RHODE ISLAND

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2019 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo Source:
Photo image courtesy of RIDOT

Table of Contents

Disclaimer

Protection of Data from Discovery Admission into Evidence

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

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

Executive Summary

The Rhode Island Department of Transportation (RIDOT) has followed the Highway Safety Manual process to guide their HSIP. RIDOT currently uses societal crash cost ranking to identify top crash site-specific locations as well as systemic type issues statewide. RIDOT reviews the top crash lists/types to develop and fine tune a plan of incorporating safety improvements through new and existing spot location/systemic projects. Rhode Island also has a HSIP committee that uses a data-driven approach to making any safety related decision and has developed a ranking form based on safety benefits, feasibility and policy conformance to be used whenever HSIP funds are considered for a project.

RIDOT's HSIP program has been ever-evolving since 2010, as other RIDOT programs, sections, and administrations have changed. Most recently, RIDOT's administration has placed a renewed focus on upgrading and maintaining our bridges and roads. As with any new administration, it takes time and adjustments to conduct business in a new and exciting way. RIDOT now has a 10-year plan for all of its core programs (traffic/safety, road, and bridge) that budgets projects based on focus areas. The emphasis on bridges and roads does not mean safety projects are ignored. Safety will always be a critical and necessary program, and while available funding may fluctuate in any given year, RIDOT is collecting the data and possessing the tools to make more informed data-driven decisions to spend safety dollars in the most beneficial way to the State.

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.

Since 2010, The Rhode Island Department of Transportation (RIDOT) has followed the Highway Safety Manual process to guide their HSIP. For network screening, RIDOT currently uses societal crash cost ranking using the KABCO scale to identify top crash site-specific locations as well as systemic type issues statewide. The systemic approach is a risk based approach that examines roadway types that are susceptible to a specific crash type (roadway departure, intersection) and identified through high-level queries. RIDOT reviews the top crash lists/types to develop and fine tune a plan of incorporating safety improvements through new and existing spot location/systemic projects.

The HSIP Committee is made up of safety stakeholders, including RIDOT, FHWA, and RIDOT HSIP Engineering Support Services consultant that meets monthly to develop the HSIP program, approve HSIP projects and requests for projects, and discuss other safety related issues. The HSIP committee uses a data-driven approach to making any safety related decision and has developed a ranking form based on safety benefits, feasibility and policy conformance to be used whenever HSIP funds are considered for a project. Not only does the HSIP committee review internal requests for funds, but also requests that come in from the local municipalities.

As part of the HSIP project ranking form, points are given for conducting a Road Safety Assessment (RSA) at the location under consideration for safety improvements. The RSA's follow federal RSA guidelines and RI has embraced the usefulness of the RSA process. The RSA process also promotes involvement from stakeholders outside of RIDOT and strengthens relationships between RIDOT and participating municipalities. These strengthening relationships will prove to be imperative for sharing/updating roadway data to allow for predictive network screening and state-specific SPF development in the future.

The collection of the MIRE elements will also assist with the selection of systemic project locations and countermeasures with the risk for specific crash types (i.e. Curves). RIDOT also uses FHWA low-cost proven safety countermeasures, NCHRP, FHWA reports, and other safety documents to assist with countermeasure identification. Again, the MIRE data collection and sharing with municipalities will improve the overall HSIP program as it will provide the municipalities additional tools to conduct RSA's and submit strong safety project candidates for HSIP committee review and approval. RIDOT is expected to begin implementation of SPF's for FY20 once the MIRE data is processed.

RIDOT prioritizes projects based on the ranking scores and how the improvements fit into the roadway departure, local safety, safety corridor, intersections, interchanges, and vulnerable users programs. Once

completed, the projects are evaluated to determine the safety effectiveness of the safety improvements. The resulting data will assist RIDOT with developing their own crash modification factors.

Where is HSIP staff located within the State DOT?

Planning

RIDOT Safety section is responsible for implementation of the HSIP. They are a separate group from RIDOT Planning and focus on traffic/safety but carry out the planning function for all safety related projects.

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process
- SHSP Emphasis Area Data

RIDOT selects the majority of HSIP funded projects thru the SHSP EA. A small portion is allotted to outside RIDOT requests. This competitive process still requires alignment with the SHSP.

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

Network Screening - On an annual basis, the RIDOT identifies the roadway facilities exhibiting the most severe safety needs based on crash severity and frequency/exposure or the predictive method. Through the RIDOT's HSIP, ALL public roads are addressed, focusing on fatal and serious injury crashes in line with their SHSP and the performance measures set forth in MAP-21 and the FAST Act. Most of the State-owned roadway network and some of the local roadways are mapped to a Linear Referencing System; however, the majority of the local roadways is not referenced and is manually reviewed to ensure their inclusion into the HSIP process.

Diagnosis and Implementation: The RIDOT works with municipalities to identify and mitigate crash issues on locally-maintained roadways. RIDOT has developed a process for locals to request a safety improvement with the intent for locals to perform the "planning" step from the HSIP process. RIDOT will then determine if the improvement is eligible for HSIP funds and distribute the funds needed to the locals so they can administer the construction of the improvements.

RIDOT has worked with several municipalities on pedestrian and bicycle safety. They have developed safety action plans for 2 communities with high pedestrian activity. RIDOT has also reviewed all segments statewide and assigned a "risk" score to them. This will help RIDOT and locals prioritize safety for vulnerable road users.

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

- Governors Highway Safety Office
- Operations
- Planning
- Traffic Engineering/Safety
- Other-GIS Analysts

Describe coordination with internal partners.

RIDOT works internally with transportation planners (Statewide Planning), RIDOT GIS analysts, RIDOT safety

engineers, RIDOT and OHS highway safety program coordinators and RIDOT operations staff as part of the entire HSIP process, including the identification of critical locations and the selection of appropriate countermeasures/ improvements. These partners are involved in Road Safety Assessments (RSAs) that were performed at many of these locations to facilitate this multi-discipline approach.

RIDOT also houses the Office of Highway Safety where the HSIP, HSP, and SHSP are all developed in a coordinated effort focused on developing consistent safety goals. Safety initiatives are now implemented in a more integrated and multi-disciplinary manner, providing RIDOT with more flexibility to direct resources to address particular safety needs. As part of the FAST Act, the RIDOT and OHS along with RI's Office of Performance Management coordinated the development of performance measurement and targets for FY20.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Law Enforcement Agency
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Tribal Agency

Describe coordination with external partners.

RIDOT works with University of RI to develop SPFs.

LEL and FHWA are involved in bi-monthly safety meetings.

The MPO is involved in the TIP process (specifically for safety projects)

RIDOT address all public roads, including tribal agency roadways. Crashes on locally and tribal owned roadways are included in the network screening process. Any safety improvements necessary based on prioritization are coordinated with these agencies.

Tribal agencies are included in the SHSP planning process and are stakeholders on the SHSP steering committee.

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

Beginning in 2015, the RIDOT performs a semi-annual review of safety improvement proposals for selection. Local governments and RIDOT staff submit engineering studies of potential safety projects. These safety proposals are evaluated to focus limited resources on areas of greatest need. HSIP funds are available for locations or corridors where a known 'substantive safety' problem exists as indicated by location specific data on severe crashes or where a risk-based analysis has demonstrated the need for systemic countermeasures. All HSIP expenditures require that a specific project action can produce a measurable and significant reduction in the number or risk of severe crashes. To achieve the maximum benefit, the focus of the program is on cost effective use of the funds allocated for safety improvements. RIDOT's HSIP project selection methods prioritize safety proposals that align with the SHSP, address roadways with actual or potential for higher deaths and serious injuries, and target the underlying safety issue.

The Multi-Disciplinary HSIP Selection Committee is made up of the HSIP Program Manager, FHWA Safety and Operations Engineer, and other RIDOT staff. The purpose of the committee is to review and select HSIP

proposals for advancement. The HSIP PSC meets on a monthly basis. The selection committee also holds a separate meeting semi-annually to prioritize and select submitted HSIP Proposals received and reviewed in the previous six month period.

RIDOT has 5 different “on-call” consultant contracts. The first on-call contract involves one consultant to perform the network screening, diagnosis, and countermeasure selection (HSIP On-Call Administration Consultant). This consultant will then develop conceptual improvement plans for RIDOT’s review. RIDOT then distributes all improvement projects to the other 4 on-call consultants, which are charged with advancing the conceptual plans to final design and construction. Once the improvements have been implemented, the first on-call consultant tracks these projects and develops safety effectiveness evaluations.

In 2016, RIDOT developed a 10-year Transportation Improvement Plan (TIP) that is revisited and updated annually. HSIP funded safety improvement projects included in the TIP are provided by the HSIP Selection Committee. In the TIP, there is a mix of site-specific and systemic safety improvement projects. There are also program based projects that act as placeholders for future locations to be added to. As the TIP is annually revisited, the safety projects are reviewed and edited by the HSIP Selection Committee based on the current safety needs and received HSIP Project Proposals. Safety projects may be adjusted in the TIP annually as long as they are fiscally constrained.

Safety projects added to the TIP must demonstrate a projected safety benefit that in sum meet annual goals set by RIDOT in order to meet its SHSP goals. If by any means the annual safety goal is not met for a given year, the safety projects included in the TIP will be revised by the HSIP Selection Committee the following year to increase the projected safety benefits to ensure the goal is still obtainable.

Projected safety benefits are provided by the HSIP Proposal forms. For safety program placeholder projects, RIDOT uses national published crash modification factors to help predict the reduction in fatalities and injuries based on the type of countermeasure deployed on a wide scale basis across the State to target roadway facilities and users identified in the SHSP as emphasis area.

Program Methodology

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

Yes
FileName:

Select the programs that are administered under the HSIP.

- Right Angle Crash
- Roadway Departure
- Safe Corridor
- Wrong Way Driving
- Other-Vulnerable Road Users

Program: Right Angle Crash

Date of Program Methodology:10/1/2016

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Volume Lane miles	

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?

- 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).

Relative Weight in Scoring

Ranking based on B/C:15
Other-Reduction in fatalities and injuries:15
Other-Facility risk level:20
Other-SHSP emphasis area:15
Other-Project feasibility:25
Other-Policy conformance:10
Total Relative Weight:100

Program: Roadway Departure

Date of Program Methodology:4/19/2015

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Volume	Median width Horizontal curvature Functional classification Roadside features Other-Roadway width Other-Clear Zone

What project identification methodology was used for this program?

- Excess expected crash frequency with the EB adjustment
- Other-Crash frequency - Fatal and serious crashes only
- Other-Facility risk factors/similar geometric types
- 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?

Yes

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).

Relative Weight in Scoring

Ranking based on B/C:15
Other-Reduction in fatalities and injuries:15
Other-Facility risk level:20
Other-SHSP emphasis area:15
Other-Project feasibility:25
Other-Policy conformance:10
Total Relative Weight:100

2019 Rhode Island Highway Safety Improvement Program
Program: Safe Corridor

Date of Program Methodology:4/19/2015

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic Volume Other-Transit	Functional classification Roadside features Other-# Of Lanes

What project identification methodology was used for this program?

- Other-Crash frequency - fatal and serious injury crashes only
- Other-Facility risk factors/similar geometric types
- 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?

Yes

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).

Relative Weight in Scoring

Ranking based on B/C:15
Other-Reduction in fatalities and serious injuries:15
Other-Facility risk level:20
Other-SHSP emphasis area:15
Other-Project feasibility:25

2019 Rhode Island Highway Safety Improvement Program
Other-Policy conformance:10
Total Relative Weight:100

Program: Wrong Way Driving

Date of Program Methodology:5/1/2015

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
Other-Wrong way driving incidents		

What project identification methodology was used for this program?

- Other-Wrong Way Driving Incidents - Potential Freeway Entry Points

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-Dedicated projects in TIP

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

Program: Other-Vulnerable Road Users

Date of Program Methodology:8/1/2013

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Traffic Volume	Functional classification
Fatal and serious injury crashes only		Other-Roadway width

What project identification methodology was used for this program?

- Crash frequency
- Other-Facility risk/similar type geometrics

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?

- 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).

Relative Weight in Scoring

Ranking based on B/C:15
Other-Reduction in fatal and serious injury crashes:15

Other-facility risk level:20
Other-Project feasibility:25
Other-Policy conformance:15
Other-SHSP emphasis area:10
Total Relative Weight:100

What percentage of HSIP funds address systemic improvements?

50

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

- High friction surface treatment
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Upgrade Guard Rails
- Wrong way driving treatments

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
- SHSP/Local road safety plan
- Other-Crash Modification Clearninghouse
- Other-NCHRP Report 500 Series

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

RIDOT has created a working Connected/Autonomous Vehicle (CAV) group made up of various departments with RIDOT including Traffic Safety. RIDOT is exploring CAV and its impact to safety.

RIDOT is currently working with May Mobility to operate a autonomous shuttle as a pilot program.

RIDOT has placeholders in the TIP for CAV projects related to safety.

RIDOT may participate in the AASHTO SPAT Challenge with a focus on a high crash corridor.

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.

RIDOT refers to the HSM methodologies on all aspects of safety where possible, including in the network

screening, diagnosis, countermeasure selection, prioritization, and safety effectiveness evaluation categories. Please see attached HSIP Program Manual for more information.

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

RIDOT encourages using the predictive method to use a more sound, data-driven approach to allocating resources that results in fewer fatalities and serious injuries on the nation's roadways. The predictive method (Excess expected crash frequency using SPFs, EB adjustment,) combines crash, roadway inventory and traffic volume data to provide more reliable estimates of an existing or proposed roadway's expected safety performance, such as crash frequency and severity. To achieve this goal, RIDOT is currently undergoing a large data collection effort to obtain all of the Model Inventory of Roadway Data Elements (MIRE), which included roadway, traffic, and other data needed to assist the RIDOT make the most efficient decisions where to allocate safety funds and resources. The RIDOT also is working on developing a data maintenance effort to ensure all data collected is updated on a timely basis. RIDOT has begun using the predictive method for some rural segment and will continue to expand in the coming years.

RIDOT is expanding its systemic program in the next few years, including creating a detailed risk based analysis and process. RIDOT is looking to automate this process by developing a tool that resided on a GIS platform. The network screening portion of the tool would automate the site-specific and systemic identification process which is currently performed manually. For site-specific analysis, the tool will use state-specific SPF equations for all facility types, addressing the predictive analysis requirements. The tool will provide a list of locations ranked by Excess Excepted Crash Frequency (Expected Crashes – Predicted Crashes). The systemic analysis will use allow the user to identify potential trends (geometry, traffic volumes) that have a higher occurrence of fatal and serious injury crashes in RI using the crash and MIRE data incorporated into the tool. Once the potential trends (aka risk factors) are identified, the tool will identify locations that have similar trends which could lead to fatal or serious injury crashes. The user can assign a weighted “point “system for each trend to help prioritize locations based on severity or number of trends at a given site. This allows the tool to provide the user with a “ranked” list of risk-based locations

RIDOT also has its own HSIP Program Manual. The purpose of this document is to describe RIDOT’s processes for planning, implementing, and evaluating HSIP funded improvements and to describe its relationship to other safety initiatives found in Rhode Island’s SHSP. This document not only helps Rhode Island to demonstrate their own successes, but also serves as a mechanism for other states to achieve improved highway safety.

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)	$15,963,694	$15,963,694	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$474,235	$474,235	100%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$58,735	$58,735	100%
State and Local Funds	$372,767	$372,767	100%
Totals	$16,869,431	$16,869,431	100%

In the FY19 reporting period, there was $1,894,338.01 in de-authorized funds from previous years HSIP projects at project close out. These totals are NOT included above.
In FY19, approx. $150,000 in state funds were used for maintenance work orders for safety-related signing and striping improvements for immediate implementation. These improvements were either identified in RSAs completed or from systemic type programs (horizontal curves, STEP).

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

$1,000,000

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

$1,000,000

$1,000,000 authorized for 2 municipality pedestrian safety projects as part of the local safety pilot program.

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

$1,000,000

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

$1,000,000

Projects include consultant support for safety project development and road safety assessments.

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%

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

RIDOT's HSIP program has been ever-evolving since 2010, as other RIDOT programs, sections, and administrations have changed. Most recently, RIDOT's administration has placed a renewed focus on upgrading and maintaining our bridges and roads. As with any new administration, it takes time and adjustments to conduct business in a new and exciting way. RIDOT now has a 10-year plan for all of its core programs (traffic/safety, road, and bridge) that budgets projects based on focus areas. The emphasis on bridges and roads does not mean safety projects are ignored. Safety will always be a critical and necessary program, and while available funding may fluctuate in any given year, RIDOT is collecting the data and possessing the tools to make more informed data-driven decisions to spend safety dollars in the most beneficial way to the State. The 10-year plan (aka STIP) identifies HSIP programmed projects for FY2018 - FY 2026.

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
Bridge Group 51A - Route 37 between I-95 and Pontiac Avenue	Interchange design	Acceleration / deceleration / merge lane	1	Interchanges	$1640814.07	$50000000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	50,000	65	State Highway Agency	Spot	Intersections	Ramp Termini Queue Spillback to Freeways
Broad Street Regeneration	Pedestrians and bicyclists	Modify existing crosswalk	25	Crosswalks	$2498906.7	$15000000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,000	25	State Highway Agency	Systemic	Pedestrians	STEP Program
Danielson Pike Resurfacing	Roadway	Roadway - restripe to revise separation between opposing lanes and/or shoulder widths	3	Miles	$90835.63	$5000000	HSIP (23 U.S.C. 148)	Rural	Major Collector	10,000	45	State Highway Agency	Systemic	Roadway Departure	Centerline Buffer
Improvements to JT Connell Highway	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1	Miles	$2541983	$7000000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,000	25	State Highway Agency	Spot	Intersections	Road Diet Program
Improvements to Old Tower Hill Road	Pedestrians and bicyclists	Modify existing crosswalk	2	Crosswalks	$200091.49	$5000000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	15,000	25	State Highway Agency	Systemic	Pedestrians	STEP Program
Local Safety Improvements - Sagutucket Road	Roadway	Roadway widening - travel lanes	1	Locations	$628555.63	$628555.63	HSIP (23 U.S.C. 148)	Urban	Major Collector	10,000	25	Town or Township Highway Agency	Spot	Roadway Departure	Local Safety Program
Route 138A - Aquidneck Island	Pedestrians and bicyclists	Install sidewalk	2	Miles	$200000	$10000000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,000	25	State Highway Agency	Systemic	Pedestrians	STEP Program
2019 State Traffic Commission	Pedestrians and bicyclists	Modify existing crosswalk	10	Crosswalks	$925625.98	$2000000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	12,000	25	State Highway Agency	Systemic	Pedestrians	STEP Program
Local Safety Improvements - Newport	Pedestrians and bicyclists	Medians and pedestrian refuge areas	2	Intersections	$500000	$1000000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,000	25	City or Municipal Highway Agency	Spot	Pedestrians	STEP Program
Intersection Safety Improvements to Route 6 at Bishop Hill Road	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$63500	$1500000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	20,000	35	State Highway Agency	Spot	Intersections	Broadside Reduction Program

2019 Rhode Island Highway Safety Improvement Program

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
On-Call HSIP Consultant Support	Non-infrastructure	Road safety audits	50	Numbers	$1400000	$1400000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	15,000	25	State Highway Agency	All	All	All
Statewide Intersecion Safety Improvements	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	3	Miles	$1500000	$2500000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	15,000	25	State Highway Agency	Systemic	Pedestrians	Road Diet Program
Roadway Departure Mitigation	Roadway	Roadway - restripe to revise separation between opposing lanes and/or shoulder widths	10	Miles	$455504.05	$2200000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	10,000	50	State Highway Agency	Systemic	Roadway Departure	Centerline Buffer
Intersection Improvements to Aquidneck Avenue	Pedestrians and bicyclists	Medians and pedestrian refuge areas	2	Intersections	$923015.87	$923015.87	HSIP (23 U.S.C. 148)	Urban	Minor Collector	12,000	25	State Highway Agency	Spot	Pedestrians	STEP Program
Local Safety Improvements - Cranston	Pedestrians and bicyclists	Modify existing crosswalk	10	Crosswalks	$102095.06	$750000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,000	25	City or Municipal Highway Agency	Systemic	Pedestrians	Local Safety Program
High Friction Surface treatments - Lincoln/Johnston/N.Kingstown	Roadway	Pavement surface - high friction surface	3	Locations	$50000	$2000000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	20,000	25	State Highway Agency	Systemic	Roadway Departure	High Friction Program
HRRR - Route 117 at Route 102 Roundabout	Intersection traffic control	Modify control - two-way stop to all-way stop	1	Intersections	$474235.31	$2000000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	10,000	50	State Highway Agency	Spot	Intersections	Broadside Reduction Program
Median Guardrail Improvements to US Route 1	Roadside	Barrier- metal	2	Miles	$198534.85	$3500000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	35,000	55	State Highway Agency	Systemic	Roadway Departure	Median Barrier Program
Intersection Safety Improvements to Route 6 at I-295	Intersection geometry	Auxiliary lanes - add acceleration lane	3	Intersections	$400000	$2000000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	25,000	35	State Highway Agency	Spot	Intersections	Ramp Termini Queue Spillback to Freeways
Intersection Safety Improvements to Route 108 at Curtis Corner Road	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$127731.48	$1500000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	15,000	30	State Highway Agency	Spot	Intersections	Broadside Reduction Program
Intersection Safety Improvements to Route 114 at I-295	Intersection traffic control	Modify control - two-way stop to roundabout	4	Intersections	$1500000	$8000000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,000	35	State Highway Agency	Spot	Intersections	Ramp Termini Queue Spillback to Freeways

2019 Rhode Island Highway Safety Improvement Program

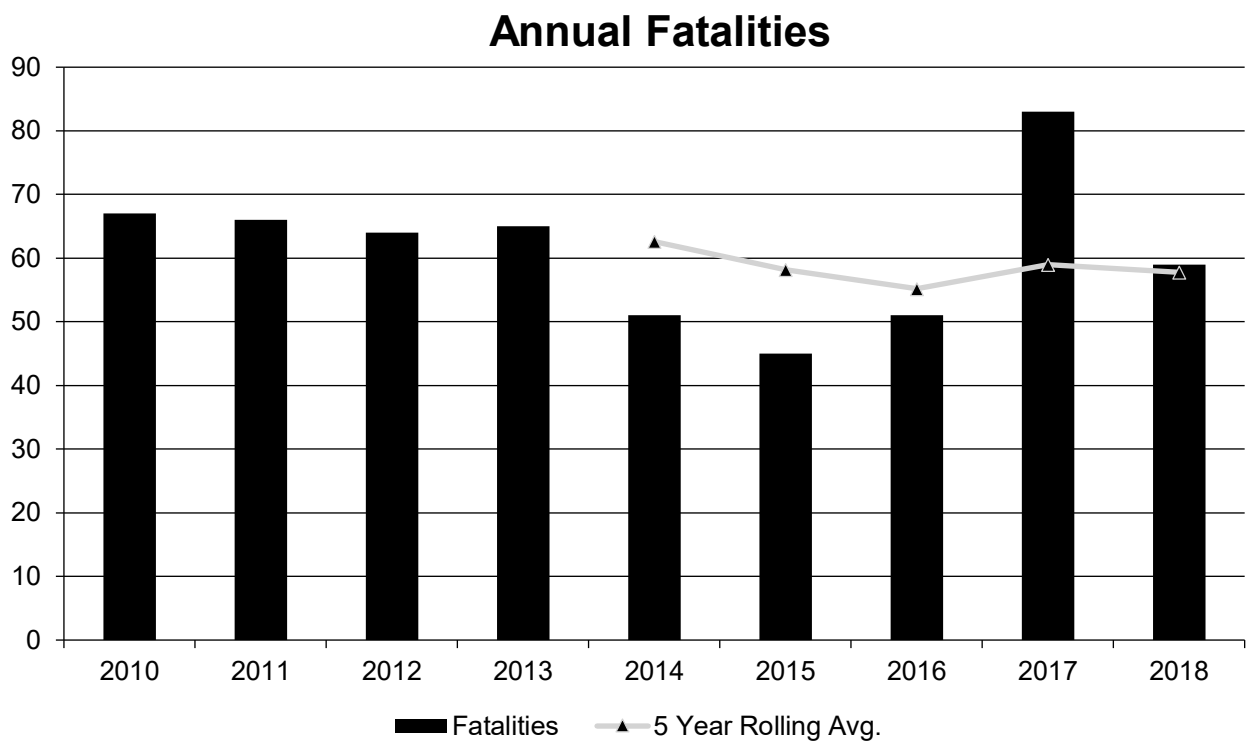
Projects shown above include new projects and previously included projects with additional HSIP funds obligated FY19.

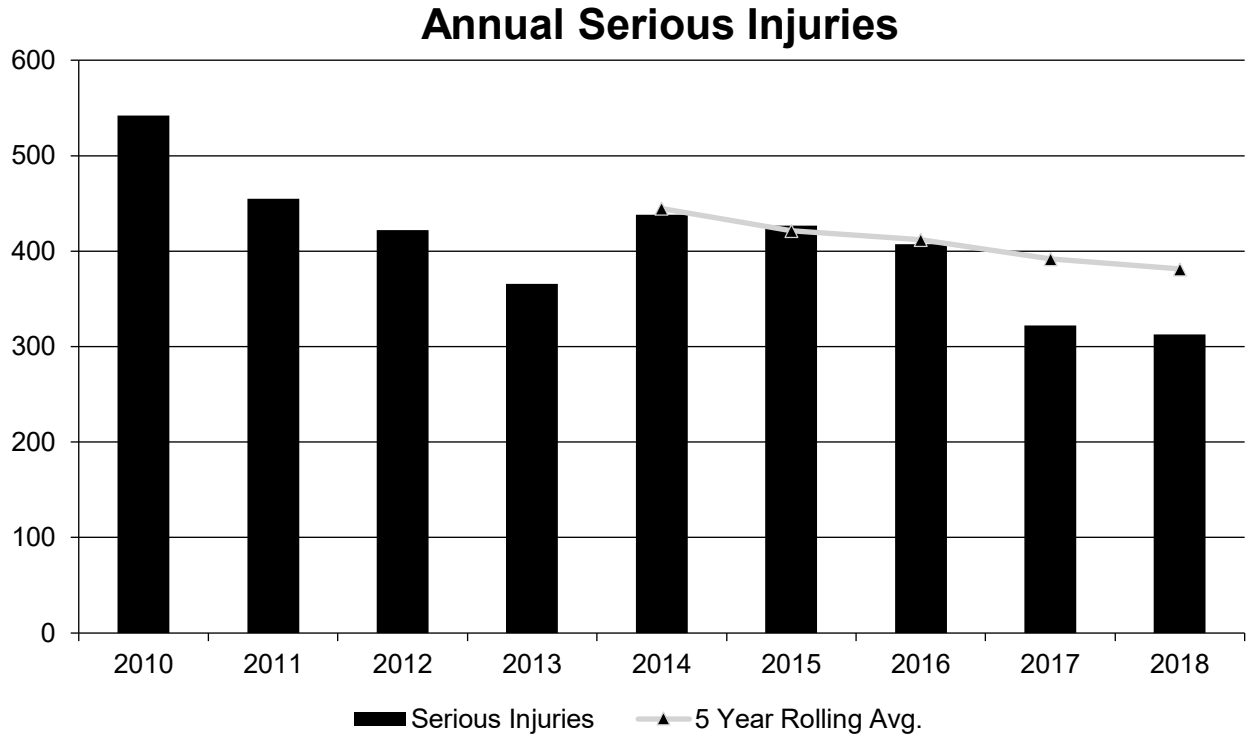
Safety Performance

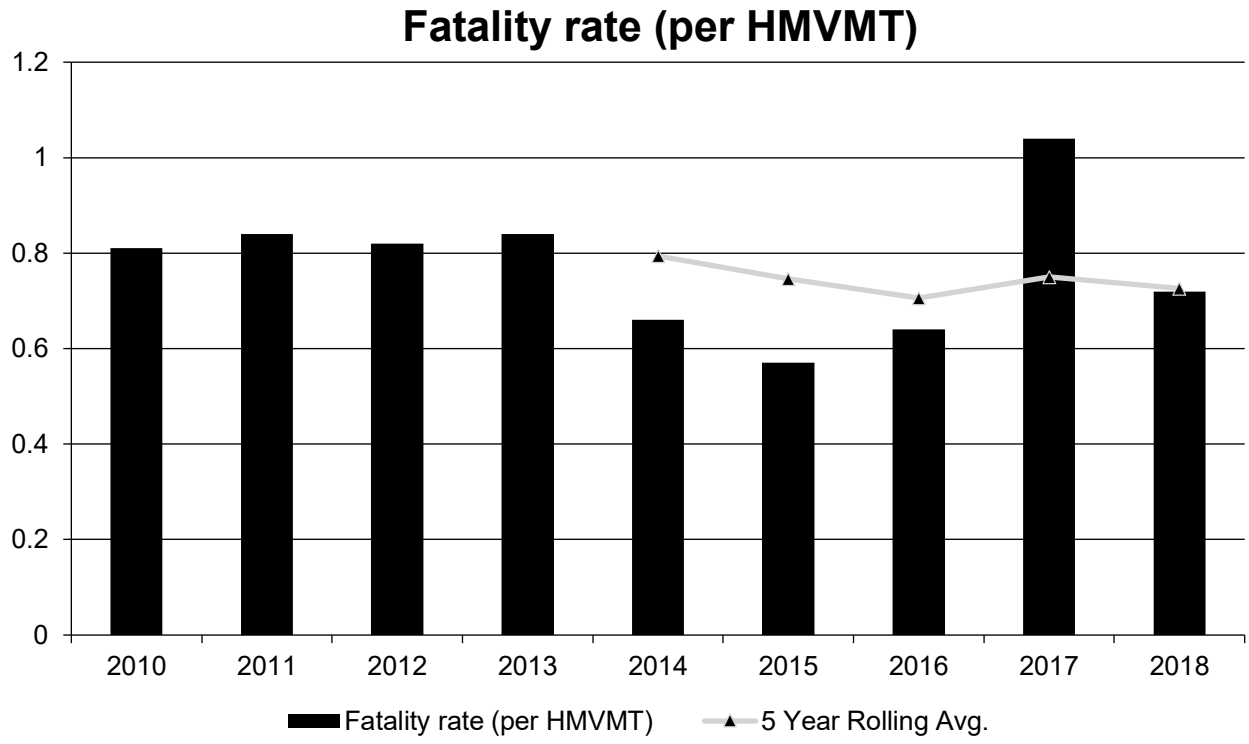
General Highway Safety Trends

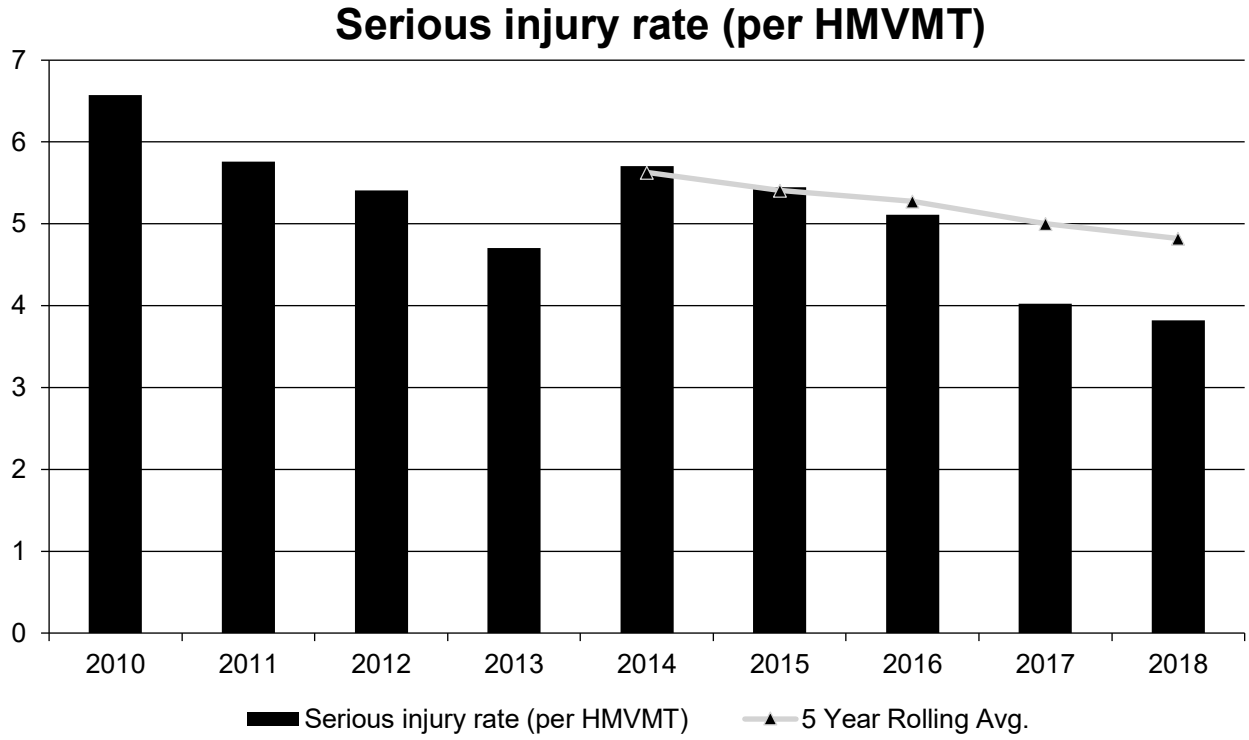
Present data showing the general highway safety trends in the State for the past five years.

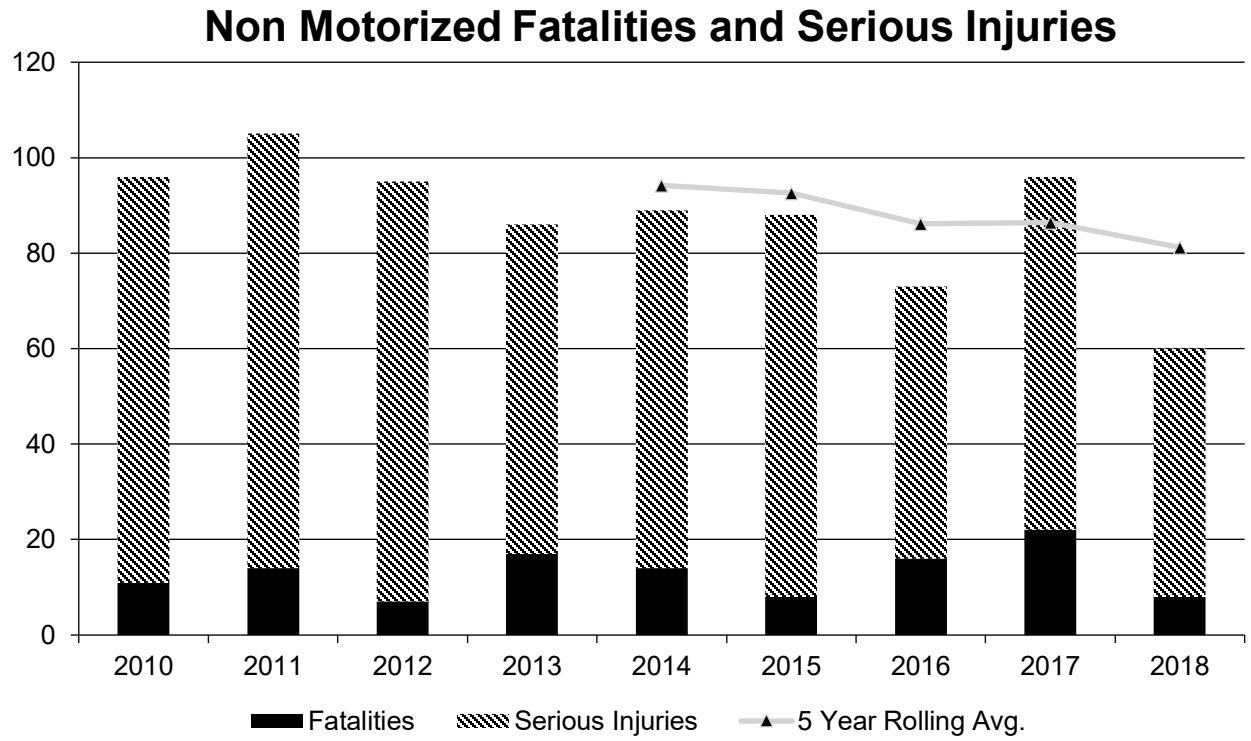
PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatalities	67	66	64	65	51	45	51	83	59
Serious Injuries	542	455	422	366	438	427	407	322	313
Fatality rate (per HMVMT)	0.810	0.840	0.820	0.840	0.660	0.570	0.640	1.040	0.720
Serious injury rate (per HMVMT)	6.570	5.759	5.405	4.707	5.705	5.451	5.108	4.024	3.818
Number non-motorized fatalities	11	14	7	17	14	8	16	22	8
Number of non-motorized serious injuries	85	91	88	69	75	80	57	74	52


Annual Fatalities
90
80
70
60
50
40
30
20
10
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.2
1
0.8
0.6
0.4
0.2
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
7
6
5
4
3
2
1
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

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	1.6	6.4	0.52	2.09
Rural Principal Arterial (RPA) - Other Freeways and Expressways	0.4	8.8		
Rural Principal Arterial (RPA) - Other	3	7.2	1.32	3.17
Rural Minor Arterial	3.4	10.8	3.04	9.5
Rural Minor Collector	0.4			
Rural Major Collector	0.4	6	1.6	8.13
Rural Local Road or Street	1.6	4.6	7.32	20.95

Functional Classification	**Number of Fatalities (5-yr avg)**	**Number of Serious Injuries (5-yr avg)**	**Fatality Rate (per HMVMT) (5-yr avg)**	**Serious Injury Rate (per HMVMT) (5-yr avg)**
Urban Principal Arterial (UPA) - Interstate	9	35	0.48	1.87
Urban Principal Arterial (UPA) - Other Freeways and Expressways	6.2	22.4	0.52	1.9
Urban Principal Arterial (UPA) - Other	15	115.8	0.81	6.24
Urban Minor Arterial	5.6	77.4	0.54	7.51
Urban Minor Collector	1			
Urban Major Collector	2.2	17.8	11.79	10.68
Urban Local Road or Street	8	28.6	2.08	7.43
Other				

Year 2014

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	32	191.2		
County Highway Agency				
Town or Township Highway Agency	10.2	101.4		
City or 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				

Provide additional discussion related to general highway safety trends.

RIDOT updated their Functional Classification in 2015. Therefore, the figures reported on in previous years HSIP Annual report will differ. In future years, the previous FC data will drop out of the 5-year rolling average calculation.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:57.0

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

Trends indicate VMTs will increase in 2020. RIDOT expects this increase to outweigh recent fatality trends, including a decrease in fatalities in 2018 after a spike in 2017. This approach maintains the 2019 targets through 2020. RIDOT and OHS worked together to align targets with those within the Rhode Island FFY 2019 HSP.

Number of Serious Injuries:348.0

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

Trends show serious injuries decreasing annually on a consistent basis. RIDOT expects this trend to continue. This approach is consistent with the historic method. RIDOT and OHS worked together to align targets with those within the Rhode Island FFY 2019 HSP.

Fatality Rate:0.720

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

Trends indicate VMTs will increase in 2020. RIDOT expects this increase to outweigh recent fatality trends, including a decrease in the fatality rate in 2018 after a spike in 2017. This approach maintains the 2019 targets through 2020. RIDOT and OHS worked together to align targets with those within the Rhode Island FFY 2019 HSP.

Serious Injury Rate:4.430

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

Trends show serious injury rates decreasing annually on a consistent basis. RIDOT expects this trend to continue. This approach is consistent with the historic method.

Total Number of Non-Motorized Fatalities and Serious Injuries:76.0

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

Trends show non-motorist fatalities and serious injuries decreasing annually on a consistent basis. RIDOT expects this trend to continue. This approach is consistent with the historic method.

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

The Rhode Island Office on Highway Safety worked with the RIDOT engineering safety division and other State partners to align FFY 2020 fatality, serious injury, and fatality rate targets with those in the Rhode Island FFY 2020 HSP. This group of partners met on May 30, 2019 to finalize its 2020 targets. As part of the target setting exercise, data was initially projected using the FORCAST function in Excel. Staff then compared the projected crashes based on the historical trendline and discussed if and how Rhode Island could maintain this trendline. Factors such as current year fatality and serious injury projections, recently implemented and proposed programs and projects, and funding were considered when determining targets for Fiscal Year 2020.

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.

Fatalities – 2018 Five-Year average Target – 53, Actual – 58; An upward spike in fatalities in 2017, many of which were pedestrians, affected the ability of Rhode Island to meet its 2018 target, which was originally set based on data ending in 2016. The actual fatalities in 2018 of 59 is also higher than the target in 2018.

Serious Injuries – 2018 Five-Year average Target – 373, Actual – 381; the sustained downward trend in serious injuries has helped Rhode Island come within 2 percent of this aggressive target originally set based on data ending in 2016.

Fatality Rate – 2018 Five-Year average Target – 0.680, Actual – 0.73; The upward spike in fatalities in 2017 combined with a slow by steady increase in VMT affected the ability of Rhode Island to meet its 2018.

Serious Injuries Rate – 2018 Five-Year average Target – 4.840. Actual – 4.83; The sustained downward trend in serious injuries helped Rhode Island to meet its 2018 target.

Non-Motorized Fatalities and Serious Injury Rate – 2018 Five-Year average Target – 86.0; Actual – 82; Despite a spike in pedestrian fatalities and serious injuries in 2017, lower numbers in 2016 and 2018 helped Rhode Island meet its target.

Applicability of Special Rules

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

No

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	15	8	18	18	5	16	12

PERFORMANCE MEASURES	2012	2013	2014	2015	2016	2017	2018
Number of Older Driver and Pedestrian Serious Injuries	24	26	37	43	42	50	40

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Change in fatalities and serious injuries
- Lives saved

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

RIDOT has seen a overall decline in fatalities and serious injuries over the past 10 years. Halfway thru our 20 year interim SHSP goal of halving fatalities and serous injuries, we are on target to meet this aggressive goal for fatalities and slightly behind the goal for serious injuries.

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

- # RSAs completed
- HSIP Obligations
- More systemic programs

RIDOT performs RSAs for all HSIP projects.

RIDOTs HSIP obligations have increased significantly in the past few years. The 10 year TIP is programmed to continue to expend the annual obligations for HSIP.

RIDOT expand its programs to include more systemic countermeasures.

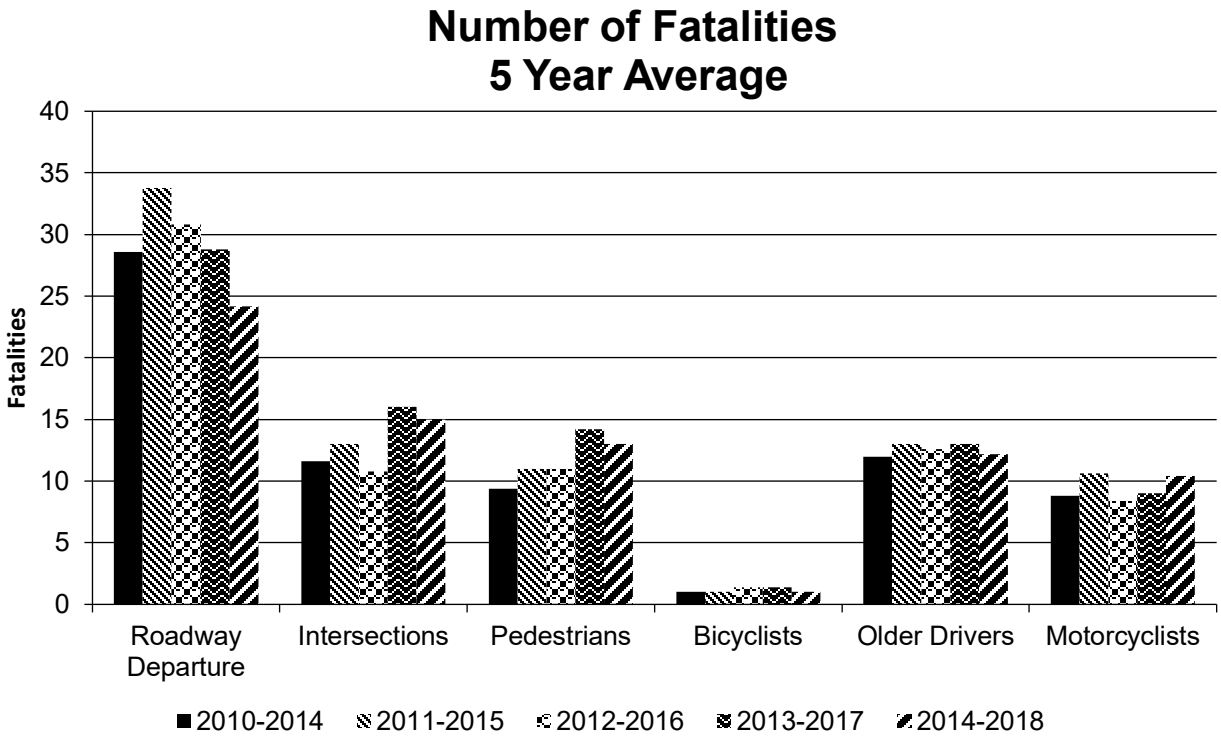
Effectiveness of Groupings or Similar Types of Improvements

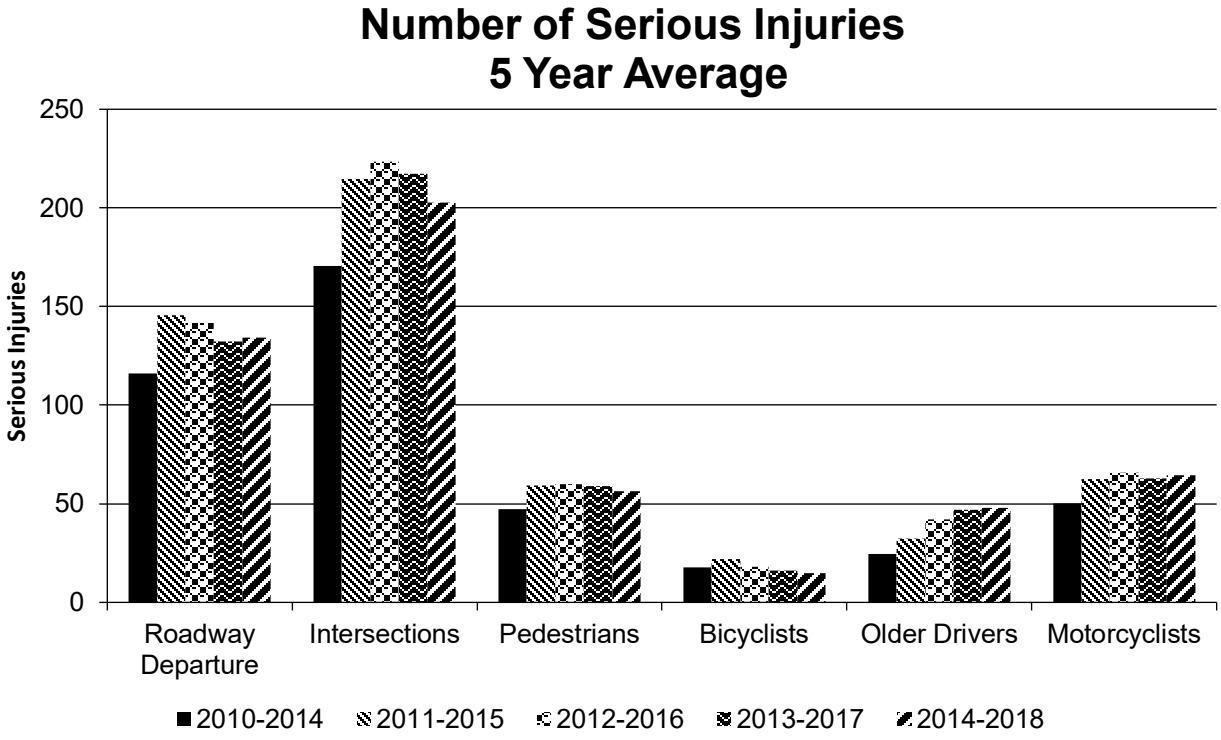
Present and describe trends in SHSP emphasis area performance measures.

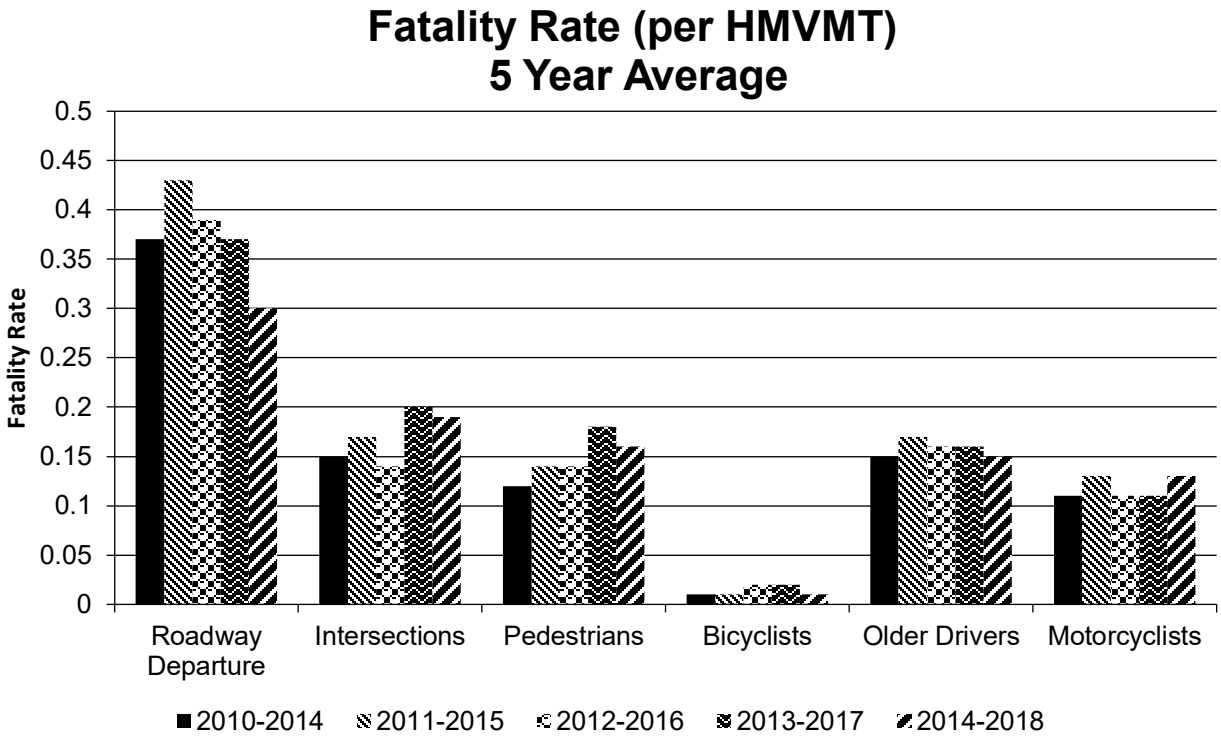
Year 2018

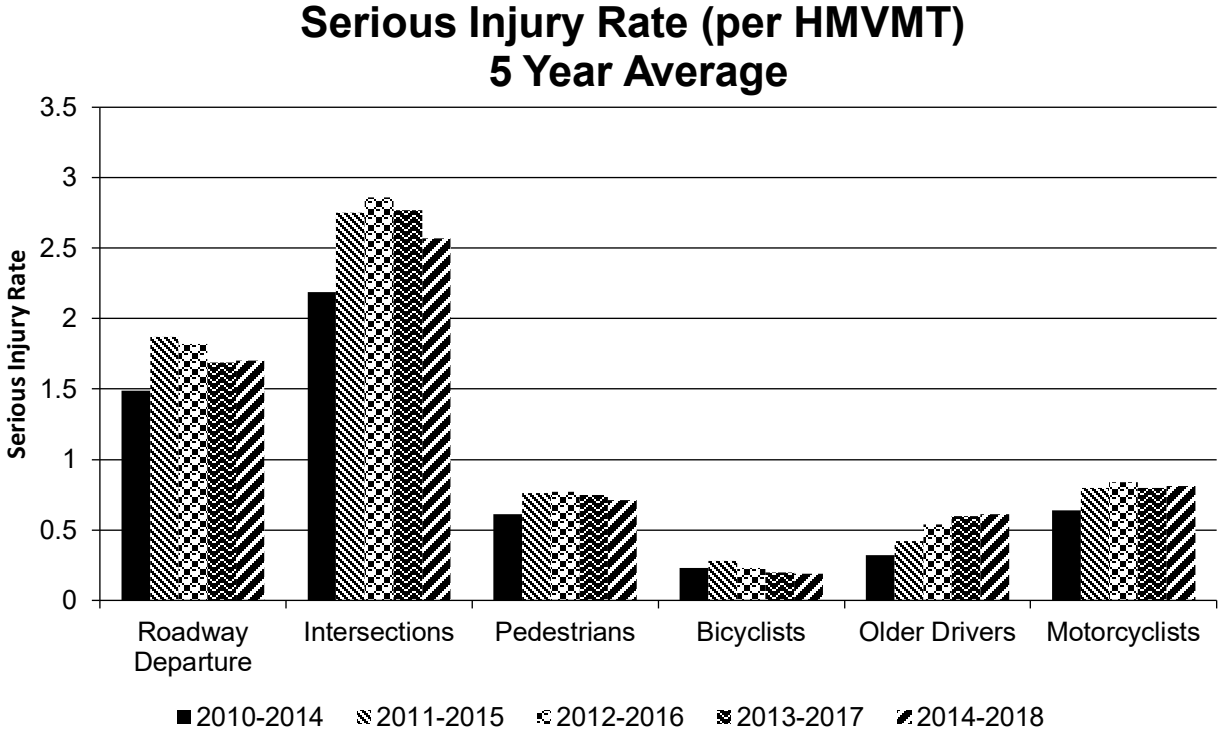
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Roadway Departure		24.2	134.2	0.3	1.7
Intersections		15	202.8	0.19	2.57
Pedestrians		13	56.2	0.16	0.71
Bicyclists		1	14.8	0.01	0.19
Older Drivers		12.2	48	0.15	0.61

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)
Motorcyclists		10.4	64.4	0.13	0.81


Number of Fatalities
5 Year Average
Fatalities
40
35
30
25
20
15
10
5
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018


Number of Serious Injuries
5 Year Average
Serious Injuries
250
200
150
100
50
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018





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:	Road Diets
Description:	Implement lane reductions on4 lane roadways.
Target Crash Type:	All
Number of Installations:	7
Number of Installations:	7
Miles Treated:	
Years Before:	5
Years After:	3
Methodology:	Simple before/after
Results:	Reduction of 50% of all crash severities and types. 55% reduction in injury crashes.

File Name: Hyperlink

CounterMeasures:	Horizontal Curve Delineation
Description:	Install curve signage and striping.
Target Crash Type:	Run-off-road
Number of Installations:	11
Number of Installations:	11
Miles Treated:	
Years Before:	5
Years After:	3
Methodology:	Simple before/after
Results:	49% reduction in target crashes of all severities with 54% reduction in injury target crashes.

File Name: Hyperlink

CounterMeasures:	High Friction Surface Treatment
Description:	Install HFST on curves and high-speed intersection approaches.
Target Crash Type:	Wet road
Number of Installations:	7
Number of Installations:	7
Miles Treated:	
Years Before:	5
Years After:	5
Methodology:	Simple before/after
Results:	47% reduction in all crashes with 53% reduction in target crashes.

File Name: Hyperlink

CounterMeasures:	Median Guardrail
Description:	Install median protection at narrow medians in freeways.
Target Crash Type:	Cross median
Number of Installations:	
Number of Installations:	
Miles Treated:	11
Years Before:	5

Years After:	5
Methodology:	Simple before/after
Results:	100% reduction of median/crossover crashes

File Name: Hyperlink

CounterMeasures:	Centerline/Edgeline Rumble Strips w/ 4 foot wide flush median
Description:	Install centerline and edgeline rumble strips along with a 4 foot flush median on high speed rural 2 lane roads.
Target Crash Type:	Run-off-road
Number of Installations:	
Number of Installations:	
Miles Treated:	5
Years Before:	5
Years After:	3
Methodology:	Simple before/after
Results:	90% reduction in fatalities and serious injuries.

File Name: Hyperlink

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)
Wrong Way Driving	Urban Principal Arterial (UPA) - Interstate	Advanced technology and ITS	Advanced technology and ITS - other			8.00		10.00		13.00	1.00	31.00	1.00	25

Compliance Assessment

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

07/25/2017

What are the years being covered by the current SHSP?

From: 2017 To: 2022

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

2022

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)	1	1					1	1	1	1
	Route Number (8)	0.99991672218521	0.999883990719258								
	Route/Street Name (9)	0.987425049966689	0.657424593967517								
	Federal Aid/Route Type (21)	0.449866755496336	0.109628770301624								
	Rural/Urban Designation (20)	0.999666888740839	1					1	1		
	Surface Type (23)	1	1					1	1		
	Begin Point Segment Descriptor (10)	1	1					1	1	1	1
	End Point Segment Descriptor (11)	1	1					1	1	1	1
	Segment Length (13)	1	1								
	Direction of Inventory (18)	0.99975016655563	1								
	Functional Class (19)	1	1					1	1	1	1
	Median Type (54)	0.99991672218521	0.999883990719258								
	Access Control (22)	0.845602931379081	0.440255220417633								

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)	1	1								
	Number of Through Lanes (31)	1	0.910788863109049					1	1		
	Average Annual Daily Traffic (79)										
	AADT Year (80)										
	Type of Governmental Ownership (4)	1	1					1	1	1	1
INTERSECTION	Unique Junction Identifier (120)			1							
	Location Identifier for Road 1 Crossing Point (122)			1							
	Location Identifier for Road 2 Crossing Point (123)			1							
	Intersection/Junction Geometry (126)			0.896518007496334							
	Intersection/Junction Traffic Control (131)			0.896409364984518							
	AADT for Each Intersecting Road (79)										
	AADT Year (80)										
	Unique Approach Identifier (139)			1							
INTERCHANGE/RAMP	Unique Interchange Identifier (178)					1					
	Location Identifier for Roadway at Beginning of Ramp Terminal (197)					1					
	Location Identifier for Roadway at Ending Ramp Terminal (201)					1					
	Ramp Length (187)					1					

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)					1					
	Roadway Type at End Ramp Terminal (199)					0.0999099909990999					
	Interchange Type (182)					1					
	Ramp AADT (191)										
	Year of Ramp AADT (192)										
	Functional Class (19)										
	Type of Governmental Ownership (4)										
Totals (Average Percent Complete):		**0.85**	**0.78**	**0.72**	**0.00**	**0.55**	**0.00**	**0.89**	**0.89**	**1.00**	**1.00**

*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.

Historically, RIDOT maintained a road inventory database for State owned and Federal Aid roads to meet Highway Performance Monitoring (HMPS) reporting requirements. Through coordination with other agencies (e-911 and the State's GIS clearinghouse) a local roads layer had been maintained. In 2013, RIDOT conducted a detailed assessment of existing road inventory databases in Rhode Island, and developed an RFP for a state-wide MIRE data collection project. In 2014, RIDOT selected a road inventory vendor to conduct the collection of MIRE elements on approximately, 6,500 roadway miles, 16,000 intersections (estimated), and 445 ramps. The inventory was finalized and delivered to RIDOT in 2016.

RIDOT's MIRE inventory includes 174 MIRE elements. Several of these elements are included in the inventory, but were not field populated (elements related to speed and traffic flow were not collected). RIDOT's MIRE data inventory consists of three separate inventories, broken down into the following categories.

1. Roadway Segment Descriptors - Consists of approximately 86,500 tenth of mile roadway segments, with 105 MIRE elements for all public roads in Rhode Island. Of the 105 elements, there are several placeholder elements (non-physical elements such as AADT, truck speeds, Etc.) that RIDOT may populate at a later date.
2. Intersection Inventory - Consists of junction (intersection points) and junction approach (intersection approach) elements. The inventory includes approximately 18,000 intersection locations with 18 junction elements and 40 junction approach elements. It is important to note that the intersection inventory was not prioritized based on the functional classification of the intersecting roads. The 18,000 intersections included in the inventory does not include all non-local paved roads based on roadway functional classification.
3. Ramp Inventory - Consists of 445 individual ramps associated with 105 unique interchange locations. Included in the ramp inventory are 21 of the 24 MIRE Interchange and Ramp Descriptors. MIRE elements not include are Interchange Entering Volume, Ramp AADT, and Year of Ramp AADT.

RIDOT's MIRE inventory includes 31 of the 37 MIRE FDEs for non-local paved roads. Elements highlighted in yellow are absent from the inventory. As previously stated, RIDOT's intersection inventory was not prioritized based on roadway functional classification and does not include all State/State and State/local intersections. To comply with FHWA's MIRE FDE requirements, RIDOT will need to complete the intersection inventory for any State/local intersections not included in the inventory. It is estimated that an additional 500 to 1,500 intersections need to be inventoried. This effort begun in 2018 and will continue over FY19 and 20 given staffing levels.

Future Steps

2019 Rhode Island Highway Safety Improvement Program

RIDOT's early response to FHWA's MIRE requirements and their intent to conduct more advanced safety analyses, have put them in a good position from a MIRE FDE compliance standpoint. Completion of the intersection inventory to include non-local paved roads. Additional work is needed for the estimation of traffic volumes to comply with the AADT requirements. In addition, within the State of Rhode Island there is one Federally and State recognized tribe, Narragansett Indian Tribe, whose roadways need to be added to the MIRE inventory. RIDOT should coordinate with the Narragansett Indian Tribe to determine the extent of their data collection efforts.

When Rhode Island's Traffic Records Strategic Plan is updated by the Traffic Records Coordinating Committee RIDOT will propose inclusion of this plan, and or the remaining action items associated with this plan. In the meantime, RIDOT will continue to implement the Plan as outlined in this document to ensure MIRE FDE are collected for all public roads by September 30, 2026.

Furthermore, RIDOT must coordinate with all localities (i.e., Metropolitan Planning Organizations (MPOs), Counties, cities, and towns) and other public roadway owners (i.e., Federal, Tribal, and private road owners) that maintain their own roadways to determine the extent of their data collection efforts. RIDOT must determine the availability, completeness, and compatibility of the FDE data on non-RIDOT maintained, public roads.

Below is a list of action items for RIDOT to complete:

1. Coordinate with the Narragansett Indian Tribe to understand the extent of their road network. a. Provide background information to the Tribe on the FHWA MIRE FDE data requirements and the steps that RIDOT has taken to meet the requirements.
2. Assess the Tribes road mileage and existing GIS data that maybe available and develop a cost estimate to be complete the inventory.
3. Seek assistance from the Tribe in completing the inventory. It is anticipated that the additional inventory could be completed without the use of any special equipment such as a mobile data collection vehicle. The State's existing high resolution aerial photography should be sufficient for locating the roadways. Attribution of the roads could be completed by the Tribe through a web-portal provided by RIDOT using their existing GIS infrastructure.
4. If Tribal staff are to complete the inventory, prepare training material on how to use any tools provided by RIDOT and background material on MIRE. There are a number of existing MIRE resources such as the MIRE Version 1.0 Report, MIRE Data Collection Guidebook that can found at https://safety.fhwa.dot.gov/rsdp/mire.aspx.
5. Finalize the MIRE Intersection Inventory for non-local paved roads. a. As part of RIDOT's MIRE data collection project, the location of all intersections within the State was identified by RIDOT GIS staff and RIDOT's MIRE vendor. It is anticipated that between 500 and 1,500 additional intersection locations need to be added to RIDOT's existing intersection inventory. A more detailed assessment should occur to accurately estimate the cost to complete the remaining intersections.
6. When finalizing the intersection inventory, RIDOT should evaluate if all of the intersection elements currently included in their inventory should be collected or if the collection should be limited to MIRE FDE's or combination. It is recommended that RIDOT collect the MIRE FDEs and any additional elements required of their AASHTOWare Safety Analyst implementation.
7. The data collection effort can likely be completed through a desktop data collection effort using the video log from RIDOT's MIRE data collection effort, existing aerial photography, and other sources of street imagining.
8. Expand the traffic count program for non-local paved roads and local paved roads. a. RIDOT should develop separate methodologies for accurately estimating AADT for non-local and local paved roads.
9. RIDOT should evaluate their existing traffic count program and HMPS reporting to identify gaps in their traffic count program. Emphasis should be on lower roadway functional classification roads and ramp facility types.
10. Based on the results of traffic volume gap analysis, RIDOT should release an RFP to enhance their traffic count program.

In addition to expanding their traffic count program, RIDOT should develop a methodology to distribute/estimate traffic volumes across their network so that all roadway, ramps, and intersection approaches meeting the MIRE FDE requirements

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

No

When does the State plan to complete its next HSIP program assessment.

2020

Optional Attachments

Program Structure:

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.