

Oregon Department of Transportation

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# ODOT Highway Safety Program Guide

*A program managed by the Project Safety Management System*

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## A guide to developing highway safety projects



OREGON DEPARTMENT of TRANSPORTATION  
TECHNICAL SERVICES  
TRAFFIC-ROADWAY SECTION

<http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/>

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Note: This document replaces the October 2002 version of the Hazard Elimination Program (HEP) Guide and is the standard guidance document for developing and programming safety projects into the Statewide Transportation Improvement Program (STIP). This document has been reviewed by the ODOT Traffic Operations Leadership Team (TOLT) and the Highway Safety Engineering Committee (HSEC).

# 1.0 Introduction

The mission of the Highway Safety Program at the Oregon Department of Transportation (ODOT) is to carry out highway safety improvement projects to achieve a significant reduction in traffic fatalities and serious injuries. The purpose of this guidebook is to document program philosophy and the application process for all Highway Safety funding. **For purposes of programming Highway Safety funds in the Statewide Transportation Improvement Program (STIP), all highway safety infrastructure improvement projects shall follow these guidelines regardless of funding type (federal or state).**

The federal Highway Safety Improvement Program (HSIP) funds that comprise a majority of the funding for the ODOT Highway Safety Program come from the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) signed into law on August 10, 2005. HSIP funds are primarily intended for infrastructure safety improvements on the state highway system while High Risk Rural Roads (HR3) funds are primarily intended for infrastructure improvements on rural county roads. Non-infrastructure highway safety improvements such as education and enforcement programs are administered by the ODOT Transportation Safety Division and are typically funded with separate funding from the National Highway Traffic Safety Administration (NHTSA), the Federal Highway Administration (FHWA), or state funds.

The Oregon Transportation Commission (OTC) has allocated approximately \$28 to 29 million dollars a year to the ODOT Highway Safety Program for 2006 through 2009 for infrastructure improvements. Of the total amount, approximately \$14 million per year is from the federal HSIP. Another \$1.1 million (approximately) is set aside for the federal HR3 program administered by the ODOT Local Government Section in cooperation with the Association of Oregon Counties (AOC). The remaining funds in the Highway Safety Program are made up of eligible federal or state funds.

The first section of this guide outlines the general Highway Safety program, while the second and third sections provide details on the selection process. The fourth Section outlines federal reporting requirements for the HSIP and HR3.

## **1.1 State Strategic Highway Safety Plan**

The State Strategic Highway Safety Plan (SSHSP) is a SAFETEA-LU requirement and was developed by ODOT to address engineering, management, operation, education, enforcement and emergency services elements of highway safety. The SSHSP identifies highway safety improvement opportunities by addressing engineering, management, operations, education, enforcement and emergency management in order to focus resources on areas of greatest need and coordinate with other highway safety programs. The SSHSP may identify programs of projects, strategies or other key factors to reduce or eliminate safety hazards. The priorities identified in the SSHSP should be used to address all Safety and HSIP projects.

In response to the SSHSP requirement, Oregon has adopted the Oregon Transportation Safety Action Plan (TSAP). The TSAP in conjunction with the safety projects included in the Statewide Transportation Improvement Program (STIP) comprise Oregon's SSHSP. Because ODOT has officially adopted the TSAP, SAFETEA-LU allows ODOT some flexibility to use up to 10% of HSIP funds for other highway safety projects typically administered under Section 402 when all infrastructure safety needs, including those for highway-rail grade crossings, have been met for a particular year.

## **1.2 Safety and HSIP Program Management**

ODOT has placed the responsibilities of Highway Safety Program management with the Traffic-Roadway Section (TRS). ODOT Regions are responsible for fund management within their own Regions and gathering information in support of the annual reporting process required by SAFETEA-LU (See Federal Reporting Requirements found in Section 4.0).

## **1.3 Project Solicitation, Prioritization and Selection**

Project solicitation, prioritization, and selection is determined by ODOT Region Traffic staff each year. HSIP funds can be used on any public road or publicly owned bicycle/pedestrian pathway or trail.

## **1.4 New Legislation**

This program manual replaces the former Hazard Elimination Program (HEP) manual published in October 2002. Federal legislation (SAFETEA-LU) signed into law on August 10, 2005 established a new Highway Safety Improvement Program (HSIP,

under 23USC148) eliminating the former HSIP (23USC152) which included the Hazard Elimination Program. Projects eligible for funding include the familiar hazard elimination type projects plus SAFETEA-LU expanded the eligibility to more types of infrastructure improvements.

## 2.0 Safety Program Guidelines

**All Highway Safety projects, regardless of funding (state or federal) will follow the same guidance for project eligibility.** The federal requirements for the HSIP program are described in Title 23 Section 148 of the United States Code (23USC148), which is included in the Appendix A of this document. In addition to the federal guidelines, ODOT has added its own criteria and requirements to tailor the Highway Safety program to match Oregon's needs. In general, for a project to meet both the federal and state requirements, it must:

- Be an eligible highway safety project (as defined below);
- Have committed matching funds of 10% of the project cost (for federal funding);
- Be able to meet all applicable guidelines and standards for construction;
- Meet one of the following eligibility criteria:
  - Positive Benefit/Cost (B/C) Ratio of 1.0 or greater;
  - Top 5% Safety Priority Index System (SPIS);
  - Safety Investment Program (SIP) Category 4 or 5; or
  - Justified by Risk Narrative.

These criteria are discussed in the following subsections.

### 2.1 Projects Eligible for Safety Funding

An *eligible* project is defined as any identified highway safety project to correct or improve a hazardous road location or address a highway safety problem (see 23USC148). Typical safety projects include, but are not limited to, the following:

Signal installation or improvement	Pedestrian safety improvements
Channelization	Grade separation
Curve realignment	Illumination

Pavement markings	Delineation
Guardrail or barrier	Crash attenuators
Slope flattening	Fixed object removal
Rockfall correction	Corridor safety improvements
Bicycle safety improvements	School zone safety improvements
Road safety audits	Traffic calming features
Sign installation or improvement	Signal preemption

In addition the following projects are eligible for funding:

- A model traffic enforcement activity at a highway-rail grade crossings
- Safety-conscious planning;
- Improvement in the collection and analysis of crash data;
- Planning, integrated interoperable emergency communications equipment, operational activities, or traffic enforcement activities (including police assistance) relating to work zone safety;
- The addition or retrofitting of structures or other measures to eliminate or reduce crashes involving vehicles and wildlife;
- Construction and operational improvements on high-risk rural roads;
- Improvements for safety of the disabled;

The following types of projects **are not considered eligible** for Highway Safety Program funding (unless listed above):

- Enforcement programs (except as specifically allowed above);
- Public information campaigns; and
- Other traditional NHTSA Section 402 projects (except as part of a construction project).

Highway Safety Program funds are typically used for stand-alone projects but may be used in conjunction with other funds for safety improvements incorporated in larger projects as a result of identifying safety problems within the projects limits. For these safety projects, the selected feature(s) will also be based on a benefit/cost analysis, addressing a top 5% SPIS site, or a SIP Category 4 or 5 segment. Further guidance on

how Highway Safety Program funds should be used in reference to SIP Categories is listed below:

- For pavement preservation projects on segments of the state highway system with a low crash history (SIP Categories 1 or 2), fewer safety features are designed into the projects because of the lack of recorded history of safety problems. **Highway Safety Program funds should not be expended on these projects.**
- For pavement preservation projects with a history of fatal or serious crashes (SIP Categories 3-5), proposed safety countermeasures shall be examined for effectiveness by benefit/cost analysis. Those features which show a positive cost benefit or have the highest potential payback should be considered for funding with Highway Safety Program funds. (Note: Safety countermeasures for SIP Category 4 or 5 segments are eligible for Highway Safety Program funding even if the benefit/cost analysis does not meet the minimum score of 1.0)

The replacement of **existing** features on STIP projects (e.g., striping, guardrail, signing, rumble strips) in like kind **shall not** be funded from the Highway Safety Program. These existing features must be funded out of the project's program limitation (Modernization, Preservation, Bridge, etc.). The only exception is if the improvement is addressing a safety issue by enhancing the feature such as upgrading striping from paint to durable materials. The improvement must still show either a benefit/cost greater than 1.0, address a top 5% SPIS site, or a SIP Category 4 or 5 segment.

## 2.2 Project Funding Information

To be eligible for use of federal Highway Safety Program funds, a 10% match of state funds to the federal funds is required. Highway Safety Program funds may pay for preliminary engineering, right-of-way, and construction costs. Safety projects should be contracted, but state forces may be used if an immediate response is necessary to correct an identified safety problem or it is in the public's best interest. Projects are required to be in the Statewide Transportation Improvement Program (STIP).

### 2.2.1 Regional Share of Funds

The total amount of Highway Safety Program funds allocated to the regions for highway safety projects is shared by the five ODOT regions. The funding allocation is

based upon a three-year average of the top 15% SPIS sites (high crash locations). Regions may rollover funds from year-to-year, in order to obtain sufficient funds for a project. The approximate funding splits for the 2008-2011 STIP are shown in the table below (based on 2004 SPIS data). The ODOT Highway Safety Engineering Committee (HSEC) has authority to set aside part of the total Highway Safety Program funding for statewide use for programs such as the Highway Safety Engineering “Quick Fix” Program and to address Key Safety Emphasis Areas found in the TSAP.

Region	Funding Allocation
1	52%
2	27%
3	10%
4	7%
5	4%
Total	100%

### **2.3 Statewide Emphasis Area share of HSIP funds**

The HSEC has authority granted from the ODOT Deputy Director to make recommendations to the Oregon Transportation Safety Committee (OTSC) to use part of the total funding for the Highway Safety Program for highway safety improvement projects that focus on statewide safety emphasis areas or for a quick response safety program. Statewide emphasis areas can include run-off-the-road crashes, pedestrian safety improvements, guardrail upgrades, signage upgrades, etc. A quick response safety program may be a small amount of funds set aside by TRS to administer during the fiscal year for small project needs and quick response. In this case, the dollar amount allocated to an emphasis area or quick response would be allocated by a process decided upon by the HSEC and agreed to by the OTSC. These projects must meet the eligibility criteria outlined in these guidelines.

### **2.4 High Risk Rural Roads**

SAFETEA-LU includes a set aside for improvement to address problems and opportunities on High Risk Rural Roads. This set aside is limited to roadways

functionally classified as rural major or minor collectors or rural local roads. In addition, the roadway must have a crash rate for fatalities and serious injuries that exceeds the statewide average for those functional classes of roadways. The ODOT Local Government Section administers the program and provides program guidance in cooperation with the AOC.

## 2.5 Highway-Rail Grade Crossings

Section 130, Railway Highway Crossings, is essentially unchanged. The ODOT Rail Division administers the program and provides the program guidelines. Contact the ODOT Rail Division for more information on this program.

## 2.6 Project Eligibility Criteria

Projects shall meet one of the following criteria for eligibility of Highway Safety Program funds:

- Positive Benefit/Cost (B/C) Ratio of 1.0 or greater;
- Top 5% Safety Priority Index System (SPIS);
- Safety Investment Program (SIP) Category 4 or 5; or
- Justified by Risk Narrative.

\* A SIP Category 3 must show a B/C of 0.8 or greater, Categories 4 and 5 do not require a B/C.

\*\* Risk Narratives **shall not** be used to justify highway safety projects except for projects where crash trends may not be evident such as bicycle or pedestrian improvements.

Internet links to samples of the forms for benefit cost and risk narratives are available in Appendix B of this guide. Applicants should download electronic versions of the forms from the ODOT TRS internet site to get the most recent forms. If applicants do not have Internet access, please contact the current TRS Highway Safety Engineering Coordinator to obtain the forms.

### 2.6.1 Benefit-Cost (B/C) Analysis

In the benefit-cost analysis, the ratio of the economic value of the long-term reductions of target crashes to the estimated cost of the improvement is calculated. The benefits are quantified over a 10- or 20-year period at a 4% interest rate. A link to a sample of

the form is available in Appendix B of this guide. ODOT recommends that 3-5 years of the most recent crash data available should be used for the analysis and that the project show a benefit cost ratio of 1.0 or greater.

ODOT recommends that all net costs related to installing the safety improvement be counted as costs for the purpose of calculating B/C. For example, additional costs of purchasing right of way for a left turn refuge should be included, excluding any portion that may be recoverable (i.e., by selling excess property).

Costs which are not attributable to the safety improvement but instead to rules or regulations may be excluded for the purpose of calculating the B/C. Costs such as environmental mitigation or requirements to meet ADA may or may not be attributable to the safety improvement even if they are required for the project. Judgment should be used as to whether or not the full cost of the mitigation or other requirement is attributable to the safety improvement or attributable to other requirements.

A crash reduction factor (CRF) is the expected reduction in crashes from applying a particular countermeasure or improvement. CRF's may apply to all crash types or may apply to only particular crash types. Those CRF's which apply to a particular type of crash - those crashes that can be prevented by the proposed improvement - should only be applied to those types of crashes and not to other types of crashes.

Some CRF's apply to all crash types. Typically the research which developed the CRF may not have distinguished between crash types or the countermeasure may be effective for multiple crash types. In these cases the reduction should be applied to all crashes within the affected area.

TRS maintains a list of CRF's for various types of improvements. The list also indicates the improvement, the type of crashes impacted and the expected reduction of crashes by crash severity. The CRF list is updated periodically, as improved information is obtained. The economic values for crash types on the "Benefit/Cost Analysis Worksheet" are updated every two years.

#### 2.6.2 Safety Priority Index System (SPIS) Ranking

The SPIS is a method developed by ODOT for identifying potential safety problems on state highways. SPIS is a tool used to identify crash history in 0.10 mile segments on state highways. SPIS scores are developed based on crash frequency, severity, and rate. A prioritized list is created for each Region (the top 5 percent of

statewide SPIS sites) and is provided to Regions annually for analysis and possible corrective action.

- A prioritized list of SPIS sites on State Highways is available on the [TRS intranet site](#) or from the Region Traffic Office. (The ODOT intranet is only accessible to ODOT employees. For non-ODOT employees the [TRS internet site](#) provides more information on SPIS)

### 2.6.3 SIP Categories

The Safety Investment Program (SIP) is a process to selectively make safety investments during preservation projects on roadways with a history of fatal and serious injury crashes and perform minimal safety upgrades on roadway preservation projects with low fatality and severe injury crash history. The goal of SIP is to create a balance to meet the competing needs of two important transportation facility elements – safety and pavement preservation, while providing the most cost effective means of reducing fatalities and severe injuries.

Five mile sections of the state highway system are categorized by the number of fatal and serious injury crashes during a three year period. The following is the stratification for SIP categories:

Category 1: 0 (no) fatal or injury A (serious) crashes;

Category 2: 1 to 2 fatal or injury A crashes;

Category 3: 3 to 5 fatal or injury A crashes;

Category 4: 6 to 9 fatal or injury A crashes;

Category 5: 10 or more fatal or injury A crashes.

A prioritized list of SIP segments on State Highways is available on the [TRS intranet site](#) or from the Region Traffic Office.

### 2.6.4 SPIS Analysis Module (SAM)

SAM is a tool for ODOT highway safety experts to perform a more detailed analysis of crash type and severity on the state highway system using the SPIS methodology. SAM allows users to categorize crashes by collision type and numerous conditions at the time of the crash including weather, lighting, road surface, and other special conditions. This type of analysis allows ODOT to identify crash

types that are over-represented on the state highway system and possibly amenable to engineering solutions.

### 2.6.5 Risk Narrative Form

The Risk Narrative Form is a way to justify a project based on the safety hazard at a location that does not have available motor vehicle crash records or would typically not show evidence of a safety problem through crash records. Pedestrian and bicycle safety improvements are often justified by a risk narrative because they do not necessarily have significant crash history but have the potential for severe or fatal injury crashes. Safety projects for improving safety of motor vehicles should normally use the benefit cost analysis because they typically would have crash records associated with a location or segment of roadway. A link to a sample of the Risk Narrative Form is available from Appendix B of this guide.

Risk Narratives may not be used to justify roadway safety projects that would typically display crash trends but few or no crashes exist. A Risk Narrative (RN) should only be used when potential exists for high severity crashes and the nature of the crashes are such that they happen so sporadically that a crash history may not exist. For example, a Risk Narrative is appropriate for projects such as Bike or Pedestrian safety projects where potential for a high severity crash exists or for mitigations for wrong way movements on freeways with reports of wrong way movements.

### 2.6.6 Engineering Study

The engineering study provides additional supporting information which should be included regardless of which method is used for eligibility. The study may include the use of predictive safety models such as the Interactive Highway Safety Design Model (IHSDM) to demonstrate expected safety problems or the anticipated effectiveness of proposed solutions. An engineering study should be performed by a qualified engineer. The study should describe the problem, potential remedies for the problems, potential reductions in crashes and any other supporting documentation. Chapter 6 of the ODOT Traffic Manual provides further guidance on considerations to include in the study when proposing specific traffic control devices.

## 2.7 **Guidelines and Standards**

Projects should be able to demonstrate that they will meet all of the necessary guidelines and standards for construction. The intent of this requirement is to ensure that projects approved for funding will be constructible. For example, a project to

install a traffic signal will not be eligible for safety funds if a traffic signal warrant analysis has not been completed.

On state highways installation of new traffic control devices require the approval of the State Traffic Engineer as listed in the ODOT Traffic Manual (See Delegated Authorities of the State Traffic Engineer in the ODOT Traffic Manual). This approval should be obtained prior to any requests for funding. Approval for funding of projects does not constitute approval for installation of traffic control devices.

## 3.0 How to Apply for Funding

All projects applications go through the local ODOT Region Traffic office. While the application process is not intended to be cumbersome, well-documented project applications are more likely to receive funding. Each application should contain the following:

- Cover letter addressed to the local ODOT Region Traffic Manager describing the problem area and the proposed solution;
- Name of contact person;
- Project justification, (including an Benefit-Cost Analysis Worksheet or Risk Narrative Form);
- Copies of crash records;
- Site drawing or sketch;
- Cost estimate;
- An engineering study that further defines the problem area and other pertinent project information (such as traffic signal warrant analyses);
- Photographs of the typical section (if available); and
- Relevant priority schemes based on crash data, such as the Safety Priority Index System (SPIS) used on State Highways (if available).

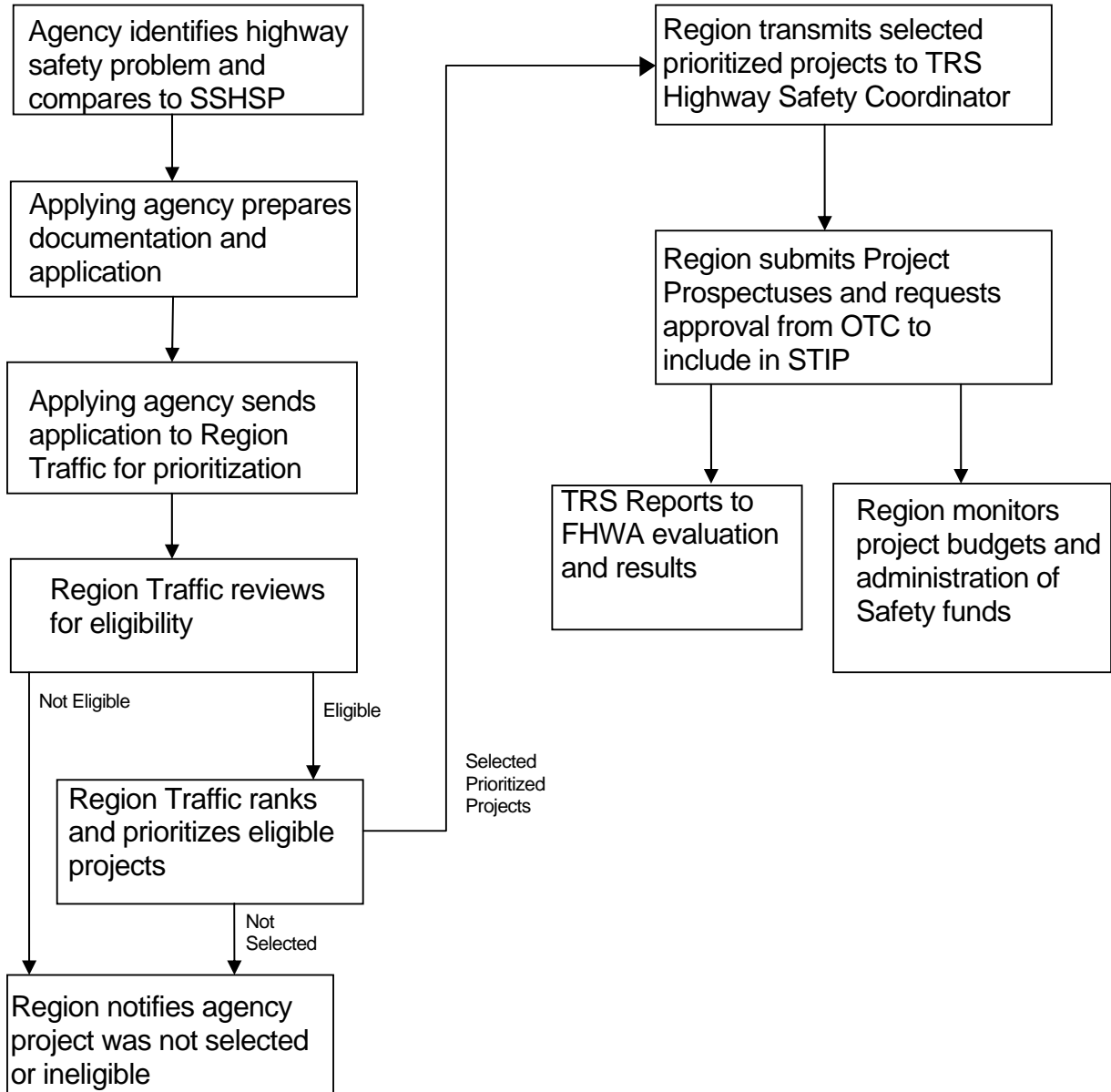
A list of additional sources that may be helpful in compiling the application are included in Appendix B.

### 3.1 Selection Process

The selection process is shown in Figure 1. The process begins when the agency identifies a safety problem. Possible safety project locations are identified from a variety of sources including crash records, SPIS, local citizens, enforcement or

emergency response personnel, and road maintenance crews. Next, the agency submits an application to ODOT's Region Traffic office, who then reviews and determines eligibility. Eligible projects will be ranked and prioritized by the Region Traffic manager with assistance of region staff.

## Figure 1 - Highway Safety Fund Process



SSHP – State Strategic Highway Safety Plan  
 HSIP – Highway Safety Investment Program  
 OTC – Oregon Transportation Commission

STP – Statewide Transportation Improvement Program  
 TRS – Traffic - Roadway Section  
 FHWA – Federal Highway Administration

Competing projects may be ranked by the incremental benefit/cost method (or by an alternative method of Region's choice) in order to establish the relative severity of the problems at the locations in terms of crashes, injuries, and/or deaths.

Regions should generally follow outlined steps below for prioritizing the safety projects. Region Traffic is responsible for selection of safety projects that meet the criteria outlined in the Guide as follows:

- A list of proposed Safety Projects is generated by Region Traffic (typically up to 150% of the funding) and prioritized by the eligibility criteria in the following order:
  1. SPIS
  2. Benefit/Cost
  3. SIP
- The projects are scoped by the Region Technical Center to clarify cost and Region Traffic updates B/C.
- Projects are reviewed and ranked by priority. They may be matched to other projects or funding types, and re-prioritized based on schedules, availability of resources, matching funds, or other factors.
- Region Project Delivery Team approves list and documents decision process.
- List of Priority Safety Projects is programmed in draft STIP.
- Share list with ACTS and gather comments on the draft STIP.

### **3.2 Prioritized Highway Safety Projects**

ODOT regions will be responsible for submitting project prospectuses and requests for inclusion of the projects in the STIP and for monitoring the expenditure of funds and managing highway safety funds.

A list of the Region's selected projects ranked on priority will be forwarded to the TRS Highway Safety Coordinator in Salem with supporting documentation. In addition, TRS will be responsible for developing lists of potential projects for any Emphasis Area funds, working with applicable sections and Regions Traffic Offices to gather information and/or solicit the highway safety projects.

### **3.3 Highway Safety Engineering Committee**

The Highway Safety Engineering Committee (HSEC) is set up by the Highway Division of ODOT to guide and give direction for highway safety engineering needs within the Department. The HSEC is responsible for reviewing and making recommendations for strategies and/or projects to be included in the State Strategic Highway Safety Plan and the ODOT Highway Safety Program. The committee also makes recommendations on emphasis areas to fund, approves regional safety funding allocation strategies, provides oversight on discretionary highway safety funding, and approves enhancements to Safety Management System (SMS) tools such as SPIS, SIP, CRF, and B/C analysis tools.

### **3.4 Oregon Transportation Safety Committee**

The Oregon Transportation Safety Committee (OTSC) is created within the Department of Transportation to advise the department on functions relating to Highway Safety (refer to ORS 802.300). The Transportation Safety Division of ODOT in consultation with the OTSC Committee is responsible for coordinating the development of the SSHSP. Per 23USC148, the State is required to develop a SSHSP, adopting strategic and performance based goals and describing a program of projects or strategies to reduce or eliminate safety hazards.

Regions are responsible for submitting project prospectuses and requests for inclusion of the projects in the STIP and for monitoring the expenditure of funds and managing the highway safety funds.

### **3.5 Revising Project Cost Estimates**

If the project estimate increases during the project development phase, the project leader will be required to coordinate the need for additional funds with the Region STIP Coordinator to determine if there are highway safety funds available from the region allotment. Project overruns will be the responsibility of the regions and will typically need to be funded from other funds in the region since all highway safety funds are allocated to the regions each year. Project estimate decreases or construction cost under-runs will be available for other eligible projects within the region.

## 4.0 Federal Reporting Requirements

### 4.1 Annual Evaluation Report

As required by 23USC148, the Oregon Department of Transportation has established an evaluation process to analyze and assess results achieved by highway safety improvement projects funded by the Highway Safety Program. Each year, ODOT submits a report to the Federal Highway Administration (FHWA) by December 30. As a part of the use of Federal funds, it is required that an applying local agency (or “local agency receiving safety funds”) will contribute to the report as requested by the Oregon DOT. In addition, the ODOT Rail Division will submit information on the Rail Crossing Safety program each year prior to the deadline for submitting the report.

TRS is responsible for coordinating the gathering of data and the analysis of the highway safety improvement projects. Region Traffic will assist in compiling the information necessary to complete the report. The process begins with TRS performing an annual statewide analysis of crashes on the state highway system and developing SPIS reports for each Region. Region Traffic staff take information from the SPIS reports and initiate investigations on potential engineering improvements, estimated cost, and barriers to implementation for their highest ranking SPIS sites. Lastly, TRS staff compile information from all ODOT Regions and send a statewide report to the FHWA as required by 23USC148.

### 4.2 Annual Priority Report

As required by 23USC148, the Oregon Department of Transportation (ODOT) is required to submit an annual report to FHWA on or before August 31 of each year that describes not less than 5 percent of locations identified by the State as possible hazardous locations and establish the relative severity in terms of crashes, injuries, fatalities (or other relevant data).

Currently the ODOT uses the Safety Priority Index System (SPIS), a method developed for identifying hazardous locations on state highways. The SPIS score is based on three years of crash data and considers crash frequency (25%), crash rate (25%), and crash severity (50%). ODOT bases its SPIS on 0.10 mile segments to account for variances in how crash locations are reported. To become a SPIS site, a location must meet one of the following criteria:

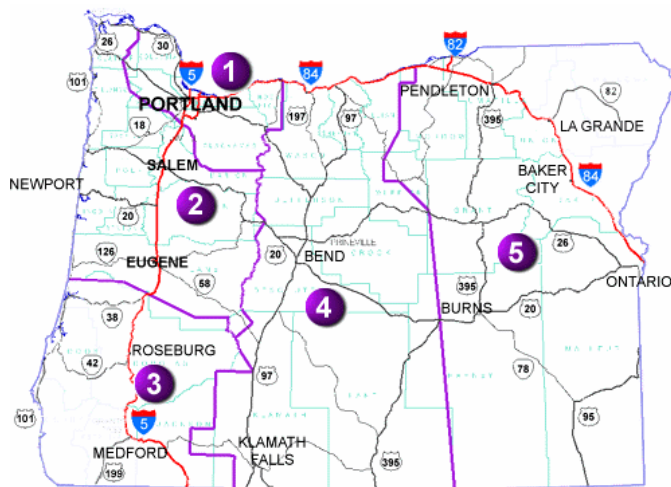
- Three or more crashes have occurred at the same location over the previous three years
- One or more fatal crashes have occurred at the same location over the previous three years

Each year, a list of the top 5% SPIS sites are generated for review. These sites are evaluated and investigated for safety problems by Region Traffic offices.

## 5.0 Contacts

### 5.1 Region Contacts

The Region Traffic Managers as of September 2007 with their telephone numbers are:



Region	Headquarters	Region Traffic Manager	Telephone
1	Portland	Sue D'Agnes	503-731-3427
2	Salem	David Warren	503-986-2655
3	Roseburg	Shyam Sharma	541-774-6335
4	Bend	Joel McCarroll	541-388-6189
5	La Grande	Tom Kuhlman	541-889-8558 Extension 252

### 5.2 TRS Highway Safety Program Coordinator

Questions or comments about the Safety or HSIP Program can be directed to:

Tim Burks, Highway Safety Engineering Coordinator  
 Traffic—Roadway Section  
 355 Capitol NE, 5th Floor  
 Salem, Oregon 97301

Voice: (503) 986-3572 Fax: (503) 986-4063

[timothy.w.burks@odot.state.or.us](mailto:timothy.w.burks@odot.state.or.us)

# APPENDIX A: TITLE 23 Section 148 of the U. S. Code

## Sec. 148. Highway safety improvement program

(a) Definitions.--In this section, the following definitions apply:

(1) High risk rural road.--The term `high risk rural road' means any roadway functionally classified as a rural major or minor collector or a rural local road--

(A) on which the accident rate for fatalities and incapacitating injuries exceeds the statewide average for those functional classes of roadway; or

(B) that will likely have increases in traffic volume that are likely to create an accident rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classes of roadway.

(2) Highway safety improvement program.--The term `highway safety improvement program' means the program carried out under this section.

(3) Highway safety improvement project.--

(A) In general.--The term `highway safety improvement project' means a project described in the State strategic highway safety plan that--

(i) corrects or improves a hazardous road location or feature; or

(ii) addresses a highway safety problem.

(B) Inclusions.--The term `highway safety improvement project' includes a project for one or more of the following:

(i) An intersection safety improvement.

(ii) Pavement and shoulder widening (including addition of a passing lane to remedy an unsafe condition).

(iii) Installation of rumble strips or another warning device, if the rumble strips or other warning devices do not adversely affect the safety or mobility of bicyclists, pedestrians, and the disabled.

(iv) Installation of a skid-resistant surface at an intersection or other location with a high frequency of accidents.

(v) An improvement for pedestrian or bicyclist safety or safety of the disabled.

(vi) Construction of any project for the elimination of hazards at a railway-highway crossing that is eligible for funding under section 130, including the separation or protection of grades at railway-highway crossings.

(vii) Construction of a railway-highway crossing safety feature, including installation of protective devices.

(viii) The conduct of a model traffic enforcement activity at a railway-highway crossing.

(ix) Construction of a traffic calming feature.

(x) Elimination of a roadside obstacle.

(xi) Improvement of highway signage and pavement markings.

(xii) Installation of a priority control system for emergency vehicles at signalized intersections.

(xiii) Installation of a traffic control or other warning device at a location with high accident potential.

(xiv) Safety-conscious planning.

(xv) Improvement in the collection and analysis of crash data.

(xvi) Planning integrated interoperable emergency communications equipment, operational activities, or traffic enforcement activities (including police assistance) relating to workzone safety.

(xvii) Installation of guardrails, barriers (including barriers between construction work zones and traffic lanes for the safety of motorists and workers), and crash attenuators.

(xviii) The addition or retrofitting of structures or other measures to eliminate or reduce accidents involving vehicles and wildlife.

(xix) Installation and maintenance of signs (including fluorescent, yellow-green signs) at pedestrian-bicycle crossings and in school zones.

(xx) Construction and yellow-green signs at pedestrian-bicycle crossings and in school zones.

(xxi) Construction and operational improvements on high risk rural roads.

(4) Safety project under any other section.—

(A) In general.--The term `safety project under any other section' means a project carried out for the purpose of safety under any other section of this title.

(B) Inclusion.--The term `safety project under any other section' includes a project to promote the awareness of the public and educate the public concerning highway safety matters (including motorcyclist safety) and a project to enforce highway safety laws.

(5) State highway safety improvement program.--The term `State highway safety improvement program' means projects or strategies included in the State strategic highway safety plan carried out as part of the State transportation improvement program under section 135(g).

(6) State strategic highway safety plan.--The term `State strategic highway safety plan' means a plan developed by the State transportation department that--

(A) is developed after consultation with--

(i) a highway safety representative of the Governor of the State;

(ii) regional transportation planning organizations and metropolitan planning organizations, if any;

(iii) representatives of major modes of transportation;

(iv) State and local traffic enforcement officials;

(v) persons responsible for administering section 130 at the State level;

(vi) representatives conducting Operation Lifesaver;

(vii) representatives conducting a motor carrier safety program under section 31102, 31106, or 31309 of title 49;

(viii) motor vehicle administration agencies; and

(ix) other major State and local safety stakeholders;

(B) analyzes and makes effective use of State, regional, or local crash data;

(C) addresses engineering, management, operation, education, enforcement, and emergency services elements (including integrated, interoperable emergency communications) of highway safety as key factors in evaluating highway projects;

(D) considers safety needs of, and high-fatality segments of, public roads;

(E) considers the results of State, regional, or local transportation and highway safety planning processes;

(F) describes a program of projects or strategies to reduce or eliminate safety hazards;

(G) is approved by the Governor of the State or a responsible State agency; and

(H) is consistent with the requirements of section 135(g).

(b) Program.--

(1) In general.--The Secretary shall carry out a highway safety improvement program.

(2) Purpose.--The purpose of the highway safety improvement program shall be to achieve a significant reduction in traffic fatalities and serious injuries on public roads.

(c) Eligibility.--

(1) In general.--To obligate funds apportioned under section 104(b)(5) to carry out this section, a State shall have in effect a State highway safety improvement program under which the State--

(A) develops and implements a State strategic highway safety plan that identifies and analyzes highway safety problems and opportunities as provided in paragraph (2);

(B) produces a program of projects or strategies to reduce identified safety problems;

(C) evaluates the plan on a regular basis to ensure the accuracy of the data and priority of proposed improvements; and

(D) submits to the Secretary an annual report that--

- (i) describes, in a clearly understandable fashion, not less than 5 percent of locations determined by the State, using criteria established in accordance with paragraph (2)(B)(ii), as exhibiting the most severe safety needs; and
- (ii) contains an assessment of--
  - (I) potential remedies to hazardous locations identified;
  - (II) estimated costs associated with those remedies; and
  - (III) impediments to implementation other than cost associated with those remedies.

(2) Identification and analysis of highway safety problems and opportunities.--As part of the State strategic highway safety plan, a State shall--

- (A) have in place a crash data system with the ability to perform safety problem identification and countermeasure analysis;
- (B) based on the analysis required by subparagraph (A)--
  - (i) identify hazardous locations, sections, and elements (including roadside obstacles, railway-highway crossing needs, and unmarked or poorly marked roads) that constitute a danger to motorists (including motorcyclists), bicyclists, pedestrians, and other highway users; and
  - (ii) using such criteria as the State determines to be appropriate, establish the relative severity of those locations, in terms of accidents, injuries, deaths, traffic volume levels, and other relevant data;
- (C) adopt strategic and performance-based goals that--
  - (i) address traffic safety, including behavioral and infrastructure problems and opportunities on all public roads;
  - (ii) focus resources on areas of greatest need; and
  - (iii) are coordinated with other State highway safety programs;
- (D) advance the capabilities of the State for traffic records data collection, analysis, and integration with other sources of safety data (such as road inventories) in a manner that--
  - (i) complements the State highway safety program under chapter 4 and the commercial vehicle safety plan under section 31102 of title 49;
  - (ii) includes all public roads;
  - (iii) identifies hazardous locations, sections, and elements on public roads that constitute a danger to motorists (including motorcyclists), bicyclists, pedestrians, the disabled, and other highway users; and
  - (iv) includes a means of identifying the relative severity of hazardous locations described in clause (iii) in terms of accidents, injuries, deaths, and traffic volume levels;
- (E)(i) determine priorities for the correction of hazardous road locations, sections, and elements (including railway-highway crossing improvements), as identified through crash data analysis;
  - (ii) identify opportunities for preventing the development of such hazardous conditions; and
  - (iii) establish and implement a schedule of highway safety improvement projects for hazard correction and hazard prevention; and
- (F)(i) establish an evaluation process to analyze and assess results achieved by highway safety improvement projects carried out in accordance with procedures and criteria established by this section; and
  - (ii) use the information obtained under clause (i) in setting priorities for highway safety improvement projects.

(d) Eligible Projects.--

- (1) In general.--A State may obligate funds apportioned to the State under section 104(b)(5) to carry out--
  - (A) any highway safety improvement project on any public road or publicly owned bicycle or pedestrian pathway or trail; or
  - (B) as provided in subsection (e), other safety projects.
- (2) Use of other funding for safety.--

- (A) Effect of section.--Nothing in this section prohibits the use of funds made available under other provisions of this title for highway safety improvement projects.
- (B) Use of other funds.--States are encouraged to address the full scope of their safety needs and opportunities by using funds made available under other provisions of this title (except a provision that specifically prohibits that use).

(e) Flexible Funding for States with a Strategic Highway Safety Plan.--

(1) <<NOTE: Certification.>> In general.--To further the implementation of a State strategic highway safety plan, a State may use up to 10 percent of the amount of funds apportioned to the State under section 104(b)(5) for a fiscal year to carry out safety projects under any other section as provided in the State strategic highway safety plan if the State certifies that--

- (A) the State has met needs in the State relating to railway-highway crossings; and
- (B) the State has met the State's infrastructure safety needs relating to highway safety improvement projects.

(2) Other transportation and highway safety plans.-- Nothing in this subsection requires a State to revise any State process, plan, or program in effect on the date of enactment of this section.

(f) High Risk Rural Roads.--

(1) In general.--After making an apportionment under section 104(b)(5) for a fiscal year beginning after September 30, 2005, the Secretary shall ensure, from amounts made available to carry out this section for such fiscal year, that a total of \$90,000,000 of such apportionment is set aside by the States, proportionally according to the share of each State of the total amount so apportioned, for use only for construction and operational improvements on high risk rural roads.

(2) Special rule.--A State may use funds apportioned to the State pursuant to this subsection for any project under this section if the State certifies to the Secretary that the State has met all of State needs for construction and operational improvements on high risk rural roads.

(g) Reports.--

(1) In general.--A State shall submit to the Secretary a report that--

- (A) describes progress being made to implement highway safety improvement projects under this section;
- (B) assesses the effectiveness of those improvements; and
- (C) describes the extent to which the improvements funded under this section contribute to the goals of--
  - (i) reducing the number of fatalities on roadways;
  - (ii) reducing the number of roadway-related injuries;
  - (iii) reducing the occurrences of roadway-related crashes;
  - (iv) mitigating the consequences of roadway-related crashes; and
  - (v) reducing the occurrences of crashes at railway-highway crossings.

(2) Contents; schedule.--The Secretary shall establish the content and schedule for a report under paragraph (1).

(3) Transparency.--The Secretary shall make reports submitted under subsection (c)(1)(D) available to the public through--

- (A) the Web site of the Department; and
- (B) such other means as the Secretary determines to be appropriate.

(4) Discovery and admission into evidence of certain reports, surveys, and information.-- Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose directly relating to paragraph (1) or subsection (c)(1)(D), or published by the Secretary in accordance with paragraph (3), shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in such reports, surveys, schedules, lists, or other data.

(h) Federal Share of Highway Safety Improvement Projects.--Except as provided in sections 120 and 130, the Federal share of the cost of a highway safety improvement project carried out with funds apportioned to a State under section 104(b)(5) shall be 90 percent.

## APPENDIX B: Additional Resources

### **CRASH DATA:**

Sylvia Vogel  
Oregon DOT, Transportation Development Division  
555 13th Street NE  
Salem OR 97301-4178  
(503) 986-4240  
Sylvia.m.vogel@odot.state.or.us

### **STATEWIDE CRASH RATE TABLES:**

[http://www.oregon.gov/ODOT/TD/TDATA/car/CAR\\_Main.shtml](http://www.oregon.gov/ODOT/TD/TDATA/car/CAR_Main.shtml)

### **CITY AND COUNTY MAPS:**

<http://www.oregon.gov/ODOT/TD/TDATA/gis/odotmaps.shtml>

### **OREGON DOT HIGHWAY INVENTORY:**

[http://www.oregon.gov/ODOT/TD/TDATA/otms/OTMS\\_Highway\\_Reports.shtml](http://www.oregon.gov/ODOT/TD/TDATA/otms/OTMS_Highway_Reports.shtml)

### **OREGON DOT HIGHWAY VOLUMES**

<http://www.oregon.gov/ODOT/TD/TDATA/tsm/tvt.shtml>

### **SAFETY PRIORITY INDEX SYSTEM (SPIS) INFORMATION (State Highways Only):**

Contact your local Region Traffic Offices or  
<http://intranet.odot.state.or.us/tstrafmgt/PSMS/SPIS/spis.htm> (ODOT Intranet site only accessible to ODOT employees)

### **BENEFIT/COST ANALYSIS WORKSHEET**

Download worksheet from [http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/highway\\_safety\\_program.shtml](http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/highway_safety_program.shtml)

### **RISK NARRATIVE FORM**

Download e-form from [http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/highway\\_safety\\_program.shtml](http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/highway_safety_program.shtml).

**COUNTERMEASURE LIST WITH CRASH REDUCTION FACTORS:**

<http://its.pdx.edu/CRF/CRFweb/> or

[http://www.oregon.gov/ODOT/HWY/TRAFFIC/PDF/Counter\\_Measures.pdf](http://www.oregon.gov/ODOT/HWY/TRAFFIC/PDF/Counter_Measures.pdf)

Tim Burks, Highway Safety Engineering Coordinator  
Oregon DOT, Traffic—Roadway Section  
355 Capitol NE, 5th Floor  
Salem, Oregon 97301  
Voice: (503) 986-3572 Fax: (503) 986-4063  
[timothy.w.burks@odot.state.or.us](mailto:timothy.w.burks@odot.state.or.us)

**NCRHP 500 Guidebooks – a series of guidebooks for addressing highway safety**

<http://safety.transportation.org/guides.aspx>

**Federal Highway Administration (FHWA) Safety Home Page**

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

**National Highway Traffic Safety Administration (NHTSA) Safety Home Page**

<http://www.nhtsa.dot.gov/>

**Transportation Research Board – Recent Publications on Safety**

<http://trb.org/>

**Manual on Uniform Traffic Control Devices**

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

**Insurance Institute for Highway Safety**

<http://www.iihs.org/default.html>

**Highway Safety Manual Related Links**

<http://www.wsdot.wa.gov/partners/hsm/public/RelatedLinks/RelatedLinks.html>