UTAH

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2017 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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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 State of Utah has experienced an increase in traffic fatalities each of the past four years. Serious injuries, however, were lower in 2016 than in 2015. We are hopeful that our efforts to prioritize safety projects that have the greatest potential to reduce severe crashes will result in a resumption of past long-term downward trends in both fatalities and serious injuries. We continue to use both crash analysis and systemic modeling to identify the projects most likely to reduce fatalities and serious injuries.

The FAST Act approved by Congress two years ago removed our ability to fund education and enforcement efforts with HSIP funds. We have been using State funds to continue these programs. Education and enforcement remain important parts of our comprehensive safety strategy to reduce severe crashes.

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.

UDOT's Safety Programs Engineer (located within the Traffic & Safety Division) oversees HSIP activities within Utah. This person is responsible for setting the policies and procedures required to fulfill the federal HSIP mandate set forth by the FAST Act. The UDOT region offices also play a major role in the development and implementation of HSIP projects. They work in concert with the UDOT Traffic & Safety Division to identify potential project locations, submit HSIP funding applications, and participate in the screening and prioritization process. Once projects are selected and funded in each region, the region offices take ownership of project delivery, assigning project managers, and proceeding according to standard federal environmental, design, and construction processes.

HSIP funds can be used for infrastructure improvements on any publicly owned roadway. Any local agency may apply for HSIP funding as long it controls the right-of-way for the location in question. However, the Traffic & Safety Division researches the crash history at these locations just as they do with projects developed internally. In order for HSIP funds to be used, all locations must show either a proven crash history or have characteristics that conform to systemic situations that UDOT has identified as a funding priority. UDOT also works with Metropolitan Planning Organizations to help them integrate safety into their long-range planning efforts.

The project process includes the following steps:

- Crash data evaluation and coordination with region offices to identify candidate projects.
- Analysis of candidate projects to determine anticipated benefit/cost ratios.
- Joint prioritization and selection of projects between the Central Traffic & Safety office and the region offices.
- Programming of projects into discrete funding years.
- Assignment of project managers and beginning of design process.
- Advertisement and construction.
- Evaluation based on three years of crash data before and after construction.
- Reporting in the annual HSIP report.

Where is HSIP staff located within the State DOT?

Operations

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

The Traffic & Safety Division is located within the Operations group. Additionally, each region office has staff designated to work on traffic and safety issues specifically within their geographical boundaries.

How are HSIP funds allocated in a State?

Formula via Districts/Regions

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

The total amount of available HSIP funding is prorated to the region offices on the basis of the share of severe crashes occurring within their respective geographic boundaries.

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

Local roads are eligible for HSIP funds if projects meet program requirements. UDOT currently lacks comprehensive roadway data for local roads (non-State and non-Federal Aid) that would make it easier to compare relative safety needs on State roads and local roads, especially for systemic treatments. However, efforts are underway to work with other State agencies, local governments, and emergency dispatch centers to develop more complete roadway inventory data on local roads. In the mean time we will continue to perform hot-spot analysis on all public roads, including locals. Once we identify a hotspot location and potential countermeasures, we approach the local government to assess their willingness to proceed with and HSIP-funded safety project.

UDOT does perform crash analysis on non-State Federal Aid routes and accepts applications from local agencies for HSIP funding consideration on all public roads. We have also begun the process of applying the usRAP safety protocol to select non-State Federal Aid and local routes. We completed the protocol in Cache County during this reporting cycle and are currently working to apply it in Utah, Summit, and Wasatch Counties.

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

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

The Traffic & Safety Division leads the HSIP effort, but various other divisions are involved in the process. Traffic/safety, project management, maintenance, and design groups are all involved at the region level, both with helping to identify candidate projects and to design and construct them.

Describe coordination with internal partners.

Planning
UDOT uses two methods to plan HSIP projects. For the first method, each UDOT region sends an annual submittal to the Traffic & Safety Division that identifies their priority projects for HSIP funding consideration. The Traffic & Safety Division then screens the crash data, traffic data, and input from the region offices. A meeting is then held with each region office to identify safety projects based on the screened data and the region submittals. Although the annual submittal is the primary mechanism by which the regions request HSIP funding, the regions may request other projects mid-year and the same process is conducted to analyze, prioritize, program, and implement them. For the second method, the Traffic & Safety Division employs a network-wide approach to identify projects. This is done by looking at crash and roadway attribute data from a statewide perspective. UDOT has several efforts underway to identify projects systemically and through network screening tools, including the usRAP model and BYU crash prediction model.

Design
After projects are programmed, project managers from the applicable UDOT region offices are assigned to each project. These project managers then shepherd the projects through UDOT's standard federal environmental, design, and construction processes. Project managers generally invite Traffic & Safety staff to attend scoping and design review meetings to make sure that the safety elements are properly incorporated into the project.

Maintenance & Operations
Each region office works with their maintenance and operations staff to give them an opportunity to suggest safety projects based on their experience maintaining the state roadway network every day. Periodic meetings are held between region traffic and safety engineers and maintenance crews. Their round of meetings in the fall is where engineers specifically solicit safety project ideas from maintenance staff. Following these meetings, region traffic and safety engineers submit safety project applications for projects they believe merit funding. These applications are then reviewed by Central Traffic & Safety as described above.

Access to Data

In order to assist each of our partners in this process, we have developed an online crash visualization and analysis tool so everyone has equal access to safety data.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Governors Highway Safety Office
Local Government Agency
Academia/University
FHWA
Other-SHSP Partners

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

Describe coordination with external partners.

Academia

UDOT has active and ongoing partnerships with both Brigham Young University (BYU) and the University of Utah to further safety work in Utah. BYU has worked with UDOT over the past several years to develop and continually refine Bayesian crash predictive models that show where crashes are over-represented. Each year BYU provides model output reports to the region offices. The reports show potential safety project locations and countermeasures for their consideration.

The University of Utah has been working with UDOT the last few years to improve the statewide crash database and to expand the usRAP model on non-State maintained roads.

FHWA

We work closely with the Safety Operations Engineer in the local FHWA office to ensure that we are complying with appropriate guidelines in our implementation of the HSIP. We routinely involve him in coordination meetings with the region offices so that he stays informed about the projects we are selecting and implementing with our HSIP funds.

Governor's Office of Highway Safety

The Utah Highway Safety Office (HSO) is housed within the Department of Public Safety. We hold regular meetings involving the HSO to ensure coordination of data, funding, and strategies for our respective programs.

MPOs

The MPOs in Utah have been very motivated to integrate safety into their planning process. UDOT has tried to use several different tools to accomplish this goal, with mixed results. During the past couple of years we have made significant headway by introducing our MPO partners to the usRAP safety model and showing how it can be used as a regional safety planning tool. During this past year we worked with the Cache MPO to implement the model on the non-State federal aid system there. This effort was very well-received and we are hopeful that good infrastructure projects will ultimately flow from it. Currently we are working with Mountainland MPO to implement the usRAP model on non-State federal aid roads in Utah, Wasatch, and Summit Counties.

SHSP Partners

SHSP Partners are actively involved in working groups for each of our SHSP emphasis areas.

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

No

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.

UDOT focuses its infrastructure improvements primarily on the Roadway Departure Crashes, Drowsy Driving, Distracted Driving, and Intersection Safety emphasis areas. The other emphasis areas (Public Outreach and Education, Use of Safety Restraints, Impaired Driving, Aggressive Driving, Pedestrian Safety, Teen Driving Safety, Motorcycle Safety, and Speed Management) are addressed primarily through non-infrastructure efforts such as education, media, and enforcement campaigns. UDOT partners with other state, local, and federal agencies to implement the non-infrastructure components of the SHSP. The FAST Act removed UDOT's ability to fund education and enforcement efforts with HSIP, so we have been using state funds to continue those programs.

A "Zero Fatalities" goal (ut.zerofatalities.com) is also part of the SHSP. UDOT began displaying weekly safety messages on variable message signs during the summer of 2015 to encourage safe driving behaviors such as seat belt use.

Program Methodology

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:
170906_HSIP Manual_FINAL.pdf

Select the programs that are administered under the HSIP.

Low-Cost Spot Improvements
Other-Reduce Serious and Fatal Injuries

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

Program:	Low-Cost Spot Improvements
Date of Program Methodology:	9/7/2017

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]

2017 Utah Highway Safety Improvement Program

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic Volume Lane miles	Median width Horizontal curvature Functional classification Roadside features

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

Crash frequency
Relative severity index
Crash rate
Excess proportions of specific crash types
Other-Hierarchical Bayesian Model

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?

No

Describe the methodology used to identify local road projects as part of this program.
We accept safety project applications from local government agencies that submit them through their respective region offices. We are also working on applying the usRAP model to federal aid routes in counties across the state. In addition, we conduct hot spot analysis on all public roads statewide to identify other opportunities on local roads.

How are projects under this program advanced for implementation?

Competitive application process
Other-usRAP model outputs

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).

Relative Weight in Scoring

Ranking based on B/C : 20
Available funding : 20

2017 Utah Highway Safety Improvement Program
Ranking based on net benefit : 20

Other-Time to Completion : 20
Other-Coordination with other Projects : 20

Total Relative Weight : 100

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

Program:	Other-Reduce Serious and Fatal Injuries
Date of Program Methodology:	3/5/2014

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]

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic Volume Lane miles	Median width Horizontal curvature Functional classification Roadside features

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

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types
Other-Hierarchical Bayesian
Other-usRAP model

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?

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No

Describe the methodology used to identify local road projects as part of this program.
We accept safety project applications from local government agencies that submit them through their respective region offices. We are also working on applying the usRAP systemic model to federal aid routes in counties across the state.

How are projects under this program advanced for implementation?

Competitive application process
Other-usRAP model outputs

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).

Relative Weight in Scoring

Ranking based on B/C : 20
Available funding : 20
Ranking based on net benefit : 20

Other-Timeline to completion : 20
Other-Coordination with other projects : 20

Total Relative Weight : 100

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

What percentage of HSIP funds address systemic improvements?

20

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

Cable Median Barriers
Rumble Strips
Pavement/Shoulder Widening
Install/Improve Signing
Upgrade Guard Rails
Add/Upgrade/Modify/Remove Traffic Signal
Other-Structure Protection on Interstate Freeways

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

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

Engineering Study
Road Safety Assessment
Crash data analysis
Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)

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

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

Connected and autonomous vehicles are identified as a Special Safety Area in our SHSP. We do not have a committed program of HSIP funds being used for V2I technologies. However, we do consider project applications submitted by our region offices. If an application for V2I or other ITS-related technologies is submitted and is worthy of funding, we are able to program the project. We have funded (or are currently funding) ITS technologies such as variable speed limit signing and wrong-way driving sign arrays.

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.

All construction projects that are funded with HSIP funds are assessed using the following procedures from the HSM:

1. Preliminary analysis is done with crash history and CMFs following procedures of Part D from the HSM.
2. If a more technical analysis is warranted, the predictive method of Part C is used.
3. Systemic projects are evaluated using SPFs within the usRAP model.
4. Methods in Chapter 4 are used to prioritize potential locations of systemic treatments such as rumble strips.
5. Utah generated (and continues to maintain) a list of standard accepted mitigation measures from Chapters 5 and 6 and information from the CMF Clearinghouse.
6. Benefit-cost ratios are calculated based on guidance from Chapter 7. No HSIP funds are applied to projects that have a benefit cost ratio less than 1 unless the project can be justified systemically.
7. All projects are prioritized based on the estimated number of severe crashes reduced and by highest benefit cost ratio.

The Bayesian statistical methods outlined in the HSM are also used extensively in a modeling partnership with Brigham Young University.

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.

Our HSIP Manual has been updated to reflect the latest transportation bill and federal rulemaking.

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.

Non-Infrastructure Projects

UDOT uses some of its HSIP funding for eligible non-infrastructure projects that aid roadway safety efforts. Such projects include:

Integrating Safety Into Planning
UDOT Traffic & Safety Division personnel work internally with other UDOT divisions to integrate safety planning into their core processes. UDOT also works with MPOs and other safety partners across the state to supply them with needed data and tools so they can better integrate safety into their internal planning processes. UDOT continues to partner with the MPOs in order to provide them with tools to incorporate safety into their transportation planning efforts. Integrating safety into UDOT and MPO planning processes helps all agencies proactively address safety.

Improving Crash Data Analysis
HSIP funding is also used to improve UDOT's crash database. The ability to accurately locate crashes and understand crash characteristics is vital to programming HSIP funds.

University & Consultant Support
The Traffic & Safety Division uses HSIP funding to contract with universities and consultants who assist with various HSIP functions. The functions include items such as program management, project management, crash data mapping, statistical analysis, safety modeling, report preparation, SPF/CMF development, training, and HSM analysis.

UDOT previously used HSIP funding for education and enforcement efforts that fall within the State's Zero Fatalities effort umbrella. With passage of the FAST Act that led to ineligibility of those activities, UDOT has been using State funds to continue those efforts.

High Risk Rural Road Special Rule

UDOT was subject to the HRRR Special Rule during FY17 (and will also be for FY18). To identify HRRR-eligible projects we first look at the roads that qualify for application of the funding. Then, we look for systemic improvements such as warning signs, shoulder treatments, barrier/guardrail, and rumble strips that could be applied to make the roads safer. It is generally difficult to find crash hot spots on these roads due to the lower volumes and crash concentrations so we rely heavily on systemic approaches to finding locations where the money can be wisely spent.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Federal 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)	$24,057,912	$23,243,132	96.61%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$1,331,318	$1,331,318	100%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$31,162	$31,162	100%
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	$3,798,331	$3,798,331	100%
Totals	$29,218,723	$28,403,943	97.21%

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

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

$1,929,851

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

$1,917,562

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

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

2017 Utah Highway Safety Improvement Program
$5,438,287

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

$5,438,287

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.

Over the past two years we have made great strides toward getting our HSIP funds obligated by the fiscal year end. This year we have a much lower balance of unobligated funds left over than we ever have in the past. The principal remaining challenges we face are:

- Reprogramming funds that return from closed projects (or from projects where scope changes reduce the budget) to other projects where they can be spent.
- Delays in project delivery timelines that prevent projects from advertising in the fiscal year originally intended.

There are several methods we are using to combat these challenges. The first is overprogramming, which means that we have started planning for more projects than we have budget for. Experience has taught us that there will always be some projects that ultimately get cancelled and others that return part of their budget, so the only way to have all of our funds obligated at the end of the year is to plan for these occurrences. In the event that we run out of HSIP funds to obligate (which has not happened to date), we have the option to delay advertisement to the following fiscal year or use some state funds as a temporary bridge across the fiscal year boundary.

This year's relatively low unobligated balance is evidence that these methods have been working. We will continually strive to get the balance as close to zero as possible.

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

2017 Utah Highway Safety Improvement Program
Yes

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

Project delivery is administered through the UDOT region offices. We are working closely with our region counterparts to make sure safety projects are addressed in a timely manner. After projects are programmed, project managers from the applicable UDOT region offices are assigned to each project. These project managers then shepherd the projects through UDOT's standard federal environmental, design, and construction processes.

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**
PIN 12217 (T&S Pgm Mgmt Support)	Non-infrastructure	Transportation safety planning	1	Numbers	$2200000	$2200000	HSIP (23 U.S.C. 148)	n/a	0	0	n/a	Other	n/a	n/a
PIN 12640 (I-215 Structure Protection)	Roadside	Barrier - concrete	1	Locations	$78000	$78000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Interstate	74,000	70	State Highway Agency	Systemic	Roadway Departure	Barrier
PIN 13385 (US-40 Passing Ln & Ctr Turn Ln)	Roadway	Install / remove / modify passing zone	2.2	Miles	$1986460	$2000000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other Freeways and Expressways	8,085	60	State Highway Agency	Spot	Lane Departure	Passing Lane
PIN 13394 (US-40 Passing Lane)	Roadway	Install / remove / modify passing zone	3.9	Miles	$2486460	$2500000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other Freeways and Expressways	5,740	65	State Highway Agency	Spot	Lane Departure	Passing Lane
PIN 13486 (I-15 & I-84 Structure Protection)	Roadside	Barrier - concrete	161	Miles	$1000000	$1000000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Systemic	Roadway Departure	Barrier
PIN 14210 (SR-167 Motorcycle Safe Guardrail)	Roadside	Barrier- metal	8.7	Miles	$300000	$300000	HSIP (23 U.S.C. 148)	Rural Major Collector	3,100	55	State Highway Agency	Spot	Roadway Departure	Barrier
PIN 14426 (Var Rtes: No-Pass Pennant Signing)	Roadway signs and traffic control	Roadway signs (including post) - new or updated	300	Miles	$250000	$250000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0	0	State Highway Agency	Systemic	Lane Departure	No-Pass Zone Signs
PIN 14427 (SR-56 Int Imps)	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Miles	$700000	$700000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,435	65	State Highway Agency	Spot	Intersections	Turn Lanes
PIN 14443 (I-70 Median Cable Barrier)	Roadside	Barrier - cable	1.8	Miles	$1000000	$1000000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	3,700	75	State Highway Agency	Systemic	Roadway Departure	Barrier
PIN 14444 (SR-12 Barrier & Signage)	Roadside	Barrier- metal	125	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	660	40	State Highway Agency	Spot	Roadway Departure	Barrier
PIN 14446 (I-15 Shoulder Imps)	Shoulder treatments	Shoulder grading	1	Miles	$500000	$500000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	14,330	80	State Highway Agency	Spot	Roadway Departure	Slope flattening
PIN 14448 (Var Rtes: Rumble Strips)	Roadway	Rumble strips - edge or shoulder	222	Miles	$500000	$500000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0	0	State Highway Agency	Systemic	Roadway Departure	Rumble Strips
PIN 14458 (SR-36 Median Barrier)	Roadside	Barrier - concrete	3.6	Miles	$1404435	$1404435	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other Freeways and Expressways	20,820	60	State Highway Agency	Spot	Roadway Departure	Barrier
PIN 14459 (Var Rtes: Structure Protection)	Roadside	Barrier - concrete	6	Locations	$2600000	$2600000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Systemic	Roadway Departure	Barrier
PIN 14466 (UTRAC Research Studies)	Non-infrastructure	Non-infrastructure - other	1	Numbers	$140000	$140000	HSIP (23 U.S.C. 148)	n/a	0	0	n/a	Other	n/a	Research

													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**
PIN 14468 (Crash Database Dev)	Non-infrastructure	Data/traffic records	1	Numbers	$225000	$225000	HSIP (23 U.S.C. 148)	n/a	0	0	n/a	Other	Data	Database development
PIN 14643 (Automate VSL Decision System)	Non-infrastructure	Non-infrastructure - other	1	Numbers	$50000	$150000	State and Local Funds	Rural Principal Arterial - Interstate	0	0	n/a	Other	Lane Departure	Speed Related
PIN 15157 (US-91/SR-252 Int Imps)	Intersection traffic control	Systemic improvements - signal-controlled	1	Intersections	$2350000	$2375000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other Freeways and Expressways	22,000	55	State Highway Agency	Spot	Intersections	New traffic signal
PIN 15231 (Var Rtes: TX Turndown & Grdrl Repl)	Roadside	Barrier- metal	1.62	Miles	$730222	$803222	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	0	0	State Highway Agency	Systemic	Roadway Departure	Barrier
PIN 15280 (I-84 Median Cable Barrier)	Roadside	Barrier - cable	40	Miles	$1500000	$1500000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	9,160	80	State Highway Agency	Systemic	Roadway Departure	Barrier
PIN 15372 (Interchange Ramp MP Signs)	Roadway signs and traffic control	Roadway signs and traffic control - other	6	Ramps	$860000	$860000	HSIP (23 U.S.C. 148)	freeway ramps	0	0	State Highway Agency	Systemic	Lane Departure	Ramp milepost signing
PIN 15450 (Pvmt Data Collection)	Non-infrastructure	Data/traffic records	7200	Miles	$400000	$2400000	State and Local Funds	n/a	0	0	n/a	Other	Data	Data collection
PIN 15531 (SR-30 Rumble Strips)	Roadway	Rumble strips - edge or shoulder	15	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural Major Collector	365	65	State Highway Agency	Systemic	Roadway Departure	Rumble Strips
PIN 15598 (Arterial Safety Concepts)	Non-infrastructure	Transportation safety planning	1	Numbers	$201961	$201961	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other	0	0	n/a	Other	Intersections	Study
PIN 15690 (Freeway Speed & Safety Analysis)	Non-infrastructure	Transportation safety planning	1	Numbers	$120000	$120000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Other	Lane Departure	Study
PIN 15809 (UDOT Speed Data Calibration)	Non-infrastructure	Data/traffic records	1	Numbers	$45000	$45000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Other	Data	Data calibration
PIN 15810 (I-15 Shldr Mod Sfty Analysis)	Non-infrastructure	Transportation safety planning	1	Numbers	$20000	$20000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Interstate	0	70	State Highway Agency	Spot	Roadway Departure	Traffic modeling

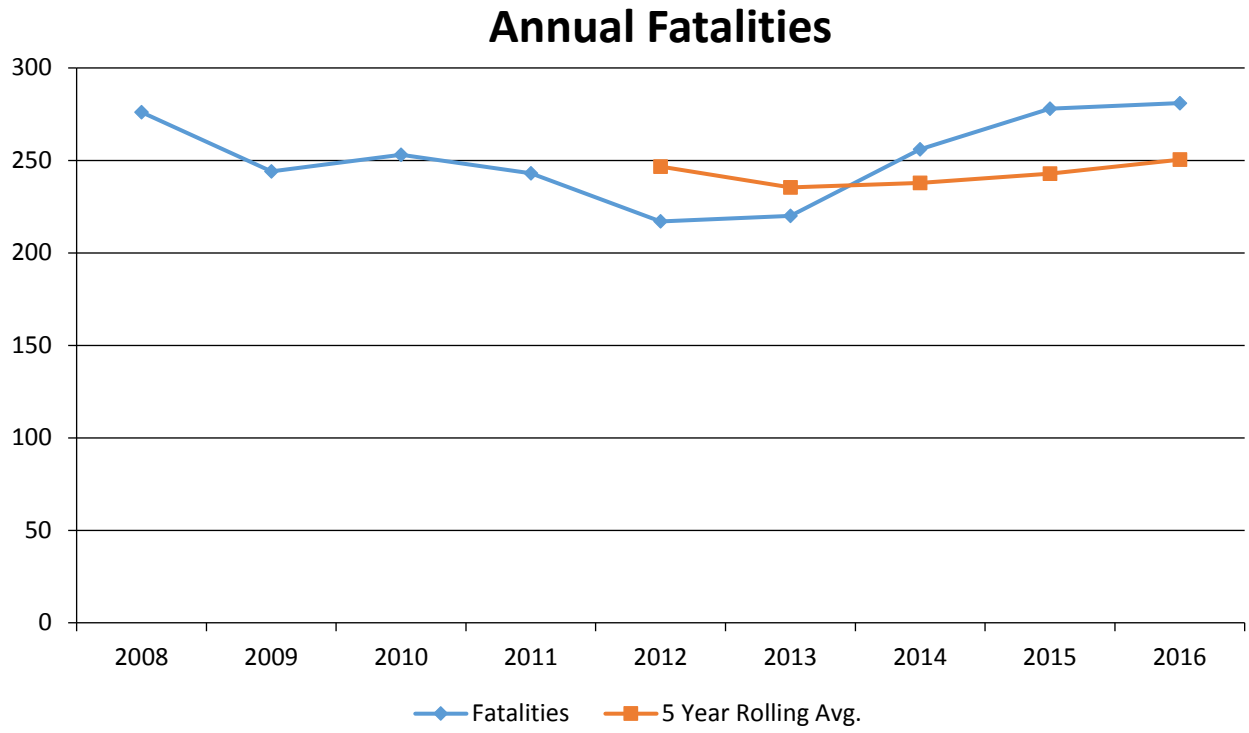
Enter additional comments here to clarify your response for this question or add supporting information.

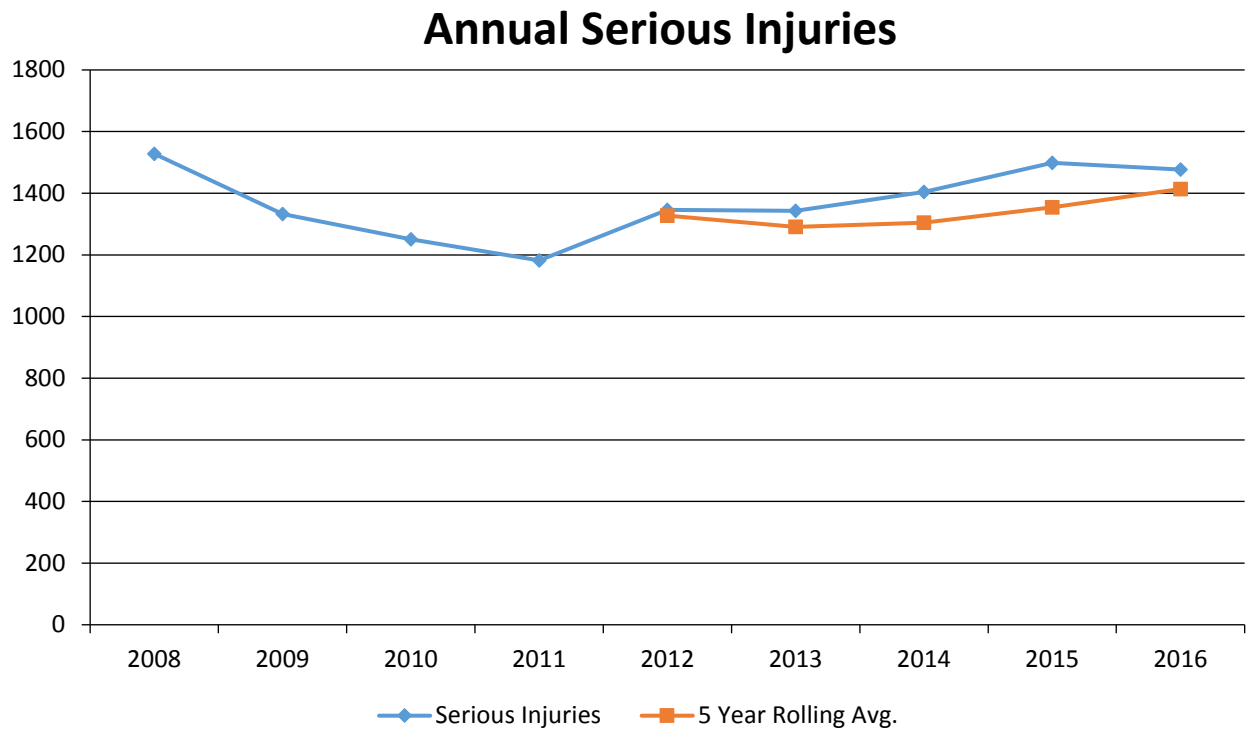
Safety Performance

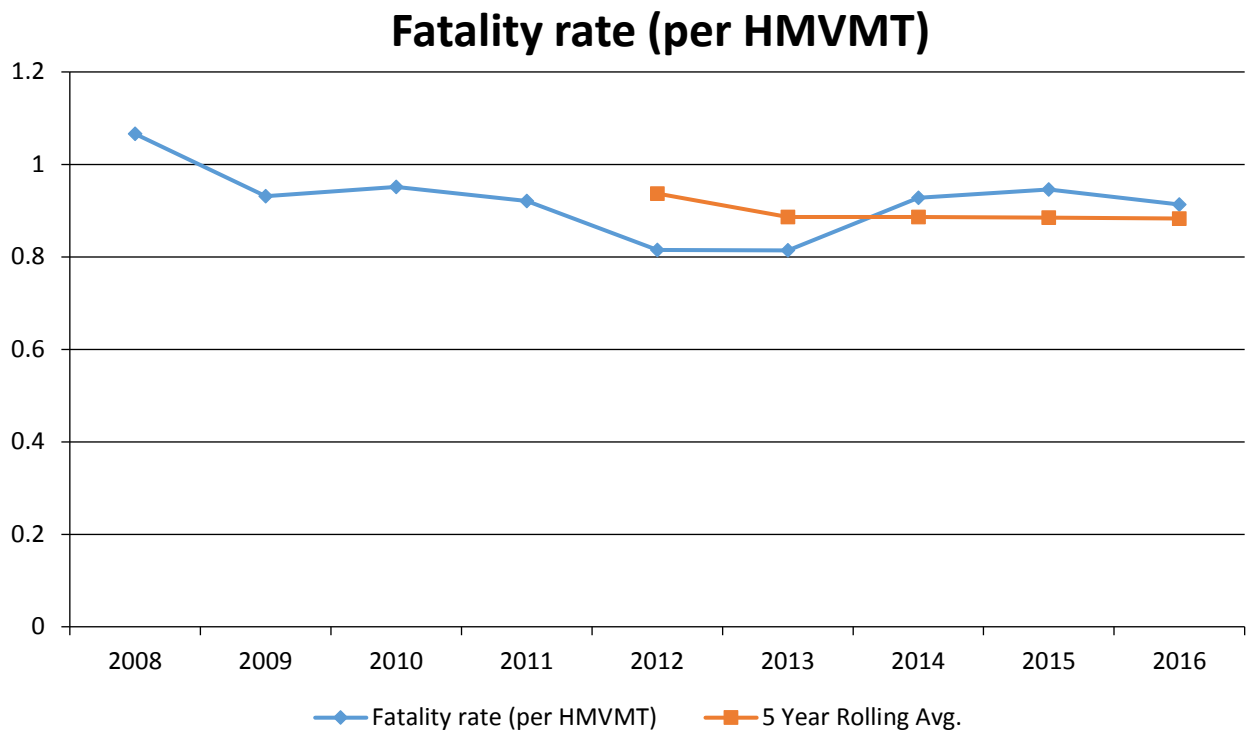
General Highway Safety Trends

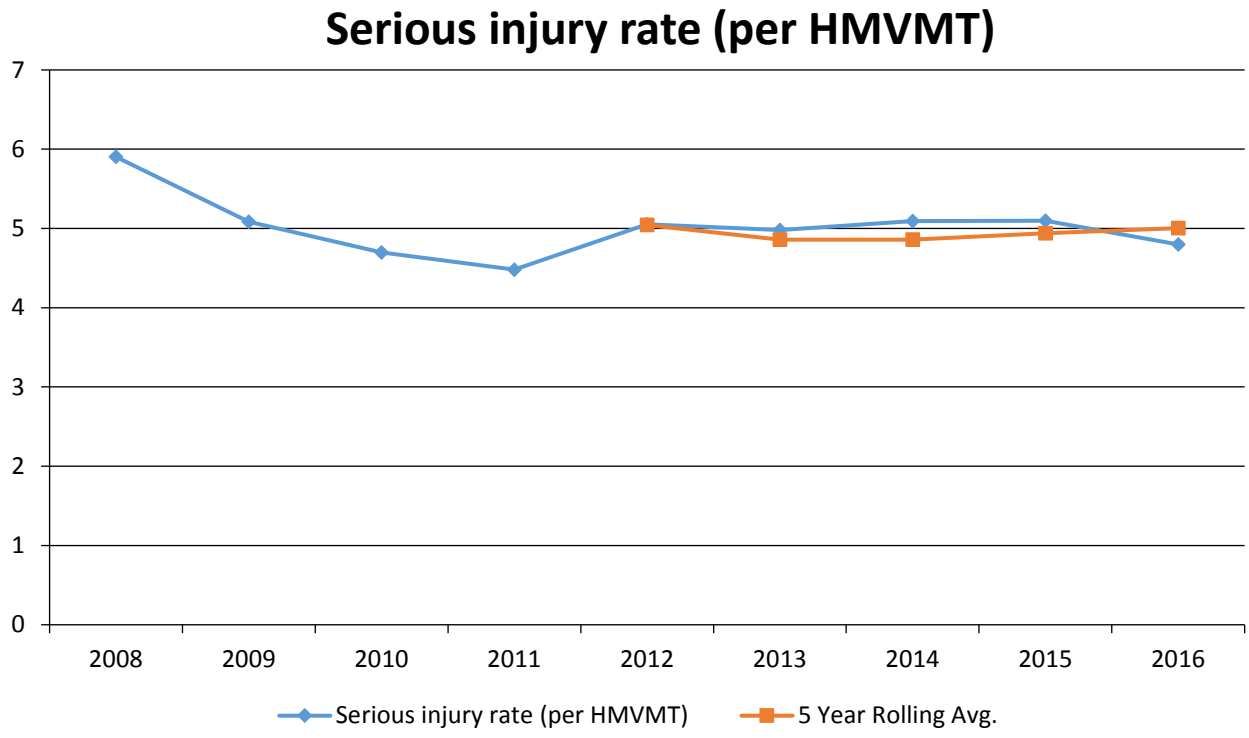
Present data showing the general highway safety trends in the State for the past five years.

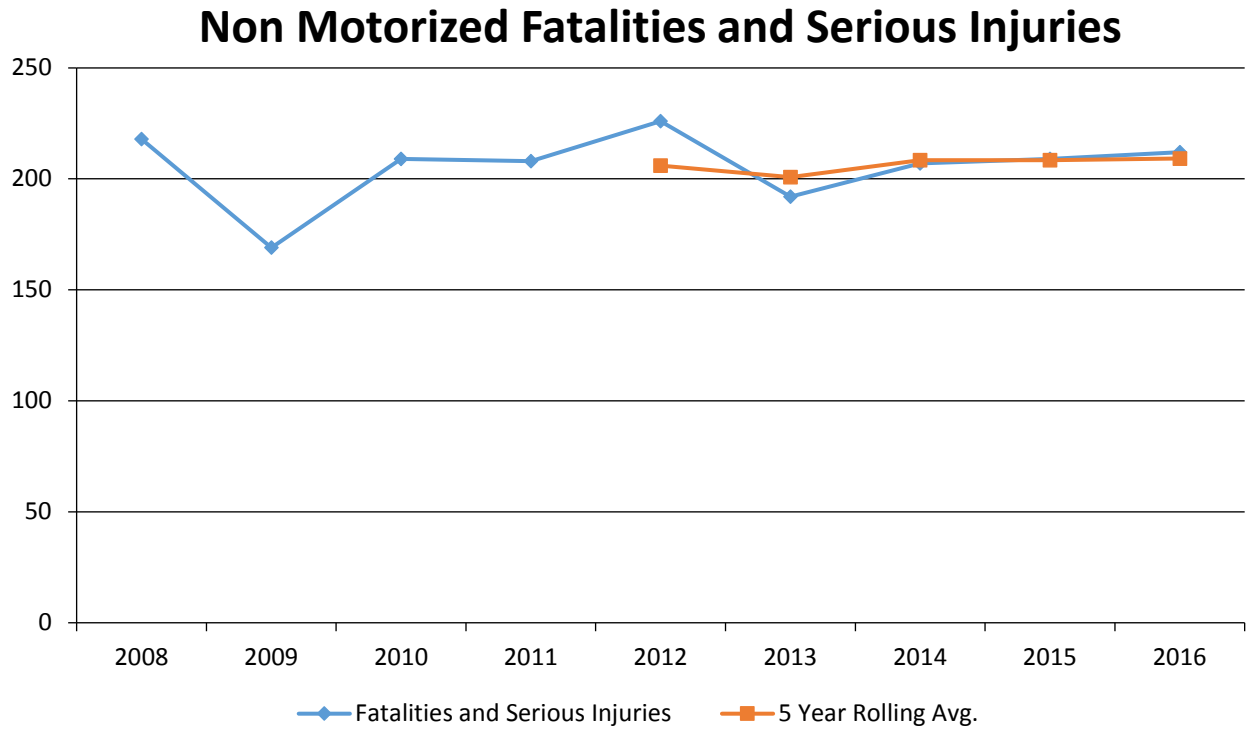
PERFORMANCE MEASURES	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	276	244	253	243	217	220	256	278	281
Serious Injuries	1,528	1,333	1,250	1,182	1,346	1,343	1,404	1,499	1,477
Fatality rate (per HMVMT)	1.066	0.931	0.951	0.921	0.815	0.814	0.928	0.946	0.913
Serious injury rate (per HMVMT)	5.903	5.084	4.696	4.481	5.053	4.979	5.092	5.099	4.799
Number non-motorized fatalities	38	25	35	37	34	36	46	54	44
Number of non-motorized serious injuries	180	144	174	171	192	156	161	155	168


Annual Fatalities
300
250
200
150
100
50
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
1800
1600
1400
1200
1000
800
600
400
200
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
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.

Describe fatality data source.

State Motor Vehicle Crash Database

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

We ensure that the State database matches FARS.

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

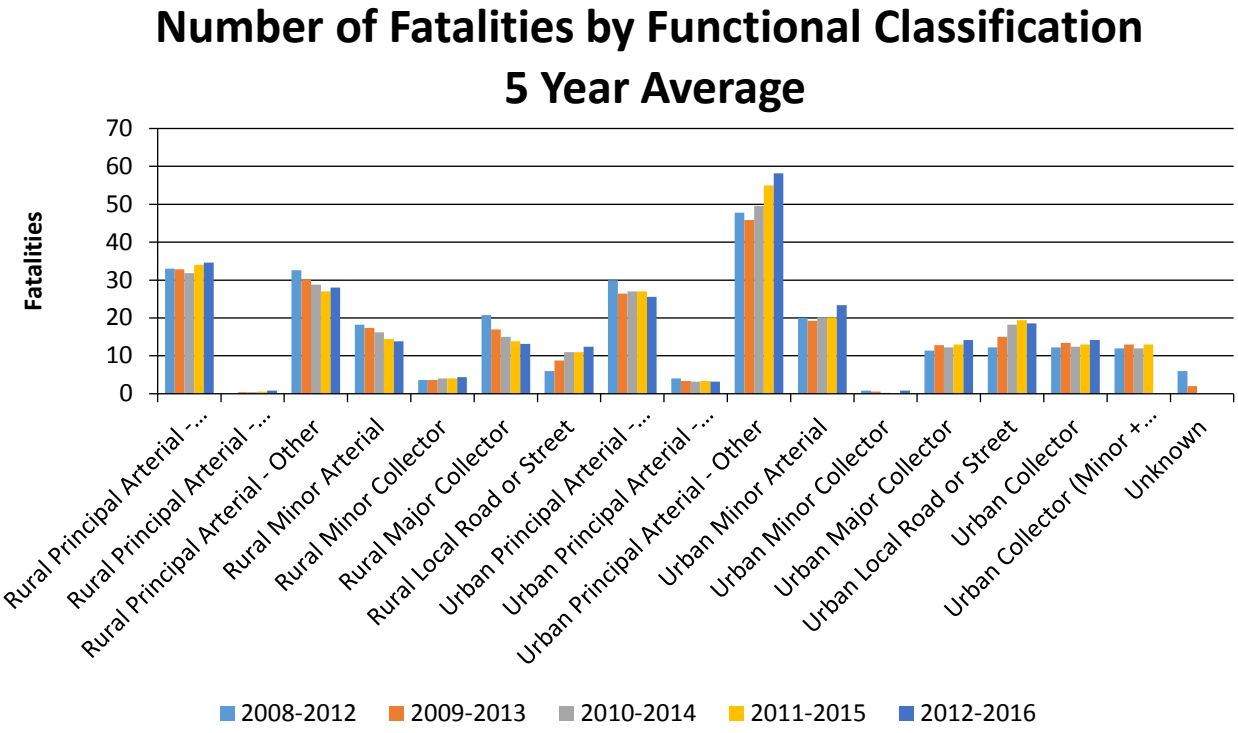
Year 2016

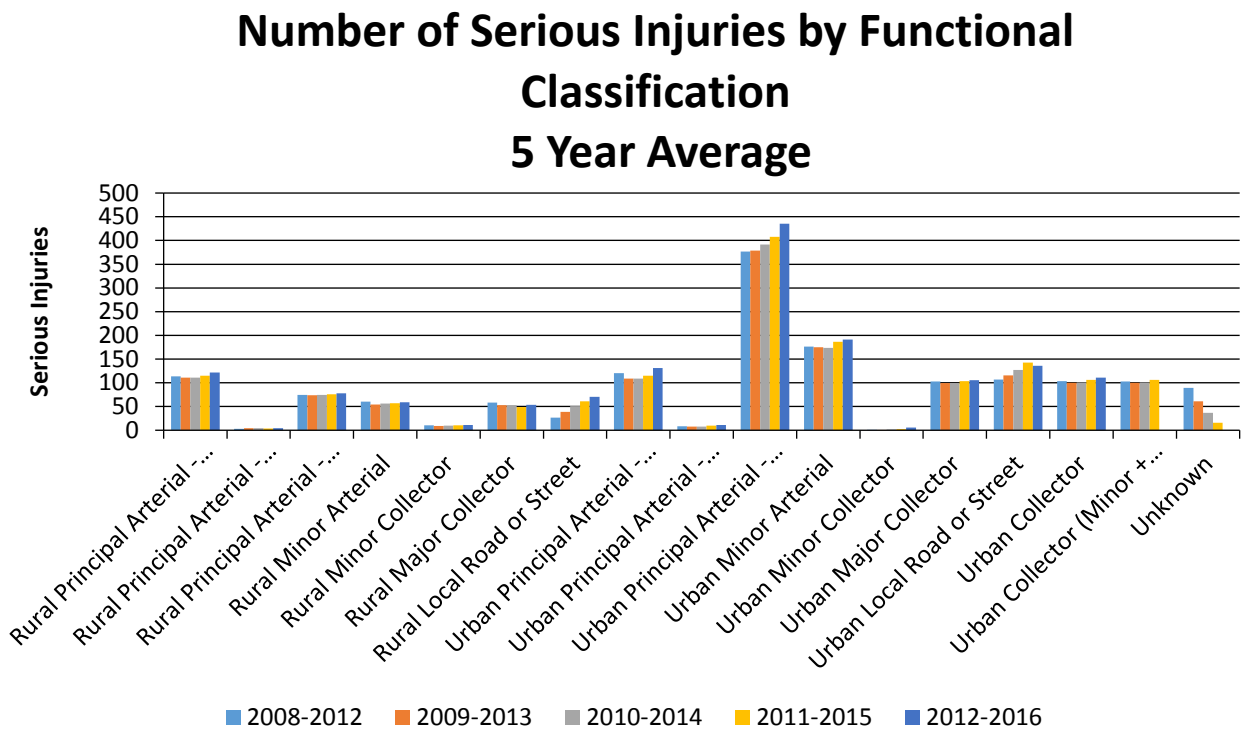
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial - Interstate	34.6	121.6	1.14	4.01
Rural Principal Arterial - Other Freeways and Expressways	0.8	4.2	0	0
Rural Principal Arterial - Other	28	77.8	1.6	4.46
Rural Minor Arterial	13.8	59.2	1.91	8.17

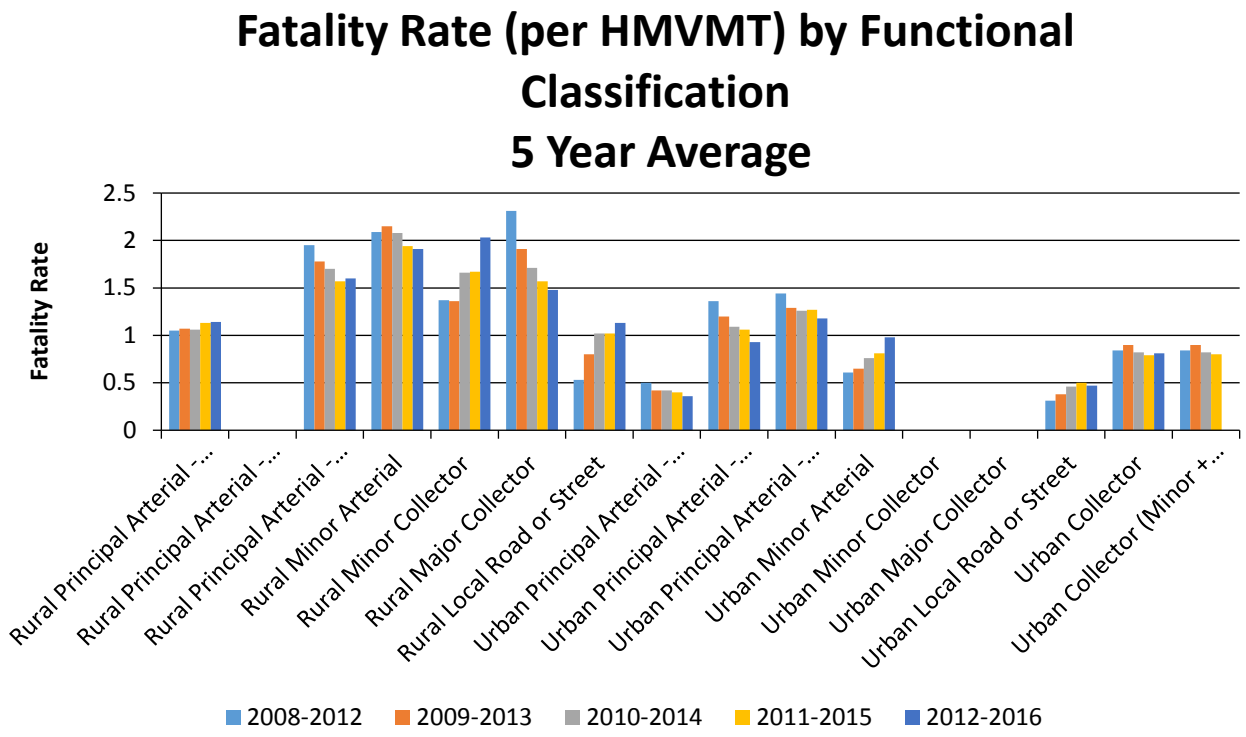
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Collector	4.4	11	2.03	5.03
Rural Major Collector	13.2	53.4	1.48	6.07
Rural Local Road or Street	12.4	70.6	1.13	6.34
Urban Principal Arterial - Interstate	25.6	131	0.36	1.83
Urban Principal Arterial - Other Freeways and Expressways	3.2	11.2	0.93	3.45
Urban Principal Arterial - Other	58.2	435.6	1.18	8.87
Urban Minor Arterial	23.4	191	0.98	8.02
Urban Minor Collector	0.8	5.6	0	0
Urban Major Collector	14.2	105.6	0	0
Urban Local Road or Street	18.6	136	0.47	3.49
Urban Collector	14.2	111.2	0.81	6.33

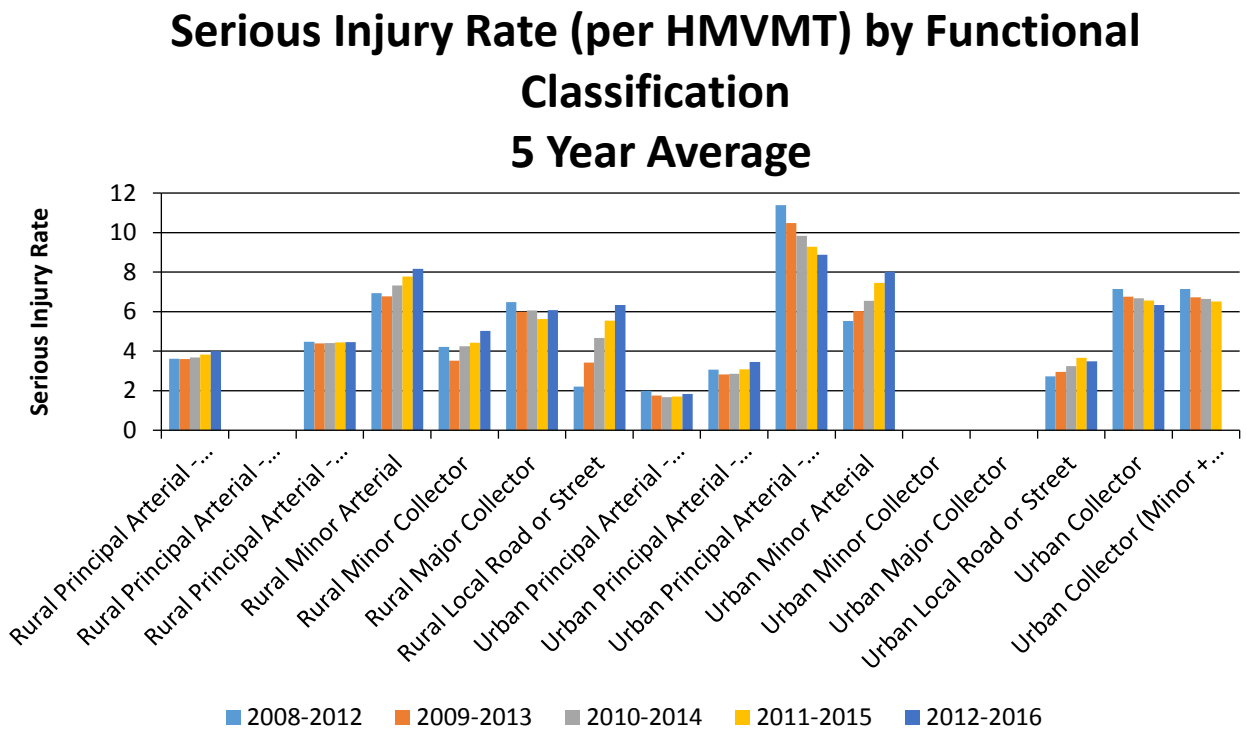
Year 2016

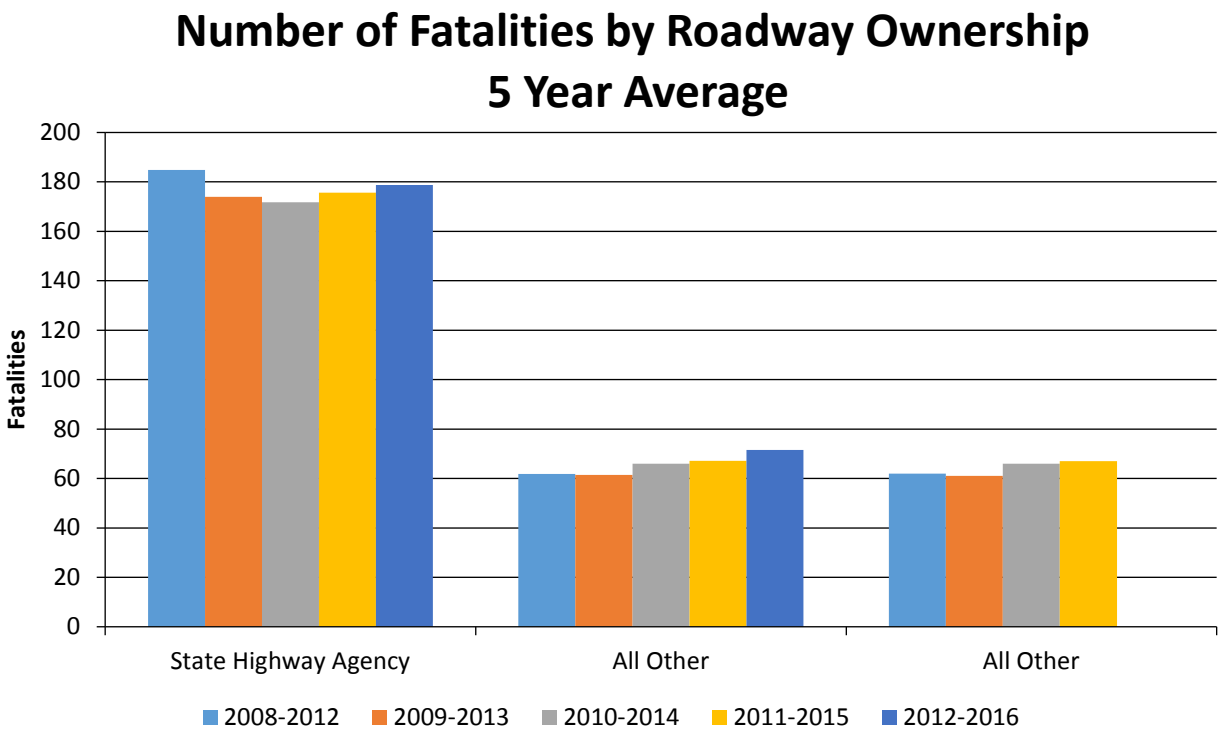
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	178.8	919.6	0.94	4.86
County Highway Agency				
Town or Township Highway Agency				
City of Municipal Highway Agency				
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				
All Other	71.6	494.6	0.76	5.29

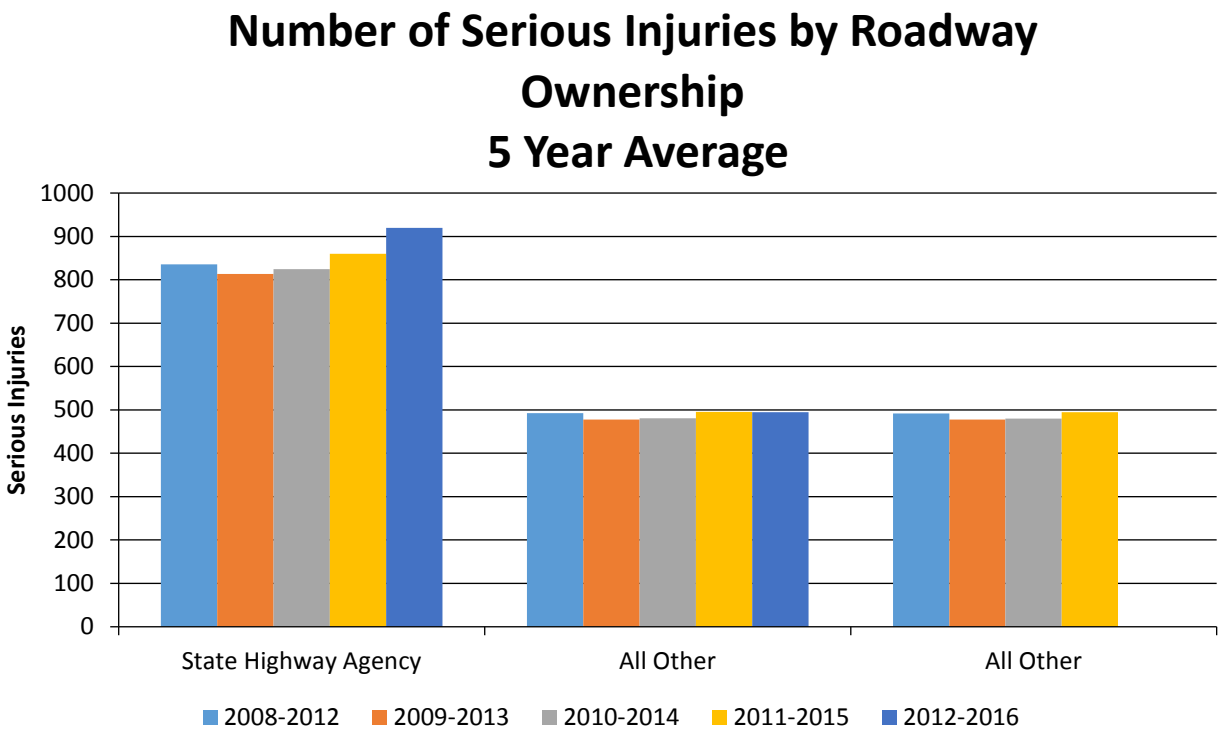

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
70
60
50
40
30
20
10
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Urban Collector
Urban Collector (Minor +...
Unknown
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

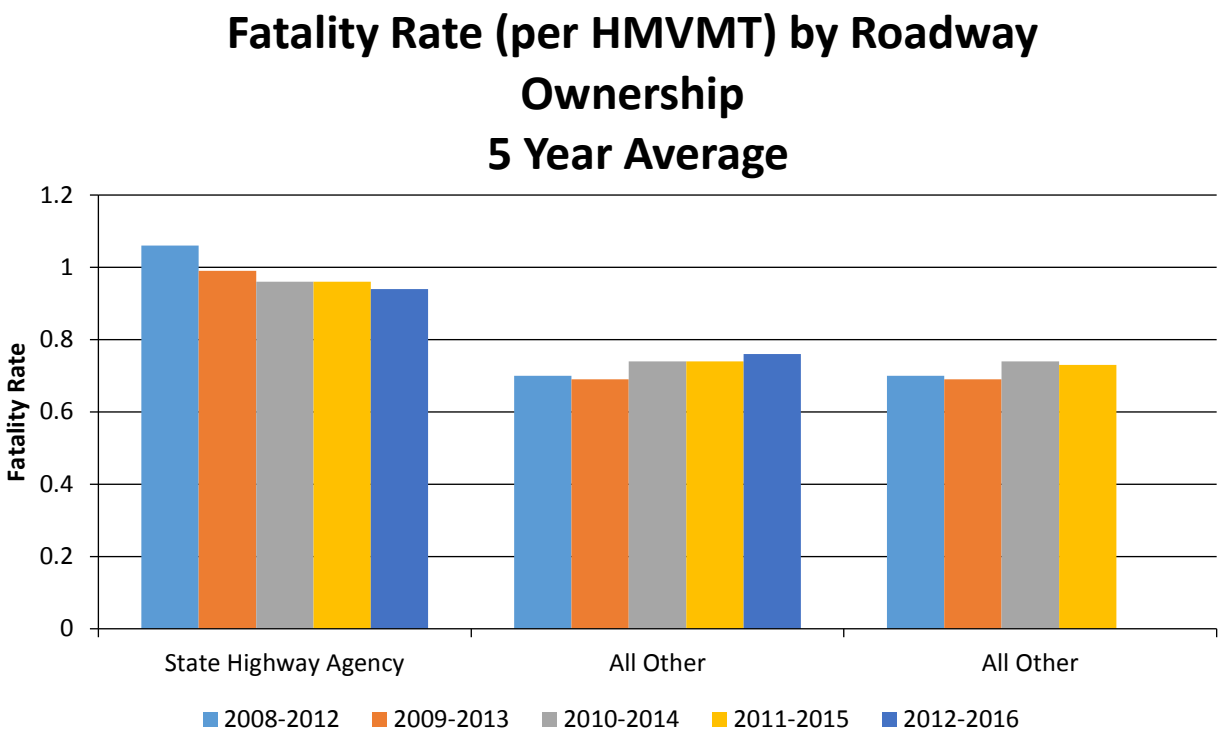

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
500
450
400
350
300
250
200
150
100
50
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Urban Collector
Urban Collector (Minor +...
Unknown
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

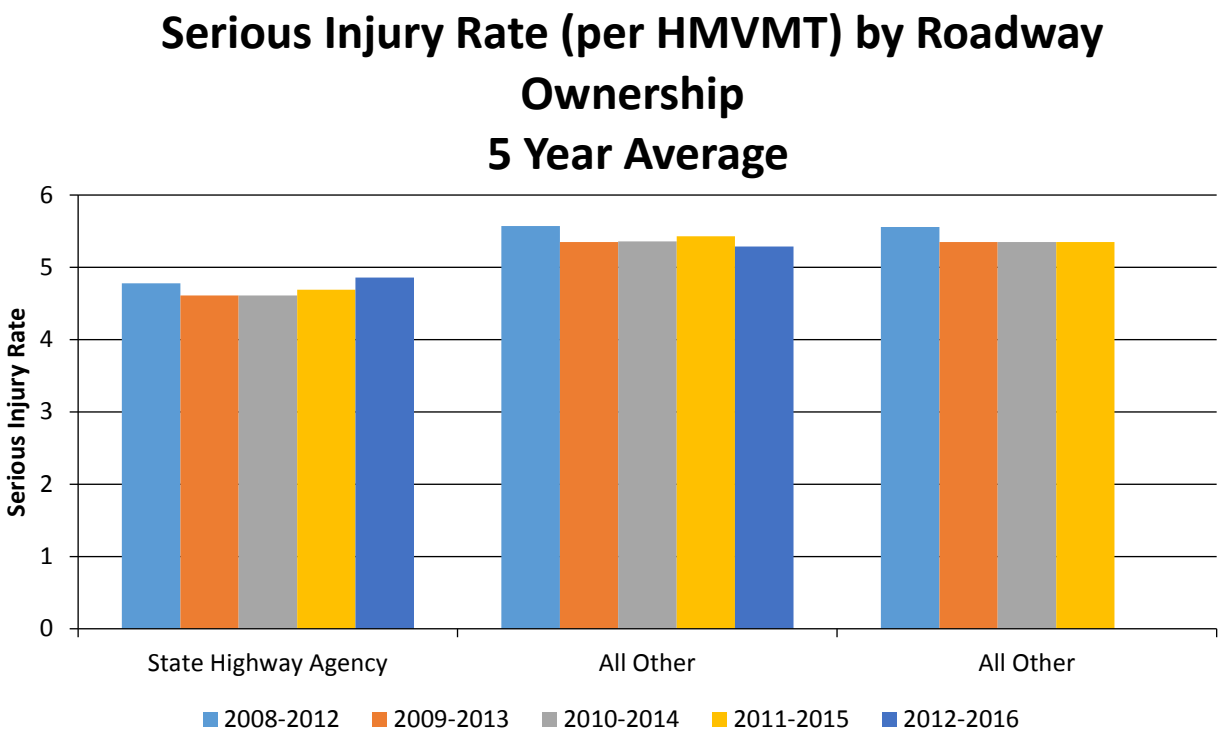

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
2.5
2
1.5
1
0.5
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Urban Collector
Urban Collector (Minor +...
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
12
10
8
6
4
2
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Urban Collector
Urban Collector (Minor +...
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
All Other
All Other
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
1000
900
800
700
600
500
400
300
200
100
0
State Highway Agency
All Other
All Other
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
All Other
All Other
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.

There are some functional classifications (e.g. urban minor and major collectors) for which 5-year rolling averages cannot be calculated because UDOT did not collect HMVMT data for all of the necessary classifications. We lumped the urban collectors into a single category for reason. We do now collect all functional classification HMVMT data so in a few years we'll have complete data that will enable us to report on all classifications.

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 2018 Targets *

Number of Fatalities	271.0

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

Step 1: Fatalities and Serious Injuries were reduced by 2.5% per year for 2017 and

2018 to reflect the goal set in our SHSP. Step 2: The 5-year rolling averages were computed using the figures calculated in Step 1 above. The 2014-2018 value for each performance measure is our 2018 target.

Number of Serious Injuries 1445.0

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

Step 1: Fatalities and Serious Injuries were reduced by 2.5% per year for 2017 and 2018 to reflect the goal set in our SHSP. Step 2: The 5-year rolling averages were computed using the figures calculated in Step 1 above. The 2014-2018 value for each performance measure is our 2018 target.

Fatality Rate 0.910

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

Step 1: Fatalities and Serious Injuries were reduced by 2.5% per year for 2017 and 2018 to reflect the goal set in our SHSP. Step 2: VMT, which can be highly variable from year-to-year, was held constant from our 2016 estimate for 2017 and 2018. Step 3: Rates were estimated using the figures calculated in Step 1 and Step 2 above and also reflect a 2.5% reduction per year. Step 4: The 5-year rolling averages were computed using the figures calculated in Step 1 thru Step 3 above. The 2014-2018 value for each performance measure is our 2018 target.

Serious Injury Rate 4.870

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

Step 1: Fatalities and Serious Injuries were reduced by 2.5% per year for 2017 and 2018 to reflect the goal set in our SHSP. Step 2: VMT, which can be highly variable from year-to-year, was held constant from our 2016 estimate for 2017 and 2018. Step 3: Rates were estimated using the figures calculated in Step 1 and Step 2 above and also reflect a 2.5% reduction per year. Step 4: The 5-year rolling averages were computed using the figures calculated in Step 1 thru Step 3 above. The 2014-2018 value for each performance measure is our 2018 target.

Total Number of Non-Motorized Fatalities and Serious Injuries 208.0

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

Step 1: Fatalities and Serious Injuries were reduced by 2.5% per year for 2017 and 2018 to reflect the goal set in our SHSP. Step 2: The 5-year rolling averages were computed using the figures calculated in Step 1 above. The 2014-2018 value for each performance measure is our 2018 target.

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

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

We held a series of meetings with our MPO and SHSO partners to coordinate and gain consensus on our safety performance targets.

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?

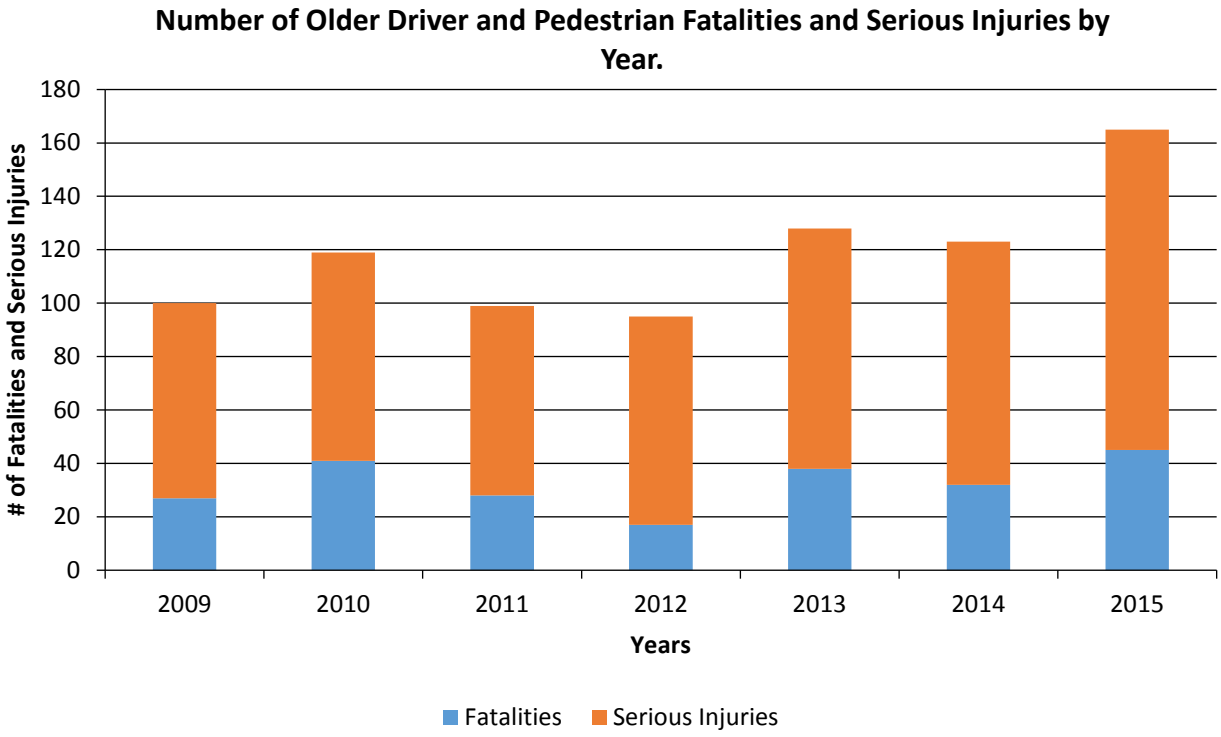
Yes

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

The HRRR special rule applies to us for FY17. We assume that it will most likely also apply to us in FY18. We were able to obligate all of the special rule funds in FY17 and have projects lined up to also obligate the FY18 special rule funds if we end up being subject to the rule next year.

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

PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015
Number of Older Driver and Pedestrian Fatalities	27	41	28	17	38	32	45
Number of Older Driver and Pedestrian Serious Injuries	73	78	71	78	90	91	120



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?

Benefit/Cost Ratio
Other-Reduction of severe crashes

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.

We have two primary measures of effectiveness for the HSIP. The first is benefit-cost ratio for infrastructure projects. The second is reduction of severe crashes.

Benefit-Cost Ratio

In this year's report, we submitted before/after crash data for 11 projects that finished construction during the 2013 calendar year. We compared three years of crash data prior to each project with three years afterward. The majority of projects exhibited positive B/C ratios and when aggregated, the combined B/C ratio statewide was 9.43. This statistic shows that Utah is doing an overall good job of identifying project locations and mitigation measures that are helping to prevent fatalities and injuries.

Reduction of Severe Crashes

2016 was the fourth consecutive year in which fatalities rose relative to the previous year (281 compared to 278 in 2015). However, serious injuries dropped from 1499 in 2015 to 1477 in 2016. This means that overall severe crashes decreased by 19 from 2015 to 2016. 5-year rolling averages for both fatalities and serious injuries have risen slightly each year for the past three years. The fatal and serious injury rates both decreased slightly for 2016 relative to 2015. The rolling 5-year average for fatality rate has held constant for the past 4 years, while the 5-year average for serious injuries has been rising slightly each year since 2013.

The severe crash trends show that we still have work to do to reduce fatalities and serious injuries. We are experiencing significant increases in vehicle-miles traveled each year and that is part of our challenge since exposure is a large factor in crash risk. However, we remain committed to finding ways to apply our HSIP resources to the best locations where improvements give us the best chance of reducing fatal and serious injury crashes.

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

HSIP Obligations

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

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

No

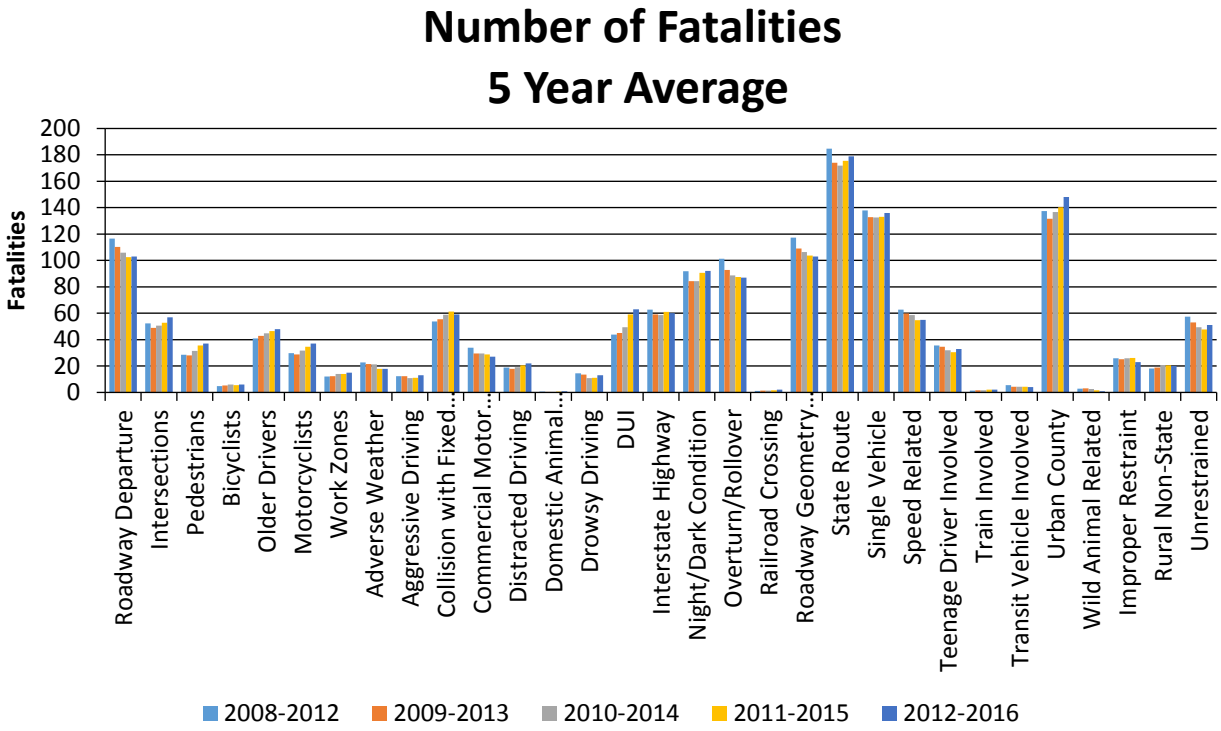
Effectiveness of Groupings or Similar Types of Improvements

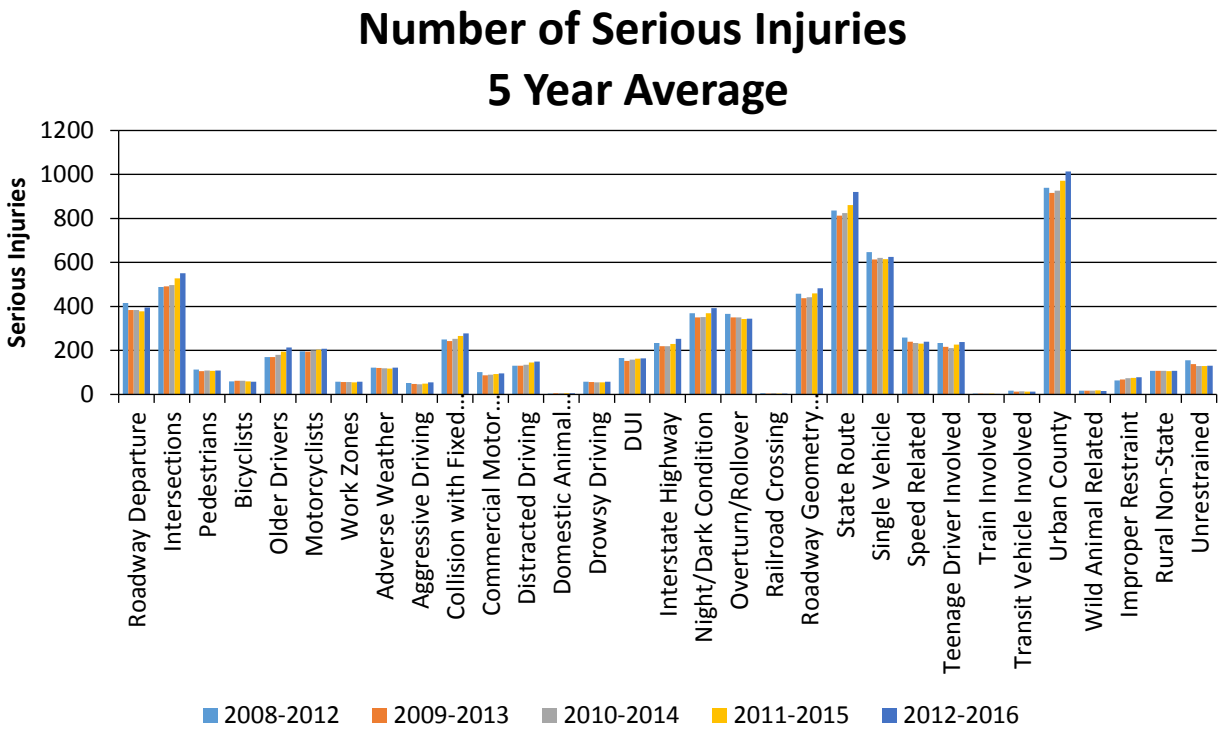
Present and describe trends in SHSP emphasis area performance measures.

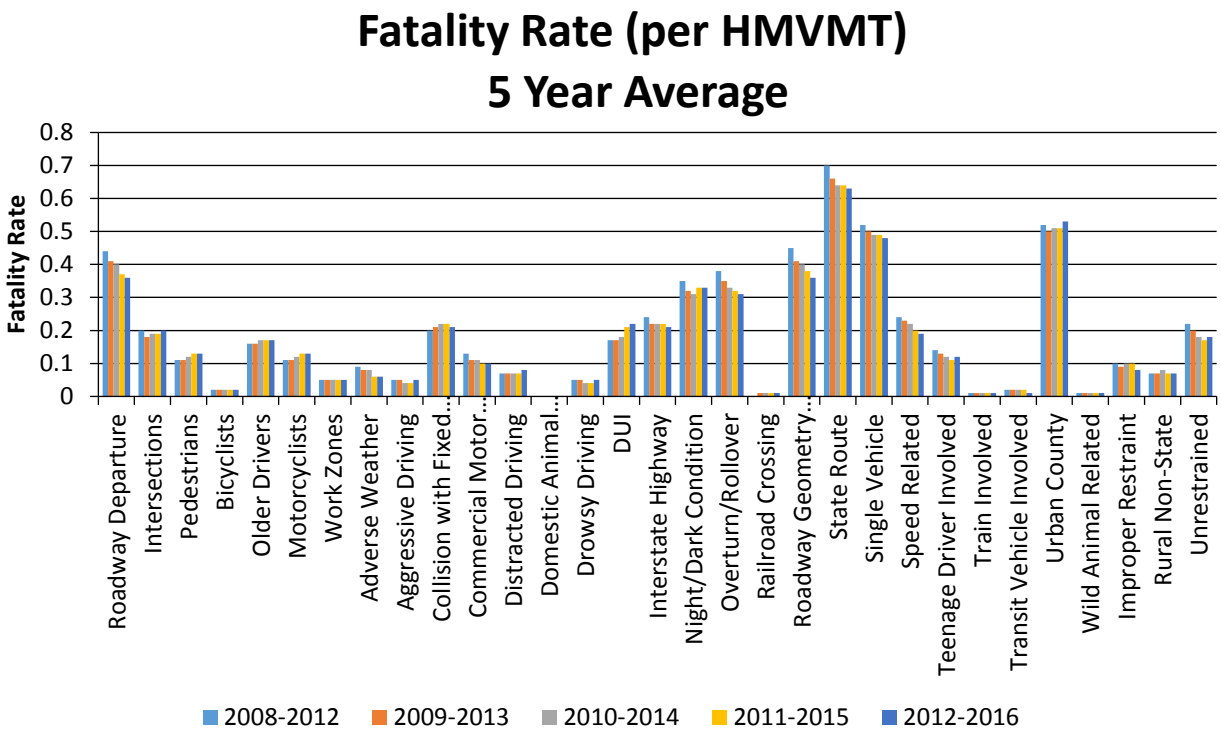
Year 2016

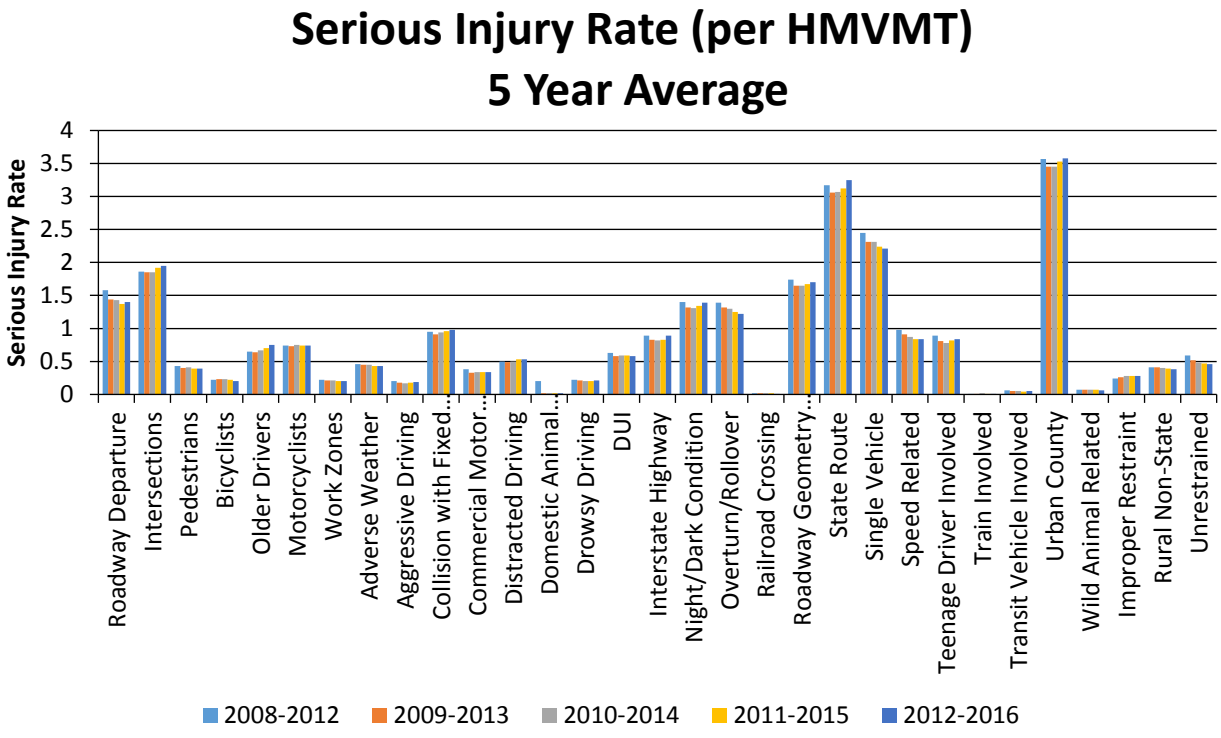
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)	Other 1	Other 2	Other 3
Roadway Departure		103	396	0.36	1.4			
Intersections		57	551	0.2	1.95			
Pedestrians		37	109	0.13	0.39			
Bicyclists		6	58	0.02	0.2			
Older Drivers		48	213	0.17	0.75			
Motorcyclists		37	208	0.13	0.74			
Work Zones		15	58	0.05	0.2			
Adverse Weather		18	122	0.06	0.43			
Aggressive Driving		13	55	0.05	0.19			
Collision with Fixed Object		59	277	0.21	0.98			
Commercial Motor Vehicle		27	95	0.1	0.34			
Distracted Driving		22	150	0.08	0.53			
Domestic Animal Related		1	6	0	0.02			
Drowsy Driving		13	58	0.05	0.21			
DUI		63	164	0.22	0.58			
Interstate Highway		60	253	0.21	0.89			

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
Night/Dark Condition		92	393	0.33	1.39			
Overturn/Rollover		87	344	0.31	1.22			
Railroad Crossing		2	4	0.01	0.01			
Roadway Geometry Related		103	482	0.36	1.7			
State Route		179	920	0.63	3.25			
Single Vehicle		136	625	0.48	2.21			
Speed Related		55	239	0.19	0.84			
Teenage Driver Involved		33	238	0.12	0.84			
Train Involved		2	3	0.01	0.01			
Transit Vehicle Involved		4	13	0.01	0.05			
Urban County		148	1,013	0.53	3.58			
Wild Animal Related		1	16	0.01	0.06			
Improper Restraint		23	78	0.08	0.28			
Rural Non-State		20	107	0.07	0.38			
Unrestrained		51	130	0.18	0.46			


Number of Fatalities
5 Year Average
Fatalities
200
180
160
140
120
100
80
60
40
20
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Adverse Weather
Aggressive Driving
Collision with Fixed...
Commercial Motor...
Distracted Driving
Domestic Animal...
Drowsy Driving
DUI
Interstate Highway
Night/Dark Condition
Overturn/Rollover
Railroad Crossing
Roadway Geometry...
State Route
Single Vehicle
Speed Related
Teenage Driver Involved
Train Involved
Transit Vehicle Involved
Urban County
Wild Animal Related
Improper Restraint
Rural Non-State
Unrestrained
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries
5 Year Average
Serious Injuries
1200
1000
800
600
400
200
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Adverse Weather
Aggressive Driving
Collision with Fixed...
Commercial Motor...
Distracted Driving
Domestic Animal...
Drowsy Driving
DUI
Interstate Highway
Night/Dark Condition
Overturn/Rollover
Railroad Crossing
Roadway Geometry...
State Route
Single Vehicle
Speed Related
Teenage Driver Involved
Train Involved
Transit Vehicle Involved
Urban County
Wild Animal Related
Improper Restraint
Rural Non-State
Unrestrained
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?

2017 Utah Highway Safety Improvement Program

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 INJURY BEFORE	ALL INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
I-80 EB Curve Warning Signs at I-15 Transition (PIN 10559)	Urban Principal Arterial - Interstate	Roadway signs and traffic control	Curve-related warning signs and flashers	4.00	5.00				1.00	2.00	6.00	6.00	12.00	-14.57
SR-17 Improvements at Curve (PIN 10566)	Rural Minor Arterial	Roadside	Barrier - concrete											0
SR-126 Turn Lanes at 700 South (PIN 10551)	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add right-turn lane	4.00						4.00		8.00		8.12
Region 4 Rumble Strips - Phase II (PIN 10567)	Various	Roadway	Rumble strips - edge or shoulder	118.00	101.00	4.00	3.00	17.00	12.00	93.00	82.00	232.00	198.00	23.46
US-89 Guardrail and Barrier MP 73 to 82 (PIN 9606)	Rural Principal Arterial - Other	Roadside	Barrier - concrete											0
SR-111 Shoulder Improvements (PIN 10560)	Urban Principal Arterial - Other	Shoulder treatments		4.00	1.00			1.00		7.00	2.00	12.00	3.00	16.89
SR-266, SR-152, US-40 Median Cable Barrier (PIN 9612)	Urban Principal Arterial - Other	Roadside	Barrier - cable	40.00	64.00	2.00	1.00	2.00	3.00	11.00	14.00	55.00	82.00	-0.77
SR-134, SR-126, US-89; Turn Lanes and Chip Seal (PIN 11359)	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add right-turn lane	12.00	19.00			2.00	2.00	5.00	7.00	19.00	28.00	6.06
US-6; Guardrail & Rumble Strips (MP 202.7-210.7) (PIN 11376)	Urban Principal Arterial - Other Freeways and Expressways	Roadway	Rumble strips - edge or shoulder	14.00	13.00			3.00	1.00	9.00	3.00	26.00	17.00	35.28
SR-65; Guardrail and rumble strips (MP 8.44-13.94) (PIN 11356)	Rural Major Collector	Roadway	Rumble strips - center	2.00	3.00			2.00	2.00		2.00	4.00	7.00	-0.34
I-80; Cable Barrier (MP 0.8-49 Various Locations) (PIN 11364)	Rural Principal Arterial - Interstate	Roadside	Barrier - cable	17.00	33.00	3.00	3.00	8.00	5.00	16.00	12.00	44.00	53.00	9.09

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

When combined, these projects yield a statewide average B/C ratio of 9.43.

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?

10/10/2016

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)	100	100					100	0	100	0
Route Number (8)	100	100								
Route/Street Name (9)	100	100								
Federal Aid/Route Type (21)	100	100								
Rural/Urban Designation (20)	100	100					100	100		
Surface Type (23)	100	3.4					100	0		
Begin Point Segment Descriptor (10)	100	100					100	0	100	0
End Point Segment Descriptor (11)	100	100					100	0	100	0
Segment Length (13)	100	100								
Direction of Inventory (18)	100	100								
Functional Class (19)	100	100					100	100	100	0
Median Type (54)	100	3.4								

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
Access Control (22)	100	100								
One/Two Way Operations (91)	100	3.4								
Number of Through Lanes (31)	100	3.4					100	0		
Average Annual Daily Traffic (79)	100	100					100	0		
AADT Year (80)	100	100								
Type of Governmental Ownership (4)	100	100					100	0	100	0
INTERSECTION										
Unique Junction Identifier (120)			100	3.4						
Location Identifier for Road 1 Crossing Point (122)			100	3.4						
Location Identifier for Road 2 Crossing Point (123)			100	3.4						
Intersection/Junction Geometry (126)			100	3.4						
Intersection/Junction Traffic Control (131)			100	3.4						
AADT for Each Intersecting Road (79)			100	3.4						
AADT Year (80)			100	3.4						
Unique Approach Identifier (139)			0	3.4						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	100				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
Location Identifier for Roadway at Ending Ramp Terminal (201)					0	100				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					100	100				

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
Roadway Type at End Ramp Terminal (199)					0	100				
Interchange Type (182)					0	100				
Ramp AADT (191)					100	100				
Year of Ramp AADT (192)					100	100				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	**100.00**	**78.53**	**87.50**	**3.40**	**63.64**	**100.00**	**100.00**	**22.22**	**100.00**	**0.00**

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

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.

UDOT intends to use a variety of resources to collect the MIRE Fundamental Data Elements by the prescribed date. The following is a general summary of resources that will be used for each data group and the status of that resource.

State-Maintained Roads: FDE for these roads will be 100% complete by the end of 2018. These data are collected using our biennial asset inventory and various internally managed business systems.

Non-State Federal-Aid System: These data are collected using various internally managed business systems and the usRAP protocol. Of Utah's 29 counties one has been collected and two more are underway. We plan to collect about 4 per year with an estimated completion year of 2024.

Local Roads: Local road data will be collected through an ARNOLD system being developed through a statewide partnership. This will be completed and data collection will begin December 2018.

Unpaved Roads: State-owned unpaved road data is collected via biennial asset inventory and with internal business systems. Non-state paved roads will be collected with the ARNOLD system.

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	Incapacitating Injury	No	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Incapacitating Injury	No	Same as MMUCC 4th Edition.	Yes	Same as MMUCC 4th Edition.	Yes
Crash Database	Incapacitating Injury	No	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Incapacitating Injury	No	Same as MMUCC 4th Edition.	Yes	Same as MMUCC 4th Edition.	Yes

Please describe the actions the State is taking to become compliant by April 15, 2019.
The State of Utah will update its crash reporting data dictionary to become compliant.

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

Utah's crash reporting resources to officers include references to ANSI D16.1-2007 and MMUCC 4th Edition.

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.

The purpose of this assessment was to determine whether scope change occurred after we initially developed projects. The FHWA Utah Safety Engineer requested data on 12 projects and the assessment was based on those. One project on SR-24 in Region 4 started out as a shoulder treatment scope and signing and guardrail were added to it. On a local government project in West Valley City (intersection of 2700 W/4100 S) scope was added during the project in order to widen the downstream side of the intersection to accommodate a future project. Scope changes on both of those projects were acceptable to FHWA. Another finding was that a project on US-6 in Spanish Fork Canyon was funded even though the calculated B/C ratio was only 0.39. However, this project was done with the blessing of the FHWA Utah Safety Engineer because previous efforts hadn't fixed the problem there and that was the safety mitigation measured deemed most likely to help.

In addition to the safety scope review, the FHWA financial manager looked at the project from a financial standpoint and found no significant issues. The assessment was deemed by FHWA to be a success.

Optional Attachments

Program Structure:

170906_HSIP Manual_FINAL.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.