Highway Safety Improvement Program

Data Driven Decisions

Rhode Island
Highway Safety Improvement Program
2015 Annual Report

Prepared by: RI

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."

Table of Contents

Executive Summary

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. RIDOT is expected to complete the collection of the majority of the MIRE elements in the fall of 2015.

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 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.

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 MAP-21 Reporting Guidance dated February 13, 2013 and consists of four sections: program structure, progress in implementing HSIP projects, progress in achieving safety performance targets, and assessment of the effectiveness of the improvements.

Program Structure

Program Administration

How are Highway Safety Improvement Program funds allocated in a State?

☒ Central

☐ District

☐ Other

Describe how local roads are addressed as part of Highway Safety Improvement Program.

Network Screening - Current: On an annual basis, the RIDOT identifies the roadway facilities exhibiting the most severe safety needs based on crash severity and frequency/exposure. 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. 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.

Network Screening - Proposed: 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. This data is being collected on ALL state and locally owned roadways. The RIDOT also is working on developing a data maintenance effort to ensure all data collected is updated on a timely basis. Also, RIDOT is working on a data-sharing effort to allow municipalities to use and update data on locally-owned facilities.

Diagnosis and Implementation: The RIDOT has developed a Local Safety Program to work 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. As part of this program, the RIDOT will provide the needed training and resources to assist the locals in the planning process with the intent for locals to perform the "planning" step independently. Initially, $1,000,000 of funding will be allotted annually for local projects that will be ranked and awarded separately from state initiated projects. Currently, there is a pilot project that includes three (3) participating municipalities with projects scheduled for reimbursement in FY16.

Identify which internal partners are involved with Highway Safety Improvement Program planning.

☒Design

☒Planning

☒Maintenance

☒Operations

☒Governors Highway Safety Office

☒Other: Other-GIS Analysts

Briefly describe coordination with internal partners.

The RIDOT works internally with transportation planners, design engineers, GIS analysts, safety engineers, highway safety program coordinators and maintenance/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 multidiscipline 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.

Identify which external partners are involved with Highway Safety Improvement Program planning.

☒ Metropolitan Planning Organizations

☒ Governors Highway Safety Office

☒ Local Government Association

☐ Other:

Identify any program administration practices used to implement the HSIP that have changed since the last reporting period.

☒ Multi-disciplinary HSIP steering committee

☐ Other:

Describe any other aspects of Highway Safety Improvement Program Administration on which you would like to elaborate.

Beginning in 2015, the RIDOT has begun the process of implementing 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 measureable 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 HSIP Proposal Selection Committee (HSIP PSC) is made up of the HSIP Program Manager, FHWA Safety and Operations Engineer, and other RIDOT staff. The purpose of the HSIP PSC is to review and select HSIP proposals for advancement. The HSIP PSC meets on a monthly basis.

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. 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.

Also new in 2015, RIDOT has developed programs and sub-programs to better help organize and track proposed improvements. The programs are anticipated to align with the SHSP and will include Roadway Departure, Intersection Safety, Safety Corridor, Interchange Improvements, Low-Cost Improvements (RI*STARS), Vulnerable Road Users, and Local Safety. Sub-programs may include Median Barrier, Horizontal Curve, Road Diet, Wrong-Way Driving Mitigation, and Localized Bottleneck Reduction.

Program Methodology

Select the programs that are administered under the HSIP.

☐ Median Barrier	☒ Intersection	☒ Safe Corridor
☐ Horizontal Curve	☐ Bicycle Safety	☐ Rural State Highways
☐ Skid Hazard	☐ Crash Data	☐ Red Light Running Prevention
☒ Roadway Departure	☒ Low-Cost Spot Improvements	☐ Sign Replacement And

		Improvement
☒Local Safety	☐Pedestrian Safety	☐Right Angle Crash
☐Left Turn Crash	☐Shoulder Improvement	☐Segments
☒Other: Other-Interchange Improvements	☒Other: Other-Vulnerable Road Users	

Program: **Intersection**

Date of Program Methodology: **4/19/2015**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒All crashes	☐Traffic	☐Median width
☐Fatal crashes only	☒Volume	☐Horizontal curvature
☒Fatal and serious injury crashes only	☐Population	☒Functional classification
☐Other	☐Lane miles	☐Roadside features
	☐Other	☒Other-Type of Traffic Control
		☒Other-Sight Distance
		☒Other-Speeds
		☒Other-# of Lanes

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Crash Frequency - fatal and serious crashes only

☒ Other-Facility risk factors and similar geometric types

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

☒ Yes

☐ No

If yes, are local road projects identified using the same methodology as state roads?

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☒ Competitive application process

☒selection committee

☐Other

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

☐Rank of Priority Consideration

☒Ranking based on B/C	15
☐Available funding	
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	
☒Reduction in Fatalities and Injuries	15
☒Facility Risk Level (Based on Historical Fatalities and Injuries)	20
☒SHSP Emphasis Area	15
☒Project Feasibility	25
☒Policy Conformance	10

Program: **Safe Corridor**

Date of Program Methodology: **4/19/2015**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☒ Traffic	☐ Median width
☐ Fatal crashes only	☒ Volume	☐ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☒ Functional classification
☐ Other	☐ Lane miles	☒ Roadside features
	☒ Other-Transit	☒ Other-# Of Lanes

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Crash frequency - fatal and serious injury crashes only

☒Other-Facility risk factors/similar geometric types

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

☒Yes

☐No

If yes, are local road projects identified using the same methodology as state roads?

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☐Other

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

☐Rank of Priority Consideration

☒Ranking based on B/C 15

☐Available funding

☐Incremental B/C

☐Ranking based on net benefit

☐Other

☒ Reduction in fatalities and serious injuries	15
☒ Facility risk level	20
☒ SHSP emphasis area	15
☒ Project feasibility	25
☒ Policy conformance	10

Program: **Roadway Departure**

Date of Program Methodology: **4/19/2015**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☐ Traffic	☒ Median width
☐ Fatal crashes only	☒ Volume	☒ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☒ Functional classification
☐ Other	☐ Lane miles	☒ Roadside features
	☐ Other	☒ Other-Roadway width
		☒ Other-Clear Zone

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Crash frequency - Fatal and serious crashes only

☒ Other-Facility risk factors/similar geometric types

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

☒ Yes

☐ No

If yes, are local road projects identified using the same methodology as state roads?

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☒ selection committee

☐ Other

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

☐ Rank of Priority Consideration

☒ Ranking based on B/C	15
☐ Available funding	
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	
☒ Reduction in fatalities and injuries	15
☒ Facility risk level	20
☒ SHSP emphasis area	15
☒ Project feasibility	25
☒ Policy conformance	10

Program: **Low-Cost Spot Improvements**

Date of Program Methodology: **10/1/2012**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☒ Traffic	☐ Median width
☐ Fatal crashes only	☒ Volume	☐ Horizontal curvature
☐ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☒ Other-Congestion	☒ Other-Overlaps with all other HSIP programs

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☒ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Delay/Congestion

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

☒Yes

☐No

If yes, are local road projects identified using the same methodology as state roads?

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☐Other

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

☐Rank of Priority Consideration

☒Ranking based on B/C	50
☐Available funding	
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	
☒Reduction in Delay/Congestion	50

Program: **Local Safety**

Date of Program Methodology: **4/19/2015**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☒ Volume	☐ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☐ Other	☒ Other-Overlaps with all other HSIP programs

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Coordination with local municipalities

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

☒ Yes

☐ No

If yes, are local road projects identified using the same methodology as state roads?

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☒ Competitive application process

☒ selection committee

☐ Other

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

☐ Rank of Priority Consideration

☒ Ranking based on B/C 15

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit	
☐ Other	
☒ Reduction in fatalities and serious injuries	15
☒ Facility risk level	20
☒ SHSP emphasis area	15
☒ Project feasibility	25
☒ Policy conformance	10

Program: **Other-Interchange Improvements**

Date of Program Methodology: **4/19/2015**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☒ Traffic	☐ Median width
☐ Fatal crashes only	☒ Volume	☒ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☒ Other-Impaired and older drivers	☒ Other-Interchange geometry

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Frequency of wrong-way driving incidents

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

☐ Yes

☒ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☒ selection committee

☐ Other

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

☐Rank of Priority Consideration

☒Ranking based on B/C	15
☐Available funding	
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	
☒Reduction in fatal and serious injury crashes	15
☒Facility risk level	20
☒SHSP emphasis area	15
☒Project feasibility	25
☒Policy conformance	10

Program: **Other-Vulnerable Road Users**

Date of Program Methodology: **8/1/2013**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒All crashes	☒Traffic	☐Median width
☐Fatal crashes only	☒Volume	☐Horizontal curvature
☒Fatal and serious injury	☐Population	☒Functional classification

crashes only

☐ Other

☐ Lane miles

☐ Roadside features

☐ Other

☒ Other-Roadway width

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Facility risk/similar type geometrics

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

☒ Yes

☐ No

If yes, are local road projects identified using the same methodology as state roads?

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☒ selection committee

☐ Other

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

☐ Rank of Priority Consideration

☒ Ranking based on B/C	15
☐ Available funding	
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	
☒ Reduction in fatal and serious injury crashes	15
☒ facility risk level	20
☒ Project feasibility	25
☒ Policy conformance	15
☒ SHSP emphasis area	10

What proportion of highway safety improvement program funds address systemic improvements?

32

Highway safety improvement program funds are used to address which of the following systemic improvements?

- ☒ Cable Median Barriers
- ☐ Traffic Control Device Rehabilitation
- ☒ Install/Improve Signing
- ☒ Upgrade Guard Rails
- ☒ Safety Edge
- ☒ Add/Upgrade/Modify/Remove Traffic Signal
- ☒ Other Other-Blunt End Terminal
- ☒ Other Other-Road Diets
- ☒ Rumble Strips
- ☐ Pavement/Shoulder Widening
- ☒ Install/Improve Pavement Marking and/or Delineation
- ☒ Clear Zone Improvements
- ☐ Install/Improve Lighting
- ☒ Other Other-Wrong-Way Driving
- ☒ Other Other-High Friction Surface Treatments

What process is used to identify potential countermeasures?

- ☒ Engineering Study
- ☒ Road Safety Assessment
- ☐ Other:

Identify any program methodology practices used to implement the HSIP that have changed since the last reporting period.

☐ Highway Safety Manual

☐ Road Safety audits

☐ Systemic Approach

☒ Other: Other-While there have been no changes implmented, RIDOT is working on identifying high risk facilties and risk factors

☒ Other: Other-RIDOT already uses HSM, RSAs, and Systemic Approach in theri HSIP.

Describe any other aspects of the Highway Safety Improvement Program methodology on which you would like to elaborate.

While fatal crashes in Rhode Island seldom occur at the same location, they typically follow specific trends. RIDOT uses systemic improvements to more effectively deploy safety countermeasures on a wide scale basis across the State, focusing on areas with the highest fatal crash trends. Locations for implementing improvements are not based on the number or rate of crashes at particular locations, but on an analysis of what roadways share safety issues that may be mitigated by the improvement. Fatal and serious injury crashes on rural and urban segments are random in nature and typically spread over hundreds of miles rather than being densely clustered at intersections in urban environments. Identifying problems on a systemic approach can address these crashes because the focus is on high-risk roadway features, not specific locations.

RIDOT wishes to use 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 hopes to begin using the predictive method in their HSIP methodology by 2017.

Progress in Implementing Projects

Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

☐ Calendar Year

☐ State Fiscal Year

☒ Federal Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	11000000	67 %	6103415.56	39 %
HRRRP (SAFETEA-LU)	180548.65	1 %	180548.65	1 %
HRRR Special Rule	900000	5 %	900000	6 %
Penalty Transfer - Section 154				
Penalty Transfer – Section 164	4392354	27 %	8306460	54 %
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)				
State and Local Funds				

Totals	16472902.65	100%	15490424.21	100%

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

$756,978.00

How much funding is obligated to local safety projects?

$756,978.00

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

19 %

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

19 %

How much funding was transferred in to the HSIP from other core program areas during the reporting period?

$0.00

How much funding was transferred out of the HSIP to other core program areas during the reporting period?

$0.00

Discuss impediments to obligating Highway Safety Improvement Program funds and plans to overcome this 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.

Describe any other aspects of the general Highway Safety Improvement Program implementation progress on which you would like to elaborate.

None

General Listing of Projects

List each highway safety improvement project obligated during the reporting period.

Project	Improvement Category	Output	HSIP Cost	Total Cost	Funding Category	Functional Classification	AADT	Speed	Roadway Ownership	Relationship to SHSP	
										Emphasis Area	Strategy
Enhanced freeway Delineation (Older Drivers Special Rule)(164HE)	Roadway delineation Delineators post-mounted or on barrier	171 Miles	2789273.28	2789273.28	Penalty Transfer – Section 164	Urban Principal Arterial - Other Freeways and Expressways	0	55	State Highway Agency	Roadway Departure	Implement countermeasures with greatest potential for safety improvement
SafetyAnalyst Software	Non-infrastructure Data/traffic records	1 Numbers	200000	200000	Penalty Transfer – Section 164		0	0		Data	Improve data to assist is making more robust data driven decisions
MIRE Data Collection (Additional Services)	Non-infrastructure Data/traffic	1 Numbers	1191270	1191270	HSIP (Section 148)		0	0		Data	Improve data to assist is making more robust data driven

	records										decisions
HSIP Contract 4 - Central/Cranston	Interchange design Ramp closure	2 Numbers	1100214.09	1100214.09	HSIP (Section 148)	Urban Principal Arterial - Other Freeways and Expressways	60000	50	State Highway Agency	Intersections	Implement countermeasures with greatest potential for safety improvement
State Traffic Commision Contract 5	Pedestrians and bicyclists Pedestrian signal - install new at intersection	5 Numbers	567859.19	567859.19	Penalty Transfer – Section 164	Urban Principal Arterial - Other	0	35	State Highway Agency	Intersections	Implement countermeasures with greatest potential for safety improvement
Intersection Improvements to Route 102/117	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	1521591.15	2421591.15	HRRR Special Rule	Rural Principal Arterial - Other	5000	50	State Highway Agency	Intersections	Implement countermeasures with greatest potential for safety improvement
Intersection Improvement	Pedestrians and	1 Numbe	1727366.	1727366.	Penalty Transfe	Urban Principal	2600	25	State Highway	Intersecti	Implement countermeas

s to Memorial Blvd/Francis Street	bicyclists Medians and pedestrian refuge areas	rs	26	26	r – Section 164	Arterial - Other	0		Agency	ons	ures with greatest potential for safety improvement
Systemic Safety Improvements - Crash Attenuator Enhancemets	Roadside Barrier end treatments (crash cushions, terminals)	25 Numbers	1791708.96	1791708.96	Penalty Transfer – Section 164	Urban Principal Arterial - Interstate	0	55	State Highway Agency	Roadway Departure	Implement countermeasures with greatest potential for safety improvement
HSIP Interstate Contract 1 - Plainfield Pike at I-295	Intersection traffic control Systemic improvements - signal-controlled	3 Numbers	250459.21	250459.21	HSIP (Section 148)	Urban Principal Arterial - Other	12000	35	State Highway Agency	Intersections	Implement countermeasures with greatest potential for safety improvement
Preliminary Engineering for HSIP Design	Non-infrastructure Transportation safety planning	8 Numbers	1286397.81	1286397.81	HSIP (Section 148)		0	0	State Highway Agency		Implement countermeasures with greatest potential for safety improvement

Statewide Wrong-Way Driving Mitigation C-1	Advanced technology and ITS Advanced technology and ITS - other	24 Numbers	347543.51	2000000	HSIP (Section 148)	Urban Principal Arterial - Interstate	0	55	State Highway Agency	Older Drivers	Implement countermeasures with greatest potential for safety improvement
Strategic Highway Safety Program - 5 Year Plan	Non-infrastructure Transportation safety planning	5 Numbers	340521.21	340521.21	HSIP (Section 148)		0	0		Data	Maintain and update SHSP
Pedestrian Enhancements to Coronado Road	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0.5 Miles	756977.95	2271003.69	HSIP (Section 148)	Urban Major Collector	10000	25	City of Municipal Highway Agency	Pedestrians	Implement countermeasures with greatest potential for safety improvement
Signal Improvements to Mineral Spring Avenue	Intersection traffic control Systemic improvements - signal-	3 Numbers	1619241.59	1619241.59	Penalty Transfer – Section 164	Urban Principal Arterial - Other	25000	25	State Highway Agency	Intersections	Implement countermeasures with greatest potential for safety

	controlled										improvement

Progress in Achieving Safety Performance Targets

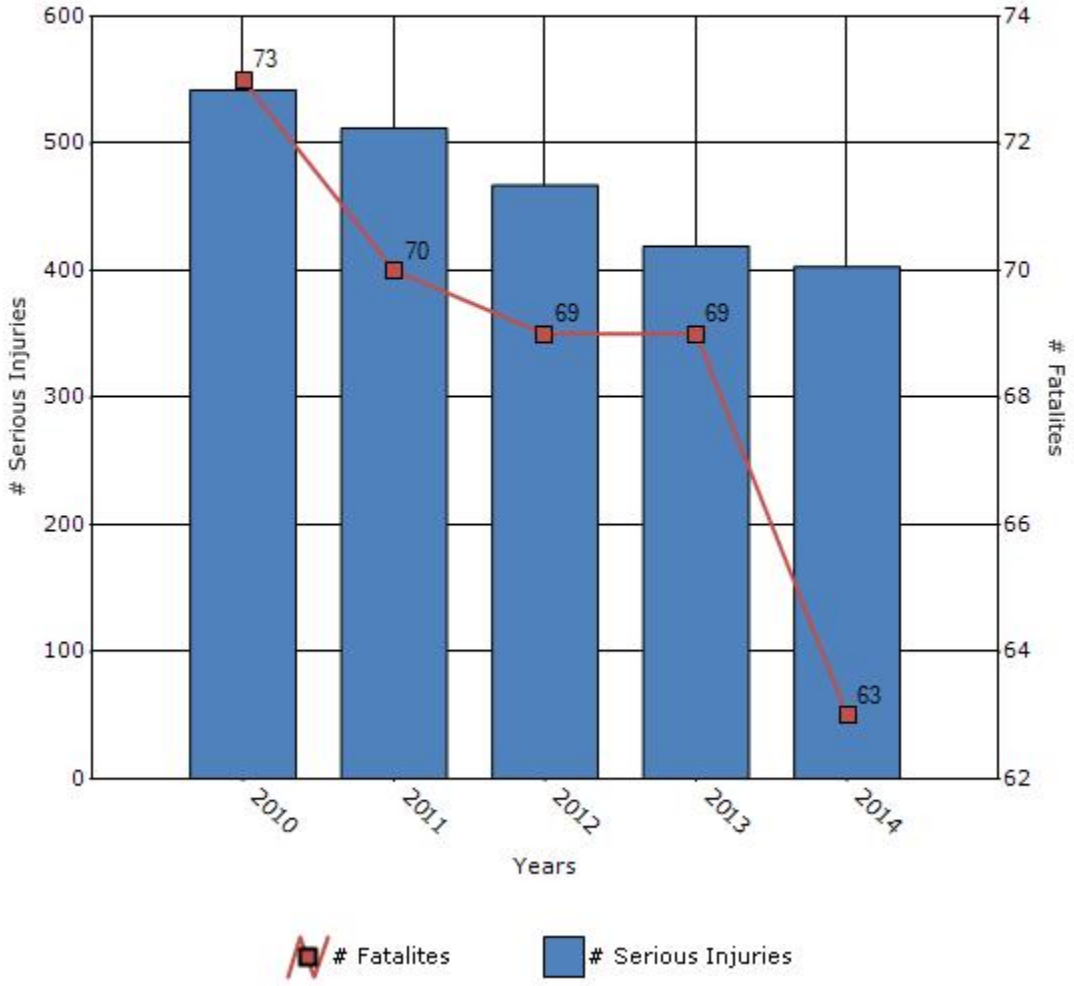
Overview of General Safety Trends

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

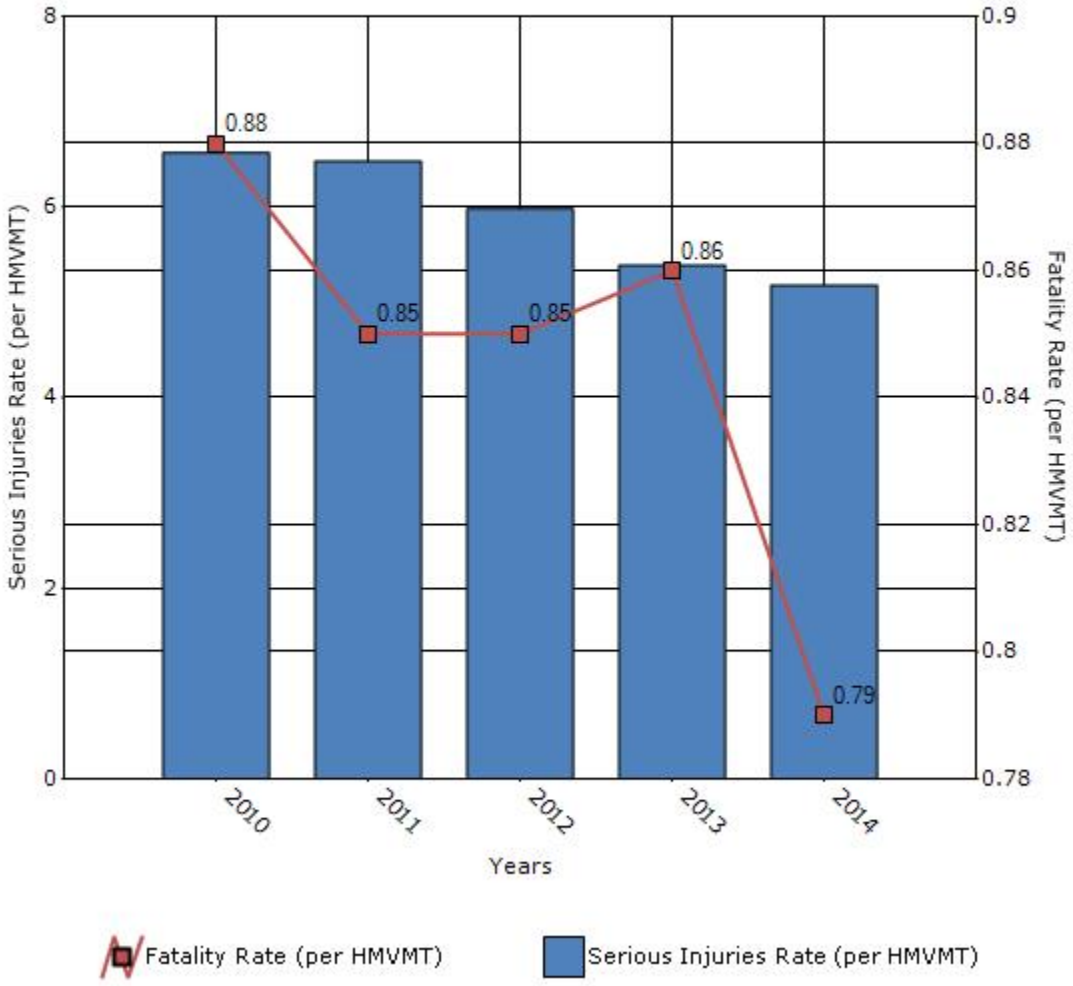
Performance Measures*	2010	2011	2012	2013	2014
Number of fatalities	73	70	69	69	63
Number of serious injuries	542	512	467	419	403
Fatality rate (per HMVMT)	0.88	0.85	0.85	0.86	0.79
Serious injury rate (per HMVMT)	6.57	6.48	5.98	5.39	5.18

*Performance measure data is presented using a five-year rolling average.

Number of Fatalities and Serious injuries for the Last Five Years



Rate of Fatalities and Serious injuries for the Last Five Years

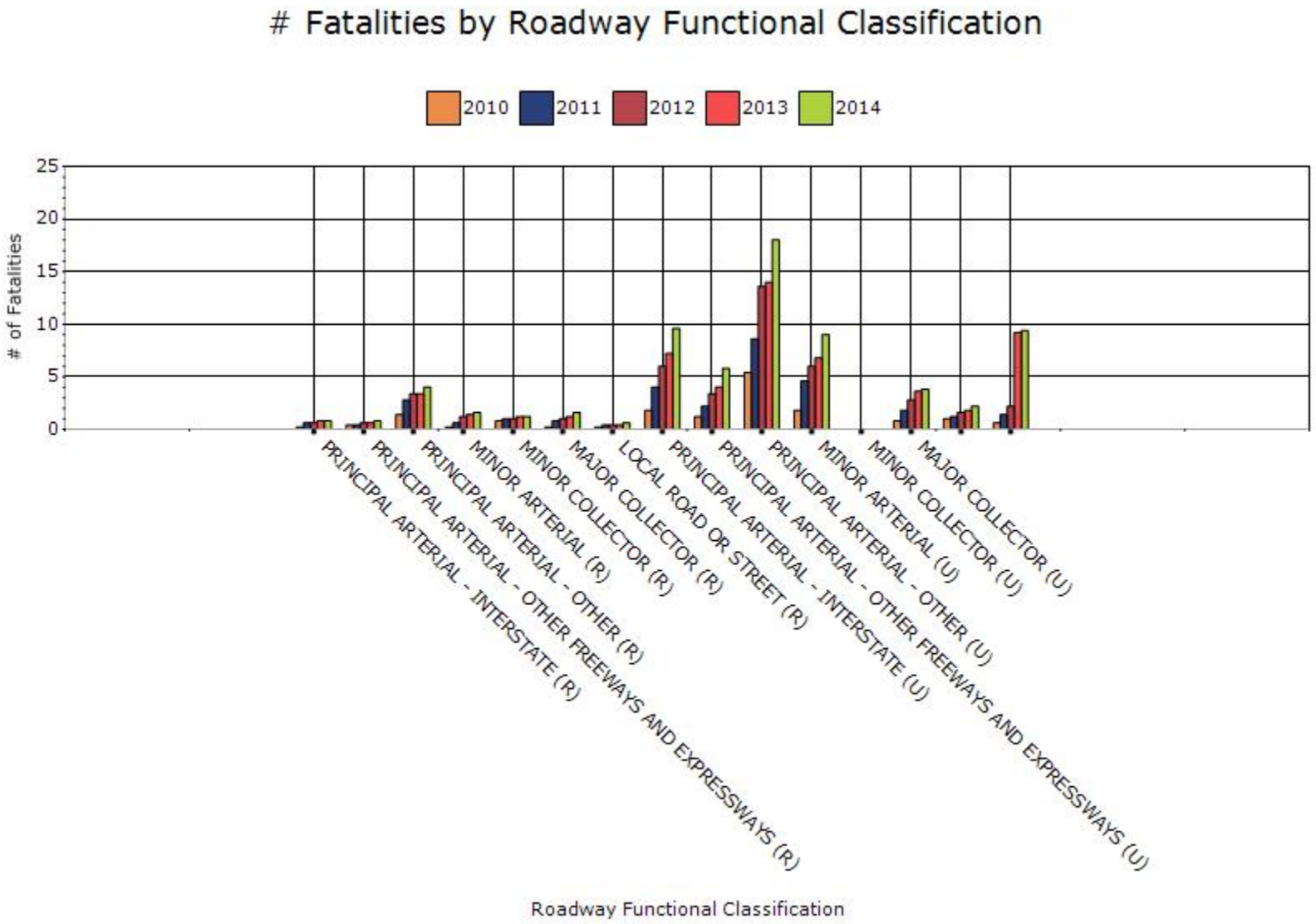


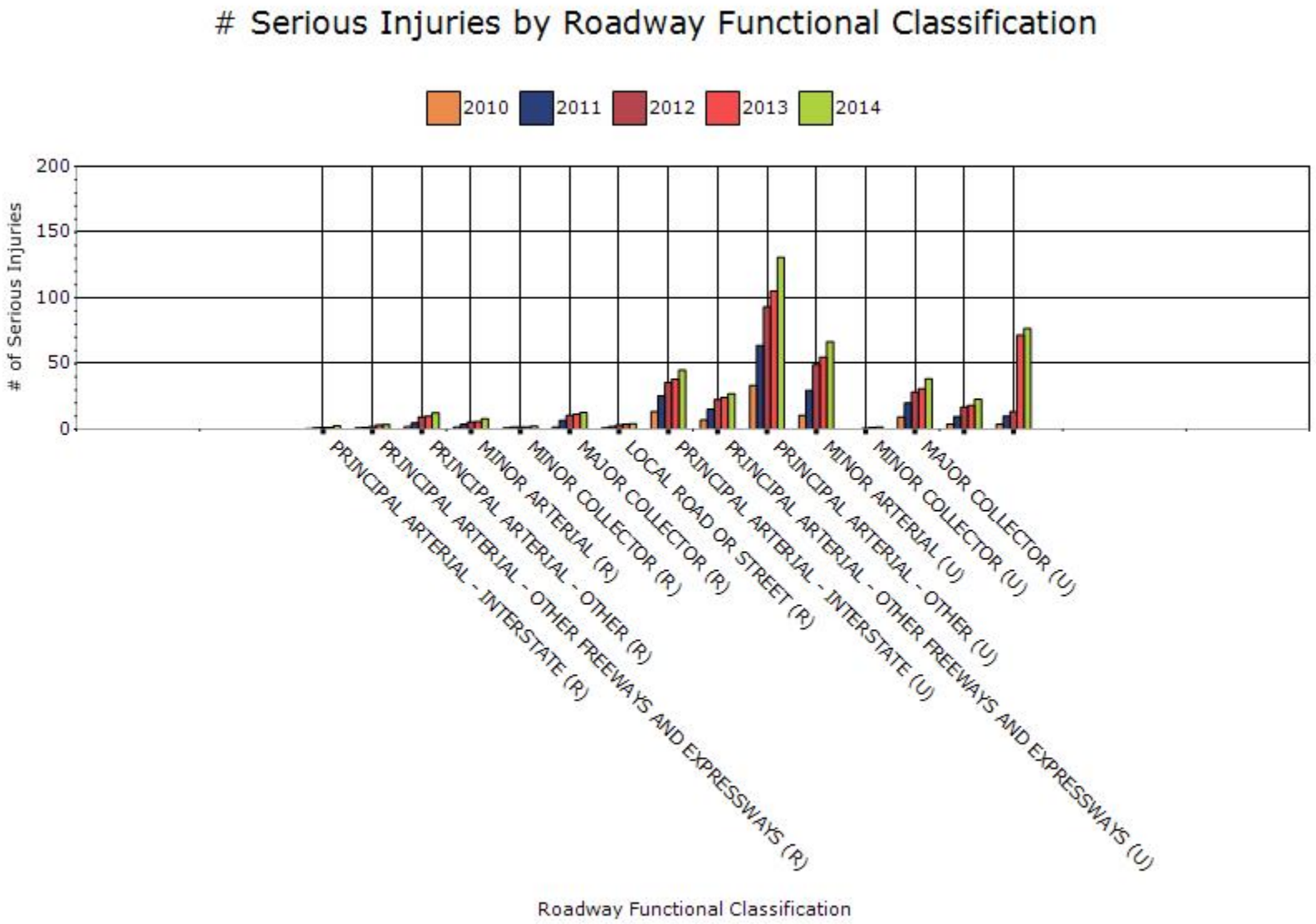
To the maximum extent possible, present performance measure* data by functional classification and ownership.

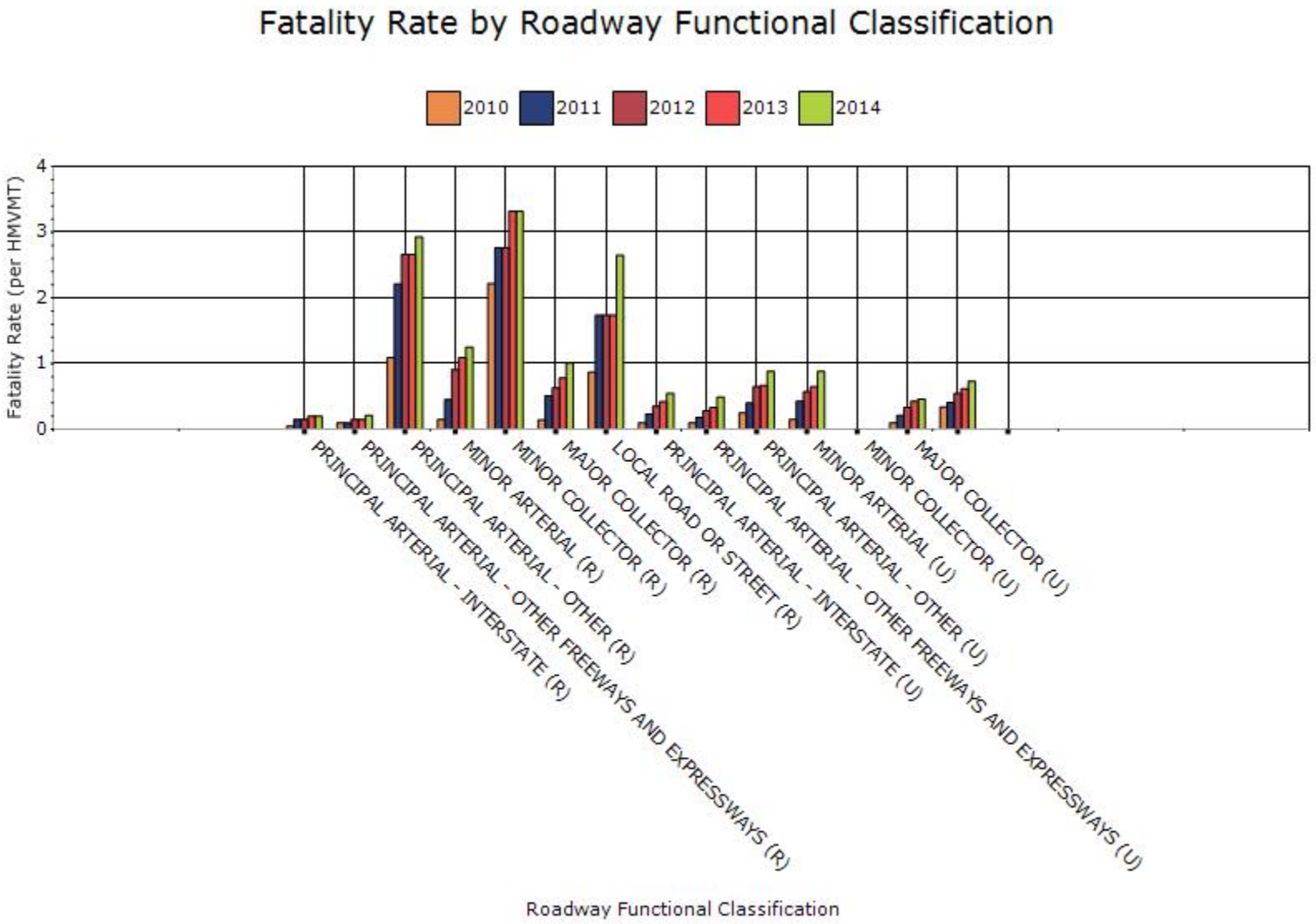
Year - 2014

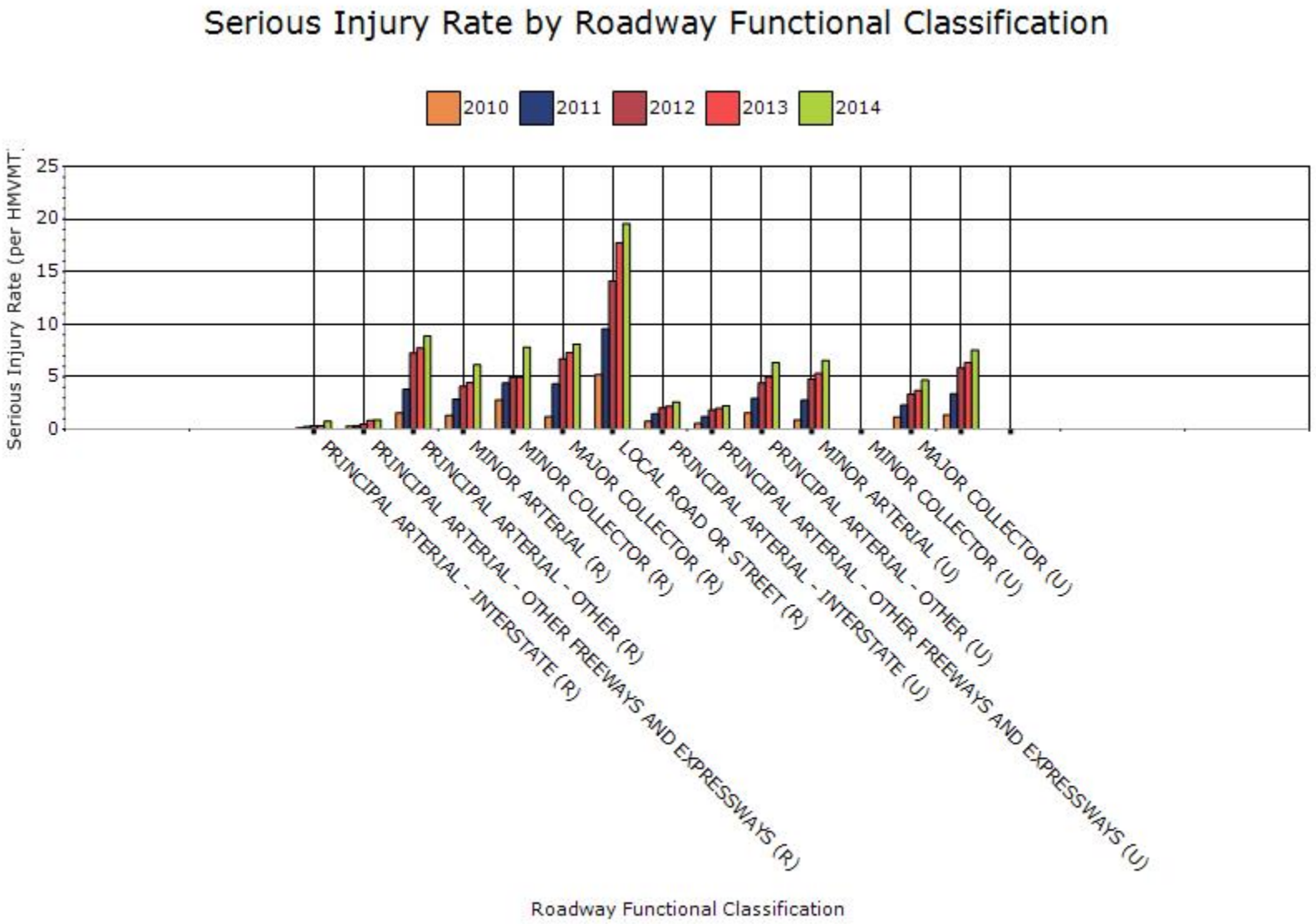
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	0.8	2.8	0.2	0.78
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0.8	3.6	0.21	0.9
RURAL PRINCIPAL ARTERIAL - OTHER	4	12.6	2.93	8.87
RURAL MINOR ARTERIAL	1.6	8	1.25	6.15
RURAL MINOR COLLECTOR	1.2	2.4	3.32	7.81
RURAL MAJOR COLLECTOR	1.6	12.8	1.01	8.1
RURAL LOCAL ROAD OR STREET	0.6	4.4	2.65	19.57
URBAN PRINCIPAL	9.6	45	0.55	2.59

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	5.8	27.2	0.49	2.25
URBAN PRINCIPAL ARTERIAL - OTHER	18	130.8	0.88	6.35
URBAN MINOR ARTERIAL	9	66.6	0.88	6.55
URBAN MINOR COLLECTOR	0	1.8	0	0
URBAN MAJOR COLLECTOR	3.8	38.4	0.46	4.69
URBAN LOCAL ROAD OR STREET	2.2	23	0.73	7.55
OTHER	9.4	76.8	0	0


Fatalities by Roadway Functional Classification
2010
2011
2012
2013
2014
# of Fatalities
25
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

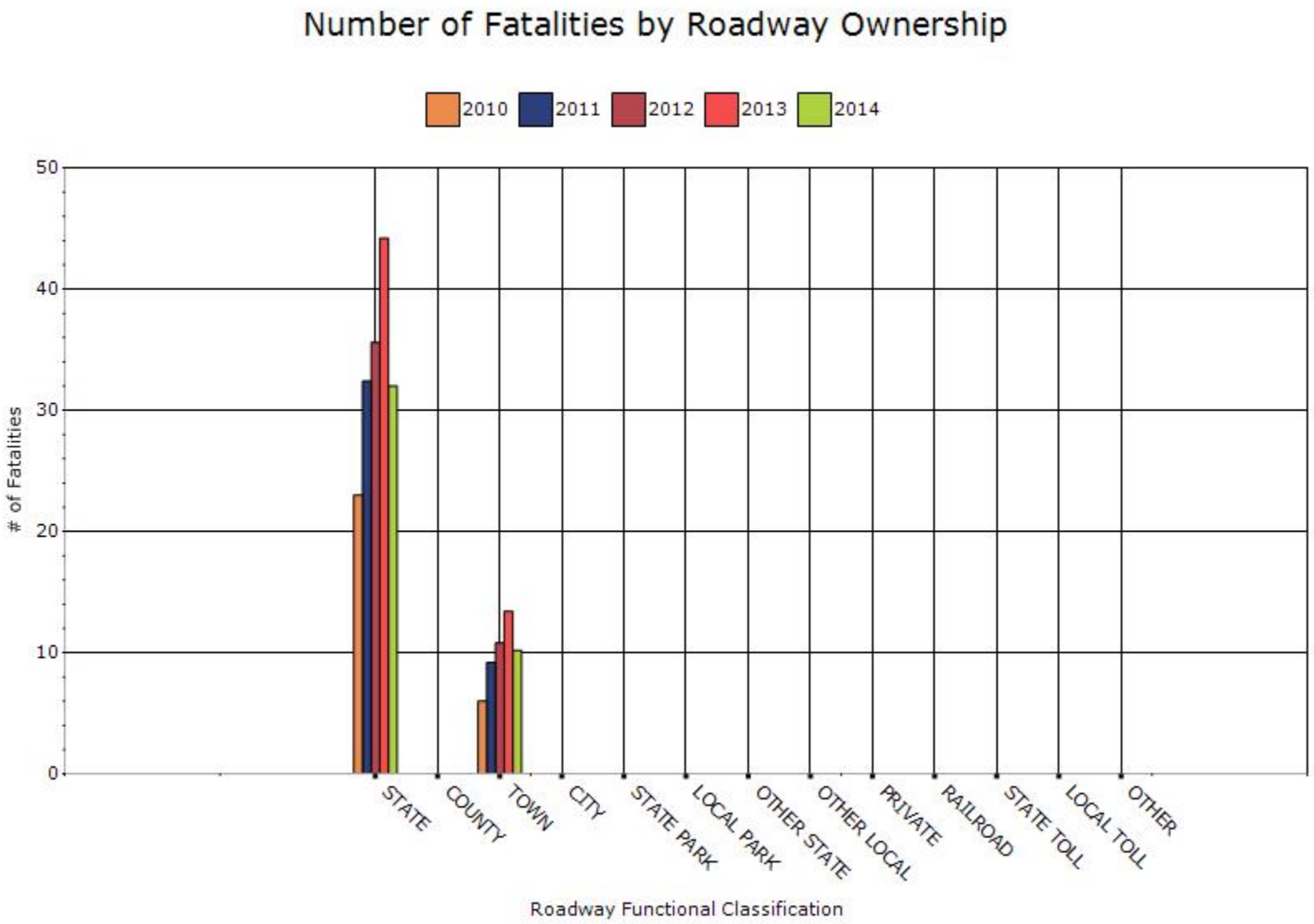

Serious Injuries by Roadway Functional Classification
2010
2011
2012
2013
2014
# of Serious Injuries
200
150
100
50
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

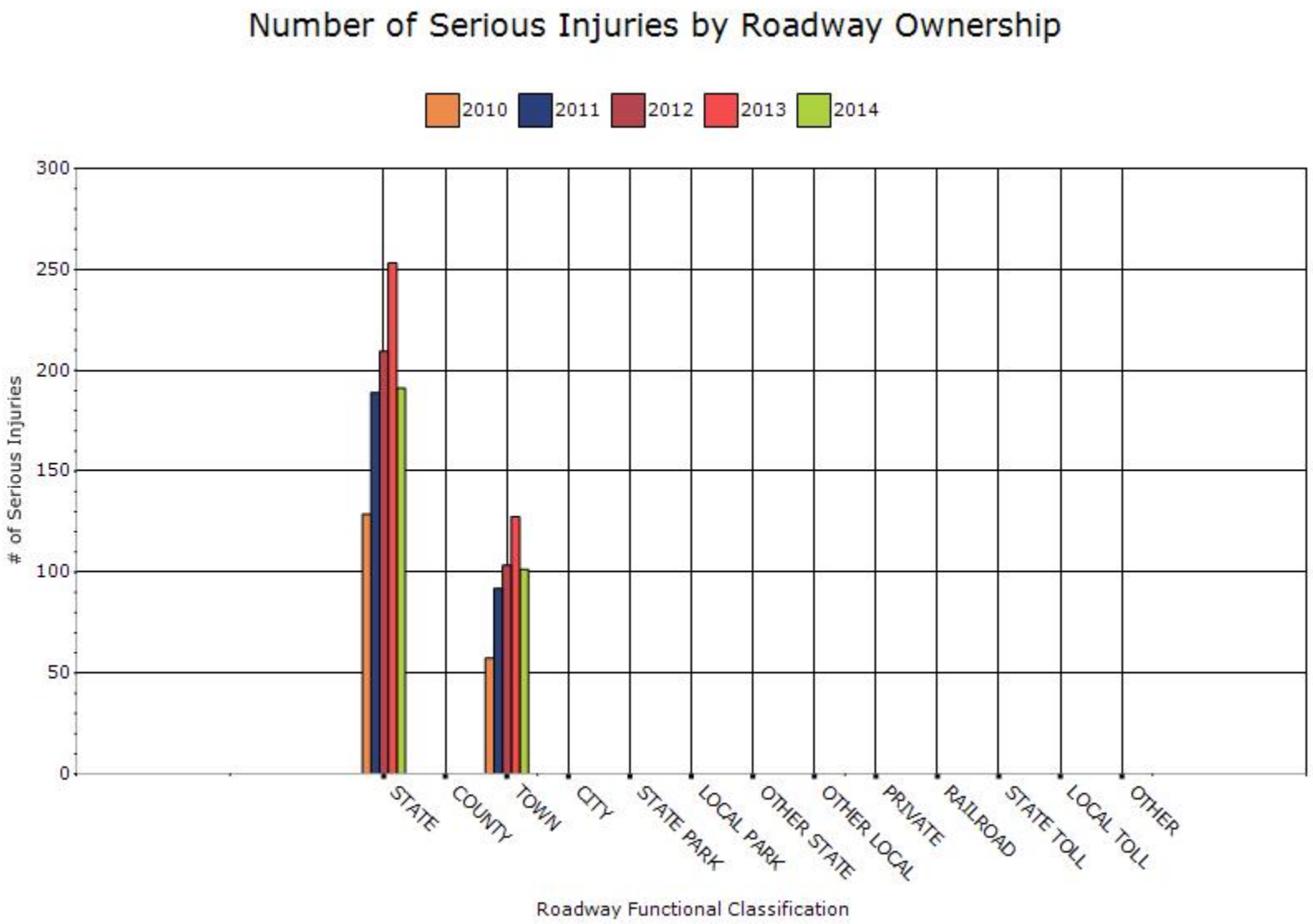

Fatality Rate by Roadway Functional Classification
2010
2011
2012
2013
2014
Fatality Rate (per HMVMT)
0
1
2
3
4
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification


Serious Injury Rate by Roadway Functional Classification
2010
2011
2012
2013
2014
Serious Injury Rate (per HMVMT)
25
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

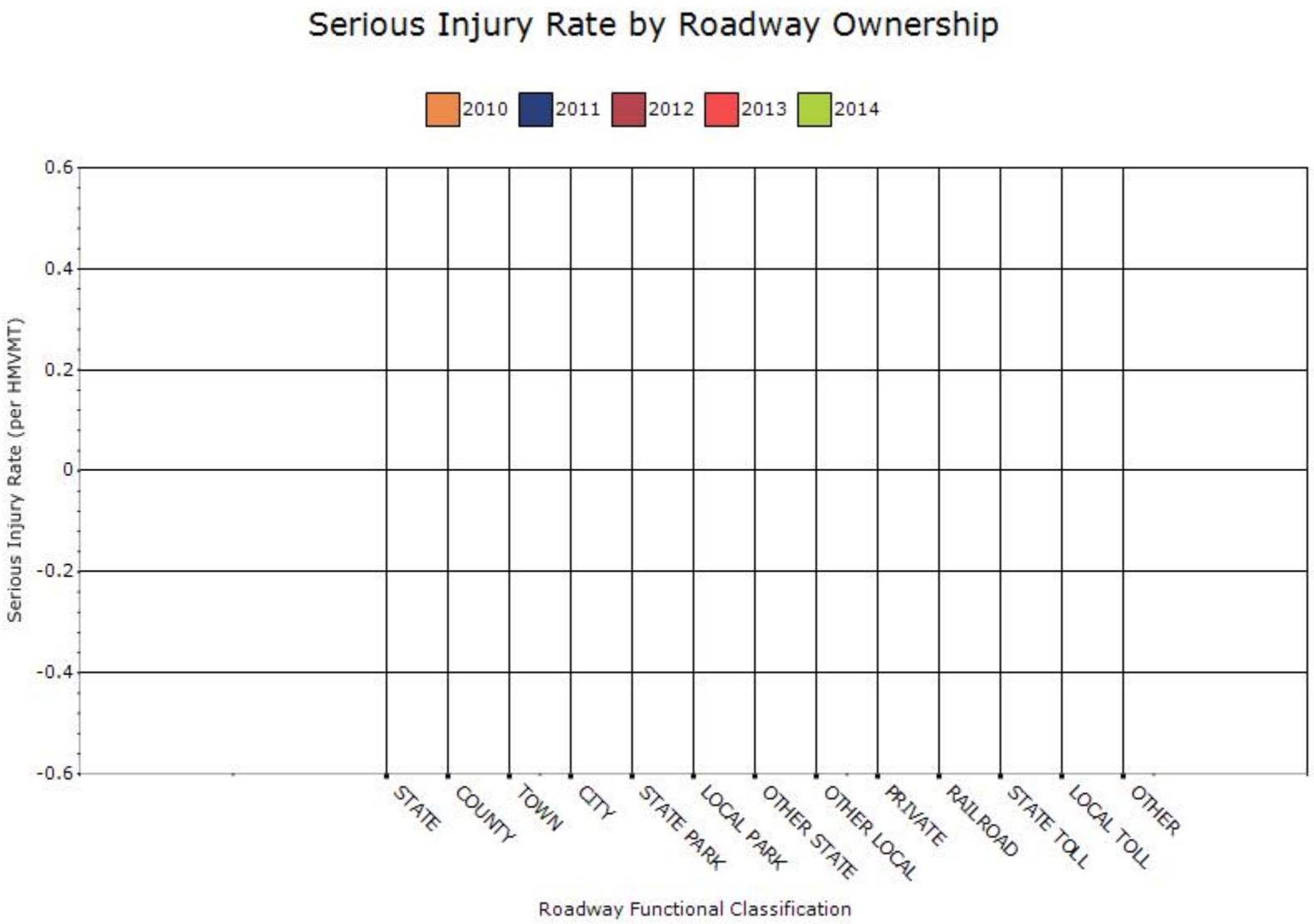
Year - 2014

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	32	191.2	0	0
COUNTY HIGHWAY AGENCY	0	0	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	10.2	101.4	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	0	0	0	0
STATE PARK, FOREST, OR RESERVATION AGENCY	0	0	0	0
LOCAL PARK, FOREST OR RESERVATION AGENCY	0	0	0	0
OTHER STATE AGENCY	0	0	0	0
OTHER LOCAL AGENCY	0	0	0	0
PRIVATE (OTHER THAN RAILROAD)	0	0	0	0
RAILROAD	0	0	0	0
STATE TOLL AUTHORITY	0	0	0	0
LOCAL TOLL AUTHORITY	0	0	0	0
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0	0	0	0


Number of Fatalities by Roadway Ownership
2010
2011
2012
2013
2014
50
40
30
20
10
0
# of Fatalities
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Number of Serious Injuries by Roadway Ownership
2010
2011
2012
2013
2014
300
250
200
150
100
50
0
# of Serious Injuries
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Fatality Rate by Roadway Ownership
2010
2011
2012
2013
2014
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Fatality Rate (per HMVMT)
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Serious Injury Rate by Roadway Ownership
2010
2011
2012
2013
2014
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Serious Injury Rate (per HMVMT)
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification

Describe any other aspects of the general highway safety trends on which you would like to elaborate.

RIDOT updated their Functional Classification in 2015. Therefore, the figures reported on in previous years HSIP Annual report will differ. Also, the new functional classifications do not align with NHTSA FARS as of this report.

RIDOT is currently exceeding its SHSP goal of reducing fatalities by 50% by 2030. We have attached graphics that illustrate the fatality and serious injury trends.

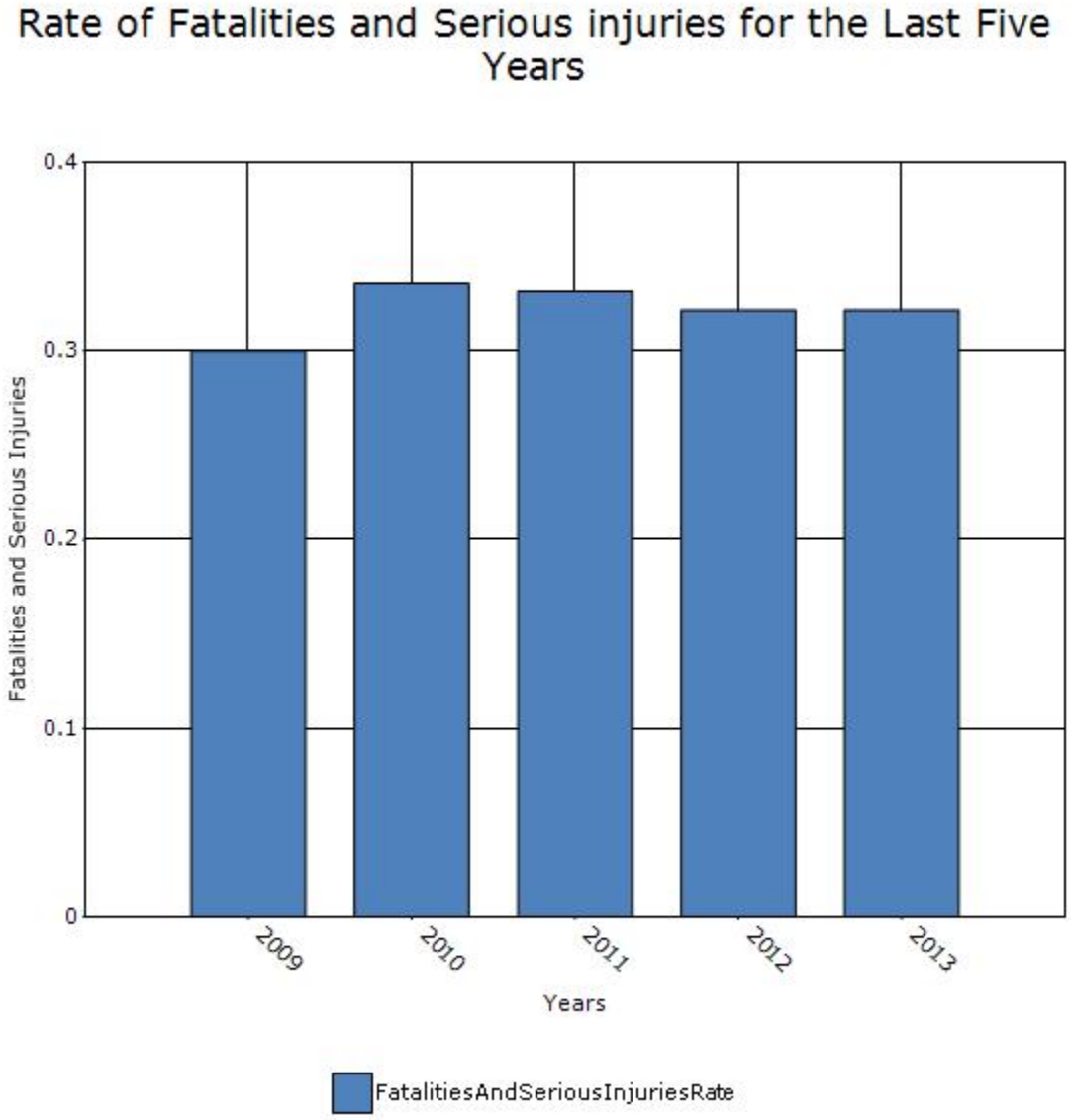
Application of Special Rules

Present the rate of traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65.

Older Driver Performance Measures	2009	2010	2011	2012	2013
Fatality rate (per capita)	0.088	0.086	0.092	0.092	0.096
Serious injury rate (per capita)	0.212	0.25	0.24	0.23	0.226
Fatality and serious injury rate (per capita)	0.3	0.336	0.332	0.322	0.322

*Performance measure data is presented using a five-year rolling average.

See Attached Document for Sub-Section Application of Special Rules.



Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program Evaluation)

What indicators of success can you use to demonstrate effectiveness and success in the Highway Safety Improvement Program?

☐ None

☐ Benefit/cost

☒ Policy change

☐ Other:

What significant programmatic changes have occurred since the last reporting period?

☐ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☒ Organizational Changes

☐ None

☒ Other: Other-Development of HSIP Proposal Form and Project Ranking

☒ Other: Other-RIDOT already focused on Fatatlies and Serious Injuries and inlcuded Local Roads in the HSIP.

☒ Other: Other-Development of HSIP Subprograms

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

Diagnosis and Implementation: The RIDOT has developed a Local Safety Program to work 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. As part of this program, the RIDOT will provide the needed training and resources to assist the locals in the planning process with the intent for locals to perform the "planning" step independently. Initially, $1,000,000 of funding will be allotted annually for local projects that will be ranked and awarded separately from state initiated projects. Currently, there is a pilot project that includes three (3) participating municipalities with projects scheduled for reimbursement in FY16.

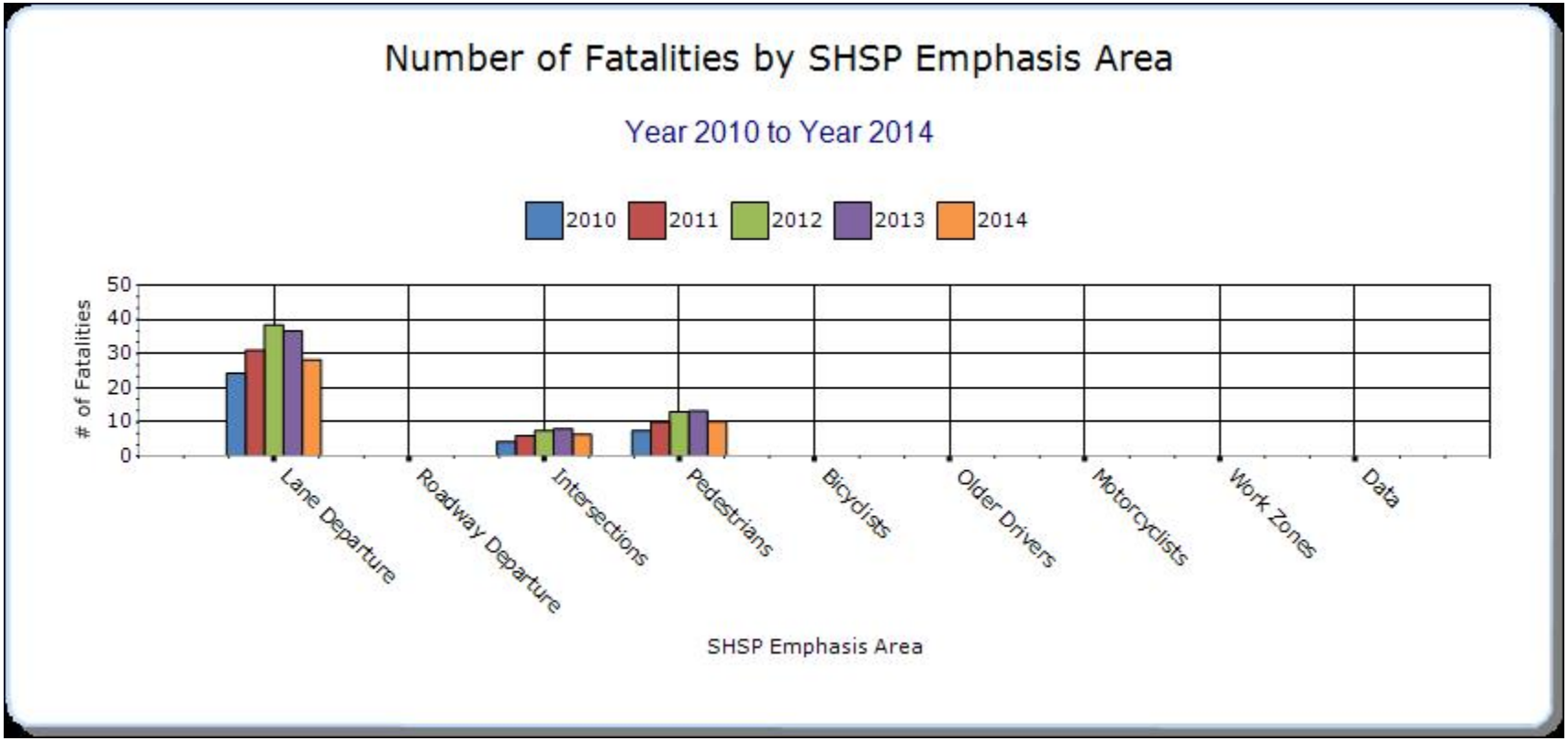
HSIP Project Ranking/Selection Process: Beginning in 2015, the RIDOT has begun the process of implementing a semi-annual review of safety improvement proposals for selection. Local governments and RIDOT staff submit engineering studies of potential safety projects. These safety proposals are evaluated 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 measureable 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.

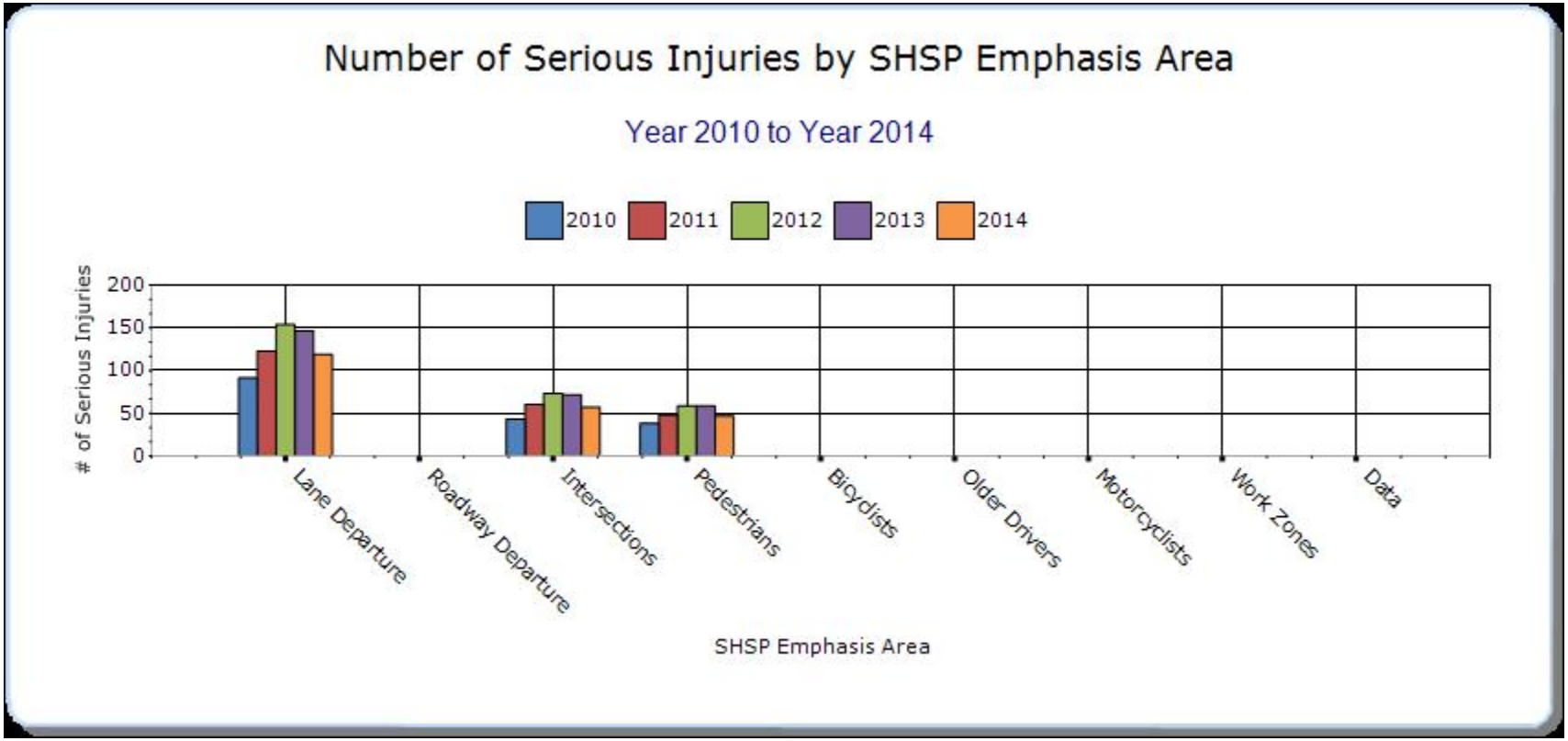
SHSP Emphasis Areas

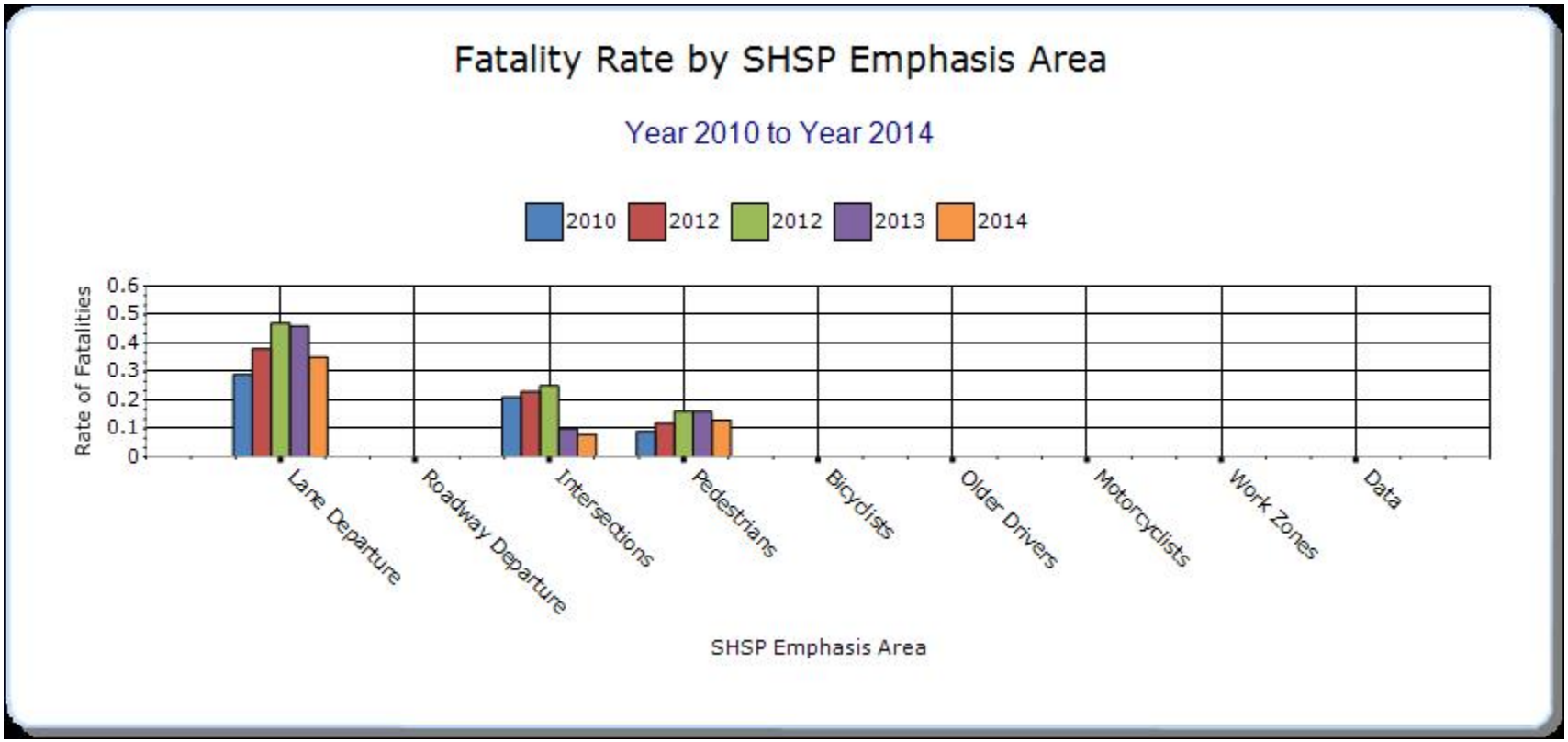
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

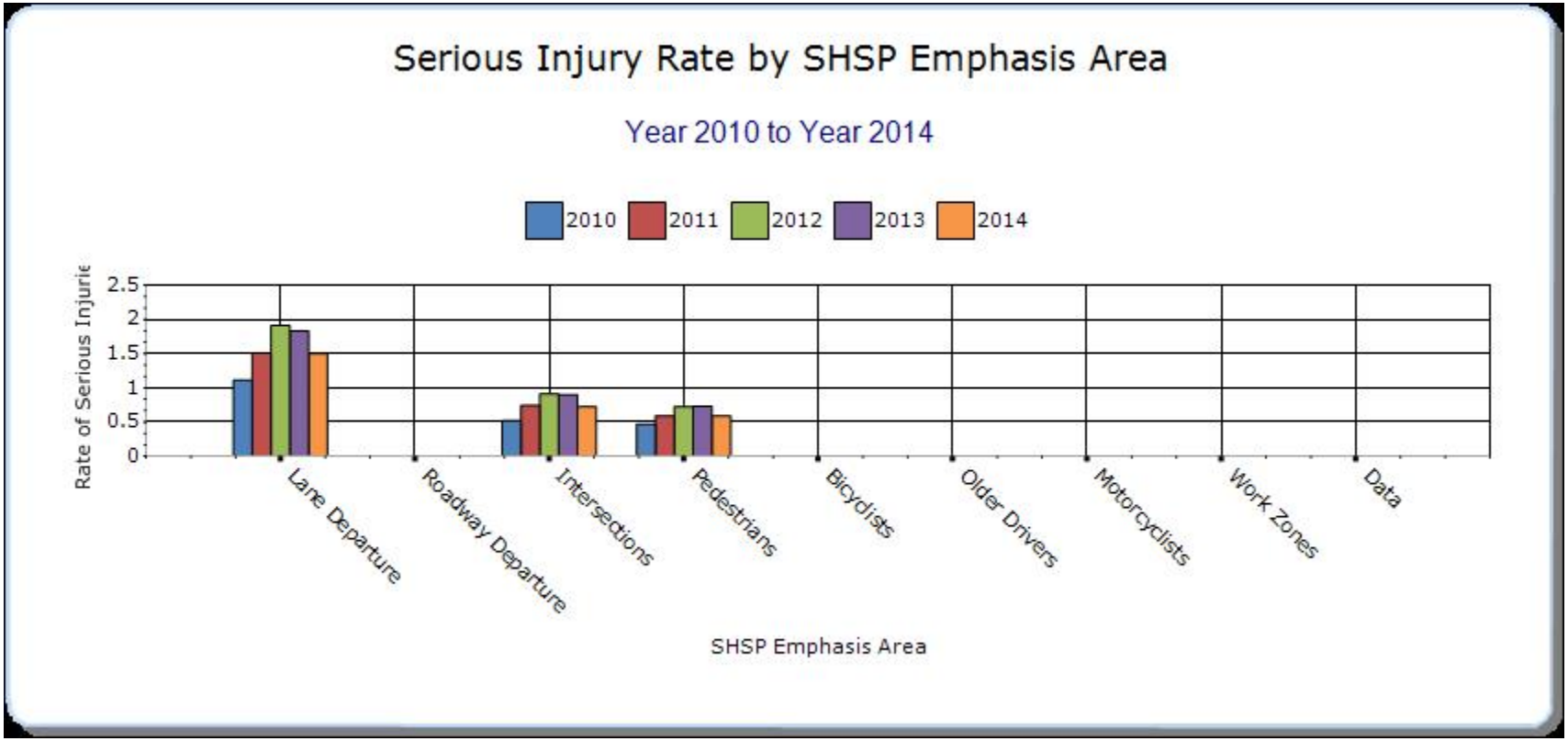
Year - 2013

HSIP-related SHSP Emphasis Areas	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Older Drivers	Vehicle/pedestrian	13.2	58.8	0.16	0.73	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Fatalities
50
40
30
20
10
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Number of Serious Injuries by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
200
150
100
50
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.6
0.5
0.4
0.3
0.2
0.1
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

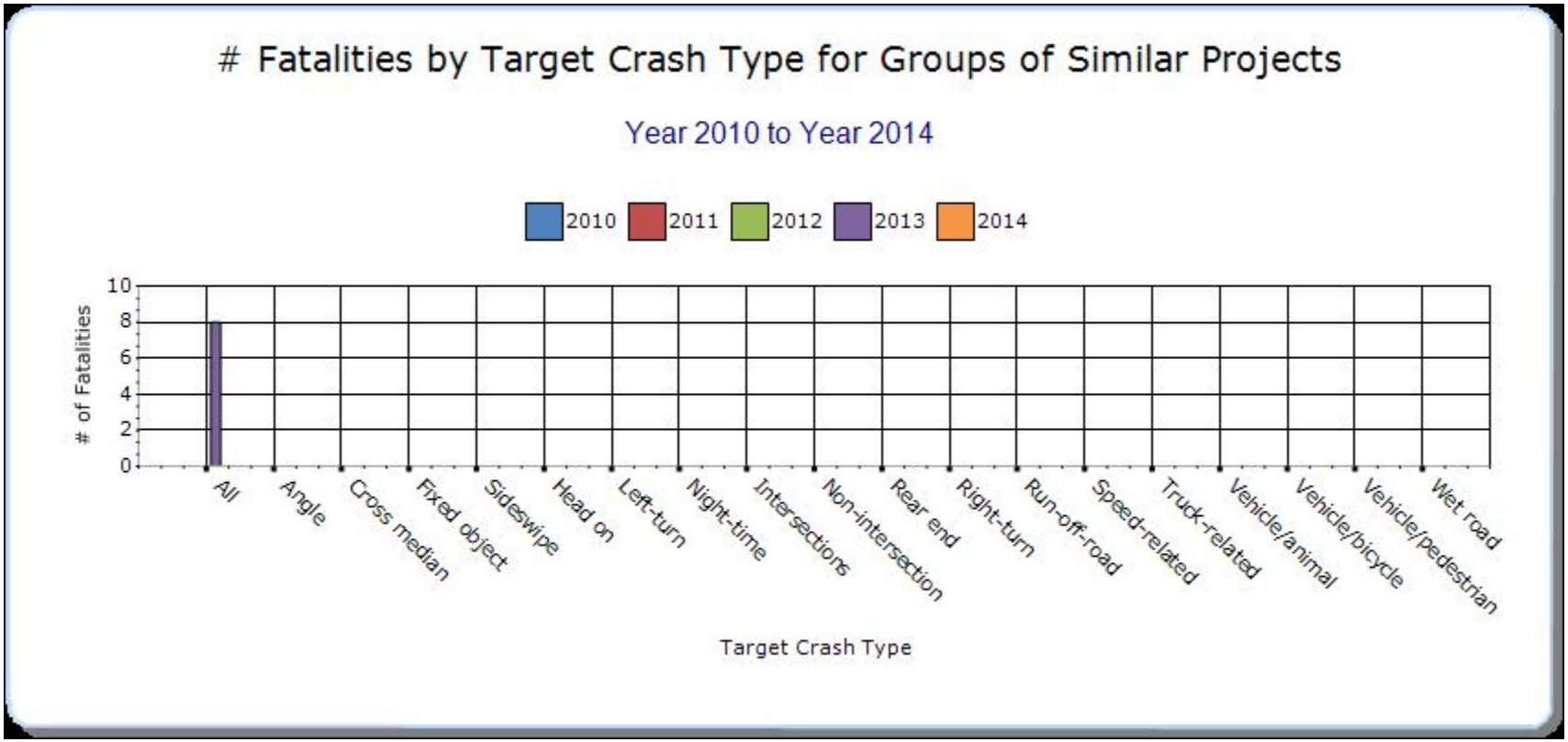

Serious Injury Rate by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
Rate of Serious Injurie
2.5
2
1.5
1
0.5
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

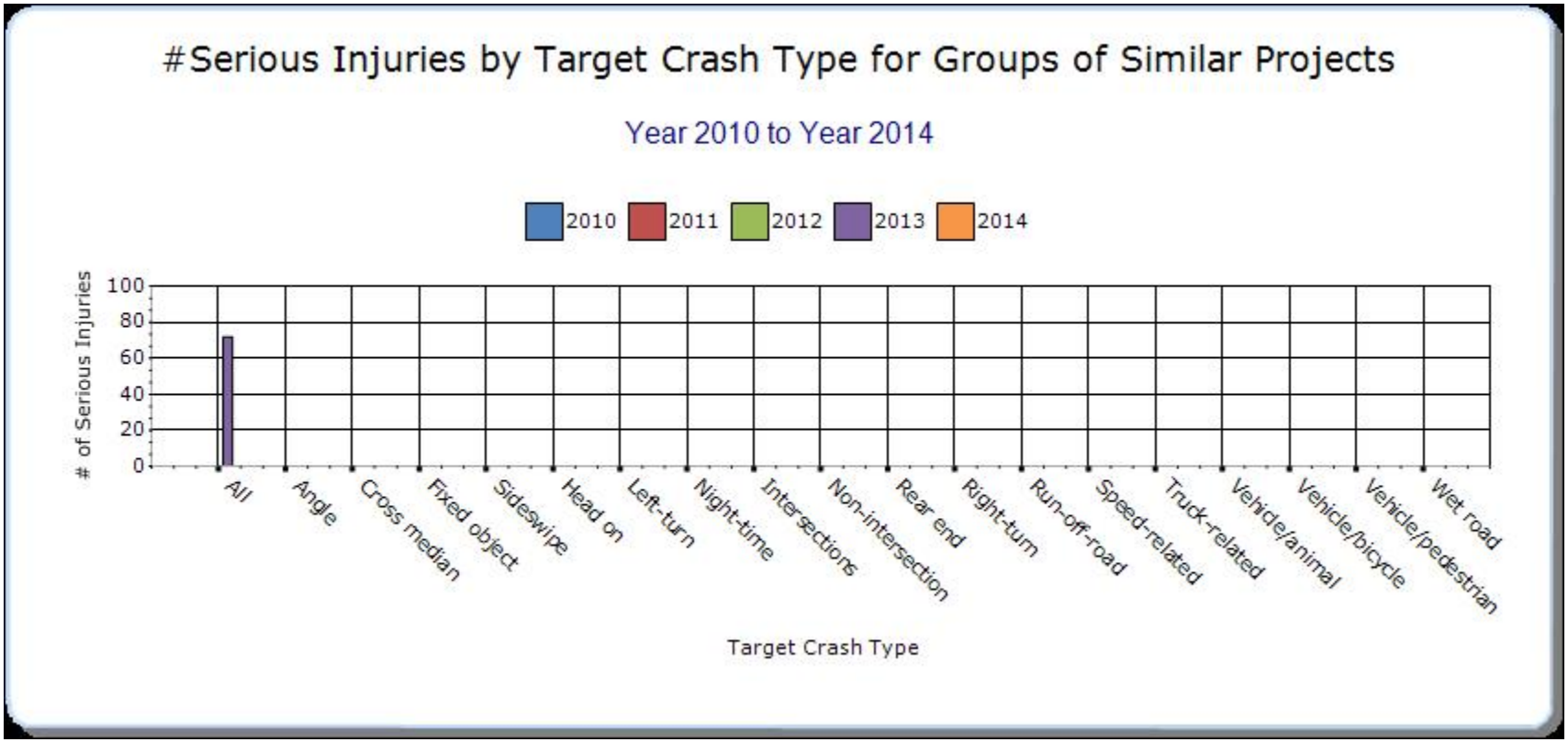
Groups of similar project types

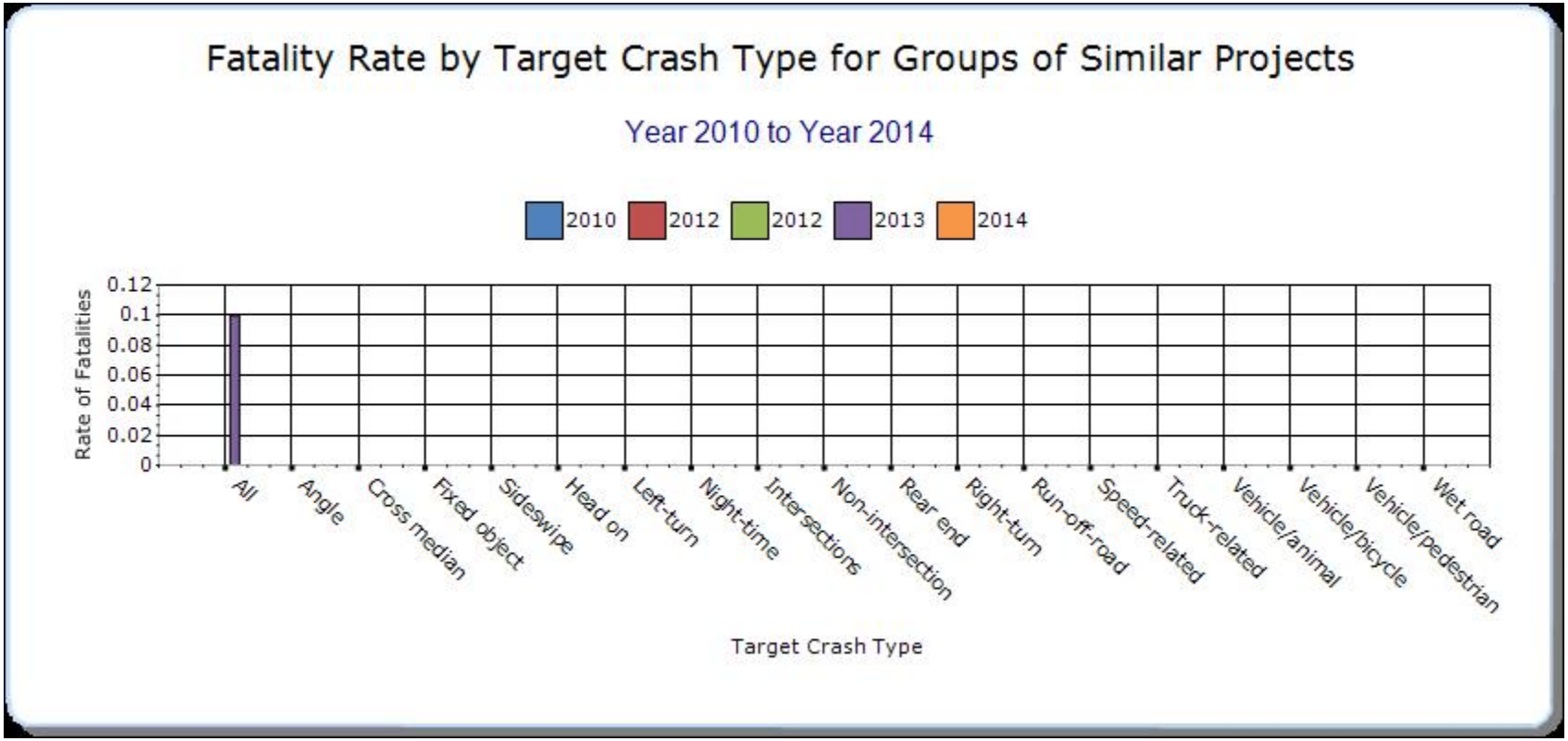
Present the overall effectiveness of groups of similar types of projects.

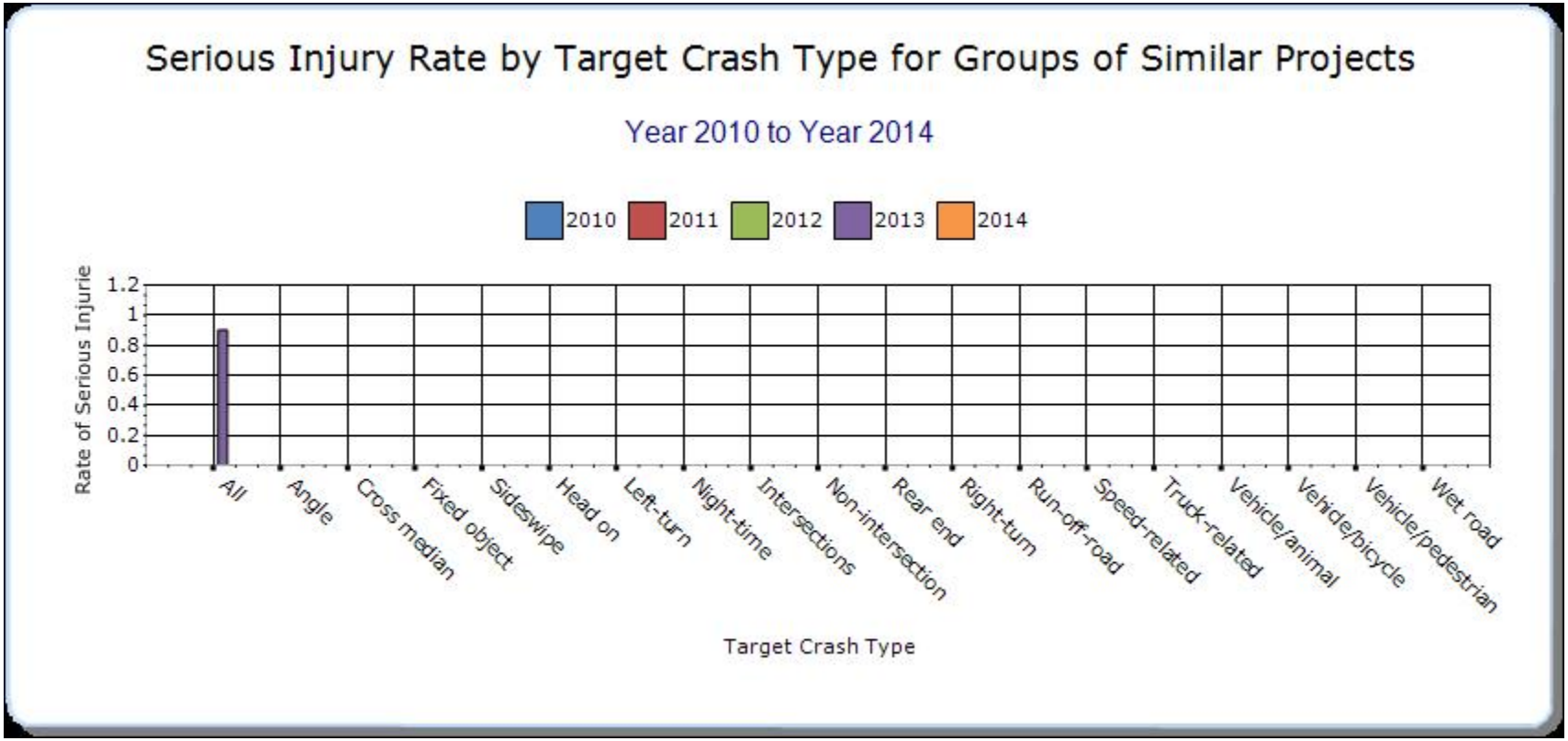
Year - 2013

HSIP Sub-program Types	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Low-Cost Spot Improvements	All	8	71.8	0.1	0.9	0	0	0


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Fatalities
10
8
6
4
2
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


#Serious Injuries by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
100
80
60
40
20
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Fatality Rate by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.12
0.1
0.08
0.06
0.04
0.02
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



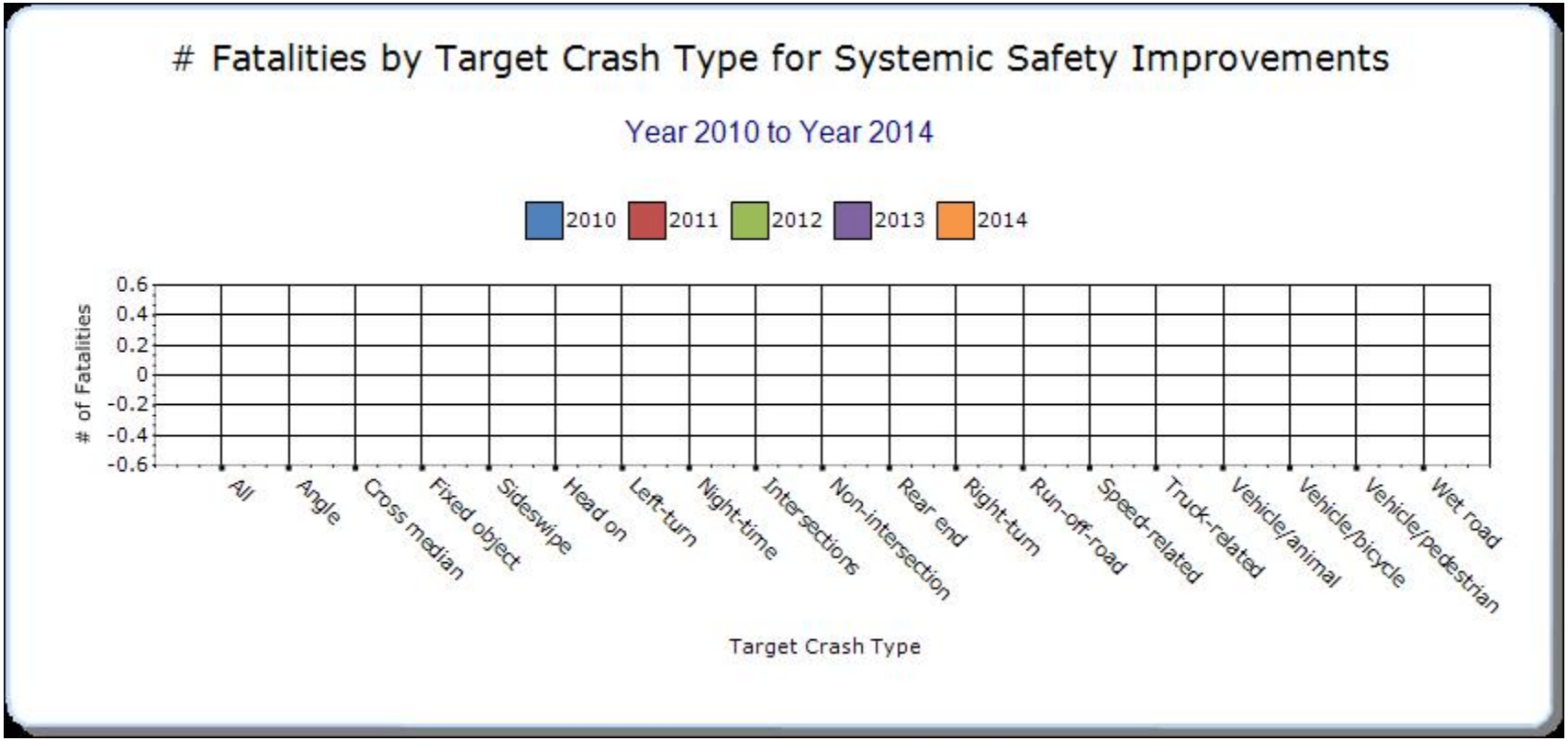
In the past 2 years, RIDOT has revamped the HSIP to develop subprograms (as listed in this report). RIDOT is currently tracking on the safety effectiveness of all improvements implemented under these subprograms. Some systemic and subprogram projects have been recently implemented and sufficient safety crash data is not yet available. It is anticipated that starting in FY2016 RIDOT will be able to present before and after crash data for each subprogram (including systemic).

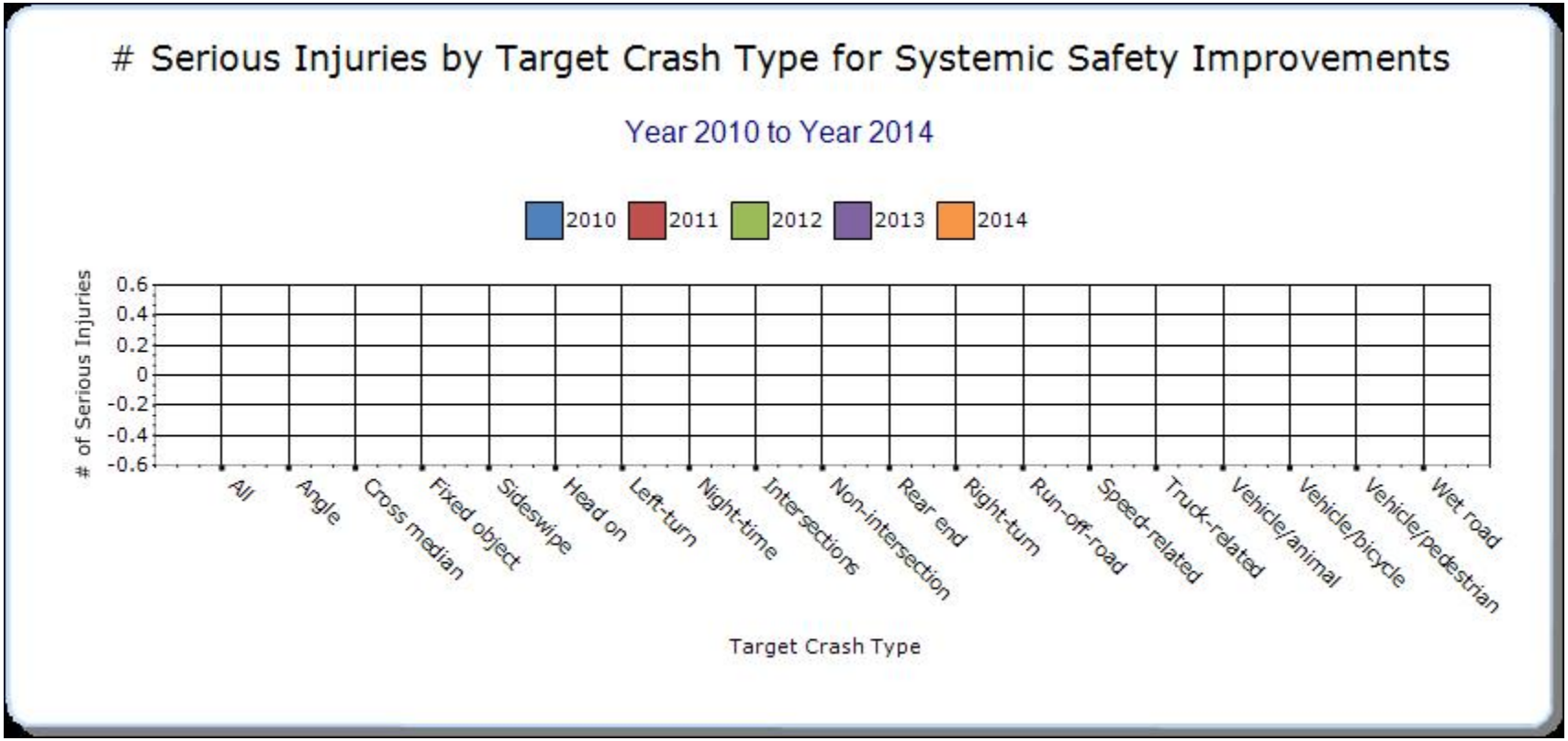
Systemic Treatments

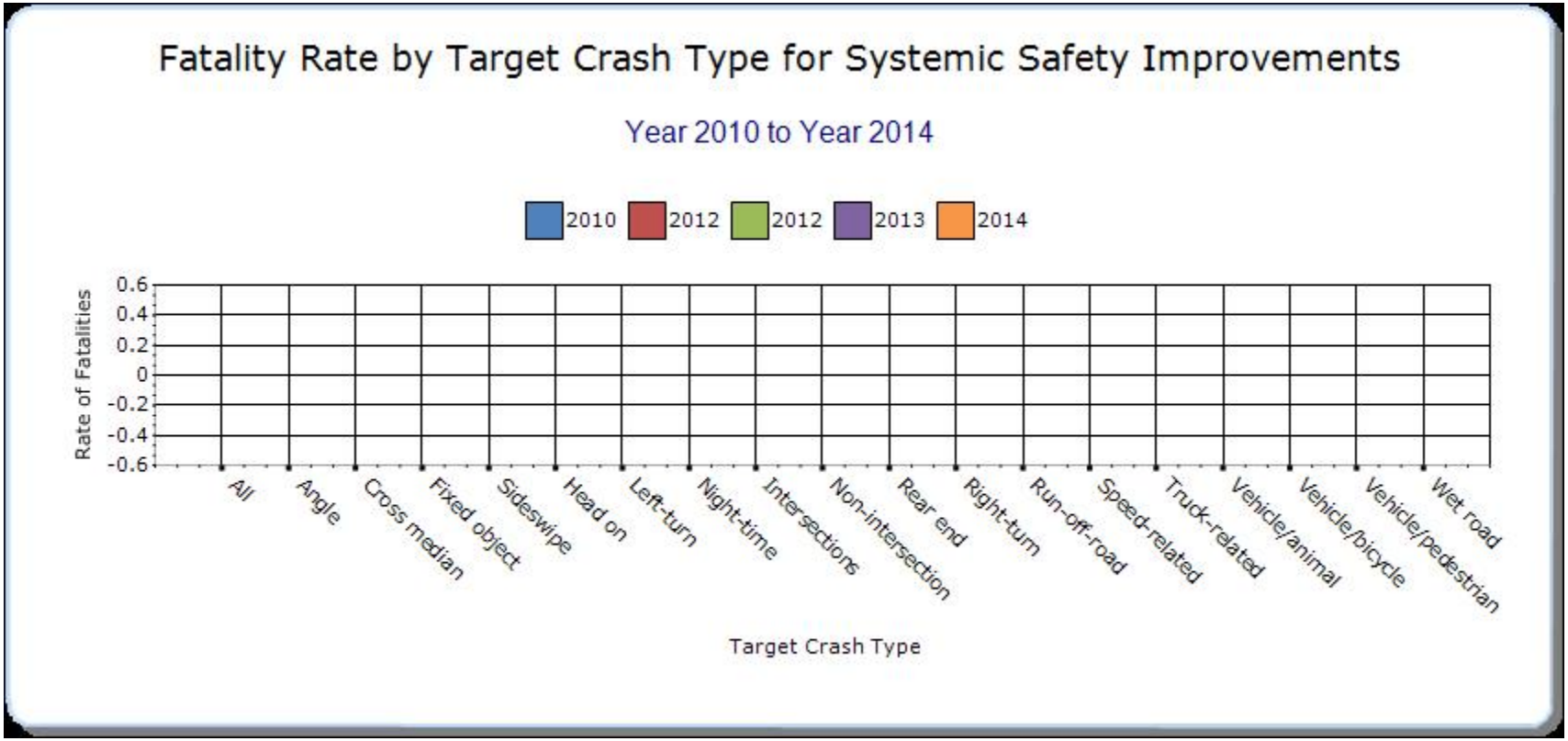
Present the overall effectiveness of systemic treatments.

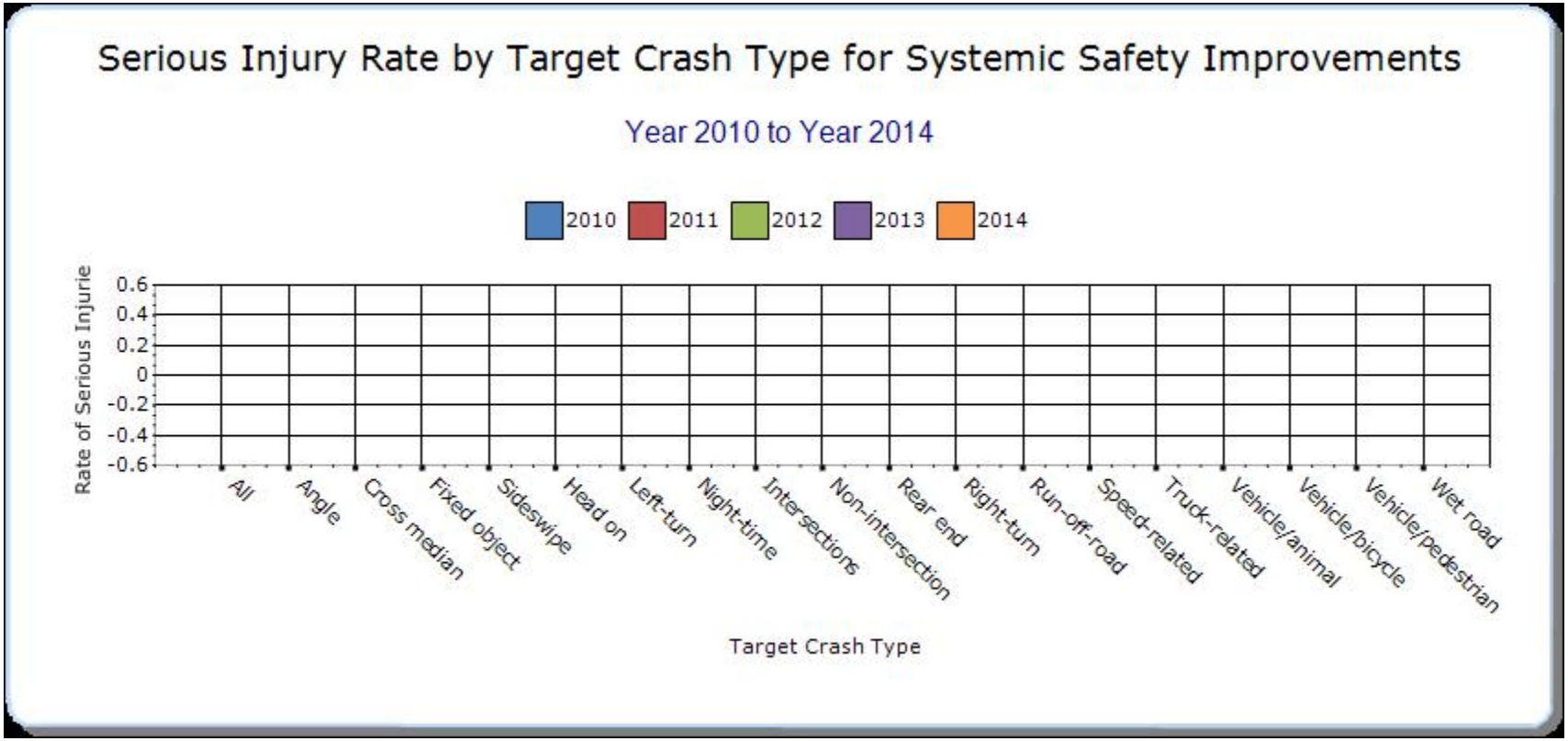
Year - 2013

Systemic improvement	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Cable Median Barriers		0.4	1.6	0	0	0	0	0


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Fatality Rate by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



In the past 2 years, RIDOT has revamped the HSIP to develop subprograms (as listed in this report). RIDOT is currently tracking on the safety effectiveness of all improvements implemented under these subprograms. Systemic improvements have been recently implemented and sufficient safety crash data is not yet available. It is anticipated that starting in FY2016 RIDOT will be able to present before and after crash data for each subprogram (including systemic).

Describe any other aspects of the overall Highway Safety Improvement Program effectiveness on which you would like to elaborate.

In the past 2 years, RIDOT has revamped the HSIP to develop subprograms (as listed in this report). RIDOT is currently tracking on the safety effectiveness of all improvements implemented under these subprograms. Systemic and subprogram projects have been recently implemented and sufficient safety crash data is not yet available. It is anticipated that starting in FY2016 RIDOT will be able to present before and after crash data for each subprogram (including systemic).

Project Evaluation

Provide project evaluation data for completed projects (optional).

Location	Functional Class	Improvement Category	Improvement Type	Bef-Fatal	Bef-Serious Injury	Bef-All Injuries	Bef-PDO	Bef-Total	Aft-Fatal	Aft-Serious Injury	Aft-All Injuries	Aft-PDO	Aft-Total	Evaluation Results (Benefit/ Cost Ratio)
	Urban Principal Arterial - Interstate	Roadway delineation	Delineators post-mounted or on barrier	2	5	42	66	115	0	3	22	76	101	80:1

RIDOT is currently

Optional Attachments

Sections	Files Attached
Progress in Achieving Safety Performance Targets: Application of Special Rules	2015 Older Driver Special Rule Calculations.xlsx

Glossary

5 year rolling average means the average of five individual, 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.

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.