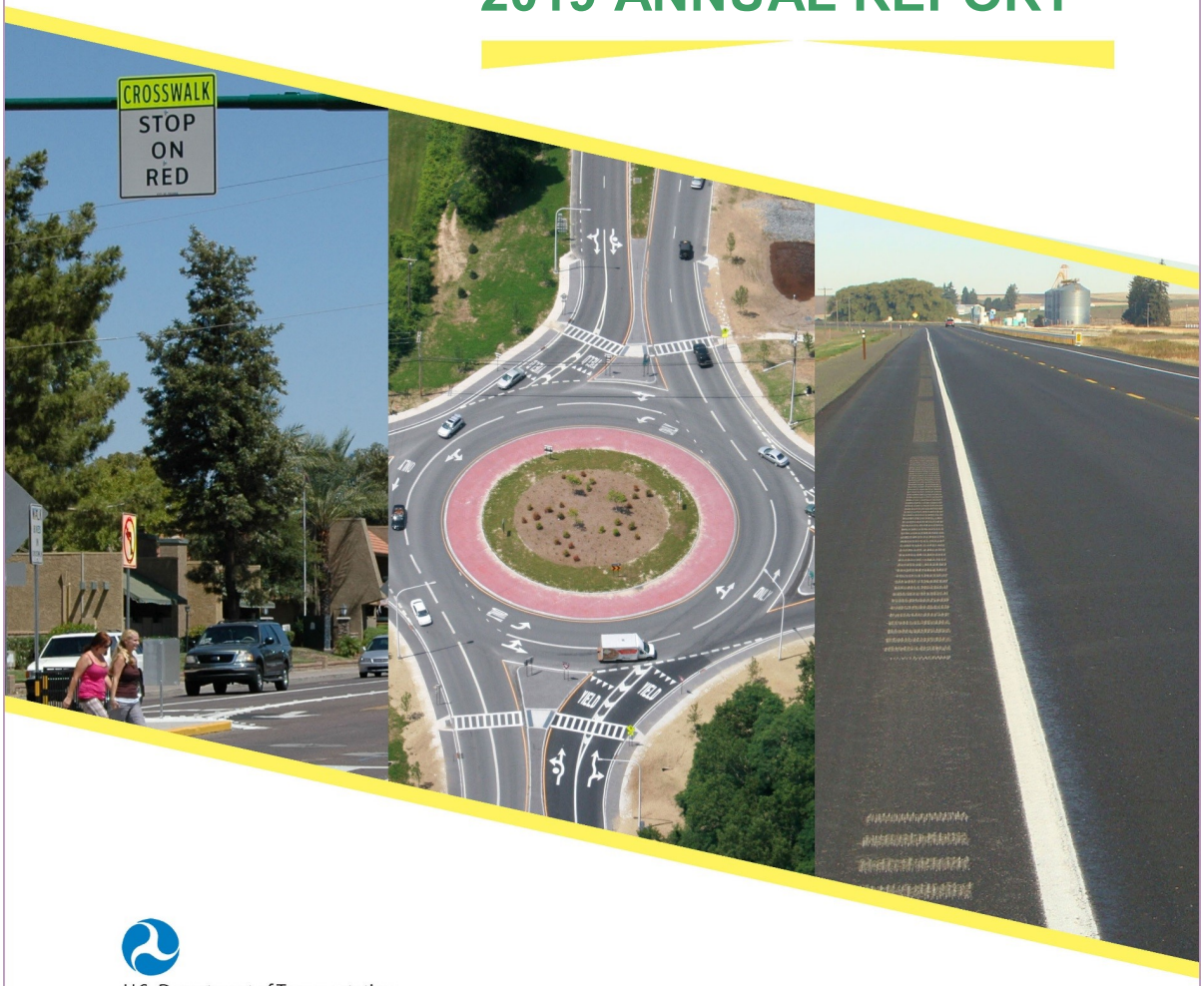
UTAH

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2019 ANNUAL REPORT



U.S. Department of Transportation
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

From 2013-2016, the State of Utah experienced an increase in traffic fatalities each year. 2017 and 2018 have marked a return to our past long-term downward trends in fatalities. Serious injury crashes have similarly decreased in 2016, 2017, and 2018. We are hopeful that our efforts to prioritize safety projects with the greatest potential to reduce fatalities will continue to reduce both fatalities and serious injuries in the years to come. We continue to use both crash analysis and systemic modeling to identify the projects most likely to reduce fatalities and serious injuries. We will also be modifying our project selection process beginning in 2019 to fund the projects with the highest B/C ratios even if doing so results in HSIP funding not being allocated to each region evenly.

The FAST Act approved by Congress three 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

The Central Traffic & Safety office 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

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 also apply the usRAP safety protocol to select non-State Federal Aid and local routes. To date, we've completed coding for all Federal-aid routes in the following counties: Box Elder, Cache, Davis, Morgan, Salt Lake, Summit, Tooele, Utah, Wasatch, and Weber. Coding is approximately 25% complete in Washington and Iron Counties. Work will continue in the coming year to move towards completion of all counties.

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

- Design
- Districts/Regions
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety

The Central Traffic & Safety office leads the HSIP effort, but various other divisions are involved in the process. The 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, Traffic & Safety Division works throughout the year with each region to determine their priority projects for HSIP funding consideration. The Traffic & Safety Division then screens the crash data, traffic data, and input from the region offices to

determine whether each project meets HSIP eligibility criteria. 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.

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

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. Specific conversations were held with Cache MPO in 2017 and MAG in 2018. We are currently working toward coding non-State Federal-aid routes in all Utah counties. To date, we've completed coding for all such routes in the following counties: Box Elder, Cache, Davis, Morgan, Salt Lake, Summit, Tooele, Utah, Wasatch, and Weber. Coding is approximately 25% complete in Washington and Iron Counties. Work will continue in the coming year to move towards completion of all counties.

SHSP Partners

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

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
FileName:
170906_HSIP Manual_FINAL.pdf

Select the programs that are administered under the HSIP.

- HRRR

2019 Utah Highway Safety Improvement Program

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

Program: HRRR

Date of Program Methodology:10/1/2016

What is the justification for this program?

- Other-Crash data trigger from FHWA

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
Fatal crashes only		Functional classification

What project identification methodology was used for this program?

- Crash frequency

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

How are projects under this program advanced for implementation?

- Other-Coordination with region offices

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

Available funding:50
Other-Ability of region to identify eligible project:50
Total Relative Weight:100

Program: Low-Cost Spot Improvements

Date of Program Methodology:3/5/2014

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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?

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

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
Ranking based on net benefit:20
Other-Time to Completion:20
Other-Coordination with other Projects:20
Total Relative Weight:100

Program: Other-Reduce Serious and Fatal Injuries

Date of Program Methodology:3/5/2014

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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?

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

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 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

What percentage of HSIP funds address systemic improvements?

20

HSIP funds are used to address which of the following systemic improvements?

- Add/Upgrade/Modify/Remove Traffic Signal
- Cable Median Barriers
- Clear Zone Improvements
- High friction surface treatment
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Pavement/Shoulder Widening
- Rumble Strips
- Upgrade Guard Rails

What process is used to identify potential countermeasures?

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

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. We have also recently funded a project to use DSRC technology in snow plows in order to allow them to coordinate their movements with signalized intersections, thereby facilitating much faster snow clearance on a key arterial street.

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 (with region offices weighing in on priority).
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.

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 FY19 (and will also be for FY20). 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 the programmed and obligated funding for each applicable funding category.

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$32,733,920	$16,230,789	49.58%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$1,336,664	$1,331,318	99.6%
Penalty Funds (23 U.S.C. 154)	$31,698	$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	$6,858,834	$5,173,874	75.43%
Old HRRR	$66,546	$0	0%
Totals	$41,027,662	$22,735,981	55.42%

Our numbers look strange this year for several reasons. One reason is that UDOT's Program Finance group prioritized its obligation authority for other federal funding categories over HSIP this year. We actually advertised plenty of projects and would have obligated the entire HSIP allotment if it hadn't been for this. Also, the amount of available HSIP funds shows up significantly higher than normal because our Program Finance group also decided to temporarily transfer in funds from other categories. These funds will be transferred back out in FY20, so they won't actually be available for use for safety projects.

Also, we actually had a negative obligation of old HRRR funds due to funds that returned off of a closing project during FY19, but the grid does not enable negative values so I had to enter a zero instead.

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

0%

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

0%

We still have a few local safety projects that are going through the construction or closeout phases, but none of the funds available for programming or obligation in FY19 were used on new local projects.

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

15%

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

27%

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

$46,791,601

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

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

Over the past few years we have made great strides toward getting our HSIP funds obligated by the fiscal year end. This year we were able to obligate all of our HSIP funds. The main reason we were able to reach our goal of full obligation was that we consistently encouraged the four region offices to overprogram, and they delivered enough of the projects to obligate all available FY19 funding.

The principal ongoing challenges we face when trying to achieve full obligation 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.
- Projects that are cancelled for political, practical, or economic reasons.

Overprogramming is our primary mitigation tool, which means planning 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, 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. Both of these measures were necessary in FY19 because we were very aggressive with overprogramming.

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 work 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.

General Listing of Projects

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SR-198; Woodland Hills Dr to Arrowhead Trail (PIN 10265)	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	2	Approaches	$200000	$8213411	HSIP (23 U.S.C. 148)	Urban	Major Collector	10,800	55	State Highway Agency	Spot	Intersections	Flashing Yellow Arrow
SR-134; I-15 Interchange Modifications (PIN 12508)	Intersection traffic control	Modify traffic signal timing - left-turn phasing (permissive to protected-only)	4	Approaches	$1700000	$8200000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	24,000	45	State Highway Agency	Spot	Intersections	Protected Left Turns
SR-65; Henefer Bridge Rehabs, C-566 & D-772 (PIN 13324)	Roadside	Barrier - cable	6	Miles	$1700000	$13200000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	9,150	70	State Highway Agency	Systemic	Roadway Departure	Barrier
SR-36; MP 47.8-52.4, Widening & Rumble Strips (PIN 13463)	Roadway	Rumble strips - edge or shoulder	4	Miles	$2385000	$4754723	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,500	65	State Highway Agency	Systemic	Roadway Departure	Rumble Strips
US-89; Weber River to SR-203 (PIN 14201)	Intersection traffic control	Intersection flashers - add advance intersection warning sign-mounted	1	Signs	$120000	$755422	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	46,000	55	State Highway Agency	Spot	Intersections	Advanced Warning Sign
US-89; MP 480.8-492.5, Rumble Strips & Int Imps (PIN 14451)	Roadway	Rumble strips - edge or shoulder	12	Miles	$2000000	$2000000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,350	55	State Highway Agency	Systemic	Roadway Departure	Rumble Strips
I-84; MP 103.5-112.1, Barrier Upgrades (PIN 14452)	Roadside	Barrier - concrete	9	Miles	$2000000	$2000000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	10,000	70	State Highway Agency	Spot	Roadway Departure	Barrier
Traffic & Safety Program Management Support FY19 (PIN 14474)	Non-infrastructure	Non-infrastructure - other	1	Numbers	$1600000	$1625000	HSIP (23 U.S.C. 148)	N/A	N/A	1	1	State Highway Agency	N/A	Program Management Support	N/A

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
I-84; MP 89.5-92.3, Install Sensors & VMS Boards (PIN 15283)	Advanced technology and ITS	Dynamic message signs	2	Locations	$3560000	$3560000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	16,300	65	State Highway Agency	Spot	Roadway Departure	Dynamic VMS
SR-44; MP 0-28, Roadside Improvements (PIN 15301)	Shoulder treatments	Widen shoulder - paved or other	28	Miles	$3320000	$3620000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	780	50	State Highway Agency	Spot	Roadway Departure	Shoulder Widening
SR-132; MP 35-39, Roadside Improvements (PIN 15302)	Roadside	Roadside grading	4	Miles	$536000	$536000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,600	55	State Highway Agency	Spot	Roadway Departure	Grading and culvert extensions
US-189; MP 8.66-14.59, Constrast Pavement Lines (PIN 15304)	Roadway	Roadway - other	6	Miles	$390000	$390000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	22,000	55	State Highway Agency	Spot	Lane Departure	Contrast and wet reflective striping
Various Routes; No-Pass Pennant Signing (PIN 15310)	Roadway signs and traffic control	Roadway signs and traffic control - other	200	Miles	$300000	$300000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	5,000	60	State Highway Agency	Systemic	Lane Departure	No Passing Pennants
SR-87; MP 10.86-19.95, Roadside Improvements (PIN 15398)	Roadside	Barrier - concrete	1	Miles	$450000	$450000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	1,630	55	State Highway Agency	Spot	Roadway Departure	Barrier
US-89; MP 396.23-397.46, Extend Ramp Barrier (PIN 16310)	Roadside	Barrier - concrete	1	Miles	$400000	$400000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	37,500	50	State Highway Agency	Spot	Roadway Departure	Barrier
I-80; MP 38-90, Cable Barrier (PIN 16314)	Roadside	Barrier - cable	23	Miles	$7335000	$7335000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	8,100	80	State Highway Agency	Systemic	Roadway Departure	Barrier
Various Routes; Centerline Rumble Strips (PIN 16320)	Roadway	Rumble strips - center	93	Miles	$285000	$285000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Multiple/Varies	5,000	60	State Highway Agency	Spot	Lane Departure	Rumble Strips

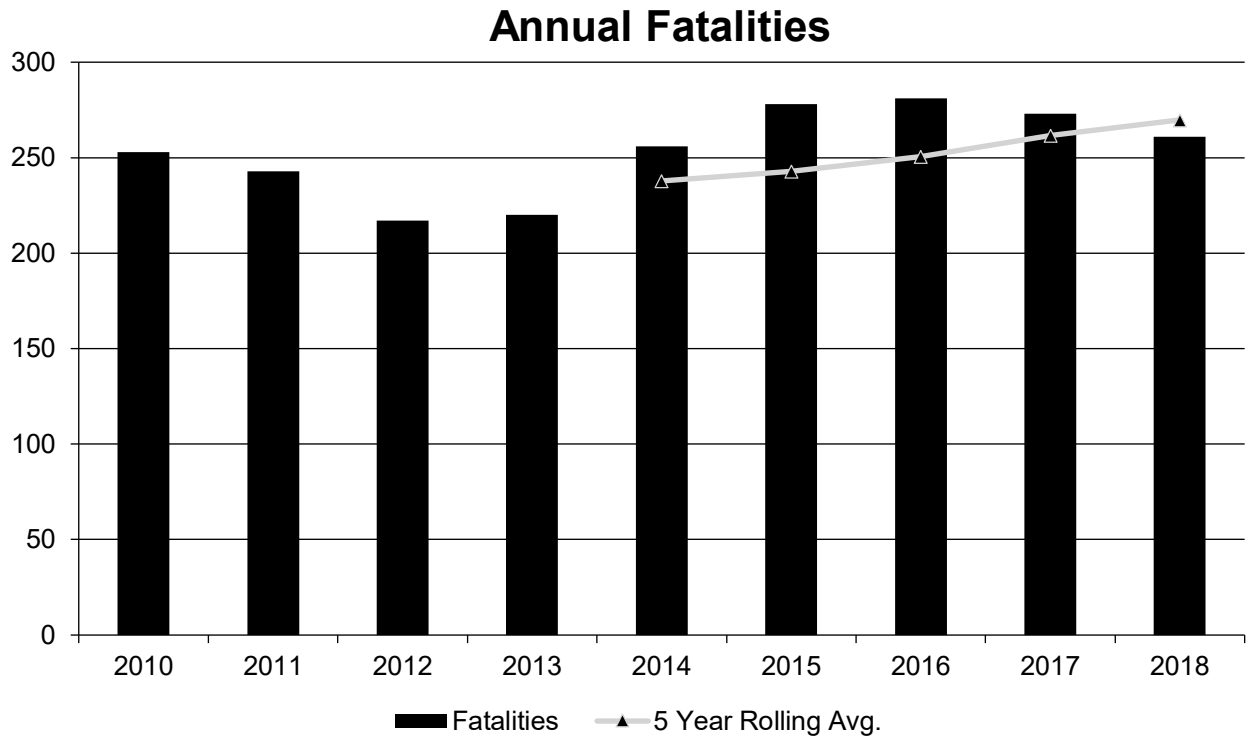
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
I-15; MP 0-132, Guardrail & Barrier (PIN 16324)	Roadside	Barrier- metal	132	Miles	$1000000	$1000000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	25,000	80	State Highway Agency	Spot	Roadway Departure	Barrier
US-191; Wildlife Underpass & Fencing, Phase 2 (PIN 16428)	Roadside	Fencing	4	Miles	$500000	$3700000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Principal Arterial-Other	3,500	65	State Highway Agency	Spot	Wildlife fencing	Fencing
Various Routes; TX Turndown Replacements (PIN 16789)	Roadside	Barrier- metal	18	Locations	$918384	$918384	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Multiple/Varies	5,000	60	State Highway Agency	Systemic	Roadway Departure	Barrier
SR-85; MP 3.52-20.84, Various Improvements (PIN 17330)	Intersection geometry	Auxiliary lanes - add right-turn lane	17	Locations	$2514000	$2540305	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	15,000	55	State Highway Agency	Spot	Intersections	Intersection Improvements
MUTCD Curve Sign Updates – R1 (PIN 17741)	Roadway signs and traffic control	Curve-related warning signs and flashers	94	Locations	$366000	$360000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	5,000	60	State Highway Agency	Systemic	Roadway Departure	Curve signs
MUTCD Curve Sign Updates – R4 (PIN 17744)	Roadway signs and traffic control	Curve-related warning signs and flashers	106	Locations	$1011000	$1011000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	5,000	60	State Highway Agency	Systemic	Roadway Departure	Curve signs

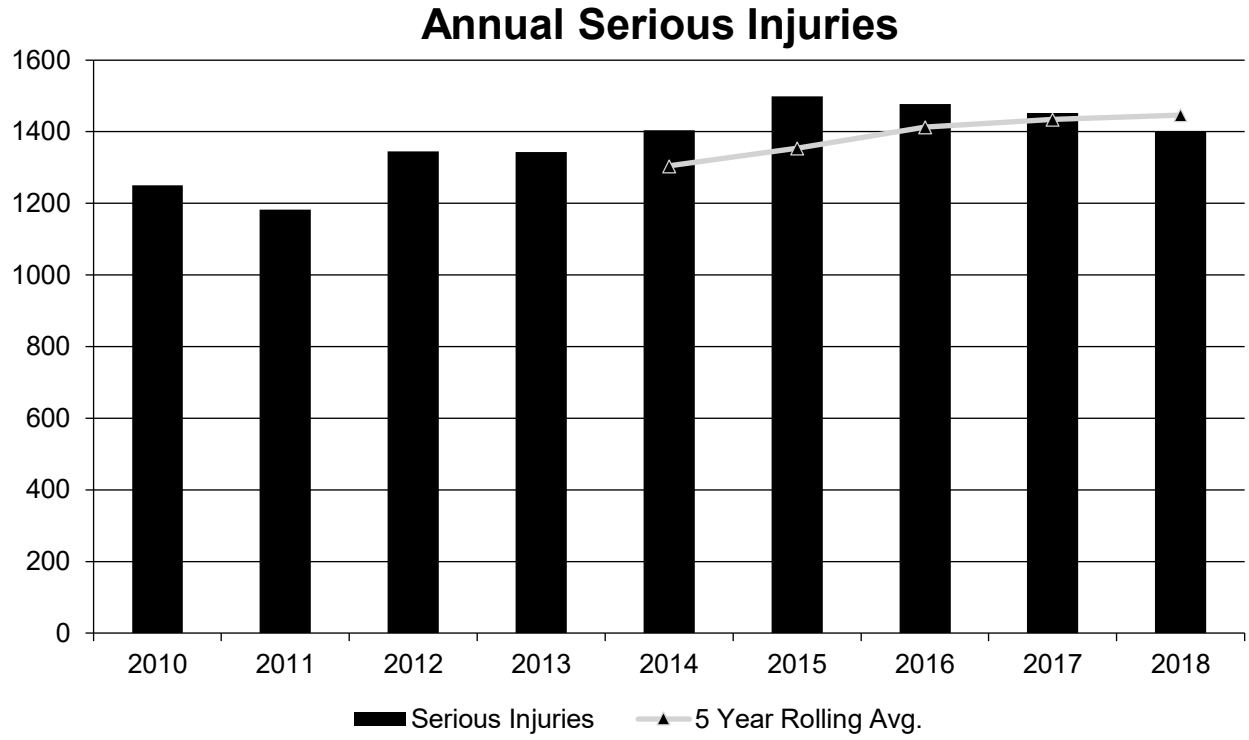
Safety Performance

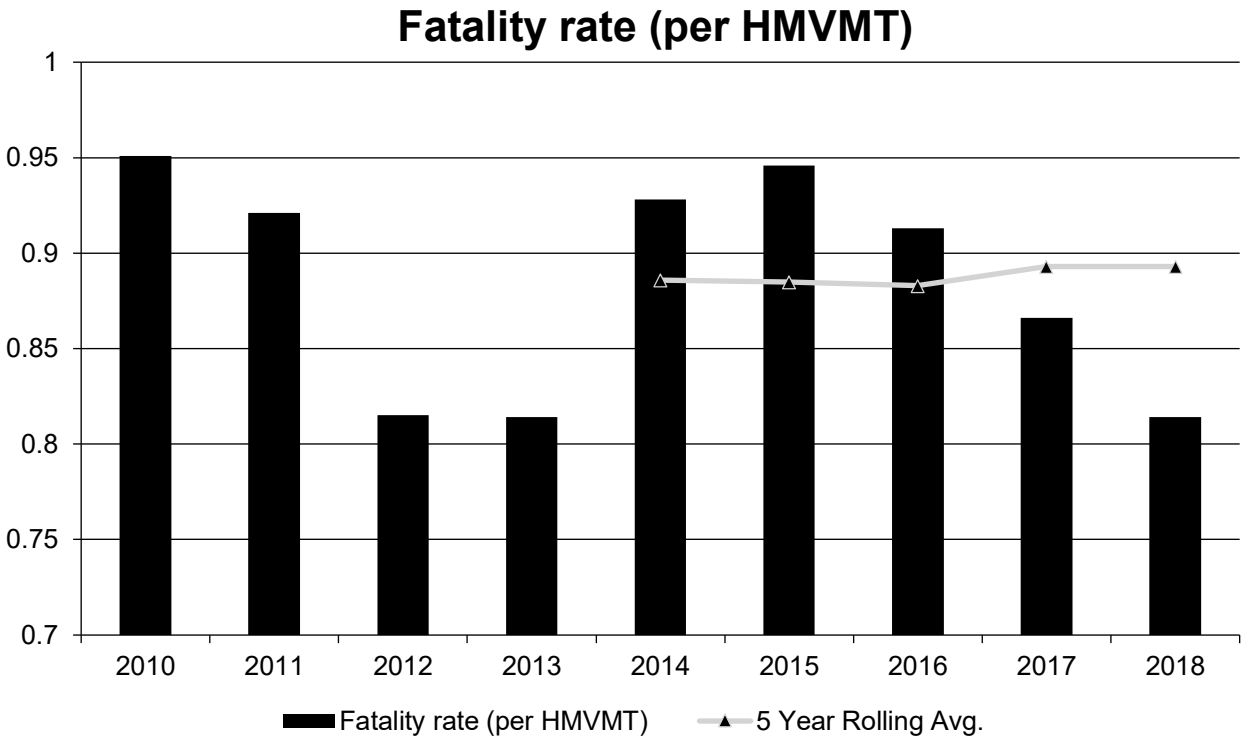
General Highway Safety Trends

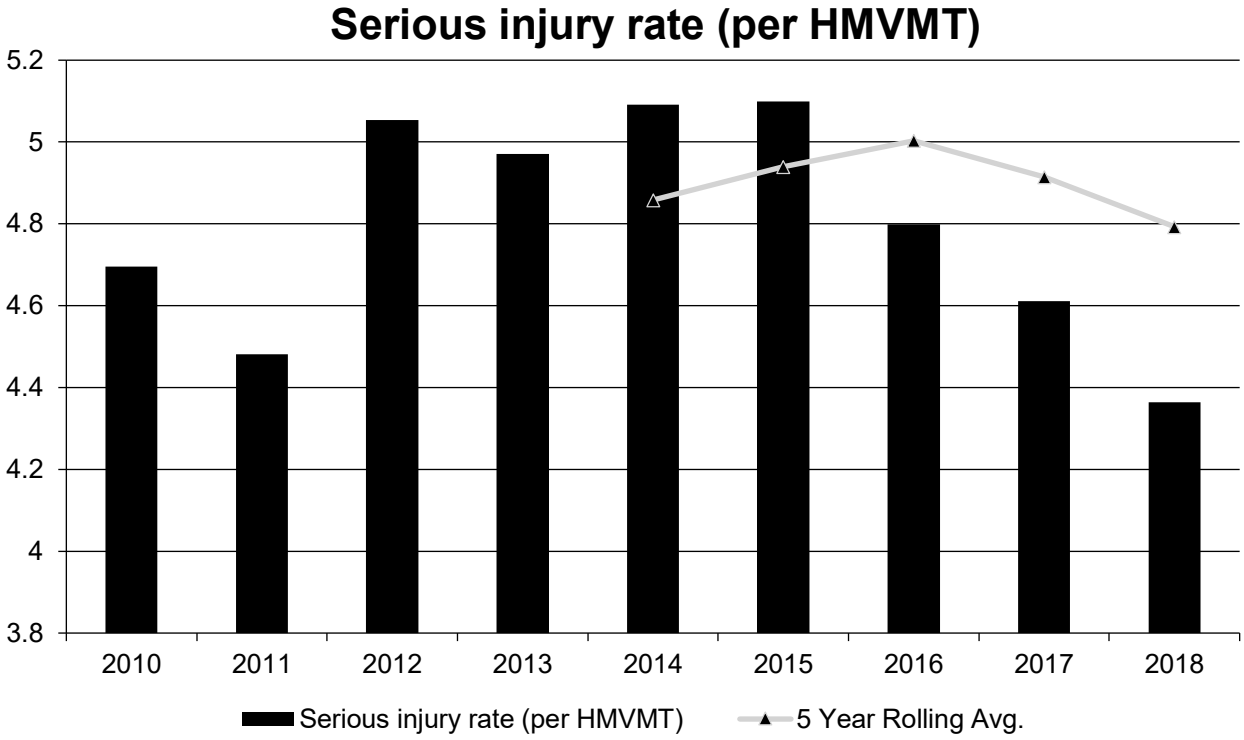
Present data showing the general highway safety trends in the State for the past five years.

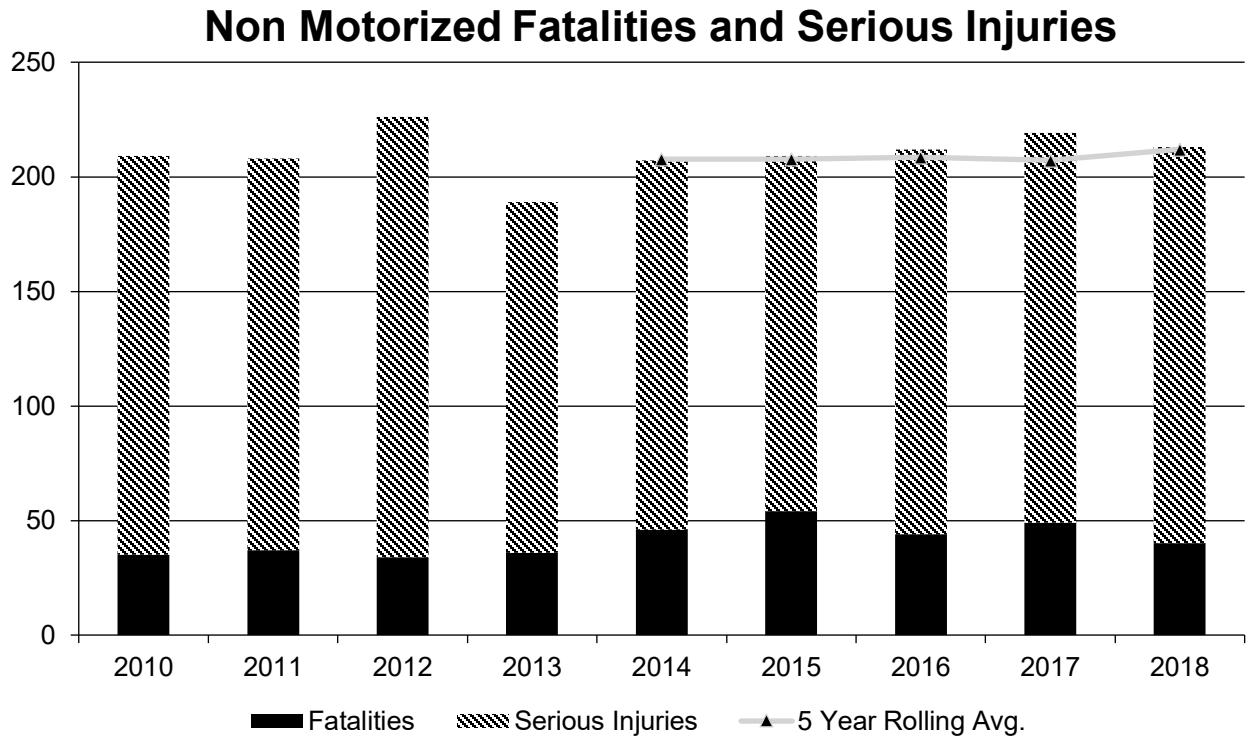
PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatalities	253	243	217	220	256	278	281	273	261
Serious Injuries	1,250	1,182	1,346	1,343	1,404	1,499	1,477	1,453	1,400
Fatality rate (per HMVMT)	0.951	0.921	0.815	0.814	0.928	0.946	0.913	0.866	0.814
Serious injury rate (per HMVMT)	4.696	4.481	5.053	4.971	5.092	5.099	4.799	4.611	4.364
Number non-motorized fatalities	35	37	34	36	46	54	44	49	40
Number of non-motorized serious injuries	174	171	192	153	161	155	168	170	173


Annual Fatalities
300
250
200
150
100
50
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
1600
1400
1200
1000
800
600
400
200
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1
0.95
0.9
0.85
0.8
0.75
0.7
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
5.2
5
4.8
4.6
4.4
4.2
4
3.8
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

State Motor Vehicle Crash Database

We ensure that the State database matches FARS.

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

Year 2018

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	32.6	126.4	1.03	3.97
Rural Principal Arterial (RPA) - Other Freeways and Expressways	2	2.8	0	0
Rural Principal Arterial (RPA) - Other	28.2	95.4	1.55	5.22
Rural Minor Arterial	16.8	62	2.09	7.88
Rural Minor Collector	4.4	18.2	1.93	7.71
Rural Major Collector	16.2	57.8	1.73	6.22

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 Local Road or Street	13.4	66.8	1.14	5.72
Urban Principal Arterial (UPA) - Interstate	24.2	141.4	0.32	1.82
Urban Principal Arterial (UPA) - Other Freeways and Expressways	4	12	0.94	2.83
Urban Principal Arterial (UPA) - Other	67.8	428.4	1.26	8.16
Urban Minor Arterial	26.6	188.2	1.05	7.42
Urban Minor Collector	2.8	14.6	1.07	7.27
Urban Major Collector	11.8	108	0.66	6.03
Urban Local Road or Street				

Year 2018

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	195.8	959.6	0.96	4.71
County Highway Agency				
Town or Township Highway Agency				
City or Municipal 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	74	487	0.76	4.97

Provide additional discussion related to general highway safety trends.

The 5-year rolling average for total fatalities has increased slightly each of the last 5 years while staying nearly the same for the fatality rate. The actual number of annual fatalities has gone down the past 2 years and the fatality rate has gone down each of the last 3 years. If these trends keep up, the 5-year rolling averages for both actual fatalities and fatality rate will also begin to go down.

Trends for serious injuries have been similar. The 5-year rolling average for serious injuries has increased

each of the last 5 years. The 5-year rolling average for serious injury rate, however, has decreased the past 2 years. Actual numbers of serious injuries and the serious injury rate have decreased for the past 3 years.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:263.5

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 2019 and 2020 to reflect the goal set in our SHSP. Step 2: The 5-year rolling averages were computed using the values calculated in Step 1. The 2016-2020 value for each performance measure is our 2020 target.

Number of Serious Injuries:1415.1

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 2019 and 2020 to reflect the goal set in our SHSP. Step 2: The 5-year rolling averages were computed using the values calculated in Step 1. The 2016-2020 value for each performance measure is our 2020 target.

Fatality Rate:0.820

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 2019 and 2020 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 2018 estimate for 2019 and 2020. Step 3: Rates were estimated using the values calculated in Step 1 and Step 2 and also reflect a 2.5% reduction per year. Step 4: The 5-year rolling averages were computed using the values calculated in Step 1 through step 3. The 2016-2020 value for each performance measure is our 2020 target.

Serious Injury Rate:4.400

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 2019 and 2020 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 2018 estimate for 2019 and 2020. Step 3: Rates were estimated using the values calculated in Step 1 and Step 2 and also reflect a 2.5% reduction per year. Step 4: The 5-year rolling averages were computed using the values calculated in Step 1 through step 3. The 2016-2020 value for each performance measure is our 2020 target.

Total Number of Non-Motorized Fatalities and Serious Injuries:210.8

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 2019 and 2020 to reflect the goal set in our SHSP. Step 2: The 5-year rolling averages were computed using the values calculated in Step 1. The 2016-2020 value for each performance measure is our 2020 target.

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

Describe progress toward meeting the State's 2018 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

We remain committed to our goal of Zero Fatalities. Our fatality rate continues to decline despite Utah ranking No. 3 among states for growth in 2018 (1.9%) and No. 1 since 2010 (14.4%). In addition to meeting our target for fatality rate, we also met our target for fatalities and for serious injury rate. The 5-year average for serious injuries was slightly higher (2.5%) than our target. In addition, we slightly exceeded the target for total number of non-motorized fatalities and serious injuries by 4.

A modest spike in serious injuries in 2015 is the primary reason for not meeting this target in 2018. However, we are encouraged by the trend since 2015, in which serious injuries have declined each year for a total of 5.5% through 2018.

We are pleased with the current trend in non-motorized fatalities. Between 2015 and 2018, this number dropped from 54 to 40, a 26% decrease and the lowest number in five years. For non-motorized serious injuries, 2018 saw the highest number since 2012 (173). This is not an acceptable trend and we continue to monitor this area closely and seek to identify and implement projects that will improve safety for this important population.

Applicability of Special Rules

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

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	2012	2013	2014	2015	2016	2017	2018
Number of Older Driver and Pedestrian Fatalities	17	38	32	45	41	50	33
Number of Older Driver and Pedestrian Serious Injuries	78	90	91	122	119	108	102

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Other-Reduction of severe crashes

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

The two measures of effectiveness chosen by UDOT are B/C ratio and reduction of severe crashes. Results presented in this report show that UDOT is making progress in both measures. The overall weighted B/C of the 3-year before/after project results is 3.9. And for several years in a row now, Utah has achieved reductions in both 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

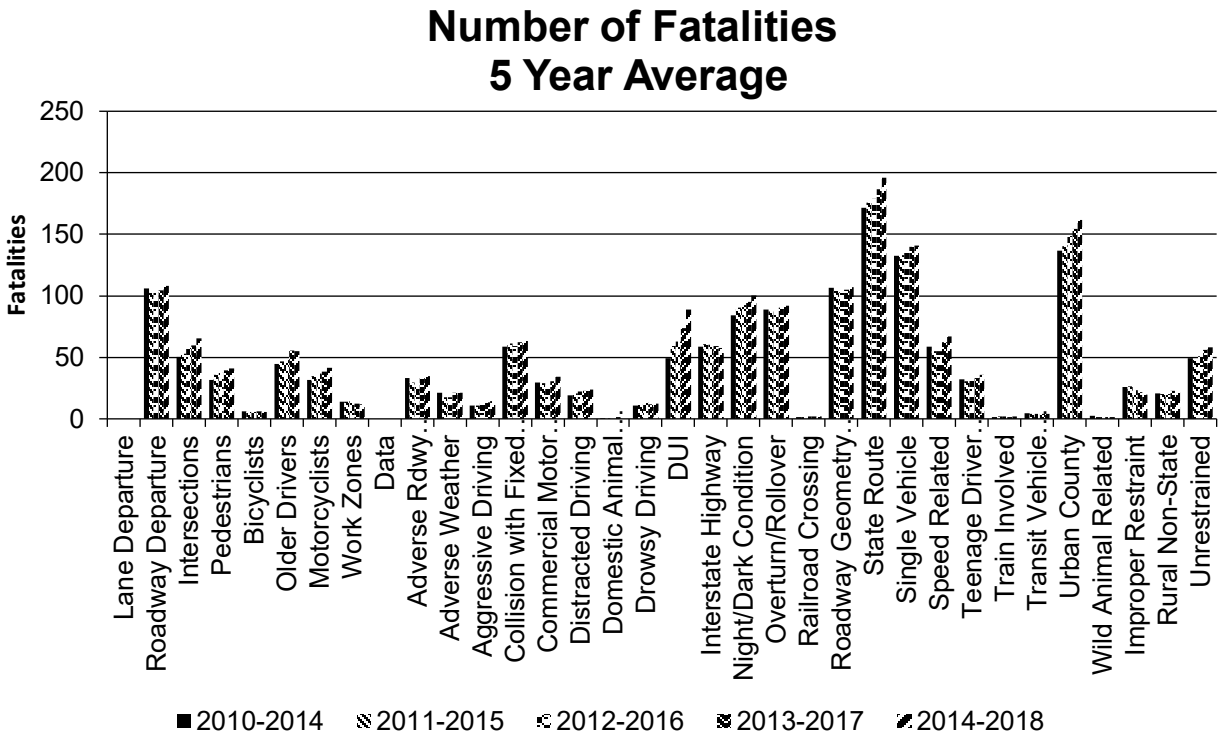
Effectiveness of Groupings or Similar Types of Improvements

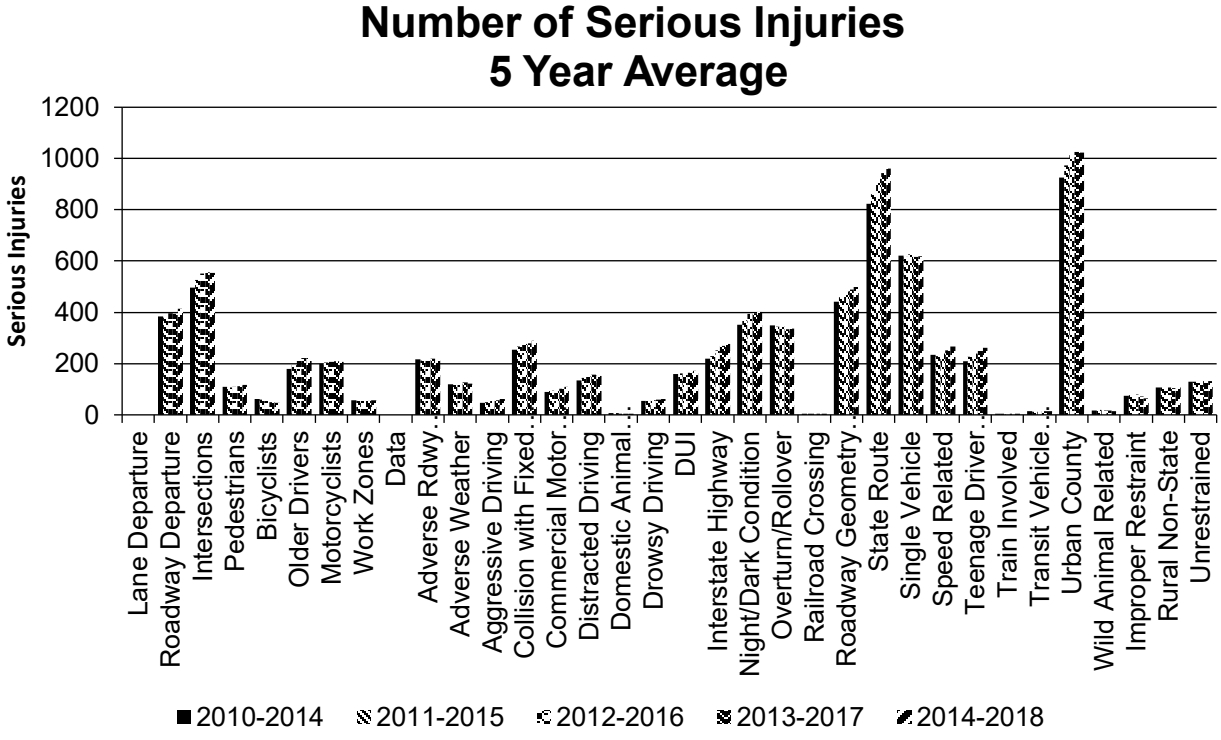
Present and describe trends in SHSP emphasis area performance measures.

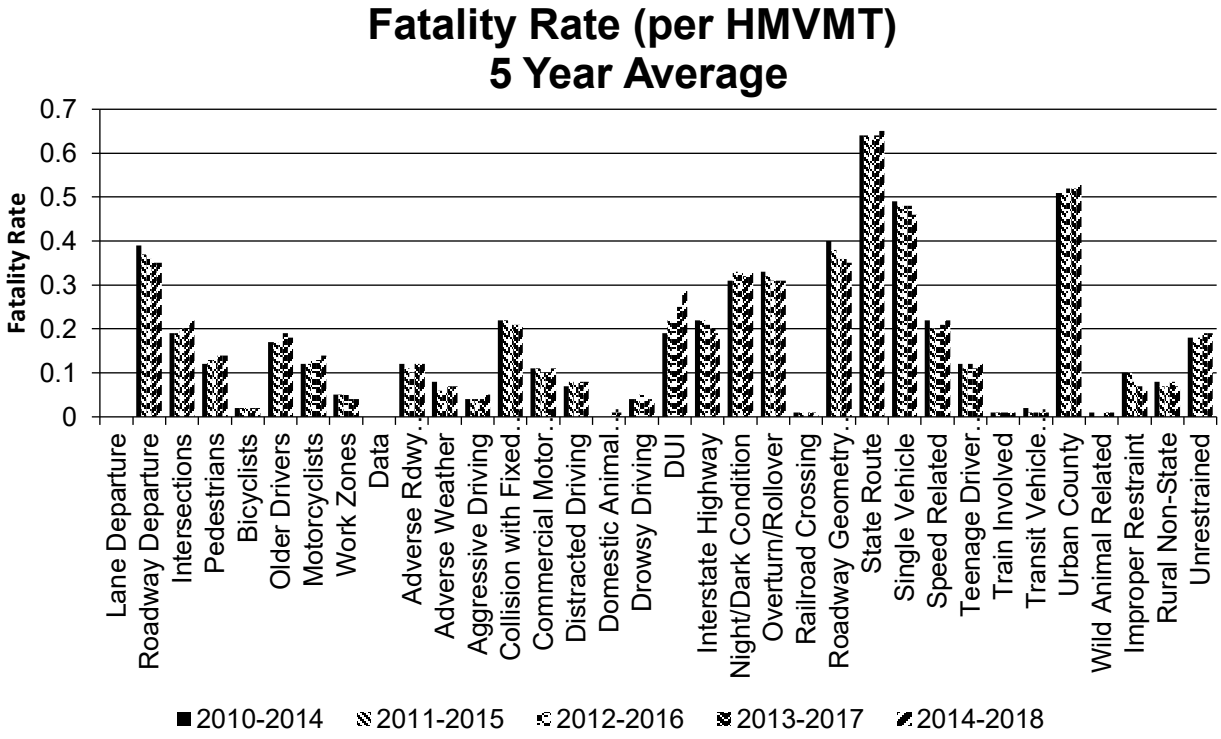
Year 2018

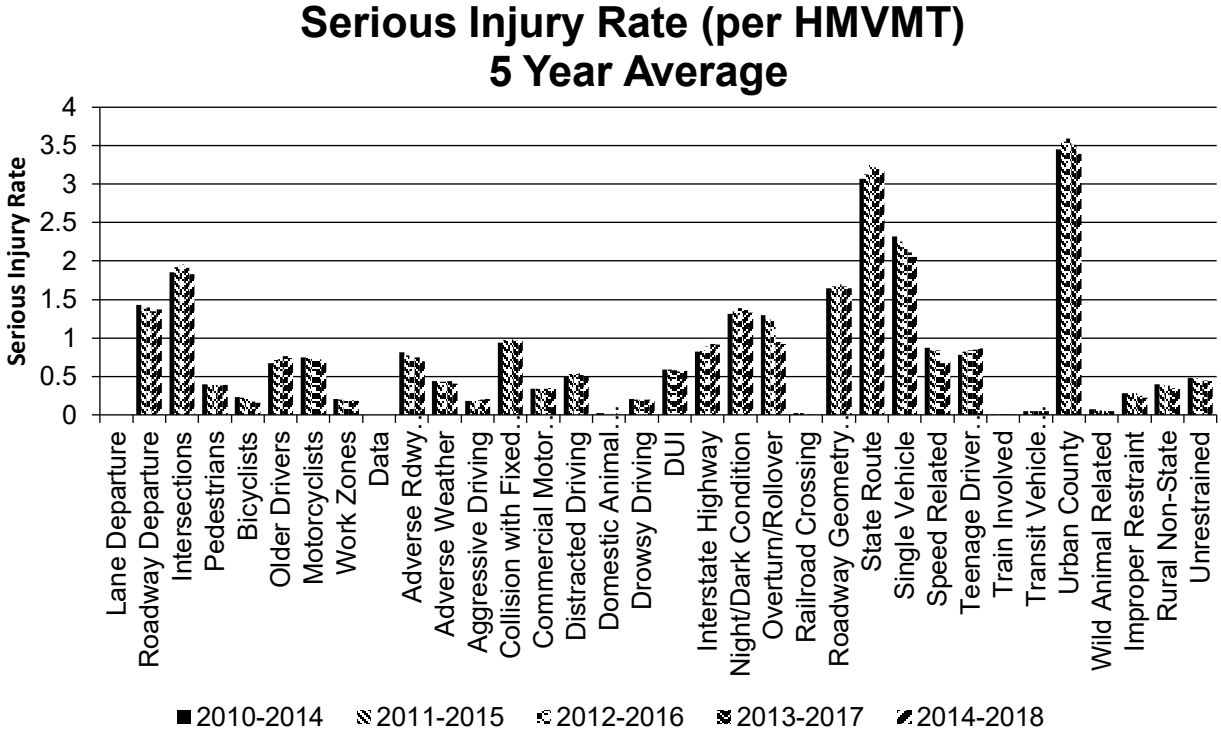
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Lane Departure		0	0	0	0
Roadway Departure		108	413	0.35	1.37
Intersections		65.6	553	0.22	1.83
Pedestrians		41	117.8	0.14	0.39
Bicyclists		5.6	47.6	0.02	0.16
Older Drivers		55	222.4	0.18	0.74
Motorcyclists		41.6	205.8	0.14	0.68
Work Zones		11.8	55.8	0.04	0.18
Data		0	0	0	0
Adverse Rdwy Surface Condition		34.6	210.8	0.12	0.7

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)
Adverse Weather		21.2	121.6	0.07	0.41
Aggressive Driving		14.2	62.6	0.05	0.21
Collision with Fixed Object		64.2	289.2	0.21	0.96
Commercial Motor Vehicle		34	109.2	0.11	0.36
Distracted Driving		23.6	151.6	0.08	0.5
Domestic Animal Related		1.4	4.4	0.01	0.01
Drowsy Driving		12.6	63	0.04	0.21
DUI		88.6	172.6	0.29	0.57
Interstate Highway		57.4	275.8	0.19	0.91
Night/Dark Condition		100.4	400.4	0.33	1.33
Overturn/Rollover		92	336.8	0.31	0.92
Railroad Crossing		1.8	4	0.01	0.01
Roadway Geometry Related		106.8	497.6	0.35	1.65
State Route		195.8	959.6	0.65	3.17
Single Vehicle		140.8	618.2	0.46	2.05
Speed Related		66.8	267.8	0.22	0.7
Teenage Driver Involved		35.8	260.8	0.12	0.86
Train Involved		1.8	4	0.01	0.01
Transit Vehicle Involved		4	14.4	0.01	0.05
Urban County		161.6	1,024	0.53	3.39
Wild Animal Related		1.4	15.4	0.01	0.05
Improper Restraint		19.4	64.6	0.06	0.22
Rural Non-State		21.8	106.6	0.07	0.35
Unrestrained		58	132.2	0.19	0.44


Number of Fatalities
5 Year Average
Fatalities
250
200
150
100
50
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
Adverse Rdwy.
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..
Train Involved
Transit Vehicle..
Urban County
Wild Animal Related
Improper Restraint
Rural Non-State
Unrestrained
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018


Number of Serious Injuries
5 Year Average
Serious Injuries
1200
1000
800
600
400
200
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
Adverse Rdwy.
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..
Train Involved
Transit Vehicle..
Urban County
Wild Animal Related
Improper Restraint
Rural Non-State
Unrestrained
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018





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

No

Each year we enter our before/after results for projects that have achieved 3 years of post-construction crash

history, so there is information available there for specific types of projects. But we have not completed any grouped studies of the effectiveness of certain types of countermeasures.

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)
SR-128 Slope Stabilization & Shoulder Improvements (PIN 9397)	Rural Major Collector	Roadside	Barrier- metal											0
SR-36; Safety and Signal Improvements (PIN 11362)	Rural Principal Arterial (RPA) - Other	Roadside	Barrier - concrete	3.00	1.00						1.00	3.00	2.00	-0.52
Rural Roads in Tooele County (PIN 11302)	Rural Local Road or Street	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1.00						1.00		2.00		1.42
I-84; Cable Barrier (MP 81.14-87.10) (PIN 11385)	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier - cable	2.00	4.00							2.00	4.00	-0.08
Bulldog Blvd/Freedom Blvd; Signal Upgrades (PIN 12232)	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	18.00	14.00			2.00		45.00	37.00	65.00	51.00	60.19
US-189/Bulldog Blvd; Signal Upgrades (PIN 12181)	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	31.00	34.00			2.00	2.00	28.00	18.00	61.00	54.00	10.71
US-89; MP 413.7-414.2, Upgrade Mid-Block Crossings (PIN 12177)	Rural Principal Arterial (RPA) - Other	Pedestrians and bicyclists	Pedestrian beacons	1.00	1.00			3.00	2.00			4.00	3.00	13.31
I-15; Median Cable Barrier (MP 378.9-400.6) FFY14 (PIN 11381)	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier - cable	1.00	37.00	2.00				3.00	4.00	6.00	41.00	16.33
I-15; Interstate Structure Protection (PIN 12185)	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier - concrete		2.00			1.00				1.00	2.00	39.23

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)
I-15; Median Cable Barrier and Other Barrier (PIN 11372)	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier - cable	13.00	33.00	1.00	1.00			11.00	6.00	25.00	40.00	0.24
I-15 Freeway Structure Protection, 8 Locations (PIN 12984)	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier - concrete								1.00		1.00	-1.05
No Passing Zone Signing; Various Locations (PIN 12202)	Various rural types	Roadway signs and traffic control	Roadway signs (including post) - new or updated	8.00	22.00	1.00	2.00	1.00	2.00	7.00	5.00	17.00	31.00	-12.77

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

The overall weighted B/C was 3.9 for the projects we reported 3-year before-after crash analysis for this year. This shows that UDOT is selecting to fund HSIP projects that are helping to reduce serious and fatal injury crashes. The actual numbers of fatal and serious injury crashes have also decreased for the past several years despite strong growth in VMT.

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?

2020

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

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
ROADWAY SEGMENT	Segment Identifier (12)	100	100					100		100	
	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			
	Begin Point Segment Descriptor (10)	100	100					100		100	
	End Point Segment Descriptor (11)	100	100					100		100	
	Segment Length (13)	100	100								
	Direction of Inventory (18)	100	100								
	Functional Class (19)	100	100					100	100	100	
	Median Type (54)	100	3.4								
	Access Control (22)	100	100								

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	One/Two Way Operations (91)	100	3.4								
	Number of Through Lanes (31)	100	3.4					100			
	Average Annual Daily Traffic (79)	100	100					100			
	AADT Year (80)	100	100								
	Type of Governmental Ownership (4)	100	100					100		100	
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)			100	3.4						
INTERCHANGE/RAMP	Unique Interchange Identifier (178)					100	100				
	Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
	Location Identifier for Roadway at Ending Ramp Terminal (201)						100				
	Ramp Length (187)					100	100				

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	Roadway Type at Beginning of Ramp Terminal (195)					100	100				
	Roadway Type at End Ramp Terminal (199)						100				
	Interchange Type (182)					100	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**	**100.00**	**3.40**	**81.82**	**100.00**	**100.00**	**22.22**	**100.00**	**0.00**

*Based on Functional Classification

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 state roads is 100+ complete. 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 several have been collected and more are underway. We plan to finish this effort in 1-2 years.

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 within 1-2 years.

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

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

During the past year, UDOT has conducted an assessment of how they select projects for HSIP funding. The goal is to better meet the objectives of reducing severe crashes. As a result of this assessment, UDOT has chosen to modify its project selection focus. In the past, HSIP funding was allocated to regions based on the relative portion of severe crashes occurring in each region. The new focus will be on selecting projects based on B/C ratio regardless of where those projects would be located. It will now theoretically be possible to allocate all HSIP funds to one region if that is where all of the projects with the highest B/C ratio are located. We believe that this process gives Utah the best opportunity to continue moving towards its Zero Fatalities goal.

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.