Yes. A State may consider additional criteria beyond safety such as construction readiness, public and political acceptability, inclusion of proven countermeasures, and leveraging resources. If States use benefit-to-cost ratio as a criterion, then all HSIP projects should be economically justified with a benefit-to-cost ratio greater than 1.0. States should use a quantitative scoring method to prioritize highway safety improvement projects. The quantitative scoring method assigns a score to each relevant criterion, and some criteria may be weighted for emphasis. States should describe their project prioritization procedure in the State HSIP Manual or similar documentation.



### **Where can I find additional information on project prioritization methods and considerations?**

AASHTO, *Highway Safety Manual* (Chapter 7 and 8), 2010.  
<http://www.highwaysafetymanual.org/Pages/default.aspx>

FHWA, *Highway Safety Improvement Program Manual*, FHWA-SA-09-029, January 2010.  
<http://safety.fhwa.dot.gov/hsip/resources/fhwasa09029/>

## **4.7 Other Planning Requirements**

**Highway safety improvement projects shall be carried out as part of the Statewide and Metropolitan Transportation Planning Process consistent with the requirements of 23 U.S.C. 134 and 135 and 23 CFR Part 450. [23 CFR 924.9(c)]**

### **How are the Statewide and Metropolitan Transportation Planning Processes integrated with the HSIP?**

Statewide and metropolitan transportation planning processes must each integrate, directly or by reference, the goals, objectives, performance measures, and targets from the HSIP and be consistent with the goals and objectives of the SHSP. [23 U.S.C. 135(d)(2)(C); 23 U.S.C. 134(h)(2)(D)] The statewide transportation plan and the metropolitan transportation plan should include these priorities and goals as well as countermeasures, strategies, and projects, if any, contained in the HSIP or the SHSP. Further, the statewide transportation plan should, and the metropolitan transportation plan must, include a description of the performance measures and targets, including the safety measures and targets, used in assessing the performance of the transportation system. [23 U.S.C. 134(i)(2)(B) and (C)]

At the project level, HSIP investments should be prioritized and documented in the State transportation improvement program (STIP) or transportation improvement program (TIP), as appropriate. Also, the STIP and the TIP must include an assessment of the anticipated effect of the overall program of projects on achieving the performance targets, including the safety targets [23 U.S.C. 135(g)(4); 23 U.S.C.134(j)(2)(D)].

### **Does the State have to include non-infrastructure safety projects in the STIP or TIP?**

Yes. States must include all HSIP-funded projects, including non-infrastructure safety projects, in the STIP or TIP [23 CFR 924.9(c)].

### **How are highway safety improvement projects included in the STIP?**

The HSIP planning process results in a list of highway safety improvement projects that are programmed in the STIP for implementation. The STIP is a 4-year program of projects. Many States include individual HSIP project listings in the STIP, as well as groups of similar projects by funding category (e.g., HSIP,

HRRRP, RHCP), type of work (e.g., signs, rumble strips, intersections), geographical area (e.g., State, region, district, county, city), or a combination thereof.

## Chapter 5: Implementation (23 CFR 924.11)

Highway Safety Improvement Program (HSIP) implementation includes advancing implementation of highway safety improvement projects as well as the Model Inventory of Roadway Elements (MIRE) fundamental data elements (FDE) requirements and Strategic Highway Safety Plan (SHSP) emphasis area strategies. Furthermore, States may use Railway-Highway Crossing Program (RHCP) funds for HSIP purposes if all of their RHCP needs have been met. Each of these implementation requirements is described in more detail below.

### 5.1 Highway Safety Improvement Program (HSIP) Implementation

**The HSIP shall be implemented in accordance with the results of the planning processes. [23 CFR 924.11(a)]**

#### How can I streamline the HSIP project delivery process?

##### *Environmental Analysis*

Many highway safety improvement projects qualify for a categorical exclusion, which eliminates the need for an environmental assessment or environmental impact statement under the National Environmental Policy Act (NEPA). Projects may be eligible for a categorical exclusion if they do not pose a significant impact to the human environment. 23 CFR 771.117(c) includes an example list of such projects. FHWA's Every Day Counts initiative also promotes programmatic agreements as another approach to expedite the environmental review process.

##### *Design*

After highway safety improvement projects have been identified, prioritized, and programmed in the STIP, they can move forward into design and construction. Many States use either in-house staff or consultant support to provide design services. In some cases, simple safety projects may use proposal-style plans, design-build or task order contracts to expedite the design process.

##### *Construction*

States may be able to use force account construction for small projects if they can demonstrate a finding of cost effectiveness. Some States have found success batching project lettings for multiple safety projects and centrally letting systemic safety improvement projects.

### Where can I find more information about streamlining HSIP project delivery?

“Environmental Impact and Related Procedures.” Title 23 CFR 771.

<http://www.ecfr.gov/cgi-bin/text-idx?SID=58c49d7893d349f05dcde4a5fd3c0c1b&mc=true&node=pt23.1.771&rgn=div5>

“Force Account Construction.” Title 23 CFR 635 Subpart B.

<http://www.ecfr.gov/cgi-bin/text-idx?SID=58c49d7893d349f05dcde4a5fd3c0c1b&mc=true&node=pt23.1.635&rgn=div5>

FHWA, Every Day Counts, Programmatic Agreements.

<http://www.fhwa.dot.gov/innovation/everydaycounts/edc-1/programmatic.cfm>

## 5.2 Model Inventory of Roadway Elements (MIRE) Fundamental Data Element (FDE) Implementation

### What documentation is required to support the MIRE fundamental data elements implementation requirements?

**States shall incorporate specific quantifiable and measurable anticipated improvements for the collection of MIRE fundamental data elements into their Traffic Records Strategic Plan by July 1, 2017. States shall have access to a complete collection of the MIRE fundamental data elements on all public roads by September 30, 2026. [23 CFR 924.11(b)]**

In planning for improvements needed to fulfill the MIRE FDE requirement, States should develop strategies that consider:

- The current status of MIRE FDE collection efforts, including FDEs currently maintained (or not maintained) in the roadway inventory as well as the public roads for which the FDEs are collected;
- Appropriate data collection methodology;
- Coordination with other agencies (within State, local, and tribal jurisdictions);
- Prioritization criteria for collecting MIRE FDE on all public roads; and
- The schedule and estimated costs for data collection efforts.

The result of this planning effort should be specific, measurable, achievable, realistic and time-bound strategies for the collection, maintenance, and management of MIRE FDE.

States should follow National Highway Traffic Safety Administration guidance on State Traffic Records Strategic Plans for the information they include in those plans about MIRE FDE-related strategies and improvement projects [23 CFR 1200.22].

**When must I submit anticipated improvements for the collection of MIRE FDE?**

The State's anticipated improvements for the collection of MIRE fundamental data elements must be incorporated in the State's Traffic Records Plan by July 1, 2017 [23 CFR Part 924.11(b)].

**What prioritization criteria can I use for MIRE FDE collection efforts?**

The prioritization criteria may vary based on a State's specific safety analysis needs, available resources, and capabilities. Prioritization methods might consider criteria such as SHSP emphasis areas, high-crash corridors, high-crash counties, high-volume roads, functional classification or the current availability of many of these data elements on certain roadways.

**When must I complete MIRE FDE data collection efforts?**

States must have access to a complete collection of the MIRE FDEs on all public roads by September 30, 2026 [23 CFR Part 924.11(b)]. State DOTs are not necessarily responsible for collecting and using these data on roads that are not State-owned. However, State DOTs should coordinate with all relevant agencies to develop processes for safety data collection to ensure that MIRE FDE are available on all public roads by the required date. Non-State agencies may collect and maintain the MIRE FDE for their roads, or they may collect the MIRE FDE but submit it to the State DOT for central data management. The State has the flexibility to determine the best approach to meet this requirement.

**How does FHWA ensure that States adopt and use the MIRE FDE to improve data collection and analysis efforts?**

FHWA ensures that the States adopt and use the MIRE FDE to improve data collection and analysis efforts via general stewardship and oversight practices, as documented in the Stewardship and Oversight Agreement. For example, the FHWA Division Office may include an assessment of MIRE FDE collection efforts in its annual HPMS review. In addition, FHWA Division Offices should monitor HSIP implementation practices to ensure that HSIP planning processes are using the most reliable safety analysis methods with the best available data within the State.

**Where can I find additional information to support MIRE FDE data collection efforts?**

FHWA, *Highway Performance Monitoring System*.

<https://www.fhwa.dot.gov/policyinformation/hpms.cfm>

FHWA, *MIRE Data Collection Guidebook*, FHWA-SA-13-009, June 2013.

<http://safety.fhwa.dot.gov/rsdp/downloads/datacollectionguidebook.pdf>

FHWA, Roadway Safety Data Program Website  
<http://safety.fhwa.dot.gov/rsdp/>

### 5.3 Strategic Highway Safety Plan (SHSP) Actions

**The SHSP shall include, or be accompanied by, actions that address how the SHSP emphasis area strategies will be implemented. [23 CFR 924.11(c)]**

#### **What are the SHSP implementation requirements?**

The SHSP shall include, or be accompanied by, *actions* that address more specifically how the SHSP emphasis area strategies will be implemented [23 CFR 924.11(c)]. Often States accomplish this by developing SHSP emphasis area action plans. These action plans typically include the strategy, related actions (e.g., projects), the plan where the action resides, the agency and/or person that will champion implementation of the action, the resources, and the timeframe. For example, the behavioral strategies may be implemented through projects in the HSP and championed by the State Highway Safety Office (SHSO), and similarly, safety infrastructure projects may be implemented through the HSIP with the State DOT taking the lead. More information on SHSP implementation requirements can be found in the *SHSP Guidance*.

#### **Where can I find additional information to support SHSP implementation efforts?**

FHWA, *Strategic Highway Safety Guidance*, March 14, 2016.  
[http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp\\_guidance.cfm](http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp_guidance.cfm)

FHWA, *Strategic Highway Safety Plan Implementation Process Model*, FHWA-SA-10-024, June 2010.  
<http://safety.fhwa.dot.gov/hsip/shsp/fhwasa10024cd/>

### 5.4 Railway-Highway Crossing Program (RHCP) Special Rule

**Funds set aside for the Railway-Highway Crossings Program under 23 U.S.C. 130 shall be used to implement railway-highway crossing safety projects on any public road. If a State demonstrates that it has met its needs for the installation of railway-highway crossing protective devices to the satisfaction of the FHWA Division Administrator, the State may use funds made available under 23 U.S.C. 130 for other types of highway safety improvement projects pursuant to the Special Rule in 23 U.S.C. 130(e)(2). [23 CFR 924.11(d)]**

### How can I use RHCP funds for other highway safety improvement projects?

States can demonstrate they have met all their needs for the installation of protective devices at railway-highway crossings by preparing a table or list of all railroad crossings in the State. The list should show what the current protective devices are and the ultimate design for protective devices for each crossing. The ultimate design for each crossing represents the most cost-effective level of protection that is needed for reasonable safety, as determined by the State. Once the ultimate design for protective devices has been achieved at each crossing, the State may write a letter to the FHWA Division Administrator requesting the use of RHCP funds for other HSIP projects. The Division Administrator should concur prior to the obligation of RHCP funds to other HSIP projects. The funds are not transferred from the RHCP to the HSIP. If a State uses the RHCP funds for other highway safety improvement projects, it should report the amount on the RHCP and HSIP annual reports. The specifics of the individual projects should be added to the HSIP annual report.

## 5.5 Federal Share

**Except as provided in 23 U.S.C. 120 and 130, the Federal share of the cost of a highway safety improvement project carried out with funds apportioned to a State under 23 U.S.C. 104(b)(3) shall be 90 percent. [23 CFR 924.11(g)]**

### What is the Federal share for HSIP projects?

The Federal Share Payable for all Federal-aid projects is described in 23 U.S.C. 120. In this section, the provisions related to increased Federal share under 23 U.S.C. 120(c)(1) is most applicable to the HSIP. 23 U.S.C. 120(c)(1) increases the Federal share for certain safety projects (as defined in the statute) to 100 percent. FHWA provides additional guidance about the increased Federal share authorized by 23 U.S.C. 120(c)(1) in the *Memorandum on Increased Federal Share under 23 U.S.C. 120(c)(1)*.

### Where can I find more information about Federal share payable for HSIP projects?

“Federal Share Payable.” Title 23 *United States Code*, Section 120.

[http://uscode.house.gov/view.xhtml?req=\(title:23%20section:120%20edition:prelim\)%20OR%20\(granuleid:USC-prelim-title23-section120\)&f=treesort&edition=prelim&num=0&jumpTo=true](http://uscode.house.gov/view.xhtml?req=(title:23%20section:120%20edition:prelim)%20OR%20(granuleid:USC-prelim-title23-section120)&f=treesort&edition=prelim&num=0&jumpTo=true)

FHWA, *Memorandum on Increased Federal Share under 23 U.S.C. 120(c)(1)*, November 25, 2014.

<http://www.fhwa.dot.gov/federalaid/141125.pdf>

## Chapter 6: Evaluation (23 CFR 924.13)

The Highway Safety Improvement Program (HSIP) evaluation process includes processes to analyze and assess the results achieved by highway safety improvement projects; and evaluation of the Strategic Highway Safety Plan (SHSP) as part of the regularly recurring update process. This chapter describes considerations for each of these processes in more detail with links to relevant guidance and information resources.

### 6.1 Analyze and Assess the Results Achieved by Highway Safety Improvement Projects

**Each State's HSIP evaluation process shall include a process to analyze and assess the results achieved by highway safety improvement projects. [23 CFR 924.13(a)(1)]**

The evaluation of highway safety improvement projects includes the evaluation of individual projects, groups of projects, and the program as a whole. Evaluation of the highway safety improvement projects is key to ensuring that limited safety funds are invested in opportunities that will have the greatest impact on reducing fatalities and serious injuries.

#### What are characteristics of a successful HSIP evaluation program?

The following is a list of guidelines for States that is designed to implement an impactful evaluation program:

- Maintain an inventory of previously implemented HSIP projects. All safety projects should be evaluated for their safety impacts after a reasonable period of time (e.g., 3 years after implementation).
- Analyze projects with similar countermeasures at similar sites together to obtain a more accurate countermeasure evaluation, as one project at one site can provide variable results.
- Conduct evaluations of highway safety improvement projects and, more importantly, aggregate evaluations by countermeasure type.
- Conduct a more rigorous evaluation with results that can be used locally and perhaps nationally when a critical mass of similar projects has been obtained.
- Employ the Empirical-Bayes or other advanced techniques for evaluating projects when possible for all evaluations. Simple before and after studies may misrepresent the impact of an individual countermeasure but may be useful to identify general trends.
- Consider using consultants and the academic community to support HSIP evaluation efforts.
- Set a goal of developing a State's own crash modification factors (CMFs) for new or innovative countermeasures, or those for which national CMFs may not apply to local conditions, to fill gaps in a State-specific list of CMFs.



- Use the evaluation results to inform the HSIP planning process.
- Assess the quality of the safety data used for the HSIP evaluation relative to data quality performance measures on a periodic basis.

#### **Where can I find additional information to support HSIP evaluation efforts?**

FHWA, A Guide to Developing Quality CMFs, FHWA-10-032, December 2010.

[http://www.cmfclearinghouse.org/collateral/CMF\\_Guide.pdf](http://www.cmfclearinghouse.org/collateral/CMF_Guide.pdf)

FHWA, *Highway Safety Improvement Program Manual*, FHWA-SA-09-029, January 2010.

<http://safety.fhwa.dot.gov/hsip/resources/fhwasa09029/>

NHTSA, *Art of Appropriate Evaluations: A Guide for Highway Safety Program Managers*, DOT HS 811 061 December 2008. <http://icsw.nhtsa.gov/people/injury/research/ArtofAppEvWeb/>

AASHTO, *Highway Safety Manual* (Chapter 9), 2010.

<http://www.highwaysafetymanual.org/Pages/default.aspx>

## **6.2 Evaluate the Strategic Highway Safety Plan as Part of the Regularly Recurring Update Process**

**Each State’s HSIP evaluation process shall include an evaluation of the SHSP as part of the regularly recurring update process. [23 CFR 924.13(a)(2)]**

#### **When should I plan for an SHSP evaluation?**

During SHSP development, States should pay particular attention to what will be measured (i.e., performance measures) and how progress will be determined. States should have in place mechanisms for regularly monitoring progress toward SHSP goals and objectives and tracking SHSP implementation.

#### **When should I conduct an SHSP evaluation?**

At a minimum, States must evaluate their SHSPs as part of the States' regularly recurring SHSP update process. Regular evaluation, based on current safety data, confirms the validity of the emphasis areas and strategies [23CFR 924.9(a)(3)(i)].

#### **What does an SHSP evaluation include?**

Evaluation should include a review of SHSP implementation (assessing whether the strategies are being implemented as planned) and reviewing the State’s progress in meeting SHSP goals and objectives, such as reductions in the number and rate of crashes, fatalities and serious injuries in the SHSP’s emphasis areas.

It is also helpful to review the management of the SHSP, referred to as a "process evaluation," which provides insight into the SHSP organizational structure, coordination with partners, and the use of data in determining emphasis areas, goals, objectives, and strategies. These elements can impact the overall success of the SHSP and should be examined periodically. More information on SHSP evaluation can be found in the *SHSP Guidance*.

#### **How can I use the results of the SHSP evaluation?**

A State should use evaluation results, at a minimum, to confirm or modify the emphasis areas and strategies in its SHSP and address performance issues that can be improved upon or incorporated in the SHSP update. For example, if an SHSP goal or objective is not met, this may suggest that the program of strategies is not effective, or in some cases, the strategies may not have been implemented as planned. The State should try to identify why the objective was not met and consider alternatives in its SHSP update. More investigation may be warranted, such as referring to project level evaluations to better understand the impact of the individual strategies. The findings could influence the selection of strategies for the SHSP update.

#### **Where can I find additional information to support SHSP evaluation efforts?**

FHWA, *Strategic Highway Safety Plan Evaluation Process Model*, FHWA-SA-12-035, March 2013.

<http://safety.fhwa.dot.gov/hsip/shsp/epm/>

FHWA, *Strategic Highway Safety Plan Guidance*, March 14, 2016.

[http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp\\_guidance.cfm](http://safety.fhwa.dot.gov/legislationandpolicy/fast/shsp_guidance.cfm)

## Chapter 7: Reporting (23 CFR 924.15)

**For the period of the previous reporting year, each State shall submit, via FHWA’s HSIP online reporting tool, to the FHWA Division Administrator no later than August 31 of each year, a report describing the progress being made to implement the HSIP and a report describing progress being made to implement railway-highway crossing improvements in accordance with 23 U.S.C. 130(g) and the effectiveness of these improvements. [23 CFR 924.15(a)]**

Each year, the State DOT prepares a Highway Safety Improvement Program (HSIP) report and a Railway-Highway Crossing Program (RHCP) report. The reports are due to the Federal Highway Administration (FHWA) Division office by August 31, and to the FHWA Office of Safety by September 30. The month in between due dates allows the FHWA Division Office to review the report for consistency with the current guidance and state of the practice before submission to the FHWA Office of Safety. States have the flexibility to define the reporting year as the State fiscal year, Federal fiscal year, or calendar year. However, safety performance measure data must be presented by calendar year.

### **What are the HSIP reporting requirements?**

The *HSIP and RHCP reporting guidance* includes additional information related to the content and schedule of these reports. States must use [FHWA’s online reporting tool](#) to prepare and submit the annual HSIP reports [23 CFR Part 924.15(a)].

### **Where can I find the States’ annual HSIP reports?**

As required by law, the States’ [SHSPs](#) and [HSIP reports](#) are available on the FHWA Office of Safety website [23 U.S.C. 148(h)(3)].

### **How does FHWA use the information in the HSIP reports?**

The information contained in the annual HSIP reports provides FHWA with a means to provide stewardship and oversight of the program and monitor the effectiveness of the HSIP and RHCP. Specifically, FHWA uses the annual reports as an opportunity to encourage the States to document ALL HSIP implementation efforts and any changes to processes or program focus. The Divisions also use the HSIP reports to monitor project implementation and evaluation efforts, verify the application of the older driver and pedestrian special rule and confirm HSIP funding levels. In addition, FHWA uses the information collected as part of the HSIP reports to prepare an *HSIP National Summary Report*, which summarizes the number of HSIP projects by type and cost. As required by 23 U.S.C. 130, FHWA uses the RHCP reports to produce and submit biennial reports to Congress.

**Where can I find more information about the annual HSIP reports?**

FHWA, *Highway Safety Improvement Program Reporting Guidance*, February 2013.

<http://www.fhwa.dot.gov/map21/guidance/guidehsipreport.cfm>

FHWA, *2013 HSIP National Summary Report*, FHWA-SA-14-030, July 2014.

<http://safety.fhwa.dot.gov/hsip/reports/nsbrpt2013.cfm>

FHWA, *Railway-Highway Crossings Program Reporting Guidance*, February 2013.

<http://www.fhwa.dot.gov/map21/guidance/guiderhcp.cfm>

## Chapter 8: Model Inventory of Roadway Elements (MIRE) Fundamental Data Elements (FDE) (23 CFR 924.17)

**The MIRE fundamental data elements shall be collected on all public roads. [23 CFR 924.17]**

### **What are the Model Inventory of Roadway Elements (MIRE) fundamental data elements (FDE)?**

The FDE are the minimum subset of the roadway and traffic data elements from FHWA's MIRE that are used to support a State's data-driven safety program. The MIRE FDE are categorized by functional classification and surface type. Table 1 of 23 CFR Part 924 includes 37 roadway segment, intersection, and interchange/ramp data elements that States are to collect for all non-local paved roads. Eighteen of these 37 MIRE FDE are Highway Performance Monitoring System (HPMS) full-extent elements and are required to be collected on all Federal-aid highways and ramps located within grade-separated interchanges [23 CFR §420.105(b)]. Table 2 of 23 CFR Part 924 includes 9 roadway segment elements for local paved roads, while Table 3 includes 5 roadway segment elements for unpaved roads.

### **Under what conditions must a State collect the MIRE FDE on gravel or otherwise unpaved roads?**

If a State wishes to use HSIP funds for a project on a gravel or unpaved road, the State must collect the MIRE FDE in Table 3. For additional information related to the unpaved roads provision in the FAST Act, see the *State Safety Data Systems Guidance*.

### **Do I have to collect AADT on all public roads?**

No. AADT is required to be collected for all paved roads [23 CFR 924.17]. However, FHWA does not require a specific method for traffic volume data collection. States may use a methodology that best meets their needs.

### **Where can I find additional information about the MIRE fundamental data elements?**

FHWA, *Highway Performance Monitoring System*.

<https://www.fhwa.dot.gov/policyinformation/hpms.cfm>

FHWA, *Model Inventory of Roadway Elements, Version 1*, FHWA-SA-10-018, October 2010.

[http://safety.fhwa.dot.gov/tools/data\\_tools/mirereport/](http://safety.fhwa.dot.gov/tools/data_tools/mirereport/)

FHWA, *State Safety Data Systemic Guidance*, March 14, 2016.

[http://safety.fhwa.dot.gov/legislationandpolicy/fast/ssds\\_guidance.cfm](http://safety.fhwa.dot.gov/legislationandpolicy/fast/ssds_guidance.cfm)

## Chapter 9: Safety Performance Measures (23 CFR 490.207)

FHWA requires State DOTs and MPOs to establish quantifiable targets for each safety performance measure identified in section 490.207(a) to assess roadway safety.

### 9.1 Safety Performance Measures

**What safety performance measures does FHWA require?**

**There are five safety performance measures for carrying out the HSIP. They are:**

- (1) Number of fatalities;**
  - (2) Rate of fatalities;**
  - (3) Number of serious injuries;**
  - (4) Rate of serious injuries; and**
  - (5) Number of non-motorized fatalities and non-motorized serious injuries.**
- [23 CFR 490.207(a)]

### 9.2 Calculations

**How will FHWA calculate safety performance measures?**

**Each safety performance measure is based on a 5-year rolling average.** [23 CFR 490.207(b)]

**What is the benefit of using a 5-year rolling average?**

A 5-year rolling average provides a better understanding of the overall fatality and serious injury data over time without eliminating years with significant increases or decreases. The 5-year rolling average also provides a mechanism to account for regression to the mean. If a particularly high or low number of fatalities and/or serious injuries occur in one year, a return to a level consistent with the average in the previous year may occur.

**How will FHWA calculate the number measures?**

FHWA calculates the number measures by adding the number for the measure for each of the most recent 5 consecutive years ending in the year for which the targets are established, dividing by 5, and rounding to the tenth decimal place. FARS Annual Report File (ARF) may be used if Final FARS is not available. Serious injury data will be taken from State reported data in the HSIP annual report. The following example illustrates this calculation:

Year	2014	2015	2016	2017	2018
Number of Fatalities	471	468	493	468	462*

\* From FARS ARF, if Final FARS is not available

1. Add the number of fatalities for the most recent 5 consecutive calendar years ending in the year for which the targets are established:

$$471 + 468 + 493 + 468 + 462 = 2,362$$

2. Divide by five and round to the nearest tenth decimal place:

$$2,362 / 5 = 472.4$$

### How will FHWA calculate the rate measures?

The rate measures are based on the number of fatalities or serious injuries per 100 million VMT. FHWA calculates the rate for the measure per 100 million VMT for each of the most recent 5 consecutive years ending in the year for which the targets are established, adds the results, divides by 5, and rounds to the thousandth decimal place. FARS ARF may be used if Final FARS is not available. Serious injury data will be taken from State reported data in the HSIP annual report. The Highway Statistics Table (VM-2) will be used for State VMT. The MPO VMT is estimated by the MPO. The following example illustrates the fatality rate calculation:

Year	2014	2015	2016	2017	2018
Fatality Rate per 100 million VMT rounded to the hundredths decimal place	0.99	0.97	1.02	0.99	0.98*

\* Based on FARS ARF, if Final FARS is not available

1. Add the fatality rate, rounded to the hundredths decimal place, for the most recent 5 consecutive calendar years ending in the year for which the targets are established:

$$0.99 + 0.97 + 1.02 + 0.99 + 0.98 = 4.95$$

2. Divide by 5 and round to the nearest thousandths decimal place:

$$4.95 / 5 = 0.990$$

### Why are the number and rate measures rounded to the tenth and thousandth places respectively?

The measures are rounded to one decimal place greater than that which they are normally reported; since fatality number and serious injury number data are usually expressed as integers, these 5-year averages are rounded to the nearest tenth decimal place. Rate data is usually expressed to the hundredth decimal place, so these 5-year rolling averages are rounded to the nearest thousandth decimal place. Applying an additional place value to the numbers that are being used to produce a 5-year rolling average more accurately reveals the change from one 5-year rolling average to another that might be obscured if the 5-year rolling averages were rounded to the same place value for which they are normally reported.

## The Non-motorized Safety Performance Measure

**The safety performance measure for the number of non-motorized fatalities and non-motorized serious injuries is the 5-year rolling average of the total number of non-motorized fatalities and non-motorized serious injuries for each State. [23 CFR 490.207(b)(5)]**

### **How does FHWA define a non-motorized user for the safety performance measure?**

The FHWA considers non-motorists, consistent with 23 U.S.C. 217(j), to be those transportation system users who are not in or on traditional motor vehicles on public roadways. This includes persons traveling by foot, children in strollers, skateboarders (including motorized), roller skaters, persons on scooters, persons in wagons, persons in wheelchairs (both non-motorized and motorized), persons riding bicycles or pedalcycles (including those with a low-powered electric motor weighing under 100 pounds, with a top motor-powered speed not in excess of 20 miles per hour), persons in motorized toy cars, and persons on two-wheeled, self-balancing types of devices. For non-motorist fatalities, FHWA defines the fatally injured non-motorist person, i.e. the “person type,” defined in [FARS](#), to include the person level attribute codes for (5) Pedestrians, (6) Bicyclists, (7) Other Cyclists, and (8) Persons on Personal Conveyances. For non-motorist serious injuries, FHWA defines the seriously injured person type as the codes and definitions for a (2.2.36) pedestrian or (2.2.39) pedalcyclist in the [American National Standard \(ANSI\) D16.1-2007 Manual on Classification of Motor Vehicle Traffic Accidents](#).

### **How will FHWA calculate the non-motorized safety performance measure?**

FHWA calculates the non-motorized safety performance measure by adding the number of non-motorized fatalities to the number of non-motorized serious injuries for each of the most recent 5 consecutive years ending in the year for which the targets are established, dividing by five, and rounding to the tenth decimal place. FARS Annual Report File (ARF) may be used if Final FARS is not available. The following example illustrates this calculation:

Year					
Number of Non-motorized Fatalities	13	10	12	9	11*
Number of Non-motorized Serious Injuries	113	98	100	87	94
Number of Non-motorized Fatalities and Serious Injuries	126	108	112	96	105

\* From FARS ARF, if Final FARS is not available

1. Add the number of non-motorized fatalities and non-motorized serious injuries for the most recent 5 consecutive calendar years ending in the year for which the targets are established:

$$(13 + 113) + (10 + 98) + (12 + 100) + (9 + 87) + (11 + 94)$$

$$126 + 108 + 112 + 96 + 105$$

2. Add the sum of the number of non-motorized fatalities and non-motorized serious injuries for the most recent 5 consecutive calendar years ending in the year for which the targets are established:

$$126 + 108 + 112 + 96 + 105 = 547$$



3. Divide by five and round to the nearest tenth decimal place:

$$547 / 5 = 109.4$$

**Is the FHWA non-motorized measure the same as the NHTSA non-motorized measures?**

No. The FHWA non-motorized safety performance measure defined in 23 CFR 490.207(a)(5) is the sum of the number of non-motorized fatalities added to the number of non-motorized serious injuries. NHTSA has two separate measures that address non-motorized users—one for pedestrian fatalities and one for bicycle and other cyclist fatalities. The NHTSA pedestrian fatality measure is included in 23 CFR 1200.4(b)(2). The NHTSA bicycle fatality measure was added subsequent to MAP-21 per the agreement on safety performance measure definitions with GHSA. In addition, the NHTSA performance measure definition of pedestrian and bicyclist fatalities differ in some respects from the FHWA non-motorized safety performance measure definition.

**What if a State does not use the ANSI D16.1 standard for defining seriously injured person type for pedestrian or pedalcyclist?**

FHWA recognizes that not all State crash databases use the ANSI D16.1 standard. Therefore, FHWA includes in the number of non-motorized serious injuries definition that States may use definitions that are equivalent to those in ANSI. For those State motor vehicle crash databases where the person type definitions do not conform to the ANSI D16.1 standard, FHWA intends to provide separate guidance on which person types should be included in the non-motorized safety performance measure data.

**How is the non-motorized fatality and serious injuries safety performance measure different from the other fatalities and serious injuries measures?**

While the number of non-motorized fatalities and the number of non-motorized serious injuries are also counted in the other safety performance measures (i.e., non-motorized fatalities are included in the number of total fatalities and rate of fatalities and non-motorized serious injuries are included in the number of total serious injuries and rate of serious injuries), the non-motorized safety performance measure is different from the others because it focuses specifically on this important mode of transportation with unique crash countermeasures distinct from motor vehicles. While components of this safety performance measure are the same as components of the other measures, the performance measure is different. For example, when the number of non-motorized serious injuries increases in a State, the total number and rate of serious injuries may or may not increase as well. The impact of the increase in non-motorized serious injuries will be different on each of the three safety performance measures that include serious injuries: the number of serious injuries; the rate of serious injuries; and the number of non-motorized fatalities and non-motorized serious injuries.

## 9.3 Fatalities

**What if Final FARS is not available?**

For the purposes of establishing targets, States are encouraged to use any and all data available, including data that go beyond traditional datasets, such as FARS, HPMS, and State crash databases.

When FHWA determines whether a State has met or made significant progress, if Final FARS data are not available, FHWA may use FARS ARF. Although the timing for the release of FARS ARF and Final FARS varies, FARS ARF is generally available one year prior to the Final FARS data. Using FARS ARF reduces the timeframe for when FHWA can determine whether a State has met or made significant progress toward meeting its targets. Using FARS ARF when Final FARS is not available to calculate a 5-year rolling average, balances the need to make timely progress determinations so States can appropriately adjust their highway safety improvement programs to support the national safety goal with the availability of the national FARS data set.

## 9.4 Serious Injuries

### How does FHWA define serious injuries?

**Before April 15, 2019 serious injuries may be determined by either of the following: (i) Serious injuries coded (A) in the KABCO injury classification scale through use of the NHTSA serious injuries conversion tables; or (ii) Using MMUCC, 4<sup>th</sup> Edition. [23 CFR 490.207(c)]**

### When is a State DOT required to use the MMUCC 4<sup>th</sup> edition definition of a serious injury?

Beginning in the HSIP report due in August 2017, all States shall report serious injuries coded “Suspected Serious Injury (A)” using the KABCO injury classification scale (23 CFR 490.207(c)). States that do not currently use KABCO may use the NHTSA serious injuries conversion tables until April 15, 2019 to determine the equivalent definition and attributes from their crash database to convert and report the number of serious injuries coded (A) using KABCO.

By or before April 15, 2019, States shall determine and report serious injuries in accordance with the MMUCC 4<sup>th</sup> Edition definition and attribute for “Suspected Serious Injury (A)” (23 CFR 490.207(c)).

### What if historical serious injury data are reported using a different definition?

Historical data, unless MMUCC compliant, shall be converted to “Suspected Serious Injury (A)” using the KABCO injury classification scale through use of the NHTSA conversion tables (23 CFR 490.207(c)). In the HSIP report due in August 2019, and thereafter, States shall determine and report serious injuries using the MMUCC 4<sup>th</sup> Edition definition and attribute (23 CFR 490.207(c)). For consistency, States should begin using the MMUCC 4<sup>th</sup> Edition definition and attribute at least by the beginning of 2019, rather than continuing to use the NHTSA conversion tables through April 15, 2019.

FHWA recognizes that as serious injury data are migrated to the MMUCC definition, variances may occur in the data collected and reported by States. For example, a State may/may not be currently coding an injury attribute that is/is not included in the MMUCC definition. A difference in coding attributes could result in over or under-counting of serious injuries once MMUCC is adopted. States should make necessary adjustments when establishing their targets to accommodate for these potential variances.

**Where can I find the KABCO serious injuries conversion table?**

The KABCO serious injuries conversion tables are available on the FHWA Office of Safety's Safety Performance Management website at: <http://safety.fhwa.dot.gov/hsip/tpm/>.

**Where can I find additional information about Safety Performance Measures?**

Safety Performance Management, <http://safety.fhwa.dot.gov/hsip/tpm/>

Transportation Performance Management, <https://www.fhwa.dot.gov/tpm/>

Highway Safety Improvement Program, <https://www.fhwa.dot.gov/hsip/>

Traffic Safety Performance Measures for State and Federal Agencies, DOT HS 811 025, August 2008, <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811025.pdf>

Governors Highway Safety Association, <http://www.ghsa.org/html/resources/planning/index.html>

## Chapter 10: Establishment of performance targets (23 CFR 490.209)

The safety performance measures support the data-driven performance focus in the HSIP. The targets will enhance safety decision-making, improve collaboration among a wide range of safety partners, and provide transparency and accountability to the public.

### 10.1 State DOT Targets

#### What are the HSIP Targets?

**State DOTs shall establish targets annually for each safety performance measure. [23 CFR 490.209(a)]**

State DOTs shall establish targets for the following five safety performance measures (23 CFR 490.209(a)):

1. The 5-year rolling average for the number of fatalities;
2. The 5-year rolling average for the rate of fatalities per 100 million VMT;
3. The 5-year rolling average for the number of serious injuries;
4. The 5-year rolling average for the rate of serious injuries per 100 million VMT; and
5. The 5-year rolling average for the number of non-motorized fatalities and non-motorized serious injuries.

#### What are the requirements for safety performance targets?

Statewide targets shall:

- Be established for each safety performance measure defined in 23 CFR 490.207 (23 CFR 490.209(a))
- Be based on 5-year rolling averages (23 CFR 490.207(b))
- Be identical to the targets established for common safety performance measures in the HSP (23 CFR 490.209(a)(1))
- Be coordinated through the State Strategic Highway Safety Plan (23 CFR 490.209(a)(1))
- Represent performance outcomes anticipated for the calendar year following the HSIP annual report date (23 CFR 490.209(a)(1))
- Represent the anticipated performance outcome for all public roadways (23 CFR 490.203)

#### What data should a State use to establish safety performance targets?

FHWA does not stipulate a specific methodology or data set States must use to establish safety performance targets. States have the authority and flexibility to establish safety targets using the methodology they determine is most appropriate. Further, FHWA recognizes that States would use the

most current data available to them in order to establish the required targets. For example, States may have more current fatality data or more current VMT data at the time targets are established than is published in FARS or HPMS. Section 11.2 identifies the data sources FHWA will use to determine whether States met or made significant progress toward meeting the targets the State establishes.

**Where can I find additional information on safety target setting methodologies and best practices?**

Additional information to support safety target setting efforts is available at:

<http://safety.fhwa.dot.gov/hsip/tpm/>, including: 1) Safety Target Setting Final Report; 2) A Compendium of State and Regional Safety Target Setting Practices; 3) Safety Target Peer Exchange; 4) Target Setting Literature Review; and 5) Urbanized and Non-urbanized Safety Target Setting: Final Report.

**Do the HSIP targets have to be identical to the targets established by the State Highway Safety Office?**

**State DOT targets shall be identical to the targets established by the State Highway Safety Office for common safety performance measures reported in the State's Highway Safety Plan, subject to the requirements of 23 U.S.C. 402(k)(4), and as coordinated through the State Strategic Highway Safety Plan. [23 CFR 490.209(a)(1)]**

**What are the common safety performance measures for the HSIP and HSP identical targets?**

NHTSA, under 23 U.S.C. 402(k)(4) and 23 CFR 1200.4(b)(2), requires that SHSOs set targets against a minimum set of safety performance measures identified in the report, "[Traffic Safety Performance Measures for States and Federal Agencies](#)" (DOT HS 811 025). Among the safety performance measures in the report are three that are common to the HSIP: (a) the number of fatalities, (b) the fatality rate, and (c) the number of serious injuries.

**Can a State DOT target be changed after it has been reported to FHWA?**

**Unless approved by FHWA and subject to § 490.209(a)(1), a State DOT shall not change one or more of its targets for a given year once it is submitted in the HSIP annual report. [23 CFR 490.209(a)(6)]**

No. Once a State DOT submits its targets in the HSIP annual report, the targets remain for a year. The State DOT will submit new targets each year for the next calendar year. In general, the State DOT should not change its targets unless there is a typographical error in the targets submitted in the HSIP report.

## 10.2 Additional Targets

**Can a State DOT establish additional targets and does it need to report such targets?**

**In addition to the targets required for the five safety performance measures, State DOTs may, as appropriate, establish additional optional targets for other portions of the State. [23 CFR 490.209(b)]**

Only five safety performance measures are required. However, for each safety performance measure, State DOTs may choose to establish separate targets for any of the urbanized areas within the State and may also choose to establish a single target for all of the non-urbanized areas in the State. These are optional targets and will not be included when assessing whether the State has met or made significant progress toward meeting its targets. If a State DOT chooses to set additional targets, the State shall report such targets in the HSIP annual report.

Although FHWA will not evaluate the additional targets (urbanized and non-urbanized targets), States may establish these targets to aid in accounting for differences in urbanized and non-urbanized areas and provide for additional transparency and accountability in the States' safety performance management programs.

#### **What is an urbanized area?**

The U.S. Census Bureau defines urbanized area boundaries based on population after each decennial census. After the U.S. Census Bureau designates urbanized area boundaries, each State may adjust those Census-defined urbanized areas. While FHWA requests that States complete the process to adjust urbanized area boundaries within two years after the Census-defined boundaries are published, urbanized area boundaries could change on varying schedules. Designation of new urbanized areas or changes to the boundary of existing urbanized areas may lead to changes in the functional classification of the roads within those areas. Therefore, changes to the urbanized area boundaries affect the scope of the urbanized and non-urbanized targets.

#### **What is a non-urbanized area?**

A non-urbanized area is the single, collective area comprising all of the areas in the State that are not "urbanized areas" defined under 23 U.S.C. 101(a)(34) and described above.

#### **Should a State DOT use the U.S. Census designated urbanized area boundary or the FHWA adjusted urbanized area boundary when establishing targets?**

State DOTs should use the boundary in effect at the time they establish targets. For example, if a boundary is adjusted in 2017, the State DOT should use the adjusted boundary for the 2018, and subsequent, targets. State DOTs shall declare and describe these boundaries in the HSIP annual report (23 CFR 490.209(b)(1)) to be clear which boundary was used. For additional information for integrating urbanized and non-urbanized safety performance management and targets into a performance-based safety program, refer to the Urbanized and Non-urbanized target setting guidance at <http://safety.fhwa.dot.gov/hsip/tpm/>.

### Who should be involved in establishing performance targets?

**The State DOT and relevant MPOs shall coordinate on the establishment of targets in accordance with 23 CFR Part 450 to ensure consistency, to the maximum extent practicable. [23 CFR 490.209(d)(1)]**

It is essential for coordination of safety targets to occur between State DOTs, SHSOs, MPOs, FHWA Division Offices, and NHTSA Regional Offices. This coordination among State safety partners and stakeholders is essential to address all aspects of safety and all strategies for improving safety and to meet the requirement for identical targets for common safety performance measures. FHWA Division and NHTSA Regional staff should be involved in the coordination to help facilitate discussions and information sharing as stewards of the required processes.

## 10.3 MPO Targets

**The Metropolitan Planning Organizations (MPO) shall establish performance targets for each of the measures identified in § 490.207(a). [23 CFR 490.209(c)]**

### How are MPO targets established?

MPOs shall establish targets for each safety performance measure within 180 days of the establishment of the State DOT's targets and shall represent the anticipated outcomes for the same calendar year as the State DOT target (23 U.S.C. 134(h)(2)). Each MPO target can be established in one of two ways:

1. Agree to plan and program projects so that they contribute toward the accomplishment of the State DOT safety target for a safety performance measure, or
2. Commit to a quantifiable target for a safety performance measure for the metropolitan planning area.

### If an MPO elects the option to establish the fatality number target, does it have to use the same option for all its safety performance targets?

No. MPOs may use any combination of establishing targets provided that they establish their targets using one of the two methods prescribed in 23 CFR 490.209(c)(4). For example, an MPO may choose to establish its own quantifiable target for the number of fatalities and number of serious injuries, and agree to support the State target for the rate of fatalities, rate of serious injuries, and number of non-motorized fatalities and non-motorized serious injuries.

### How do MPOs calculate VMT for rate-based targets?

For rate-based targets, MPO VMT is not available in HPMS – the source of State VMT estimates – because local roadway travel is only reported in HPMS in aggregate for the State and for large Census

urbanized areas, which do not necessarily coincide with MPO planning areas. MPOs shall estimate VMT within the metropolitan planning area to establish MPO rate-based safety targets and to report MPO safety rate-based performance outcomes (23 CFR 490.209(c)(5)).

MPOs should make maximum use of data prepared for HPMS when preparing the rate-based target denominator. If an MPO develops data specifically for the denominator, it should use methods to compute VMT that are consistent with those used for other Federal reporting purposes (HPMS and, where applicable, air quality analysis). MPO VMT shall be estimated historically to report MPO safety performance outcomes (23 CFR 490.213(c)). MPOs may also choose to forecast the VMT for the subsequent calendar year when establishing the safety rate targets. Because HPMS reporting for the most recent year may not happen immediately, it may be necessary to extrapolate VMT in order to establish a baseline for the safety performance measure as well as to choose the performance target. In evaluating the denominator for years subsequent to the most recent year submitted to HPMS, MPOs are encouraged to extrapolate traffic trends by functional class from at least three and up to ten previous years of HPMS data and from local data computed using a consistent methodology. The MPO may apply more elaborate modeling strategies if desired (such as a regression analysis or a regional travel demand model), but the results of such strategies should be compared in any case to a simple traffic trend analysis, and any significant differences between the estimates should be documented by reference to recent significant changes in planning assumptions or local conditions that are represented in the models but that may not yet be visible in historical roadway count data. For additional information, refer to the *Technical Guidance to Support Local Computation of VMT-based Safety Performance Targets*.

#### **When do MPOs have to establish safety targets?**

MPOs have to establish safety targets within 180 days of the State DOT's targets per 23 U.S.C. 134. Since State DOTs and MPOs shall coordinate on the establishment of targets (23 CFR 490.209(d)(1)), MPOs are encouraged to establish targets soon after that coordination and when the State DOT establishes and reports its targets in the HSIP report. MPOs do not need to wait 180 days to establish their targets.

#### **Where can I find additional information about VMT estimation?**

FHWA Traffic Monitoring Guide, <http://www.fhwa.dot.gov/policyinformation/tmguide/>

FHWA HPMS Field Manual, <http://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/>

FHWA Review of State Practices Used to Report Local Area Travel,  
<http://www.fhwa.dot.gov/policyinformation/hpms/statepractices.cfm>

FHWA Sample Methodologies for VMT Estimation and Forecasting,  
[http://www.fhwa.dot.gov/environment/air\\_quality/conformity/research/sample\\_methodologies/emismeth02.cfm](http://www.fhwa.dot.gov/environment/air_quality/conformity/research/sample_methodologies/emismeth02.cfm)



FHWA Technical Guidance to Support Local Computation of VMT-based Safety Performance Targets, [https://www.fhwa.dot.gov/planning/processes/tools/technical\\_guidance/index.cfm](https://www.fhwa.dot.gov/planning/processes/tools/technical_guidance/index.cfm)

#### How do MPOs that cross multiple State boundaries establish targets?

**The MPOs with multi-State boundaries that agree to plan and program projects to contribute toward State targets in accordance with § 490.209(c)(4)(i) shall plan and program safety projects in support of the State DOT targets for each area within each State. [23 CFR 490.209(d)(2)]**

MPOs with multi-State boundaries that choose to establish their own quantifiable target for a safety performance measure, shall establish one target for the entire metropolitan planning area (23 CFR 490.209(c)(4)). However, if the multi-State MPO chooses to agree to plan and program projects so that it contributes toward the accomplishment of the State DOT safety target, the MPO shall agree to do so for each State target (23 CFR 490.209(d)(2)). For example, an MPO that extends into three States and does not elect to establish a quantifiable fatality number target for the entire metropolitan planning area, shall agree to plan and program projects to contribute toward three separate fatality number targets. For each of the five safety performance measures, the MPO can make a different choice to establish a quantifiable target or to agree to support each of the State's targets.

### 10.4 Safety Performance Measure Applicability

**The safety performance measures are applicable to all public roads covered by the HSIP carried out under 23 U.S.C. 130 and 148. [23 CFR 490.203]**

#### Why are the safety performance measures applicable to all public roads?

As described in Chapter 2 of this guidance, the HSIP is a core Federal-aid highway program with the purpose to achieve a significant reduction in fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land. Therefore, the safety performance measures defined by FHWA and the State DOT and MPO targets established to reflect those measures to carry out the HSIP are applicable to all public roads.

## Chapter 11: Significant Progress (23 CFR 490.211)

23 U.S.C. 148(i) establishes requirements for States that do not meet or make significant progress toward meeting their safety performance targets. The following section institutes the process for FHWA to assess whether State DOTs have met or made significant progress toward meeting safety targets and describes the requirements for States that have not met or made significant progress toward meeting their safety targets.

### 11.1 Significant Progress

**Who determines whether or not a State DOT has met or made significant progress toward meeting performance targets?**

The FHWA will evaluate whether a State DOT has met or made significant progress toward meeting performance targets. [23 CFR 490.211(c)]

**When will FHWA make the determination?**

The FHWA will determine whether a State has met or made significant progress toward meeting its targets when the outcome data for that calendar year are available. The FHWA expects to notify States of its determination within 3 months, by March 31 of the year after the data become available.

**How will FHWA notify the States whether they met or made significant progress toward meeting performance targets?**

The FHWA will issue a memo to each State DOT indicating whether the State met or made significant progress toward meeting its performance targets.

### 11.2 Data Sources

**What data sources will be used to make the determination?**

The main data sources that will be used to determine if a State DOT has met or made significant progress toward meeting its safety targets are summarized in the table below (23 CFR 490.211(a)).

Performance Target	Data source(s) used to make determination
Number of Fatalities	Final FARS (FARS ARF may be used if Final FARS is not available)
Rate of Fatalities	Final FARS (FARS ARF may be used if Final FARS is not available) and HPMS data

<b>Number of Serious Injuries</b>	State motor vehicle crash database
<b>Rate of Serious Injuries</b>	State motor vehicle crash database and HPMS data
<b>Number of non-motorized fatalities and serious injuries</b>	Final FARS (FARS ARF may be used if Final FARS is not available), State motor vehicle crash database

### 11.3 Targets Assessed

#### Which performance targets will be evaluated?

FHWA will evaluate whether a State DOT has met or made significant progress on the five targets established under section 490.207(a). FHWA will not evaluate the additional targets (urbanized and non-urbanized targets) a State DOT chooses to establish under section 490.209(b) or the targets an MPO establishes under section 490.209(c).

#### How are MPO targets evaluated?

Although 23 U.S.C. 148 establishes a specific State accountability process, it does not provide a specific process for FHWA to evaluate MPO target achievement. FHWA will, however, hold MPOs accountable for the targets they establish under the updated Statewide and Metropolitan Planning regulations through (1) the development of the metropolitan transportation plan (MTP) including a system performance report component, (2) the development of the Transportation Improvement Program (TIP) including the Federal Planning Finding, (3) the Transportation Management Area (TMA) planning certification process, and, if required and appropriate, (4) the HSIP Implementation Plan.

### 11.4 Significant Progress Determination

#### What is significant progress and how is it calculated?

**A State DOT is determined to have met or made significant progress toward meeting its targets when at least four of the five performance targets established under 490.207(a) are met or the outcome for a safety performance measure is less than the 5-year rolling average data for the safety performance measure for the year prior to the establishment of the State’s target. [23 CFR 490.211(c)(2)]**

A State DOT is considered to have met or made significant progress toward meeting its safety targets when it meets or is better than the baseline for at least four out of the five targets (23 CFR 490.211(c)(2)). The baseline, for these purposes, is the 5-year rolling average for the safety performance measure ending the year prior to the establishment of the target being evaluated. As shown in the below example, the baseline for calendar year (CY) 2018 targets, which are established in

2017, would be based on a comparison to the 5-year rolling average of performance data from 2012-2016.

Performance Measures	5-Year Rolling Averages			Target Achieved?	Better than baseline?	Met or Made Significant Progress
	2012 – 2016 Baseline Performance	2014-2018 Target	2014-2018 Actual Performance			
Number of Fatalities	474	468	472.4	No	Yes	Yes
Fatality Rate	0.988	0.98	0.99	No	No	
Number of Serious Injuries	2,310.4	2160	2,185.6	No	Yes	
Serious Injury Rate	4.822	4.572	4.584	No	Yes	
Number of Non-motorized Fatalities and Serious Injuries	113.2	110	109.4	Yes	N/A	

In this example:

- The number of fatalities target was not met, but the actual performance in 2014-2018 (472.4) was better than the 2012-2016 baseline (474).
- The fatality rate target was not met. The actual performance (0.99) was worse than the baseline (0.988).
- The number of serious injuries target was not met, but the actual performance (2,185.6) was better than the baseline (2,310.4).
- The rate of serious injuries target was not met, but actual performance (4.584) was better than the baseline (4.288).
- The number of non-motorized fatalities and non-motorized serious injuries target was met.

Because four of the five targets were either met or were better than baseline, FHWA would determine that the State met or made significant progress toward meeting its safety performance targets.

## 11.5 Consequences

**What happens if a State has not met or made significant progress toward meeting its performance targets?**

**If a State has not met or made significant progress toward meeting performance targets, the State DOT must comply with 23 U.S.C. 148(i) for the subsequent fiscal year. [23 CFR 490.211(d)]**

If a State DOT has not met or made significant progress toward meeting its performance targets, for the next fiscal year, per 23 U.S.C. 148(i), the State DOT shall use obligation authority equal to the HSIP apportionment for the fiscal year prior to the year for which the overall performance targets were not met or significant progress was not made only for HSIP projects. The State DOT will also be required to

submit an HSIP Implementation Plan to FHWA. The HSIP Implementation Plan would describe the specific actions or components a State DOT, and potentially MPOs, would take to meet its/their targets. FHWA intends to provide additional guidance on HSIP Implementation Plans.

**Are there exceptions or circumstances that could excuse a State from having to meet or make significant progress toward meeting a target?**

No. The risk of unforeseen events or factors outside of a State DOT's control should be accounted for in the State's target establishment process. The regulations acknowledge the potential for unforeseen events and the impact of factors outside the State DOT's control by using a 5-year rolling average for each safety performance measure and defining significant progress as having met or made significant progress toward meeting four out of five safety targets.

**Can the State DOT be considered to have met or made significant progress toward meeting its targets if the outcome of any safety performance measure increases from the previous year?**

Yes. A State DOT may choose to establish a target that is higher than the previous year's performance outcome or 5-year rolling average. This may be appropriate if evidence, such as a change in State law or an increase in population, would lead to an increase in fatalities or serious injuries. In such a case, the State DOT may meet that target even if fatalities or serious injuries increase.

**What is an HSIP Implementation Plan?**

An HSIP Implementation Plan will describe actions the State DOT will take to achieve targets based on a detailed analysis, including analysis of crash types. The implementation plan shall: identify roadway features that constitute a hazard to road users; identify highway safety improvement projects on the basis of crash experience, crash potential, or other data-supported means; describe how HSIP funds will be allocated, including projects, activities, and strategies to be implemented; describe how the proposed projects, activities, and strategies funded under the State HSIP will allow the State DOT to make progress toward achieving the safety performance targets; and describe the actions the State DOT will undertake to achieve the performance targets in subsequent years [23 U.S.C. 148(i)]. FHWA will issue additional guidance on creating and implementing an HSIP Implementation Plan.

## Chapter 12: Reporting safety targets (23 CFR 490.213)

States are required to report safety targets to FHWA on an annual basis. The requirements for reporting the measures are described in more detail below.

### 12.1 State DOT Reporting

#### How will a State DOT report targets to FHWA?

**The targets established by the State DOT shall be reported to FHWA in the State's HSIP annual report in accordance with 23 CFR Part 924. [23 CFR 490.213(a)]**

#### When will State DOTs begin reporting targets?

State DOTs will first report safety targets in the HSIP annual report due August 31, 2017.

#### When will State DOTs begin reporting performance data?

State DOTs currently report safety performance data in their annual HSIP Reports. Refer to Chapter 7 for additional information on HSIP reporting requirements.

### 12.2 MPO Reporting

#### How will MPOs report their established targets?

**The MPOs shall annually report their established safety targets to their respective State DOT. [23 CFR 490.213(b)]**

MPOs annually report their established safety targets to their respective State DOT in a manner that is documented and mutually agreed upon by both parties (23 CFR 490.213(b)). While the process does not necessarily need to be incorporated into the Metropolitan Planning Agreement, it should work within the intent of the established Metropolitan Planning Agreement. State DOTs and MPOs should develop a reporting system within the framework of the agreement that identifies the coordinated processes for the collection of performance data, the selection of performance targets for the metropolitan area, the reporting of metropolitan area targets, and the reporting of actual system performance related to those targets.

#### Will MPO targets be reported to FHWA?

No. MPOs will report their targets to their respective State DOTs, in a manner that is documented and mutually agreed upon by both parties. States shall make this information available to FHWA upon request. (23 CFR 490.209(c)(3))

### **How will MPOs be held accountable for their safety targets?**

The law provides for MPO involvement throughout the entire performance management process by giving MPOs the flexibility to establish their own performance targets (or support the State's targets) and instituting changes to the Statewide and Metropolitan Planning regulations and process. The development of the MTP, metropolitan system performance report, TIP, and, if required, HSIP implementation plan, along with the TMA Planning Certification process all serve as links between investment priorities and performance targets. Collectively, these documents and processes will strengthen the efficacy of performance management. Furthermore, the transparent review and assessment of the performance-based planning process and its documentation hold MPOs accountable to their constituents and partners for achieving the targets they establish and advancing national transportation policy goals.

### **Can MPOs change their targets after submission to the State DOT?**

The process, if any, for MPOs to change their targets should be documented in the agreement between the State DOT and MPOs for reporting of their performance targets. Given that the MPOs will submit new targets each year for the next calendar year, FHWA discourages MPOs from changing targets after they are submitted to the State DOT. Targets should only be changed if the State DOT changes its targets, in accordance with 23 CFR 490.209(a)(6), or if there is a typographical error in the targets that were submitted.

## Appendix A: State Highway Safety Improvement Program Manual Template

### **Purpose**

*Describes the purpose of the manual, which may vary by State. The Highway Safety Improvement Program (HSIP) Manual should be developed in coordination with the Federal Highway Administration (FHWA), meet the needs of the particular State, and may address any or all of the following topics.*

### **Organizational Structure**

*Describes which units within the organization are responsible for the various aspects of HSIP administration, planning, implementation, evaluation, and reporting and where those units are located within the organization.*

### **Roles & Responsibilities**

*Describes the specific roles and responsibilities of each organizational unit in carrying out the HSIP (i.e., who does what). This would include a discussion of any multi-disciplinary/multi-agency committees that provide direction on HSIP activities. This discussion might include the purpose, make-up, and authority of that committee.*

### **Relationship to other safety programs**

*Describes the relationship with other safety programs administered by the State Highway Safety Office, metropolitan planning organizations, etc.*

### **HSIP Investment Approach**

*Describes how the HSIP apportionment is allocated across the agency, programs, and projects. For example, are HSIP funds administered centrally or via district? Are there set-asides for established programs or types of projects? Is there a competitive application process? How do local agencies obtain HSIP funds? This would also include a discussion of any other funds that are used to leverage or support the HSIP (e.g. State funds, Penalty Transfer funds) and how those funds are programmed (e.g. 4- to 5-year program plan).*

### **HSIP Eligibility**

*Describes State-specific eligibility criteria for use of HSIP funds. These criteria might address coordination with the SHSP; use of HSIP funds for proven countermeasures, systemic projects, project, non-infrastructure projects or individual phases of a larger capital projects; scope creep; and HSIP administration.*

### **HSIP Processes**

*Describes HSIP planning, implementation, evaluation and reporting processes, including an overview of each process, specific methodologies and timeframes. This description might be supplemented by a*



*process or project development flowchart. For HSIP planning, the discussion might include the list of recommended crash modification factors, countermeasures service life, crash costs and operation and maintenance costs to support competitive applications. Applications may also be provided for reference.*