



VERMONT

HIGHWAY SAFETY IMPROVEMENT PROGRAM 2017 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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Disclaimer

Protection of Data from Discovery Admission into Evidence

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section [HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

During the state fiscal year (July 1, 2016 to June 30 2017), VTrans conducted ten road safety audits at hot spot locations in collaboration with law enforcement officers around the states. The Agency further continued to work with local municipalities and implemented a systemic safety program to address local road safety.

For the state fiscal year (July 1, 2016 to June 30 2017), the total amount of funding that was obligated during the reporting period was \$13,312,845. Of these, \$9,761,465 was obligated from HSIP Section 148 and \$3,551,379 was obligated from Section 164.

Over the years, the HSIP and other related safety efforts have been efficient at reducing the number of major crashes (fatal + serious injury crashes). One of the principal measures of success that illustrates this is the reduction in the five-year average of major crashes which passed from 367 major crashes for the 2008-2012 period to 305 for the 2012-2016 period.

The five-year averages of the number of fatalities and serious injuries went down for the same periods as well. The five-year average of the number of fatalities went from 70 fatalities to 62 while the five-year average of the number of serious injuries went from 386 to 305 serious injuries.

Introduction

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

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

The overall program structure is centralized.

HSIP staff review high crash locations on the federal aid network and identify potential projects. Solutions are proposed to mitigate crash patterns and crash types. Crash modification factors and benefits-to-costs ratios (B/C ratio) are used to determine the best solutions. A project must have a B/C ratio of greater than 1 to be further considered.

A group of senior management review the recommendations for further advancement of the projects to scoping or design.

Major HSIP projects are designed by consultants or Agency staff following the normal project development process.

Small projects such as signage, markings, beacons and brush cutting are implemented via work orders done by the Agency.

Statewide projects related to signs and markings are contracted out yearly.

The Agency incorporate the SafetyEdge and centerline rumble stripes on all paving projects according to Agency guidelines.

Projects are evaluated by the Office of Highway Safety using before and after crash data for a period of three-years before and three years after construction.

Where is HSIP staff located within the State DOT?

Engineering

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

HSIP staff is located under the Highway Division within the Office of Highway Safety. See the attached PDF Organization Chart for a clarification.

How are HSIP funds allocated in a State?

SHSP Emphasis Area Data

Other-Central Office via High Crash Location Reviews

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

HSIP funds are used to construct statewide pavement markings and signs projects. They are also used to implement projects as a result of the review of High Crash Locations. In additions, they are used to implement engineering design projects that are related to SHSP specific critical emphasis areas.

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

Local roads that are part of the Federal Aid System are addressed the same way as state maintained roads, using the approved HSIP ranking methodology for the identification of locations with potential safety problems. The local roads that rank within the subset of top locations are reviewed through an engineering study. Low cost remedial actions are implemented via a statewide project, while high cost solutions are implemented by VTrans through the regular design process.

VTrans operates a program called Systemic Local Roads Safety Program (SLRS). This program targets all urban and rural local roads with traffic volumes of less than 5000 vehicles per day. For this SLRS program, locations are identified by the regional planning commissions using crash risk factors (such as presence of a horizontal curve), crash data, and anecdotal information. For these locations, safety corridor reviews are performed to identify signing and marking improvements. These low cost treatments are designed and implemented via a statewide project. The methodology used to select the SLRS projects was attached as an uploaded document under the Program Methodology Section.

Upon the request of a municipality, VTrans will perform a road safety audit of any local road to assist the municipality with local safety concerns. A multidisciplinary team is put together, a site visit is performed and a report outlying recommendations is provided to the municipality

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

Traffic Engineering/Safety

Design

Maintenance

Operations

Governors Highway Safety Office

Other-VTrans Office of Highway Safety

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

These groups are mostly involved during the conduct of road safety audits and road safety reviews.

The Office of Highway Safety is responsible for maintaining the crash data and generating high crash locations lists.

Describe coordination with internal partners.

Depending on the characteristics of the site to be reviewed, Design, Operations and Maintenance staff as well as the Governor's Highway Safety Office Enforcement Liaison are asked to take part to the visit of the site and to formulate some recommendations. Key individuals are contacted several weeks in advance usually by email by the lead investigator. For each site, along with a request to attend an on-site meeting, the lead investigator also sends relevant background information such as crash information and a general description of the problem.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

Other-Municipalities

Other-Regional Planning Commissions

Other-Law Enforcement

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

Describe coordination with external partners.

As with internal partners, external partners are involved during the conduct of road safety audits and safety reviews. They are asked to take part to the visit of the sites and to formulate some recommendations. Key individuals are contacted several weeks in advance usually by email by the lead investigator. For each site, along with a request to attend an on-site meeting, the lead investigator also sends relevant background information such as crash information and a general description of the problem.

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.

There has been a continued challenge in the deployment of HSIP countermeasure projects in that they follow the same design process as every other road and bridge projects at VTrans. The solution may be identified quickly, however there is no priority put on an HSIP projects compared to other projects and therefore, implementation can take several years as the safety project works through the same design process (PE, ROW and construction) as all VTrans projects.

There are other business units at VTrans other than the Office of Highway Safety that are using HSIP funds.

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The Assets Management & Programming Bureau at VTrans is responsible for programming project and the Office of Highway Safety is not directly responsible for programming safety projects.

The delivery of low cost projects, such as the installation of signs or the upgrade of signal equipment on town highways has been an issue as well. While, since 2012, we have been developing and contracting regional projects to implement these low cost solutions on town and city owned roads (thus making sure that federal procurement procedures are followed), the time lag between the road reviews and the installation of the low cost improvements has been two to four years. In addition, preparing formal plans for contacting purposes has also been time consuming. VTrans is working on developing an alternative contracting process to accelerate the delivery of these low cost projects using an on-call contractor. It is anticipated that this process will be in place during construction season 2018.

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:

[FFY18 Systemic Local Road Safety.pdf](#)

[Vermont HSIP Manual February 19 2016.pdf](#)

[Vermont HSIP Low Cost Program October 2016.pdf](#)

Select the programs that are administered under the HSIP.

Low-Cost Spot Improvements

Sign Replacement And Improvement

Local Safety

HRRR

Other-School Zone Safety

Other-Major Project Spot Improvements

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

Local Safety refers to our Systemic Local Road Safety Program (this program is an extension of our former HRRR program. SLRS addresses all local town owned roads. There are still projects that are being developed or about to be constructed from locations that were reviewed under the former HRRR program).

HRRR refers to the HRRR Special Rules under FAST Act that requires a State to obligate a certain amount of funds on HRRRs if the fatality rate on its rural roads increases. This program is not active at this time in Vermont as Vermont has not been penalized.

Low-Cost Safety Improvements refer to the implementation of the low-cost, short-term countermeasures identified during the road safety audits done at hot spot locations. Major Project Spot Improvements refer to the design of the higher cost projects that were identified during the road safety audits.

School Zone Safety is the review of school zones for uniform signage and markings.

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Program: HRRR

Date of Program Methodology: 2/19/2016

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

Other-FAST Act Special Rules

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

Other-Funding set-aside only if special rules apply

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

Crashes

Exposure

Roadway

Other-Fatal and all injury crashes

Functional classification

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

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

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

How are projects under this program advanced for implementation?

Other-statewide project for low cost improvements

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 : 100

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Total Relative Weight : 100

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

As per the HSIP Manual, if VTrans is penalized by the Special Rule for HRRR safety, then the HRRR Program becomes effective for the required period of time. Under the HRRR Program, VTrans may utilize a combination of site-specific, systemic, and corridor projects to address the identified issues as appropriate. VTrans defines "significant safety risks" as those rural major and minor collectors and rural local roads with three or more fatal and injury crashes per mile over a five-year period.

What VTrans used to call HRRR in the past, is now done under the expended Systemic Local Road Safety Program as was explained in the clarification to question 14.

Program: Local Safety

Date of Program Methodology: 2/19/2016

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

Addresses SHSP priority or emphasis area

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

Funding set-aside

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

Crashes	Exposure	Roadway
All crashes	Volume	Horizontal curvature Functional classification

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

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

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

How are projects under this program advanced for implementation?

Competitive application process

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

Relative Weight in Scoring

Available funding : 100

Total Relative Weight : 100

Enter additional comments here to clarify your response for this question or add supporting information. The SLRS program addresses rural and urban roads that are locally maintained by a municipality and have less than 5,000 vehicles per day, and focuses on risk factors rather than primarily crash history to identify sites for improvements.

Program: Low-Cost Spot Improvements

Date of Program Methodology: 10/3/2016

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

Addresses SHSP priority or emphasis area

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

Funding set-aside

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

Crashes	Exposure	Roadway
All crashes	Traffic Lane miles	Functional classification

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

Equivalent property damage only (EPDO Crash frequency)
Relative severity index
Crash rate

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

Yes

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

Yes

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

How are projects under this program advanced for implementation?

Other-Office of Highway Safety Staff based on recommendations from Road Safety Audit Team

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 : 100

Total Relative Weight : 100

Enter additional comments here to clarify your response for this question or add supporting information. This program implements the low cost countermeasures identified during the review of high crash locations. Part of the execution of the HSIP includes prioritizing mitigation measures based on cost. The low cost solutions typically center around minimally invasive changes. This low cost program seeks to facilitate VTrans' ability to implement these changes expeditiously.

Program: Sign Replacement And Improvement

Date of Program Methodology: 2/9/2015

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

Other-Sign replacement needs

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

Other-Average Sign Age

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

No

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

Yes

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

How are projects under this program advanced for implementation?

Other-Programed by Asset Management & Performance Bureau

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 : 100

Total Relative Weight : 100

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

The goal is to construct 100 road miles per year via sign replacement projects.

Program: Other-School Zone Safety

Date of Program Methodology: 1/1/2014

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

Other-Addresses pedestrian safety in school zones

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

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Funding set-aside

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

Crashes

Exposure

Roadway

Other-Presence of a School

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

Other-Participation in the safe route to school program

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

Yes

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

Yes

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

How are projects under this program advanced for implementation?

Other-All sites are advanced for signs and markings

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

Rank of Priority Consideration

Other-All sites are advanced : 1

Enter additional comments here to clarify your response for this question or add supporting information. The Vermont Agency of Transportation (VTrans) has developed a School Zone Safety Initiative to help achieve uniform applications of traffic control devices within Vermont's local school zones for the purpose of enhancing the safety of road users through these school zones. This program has been in operation since 2014. However due to lack of personal, VTrans is considering eliminating this program in the future.

Program:

Other-Major Project Spot
Improvements

Date of Program Methodology: 2/19/2016

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

Traffic
Lane miles

Functional classification

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

Equivalent property damage only (EPDO Crash frequency)

Relative severity index

Crash rate

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

Yes

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

Yes

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

How are projects under this program advanced for implementation?

selection committee

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

Rank of Priority Consideration

Available funding : 1

Incremental B/C : 2

Enter additional comments here to clarify your response for this question or add supporting information. Potential major projects that have been identified during the road safety audits of high crash locations are reviewed by a selection committee. The selected projects are programed based on funding availability.

What percentage of HSIP funds address systemic improvements?

55.3

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

Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Upgrade Guard Rails
Add/Upgrade/Modify/Remove Traffic Signal

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

VTrans has developed and implemented policies for centerline rumble strips and the SafetyEdge on all paving projects.

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.

Countermeasures are identified based on a review of the crash history (e.g., crash summary tables and collision diagram), existing conditions (e.g., traffic operations, roadway design, and adjacent land use), past studies, planned future developments and designs, and a field study to observe road user behaviors.

Crash modification factors are used to estimate the potential crash reduction that could be achieved by each countermeasures.

Does the State HSIP consider connected vehicles and ITS technologies?

No

Enter additional comments here to clarify your response for this question or add supporting information. Autonomous vehicles are not addressed by the HSIP.

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.

Vermont has been using the overall safety management process discussed in Part B of the HSM to conduct the HSIP.

Vermont has been using the critical rate method to screen the roadway network when identifying high crash locations.

Vermont has been using the methodology shown in Appendix 4a to update its crash cost estimates.

Vermont has been using crash modification factors for estimating the crash reduction benefits when calculating benefits/costs ratios (B/C ratio) for evaluating alternatives.

Vermont is in the process of preparing an implementation plan for incorporating AASHTOWARE SafetyAnalyst into the safety management process.

Vermont has used at some occasions the predictive equations presented in Part C of the HSM when conducting some site impacts analysis. However, the fact the equations are not calibrated to Vermont conditions has limited the use of these tools.

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

No

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.

The main challenge concerning our HSIP ranking methodology for spot improvements continues to be that it does not address roads that are off the Federal Aid System. The current HSIP ranking methodology generates locations based on the high crash locations that are generated by VTrans' Highway Safety Data Section. The data that the Highway Safety Data Section uses as input are only for the roads that fall under the Federal Aid highway system. Consequently, only locally maintained roads that are on the Federal Aid systems are considered as part of the ranking methodology of the HSIP.

Given that Vermont is a rural state with crashes that tend to be dispersed, another ongoing challenge with our current spot improvement methodology is that it tends to identify rural locations with very few crashes or urban locations with a large number of crashes at high traffic intersections.

VTrans acquired a license for AASHTOWare SafetyAnalyst and we are working on an implementation plan to incorporate it within our HSIP process. A consultant was hired to review Vermont's existing data availability and quality, conduct a gap analysis between existing data sets and the Safety Analyst data requirements and prioritize the data collection and transformation needs for implementation. We are hoping to include all public roads while implementing this methodology. We are expecting that SafetyAnalyst will solve the issues mentioned previously.

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VTrans and the Vermont FHWA Division Office hosted the conduct of an HSIP review by a team of FHWA representatives in May 2016. The purpose of the review was to assess the status of HSIP planning, implementation and evaluation efforts, with a focus on streamlining HSIP project delivery, identifying safety efforts beyond the HSIP and advancing HSIP evaluation efforts. The review team prepared a final report documenting recommendations. VTrans developed an action plan to implement the recommendations over the next few years.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

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

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	\$9,761,465	\$9,761,465	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	\$0	\$0	0%
Penalty Funds (23 U.S.C. 154)	\$0	\$0	0%
Penalty Funds (23 U.S.C. 164)	\$3,551,379	\$3,551,379	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	\$0	\$0	0%
Totals	\$13,312,844	\$13,312,844	100%

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?

25%

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

25%

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

24.56% of HSIP funding is programmed and obligated to local (non-state owned and operated) safety projects

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

1%

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

1%

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

0.75% of HSIP funding is programmed and obligated to non-infrastructure safety projects.

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.

VTrans has several large HSIP funded projects that are currently in the development process. When all of these projects reach construction as anticipated, there will not be enough HSIP funds available to construct these projects. VTrans is working to develop a better system to track Section 164 and 148 funded project through its Project Navigation System. VTrans will be working on developing a prioritized list of projects for construction.

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

Yes

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

The 2016 FHWA lead HSIP review recognized that HSIP funds were used by other VTrans business units (other than the Office of Highway Safety) to develop and implement safety projects. VTrans will be working in the future to develop a process to track all projects that uses HSIP funds during implementation and to gauge their effectiveness on reducing highway fatalities and serious injuries after completion.

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General Listing of Projects

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

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
MORRISTOWN STP HES 030-2(28) - Construction	Intersection geometry	Intersection geometrics - modify skew angle	0.01	Miles	\$13500	\$13500	HSIP (23 U.S.C. 148)	Rural Minor Arterial	7,200	40	State Highway Agency	Spot	Intersections	Improve Geometry
NEW HAVEN HES 032-1(8) - Development	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	0.3	Miles	\$130000	\$130000	Penalty Funds (23 U.S.C. 164)	Rural Minor Arterial	4,000	45	State Highway Agency	Spot	Intersections	Improve Geometry
BARRE TOWN STP HES 0169(8) - Development	Intersection geometry	Intersection geometrics - modify skew angle	0.01	Miles	\$94500	\$94500	HSIP (23 U.S.C. 148)	Rural Major Collector	5,200	35	State Highway Agency	Spot	Intersections	Improve Geometry
WILLISTON STP HES 5500(12) - Development	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	0.47	Miles	\$350000	\$350000	HSIP (23 U.S.C. 148)	Urban Minor Arterial	18,900	40	State Highway Agency	Other	Intersections	Improve Operations
HARTFORD-ROYALTON IMG SIGN(48) - Construction	Roadway signs and traffic control	Roadway signs (including post) - new or updated	21.32	Miles	\$1480029.96	\$1480029.96	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	24,000	65	State Highway Agency	Systemic	Older Drivers	Improve Signs and Markings
WINOOSKI HES 5100(13) - Construction	Intersection geometry	Intersection geometry - other	0.03	Miles	\$1211704.75	\$1211704.75	Penalty Funds (23 U.S.C. 164)	Urban Principal Arterial - Other	11,000	25	City of Municipal Highway Agency	Other	Pedestrians	Improve Infrastructures for all Users
PLAINFIELD NH 028-3(41) - Development	Intersection traffic control	Intersection traffic control - other	0.11	Miles	\$75000	\$75000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	0		State Highway Agency	Spot	Intersections	Improve Operations
ROCKINGHAM-HARTFORD IMG SIGN(54) - Construction	Roadway signs and traffic control	Roadway signs (including post) - new or updated	34	Miles	\$1260862.79	\$1260862.79	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	19,200		State Highway Agency	Systemic	Older Drivers	Improve Signs and Markings
MORRISTOWN STPG SGNL(47) - Construction	Intersection traffic control	Intersection traffic control - other	0.6	Miles	\$1069567.53	\$1069567.53	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Intersections	Improve Geometry
STATEWIDE - SOUTHWEST STPG SIGN(64) - Development	Roadway signs and traffic control	Roadway signs (including post) - new or updated	31.121	Miles	\$75000	\$75000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
STATEWIDE - NORTHWEST STPG SIGN(63) - Development	Roadway signs and traffic control	Roadway signs (including post) - new or updated	52.918	Miles	\$120000	\$120000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
HARTFORD NH 020-2(44) - Development	Intersection traffic control	Intersection traffic control - other	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	Improve Operations
STATEWIDE HES GARD(2) - Construction	Roadside	Barrier- metal	1	Numbers	\$613499.96	\$613499.96	Penalty Funds (23 U.S.C. 164)	Rural Minor Arterial	0	0	State Highway Agency	Systemic	Roadway Departure	Improve Infrastructures for all Users

2017 Vermont Highway Safety Improvement Program

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	RELATIONSHIP TO SHSP	
													EMPHASIS AREA	STRATEGY
LYNDON STPG SGNL(48) - Construction	Intersection traffic control	Modify traffic signal - modernization/replacement	0.095	Miles	\$648730.76	\$648730.76	Penalty Funds (23 U.S.C. 164)	Rural Major Collector	0	35	State Highway Agency	Spot	Intersections	Improve Operations
STATEWIDE HES SHSP(7) - Planned	Non-infrastructure	Transportation safety planning	1	Numbers	\$100371.23	\$100371.23	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0	0	Private (Other than Railroad)	Spot	Intersections	Improve Signs and Markings
BARRE CITY HES 037-1(8) - Development	Intersection geometry	Auxiliary lanes - add left-turn lane	0.02	Miles	\$65000	\$65000	Penalty Funds (23 U.S.C. 164)	Urban Minor Arterial	6,900	25	City of Municipal Highway Agency	Spot	Intersections	Improve Geometry
COLCHESTER HES NH 5600(14) - Development	Interchange design	Interchange design - other	1.025	Miles	\$250000	\$250000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other	22,800	35	State Highway Agency	Spot	Intersections	Improve Infrastructures for all Users
COLCHESTER HES 028-1(28) - Construction	Intersection geometry	Auxiliary lanes - add left-turn lane	0.02	Miles	\$391931.11	\$391931.11	Penalty Funds (23 U.S.C. 164)	Urban Minor Arterial	0	50	State Highway Agency	Spot	Intersections	Improve Geometry
COLCHESTER-ESSEX STPG SGNL(45) - Construction	Intersection traffic control	Modify traffic signal - modernization/replacement	4.656	Miles	\$98509.56	\$98509.56	HSIP (23 U.S.C. 148)	Urban Minor Arterial	0	35	Town or Township Highway Agency	Systemic	Intersections	Improve Operations
WILLISTON-ESSEX STPG SGNL(46) - Construction	Intersection traffic control	Modify traffic signal - modernization/replacement	4.494	Miles	\$370000	\$370000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other	1,000	35	State Highway Agency	Systemic	Intersections	Improve Operations
STATEWIDE - NORTHWEST REGION STPG SIGN(58) - Construction	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	41.066	Miles	\$13600	\$13600	HSIP (23 U.S.C. 148)		1,000	50	State Highway Agency	Systemic	Older Drivers	Improve Signs and Markings
STATEWIDE - NORTHEAST STPG SIGN(62) - Development	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	60.696	Miles	\$100000	\$100000	HSIP (23 U.S.C. 148)		1,000	50	State Highway Agency	Systemic	Older Drivers	Improve Signs and Markings
WEST RUTLAND STPG SGNL(50) - Development	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Numbers	\$30000	\$30000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	9,800	40	State Highway Agency	Other	Intersections	Improve Operations
ARLINGTON STP 319-1(29) - Development	Intersection traffic control	Modify control - modifications to roundabout	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		2,900	50	State Highway Agency	Spot	Intersections	Improve Geometry
BARRE TOWN HES STPG 6100(6) - Development	Intersection traffic control	Systemic improvements - signal-controlled	0.196	Miles	\$100000	\$100000	Penalty Funds (23 U.S.C. 164)	Urban Minor Arterial	11,900	35	State Highway Agency	Spot	Intersections	Improve Operations
WATERBURY STP SGNL(18) - Construction	Intersection traffic control	Modify control - modifications to roundabout	0.036	Miles	\$19411.57	\$19411.57	HSIP (23 U.S.C. 148)	Rural Minor Arterial	6,650	25	Town or Township Highway Agency	Spot	Intersections	Improve Geometry
HINESBURG HES 021-1(19) - Development	Intersection geometry	Auxiliary lanes - add left-turn lane	0.3	Miles	\$248719.92	\$248719.92	Penalty Funds (23 U.S.C. 164)	Rural Minor Arterial	8,600	40	State Highway Agency	Spot	Intersections	Improve Geometry

2017 Vermont Highway Safety Improvement Program

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	RELATIONSHIP TO SHSP	
													EMPHASIS AREA	STRATEGY
STATEWIDE - SOUTHWEST REGION STPG SIGN(47) - Closing	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1	Numbers	\$149.02	\$149.02	HSIP (23 U.S.C. 148)	Rural Major Collector	0	50	State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
STATEWIDE STPG TMNG(6) - Development	Intersection traffic control	Modify traffic signal timing - general retiming	1	Numbers	\$85000	\$85000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0	0	State Highway Agency	Systemic	Intersections	Improve Operations
FERRISBURGH NHG SGNL(42) - Closing	Intersection traffic control	Intersection traffic control - other	0.02	Miles	\$158139.81	\$158139.81	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	0	50	State Highway Agency	Spot	Intersections	Improve Operations
WATERBURY NHG SGNL(43) - Closing	Intersection traffic control	Intersection traffic control - other	0.01	Miles	\$20037.81	\$20037.81	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0	40	State Highway Agency	Other	Intersections	Improve Operations
LUDLOW HES SGNL(44) - Construction	Intersection traffic control	Intersection traffic control - other	0.02	Miles	\$47456.34	\$47456.34	Penalty Funds (23 U.S.C. 164)	Rural Principal Arterial - Other	0	50	State Highway Agency	Spot	Intersections	Improve Operations
STATEWIDE - SOUTHEAST REGION STPG MARK(312) - Development	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STATEWIDE - SOUTHWEST REGION STPG MARK(313) - Development	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STATEWIDE - SOUTHWEST REGION STPG MARK(309) - Construction	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$516760.25	\$516760.25	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Roadway Departure	Improve Signs and Markings
CHARLOTTE NHG SGNL(49) - Development	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Numbers	\$30000	\$30000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	Improve Operations
BENNINGTON STP 1000(21) - Development	Alignment	Vertical alignment or elevation change	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	Improve Geometry
ST. GEORGE STP 021-1(36) - Development	Intersection traffic control	Intersection traffic control - other	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	Improve Operations
STATEWIDE - NORTHEAST REGION STPG MARK(310) - Development	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STATEWIDE - NORTHWEST REGION STPG MARK(311) - Development	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$20000	\$20000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings

2017 Vermont Highway Safety Improvement Program

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	RELATIONSHIP TO SHSP	
													EMPHASIS AREA	STRATEGY
BERLIN-GUILDHALL NHG SIGN(59) - Construction	Roadway signs and traffic control	Roadway signs (including post) - new or updated	61.714	Miles	\$90300	\$90300	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
STATEWIDE IMG SIGN(61) - Development	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Numbers	\$75000	\$75000	HSIP (23 U.S.C. 148)		0			Systemic	Older Drivers	Improve Signs and Markings
STATEWIDE IMG MARK(116) - Construction	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$1020000	\$1020000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STATEWIDE - NORTHEAST REGION STPG MARK(306) - Construction	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$530000	\$530000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STATEWIDE - NORTHWEST REGION STPG MARK(307) - Construction	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$30000	\$30000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STATEWIDE - SOUTHEAST REGION STPG MARK(308) - Construction	Roadway delineation	Longitudinal pavement markings - remarking	1	Numbers	\$30000	\$30000	HSIP (23 U.S.C. 148)		0			Systemic	Lane Departure	Improve Signs and Markings
STOWE-BERKSHIRE STPG SIGN(49) - Closing	Roadway signs and traffic control	Roadway signs (including post) - new or updated	44.946	Miles	\$45133.06	\$45133.06	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0	50	State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
RUTLAND TOWN NHG 019-3(60) - Construction	Intersection traffic control	Modify traffic signal - modernization/replacement	0.07	Miles	\$485453.96	\$485453.96	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other	0		State Highway Agency	Other	Intersections	Improve Operations
COLCHESTER STP 5600(19) - Development	Roadway	Roadway - other	1.05	Miles	\$135000	\$135000	HSIP (23 U.S.C. 148)	Urban Minor Arterial	0		State Highway Agency	Other	Intersections	Improve Geometry
WINOOSKI-CAMBRIDGE STPG SIGN(55) - Construction	Roadway signs and traffic control	Roadway signs (including post) - new or updated	23.94	Miles	\$262874.99	\$262874.99	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
STOWE HES 0235(22) - Development	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	0.048	Miles	\$94993.87	\$94993.87	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	Improve Geometry
STATEWIDE - SOUTH REGION STPG SIGN(57) - Construction	Roadway signs and traffic control	Roadway signs (including post) - new or updated	55.514	Miles	\$472269.96	\$472269.96	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Older Drivers	Improve Infrastructures for all Users
HYDE PARK HES 030-2(23) - Complete	Interchange design	Interchange design - other	0.02	Miles	\$4336.86	\$4336.86	Penalty Funds (23 U.S.C. 164)	Rural Minor Arterial	8,700	40	State Highway Agency	Spot	Intersections	Improve Geometry

2017 Vermont Highway Safety Improvement Program

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	RELATIONSHIP TO SHSP	
													EMPHASIS AREA	STRATEGY
STATEWIDE HES HSIP(2) - Development			1	Numbers	\$10000	\$10000	Penalty Funds (23 U.S.C. 164)	Rural Minor Arterial	0	0		Spot	Intersections	Improve Signs and Markings
STATEWIDE HES HSIP(7) - Development	Roadway signs and traffic control	Roadway signs and traffic control - other	42.023	Miles	\$80000	\$80000	Penalty Funds (23 U.S.C. 164)	Rural Principal Arterial - Other	0		State Highway Agency	Spot	Intersections	Improve Signs and Markings

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

The projects above were all obligated during the reporting period (State Fiscal Year).

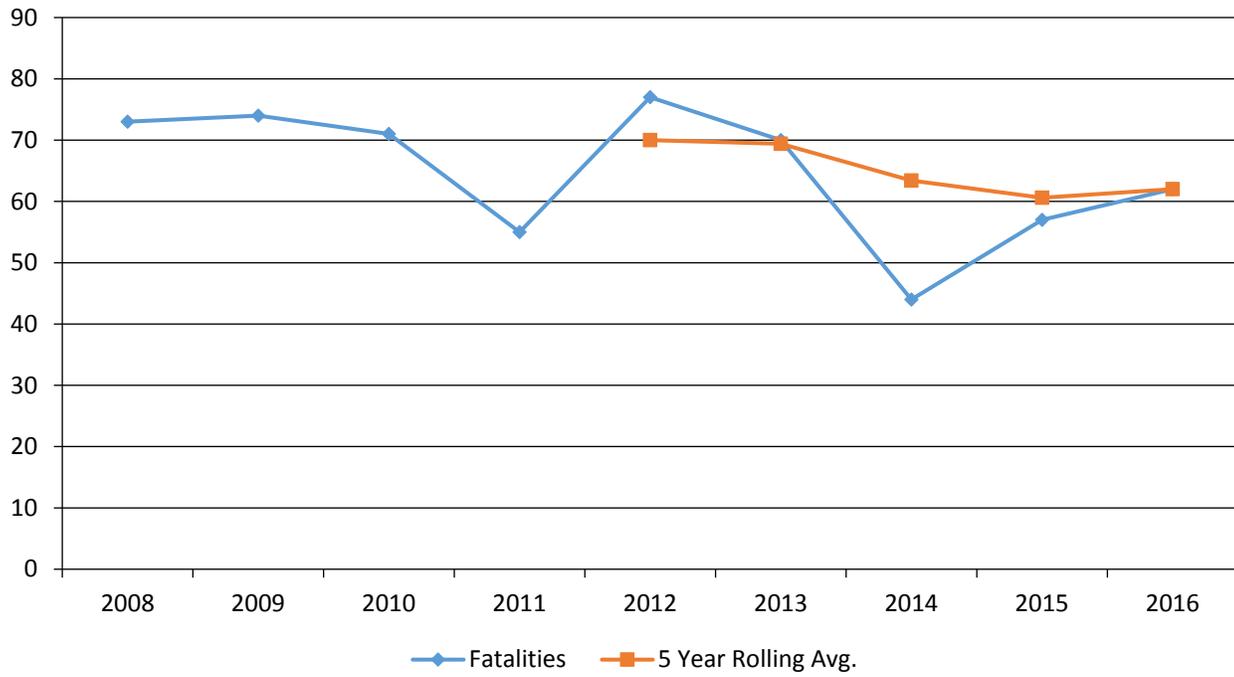
Safety Performance

General Highway Safety Trends

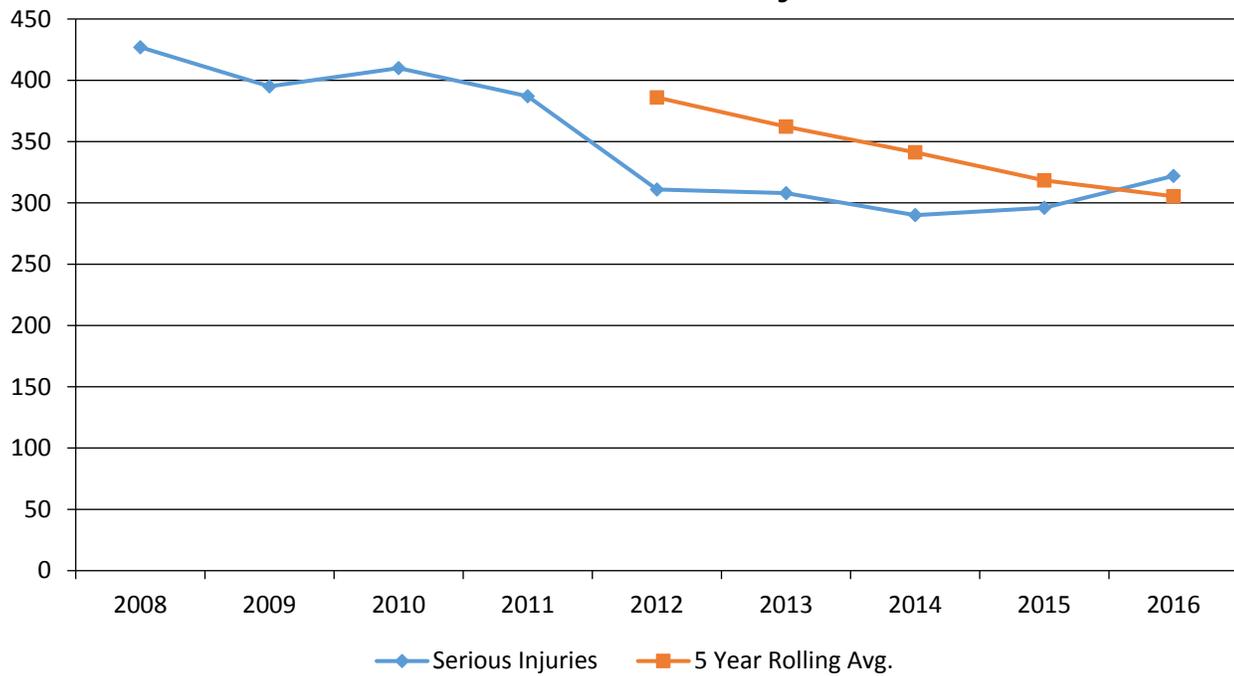
Present data showing the general highway safety trends in the State for the past five years.

PERFORMANCE MEASURES	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	73	74	71	55	77	70	44	57	62
Serious Injuries	427	395	410	387	311	308	290	296	322
Fatality rate (per HMVMT)	1.017	0.982	0.980	0.770	1.070	0.983	0.623	0.780	0.840
Serious injury rate (per HMVMT)	5.950	5.241	5.660	5.419	4.322	4.327	4.108	4.049	4.372
Number non-motorized fatalities	1	5	5	4	10	6	4	9	6
Number of non-motorized serious injuries	29	35	33	36	40	38	25	36	37

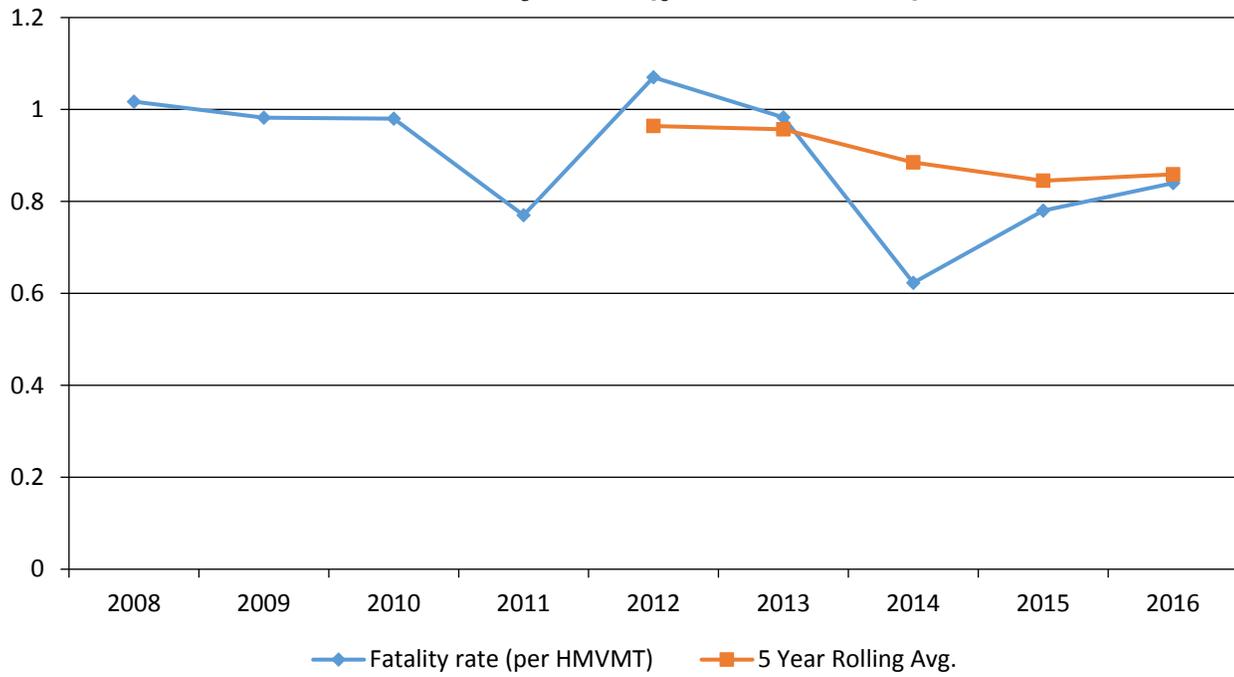
Annual Fatalities



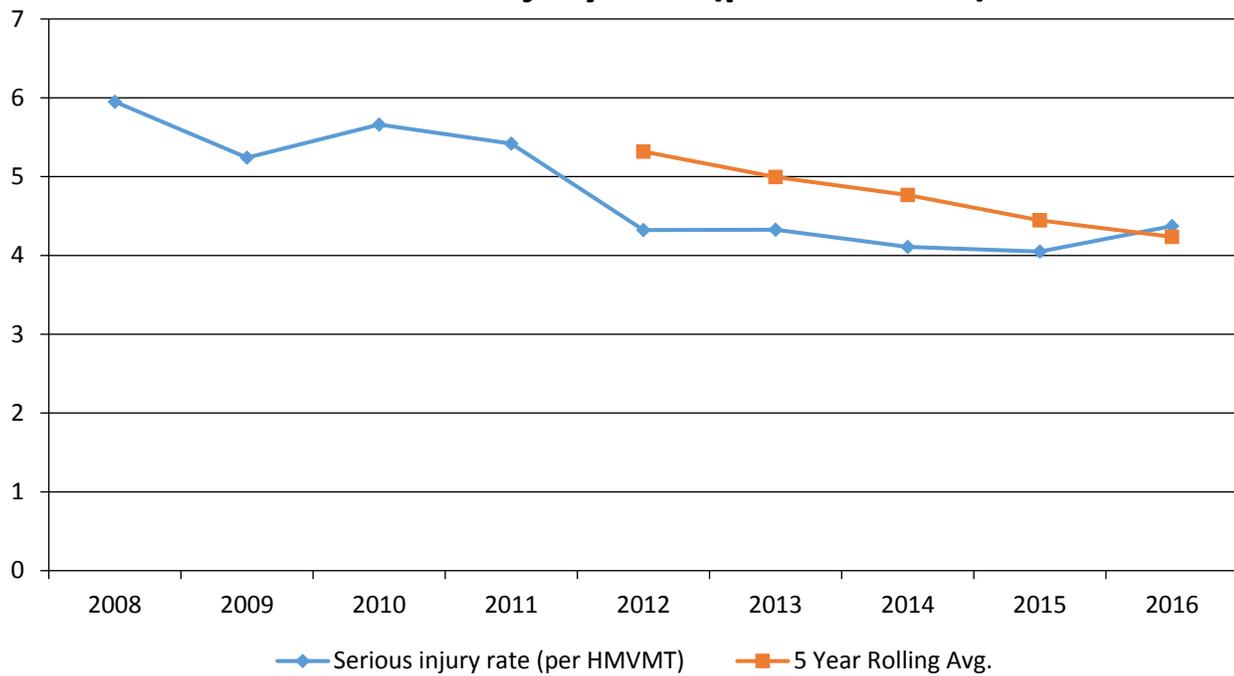
Annual Serious Injuries



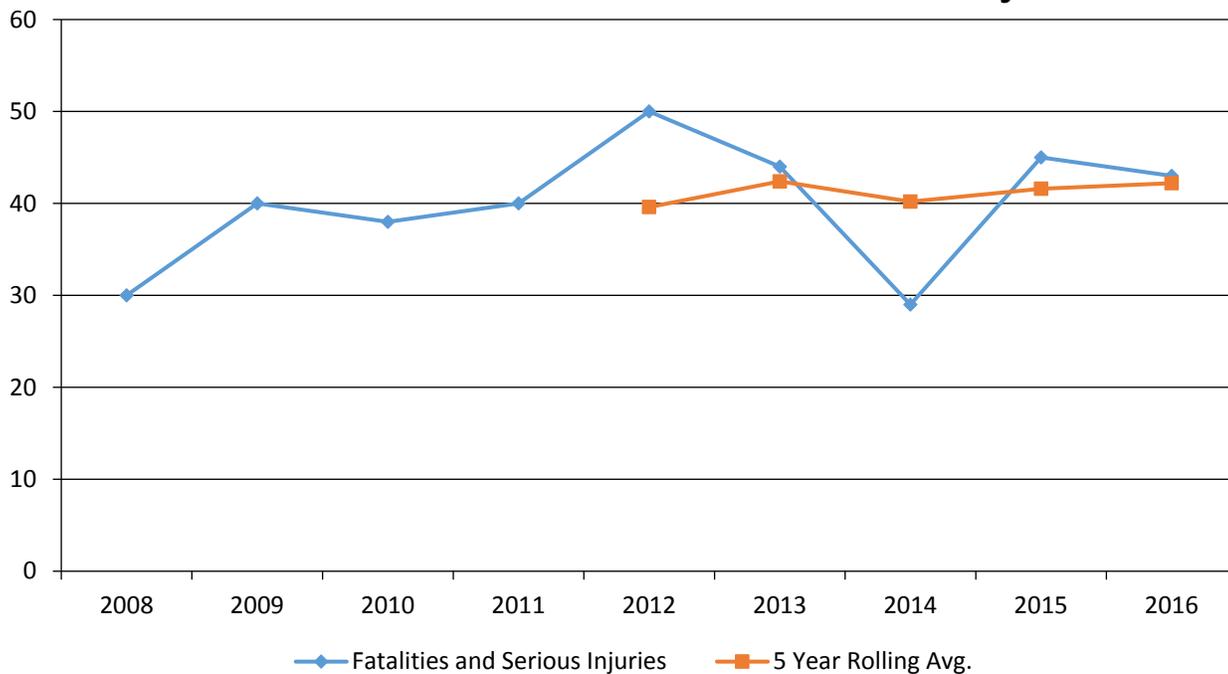
Fatality rate (per HMVMT)



Serious injury rate (per HMVMT)



Non Motorized Fatalities and Serious Injuries



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

Describe fatality data source.

FARS

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

The number of fatalities is based on 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	4.4	23.8	0.36	18.19
Rural Principal Arterial - Other Freeways and Expressways	0	0	0	0
Rural Principal Arterial - Other	11	28	1.55	8.36
Rural Minor Arterial	10.2	45.4	1.06	18.42

2017 Vermont Highway Safety Improvement Program

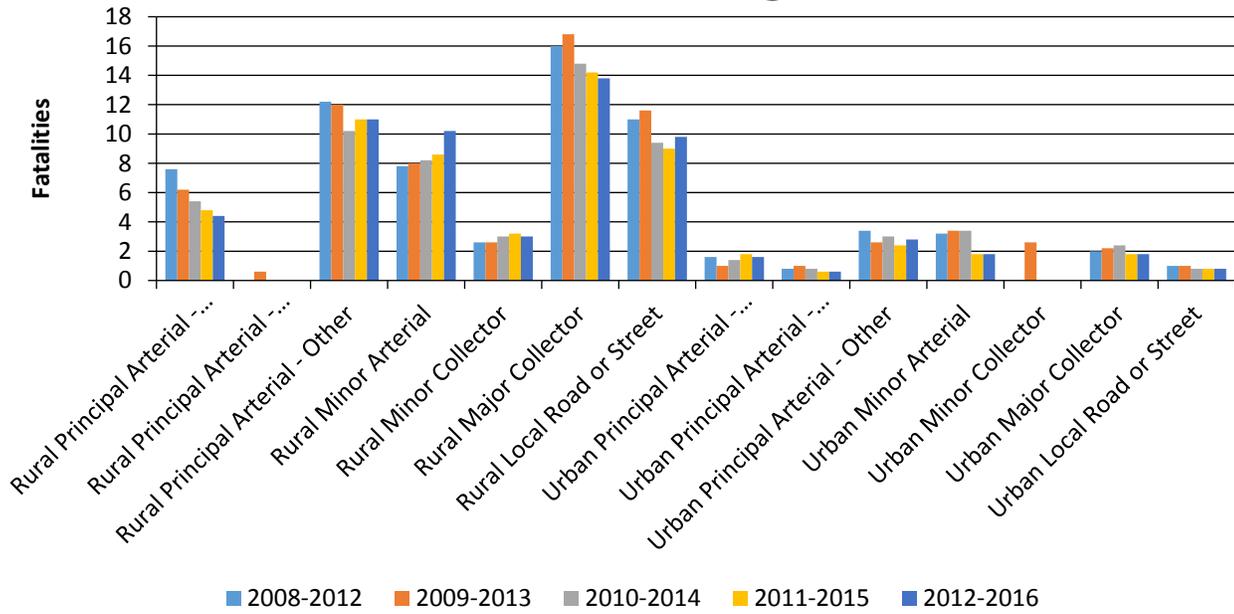
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Collector	3	12.6	1.41	5.93
Rural Major Collector	13.8	60.2	1.2	17.1
Rural Local Road or Street	9.8	41.6	1.02	4.31
Urban Principal Arterial - Interstate	1.6	4	0.32	0.82
Urban Principal Arterial - Other Freeways and Expressways	0.6	2.4	1.03	3.99
Urban Principal Arterial - Other	2.8	30.2	0.6	6.46
Urban Minor Arterial	1.8	18.8	0.5	5.21
Urban Minor Collector	0	0	0	0
Urban Major Collector	1.8	13.8	0.73	5.57
Urban Local Road or Street	0.8	10.6	0.2	2.91

2017 Vermont Highway Safety Improvement Program

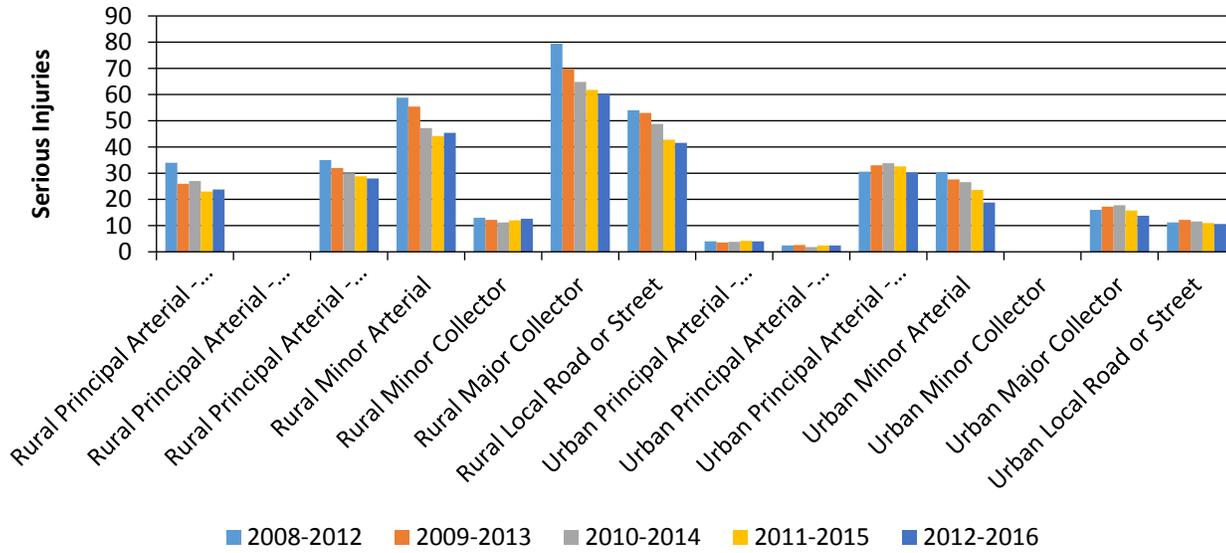
Year 2016

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	42.2	191.6	0	0
County Highway Agency				
Town or Township Highway Agency	16.6	74.6	0	0
City of Municipal Highway Agency	3.2	32.8	0	0
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				

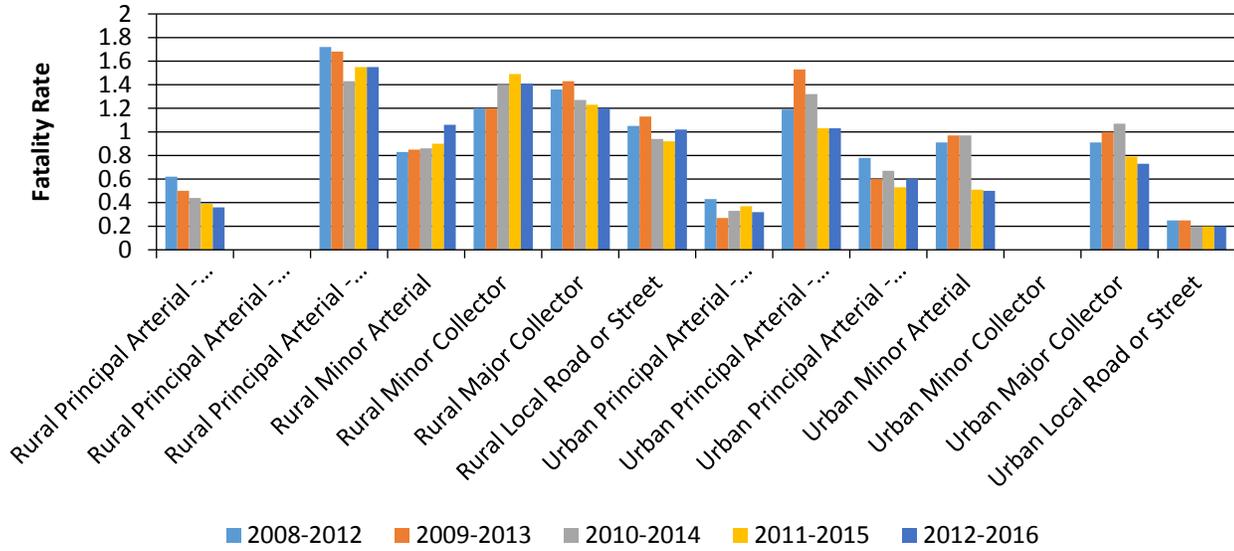
Number of Fatalities by Functional Classification 5 Year Average



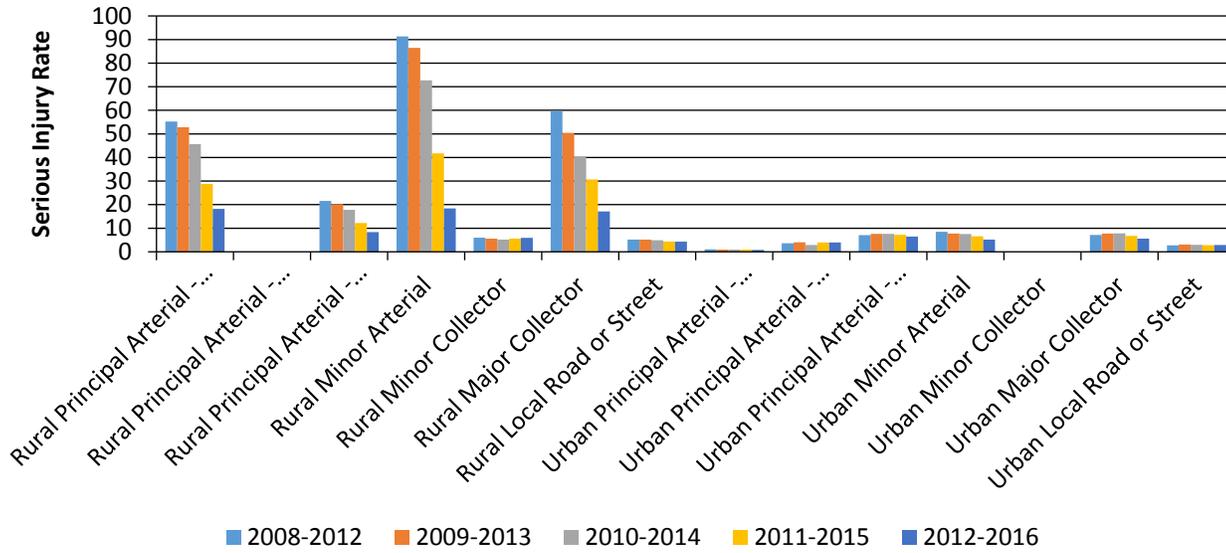
Number of Serious Injuries by Functional Classification 5 Year Average



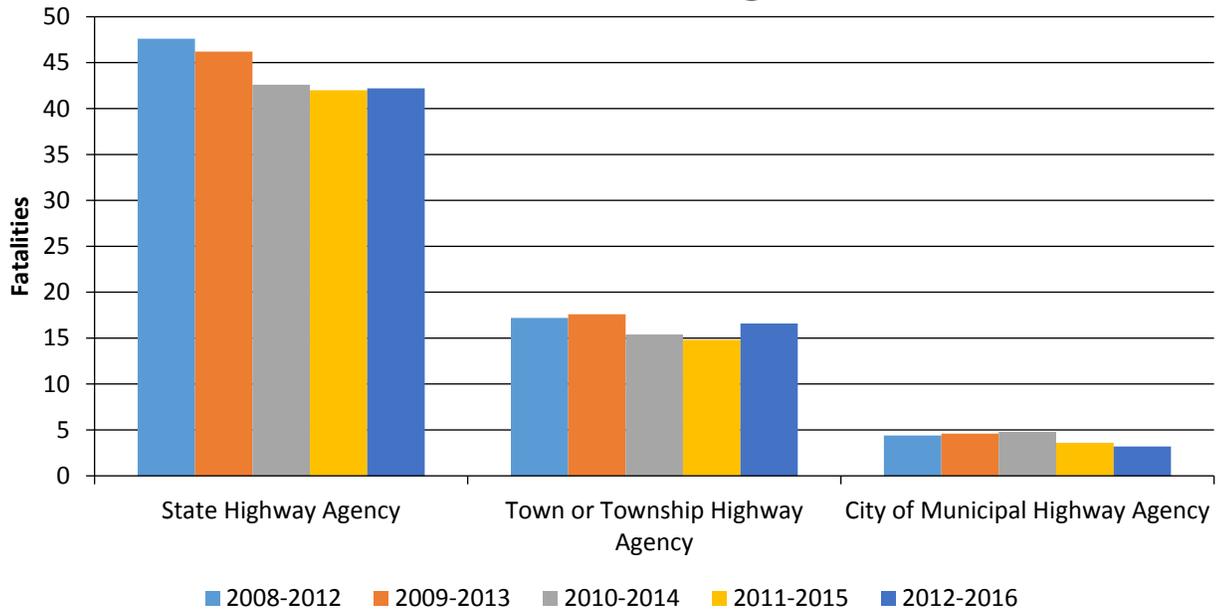
Fatality Rate (per HMVMT) by Functional Classification 5 Year Average



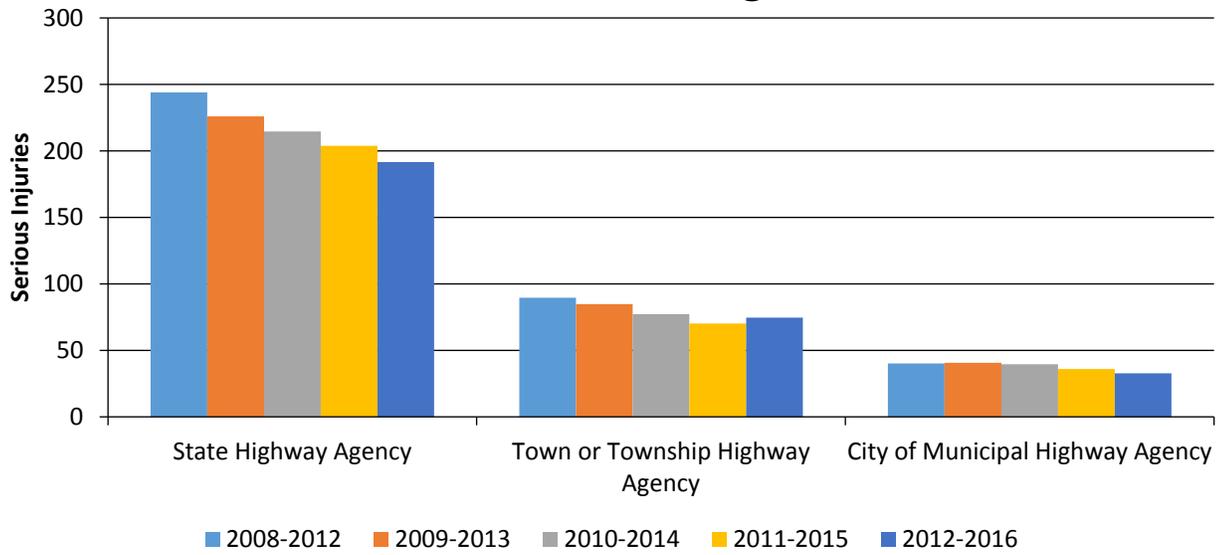
Serious Injury Rate (per HMVMT) by Functional Classification 5 Year Average



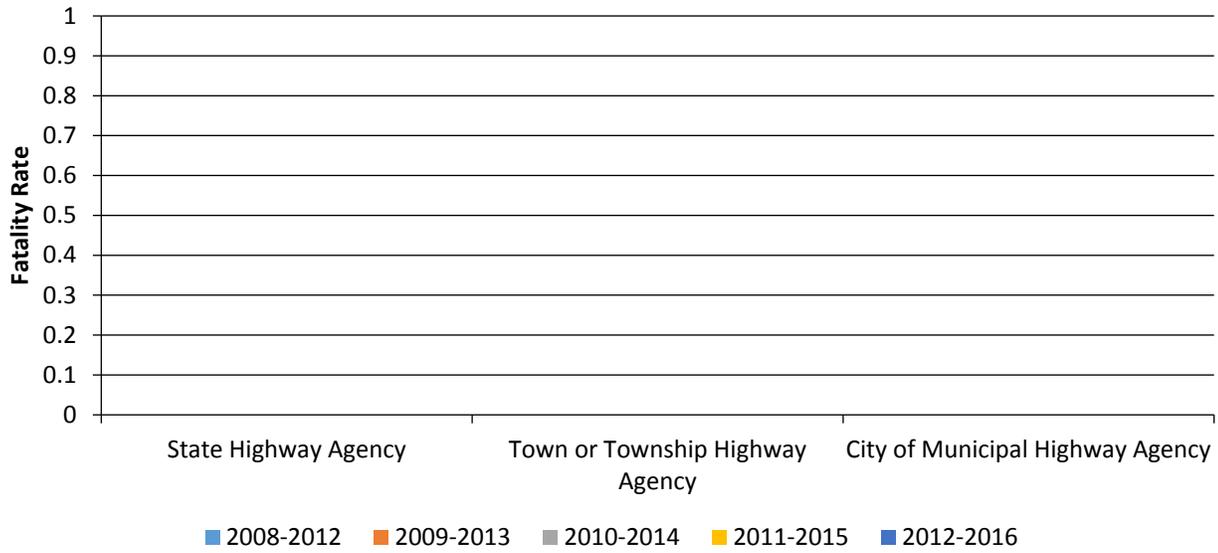
Number of Fatalities by Roadway Ownership 5 Year Average



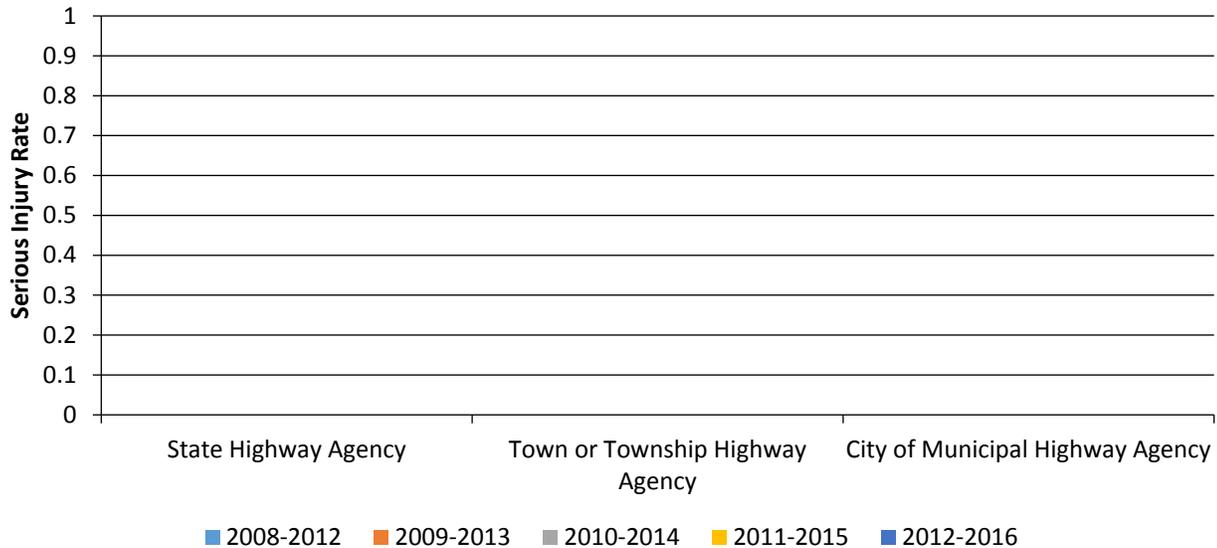
Number of Serious Injuries by Roadway Ownership 5 Year Average



Fatality Rate (per HMVMT) by Roadway Ownership 5 Year Average



Serious Injury Rate (per HMVMT) by Roadway Ownership 5 Year Average



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

Note that the data for State Highway Agency also include some crashes that took place on Vermont Class I Roads that would be owned by towns and cities.

Note also that HMVTMs by Roadway Ownership are not available.

In addition, urban boundaries were changed from 2013 to 2014 which could result in changes in mileage when compared to previous years.

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

Yes

Provide additional discussion related to general highway safety trends.

A unique element of safety implementation in Vermont is the collaborative effort of a group of public and private organizations under the Vermont Highway Safety Alliance (VHSA). The efforts of the VHSA are led by the Strategic Highway Safety Plan (SHSP).

Another uncommon aspect of safety implementation in Vermont is that VTrans not only manages the Highway Safety Improvement Program but it also operates the Governor’s Highway Safety Program. This has facilitated the coordination and implementation of behavioral countermeasures targeted at the Critical Emphasis Areas listed in the SHSP.

2017 Vermont Highway Safety Improvement Program

Over the years, leaving the road and crashes taking place at intersections have been the two crash types that have typically accounted for a large proportion of major crashes (fatal plus serious injury crashes) and those that are more readily addressed by the HSIP.

For several years, VTrans has been implementing statewide policies related to the inclusion of centerline rumble stripes and the SafetyEdge on all paving projects. The most recent Highway Safety Plan prepared by the Governor's Highway Safety Program includes projects that are targeted at driver behaviors that lead to the occurrence of leaving the roadway including reducing impaired driving, reducing speeding and reducing distracted driving.

In spring 2017, VTrans identified four safety corridors along the interstate where high speeds were an issue. During summer 2017, from June to September, message boards along with radar speed feedback signs were installed and increased enforcement was provided by the State during this period.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2018 Targets *

Number of Fatalities 58.0

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

2014 was a historical low for fatalities in Vermont. Since then, Vermont has observed two years of increasing numbers of fatalities, which mirrors the rise that has been realized across the nation. In addition, two states in New England have legalized marijuana, which could have an impact on Vermont. The trend line used for this performance measure is based on over 10 years of data and utilizes a linear model to establish the 2018 target. The 2017-2021 Strategic Highway Safety Plan measures success in term of overall crash reduction in serious and fatal crashes with a goal of 10% reduction by 2021. The percentage reduction in fatalities expected by this target supports the goal of the SHSP by providing a 3% reduction over three years.

Number of Serious Injuries 290.0

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

The long-term trend for serious injuries has been continually trending down. However, since 2012 the number of serious injuries has not varied greatly. The trend line used for this performance measure is based on over 10 years of data and utilizes a linear model to establish the 2018 target. The 2017-2021 Strategic Highway Safety Plan measures success in term of overall crash reduction in serious and fatal crashes with a goal of 10% reduction by 2021. The proposed target reduce the number of serious injuries by 8% over three years.

2017 Vermont Highway Safety Improvement Program

Fatality Rate 0.830

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

Following an historical low for fatalities in Vermont in 2014, Vermont has seen an increase in the number of fatalities the last two years. The number of Vehicle Miles Traveled in Vermont has been somewhat stable in recent years. The trend line used for this performance measure is based on over 10 years of data and utilizes a linear model to establish the 2018 target. Our proposed target is a reduction in the 5-year fatality rate, which support the overall reduction in fatal and serious crashes presented in the 2017-2021 Strategic Highway Safety Plan.

Serious Injury Rate 4.300

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

The long-term trend for serious injuries has been continually trending down and since 2012, the number of serious injuries has not varied greatly. The number of Vehicle Miles Traveled in Vermont has been somewhat stable in recent years. The trend line used for this performance measure is based on over 10 years of data and utilizes a linear model to establish the 2018 target. Our proposed target is a reduction in the 5-year serious injury rate, which support the overall reduction in fatal and serious crashes presented in the 2017-2021 Strategic Highway Safety Plan.

Total Number of Non-Motorized Fatalities and Serious Injuries 40.1

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

The number of bicycle and pedestrian fatalities and serious injuries is a value that has been steadily increasing in recent years. While there has been a surge of bicycle fatalities, pedestrian crashes represent the largest problem. Crashes involving bicyclists currently account for approximately 3.5% of all major crashes and this number is likely to increase as the bicyclist population increases. On average, 10% of the total major crashes involve pedestrians. From 2011 through 2015, the average annual crash rate for pedestrian fatalities was reported to be six crashes per year. Different types of trend lines were explored to determine a reasonable trend. A 3rd degree polynomial trend line provided the best fit, which projected a slight decrease in 2018. The 2017-2021 Strategic Highway Safety Plan considers pedestrians and bicyclists as two separate emphasis area with their own sets of strategies. The reduction goal for each of these two emphasis areas in the 2017-2021 Strategic Highway Safety Plan is a 10% reduction if fatal and serious injury crashes. Our proposed target is downward and contribute to the overall goal of the Strategic Highway Safety Plan.

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

2017 Vermont Highway Safety Improvement Program

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

Under MAP-21 FHWA and NHTSA were required to develop some National Performance Targets for various areas. In the area of highway safety, FHWA and NHTSA settled on five performance measures. Initial goals for these 5 performance measures are to be set by August 31, 2017.

FHWA, in an effort to assist states with the generation of performance measures, developed different workshops/training courses for states to take advantage of these resources in their process of setting targets. On January 10th, 2017, Vermont conducted the "Safety Performance Target Setting Workshop." The outcome of this workshop led to the establishment of the Target Setting Task Force and subsequent proposed targets.

Following the model suggested in the target setting workshop, VTrans established a multi-disciplinary task force to evaluate the data and propose the 2018 safety target goals. Data for each of the five performance measures was tracked from 2005 to the most recent year that data was available. Utilizing the five-year running average data, a best-fit trend line was established and projected out to 2018. The task force then considered external pressures that could move the target up or down from the projected value ending with a performance measure goal.

The established performance measure goals were vetted by the Vermont AOT, Policy Planning and Intermodal Development Division, prior to receiving final approval by Vermont AOT Executive Staff and the Vermont Highway Safety Alliance Board of Directors.

The task force included representatives from the VTrans Office of Highway Safety, Governor's Highway Safety Program, VTrans Highway Safety Plan Coordinator, VTrans Highway Safety Improvement Plan Engineer, VTrans Transportation Planning Coordinator, VTrans Bike & Pedestrian Coordinator and the Chittenden County Regional Planning Commission.

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.

Vermont does not wish to establish separate targets for the urbanized areas.

Applicability of Special Rules

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

No

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

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

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PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015
Number of Older Driver and Pedestrian Fatalities	16	16	10	12	14	7	11
Number of Older Driver and Pedestrian Serious Injuries	36	41	26	28	35	27	18

Number of Older Driver and Pedestrian Fatalities and Serious Injuries by Year.



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

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries
Other-Change in fatal and serious injury 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.

The overall effectiveness of the HSIP is measured by changes in the number of fatalities and serious injuries as well as by changes in the number of fatal and serious injury crashes (referred to as major crashes in the Strategic Highway Safety Plan).

The trend in the five-year average of the number of fatal crashes has been down from the 2008-2012 period to the 2012-2016 one passing from 63 fatal crashes to 57 fatal crashes.

Similarly the five-year average of the number of serious injury crashes has also been going down passing from 313 serious injury crashes to 253.

The five-year averages of the number of fatalities and serious injuries went down for the same periods as well. The five-year average of the number of fatalities went from 70 fatalities to 62 while the five-year average of the number of serious injuries went from 386 to 305 serious injuries.

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

RSAs completed
Increased awareness of safety and data-driven process

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

Twelve road safety audits were conducted specifically for the HSIP in 2015 and twelve were conducted in 2016.

There has been an increase in the level of awareness of safety while developing other types of projects within VTrans. For example, the Pavement Management Unit has been requesting crash data and has been seeking input from the Office of Highway Safety when developing paving projects.

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

No

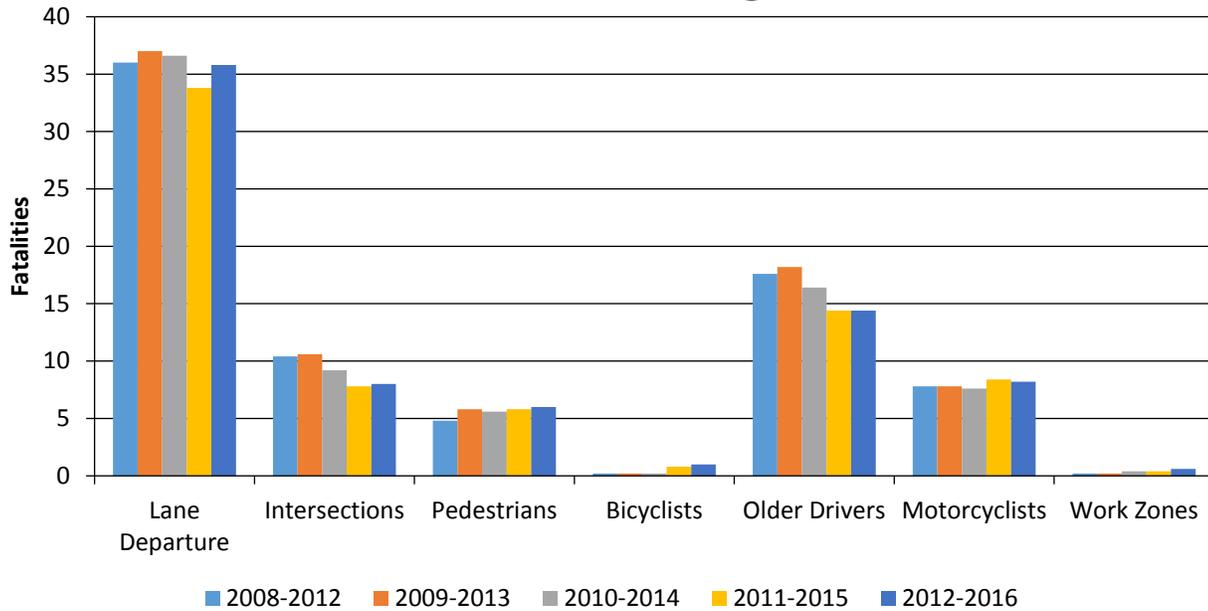
Effectiveness of Groupings or Similar Types of Improvements

Present and describe trends in SHSP emphasis area performance measures.

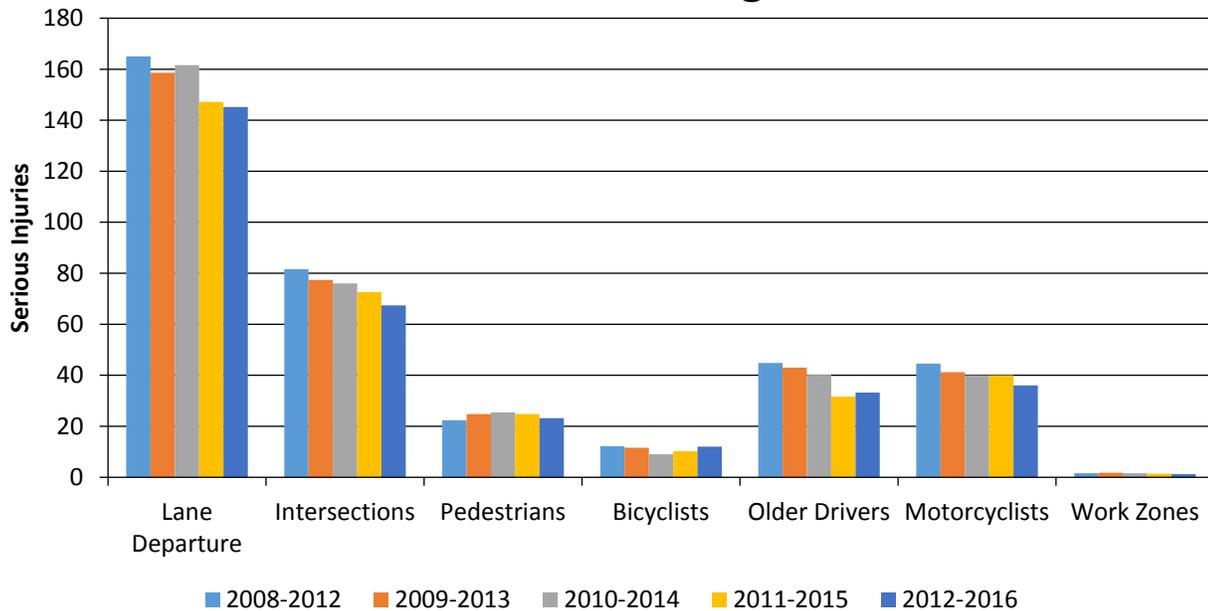
Year 2016

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
Lane Departure		35.8	145.2	0.5	2.01			
Intersections		8	67.4	0.11	0.93			
Pedestrians		6	23.2	0.08	0.32			
Bicyclists		1	12	0.01	0.16			
Older Drivers		14.4	33.2	0.2	0.46			
Motorcyclists		8.2	36	0.11	0.5			
Work Zones		0.6	1.2	0.01	0.02			

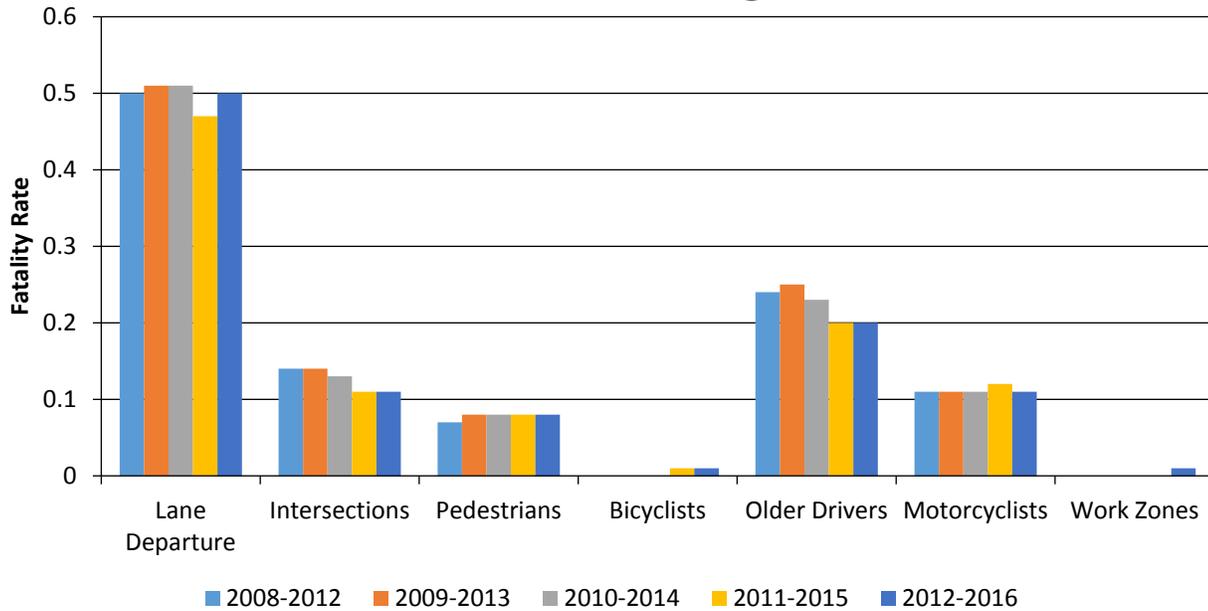
Number of Fatalities 5 Year Average



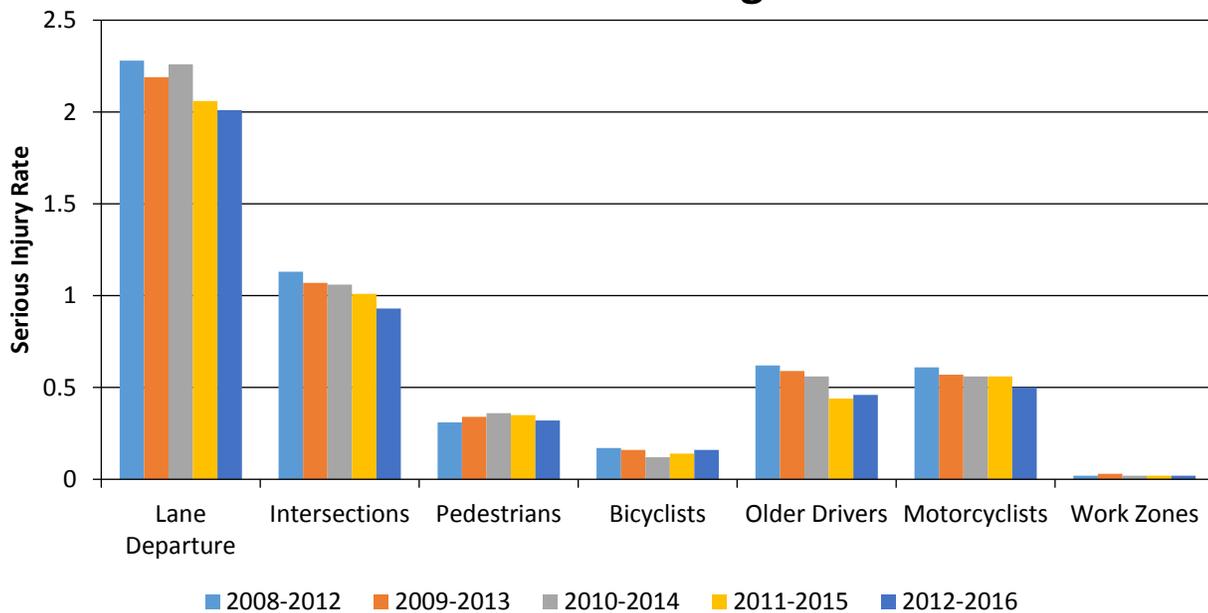
Number of Serious Injuries 5 Year Average



Fatality Rate (per HMVMT) 5 Year Average



Serious Injury Rate (per HMVMT) 5 Year Average



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

The following factors were considered when presenting the data.

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Older Driver Emphasis Area: Occupants of ALL ages w/major injuries in all vehicles involved in a Major Crash whereby a 65+ YO operator was involved. Occupants of ALL ages w/fatal injuries in all vehicles involved in a Major Crash whereby a 65+ YO operator was involved.

Lane Departure: Includes Vehicle Collided With overturned, guardrail/curb, tree, pole./sign, ledge/boulder, and other fixed object and sequence of events Ran off Road and Overturned/rollover

Intersections: 4 way, T, Y, Circle/roundabout and 5 way

Motorcyclists: PlateType

Work Zones: Road Condition = work zone

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

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

CounterMeasures:	Roundabout
Description:	In May 2016, VTrans summarized crash data at roundabouts in Vermont. For each site, the same number of before and after crash data was used. For example, for a site that had only one year of crash data available following construction, one year of before crash data was used. Crashes were summarized by severity levels. No statistical analysis was performed. This was a simple before and after crash data analysis. The roundabouts included in this analysis included all known roundabout in operation.
Target Crash Type:	All
Number of Installations:	11
Number of Installations:	11
Miles Treated:	
Years Before:	1 to 5 per site
Years After:	1 to 5 per site
Methodology:	Simple before/after

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The evaluation showed a crash reduction in all fatal and injury categories and an increase in property damage only (PDO) crashes. Overall, the total number of crashes went down by 5%.

	Fatal	Incap Inj	Non-Incap	Possible Injury	PDO	Total
Results:						
Before	2	7	22	15	63	109
After	0	2	10	10	82	104
Change	-100%	-71%	-55%	-33%	30%	-5%

File Name: [Vermont Roundabouts BeforeAfter May 2016.xlsx](#)

Project Effectiveness

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

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

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

Yes

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

Of the seven emphasis areas identified in the SHSP, lane departure crashes and intersection crashes are the two areas that specifically relate to engineering and the HSIP.

The 2017-2021 SHSP has target reductions for intersection and lane departure major crashes that have been set at 10% of 2012 thresholds. In terms of numbers, this represents a five-year target of 72 major crashes for intersection crashes and a five-year average target of 186 major crashes for lane departure crashes.

The latest five-year average (2012-2016) for lane departure crashes is 148 major crashes, which is below the SHSP target of 186 major crashes.

For the emphasis area concerning intersections, the latest five-year average (2012-2016) is 66 major crashes. This five-year average is below the SHSP target of 72 major crashes at intersections.

Compliance Assessment

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

04/26/2017

What are the years being covered by the current SHSP?

From: 2017 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.

The 2017-2021 Strategic Highway Safety Plan was endorsed by Vermont Secretary of Transportation, Joe Flynn, on April 26, 2017. On May 16, 2017, FHWA Vermont Division Administrator, Matthew Hake, approved the process that was followed by Vermont to produce the 2017-2021 Strategic Highway Safety Plan.

The 2017-2021 SHSP can be viewed [by clicking this link](#).

The process for developing the next Strategic Highway Safety Plan will be initiated in 2021. The next Strategic Highway Safety Plan will be due in 2022 and will cover the period 2022-2026.

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

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 SEGMENT										
Segment Identifier (12)	100	100					0	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					0	100		
Surface Type (23)	100	100					0	100		

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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
Begin Point Segment Descriptor (10)	100	100					0	0	0	0
End Point Segment Descriptor (11)	100	100					0	0	0	0
Segment Length (13)	100	100								
Direction of Inventory (18)	50	50								
Functional Class (19)	100	100					0	100	100	100
Median Type (54)	50	50								
Access Control (22)	100	100								
One/Two Way Operations (91)	100	100								
Number of Through Lanes (31)	100	100					0	0		
Average Annual Daily Traffic (79)	100	100					0	0		
AADT Year (80)	100	100								
Type of Governmental Ownership (4)	100	100					0	50	50	50
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			0	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			25	0						
AADT for Each Intersecting Road (79)			25	25						
AADT Year (80)			25	25						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										

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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
Unique Interchange Identifier (178)					50	50				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					0	0				
Roadway Type at End Ramp Terminal (199)					0	0				
Interchange Type (182)					0	0				
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):	94.44	94.44	9.38	6.25	68.18	68.18	0.00	50.00	50.00	50.00

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

Note that in this table, there are 0% values that should be read as NA, Not Applicable, as percentages do not apply.

Local Paved Roads - NA for state owned (locals own them all).

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.

In September 2016, the Mapping Section sent out a spreadsheet of the MIRE elements among the Agency (VTrans) to make an assessment of what MIRE fundamental data elements (MIRE FDEs) the Agency has, which section maintains it and which elements may need to be built.

In September 2016, VTrans also received a draft geodatabase template of the MIRE database that Rhode Island DOT is having built by Esri to give us a point of beginning as the assessment of MIRE moves forward.

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Several data experts from different Agency of Transportation units met on June 11, 2017 to discuss the status of the MIRE FDEs data.

The group compiled a chart that shows what data the Agency currently had and what state the data was. Some of the MIRE FDEs data can be extracted by reconfiguring existing data sets. This group estimated that Vermont currently collected 80-90% of the necessary data elements required in the MIRE FDEs schema. Data is stored in GIS format in ArcSDE as features or event tables. Current data may not be stored in the MIRE schema and may require translation to meet MIRE requirements.

There are some MIRE FDEs that already exist on the federal aid system due to HPMS requirements, or existing collection to support other programs within VTrans. These can be updated and process to defined to meet the MIRE data schema within the short term. Intersection data and other segment data may take time to develop and require medium term, and AADT collection and data on the more rural local roads may be a longer-term process.

Some elements are not being collected on state and municipal highways, but there is coordination with regional planning commissions, who work directly with towns, cities, the gores and grant within Vermont. As a plan is formulated, there will be an initiative to move forward in data collection, with coordination with the RPCs and locals as needed. Vermont does have federal highways, under several federal agencies, which will need to be coordinated to gain this data.

It is uncertain at this time to what extent the other agencies that owns the roads will collect MIRE FDEs at this time and an assessment of this may be done as part of the planning process for the FDEs collection.

The largest missing data set in Vermont's roadway data is the intersection data. There currently exists no single comprehensive system to identify all Vermont intersections and their corresponding traffic controls and associated elements. For example, The Agency has separate intersection databases for traffic counting and traffic signals. These system identifiers will need to be merged into the new system in order to maintain the current business processes. Some new intersection control data will require coordination with local communities and/or the Regional Planning Commissions to collect the needed data.

Vermont will focus on developing a system that will give each intersection a unique identifier that will permit to merge the existing numbering schemes. This intersection schema will be the highest priority to addressed before any other work with intersecon can be accomplished.

The Agency has secured 405c funds from the Traffic Records Coordination Committee for FY2018 to develop an inventory of intersections.

The group that met on June 11, 2017 identified the following potential schedule for completed an intersection database on the federal-aid system.

- Develop intersection numbering system and database elements - (August - October 2017)
- Link other database numbering systems into new database - (September -October 2017)
- Collect Intersection data with temporary employees via Google Maps and or other similar databases. (January -December 2018)
- Obtain the remainder of intersection data via field visits to sites that do not have a photo log option. (January -December 2018)

Other tasks needed to comply with the 2026 deadline include:

Build on the July 11, 2017 meeting and preform a rigorous assessment of what exists, identify gaps and develop a data acquisition plan. The listing of the MIRE FDEs with collection status is in process of being developed as an inventory of existing data sources is being created across a series of sections within the Vermont Agency of Transportation.

Identify the technology and methodologies including GIS technology for collecting the MIRE FDEs.

Determine a process for data exchange with other agencies that will collect data.

Estimating the costs, levels of staffing, or resource requirements to collect the MIRE FDEs.

Identifying funding for the collection, storage, and maintenance of the MIRE FDE data.

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.

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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	Suspected Serious Injury (A)	Yes	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Suspected Serious Injury (A)	Yes	Suspected Serious Injury (A) - (previously Injury – Incapacitating) is any injury, other than fatal, which results in one or more of the following: Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood Broken or distorted extremity (arm or leg) Crush injuries Suspected skull, chest or abdominal injury other than bruises or minor lacerations Significant burns (second and third degree burns over 10% or more of the body) Unconsciousness when taken from the crash scene Paralysis	Yes	Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood Broken or distorted extremity (arm or leg) Crush injuries Suspected skull, chest or abdominal injury other than bruises or minor lacerations Significant burns (second and third degree burns over 10% or more of the body) Unconsciousness when taken from the crash scene Paralysis	Yes
Crash Database	Suspected Serious Injury (A)	Yes	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	N/A	No	N/A	No	N/A	No

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

Vermont does not have an overall crash data dictionary. The crash form instructions manual contains the definitions related to the fields listed on the form and this is what has been used mostly (NHSTA 2016 Traffic Records Assessment concluded that “while the WebCrash data dictionary alone did not contain the necessary information, when combined with the Investigator's Guide for Completing the State of Vermont Uniform Crash Report, all data elements and allowable values were covered in great detail.) As just mentioned, the developer of the crash database has a WebCrash data dictionary related to the system and we might be able to use it as a starting point for developing a comprehensive crash data dictionary.

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

Vermont does not have a crash data dictionary. Definitions are listed in the Crash Report Form Instruction Manual.

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.

A Vermont’s HSIP program assessment was conducted May 17-19 2016.

The objectives of the review were: 1. Determine the status of HSIP planning, implementation and evaluation efforts for compliance with 23 CFR part 924. 2. Recognize safety efforts beyond HSIP. 3. Identify opportunities to streamline HSIP project delivery. 4. Identify opportunities to enhance HSIP evaluation practices.

The recommendations of the assessment for objective 1 are listed below:

1.1 Document current processes to include all business units that identify, select and deliver HSIP projects. 1.2 Develop a system that will produce a prioritized program of Highway Safety Improvement Projects for the next 3 years. 1.3 Create a staffing plan, standard operating procedures for each safety position and determine the optimal mix of in house staff, on call contractors/consultants and university partnerships to effectively implement the program. 1.4 VTrans develop a Safety Analyst implementation plan to ensure that VTrans dedicates enough resources to implement and maintain Safety Analyst.

As a result of the assessment, for objective 1:

VTrans is currently working to implement the use of the Safety Analyst program. As a part of the implementation plan for the SA program, VTrans will develop an HSIP analysis process. (18 Months)

VTrans is working to develop a better system to track Section 164 and 148 funded project through VPINs which will assist us in providing information for HSIP annual report.

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In the area of Highway Safety, VTrans will develop a staffing plan in three-year time. VTrans will likely have to rely on Consultants and University contracts to carry much of the Safety Analyst and other programmatic implementation work.

The recommendations for objectives 2, 3 and 4 are listed below:

2.1 Develop a prioritized list of safety projects for review and eligibility determination by the Division Office. This prioritized list should identify the funding source and business unit that is responsible for implementation and completion of the project. 3.1 Develop and implement an on-call contract for low cost safety projects. 4.1 Develop a systematic process to perform project and HSIP evaluations, to communicate results to stakeholders (e.g. Maintenance Districts, RPC's, Program Delivery and the general public) and to provide feedback to the planning process for future projects.

As a result of the assessment, for objectives 2, 3 and 4:

VTrans is workingwith FHWA on an on-call contracting procedure for simple limited scope projects that would focus on signs and pavement marking projects. Implementation is expected for the 2018 construction season.

VTrans will develop a standard methodology for conducting post mitigation crash evaluation in twelve months.

Optional Attachments

Program Structure:

[Vermont HSIP Staff Location Org Chart.pdf](#)

[FFY18 Systemic Local Road Safety.pdf](#)

[Vermont HSIP Manual February 19 2016.pdf](#)

[Vermont HSIP Low Cost Program October 2016.pdf](#)

Project Implementation:

Safety Performance:

Evaluation:

[Vermont Roundabouts BeforeAfter May 2016.xlsx](#)

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.