OREGON

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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Disclaimer

Protection of Data from Discovery Admission into Evidence

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section [HSIP], 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 the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds 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 mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The Oregon Department of Transportation (ODOT) is responsible for administering Oregon's Highway Safety Improvement (HSIP) Program. All roads within the state of Oregon are eligible to receive HSIP funding under the All Roads Transportation Safety (ARTS) Program.
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. For purposes of programming Highway Safety funds in the Statewide Transportation Improvement Program (STIP), all highway safety infrastructure improvement projects shall follow these guidelines.
The majority of the funding for the ODOT Highway Safety Program comes from the Highway Safety Improvement Program (HSIP), which is a core federal-aid program under the Fixing America's Surface Transportation (FAST) Act that went into effect in December, 2015. The primary goal of the HSIP is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state owned roads and tribal roads. The HSIP also requires a data-driven and strategic approach to improving highway safety on all public roads that focuses on performance. The FAST Act, which replaced the Moving Ahead for Progress in the 21st Century Act (MAP-21), largely maintained the program structure of the HSIP with slight increases in funding and a change that disallows HSIP funds to be transferred to and used for educational and enforcement type activities. The HSIP funds are primarily intended for infrastructure improvement projects. Non-infrastructure highway safety improvements such as education and enforcement programs are administered by the ODOT Transportation Safety Division (TSD), and are typically funded with separate funding from the National Highway Traffic Safety Administration (NHTSA), the Federal Highway Administration (FHWA), or state funds.

Following the HSIP requirements, ODOT has developed a new safety program, known as the All Roads Transportation Safety (ARTS) Program, which addresses safety on all public roads including non-state roadways. ODOT worked with the representatives from the League of Oregon Cities (LOC) and the Association of Oregon Counties (AOC) to document principles for a jurisdictionally blind safety program for Oregon to address safety on all public roads of the state, which eventually led to the development of the ARTS Program.
The ARTS Program is intended to address safety needs on all public roads in Oregon. About half of the fatal and serious injury crashes in the state occur on non-state roadways. By working collaboratively with local road jurisdictions (cities, counties, MPOs, and tribes) ODOT can expect to increase awareness of safety on all roads, promote best practices for infrastructure safety, complement behavioral safety efforts, and focus limited resources to reduce fatal and serious injury crashes in the State of Oregon. The program is a data-driven program to achieve the greatest benefits in crash reduction and is blind to jurisdiction.
Under the inaugural round of the ARTS Program, safety projects have been selected that will be delivered between 2017 and 2021. The Oregon Transportation Commission (OTC) has allocated approximately $31 to $37 million dollars per year to the ODOT Highway Safety Program for these five years (for a total of $166 million dollars) for infrastructure improvements. The majority of this funding will come from the federal HSIP. Currently, we are updating our outdated Roadway Departure plan on Oregon roadways. In the Fall of 2017, ODOT will start the second round of the All Roads Transportation Safety (ARTS) program.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety

improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

The objective of the ARTS Program is to select the best safety projects using a jurisdictionally blind and data-driven approach to significantly reduce the occurrence of fatalities and serious injuries on all roads in the state. A data-driven approach uses crash data, risk factors, or other data supported methods to identify the best possible locations to achieve the greatest benefits. Many highway projects incorporate design features or elements that relate to highway safety, such as updating guardrail or improving intersection channelization, signing, and pavement markings. But appropriate use of HSIP funds is only for locations or corridors where a known problem exists as indicated by location-specific data on fatalities and serious injuries, and/or where it is determined that the specific project can with confidence produce a measurable and significant reduction in such fatalities or serious injuries. To achieve the maximum benefit, the focus of the ARTS Program is on cost-effective use of the funds allocated for safety improvements addressing fatal and serious injury crashes.
The general program guidelines are as follows:
• All projects shall address specific safety problems that contribute to fatal and serious injury crashes.
• All projects shall use only countermeasures from the ODOT-approved countermeasure list.
• Only the most recent available five years of ODOT-reported crashes shall be used for crash analysis.
• Projects shall be prioritized based on ODOT-approved prioritization method such as Benefit-Cost Ratio.
• ODOT Regions will be responsible for developing and delivering projects.
The ARTS Program has two components – a hotspot component and a systemic component, as shown in Figure 2-1. The hotspot approach is the traditional approach used in safety analysis, in which ‘hotspot’ locations are identified based on crash history and appropriate countermeasures are implemented to reduce crashes. Hotspot projects typically focus on a particular location (for example, an intersection or a short segment of a roadway) that may have multiple causes to address. For the ARTS Program, a hotspot location is defined as a location that has at least one fatal or serious injury crash within the last five years.

The systemic approach identifies a few proven low-cost countermeasures that can be widely implemented and then applies the countermeasures where there is evidence that they would be most useful. The HSIP places a significant emphasis on the systemic approach, which has been proven to successfully reduce the occurrences of fatal and serious injury crashes. The systemic component of the ARTS Program has been further divided into three emphasis areas – roadway departure, intersection, and pedestrian/bicycle. Based on 2009 through 2013 data, these three emphasis areas accounted for approximately 85% of the fatal and serious injury crashes in the state.
The systemic approach originally used Section 164 penalty funds allocated to the Safety Program, but under the ARTS Program the systemic approach has been moved into the mainstream safety program equal with the hotspot approach.

Where is HSIP staff located within the State DOT?

Other-Traffic-Roadway Engineering Section

Enter additional comments here to clarify your response for this question or add supporting information.

The Oregon DOT Highway Safety Engineer and Highway Safety Engineering Coordinator are located in our headquarters office in Salem. There are 5 Region Traffic offices across Oregon. Each Region Traffic office has several employees that work with Region staff to help develop appropriate safety projects using one of our safety plans (Roadway Departure, Intersection, Bike/ped plans) or using our Safety Priority Index System (SPIS) to help identify high crash locations.

How are HSIP funds allocated in a State?

SHSP Emphasis Area Data

Enter additional comments here to clarify your response for this question or add supporting information.

The available money is separated into two categories — systemic and hot spots. Systemic project are proven, low-cost measures that have successfully reduced the occurrence of fatal and serious injury crashes and that can be widely implemented, like rumble strips on the shoulder of the road. Hot spots are identified by a higher than normal crash occurrence. These are often higher cost projects and are targeted to a specific segment of roadway or intersection.

ODOT collected input from the local governments in each region of the state.

Funding is divided to each region based on the number of fatalities and serious injury crashes. Potential projects within each region are prioritized by their benefit cost.

Describe how local and tribal roads are addressed as part of HSIP.

Local and tribal roads are addressed through t he All Roads Transportation Safety (ARTS) Program a safety program that addresses safety needs on all public roads in Oregon. By working collaboratively with local road jurisdictions (cities, counties, MPO’s and tribes) can ODOT hopes to increase awareness of safety on all roads, promote best practices for infrastructure safety, compliment behavioral safety efforts and focus limited resources to reduce fatal and serious injury crashes in the state of Oregon. This program uses a data-driven approach that is blind to jurisdiction to achieve the greatest benefits in crash reduction and emphasize elements of the SHSP.

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• All projects shall use only countermeasures from the ODOT-approved countermeasure list.

• Only the most recent available five years of ODOT-reported crashes shall be used for crash analysis.

• Projects shall be prioritized based on ODOT-approved prioritization method such as Benefit-Cost Ratio.

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The systemic approach identifies a few proven low-cost countermeasures that can be widely implemented and then applies the countermeasures where there is evidence that they would be most useful. The HSIP places a significant emphasis on the systemic approach, which has been proven to successfully reduce the occurrences of fatal and serious injury crashes. The systemic component of the ARTS Program has been further divided into three emphasis areas – roadway departure, intersection, and pedestrian/bicycle. Based on 2009 through 2013 data, these three emphasis areas accounted for approximately 85% of the fatal and serious injury crashes in the state.

The systemic approach originally used Section 164 penalty funds allocated to the Safety Program, but under the ARTS Program the systemic approach has been moved into the mainstream safety program equal with the hotspot approach.

Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

Traffic Engineering/Safety
Design
Planning
Maintenance
Operations
Districts/Regions
Local Aid Programs Office/Division
Governors Highway Safety Office
Other-Highway Safety Engineering Committee (HSEC)

Enter additional comments here to clarify your response for this question or add supporting information.

ODOT established a Highway Safety Engineering Committee (HSEC) on February 18, 2005 which meet quarterly. This committee provides a leadership forum to strategize, coordinate and direct the engineering-related highway safety activities and is comprised of individuals with a mix of expertise within the Department. Members of the committee represent the Transportation Safety Division, Region and Headquarters Traffic, Region Technical Centers, Region Planner, District Maintenance and Roadway Section. The Traffic Operations and Leadership Team (TOLT) was also established several years ago which provides statewide policy and procedure leadership for traffic engineering related issues.

Describe coordination with internal partners.

ODOT established a Highway Safety Engineering Committee (HSEC) on February 18, 2005 which meet quarterly.

The Highway Safety Engineering Committee (HSEC) provides operational decisions for the Safety Management System within ODOT and provides advice and recommendations to Highway Leadership Team as well as other leadership teams within ODOT regarding funding issues or major safety policy matters.

The HSEC will be comprised of individuals with a mix of expertise within the Department. Members of the committee represent the Transportation Safety Division, Region and Headquarters Traffic, Region Technical Centers, Transportation Development (Planning), Maintenance, Federal Highway, Transportation Safety, Association of Oregon Counties and Roadway Section.

The Highway Safety Engineering Committee provides a leadership forum to enhance, strategize, coordinate, and direct the engineering/infrastructure related highway safety activities for the Department including the ARTS/HSIP program.

The Traffic Operations and Leadership Team (TOLT) was also established several years ago which provides statewide policy and procedure leadership for traffic engineering related issues.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Governors Highway Safety Office
Local Technical Assistance Program
Local Government Agency
Tribal Agency
Law Enforcement Agency
Academia/University
FHWA

Enter additional comments here to clarify your response for this question or add supporting information.

Our 5 Region Traffic offices work closely with all external partners in determining appropriate safety projects to fund in Oregon to reduce fatal and serious injury crashes.

Describe coordination with external partners.

Our 5 Region Traffic offices work closely with external partners in determining appropriate safety projects to fund in Oregon to reduce fatal and serious injuries crashes. We are currently in our round 2, All Roads Transportation Safety (ARTS) program where the 5 Region Traffic offices are conducting outreach meetings with local agencies interested in submitting proposed ARTS safety projects for funding consideration.

Some External Partners are involved in HSEC, but all are involved in the planning through the SHSP process as stakeholders in the strategic planning document that defines Oregon's traffic safety trends and challenges. The SHSP also identifies Oregon's policies and strategies to eliminate fatalities and serious injuries.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

Yes

Describe HSIP program administration practices that have changed since the last reporting period.

The major change in the round 2 ARTS (All Roads Transportation Safety) program is that both the proposed hot spot projects and the proposed systemic project now require an application to be submitted for funding consideration. The second round of the ARTS program began in the fall of 2017 and extended through the spring of 2018. During this period, projects were selected for the STIP and to be delivered in the years 2022 through 2024. Approximately $30 million per year will be available for the ARTS program as determined by the Oregon Transportation Commission (OTC).

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

Yes

Describe other aspects of HSIP Administration on which the State would like to elaborate.

http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/docs/pdf/odot_safety_program_guide.pdf Oregon DOT updated their Roadway Departure plan in September 2017 for the state http://www.oregon.gov/ODOT/Engineering/Docs_TrafficEng/Departure-Implementation-Plan.pdf . Portland State University recently develop a plan regarding wrong way driving and recommendation on our interstate ramps http://www.oregon.gov/ODOT/Engineering/Docs_TrafficEng/Wrong-Way-Driver-Report.pdf . ODOT is in the process of implementing several of the recommendations in Region 3 using the ARTS funding. Although not as commonly used as benefit-cost analysis, cost-effectiveness analysis is another tool that is used by ODOT for project prioritization. Rather than comparing the economic value of the crash reductions to the project cost, cost-effectiveness analysis compares the change in crash frequency due to the implementation of a countermeasure to the project cost. For Oregon's pedestrian/bicycle projects under the ARTS Program, Cost-Effectiveness Index (CEI) is used to prioritize projects. CEI estimates the cost to reduce one crash. The lower the CEI value of a project, the higher it will rank in the prioritized list. Here is a link to the ARTS program for more information http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/Pages/ARTS.aspx .

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

Yes

To upload a copy of the State processes, attach files below.

File Name:
odot_safety_program_guide[1].pdf

Select the programs that are administered under the HSIP.

Intersection
Bicycle Safety
Roadway Departure
Pedestrian Safety

Enter additional comments here to clarify your response for this question or add supporting information.

ODOT's common highway safety goal on Oregon roadways is to select appropriate safety projects that will reduce fatal and serious injury crashes. In our HSIP ARTS program, most all of these program topic areas can receive HSIP safety funding depending on the applicant justifying an acceptable benefit/cost analysis to reduce fatal and serious injury crashes. We do have a small fund called Quick Fix funding to address low cost safety spot improvements for our highway system only.

Program:	Bicycle Safety
Date of Program Methodology:	2/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Volume	Functional classification Roadside features

What project identification methodology was used for this program? [Check all that apply]

Other-Cost Effectiveness for Bike/Peds

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Cost Effectiveness : 100

Enter additional comments here to clarify your response for this question or add supporting information.

The traditional approach to safety is to identify “hotspot” locations and then identify measures to implement by diagnosing the “hotspot”. ODOT hired a consultant to create a draft list of potential hotspot projects (prioritized based on benefit cost ratios) for all roads in each Region identifying locations and the appropriate countermeasures. This doesn’t allow us to select hot spot.

The systemic approach identifies a few proven low-cost measures to be widely implemented, then implements the measures where there is evidence that they would be most useful. The systemic measures have been proven to successfully reduce the occurrence of fatal and serious injury crashes. The process for Systemic projects was an application-based process. Local Agencies and ODOT Regions submitted applications for systemic projects in three focus areas- roadway departure, intersections, and pedestrian/bicycle. Projects were prioritized based on benefit cost ratio (for roadway departure and intersections projects) and cost-effectiveness index (pedestrian/bicycle projects). Here is a link to the bicycle/pedestrian plan.
http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/Pages/Bicycle_Pedestrian_Safety.aspx

Program: Intersection

Date of Program Methodology: 6/1/2012

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Volume	Horizontal curvature Functional classification Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Crash Severity

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

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Rank of Priority Consideration

Ranking based on B/C : 100

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Program: Pedestrian Safety

Date of Program Methodology: 2/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Volume	Functional classification Roadside features

What project identification methodology was used for this program? [Check all that apply]

Other-Crash Severity

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

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Program: Roadway Departure

Date of Program Methodology: 9/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes **Exposure** **Roadway**

		Horizontal curvature
Fatal and serious injury crashes only	Population	Functional classification
		Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Crash Severity

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

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Ranking based on B/C : 100

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index (pedestrian/bicycle projects). Here is a link to our roadway departure plan.
http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/pages/roadway_departure.aspx

What percentage of HSIP funds address systemic improvements?

50

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

Cable Median Barriers
Rumble Strips
Traffic Control Device Rehabilitation
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Add/Upgrade/Modify/Remove Traffic Signal
Horizontal curve signs
High friction surface treatment
Wrong way driving treatments

Enter additional comments here to clarify your response for this question or add supporting information.

Program Components

The ARTS Program has two components – a hotspot component and a systemic component. The hotspot approach is the traditional approach used in safety analysis, in which 'hotspot' locations are identified based on crash history and appropriate countermeasures are implemented to reduce crashes. Hotspot projects typically focus on a particular location (for example, an intersection or a short segment of a roadway) that may have multiple causes to address. For the ARTS Program, a hotspot location is defined as a location that has at least one fatal or serious injury crash within the last five years.

The systemic approach identifies a few proven low-cost countermeasures that can be widely implemented and then applies the countermeasures where there is evidence that they would be most useful. The HSIP places a significant emphasis on the systemic approach, which has been proven to successfully reduce the occurrences of fatal and serious injury crashes. The systemic component of the ARTS Program has been further divided into three emphasis areas – roadway departure, intersection, and pedestrian/bicycle. Based on 2009 through 2013 data, these three emphasis areas accounted for approximately 85% of the fatal and serious injury crashes in the state.

The ARTS Program funds will be allocated to the five ODOT Regions based on the proportion of the fatal and serious injury crashes occurred within the last five years in each Region. For a given Region, total funding should be divided equally between the hotspot and systemic components. Again, for the systemic component, it is recommended that Regions split the available funding between the emphasis areas identified in the TSAP (currently those are roadway departure, intersection, and pedestrian/bicycle) based on the proportion of the fatal and serious injury crashes occurred between these three areas within the last five years. For the

first round of the ARTS Program, based on the crash data from 2009 to 2013, the statewide proportions of fatal and serious injury crashes between roadway departure, intersection, and pedestrian/bicycle crashes were 50%, 36%, and 14%, respectively.

ODOT has approximately $166 million of funding for the five years between 2017 and 2021. Here is a link to ODOT's CRF list http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/Pages/ARTS.aspx#Crash_Reduction_Factors

What process is used to identify potential countermeasures? [Check all that apply]

Engineering Study
Road Safety Assessment
Crash data analysis
SHSP/Local road safety plan
Stakeholder input
Other-Region Traffic Investigator's investigate the top 5% Safety Priority Index System (SPIS) each year and identify potential cost effective countermeasures.

Enter additional comments here to clarify your response for this question or add supporting information.

Once locations have been identified for potential safety improvements through networking screening and diagnoses, the next step is to identify potential countermeasures that can be implemented to improve safety. A countermeasure can be defined as a roadway strategy intended to decrease crash frequency and/or severity at a given site.

ODOT has compiled a list of countermeasures, known as the ODOT Crash Reduction Factor (CRF) List, which have been proven to reduce crashes. A Crash Reduction Factor (CRF) is the percentage crash reduction that might be expected after implementing a given countermeasure(s) at a specific site. These countermeasures were primarily chosen from the Highway Safety Manual, the Crash Modification Factors (CMF) Clearinghouse, and the FHWA Desktop Reference for Crash Reduction Factors. All the countermeasures were listed as either ‘hotspot’ or ‘systemic’ countermeasures. Any countermeasures listed in the ODOT CRF List can be used for hotspot projects. However, for systemic projects only countermeasures that are listed as ‘systemic’ shall be used. The ODOT CRF List is updated periodically as new countermeasures or better studies on existing countermeasures become available. Suggestions for including new countermeasure(s) to the ODOT CRF List can be submitted to ODOT TRS Staff using the CRF Request Form provided on the ARTS website.

Some CRFs may be applicable to all crash types and/or all severities. Some CRFs may be applicable to a particular crash type and/or severity. Correct crash types and severities should be used in the benefit-cost analysis. Refer to the ODOT Highway Safety Investigation Manual for more information on the CRF http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/Pages/ARTS.aspx#Crash_Reduction_Factors .

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

ODOT's All Roads Transportation Safety (ARTS) program includes several ITS technologies as potential countermeasures, especially curve and intersection warning systems and variable speeds Oregon is in the formative stages of developing connected vehicle technologies .

Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

Please describe how the State uses the HSM to support HSIP efforts.

We are in the early stages of using the HSM to support HSIP efforts. Our ODOT Planning unit has incorporated several methodologies into their latest manual. We are using the cost-effectiveness analysis tool outlined in the HSM for project prioritization. Rather than comparing the economic value of the crash reductions to the project cost, cost-effectiveness analysis compares the change in crash frequency due to the implementation of a countermeasure to the project cost. For the pedestrian/bicycle projects under the ARTS Program, Cost-Effectiveness Index (CEI) is used to prioritize projects. CEI estimates the cost to reduce one crash. The lower the CEI value of a project, the higher it will rank in the prioritized list. ODOT uses some analysis methods from the HSM, including expected numbers of crashes for bikes and pedestrians, proportions of crashes in investigations and critical crash rates in planning and project level analysis.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

Yes

Describe program methodology practices that have changed since the last reporting period.

Yes, we are in the process of implementing round two of the ARTS program.

The ARTS program primarily uses federal funds from the Highway Safety Improvement Program (HSIP). The principles and purpose of ARTS and HSIP are:

The program goal is to reduce fatal and serious injury crashes.

The program must include all public roads.

The program is data driven and blind to jurisdiction.

The process is be overseen by Oregon DOT Regions.

Both traditional “hot spot” methodology and systemic methodology is used based on an application process.

The objective of ARTS and HSIP is to significantly reduce the occurrence of fatalities and serious injuries. A data-driven approach uses crash data, risk factors, or other data supported methods to identify the best possible locations to achieve the greatest benefits. Many highway projects incorporate design features or elements that relate to highway safety, such as updating guardrail or improvements to intersection channelization, signing and pavement markings. But appropriate use of HSIP funds is only for locations or corridors where a known problem exists as indicated by location-specific data on fatalities and serious injuries, and/or where it is determined that the specific project can, with confidence, produce a measurable and significant reduction in such fatalities or serious injuries. To achieve the maximum benefit, the focus of the ARTS program is on cost effective use of the funds allocated for safety improvements addressing fatal and serious injury crashes.

All Projects shall:

Address a specific Safety problem contributing to fatalities and serious injuries

Use proven countermeasures that correct or substantially improve the fatal and serious injury problem

Use ODOT crash data to establish the Benefit/Cost ratio (so projects can be compared fairly)

Use ODOT Benefit Cost method (or Cost effectiveness for Bicycle/Pedestrian)

Be prioritized or categorized based on the Benefit/Cost Ratio for developing the 150% list

Use only proven countermeasures from the approved ODOT Crash Reduction Factor list (a written process is developed for considering new measures)

Projects must include written support from the Road Jurisdiction if the project is proposed by another agency

Benefit Costs will be based on the most recent available three to five years of crash data

The traditional approach to safety is to identify “hot spot” locations, and then identify measures to implement by diagnosing the “hot spot”.

Hot Spot Projects shall:

Address a location with a crash history of at least one fatal or serious injury crash within the last five years

The systemic approach identifies a few proven low-cost measures to be widely implemented, then implements the measures where there is evidence that they would be most useful. The systemic measures have been proven to successfully reduce the occurrence of fatal and serious injury crashes. The sites may be selected from ODOT’s list of priority corridors for Roadway Departure, Intersections or Pedestrian/Bicycle crashes. Our Safety Priority Index System (SPIS) is another flagging tool used to select appropriate safety projects.

Systemic Projects shall:

Use only approved “Systemic” countermeasures as listed in the Crash Reduction factors list

Not require the acquisition of significant amounts of right of way (more than 10% of project costs), preferably no right of way

For the Pedestrian and Bicycle Analysis, use Highway Safety Manual methods to estimate predicted crashes for pedestrians and bicycles and Cost Effectiveness to prioritize projects selection.

Systemic Projects should:

Have a history of fatal or serious injury crashes or a risk of high severity crashes and preferably are selected from priority corridors within Systemic plans.

The Safety funds are split to each region based on the amount of fatalities and serious injuries occurring in the region on all public roads. Regions will be required to spend a minimum of 50% of their funding on Systemic projects.

Systemic funding is intended to be used for Roadway Departure, Intersections and Pedestrian/Bicycle type projects. At the statewide level the split in F&A between Roadway Departure, Intersections and Ped/Bike is about 40%/40%/20% respectively. Regions will be given the flexibility to determine the appropriate splits between systemic types of projects for their regions. It is suggested:

That at least one project per year be developed for each type, if possible.

Region splits of systemic funds for each systemic type be roughly equivalent to the proportion of F&A occurring in the region

Funding is eligible to be used for approved countermeasures as long as those countermeasures provide an improvement to reducing fatal and serious injury and are prioritized through the ARTS data driven process. Safety funds may be used to include or replace elements that are necessary to satisfactorily complete the project, such as replacing non-compliant ADA ramps, replacing pavement striping that is removed or right of way, but those elements must be included in the cost of the project and part of the prioritization process. Other elements (not applicable to the safety project) may be combined with the project (i.e., culvert), but must be funded by other sources, not safety funds.

Both Hot Spot and Systemic processes will be an application based process. Oregon jurisdictions will be invited to submit projects for Hot Spot and Systemic funding, using a large list of proven countermeasures. ODOT will distribute data on Hot Spots and Systemic Plans to help determine potential locations for improvement.

For Hot Spots projects agencies will be given the opportunity to submit projects with justification that it meets the program purpose. The number of submittals should be limited because of limited funds, but ODOT will ask for submittals amounting to 300 to 500% of the funding available to ensure sufficient worthwhile projects. Regions will categorize projects based on the project's ability to reduce fatal and serious injury crashes and the benefit cost of the project, and finalize a draft 150% list for field scoping.

For Systemic projects the submittals will be for three systemic categories of funding, roadway departure, intersections and pedestrian/bicycle, attempting to solicit submittals amounting to about 300 - 500% of available funding. ODOT Regions will check all applications for program purpose and correctness, working with the submitting agencies when necessary in order to develop a potential list of projects. The intent is that the ODOT Regions will analyze and refine the list of submitted projects in order to prioritize the project list based on program purpose of reducing fatal and serious injuries and benefit cost, in order to finalize a draft 150% list for field scoping.

Once the refined 150% lists are ready, all projects (both hot spot and systemic) will go through a multi-discipline assessment to verify the solution. A multi-disciplinary team, including the owner of the facility, will ensure the best countermeasure is chosen to mitigate fatal and serious injury crashes. The project will also be scoped to verify the costs and any possible barrier to implementation. A finalized list of prioritized projects can then be produced with the best solution and the best cost.

Once the list is prioritized and a final 100% list is produced ODOT Region's will work with Jurisdictions to determine the delivery methods, delivering agency and timelines (applicable funding year). For projects involving local agencies, the ODOT Regions will work with Jurisdictions to develop an Intergovernmental Agreement. The delivering agency will be accountable for timely and fiscally responsible delivery.

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

Yes

Describe other aspects of the HSIP methodology on which the State would like to elaborate.

All Roads Transportation Program: Frequently Asked Questions

1. What is the ARTS Program?

The All Roads Transportation Safety Program (ARTS) is a safety program that addresses safety for all public roads in the state of Oregon. This program uses federal funds from the Highway Safety Improvement Program . HSIP adopts a data-driven approach that uses crash data, risk factors, and other supported methods to identify the best possible locations to achieve the greatest benefits. The first round of ARTS began in 2014 with projects scheduled for delivery in years 2017-2021. The second round of project selection is scheduled to begin this fall for projects delivered in years 2022-2024.

2. What is the purpose of the ARTS Program?

The primary objective of the ARTS Program is to select the best projects to reduce fatalities and serious injuries on all public roads in the state.

3. What is the timeline for ARTS Program?

The second round of the ARTS project selection will begin in the fall of 2017 and extend through the spring of 2018. During this period, projects will be selected for the STIP and delivered in years 2022 through 2024. The Oregon Department of Transportation (ODOT) is currently working on developing the project criteria and plans on outreach to the local agencies sometime in late 2017.

4. What methods are used for project selection?

ODOT will use two different methods for selecting projects – traditional ‘Hotspot’ method and ‘Systemic’ method. ODOT regions are required to spend at least half of the funding for Systemic projects. These two methods are designed to select the most cost-effective projects among all public roads in Oregon to reduce the most fatal and serious injury crashes with available funds.

5. How much funding is available and how is it allocated?

During the period of 2022 through 2024, approximately $30 million per year will likely be available for the ARTS program. This funding will be determined by the Oregon Transportation Commission (OTC).

Funds will be allocated to each ODOT region based on the proportion of fatalities and serious injuries that occurred within the region during the last five years. The region allocations during the last round of ARTS funding was approximately:

Region 1 - 33%
Region 2 - 34%
Region 3 - 15%
Region 4 - 11%
Region 5 - 7%

6. What is the Hotspot method and how are the Hotspot projects selected?

The hotspot method identifies locations with documented crash problems, selects and then applies appropriate countermeasure(s) to mitigate the crash problems. Hotspot countermeasures are typically more expensive than systemic countermeasures. Examples of hotspot projects include installation of left turn lane(s), installation of a new traffic signal or roundabout at an intersection, or conversion of a signalized intersection to a roundabout.

ODOT will develop a list of locations for potential projects using its Safety Priority Index System (SPIS), and Safety Implementation Plans for three emphasis areas including potential remedies and countermeasures: Roadway Departure, Intersections and the Pedestrian and Bicycle. Local agencies can use the SPIS list or whatever method they choose to pick the best potential projects. These projects must address locations with a crash history of at least one fatal or serious injury crash within the last five years.

Local agencies and ODOT will both prepare applications for the projects that they believe will be the most effective at reducing fatal and serious injury crashes and yet have a good benefit cost ratio. All the proposed hotspot countermeasures must be from the ODOT CRF List .

Projects are prioritized based on benefit cost ratio. The projects selected for funding and addition to the Statewide Transportation Improvement Program (STIP) are those with the highest benefit cost .

To access data and tools, visit the ARTS Program website .

7. What is the Systemic method and how will the Systemic projects be selected?

The Systemic method takes a broader view by looking at the crash history and risks associated with an entire roadway/corridor and then applying proven low-cost countermeasures to reduce the risk along the entire roadway, corridor or jurisdiction. Examples of systemic projects include installation of curve warning signs, reflectorized backplates on signals, rumble strips, countdown pedestrian timers and conversion to flashing yellow left turn arrow (FYLTA) signal heads for protected-permitted left turn (PPLT) signal operation.

The ARTS Program consists of three emphasis areas for systemic improvements: Roadway Departure, Intersection, and Pedestrian and Bicycle. Systemic project locations may be selected from ODOT’s list of priority corridors for these three areas or from other sources. The systemic funds are roughly proportional to the number of fatalities and serious injuries that occur within the region.

Like the hotspot approach, the systemic approach is an application-based process. ODOT and all local jurisdictions within a region can submit an application for available Systemic funding. All the proposed systemic countermeasures must be from the ODOT CRF List . Projects are prioritized based on benefit cost ratio (for Roadway Departure and Intersection projects) and cost effectiveness index (Pedestrian and Bicycle projects).

8. Can the same countermeasures be used for Hotspot as Systemic projects? Can a single location use a Systemic approach?

While systemic and Hotspot countermeasures may be applicable at the same location, ODOT asks applicants to submit separate applications for hotspot and for systemic measures during this round. Once approved for funding, the measures can be combined under one project if desired. Separate applications allow similar comparisons of benefits for both methods.

9. If a local jurisdiction has supplemental crash data, can that data be used during the project selection process?

ODOT recognizes that some jurisdictions may have supplemental crash data (e.g. police reports) that might be different from ODOT crash data. This data is exempt from project prioritization and benefit cost analysis. For fairness and consistency, crash data from 2012-2016 obtained from ODOT Crash Reports must be used for

analysis purposes. However, the supplemental data may be informative for selecting appropriate countermeasures at a given location.

10. How is the final project list prepared?

All projects in the refined lists (for both hotspot and systemic) go through multi-disciplinary assessment to verify the applicability of the proposed solution. A final list (100 percent list) is prepared and prioritized based on the best benefit cost ratios (Pedestrian and Bicycle projects are ranked based on cost effectiveness).

11. Can a Hotspot or Systemic safety project from the final list be combined with another Statewide Transportation Improvement Program (STIP) project at the same location?

Yes, if a hotspot or systemic safety project from the final list is at a location where another STIP project is planned, these two projects may be combined for efficiency. Similarly, if a Hotspot project is selected in a location that is in the corridor where there will be a systemic project, both projects may be combined to a single project for efficient design and delivery of the project. This typically occurs after project lists are completed and before the STIP is adopted.

12. Who designs and delivers the projects?

After the final 100 percent list is complete, ODOT regions work with the local jurisdictions to determine the delivery methods, timelines, and delivery agencies. Local agencies are encouraged to consider fund exchange (State Funded Local Projects) and deliver the projects themselves. The delivering agency is responsible for timely and fiscally responsible delivery.

13. Will a local match be required for selected projects?

The federal HSIP requires a 7.78 percent match for projects. This requires local agencies to contribute 7.78 percent of the total project cost. Local agencies are encouraged to fund exchange for state funds. More information can be found on the Local Agency Guidelines website.

14. Do HSIP projects follow Statewide Transportation Improvement Program process?

All the projects selected under the ARTS Program follow the STIP process. Refer to the STIP website for more information on the STIP process and stakeholder involvement.

15. Do the engineering countermeasures impact driver behaviors such as drinking and driving and speeding?

A direct relationship between countermeasures and driver behaviors has not been determined. Some countermeasures may directly improve driver behaviors, others may not, however the improvement may prevent similar crashes in the future. For example, a roadway with a countermeasure installed — such as a median barrier or centerline rumble strips — may prevent an intoxicated driver from crossing into oncoming lanes.

Countermeasures that effectively reduce crashes are developed using data from all types and causes of crashes. The Crash Reduction Factor represents the relative change in crash frequency for a particular countermeasure regardless of cause of a crash. Engineering judgment may be needed to determine the appropriate countermeasure to mitigate poor driver behaviors.

16. So what can my local agency do to start preparing for ARTS?

ODOT will reach out to local agencies in each region this fall. In the meantime, local agencies and ODOT can begin thinking about and looking for good safety project candidates that meet funding eligibility. ODOT will update the ARTS webpage as more information becomes available. The following are available now:

The most recent 2016 SPIS reports for State Highways and Local Roads and

- The new Roadway Departure Plan .

17. Who should I contact if I have questions?

For questions regarding the ARTS Program, please contact your local ODOT Region Traffic Office. While the FAQs are informative, some items like schedule and timelines could change.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter additional comments here to clarify your response for this question or add supporting information.

Enter the programmed and obligated funding for each applicable funding category.

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$29,132	$29,132	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$29,132	$29,132	100%

Enter additional comments here to clarify your response for this question or add supporting information.

ODOT has approximately $166 million of funding for five years between 2017 and 2021 for the first round of the ARTS Program. ODOT has approximately $87,396,000 of funding for the next three years between 2022 and 2024 for the second round of the ARTS program.

Safety Leverage HB 2017 - The Safety Leverage Funds are meant to help improve the safety of the state highway system where the Agency is planning to make a separate Fix-It program investment. The intent is to improve the most important safety issues that are in the general area of a planned Fix-It project. Investment decisions from this leverage fund will follow the general priorities outlined in the 2016 Transportation Safety Action Plan (TSAP). The funds should be used for engineering countermeasures that can demonstrate a measurable cost-effective benefit and should generally follow the prioritization guidelines below:
• Tier 1 - Infrastructure improvements that will reduce serious / fatal crashes within the Emphasis Areas of the 2016 TSAP, such as Intersection, Roadway Departure, Pedestrian, and Bicycle crashes.
• Tier 2 - Regional safety priority areas, such as top 10% Safety Priority Index System (SPIS) sites, region-wide systemic safety features, or other documented crash locations.

Safety leverage opportunities are identified by the following process:
• Regions review the Fix-It programs 150% lists for Tier 1 and 2 Safety Leverage qualification.
• Scoping teams review the Fix-It programs 150% lists for project details, including: status of each project, location, noting whether it qualifies as Safety Leverage (identifying safety mitigation as appropriate), or

explaining why the project does not qualify in the “Leverage Opportunities” section of the Business Case.
• The Safety Leverage portion of all projects is prioritized by Regions and ACTS within Tier 1 and 2.
• Funding limitations are applied: Tier 1 in priority order first, then Tier 2 if funding allows. The outcome of Safety Leverage prioritization will be documented for each eligible project in the “Leverage Opportunities” section of the Business Case.

Region Funding Allocation:
Region 1 $10,680,000
Region 2 $9,273,000
Region 3 $4,431,000
Region 4 $3,108,000
Region 5 $2,508,000
Total $10,066,953

How much funding is programmed to local (non-state owned and operated) or tribal safety projects?

40%

How much funding is obligated to local or tribal safety projects?

40%

Enter additional comments here to clarify your response for this question or add supporting information.

The objective of the ARTS Program is to select the best safety projects using a jurisdictionally blind and data-driven approach to significantly reduce the occurrence of fatalities and serious injuries on all roads in the state. A data-driven approach uses crash data, risk factors, or other data supported methods to identify the best possible locations to achieve the greatest benefits.

Benefit-cost analysis, which compares the economic benefits of the crash reductions to the project cost, is the traditional analysis tool that is used to determine financial viability of a project and to prioritize projects. The ODOT Benefit-Cost Workbook shall be used to calculate benefit-cost ratio for the ARTS Program. ODOT requires that five years of the most recent crash data available be used for the analysis and that the project has a benefit-cost ratio of 1.0 or greater. Projects with higher benefit-cost ratios will rank higher in the prioritized list.

ODOT's first round of ARTS has approximately $166 million of funding for the five years between 2017 and 2021. Approximate funding splits between the ODOT Regions for the first round of the ARTS Program are as shown, Region 1 = 33%, Region 2 = 34%, Region 3 = 15%, Region 4 = 11%, Region 5 = 7%.

ODOT's second round of ARTS has approximately $29,132,000 of funding for three years between 2022 and 2024. Approximate funding splits between the ODOT Regions for the second round of the ARTS Program are shown, Region 1 = 31.4%, Region 2 = 35.7%, Region 3 = 15.7%, Region 4 = 10.2%, Region 5 = 7%.

How much funding is programmed to non-infrastructure safety projects?

0%

How much funding is obligated to non-infrastructure safety projects?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

0%

How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

Oregon DOT does a great job obligating the HSIP funds to appropriate safety project but the challenge is getting the safety projects programmed and built in an appropriate time frame. We are working on writing IGA's with local agencies to ensure the HSIP funds get spent in a timely fashion. The Region Traffic offices monitor their safety funds.

Does the State want to elaborate on any other aspects of it’s progress in implementing HSIP projects?

Yes

Describe any other aspects of the State’s progress in implementing HSIP projects on which the State would like to elaborate.

I believe our biggest challenge in HSIP implementation is programming and constructing these projects in a timely fashion, especially local safety projects.

General Listing of Projects

List the projects obligated using HSIP funds for the reporting period.

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
US97@Cherry Lane/US26@Dover Lane (Madras) Intersection Improvements	Intersection geometry	Intersection geometry - other		Intersections			HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		State Highway Agency	Spot	Intersections	
Reg. 5 ROR Safety Improvements	Roadway	Rumble strips - center		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
A St. Rail Safety Improve	Railroad grade crossings	Protective devices			$145,000	$145,000	RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))		0		State Highway Agency	Spot		
I-5 Sexton climbing lane	Roadway	Roadway widening - add lane(s) along segment		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	0		State Highway Agency	Spot	Roadway Departure	
I-5 Exit58 6th&Morgan int	Intersection geometry	Intersection geometrics - realignment to align offset cross streets		Intersections			HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Interstate	0		State Highway Agency	Spot	Intersections	
US97/OR58 JCT Passing Lns	Roadway	Roadway widening - add lane(s) along segment		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Roadway Departure	
US97 Baker-Lava Med. Barr	Roadside	Barrier - concrete		Miles		$80,231	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
US97@1st St in LaPine	Intersection geometry	Intersection geometry - other	1	Intersections		$4452	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
OR551@Keil Road	Intersection geometry	Intersection geometry - other		Intersections		$99,711	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	
OR213:Duke St Signal Upgr	Intersection traffic control	Intersection traffic control - other		Intersections	$46,115	$54,218			0		State Highway Agency	Spot	Intersections	
OR154@Stringtown L refuge	Intersection geometry	Auxiliary lanes - add left-turn lane		Intersections	$9,039	$9,039	HSIP (23 U.S.C. 148)	Rural Major Collector	0		State Highway Agency	Spot	Intersections	
US30&OR99W Signal upgrade	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
SW 35th St Rail Crossing	Railroad grade crossings	Railroad grade crossing gates		Locations			RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))		0		State Highway Agency	Spot	Railroad grade crossing	
US30@Mcalister TrafSignal	Intersection traffic control	Intersection traffic control - other		Intersections	$107,264	$153,645	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
RX1580 Greenhill Rail Saf	Railroad grade crossings	Protective devices		Locations	$499,500	$559,707	RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))		0		State Highway Agency	Spot	Protective devices	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
Willa-Sheridan RailX-ing	Railroad grade crossings	Railroad grade crossing gates		Upgrade signal w/autogate	$225,553	$285,962	RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))		0		State Highway Agency	Spot	Upgrade signal w/autogate	
ARTS (City of Bend)	Roadway signs and traffic control	Roadway signs and traffic control - other		Intersections	$249,727	$268,707	HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Systemic	Intersections	
Eugene Signalized upgrade	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified		Intersections			HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Systemic	Intersections	
Table Rock Rd:I-5 Biddle	Roadway	Pavement surface - miscellaneous		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Reg 4 HSIP transiton Rural, Sign Upgrades, Rumble strips, Delineators & Stripping	Roadway delineation	Roadway delineation - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
18880 Rumble Strips	Roadway	Rumble strips - center		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
GV Signal Upgrade (RoseB)	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
Baker Rd-Lava But Barrier	Roadside	Barrier - concrete		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
US97:Romaine Village Way - Lava Butte (concrete median barrier)	Roadside	Barrier - concrete		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
I-84: Baker Valley Variable Speed Limit (VSL) 2015	Speed management	Speed management - other		Locations			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	0		State Highway Agency	Spot	Roadway Departure	
US101@NE Devils Lake Rd (Add left turn refuge)	Intersection geometry	Auxiliary lanes - add left-turn lane		Miles			HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		State Highway Agency	Spot	Intersections	
US26(Powell Blvd): SE 20th-SE34th (crosswalk signals, RF beacons, striping, signing & ADA upgrades)	Roadway signs and traffic control	Roadway signs and traffic control - other		Locations	$1,081,811	$1,083970	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
OR8: Minter BR RD - SW 331st Av. Sec Tualitin Valley Highway Washington Co.	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Systemic	Roadway Departure	
I-5: Exit 119 & 120 Interchange Improvements	Roadway	Roadway - other		Interchanges			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	0		State Highway Agency	Spot	Interchange Improvements	
OR39 @ Christensen Road Salmon River LT Turn Refuge/Sever	Roadway	Roadway widening - add lane(s) along segment					HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
West Connection of Caleg Payne RD (Yamhill														
OR38:US 101-Dean Cr. Paving & Ped Improvements Umpqua Grid/Inlay & Ped Improvements (Douglas Co.)					$528,000	$528,000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Pedestrians	
OR551 @ Ehlen Road	Roadway	Roadway - other		Intersections	$348,984	$348,984	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	
US26: Warm Springs Safety Corridor Warm Springs Intersection Roadside & Bike/Ped Safety Improvements	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists		Locations	$332,683	$485,750	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Bicyclists	
Hermiston Signals Safety Improvements Umatilla-Stanfield Highway Umatilla County	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
OR99 @ Creel Rogue Valley Reduce to 3-Lanes, Consolidate Accesses, Add Bike & Ped (Jackson co.)	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Pedestrians	
OR213 (82nd Av): SE Duke St. Cascade Hwy. N. Intersection Signal Upgrades, Ped & Sidewalk, Buss	Intersection traffic control	Intersection traffic control - other		Intersections	$79,679	$86,400	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
OR99W: Amity SCL to Hoffman Rd. Pacific Hwy. Rd. Pacific Hwy. West	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
OR99W: SW Naito Pkwy - SW Huber St. Phase 2	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
US30B: NE 103Rd Av. - 107th Av. NE Portland Add Lt Turn Lane, Upgrade Signal, ADA	Roadway	Roadway widening - add lane(s) along segment		Intersections			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
OR217: OR10 - 99W SB Auxiliary Lane	Roadway	Roadway - other					HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) -	0		State Highway Agency	Spot	Roadway Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
								Other Freeways and Expressways						
OR213 @ S Union Mills Rd Cascade S. Intersection Improvements (Clackamas co)	Intersection traffic control	Intersection traffic control - other		Intersections		$183,896	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
OR224 (Clackamas Hwy): SE 197th Av. (Clackamas Co.)	Roadway	Roadway - other					HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
OR224 (Clackamas Hwy): SE 232nd Dr.	Roadway	Roadway widening - add lane(s) along segment		Lanes			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Roadway Departure	
OR211:Eagle Cr. - Sandy Hwy @ Dubarko Rd (Sandy) Eagle Cr. - Sandy Hwy	Roadway	Roadway - other					HSIP (23 U.S.C. 148)	Rural Minor Collector	0		State Highway Agency	Spot	Intersections	
OR34 Safety Improvements from I-5 to Corvallis	Roadside	Barrier - concrete		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
OR99: Urban Upgrade (Cottage Grove)	Roadway signs and traffic control	Roadway signs and traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
Hwy 351: Joseph/Wallowa Lake Bike/Ped Improvements	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists		Miles		$388,174	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Bicyclists	
I-84: Median Barrier Safety Improvement Project	Roadside	Barrier - other		Miles	$478,303	$478,303	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
E. Systemic Signals & Illumination (ODOT)	Intersection traffic control	Intersection traffic control - other		Intersections	$565,152	$612,831	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
Broadway Street @ Pine St. (Salem)	Intersection traffic control	Intersection traffic control - other		Intersections	$269,466	$292,200	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
ARTS (Deschutes Co.)	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists					HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Pedestrians	
Region 2 Curve Warnings, part 2 (curve warning enhancements)	Roadway signs and traffic control	Roadway signs and traffic control - other		Signs			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Dist. 8 Rumble Strips & Warning Signs	Roadway	Rumble strips - edge or shoulder		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
I05 Cable Barrier - Southern Oregon	Roadside	Barrier - cable		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	0		State Highway Agency	Systemic	Roadway Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
FFO- US101: Cook Chasm - Sutton Creek	Roadway	Pavement surface - miscellaneous		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
US101: Curve Warning Upgrade	Roadway signs and traffic control	Sign sheeting - upgrade or replacement		Signs			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
I-5 @ OR214 Interchange (Woodburn) Development	Intersection geometry	Intersection geometry - other					HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
City of Eugene Signalized Intersection Improvement	Intersection traffic control	Intersection traffic control - other		Intersections					0		City of Municipal Highway Agency	Spot	Intersections	
Region 4 HSIP Transition	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists					HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
Reg. 2 Curve warning, Part 2	Roadway signs and traffic control	Curve-related warning signs and flashers		Locations			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Reg. 5 Run Off the Road Safety Improvements	Roadside	Roadside - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Dist. 8 Rumble Strips & Warning signs	Roadway	Rumble strips - edge or shoulder		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Garden Valley and Roseburg Signal Upgrades	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
I-84: NE Oregon Snow Zone Safety Improvements	Roadside	Roadside - other		Locations			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	0		State Highway Agency	Systemic	Roadway Departure	
US101 Johnson Cr. - McTimmons Lane Paving	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
US101 Cooks Chasm - Sutton Creek (Lane Co.)	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
OR8 @ OR219 and SE 44th - SE 45th Ave. (Hillsboro)	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
OR126: Eugene to Florence Safety Improvement	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists					HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Pedestrians	
OR99E: Young St. Safety & ADA Ramps (Woodburn)	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists		Locations			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Pedestrians	
OR213 @ S. Union Mills Rd. Cascade	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
S. Intersection Improvements														
City of Salem Signalized Intersection Improvements	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Spot	Intersections	
Rail Crossing Improvements	Railroad grade crossings	Upgrade railroad crossing signal					HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Rail crossing improvements	
US97 @ Wickiup Jct. (LaPine)	Intersection geometry	Intersection geometry - other		Intersections			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
Bellevue-Hopewell Hwy Rail Xing Safety Project (phase 2)	Railroad grade crossings	Railroad grade crossings - other			$61,500	$75,000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Rail crossing safety	
Willamina-Sheridan Hwy Rail X'ing Upgrade Signal Lights & add Auto Gates	Railroad grade crossings	Upgrade railroad crossing signal		Locations	$118,964	$132,182	HSIP (23 U.S.C. 148)	Urban Major Collector	0		City of Municipal Highway Agency	Spot	Upgrade signal w/autogate	
St. Louis Rd. Rail X'ing Safety Project, auto gates and signals	Railroad grade crossings	Railroad grade crossing gates		Locations	$354,495	$363,328	HSIP (23 U.S.C. 148)		0		County Highway Agency	Spot	Install auto gates and signals	
Greenhill Rd. (Eugene)/PE for pail Safety Program Project	Railroad grade crossings	Railroad grade crossings - other		Locations			HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Spot	Railroad grade crossing	
Coos County Signal Upgrades, Oregon Coast Highway (Coos, Co.)	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
Delaney Rd. Sidewalks & Bikelanes (City of Turner) Add sidewalks & Bikelanes	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists					HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Systemic	Sidewalks and Bike Lanes	
Commercial St: Oxford St. SE-Winding Way SE (Salem)	Roadway	Roadway - other					HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Systemic		
US-30 & OR-34 Continous Left Turn Lane Rumble Strip	Roadway	Roadway widening - add lane(s) along segment		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Region 4 Centerline Rumble Strip	Roadway	Rumble strips - center		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
US101 @ Perkins Lane Intersection Improvements	Intersection geometry	Intersection geometry - other		Intersections	$459,512	$498,279	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
US26: Timberline Hwy - OR35 Sherwood Campground	Roadway	Roadway - other		Miles	$88,800	$88,800	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
OR8: SW 185th Ave. Sec (Washington Co.)	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
Mission St. Adaptive Signal Timing (Salem)	Speed management	Speed management - other			$235,875	$235,875	HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Systemic		
OR99W (Barbur Blvd) @ SW Capitol Hwy.	Intersection traffic control	Intersection traffic control - other		Intersections	$799,311	$799,311	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
Region 4 Sign Upgrades	Roadway signs and traffic control	Sign sheeting - upgrade or replacement		Miles	$167,166	$167,166	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Rumble Strips (ODOT-ARTS)	Roadway	Rumble strips - edge or shoulder		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
George Millican Rd: OR 126-Reservoir Rd. Local Realign & Reconstruct Rd.	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
NW Cornelius Pass Rd US30 - NW Kaiser Rd Local Safety & Lighting Improvements	Lighting	Lighting - other		Locations			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
Regionwide Rumble Strips	Roadway	Rumble strips - edge or shoulder		Miles	$1,510,857	$1,510,857	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Region 2 Dynamic Warning Signs	Roadway signs and traffic control	Roadway signs (including post) - new or updated		Numbers	$64,023	$64,023	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Roadway Departure	
I-5: MP 303.27 to MP 308.63	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
US101: Johnson Ave. Intersections (Coos Bay)	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
OR82: Minam Curve & Bank Stabilization	Roadway	Roadway - other			$5,321,109	$5,770,016	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Stabilization	
US26 (Powell Blvd): SE 122nd Ave - SE 136th Ave	Roadway	Roadway - other					HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
I-205 Exit Ramps at SE Division St	Roadway	Roadway - other			$4,440	$4,440	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Exit Ramp	
US30BY (Lombard) Safety Extension	Roadway	Roadway - other		Ramps			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot		

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
OR207: 11th 2 Elm & Orchard Signals (Hermiston)	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	
OR140: Green Springs Intch-K Falls/Malin Hwy S. K-Falls	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Systemic	Roadway Departure	
US30(Astoria) & OR99W (McMinnville) Signal Upgrades	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
Region 1 Bike Ped Crossings	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists		Locations			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Pedestrians	
Safety Features for Local Roads and Streets 2018	Roadway	Roadway - other		Intersections	$166,500	$166,500	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
13th Ave.: Lincoln St to Alder St (Eugene)	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
2014 Region 1 Curve Warning Sign Project	Roadway signs and traffic control	Roadway signs and traffic control - other		Miles	$1,812	$124,043	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Region 4 Curve Warning Signs	Roadway signs and traffic control	Roadway signs (including post) - new or updated		Miles	$1,078,390	$1,078,390	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Coos & Douglas County Sign & Delineation Upgrades (Coos&Douglas Co.)	Roadway signs and traffic control	Roadway signs (including post) - new or updated		Miles			HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Roadway Departure	
2015 Region 1 Curve Warning Sign Project	Roadway signs and traffic control	Roadway signs (including post) - new or updated			$204,668	$204,668	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
I-5 S. Medford - N. Ashland Paving	Roadway	Pavement surface - miscellaneous		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	0		State Highway Agency	Systemic	Roadway Departure	
US97: Redmond-Bend	Roadway	Roadway - other		Miles	$333,000	$333,000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
OR86: Baker-Copperfield Hwy Guardrail Phase III	Roadside	Barrier- metal		Miles			HSIP (23 U.S.C. 148)	Rural Minor Collector	0		State Highway Agency	Systemic	Roadway Departure	
US20: Safety Upgrades (Albany to Corvallis)	Roadway	Roadway - other		Miles		$2,775,000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	
OR126: Florence-Eugene Shoulder Widening	Roadway	Roadway widening - travel lanes		Miles			HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Roadway Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
NB30B: NE 103rd Ave-NE 107th Ave NE Portland	Roadway	Roadway - other		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
OR213 @ MP 15.71 (Toliver Rd)	Intersection traffic control	Intersection traffic control - other		Intersections	$777,000	$777,000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
Rural Intersection and Curve Warning (ODOT)	Roadway	Roadway - other		Miles	$89,521	$89,521	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Region 2 Centerline Rumble Strips (Unit 3)	Roadway	Rumble strips - center		Miles			HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Southern Oregon Warning Sign Upgrades	Roadway signs and traffic control	Roadway signs (including post) - new or updated					HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	
Salem Industrial Drive NE Rail Crossing	Railroad grade crossings	Railroad grade crossings - other		Locations	$40500	$45,000	RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))		0		State Highway Agency	Spot	Railroad grade crossing	
US30: Traffic Signals @ McAlister Rd. La Grande-Baker Highway	Intersection traffic control	Intersection traffic control - other			$77,679	$86,310	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
OR361 @ Dover, Eureka, Gem & Highland	Intersection traffic control	Intersection traffic control - other		Intersections			HSIP (23 U.S.C. 148)	Rural Minor Collector	0		State Highway Agency	Spot	Intersections	

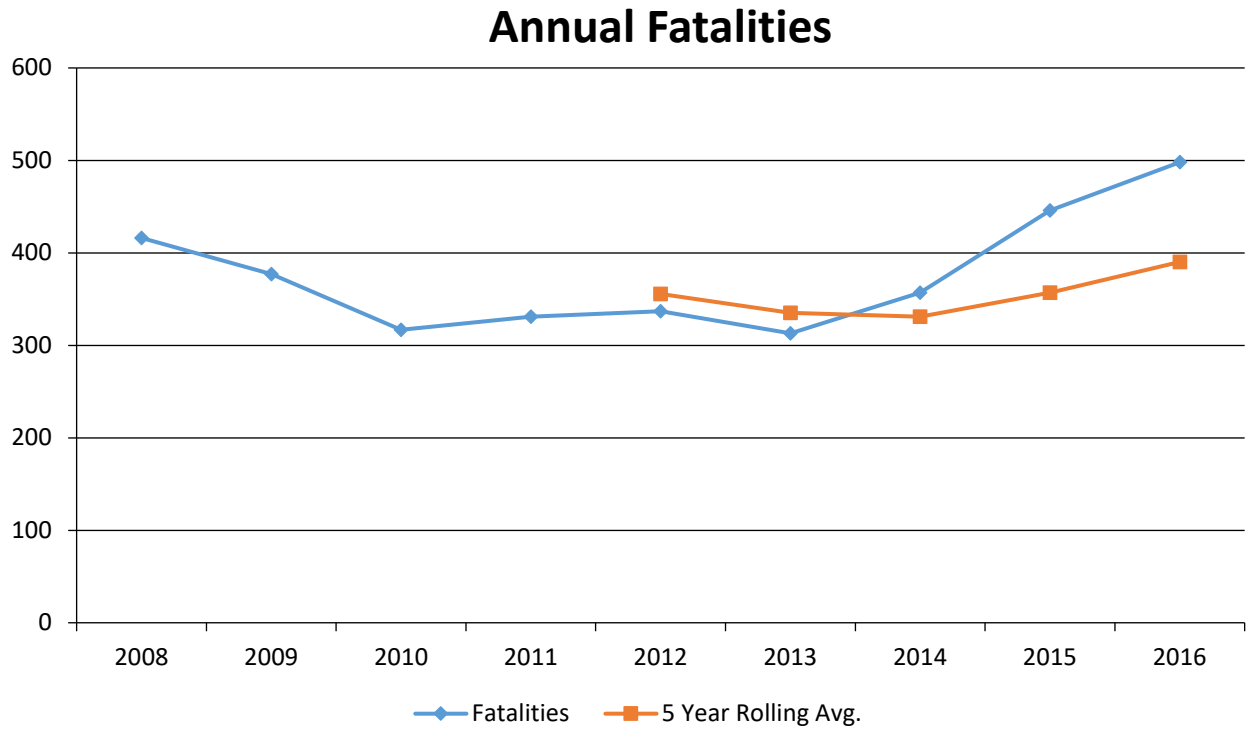
Enter additional comments here to clarify your response for this question or add supporting information.

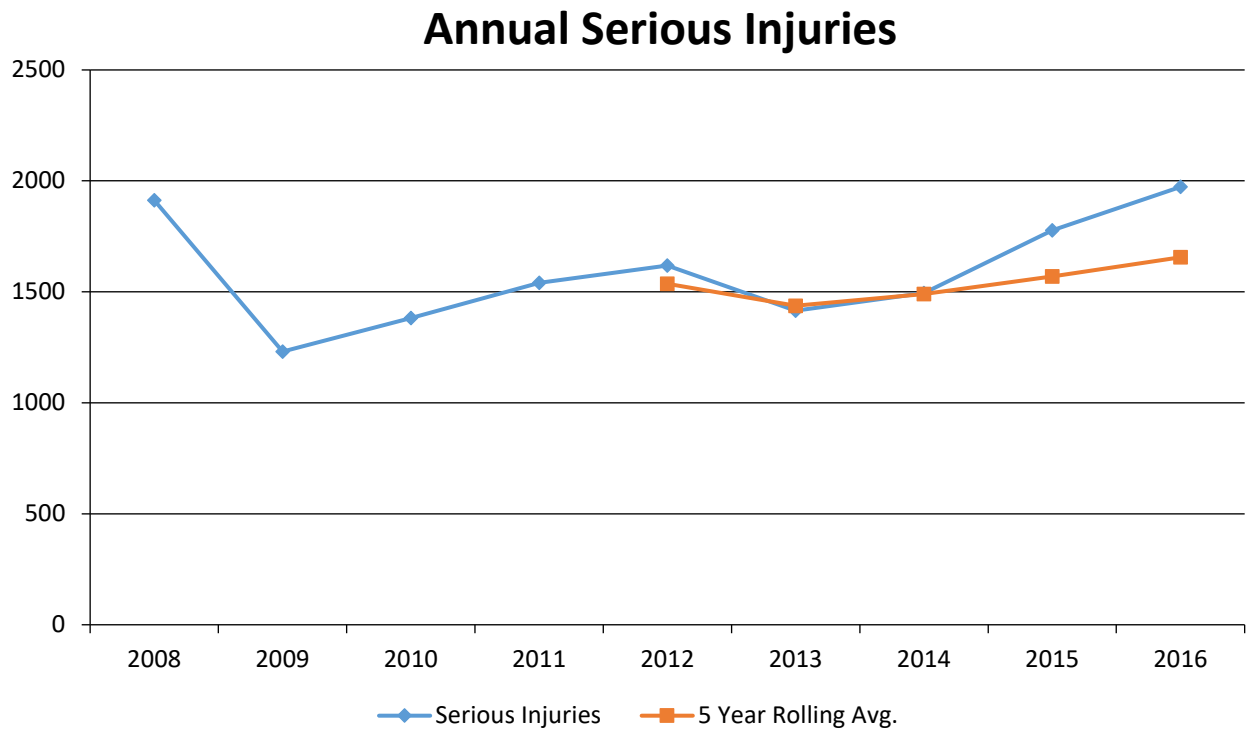
Safety Performance

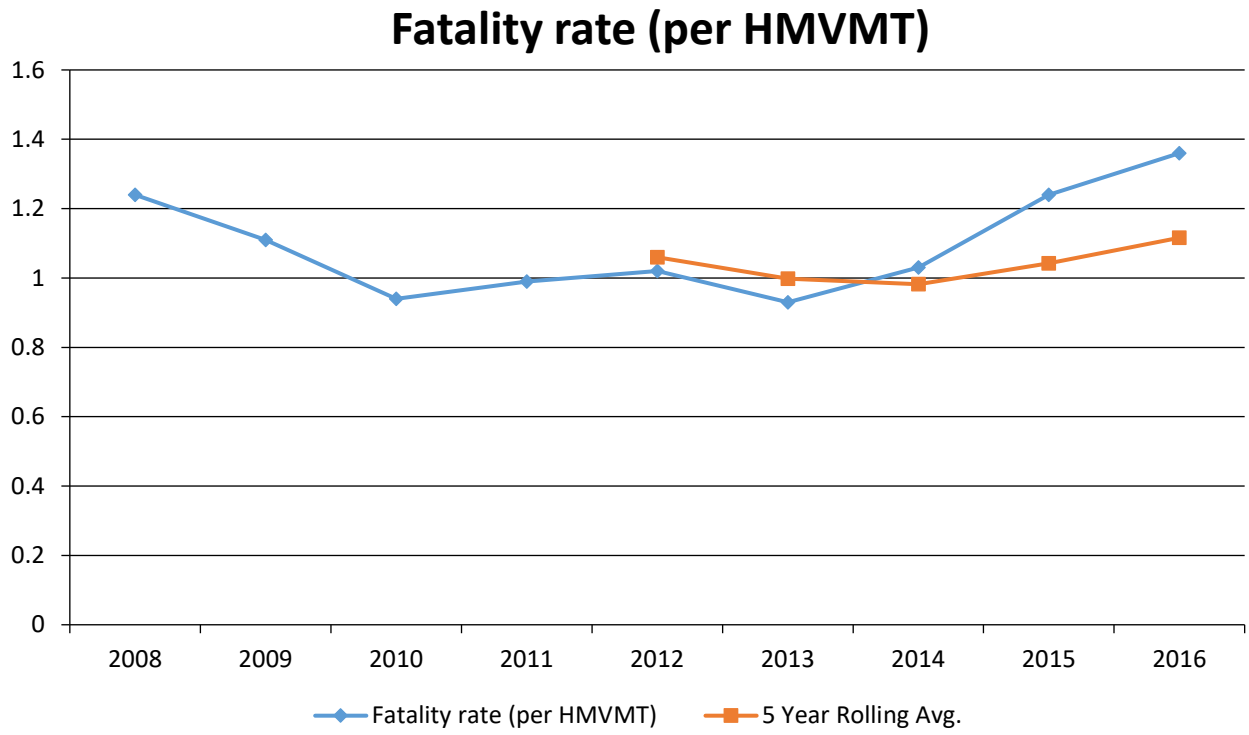
General Highway Safety Trends

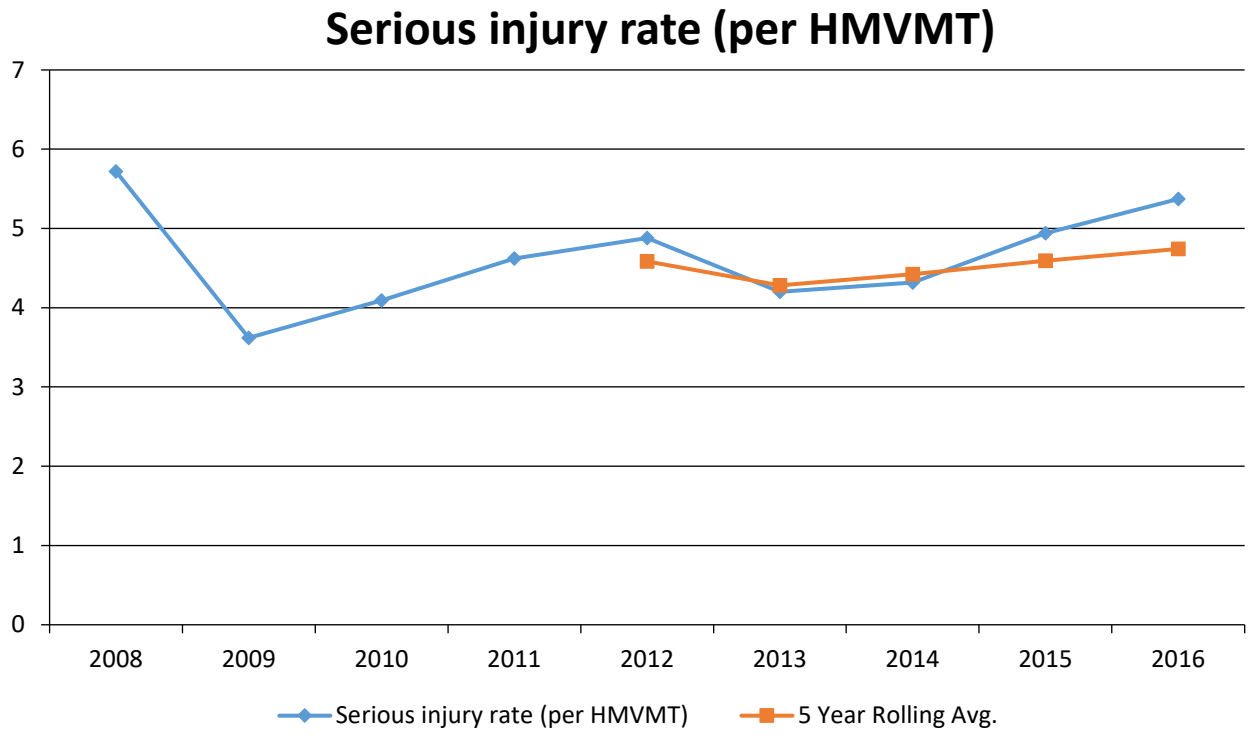
Present data showing the general highway safety trends in the State for the past five years.

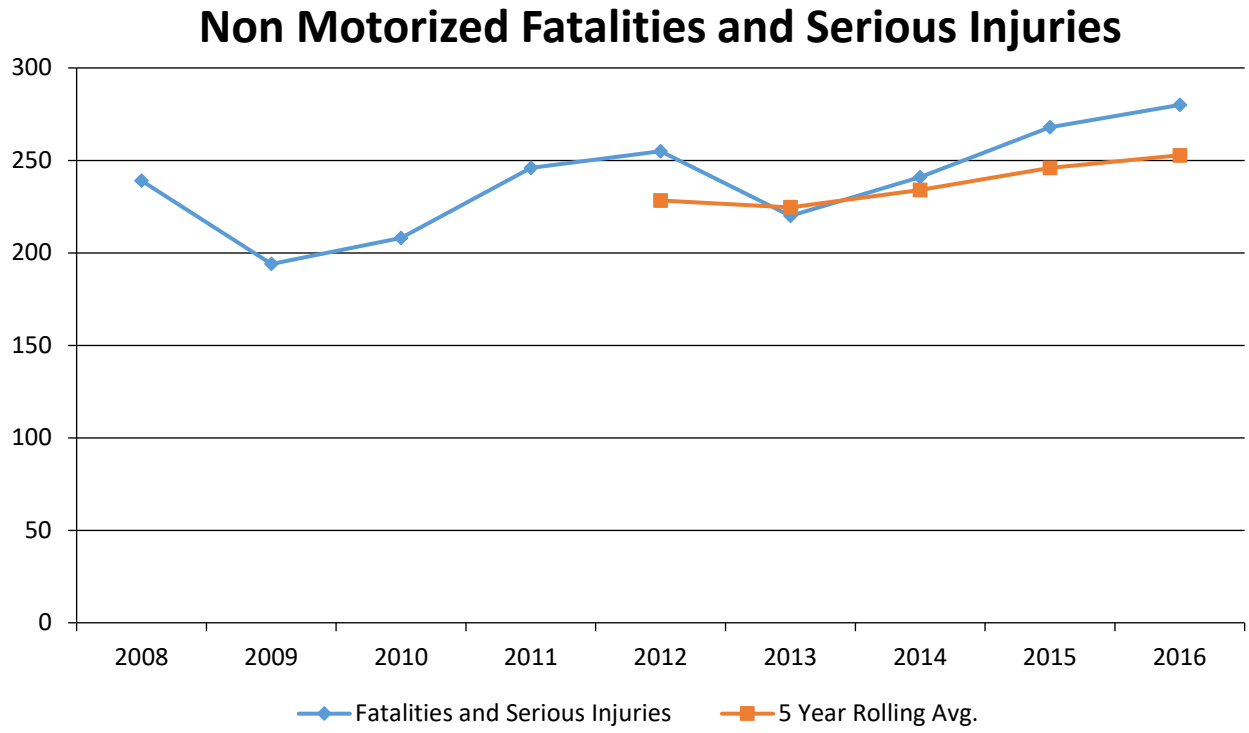
PERFORMANCE MEASURES	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	416	377	317	331	337	313	357	446	498
Serious Injuries	1,913	1,231	1,382	1,541	1,618	1,416	1,495	1,777	1,973
Fatality rate (per HMVMT)	1.240	1.110	0.940	0.990	1.020	0.930	1.030	1.240	1.360
Serious injury rate (per HMVMT)	5.720	3.620	4.090	4.620	4.880	4.200	4.320	4.940	5.370
Number non-motorized fatalities	62	45	69	62	70	55	64	82	84
Number of non-motorized serious injuries	177	149	139	184	185	165	177	186	196
PDO Crashes	23,406	21,887	22,922	24,853	25,036	26,228	26,716	26,025	29,321

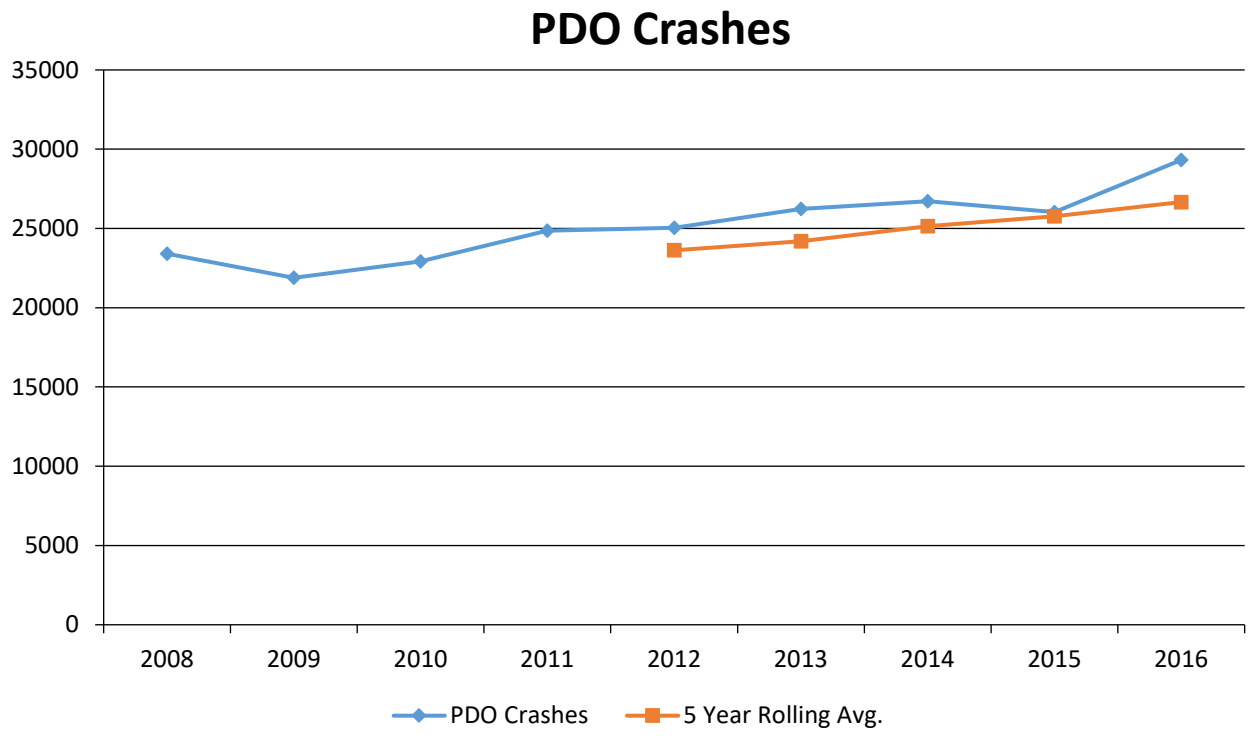

Annual Fatalities
600
500
400
300
200
100
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
2500
2000
1500
1000
500
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
7
6
5
4
3
2
1
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious injury rate (per HMVMT)
5 Year Rolling Avg.





Enter additional comments here to clarify your response for this question or add supporting information.

Please note that the 2017 crash data for Oregon has not been coded into our Crash Analysis and Reporting System (CARS) database yet. We anticipate that it will be available for next years 2019 HSIP annual report. In 2017 there were 439 fatalities in Oregon.

Number of non-motorized fatalities means the total number of fatalities (as defined in this section) with the FARS person attribute codes: Pedestrian, (6) Bicyclist, (7) Other Cyclist, and (8) Person on Personal Conveyance

Serious injuries means:
(1) From April 14, 2016 to April 15, 2019, injuries classified as “A” on the KABCO scale through use of the conversion tables developed by NHTSA; and
(2) After April 15, 2019, “suspected serious injury (A)” as defined in the MMUCC.

Describe fatality data source.

Other

If Other Please describe

Oregon Department of Transportation (ODOT) Crash Data Base System in comparison with FARS data

Enter additional comments here to clarify your response for this question or add supporting information.

Primarily, we use the Oregon Department of Transportation (ODOT) crash data base system because the data is available sooner than the FARS data. We compare our ODOT fatality crash data with FARS when possible.

To the maximum extent possible, present this data by functional classification and ownership.

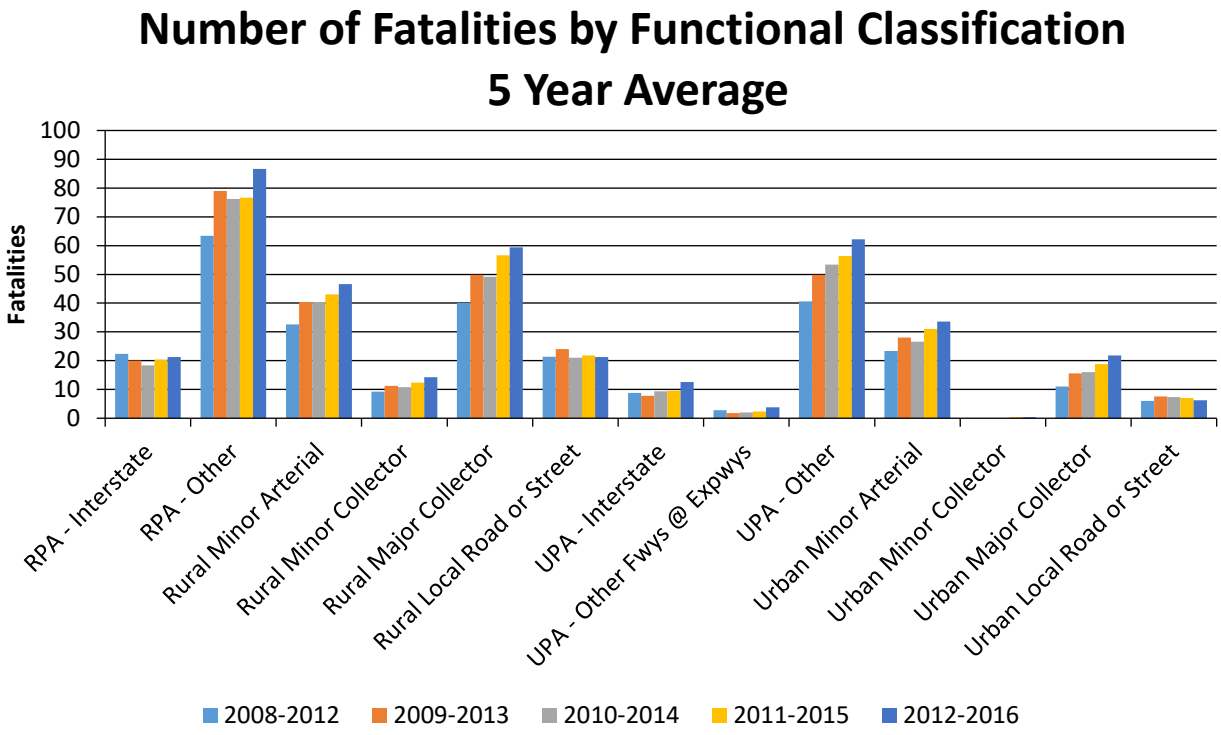
Year 2016

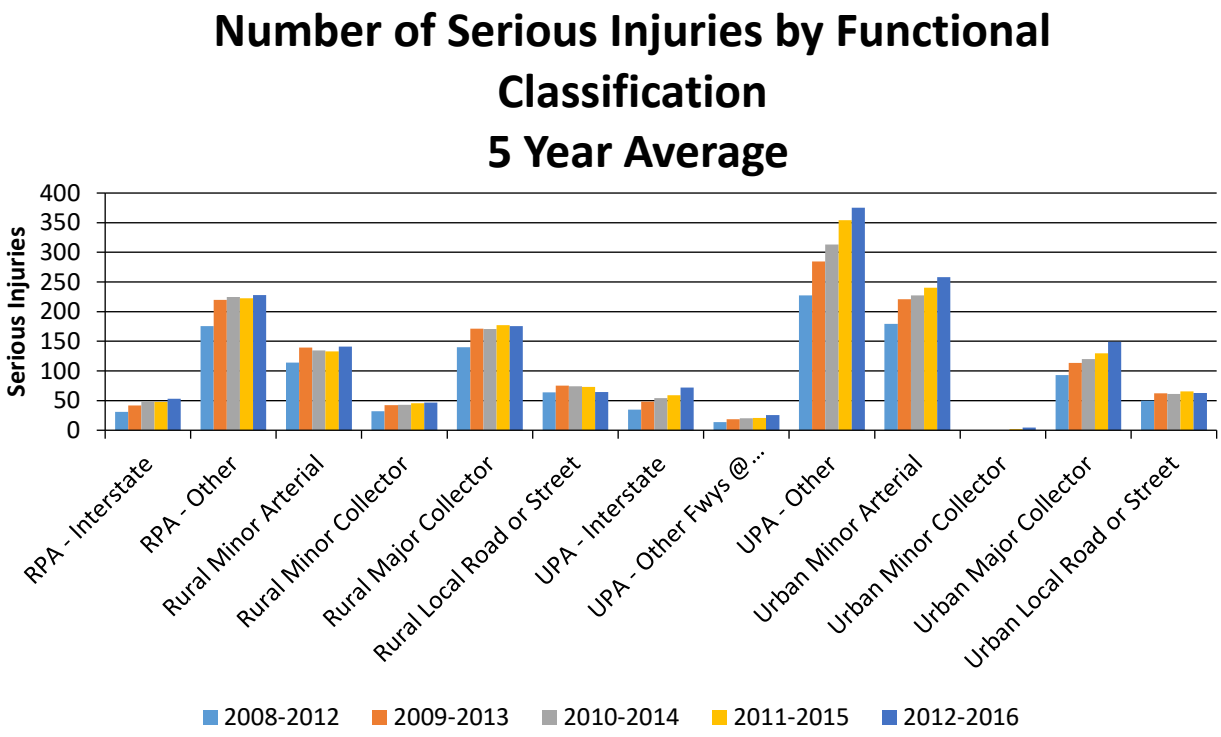
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	21.2	53.2	0.55	1.36
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	86.6	227.8	2.06	5.42
Rural Minor Arterial	46.6	140.8	2.5	7.52
Rural Minor Collector	14.2	46.8	0.96	2.38
Rural Major Collector	59.4	175.8	3.19	9.34
Rural Local Road or Street	21.2	64.6	1.15	3.56
Urban Principal Arterial (UPA) - Interstate	12.6	72	0.23	1.4
Urban Principal Arterial (UPA) - Other Freeways and Expressways	3.8	25.4	0.28	1.86

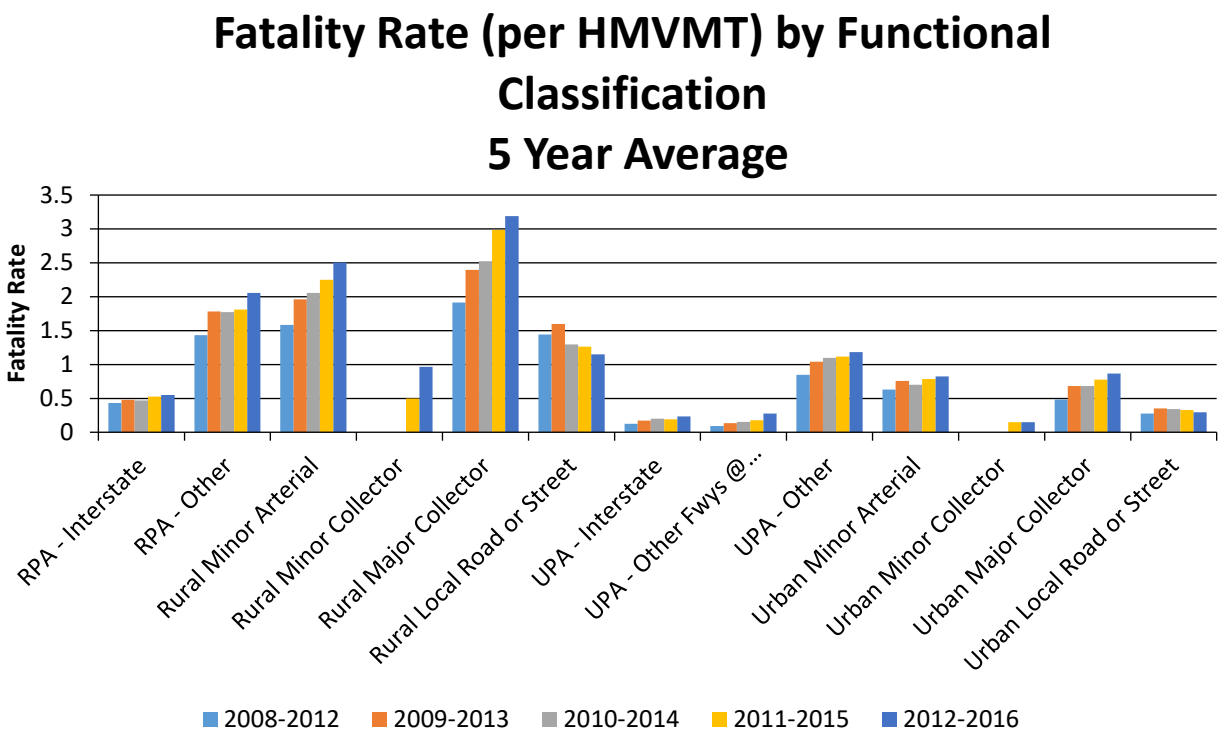
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Urban Principal Arterial (UPA) - Other	62.2	375.2	1.18	7.18
Urban Minor Arterial	33.6	258.2	0.82	6.3
Urban Minor Collector	0.4	4.4	0.15	1.64
Urban Major Collector	21.8	149.4	0.86	5.88
Urban Local Road or Street	6.2	63	0.29	2.96

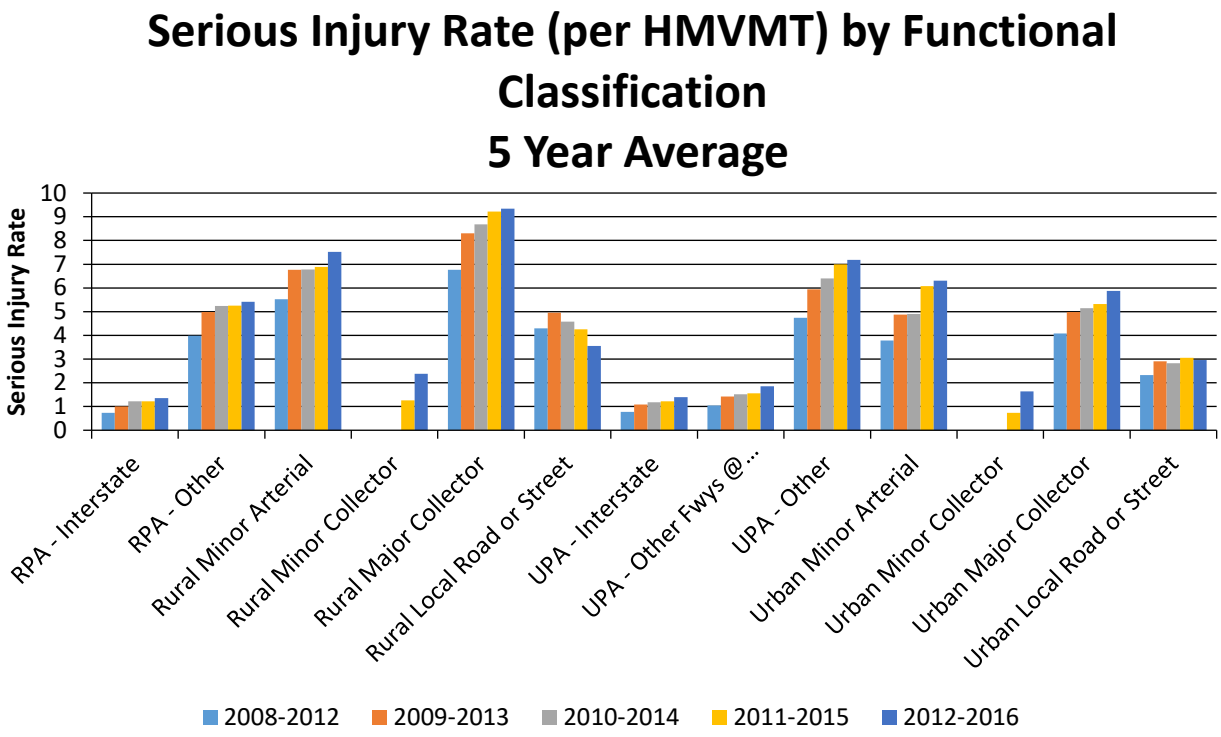
Year 2015

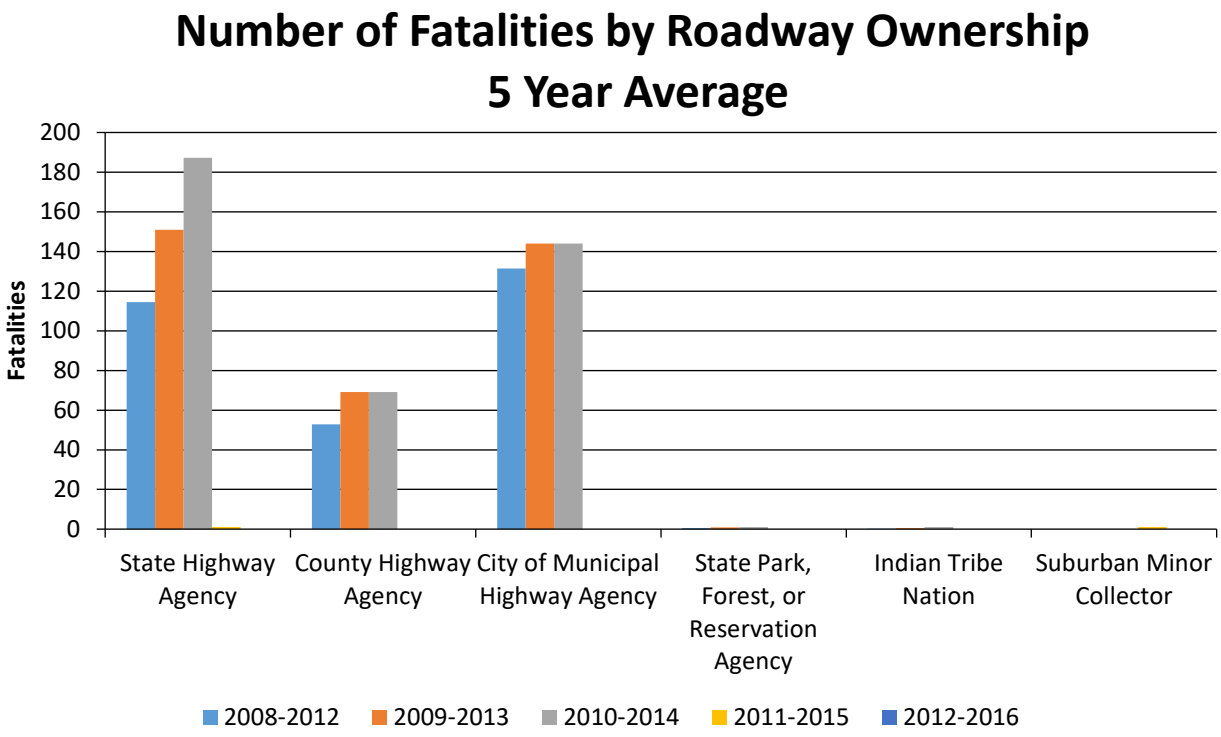
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	1	1	1	1
County Highway Agency				
Town or Township Highway Agency				
City of Municipal Highway Agency				
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				
Suburban Minor Collector	1	1	1	1

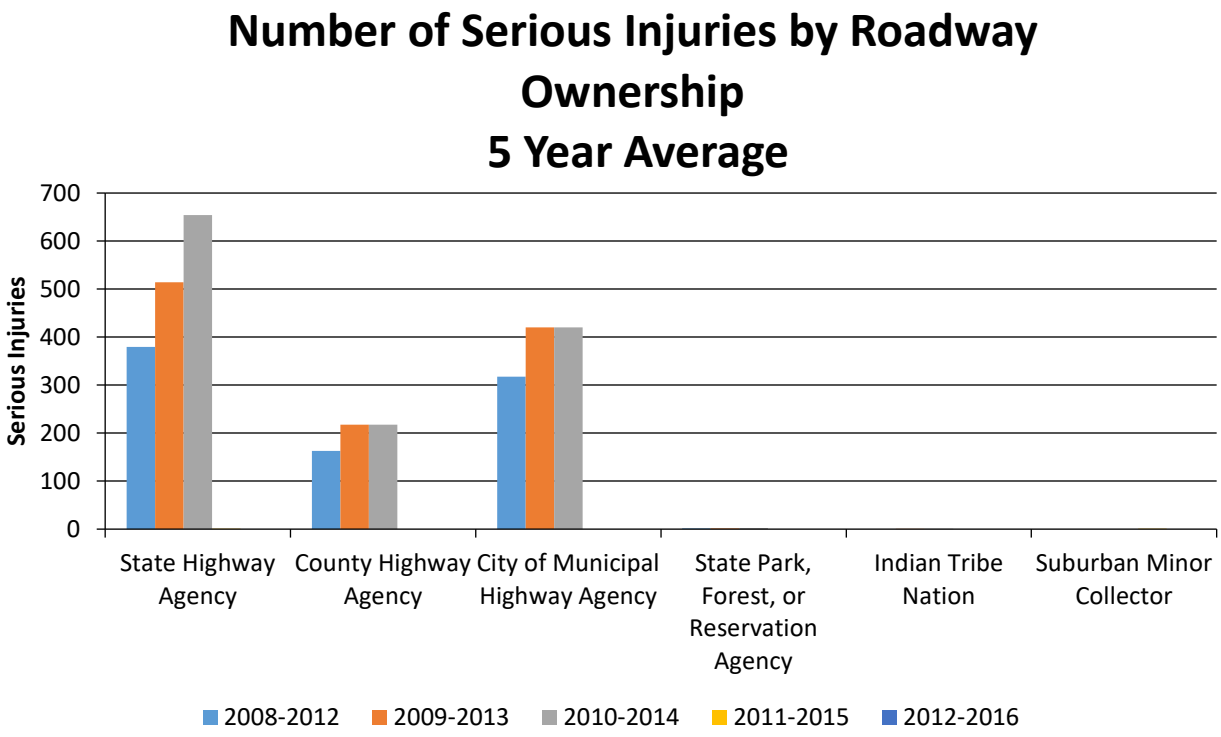

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
100
90
80
70
60
50
40
30
20
10
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @ Expwys
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

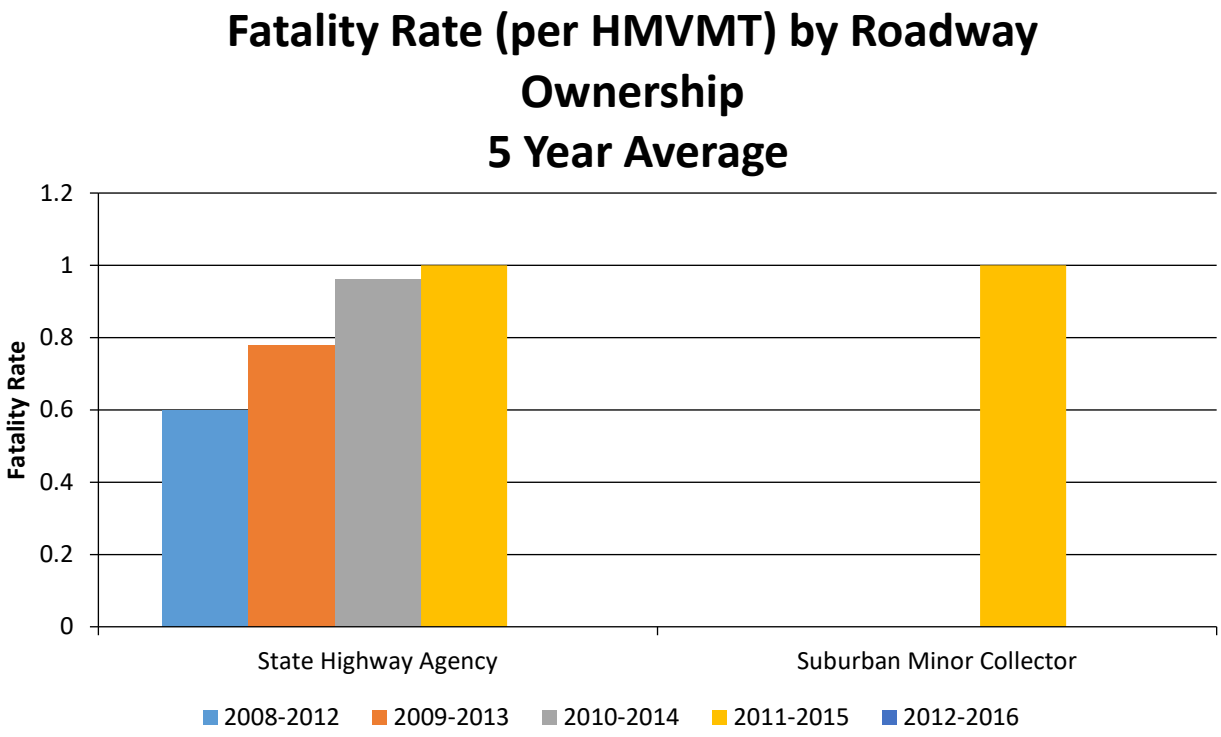

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
400
350
300
250
200
150
100
50
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

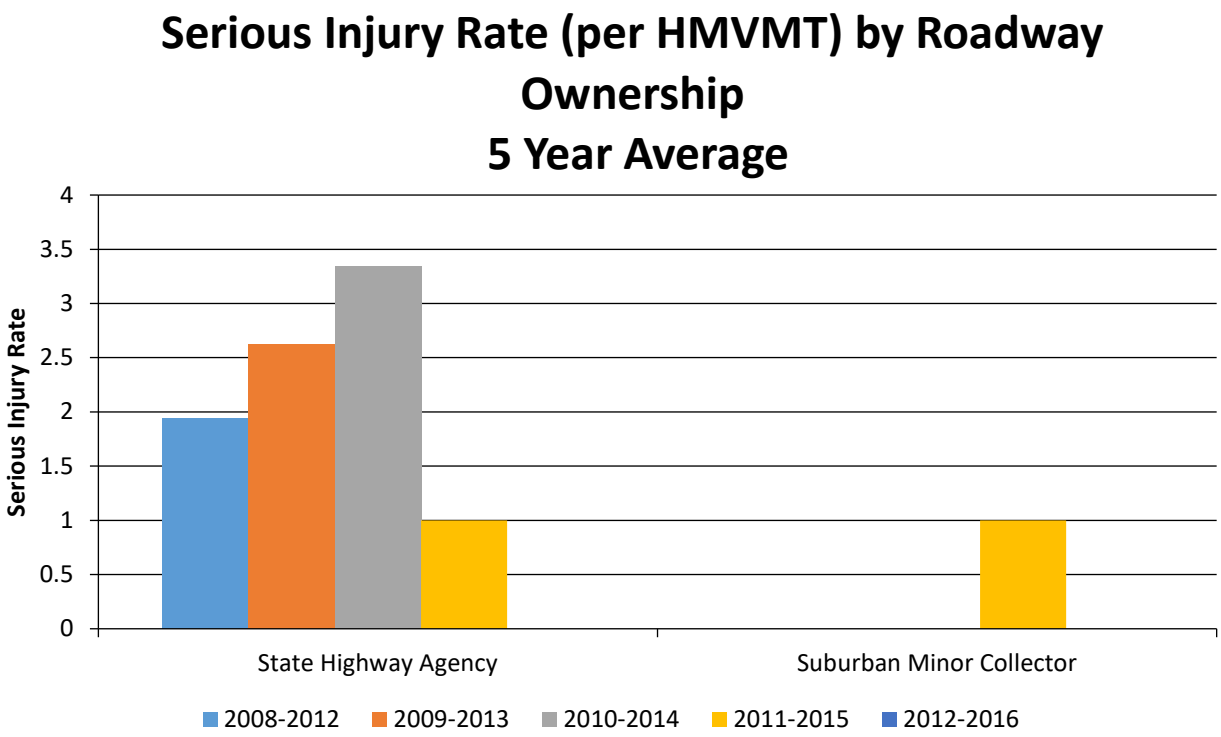

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
3.5
3
2.5
2
1.5
1
0.5
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
10
9
8
7
6
5
4
3
2
1
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
200
180
160
140
120
100
80
60
40
20
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
State Park, Forest, or Reservation Agency
Indian Tribe Nation
Suburban Minor Collector
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
State Park, Forest, or Reservation Agency
Indian Tribe Nation
Suburban Minor Collector
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
1.2
1
0.8
0.6
0.4
0.2
0
State Highway Agency
Suburban Minor Collector
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016



Enter additional comments here to clarify your response for this question or add supporting information.

Please note that the 2017 crash data for Oregon has not been coded into our Crash Analysis and Reporting System (CARS) database yet. We anticipate that it will be available for next years 2019 HSIP annual report.

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

No

Safety Performance Targets

Safety Performance Targets

Calendar Year 2019 Targets *

Number of Fatalities	343.0

Describe the basis for established target, including how it supports SHSP goals.

The annual HSIP performance targets were developed during the last Strategic

Highway Safety Plan update and were agreed upon by a multidisciplinary working group. Decrease traffic fatalities to 343 by December 31, 2019.

Number of Serious Injuries 1432.0

Describe the basis for established target, including how it supports SHSP goals.

The annual HSIP performance targets were developed during the last Strategic Highway Safety Plan update and were agreed upon by a multidisciplinary working group. Decrease serious traffic injuries to 1,432 by December 31, 2019.

Fatality Rate 0.830

Describe the basis for established target, including how it supports SHSP goals.

The annual HSIP performance targets were developed during the last Strategic Highway Safety Plan update and were agreed upon by a multidisciplinary working group. Reduce the fatality rate to 0.83, through December 31, 2019.

Serious Injury Rate 4.240

Describe the basis for established target, including how it supports SHSP goals.

The annual HSIP performance targets were developed during the last Strategic Highway Safety Plan update and were agreed upon by a multidisciplinary working group. The serious injury rate for our 2019 target is 4.24 people per 100 million vehicle miles traveled (VMT).

Total Number of Non-Motorized Fatalities and Serious Injuries 225.0

Describe the basis for established target, including how it supports SHSP goals.

The annual HSIP performance targets were developed during the last Strategic Highway Safety Plan update and were agreed upon by a multidisciplinary working group. The non-motorized fatalities plus serious injuries for our 2019 target is 225 people.

Enter additional comments here to clarify your response for this question or add supporting information.

For more information regarding how ODOT's performance measures were set, please refer to page 100-105 of the Oregon Transportation Safety Action Plan 2016 http://www.oregon.gov/ODOT/TS/docs/TSAP/TSAP_2016_web.pdf .

Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

The annual HSIP performance targets were developed during the last Strategic Highway Safety Plan update and were agreed upon by a multidisciplinary working group including the SHSO (and including a representative of an MPO). Afterwards ODOT held meetings with the MPOs from around the state and explained the process and the outcome. The Oregon Transportation Safety Action Plan 2016 http://www.oregon.gov/ODOT/TS/docs/TSAP/TSAP_2016_web.pdf .

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Applicability of Special Rules

Does the HRRR special rule apply to the State for this reporting period?

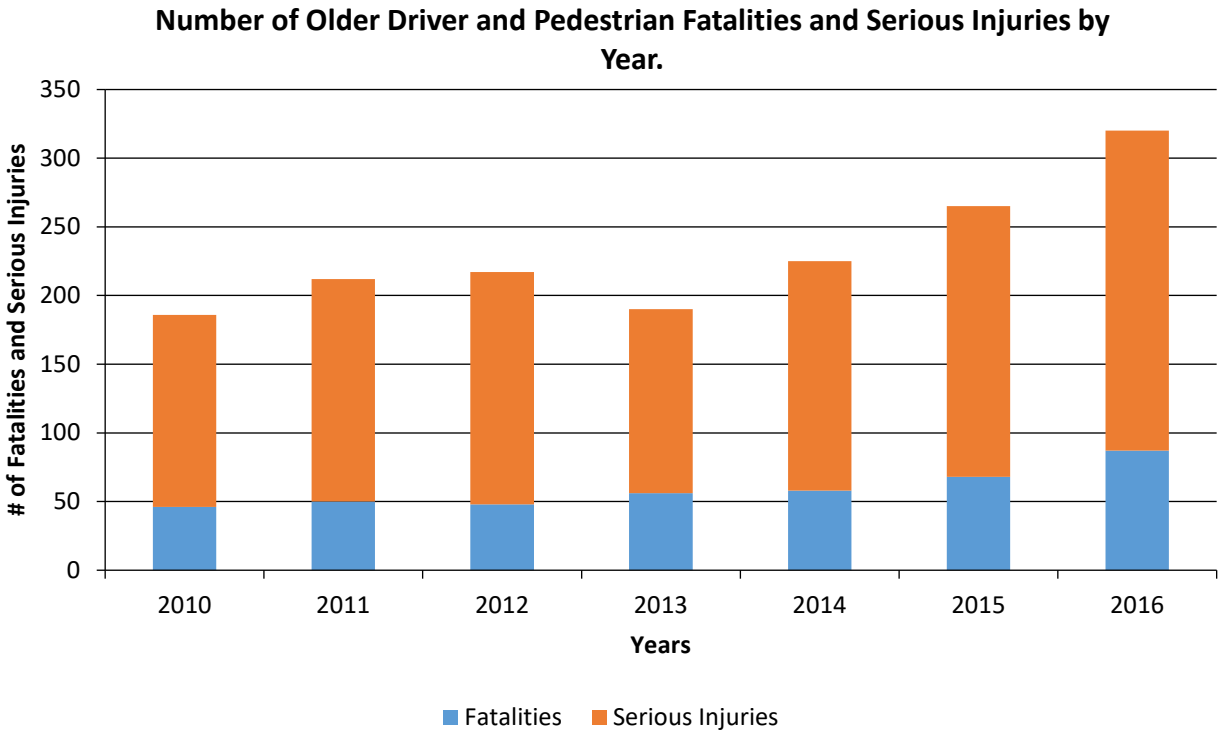
No

Enter additional comments here to clarify your response for this question or add supporting information.

The High Risk Rural Roads special rule is triggered in Oregon for next fiscal year 2019 (Oct. 1, 2018 - Sept. 30, 2019)
We have qualifying roadway departure safety projects in FY 2019 and have not chosen which projects to code to those funds at this time.

Provide the number of older driver and pedestrian fatalities and serious injuries 65 years of age and older for the past seven years.

PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016
Number of Older Driver and Pedestrian Fatalities	46	50	48	56	58	68	87
Number of Older Driver and Pedestrian Serious Injuries	140	162	169	134	167	197	233



Enter additional comments here to clarify your response for this question or add supporting information.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries

Enter additional comments here to clarify your response for this question or add supporting information.

Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

Historically Oregon's fatalities and serious injuries have trended downwards, Since 2013 however there have been annual increases, this increase has been common across the country. Project level evaluations has shown that the projects implemented under HSIP funding have improved the locations where invested. A recent comparison of Roadway Departure has also shown that the last few years of investments in this key area has lessened the percentage of total roadway departure crashes, indicating Oregon's investments in systemic roadway departure has been moving the numbers.

What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

More systemic programs
Policy change
Increased awareness of safety and data-driven process
Increased focus on local road safety

Enter additional comments here to clarify your response for this question or add supporting information.

With the implementation of the ARTS program, there is an increased awareness of safety and a data-driven process for developing safety projects across all jurisdictions in Oregon.
Policy level changes that are a direct result of HSIP implementation efforts like the use of safety edge now incorporated into our Highway Design Manual. Improved guidance in our signing and striping manuals to reduce wrong way driving at interchange ramps taken from a recent research project that was completed in September 2017. Improved guidance in our signal policy and guidelines to eliminate conflicts between left turn traffic and pedestrians.

Are there any significant programmatic changes that have occurred since the last reporting period?

Yes

Describe significant program changes that have occurred since the last reporting period.

The second round of the ARTS program primarily uses federal funds from the Highway Safety Improvement Program (HSIP). The principles and purpose of ARTS and HSIP are:

- The program goal is to reduce fatal and serious injury crashes.
- The program must include all public roads.
- The program is data driven and blind to jurisdiction.
- The process will be overseen by Oregon DOT Regions.
- Both traditional “hot spot” methodology and systemic methodology is used.All Projects shall:
- The objective of ARTS and HSIP is to significantly reduce the occurrence of fatalities and serious injuries. A data-driven approach uses crash data, risk factors, or other data supported methods to identify the best possible locations to achieve the greatest benefits. Many highway projects incorporate design features or elements that relate to highway safety, such as updating guardrail or improvements to intersection channelization, signing and pavement markings. But appropriate use of HSIP funds is only for locations or corridors where a known problem exists as indicated by location-specific data on fatalities and serious injuries, and/or where it is determined that the specific project can, with confidence, produce a measurable and significant reduction in such fatalities or serious injuries. To achieve the maximum benefit, the focus of the ARTS program is on cost effective use of the funds allocated for safety improvements addressing fatal and serious injury crashes.

- Address a specific Safety problem contributing to fatalities and serious injuries
- Use proven countermeasures that correct or substantially improve the fatal and serious injury problem
- Use ODOT crash data to establish the Benefit/Cost ratio (so projects can be compared fairly)
- Use ODOT Benefit Cost method (or Cost effectiveness for Bicycle/Pedestrian)
- Be prioritized or categorized based on the Benefit/Cost Ratio for developing the 150% list
- Use only proven countermeasures from the approved ODOT Crash Reduction Factor list (a written process is developed for considering new measures)
- Projects must include written support from the Road Jurisdiction if the project is proposed by another agency
- Benefit Costs will be based on the most recent available three to five years of crash dataHot Spot Projects shall:
- The traditional approach to safety is to identify “hot spot” locations, and then identify measures to implement by diagnosing the “hot spot”.

- Address a location with a crash history of at least one fatal or serious injury crash within the last five yearsSystemic Projects shall:
- The systemic approach identifies a few proven low-cost measures to be widely implemented, then implements the measures where there is evidence that they would be most useful. The systemic measures have been proven to successfully reduce the occurrence of fatal and serious injury crashes. The sites may be selected from ODOT’s list of priority corridors for Roadway Departure, Intersections or Pedestrian/Bicycle crashes.

- Use only approved “Systemic” countermeasures as listed in the Crash Reduction factors list
- Not require the acquisition of significant amounts of right of way (more than 10% of project costs), preferably no right of way
- For the Pedestrian and Bicycle Analysis, use Highway Safety Manual methods to estimate predicted crashes for pedestrians and bicycles and Cost Effectiveness to prioritize projects selection.
- Systemic Projects should:

- Have a history of fatal or serious injury crashes or a risk of high severity crashes and preferably are selected from priority corridors within Systemic plans.Systemic funding is intended to be used for Roadway Departure, Intersections and Pedestrian/Bicycle type projects. At the statewide level the split

in F&A between Roadway Departure, Intersections and Ped/Bike is about 40%/40%/20% respectively. Regions will be given the flexibility to determine the appropriate splits between systemic types of projects for their regions. It is suggested:

- The Safety funds are split to each region based on the amount of fatalities and serious injuries occurring in the region on all public roads. Regions will be required to spend a minimum of 50% of their funding on Systemic projects.

- That at least one project per year be developed for each type, if possible.
- Region splits of systemic funds for each systemic type be roughly equivalent to the proportion of F&A occurring in the region Both Hot Spot and Systemic processes will be an application based process. Oregon jurisdictions will be invited to submit projects for Hot Spot and Systemic funding, using a large list of proven countermeasures. ODOT will distribute data on Hot Spots and Systemic Plans to help determine potential locations for improvement. For Systemic projects the submittals will be for three systemic categories of funding, roadway departure, intersections and pedestrian/bicycle, attempting to solicit submittals amounting to about 300 - 500% of available funding. ODOT Regions will check all applications for program purpose and correctness, working with the submitting agencies when necessary in order to develop a potential list of projects. The intent is that the ODOT Regions will analyze and refine the list of submitted projects in order to prioritize the project list based on program purpose of reducing fatal and serious injuries and benefit cost, in order to finalize a draft 150% list for field scoping.
- Once the refined 150% lists are ready, all projects (both hot spot and systemic) will go through a multi-discipline assessment to verify the solution. A multi-disciplinary team, including the owner of the facility, will ensure the best countermeasure is chosen to mitigate fatal and serious injury crashes. The project will also be scoped to verify the costs and any possible barrier to implementation. A finalized list of prioritized projects can then be produced with the best solution and the best cost.
- For Hot Spots projects agencies will be given the opportunity to submit projects with justification that it meets the program purpose. The number of submittals should be limited because of limited funds, but ODOT will ask for submittals amounting to 300 to 500% of the funding available to ensure sufficient worthwhile projects. Regions will categorize projects based on the project's ability to reduce fatal and serious injury crashes and the benefit cost of the project, and finalize a draft 150% list for field scoping.
- Funding is eligible to be used for approved countermeasures as long as those countermeasures provide an improvement to reducing fatal and serious injury and are prioritized through the ARTS data driven process. Safety funds may be used to include or replace elements that are necessary to satisfactorily complete the project, such as replacing non-compliant ADA ramps, replacing pavement striping that is removed or right of way, but those elements must be included in the cost of the project and part of the prioritization process. Other elements (not applicable to the safety project) may be combined with the project (i.e., culvert), but must be funded by other sources, not safety funds.

  Both Hot Spot and Systemic processes will be an application based process. Oregon jurisdictions will be invited to submit projects for Hot Spot and Systemic funding, using a large list of proven countermeasures. ODOT will distribute data on Hot Spots and Systemic Plans to help determine potential locations for improvement.

  For Hot Spots projects agencies will be given the opportunity to submit projects with justification that it meets the program purpose. The number of submittals should be limited because of limited funds, but ODOT will ask for submittals amounting to 300 to 500% of the funding available to ensure sufficient worthwhile projects. Regions will categorize projects based on the project's ability to reduce fatal and serious injury crashes and the benefit cost of the project, and finalize a draft 150% list for field scoping.

  For Systemic projects the submittals will be for three systemic categories of funding, roadway departure, intersections and pedestrian/bicycle, attempting to solicit submittals amounting to about 300 - 500% of available funding. ODOT Regions will check all applications for program purpose and correctness, working with the submitting agencies when necessary in order to develop a potential list of projects. The intent is that the ODOT Regions will analyze and refine the list of submitted projects in

order to prioritize the project list based on program purpose of reducing fatal and serious injuries and benefit cost, in order to finalize a draft 150% list for field scoping.

Once the refined 150% lists are ready, all projects (both hot spot and systemic) will go through a multi-discipline assessment to verify the solution. A multi-disciplinary team, including the owner of the facility, will ensure the best countermeasure is chosen to mitigate fatal and serious injury crashes. The project will also be scoped to verify the costs and any possible barrier to implementation. A finalized list of prioritized projects can then be produced with the best solution and the best cost.

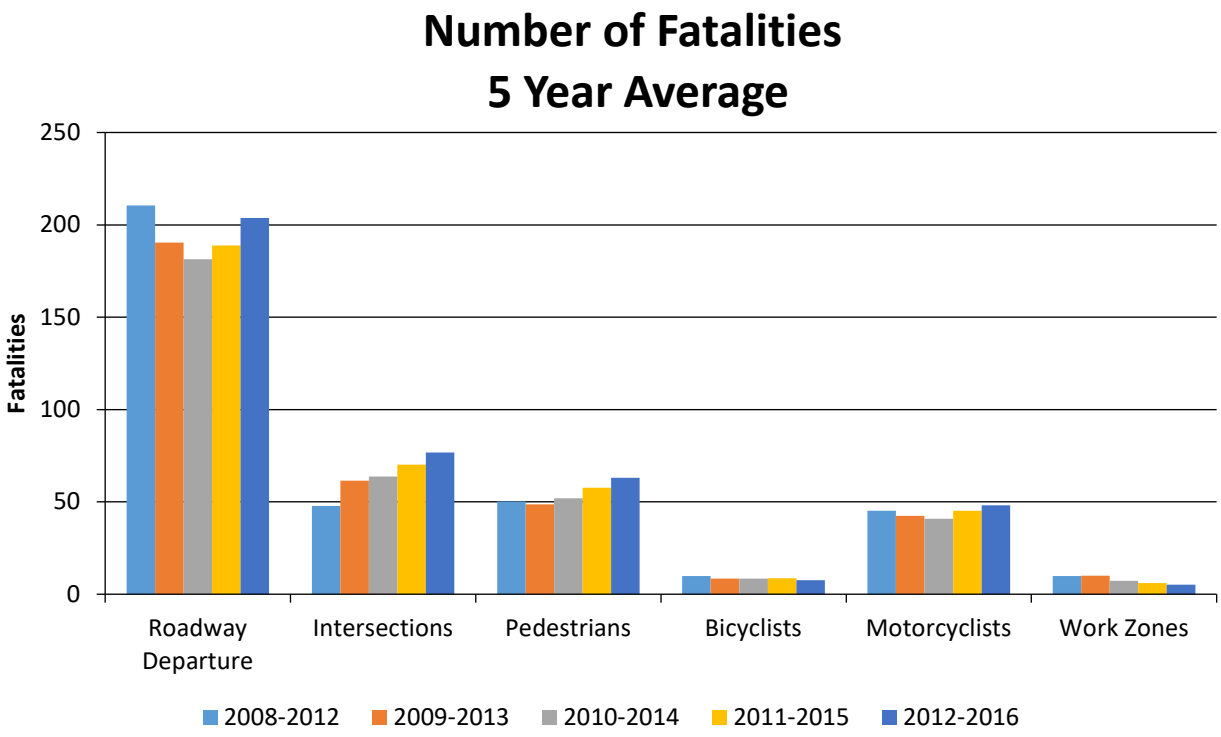
Once the list is prioritized and a final 100% list is produced ODOT Region's will work with Jurisdictions to determine the delivery methods, delivering agency and timelines (applicable funding year). For projects involving local agencies, the ODOT Regions will work with Jurisdictions to develop an Intergovernmental Agreement. The delivering agency will be accountable for timely and fiscally responsible delivery.

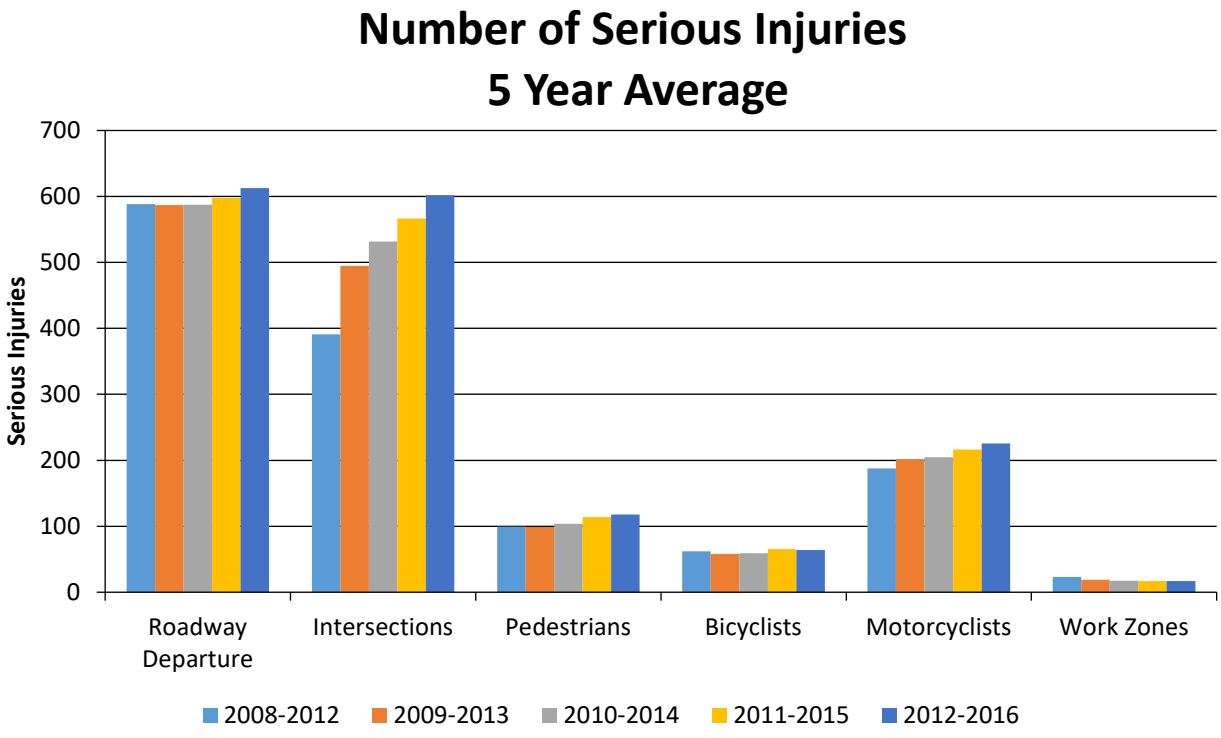
Effectiveness of Groupings or Similar Types of Improvements

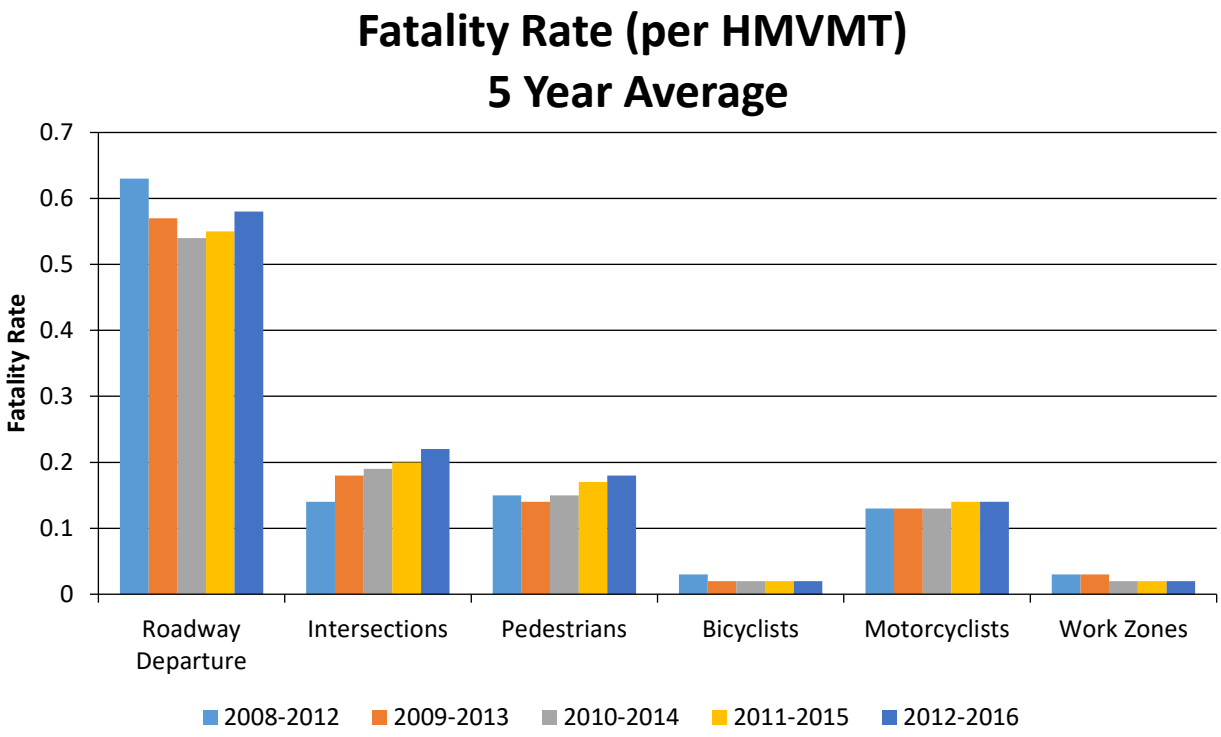
Present and describe trends in SHSP emphasis area performance measures.

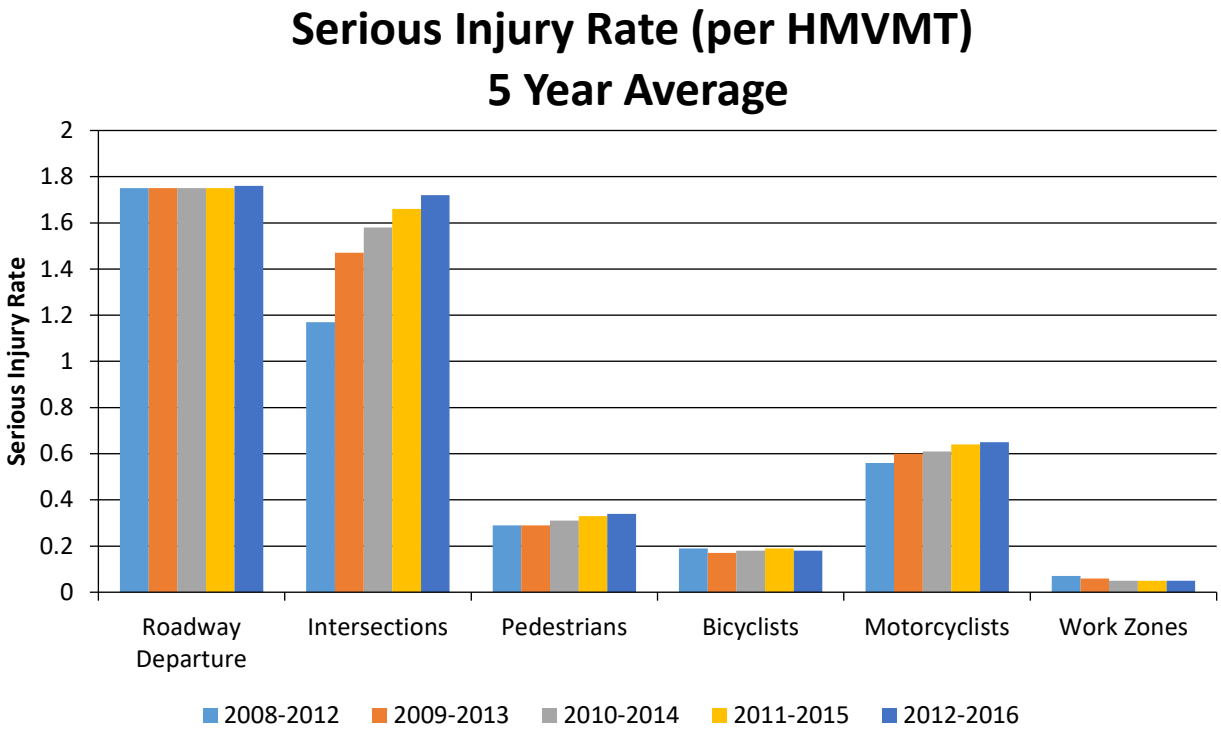
Year 2016

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)	Other 1	Other 2	Other 3
Roadway Departure	Run-off-road	203.8	612.4	0.58	1.76	0	0	0
Intersections	All	76.8	602.2	0.22	1.72	0	0	0
Pedestrians	Vehicle/pedestrian	63	118	0.18	0.34	0	0	0
Bicyclists	Vehicle/bicycle	7.6	63.8	0.02	0.18	0	0	0
Motorcyclists	Motorcycle crashes	48.2	225.6	0.14	0.65	0	0	0
Work Zones	All	5.2	17	0.02	0.05	0	0	0


Number of Fatalities
5 Year Average
Fatalities
250
200
150
100
50
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Motorcyclists
Work Zones
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Motorcyclists
Work Zones
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016





Enter additional comments here to clarify your response for this question or add supporting information.

Has the State completed any countermeasure effectiveness evaluations during the reporting period?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Project Effectiveness

Provide the following information for previously implemented projects that the State evaluated this reporting period.

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
US101:N Bend-Coos Bay	Urban Principal Arterial (UPA) - Other	Roadway signs and traffic control	Roadway signs and traffic control - other	58.00	57.00	2.00	1.00	2.00	3.00	40.00	35.00	102.00	96.00	
OR8:N 10th Ave-N 19th Ave	Urban Principal Arterial (UPA) - Other	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	34.00	28.00			4.00	2.00	35.00	38.00	73.00	68.00	
Kalmiopsis Elem Sch:Easy	Urban Minor Arterial	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists											
Stella Mayfield Elem Sch	Urban Minor Arterial	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists											
Columbia Blvd/Mcnary SRTS	Urban Minor Arterial	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists											
FFO - OR99W: I-5 NB Ramps	Urban Principal Arterial (UPA) - Other	Roadway	Roadway - other	81.00	46.00		2.00	6.00	4.00	87.00	50.00	174.00	102.00	
OR:211:Eagle Cr-Sandy Hwy	Urban Minor Arterial	Intersection geometry	Intersection geometry - other	8.00	7.00			5.00		13.00	9.00	26.00	16.00	
OR62: Linn Rd - Hwy. 234	Rural Minor Collector	Roadway	Roadway - other	20.00	13.00	1.00	1.00	4.00	2.00	15.00	26.00	40.00	42.00	
I-5:Glendale-Hugo Climb L	Rural Principal Arterial (RPA) - Interstate	Roadway	Roadway - other	158.00	117.00	3.00	2.00	8.00	7.00	108.00	73.00	277.00	199.00	
OR39:Merrill NCL-Calif ln	Rural Principal Arterial (RPA) - Other	Roadway delineation	Roadway delineation - other	11.00	7.00				1.00	8.00	7.00	19.00	15.00	
OR126:Grass Butte-Rimrock	Urban Principal Arterial (UPA) - Other	Roadway delineation	Roadway delineation - other	9.00	5.00		1.00	3.00	1.00	14.00	10.00	26.00	17.00	
OR99W:SW Durham RD-Fische	Urban Principal Arterial (UPA) - Other	Intersection geometry	Intersection geometry - other	62.00	46.00			3.00	3.00	83.00	44.00	148.00	93.00	
OR99E: Vineyard Rd.	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Intersection traffic control - other	5.00	6.00			2.00	1.00	12.00	7.00	19.00	14.00	
OR224:SE 135th Ave.	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Intersection traffic control - other	14.00	6.00			1.00		12.00	9.00	27.00	15.00	

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
US26: SE Orient Dr.	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Intersection traffic control - other	14.00	6.00			1.00		12.00	9.00	27.00	15.00	
US20,US26,US395 Rumbles	Rural Principal Arterial (RPA) - Other	Roadway delineation	Roadway delineation - other											
US97@Cherry Ln US26@Dover	Rural Principal Arterial (RPA) - Other	Intersection geometry	Intersection geometry - other	5.00	6.00				1.00	5.00		10.00	7.00	
OR140:Lake of the Woods	Rural Principal Arterial (RPA) - Other	Roadway signs and traffic control	Roadway signs and traffic control - other	56.00	79.00	1.00	3.00	12.00	3.00	40.00	46.00	109.00	131.00	
2014 Reg 1 Curve Signing	Rural Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	315.00	199.00	3.00	5.00	25.00	11.00	357.00	261.00	700.00	476.00	
Reg 2 CL Rumbles Unit 1	Rural Principal Arterial (RPA) - Other	Roadway delineation	Roadway delineation - other	226.00	178.00	7.00	9.00	24.00	15.00	188.00	171.00	445.00	373.00	
US97:Wichiup Av-Bowery ln	Rural Principal Arterial (RPA) - Other	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	42.00	49.00	3.00	1.00	4.00	2.00	29.00	31.00	78.00	83.00	
Reg 2 CL Rumbles Unit 2	Rural Principal Arterial (RPA) - Other	Roadway delineation	Roadway delineation - other	119.00	80.00	7.00	13.00	26.00	20.00	131.00	131.00	283.00	244.00	

Enter additional comments here to clarify your response for this question or add supporting information.

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

No

Compliance Assessment

What date was the State's current SHSP approved by the Governor or designated State representative?

10/01/2016

What are the years being covered by the current SHSP?

From: 2016 To: 2021

When does the State anticipate completing it's next SHSP update?

2021

Enter additional comments here to clarify your response for this question or add supporting information.

Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.

	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
MIRE NAME (MIRE NO.)	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT										
Segment Identifier (12)	0	0					0	0	0	0
Route Number (8)	0	0								
Route/Street Name (9)	0	0								
Federal Aid/Route Type (21)	0	0								
Rural/Urban Designation (20)	0	0					0	0		
Surface Type (23)	0	0					0	0		
Begin Point Segment Descriptor (10)	0	0					0	0	0	0
End Point Segment Descriptor (11)	0	0					0	0	0	0
Segment Length (13)	0	0								
Direction of Inventory (18)	0	0								
Functional Class (19)	0	0					0	0	0	0
Median Type (54)	0	0								
Access Control (22)	0	0								

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
One/Two Way Operations (91)	0	0								
Number of Through Lanes (31)	0	0					0	0		
Average Annual Daily Traffic (79)	0	0					0	0		
AADT Year (80)	0	0								
Type of Governmental Ownership (4)	0	0					0	0	0	0
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			0	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			0	0						
AADT Year (80)			0	0						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					0	0				
Location Identifier for Roadway at Ending Ramp Terminal (201)					0	0				
Ramp Length (187)					0	0				
Roadway Type at Beginning of Ramp Terminal (195)					0	0				
Roadway Type at End Ramp Terminal (199)					0	0				

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Interchange Type (182)					0	0				
Ramp AADT (191)					0	0				
Year of Ramp AADT (192)					0	0				
Functional Class (19)					0	0				
Type of Governmental Ownership (4)					0	0				
Totals (Average Percent Complete):	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

*Based on Functional Classification

Enter additional comments here to clarify your response for this question or add supporting information.

Mire Non Local Paved Roads - Segment Non Local Paved Roads - Intersection Non Local Paved Roads - Ramps Local Paved Roads Unpaved Roads
Fundamental
Data Elements State Non-State State Non-State State Non-State State Non-State State Non-State

70% 15% 70% 5% 60% 20% 90% 5% 90% 5%

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

Oregon DOT performed a phase 1 pilot to estimate the work necessary to collect intersection data on state highways, the finding of the pilot are being used to plan a phase pilot to collect signalized intersection data in the most populous region of the state. While there are about 500 signalized intersections on state highways in this region, the quantity and density will be very useful to hone the attributes collected and the methods used for optimum efficiency. In addition, Region 1 was identified for collection of signalized intersection data so HSM methods could be used to identify signalized intersections which, are often over capacity and already identified as crash hot spots, for potential safety improvements.

The objectives of this pilot is to collect the FDE for signalized intersection only, utilize HSM methods of network screening for potential safety improvements and finalize the methodology before implementation in other regions of the state. Tentatively we have a planned schedule of collection of the data elements.

Winter 2017 Prepare to implement Phases 3-7

Spring 2018 Begin Phase 3, FDE data collection for signalized intersections in Regions 2, 3, 4 and 5

Fall 2020 Estimated completion of Phase 3 collection of FDE

Spring 2021 Begin Phase 4, FDE data collection for signalized interchange-only intersections state-wide

Winter 2021 Estimated completion of Phase 4 collection of FDE

Spring 2022 Begin Phase 5, FDE data collection for signalized intersections on local roads

Winter 2023 Estimated completion of Phase 5 collection of FDE

Spring 2024 Begin Phase 6, FDE data collection for state-owned highway segments between signalized intersections state-wide

Winter 2024 Estimated completion of Phase 6 collection of FDE

Spring 2025 Begin Phase 7, FDE data collection for local road segments between signalized intersections state-wide

Winter 2026 Estimated completion of Phase 7 collection of FDE

Spring 2027 Data maintenance cycle begins

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	Incapacitated (A)	Yes	N/A	No	N/A	No
Crash Report Form Instruction Manual	Incapacitated (A)	Yes	Incapacitated – any injury that prevents the party form walking, driving, or normally continuing the activities he or she was capable of performing before the injury occurred. Example include; broken or distorted limbs , skull or chest injuries, abdominal injuries , unconscious at or when taken from the crash scene, unable to leave crash scene without assistance	Yes	Incapacitated – any injury that prevents the party form walking, driving, or normally continuing the activities he or she was capable of performing before the injury occurred. Example include; broken or distorted limbs , skull or chest injuries, abdominal injuries , unconscious at or when taken from the crash scene, unable to leave crash scene without assistance	Yes
Crash Database	Code 2 - Incapacitating (Serious/Major)	Yes	N/A	No	N/A	No
Crash Database Data Dictionary	Code 2 - Incapacitating (Serious/Major)	Yes	Code 2 is used for participants who suffer incapacitating injuries. An incapacitating (severe or major) injury is a non-fatal injury which "prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred". (see to ANSI D16.1-2007, definition 2.3.4) Examples of incapacitating injuries include broken bones, severe bleeding, unconsciousness, etc.	Yes	Code 2 is used for participants who suffer incapacitating injuries. An incapacitating (severe or major) injury is a non-fatal injury which "prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred". (see to ANSI D16.1-2007, definition 2.3.4) Examples of incapacitating injuries include broken bones, severe bleeding, unconsciousness, etc.	Yes

Please describe the actions the State is taking to become compliant by April 15, 2019.

Enter additional comments here to clarify your response for this question or add supporting information.

Did the State conduct an HSIP program assessment during the reporting period?

Yes

Describe the purpose and outcomes of the State’s HSIP program assessment.

Oregon DOT collected comments and surveyed participants of the All Roads Transportation Safety (ARTS) program in order to determine effectiveness of the program and to determine potential program changes. Several of the comments will be incorporated into the next round of the ARTS program. ODOT plans to complete its next HSIP program assessment in 2019.

Optional Attachments

Program Structure:

odot_safety_program_guide[1].pdf

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

5 year rolling average	means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).
Emphasis area	means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.
Highway safety improvement project	means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.
HMVMT	means hundred million vehicle miles traveled.
Non-infrastructure projects	are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.
Older driver special rule	applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.
Performance measure	means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.
Programmed funds	mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.
Roadway Functional Classification	means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.
Strategic Highway Safety Plan (SHSP)	means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.
Systematic	refers to an approach where an agency deploys countermeasures at all locations across a system.
Systemic safety improvement	means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.
Transfer	means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.