Highway Safety Improvement Program

Data Driven Decisions

New Hampshire
Highway Safety Improvement Program
2014 Annual Report

Prepared by: NH

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."

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Executive Summary

The overall purpose of this program is to achieve a significant reduction in fatalities and serious injuries on all public roads through the implementation of highway safety improvement projects. This includes both infrastructure-related projects and non-infrastructure projects, selected and justified by proven data-driven approaches. All highway safety improvement projects should be chosen and implemented with the goal of reducing fatalities and serious injuries on public roads and the achievement of State safety targets. Some projects will directly impact these performance measures through the implementation of engineering or behavioral countermeasures, while others may advance the data systems and analysis capabilities of the State to more accurately identify locations with the highest potential for safety improvement, evaluate the performance of highway safety improvement projects, or identify high risk roadway characteristics and driver behaviors.

In 2006 FHWA established a new approach to advancing safety by focusing on performance. In order to effectively meet performance targets, States must apply limited resources to the areas that are most likely to achieve results. The requirement to develop and regularly update a SHSP ensures that this approach is maintained. NH annually tracks and reports performance measures including the number of fatalities and severe injuries and fatalities and severe injury rates per vehicle mile traveled. Several other performance measures of specific interest to the State are listed in the NH SHSP.

NH has embraced the goals and vision of the Toward Zero Deaths (TZD) initiative. The State named its SHSP *New Hampshire Driving Toward Zero Deaths* in recognition of the National plan, and created a public outreach program with the same name to promote change in New Hampshire's safety culture (nhdtz.com). The initiative recognizes that even one traffic death is unacceptable and sets the aggressive goal to reduce all deaths on the Nation's highways, a goal virtually achieved in the aviation industry in the past several decades. Dozens of public and private stakeholders from across the State have come together in a collaborative effort to update and carry out the strategies in the SHSP. The vision of Driving Toward Zero is embodied in NH's goal of reducing the number of fatalities and serious injuries by 50% by 2030, equaling an annual reduction of 3.4%. This is measured as a five-year rolling average with the most recent data. Maine and Vermont share this target, and to that end MaineDOT and VTrans have formed a tri-state collaborative partnership with NHDOT to more effectively reach the collective regional goal. NHDOT has also incorporated the reduction of fatalities into their Balanced Scorecard, representing one of the twelve Strategic Objectives of the agency.

The concept of a focused approach has been further reinforced with requirements for data-driven decision making and resource allocation. 23 USC 148(c)(2), as amended by section 1401(a)(1) of SAFETEA-LU, Identification and Analysis of Highway Safety Problems and Opportunities, delineates specific requirements for determining safety problem identification and countermeasure analyses. The legislation also provides flexibility in the use of HSIP funds to address a State's non-infrastructure safety issues. It is clear from legislation that safety funds are to be used on the most effective treatments and activities at the locations with the greatest needs, or potential thereof, and that the best available data is to be used to determine the proposed treatments. NH has been moving forward with implementation of the Highway Safety Manual (HSM) as a participant in the NCHRP 17-50 Lead State Initiative to facilitate this process and allow for more robust analysis of the roadway network. Use of Part A, Part B, and Part D of the HSM is growing, while implementation of Part C is in the beginning stages in NH.

MAP-21 continued building on the concept of a safety data system that has the capability to identify key safety problems, establish their relative severity, and then adopt strategic and performance-based goals to maximize safety. Recent improvements to the NH data system include a phased initiative to implement electronic crash reporting through the State's Crash Report Management System (CRMS), the compilation of the Model Inventory of Roadway Elements (MIRE) fundamental data elements (FDE), and the completion of the National Highway Traffic Safety Administration (NHTSA) Traffic Records Assessment. One of the key outcomes of the Traffic Records Assessment was that performance measures for data quality are needed, including measures of timeliness, accuracy, completeness, uniformity, integration, and accessibility in order to guide improvements to the data and data systems.

The States are required to define a clear linkage between the behavioral NHTSA-funded Highway Safety Program and the HSIP through the State SHSP. The 2012 version (2nd edition) of the NH SHSP identifies 9 critical emphasis areas (CEA) to be addressed by safety stakeholders in NH, listed below.

- □□□□□□□□ Adolescent Drivers
- □□□□□□□□ Comprehensive Safety Data Improvement
- □□□□□□□□ Crash Locations
- □□□□□□□□ Distracted Driving
- □□□□□□□□ Impaired Driving
- □□□□□□□□ Motorcycles and Vulnerable Roadway Users

- Older Drivers
- Speeding
- Vehicle Occupant Protection

The “4-E’s” of safety (education, enforcement, engineering, and emergency management services) should be considered in selection and development of HSIP projects, however the intent of the HSIP is to primarily target engineering-related countermeasure improvements. The crash types of special interest have been identified in the Crash Locations CEA. The next major update to the SHSP is scheduled for 2016, while more minor updates to the plan and strategies outlined in each section should be reviewed at least annually.

With respect to eligibility for funding, 23 USC 148(a)(4) provides a sample listing of eligible highway safety improvement project types. However, it is important to note that only data-driven projects that target strategies identified in the State SHSP are eligible for funding in NH. Furthermore, given the limited funding available, funds should be prioritized to help ensure that projects with the greatest safety return will be the top priority. For example addressing crashes involving animals is a possible eligible activity per MAP-21, but since it is not addressed in the current version of the SHSP as a CEA or related strategy, and higher safety needs have been identified, HSIP funds should not be used for that purpose in NH.

23 USC 148(e)(2) makes clear that other Federal-aid funds are eligible to support and leverage the safety program. Improvements to safety features, such as guardrail, that are routinely provided as part a broader Federal-aid project should be funded from the same source funds as the broader project when that safety feature is included in the broader project, not HSIP funds. This allows the HSIP funds to be reserved for stand-alone safety projects thereby allowing for true targeting of safety needs. This is consistent with the provision of separate funding for safety projects and with FHWA's long-standing position on the use of safety funds.

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.

Municipally-maintained local roads and intersections are included in the screening with State-maintained sites and are evaluated using the same methodology. The majority of rural collector as well as rural and urban local road (functional class 8, 9, and 19) traffic data are not available, and therefore the volumes are estimated based on similar roads that have measured data. Urban and rural local roads are categorized separately from the other functional classes in network screening to account for the estimation of volume data. The State is working to improve volume data on all public roads.

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

☒Design

☒Planning

☒Maintenance

☒Operations

☒Governors Highway Safety Office

☒Other: Other-Regional Planning Commission staff

Briefly describe coordination with internal partners.

The State's HSIP is centrally administered. Annually, the Bureau of Highway Design performs a statewide network screening of crashes on all roadway types and distributes results to NHDOT Districts, Bureau of Planning and Community Assistance, and Bureau of Traffic, as well as Metropolitan Planning Organizations (MPO) and Regional Planning Commissions (RPC). These stakeholders are encouraged to review the results of the analysis and provide comments on known aspects of specific locations. Comments may include, but is not limited to: recent work in the area, significant changes to traffic patterns or volumes, upcoming capital projects in the area, local experience/insight on crashes, etc.

The HSIP committee consists of Assistant Director Project Development, design, traffic, maintenance, Bike Pedestrain coordinator and planning personnel from the NHDOT, RPCs, MPOs and FHWA . Committee meetings are held quarterly, or as necessary, to review project selection and progress reports from project managers. Regional Planning Commissions are encouraged to incorporate the HSIP process in their Transportation Improvement Plan development.

The State identifies lane departure crashes and intersections crashes as critical crash types in the Crash Locations Critical Emphasis Area in the SHSP, which addresses engineering and infrastructure-related improvements. Projects are identified that target these types of crashes using the methods listed below. The three approaches will identify sites for *Traditional*, *Systemic*, and *Road Safety Audit projects* that have potential for safety improvements.

HSIP Committee and other stakeholders will receive a list of sites identified through network screening for review. Some sites may go beyond the scope of an HSIP project, which typically means their cost is greater than the anticipated benefits, or the overall cost of right-of-way, environmental, and scope of improvements is of a magnitude that it is of an improvement is deemed too costly or prohibitive in relation to other potential HSIP projects. These sites are recommended for consideration in the long-range capital improvement plans.

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

☒Metropolitan Planning Organizations

☒Governors Highway Safety Office

☒Local Government Association

☒Other: Other-Regional Planning Commission Staff

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.

The NHDOT Highway Safety Engineer (HSE) updates the Safety Analyst data import to the ten most recent years of data and then the HSE performs the Network Screening and produces the

Transparency Report of potential projects, by October 1. The HSE distributes the *Transparency Report* to stakeholders in October, for consideration of HSIP funding proposed projects locations and completion of submittal packages are due on January 1. The committee selects and prioritizes the projects from January – March. March – September completes the cycle and ends the Federal fiscal year; all annual funding is obligated by September 30.

Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law, which eliminated specific HRRR funding and created a special rule for High Risk Rural Roads. MAP-21 also revised the definition of what is considered a "High Risk" Rural Road. The new definition is "any roadway functionally classified as a rural major or minor collector or a rural local road with significant safety risks, as defined by a State in accordance with an updated State Strategic Highway Safety Plan".

The term "High Risk Rural Road" means any roadway functionally classified as a rural major or minor collector or rural local road (functional class 7, 8 and 9)- a) on which the crash rate for fatalities and incapacitating injuries exceeds the statewide average for roadways of the same functional classifications or roadway; or b) that will likely have increases in traffic volumes that are estimated to create an crash rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classifications of roadway.

Though there is no longer a specific pot of money for an HRRR program, NHDOT chooses to continue to fund improvement on these roadways though the HSIP program. A statewide analysis of lane departure crashes is used to identify towns with the greatest number of the targeted crash types. The prioritized list is filtered by each of the nine RPCs. Towns are selected from each RPC. Sixteen towns chose to participate in the first phase of the program.

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:

Program: **Median Barrier**

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-Run Off the Road	☐Lane miles	☐Roadside features
	☐Other	☐Other

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

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

If no, describe the methodology used to identify local road projects as part of this program.

no medians on local roads

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	50
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	

Program: **Intersection**

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-EPDO	☐ Lane miles	☐ Roadside features
	☐ Other	☒ Other-Site Subtype

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

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

If no, describe the methodology used to identify local road projects as part of this program.

EPDO

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	50
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	

Program: **Horizontal Curve**

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-Run Off the Road	☐ Lane miles	☐ Roadside features
	☐ Other	☒ Other-site subtype

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

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	50
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	

Program: **Crash Data**

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	☐Other

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-need requirement MIRE and HSM

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

☒Available funding 100

☐Incremental B/C

☐Ranking based on net benefit

☐Other

Program: **Roadway Departure**

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-Run Off the Road	☐ Lane miles	☒ Roadside features
	☐ Other	☐ Other

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

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	50
☐ Incremental B/C	
☐ Ranking based on net benefit	

☐ Other

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	☐ Other

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-RSA request from local agencies

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 100

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Sign Replacement And Improvement**

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	☐ Other

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-Run off the Road

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
- ☒ Available funding 100
- ☐ Incremental B/C
- ☐ Ranking based on net benefit
- ☐ Other

Program: **Local Safety**

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	☐ Other

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

☒ Other-RSA local agency

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	50
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	

Program: **Right Angle Crash**

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

☒ Other-RSA request by local agency

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

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	50
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	

Program: **Left Turn Crash**

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	☒ Other-RSA rquested by local agency

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

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	50
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	

Program: **Segments**

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-Run off the Road	☐ Lane miles	☐ Roadside features
	☐ Other	☒ Other-Site subtype

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

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	50
☐ Incremental B/C	
☐ Ranking based on net benefit	

☐ Other

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

50

Highway safety improvment program funds are used to address which of the following systemic improvments?

☒ Cable Median Barriers

☐ Traffic Control Device Rehabilitation

☒ Install/Improve Signing

☒ Upgrade Guard Rails

☐ Safety Edge

☒ Add/Upgrade/Modify/Remove Traffic Signal

☒ Other Other-F--terminal Replacements

☒ Rumble Strips

☐ Pavement/Shoulder Widening

☒ Install/Improve Pavement Marking and/or Delineation

☐ Clear Zone Improvements

☐ Install/Improve Lighting

☒ Other Other-intersections

☒ Other Other-Other Median Barriers

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:

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

The systemic approach to safety involves improvements to roadways that are widely implemented based on high-risk roadway features correlated with particular severe crash types. This method is very different from the traditional approach used in network screening in that locations receiving improvements are not necessarily required to have a demonstrated crash history. Systemic improvements serve as a strong complement to improvements identified through network screening, together treating the most hazardous sites and reducing the risk of severe crashes across the entire network.

Systemic countermeasure programs have also been shown to be more effective at reducing the overall number of crashes in the state than spot improvements, meaning that successful management of these programs will be essential in reaching State performance targets for reduction of fatalities and severe injuries. Whereas spot improvement projects only influence the safety at a single site or small area, systemic countermeasures are installed in entire towns, districts, or statewide with the potential to treat a large number of safety concerns and change

driver behaviors. This is typically accomplished by implementing a large number of low-cost countermeasures that generally have a proportionally large safety benefit. Thus, it is the intent of the NH HSIP to use systemic countermeasure treatments as a significant means to improve highway safety in the State.

The systemic approach is iterative, flexible, and applicable to a variety of systems, locations, and crash types. Similar to the network screening approach, systemic planning involves problem identification, countermeasure selection, and project prioritization. The first step in the systemic process is to analyze system-wide crash and roadway data to target crash types (e.g., lane departure) and associated roadway risk factors (e.g., curves or roadside hazards) that make a significant contribution to the number of fatal and severe injury crashes in the State. Sites with these risk factors are identified and prioritized by potential for future severe crashes based on AADT, crash predictions for that roadway type, roadway characteristics, etc. Appropriate low-cost countermeasures (e.g., rumble strips) are then proposed to effectively address the specific crash types on roads with the identified risk factors. Finally, the chosen countermeasures are installed systemically at the selected sites.

In 2009, the State identified its first systemic project focusing on rural signing improvements. Since that time, the following additional systemic programs have been implemented: shoulder and centerline rumble strips and stripes, median barrier improvements, guardrail and end terminal improvements, rural curve signing and delineation, and an Intersection Safety Improvement Plan (ISIP). These programs are expected to continue in the next few years, with the ISIP growing in levels of effort as the phased implementation process begins.

Within the next year the State plans to develop a system that is capable of regularly evaluating the effectiveness of its implemented countermeasures. Evaluation of systemic projects should be considered when developing this data. This is vital in determining which programs should be allocated more or less funding, and whether the sites receiving treatments were correctly identified as those with potential to reduce fatal and severe crashes. A new feature for Safety Analyst is planned within the next couple of years with the capability to easily identify and evaluate systemic projects. Information showing the overall effectiveness of the current programs will also guide the Committee's review of funding allocations for projects selected in each project identification method; e.g. if systemic countermeasure projects are more cost-effective than other types of HSIP projects then a greater amount of funding should be spent on them in the program.

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)	20600000	98 %	17800000	94 %
HRRRP (SAFETEA-LU)				
HRRR Special Rule	378400	2 %	1176357.99	6 %
Penalty Transfer - Section 154				
Penalty Transfer – Section 164				
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)				
State and Local Funds				

Totals	20978400	100%	18976357.99	100%

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

$350,000.00

How much funding is obligated to local safety projects?

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

$375,000.00

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

$375,000.00

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.

The Federal Highway Administration (FHWA) has advised that the funding levels for the Federal Highway Trust Fund (HTF) will likely run out of money for transportation disbursements to states by July or August 2014. FHWA may need to institute cash management measures which would involve delayed or partial reimbursements to the states. The impact to The State of New Hampshire and the Transportation Improvement program will result in general uncertainty and will have a significant impact to funding the State Ten Year Transportation Improvement Plan. Due to limited State Highway Trust Fund revenues, the State of New Hampshire uses Turnpike Toll Credits to meet the match of the federal program. As a result, there are limited State dollars to support the federal program and as a consequence, the STIP becomes dependent on the availability of federal funds. Any loss of federal funds could very well lead to suspension of work and delay of future State and local transportation projects. As a result of the Congressional discussion on the HTF and MAP-21 reauthorization, the Department of Transportation has employed a moderate risk management strategy in utilizing federal funds with a strong commitment to funding current construction projects under contract. Revenue in the HTF is approximately 70 percent of federally reimbursable construction program outlays. Due to the uncertainty of federal funds in the HTF, the New Hampshire Department of Transportation sought the full authorization of federal funds for current year construction cash needs on existing multi-year construction projects to ensure funds are available to maintain the current federally funded construction program. As a result, the State's remaining allocation of 2014 federal fiscal year funds is fully obligated and the remaining federally funded projects in the advertising schedule (about $25m) are being delayed to 2015 federal fiscal year. Taking proactive steps in anticipation of possible end of fiscal year redistribution of federal funds, the Department has maintained several projects in the September advertising schedule for any anticipated redistribution of federal funds. Typical redistribution to the State of NH has been in the amount of $5 to $8 million per year over the past years. The timing of advertising of these projects is subject to
availability of redistribution funding and will change if this funding is unavailable. Should a long term sustainable solution to the HTF issue not be reached by Congress in the coming months, project delays in Federal Fiscal Year 2015 are anticipated to be more substantial than those occurring in 2014. The NH DOT recognizes that every change in schedule regardless of project size can lead to considerable inconvenience for communities impacted and real economic consequences for our construction industry partners who plan on bidding on this work. We have worked diligently to avoid taking these steps that impact project schedules for as long as practical. We look forward to resolution of this issue through

authorization of a long-term surface transportation bill and through sustainable revenue sources to fund our critical transportation infrastructure projects.

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

Crash Data table formating is being improved by automating some of the DOT locating features.

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
Barrington project # 16178	Intersection traffic control Modify control - two-way stop to all-way stop	1 Numbers	569416	569416	HRRR Special Rule	Rural Major Collector	8700	40	State Highway Agency	Intersections	High Risk Rural Road curve improvement
Derry Project #15690	Intersection geometry Auxiliary lanes - add left-turn lane		1135000	1135000	HSIP (Section 148)	Urban Minor Arterial	12500	45	State Highway Agency	Intersections	Improve access management of intersection as well as adding left turn lanes
Lee Project #15692	Intersection traffic control Modify control - modifications to roundabout		2795000	2795000	HSIP (Section 148)	Rural Principal Arterial - Other	15170	35	State Highway Agency	Intersections	Improve traffic circle to roundabout
Pittsfield Project #	Intersection geometry Auxiliary lanes - add		319499	319499	HSIP (Sectio	Rural Minor		55	State Highway	Intersections	Improve geometry

24842	left-turn lane				n 148)	Arterial			Agency		of intersection and improve signal equipment
Epping-Hampton project # 26605	Roadside Barrier-metal		224100	224100	HSIP (Section 148)	Rural Principal Arterial - Interstate	27000	65	State Highway Agency	Roadway Departure	median barrier improvements
Manchester project #20004	Intersection traffic control Modify traffic signal - modernization/replacement		350000	350000	HSIP (Section 148)	Urban Local Road or Street		40	City of Municipal Highway Agency	Intersections	moderization of signals
Statewide project #28136	Roadway signs and traffic control Roadway signs (including post) - new or updated		770000	770000	HRRR Special Rule	Rural Major Collector		40	State Highway Agency	Roadway Departure	Improve signs along horizontal curves
WEDU Project #26484	Non-infrastructure Educational efforts		250000	250000	HSIP (Section 148)	educational effort			education effort	educational effort	covers all emphasis areas
Teen Driver Project	Non-infrastructure Outreach		100000	100000	HSIP (Section 148)	educational outreach to high			educational outreach to high	educational outreach to high	educational outreach to high

#26524						schools			schools	schools	schools
Rumble Strip Project #26842	Roadway Rumble strips - center		261700	261700	HSIP (Section 148)	Rural Principal Arterial - Other		55	State Highway Agency	Lane Departure	Reduce run off the road crashes
AASHTO license software Project #27082	Non-infrastructure Data/traffic records		25000	25000	HSIP (Section 148)	software for crash data			State Highway Agency	Roadway Departure	software for crash data

Progress in Achieving Safety Performance Targets

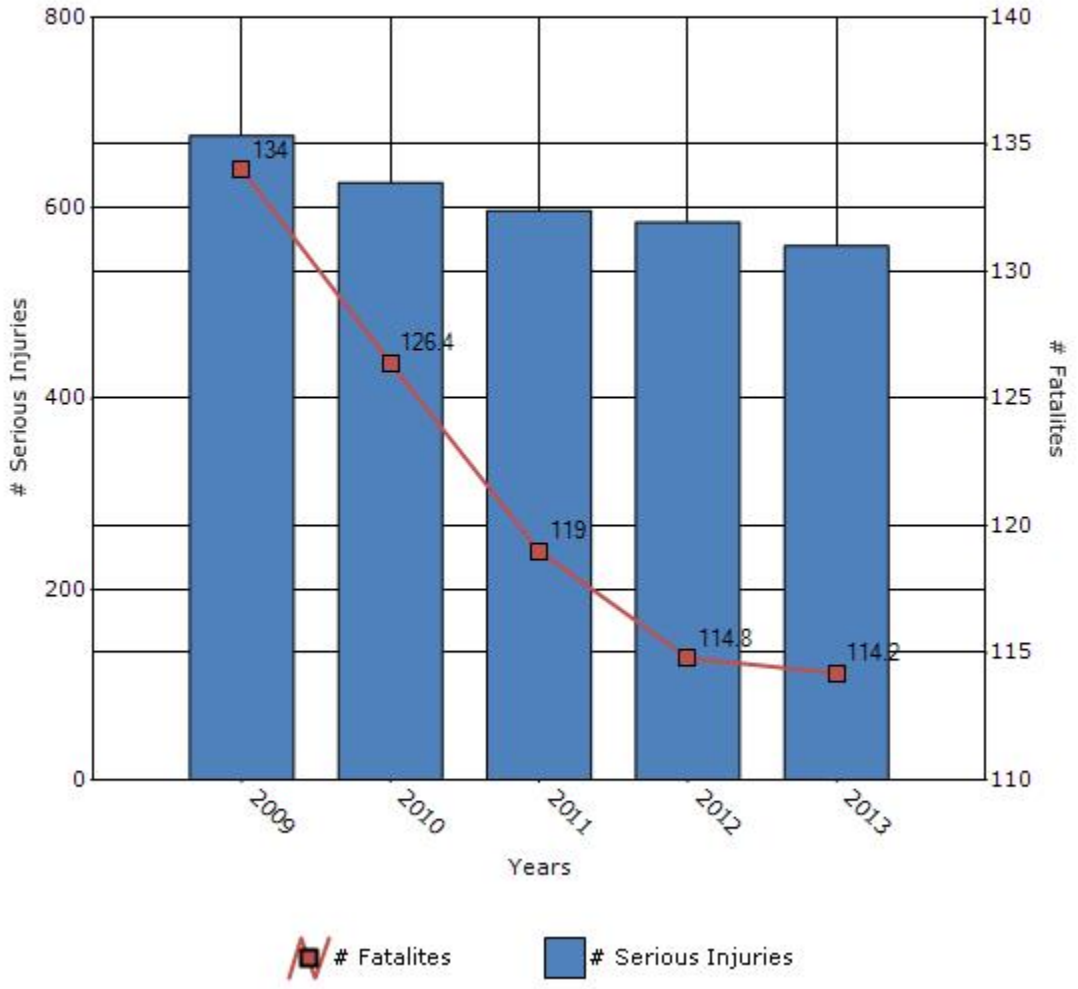
Overview of General Safety Trends

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

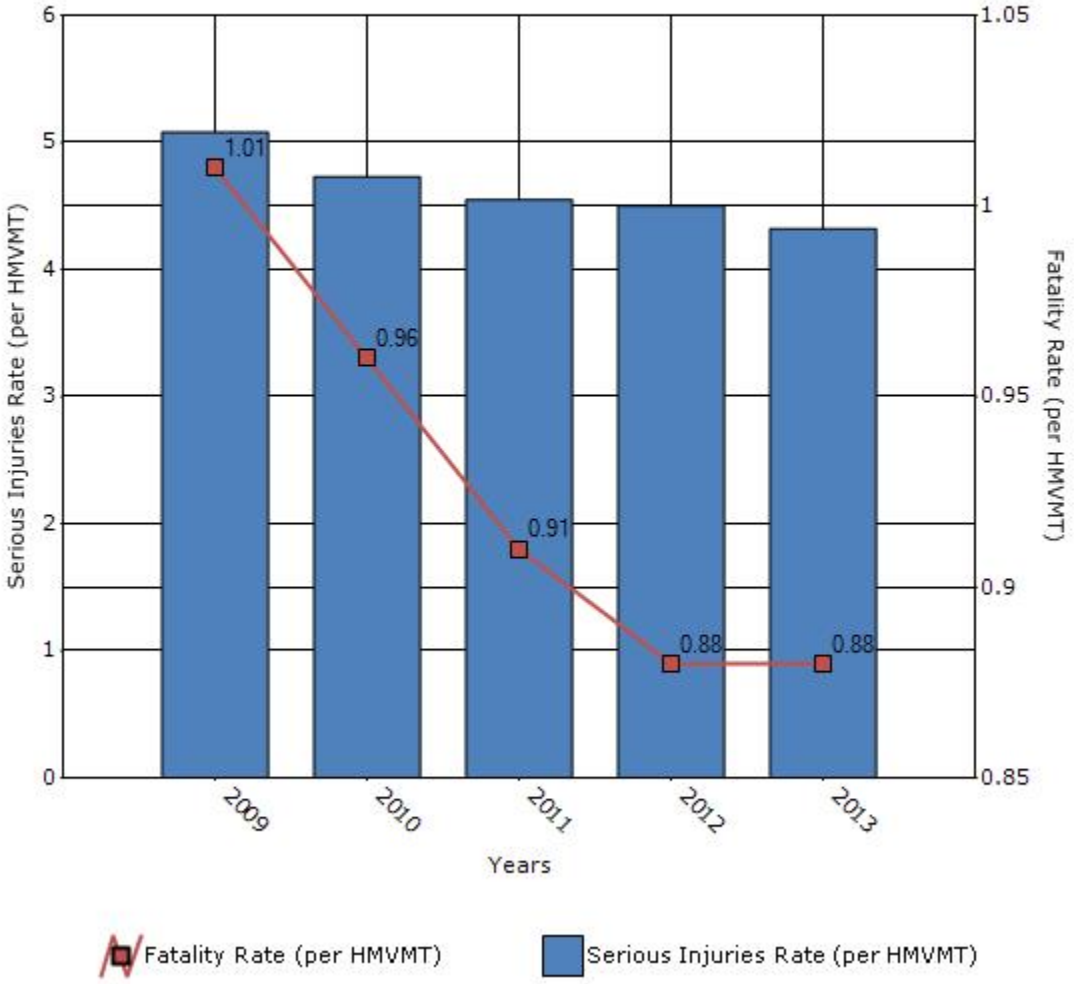
Performance Measures*	2009	2010	2011	2012	2013
Number of fatalities	134	126.4	119	114.8	114.2
Number of serious injuries	676	626.6	597.2	585.2	560.2
Fatality rate (per HMVMT)	1.01	0.96	0.91	0.88	0.88
Serious injury rate (per HMVMT)	5.08	4.73	4.55	4.5	4.32

*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

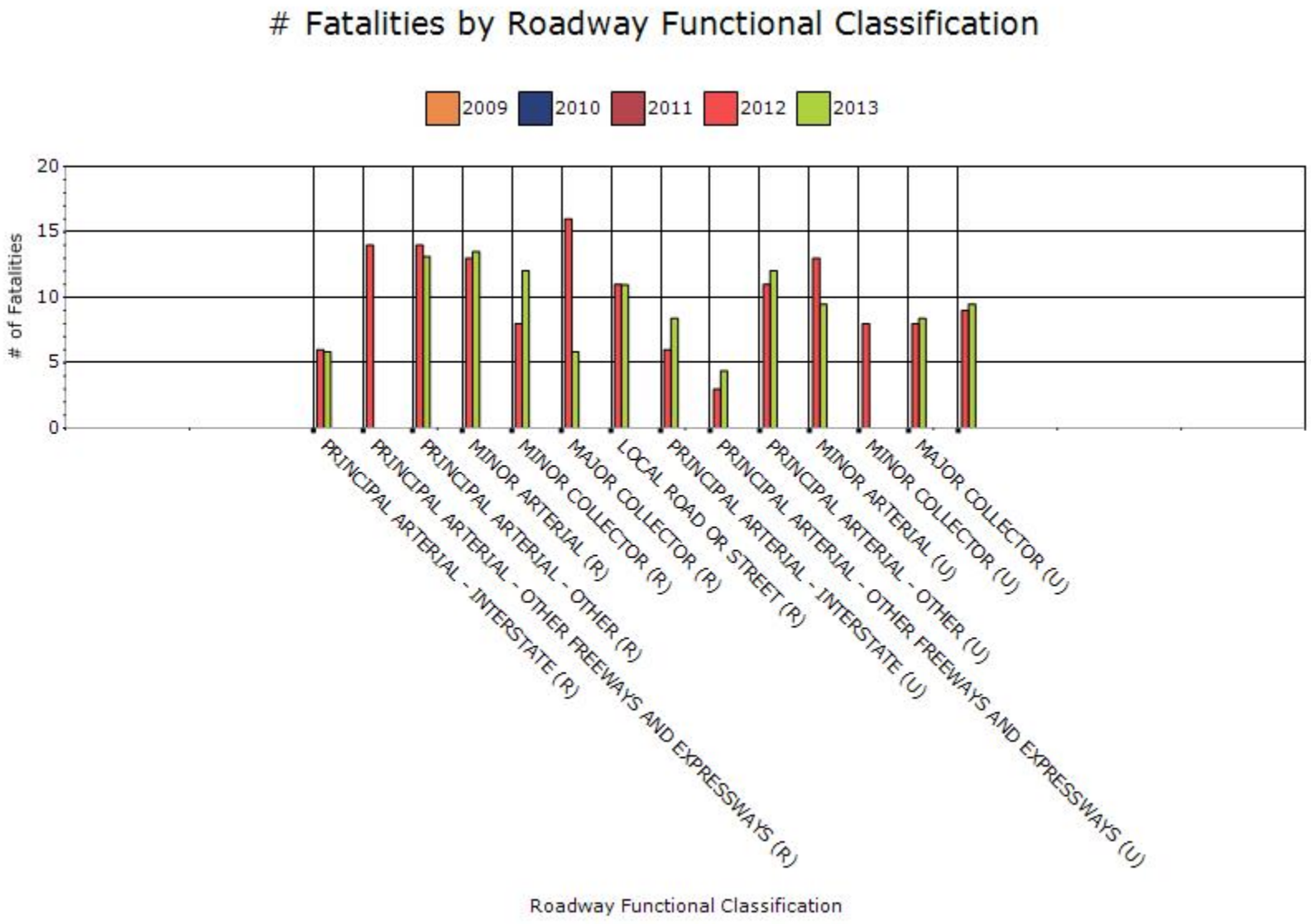


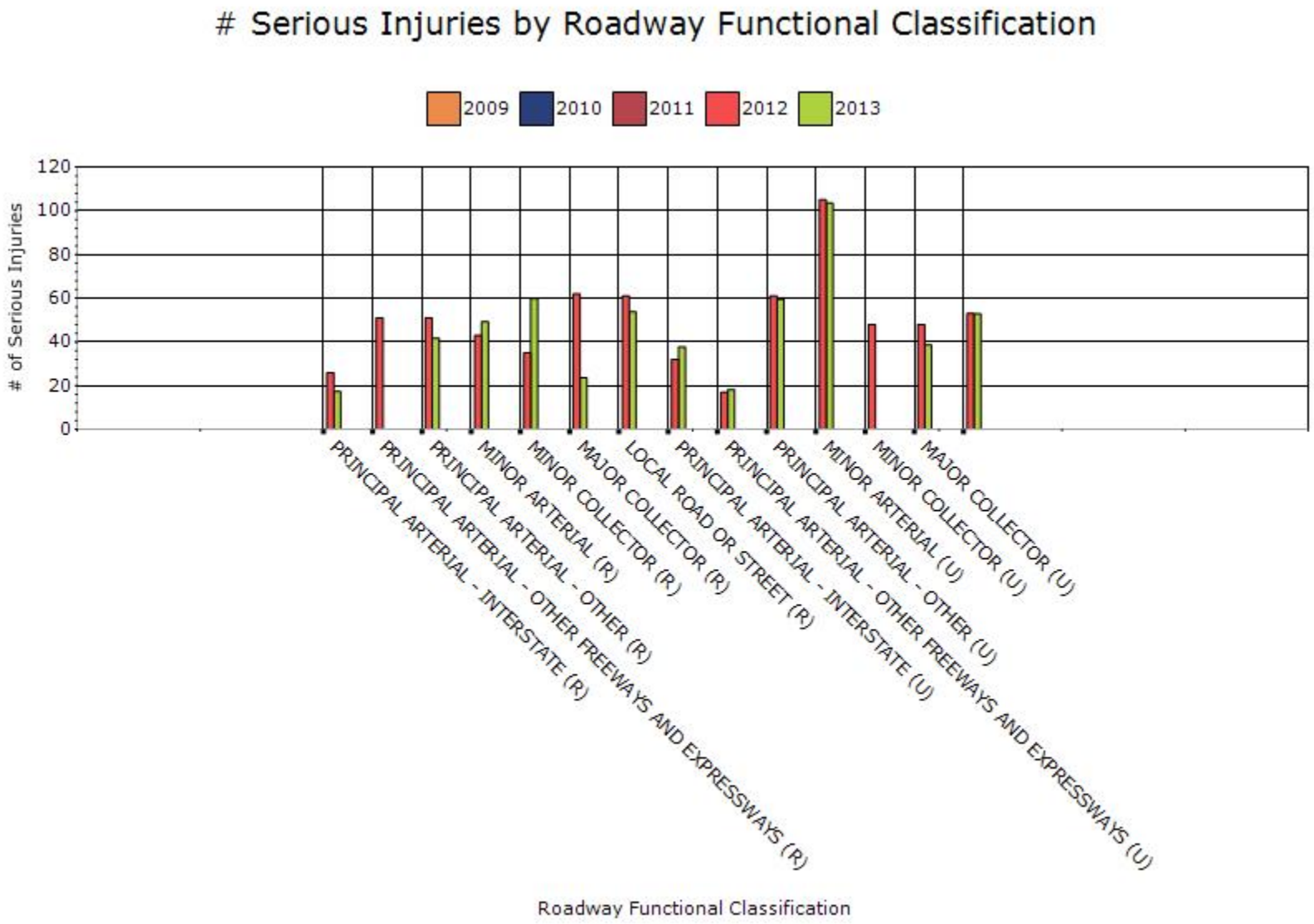
To the maximum extent possible, present performance measure* data by functional classification and ownership.

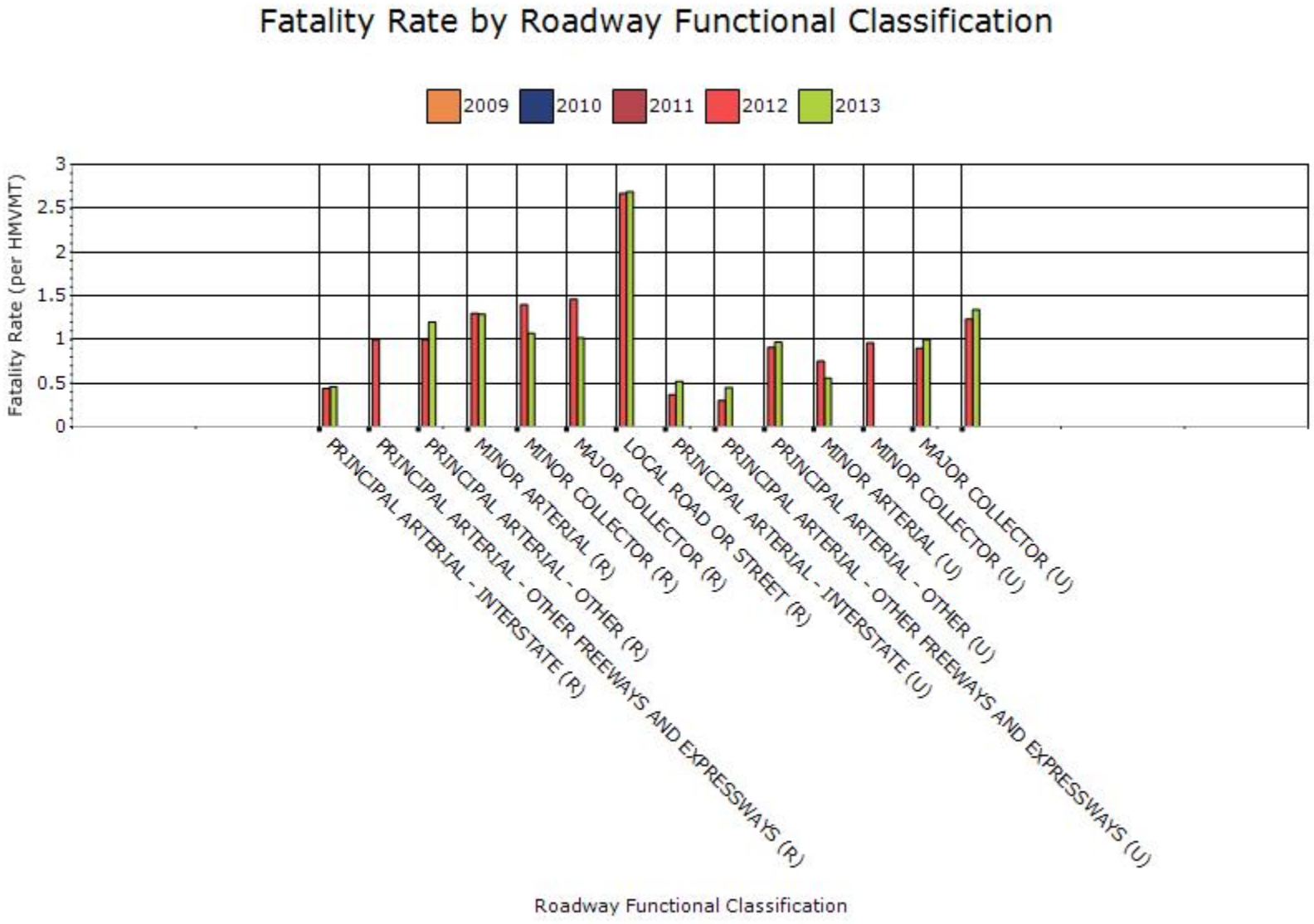
Year - 2013

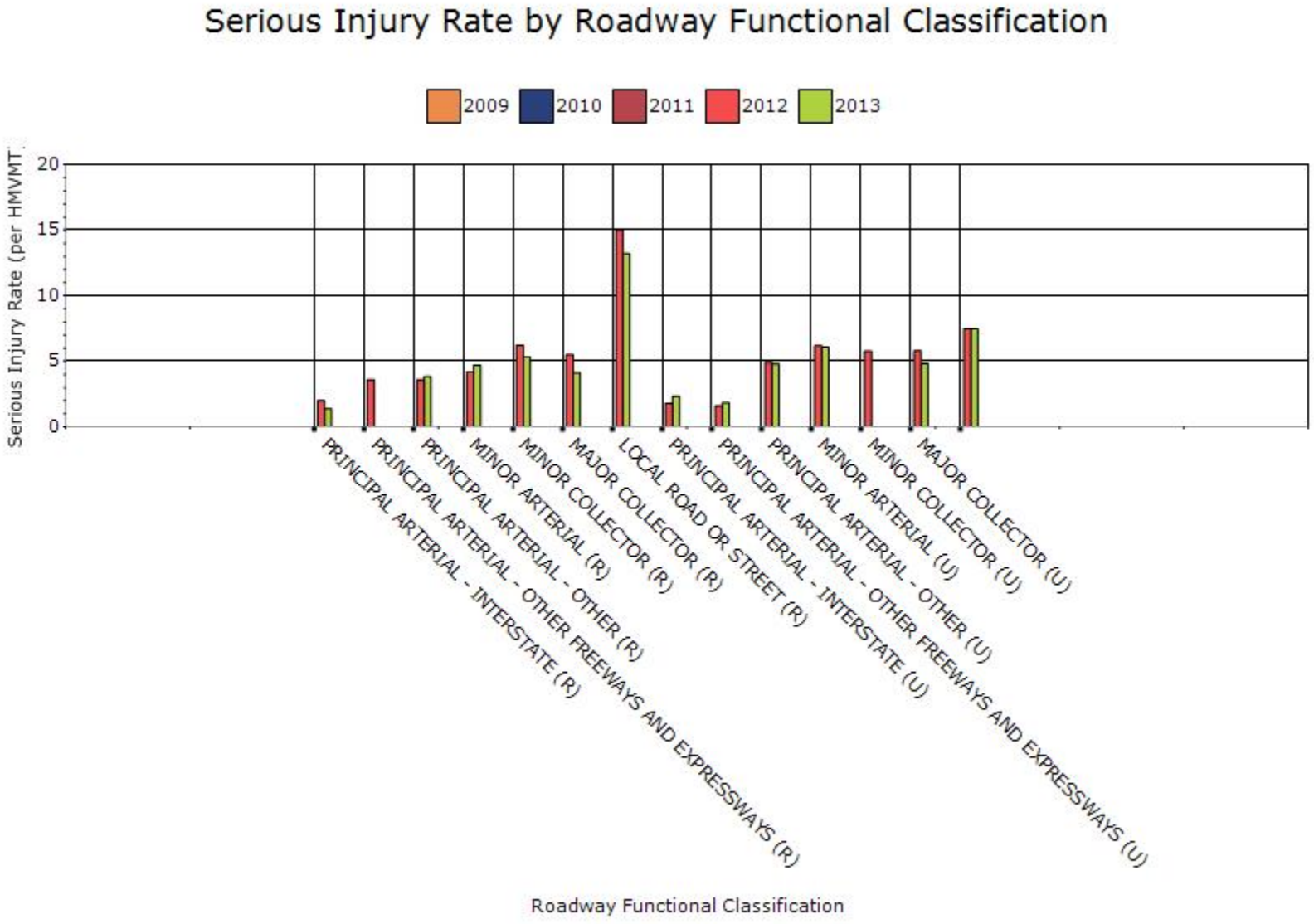
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	5.84	17.33	0.46	1.37
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0	0	0
RURAL PRINCIPAL ARTERIAL - OTHER	13.13	41.76	1.2	3.83
RURAL MINOR ARTERIAL	13.5	49.31	1.29	4.7
RURAL MINOR COLLECTOR	12.04	59.97	1.07	5.32
RURAL MAJOR COLLECTOR	5.84	23.55	1.02	4.13
RURAL LOCAL ROAD OR STREET	10.95	53.75	2.69	13.21
URBAN PRINCIPAL	8.39	37.76	0.52	2.34

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	4.38	18.21	0.45	1.85
URBAN PRINCIPAL ARTERIAL - OTHER	12.04	59.53	0.97	4.8
URBAN MINOR ARTERIAL	9.49	103.51	0.56	6.08
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	8.39	38.65	1	4.83
URBAN LOCAL ROAD OR STREET	9.49	52.87	1.34	7.49


Fatalities by Roadway Functional Classification
2009
2010
2011
2012
2013
# of Fatalities
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

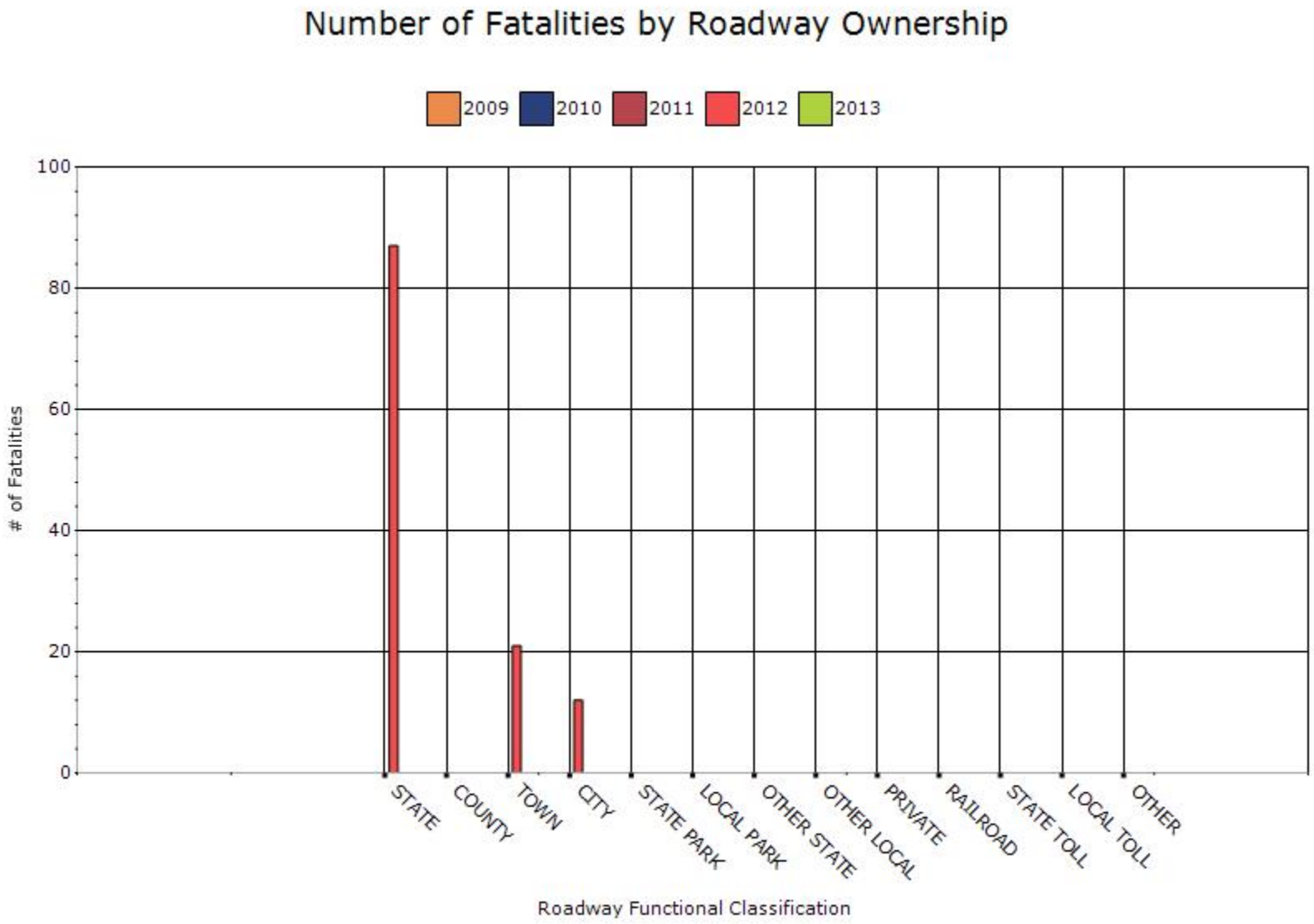

Serious Injuries by Roadway Functional Classification
2009
2010
2011
2012
2013
# of Serious Injuries
120
100
80
60
40
20
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (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

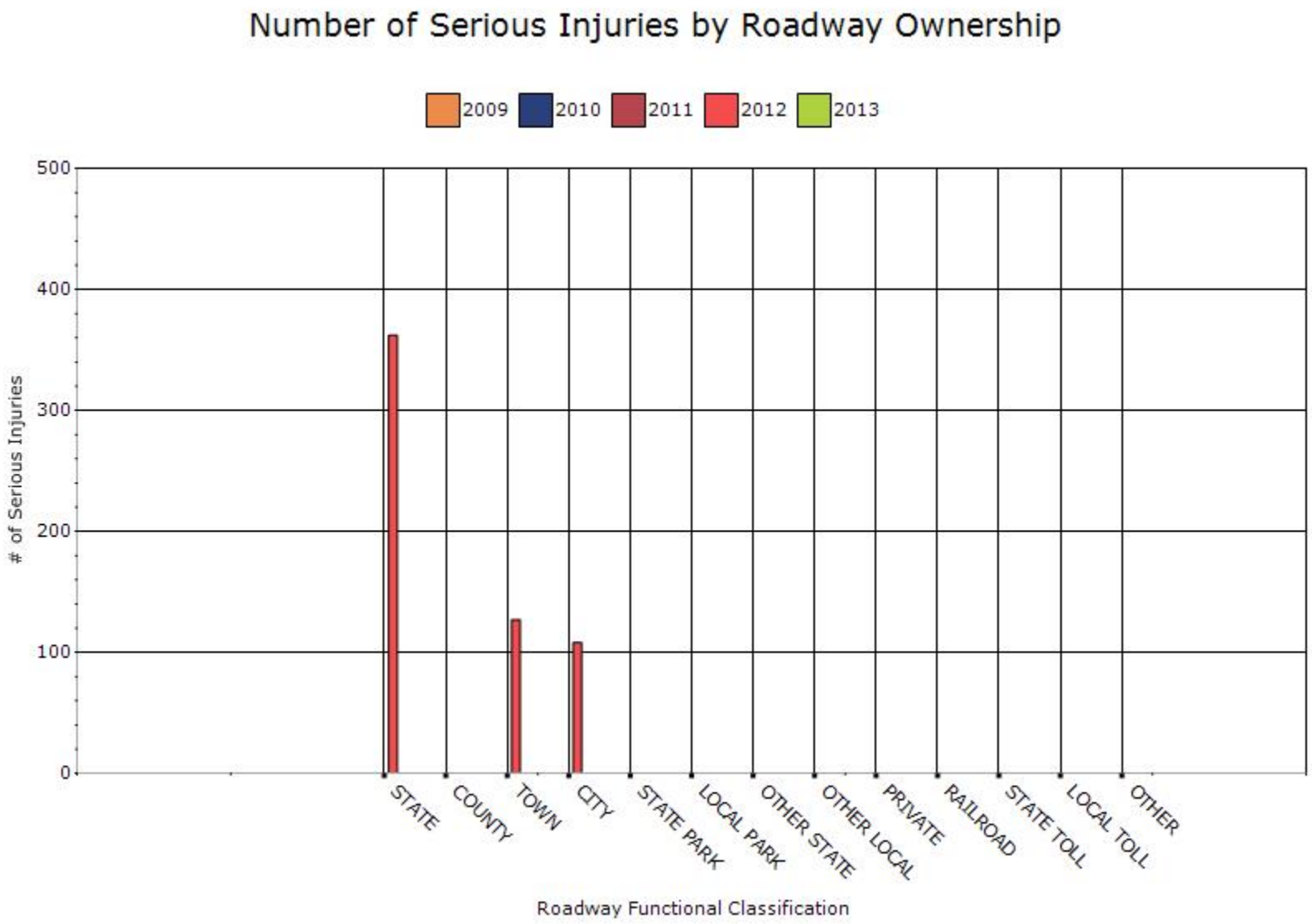

Fatality Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
3
2.5
2
1.5
1
0.5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
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

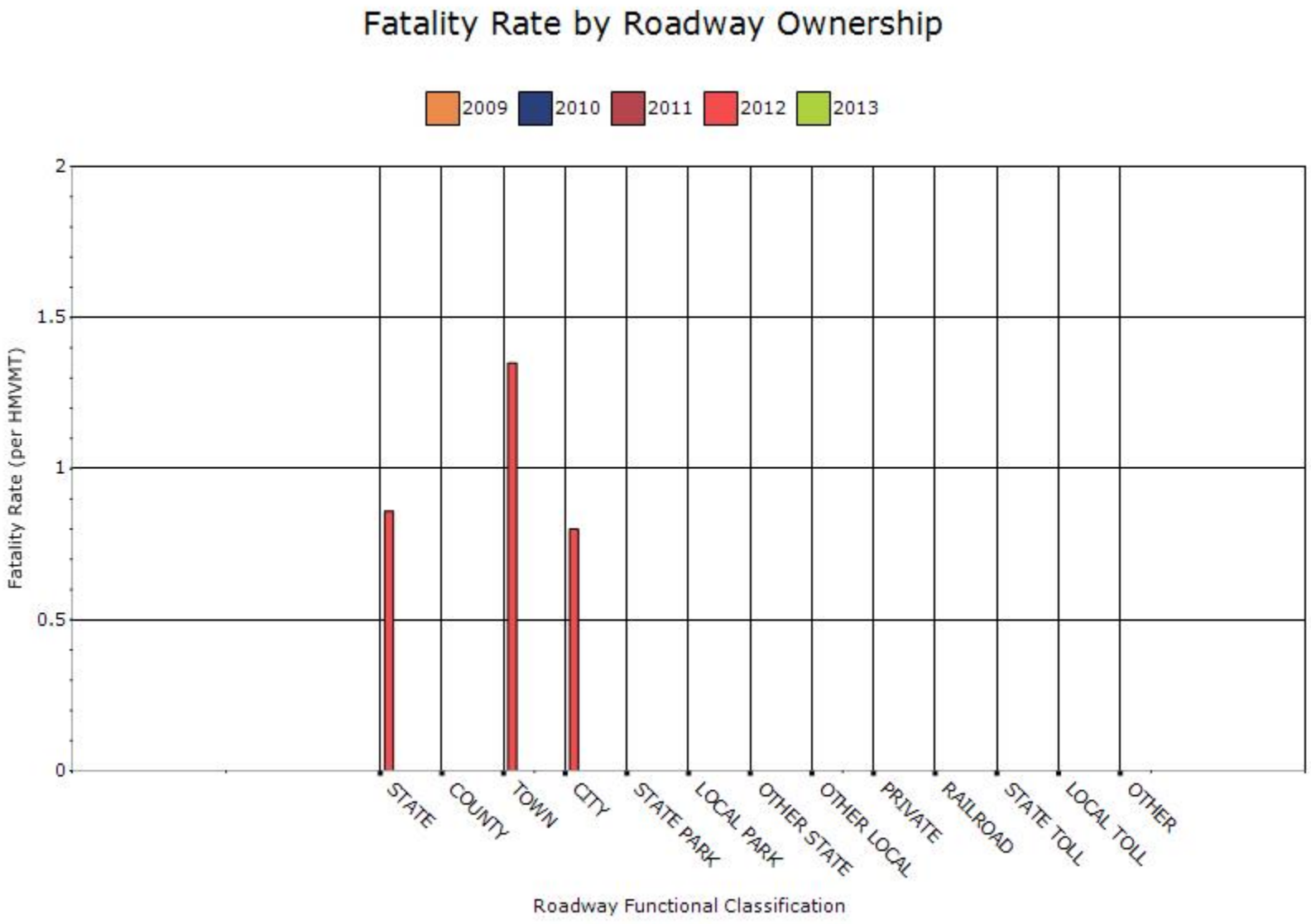

Serious Injury Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Serious Injury Rate (per HMVMT)
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (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

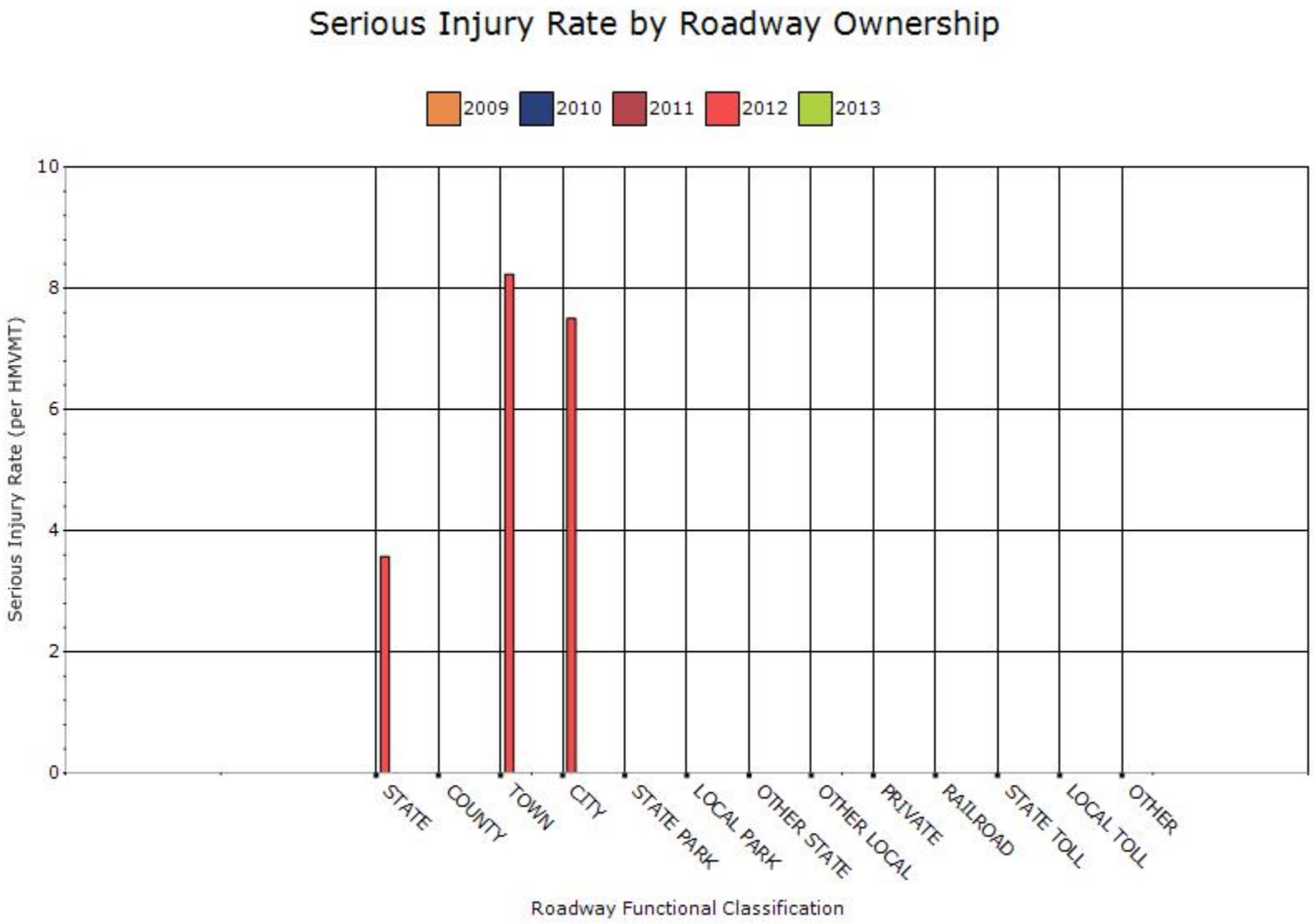
Year - 2012

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	87	362	0.86	3.57
COUNTY HIGHWAY AGENCY	0	0	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	21	127	1.35	8.23
CITY OF MUNICIPAL HIGHWAY AGENCY	12	108	0.8	7.5
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
2009
2010
2011
2012
2013
100
80
60
40
20
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
2009
2010
2011
2012
2013
500
400
300
200
100
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
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
2
1.5
1
0.5
0
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
2009
2010
2011
2012
2013
10
8
6
4
2
0
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.

Similar to infrastructure-related projects, non-infrastructure projects should be consistent with the NH SHSP and based on crash experience, crash potential, crash rate, or other data-supported means. HSIP funds should be used to implement proven, effective strategies in order to support the State's safety performance targets. Strategies should either add to existing successful non-infrastructure programs (but not replace existing funding sources), or be used to implement new activities proven through research. In addition, the safety benefit and economic effectiveness of both infrastructure and non-infrastructure projects should be considered during the Project Selection Process described later in this manual. Non-infrastructure projects must be approved by the NHDOT HSIP Committee in competition with all other projects.

Examples of eligible non-infrastructure projects include behavioral countermeasures; safety culture programs; transportation safety planning; collection, analysis, and improvement of safety data; and road safety audits. The HSIP Committee has previously funded data improvements, road safety audits, and safety culture and public outreach efforts of the New Hampshire Driving Toward Zero (NHDTZ) program. HSIP contributes about $250,000 annually to NHDTZ, or about 3% of total HSIP funding. There are many opportunities to build on these efforts and to coordinate with other agencies in non-infrastructure programs.

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)	0.194	0.168	0.16	0.156	0.118
Serious injury rate (per capita)	0.44	0.4	0.402	0.394	0.328
Fatality and serious injury rate (per capita)	0.634	0.566	0.56	0.55	0.444

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

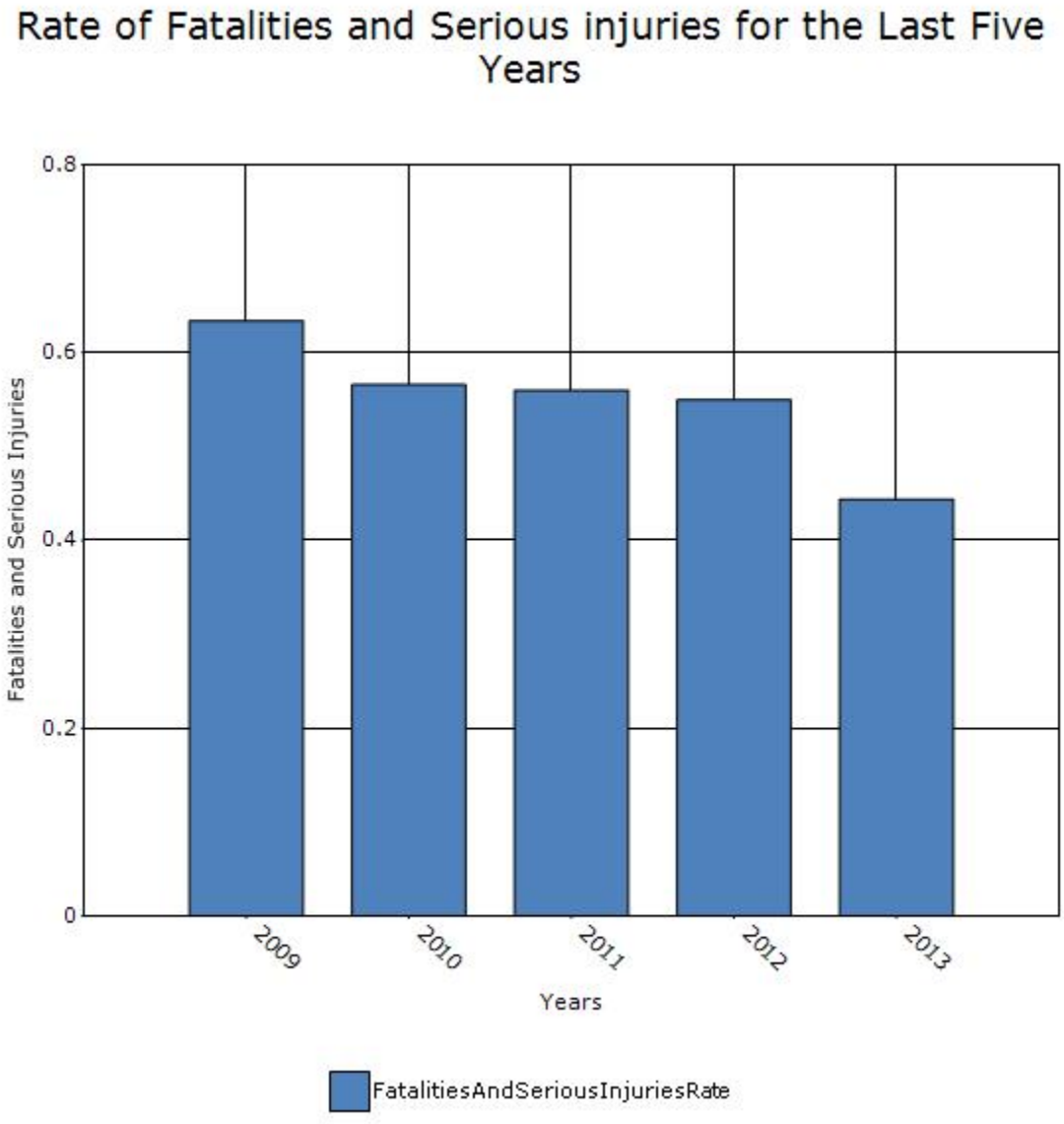
just divide total older driver injuries by the older driver population data as shown on your website.

VMT rate for K = K/HMVMT for 2012 where k=22,HMVMT=128.61

VMT rate for K =0.17

For the special rule VMT rate for K=K/# of people 65 yrs or older for 2012, where k=22, # people =147
Special rule for K = 22/147=0.15

For special rule of injuries for A=A/# people 65 or older for 2012, where A=65, # people= 147
Special rule for A=65/147=0.44



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:

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

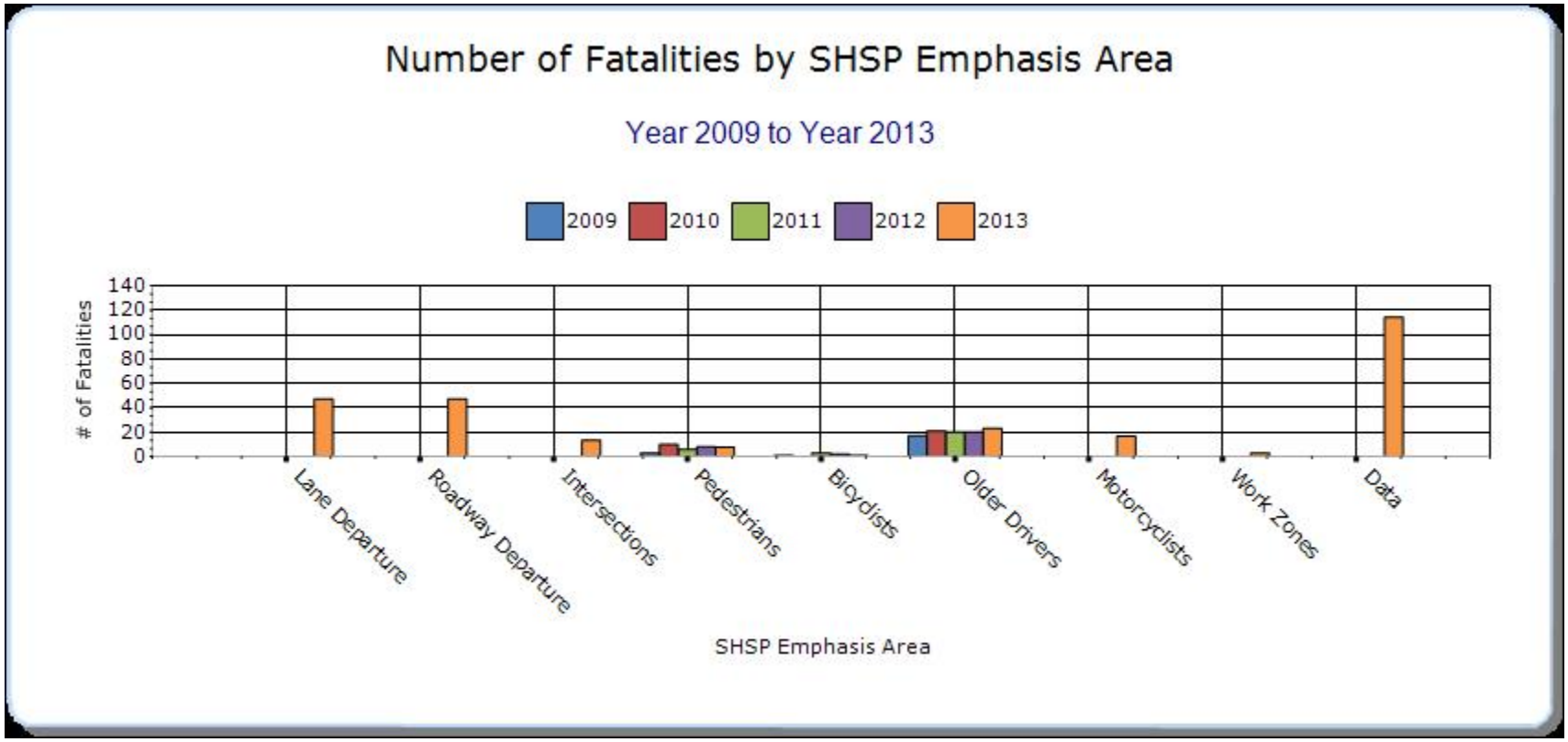
We have developed a program that has projects projected for 3 years in the future and an additional waiting list. We also have calculated B/C ratios for almost all of the projects in the HSIP program.

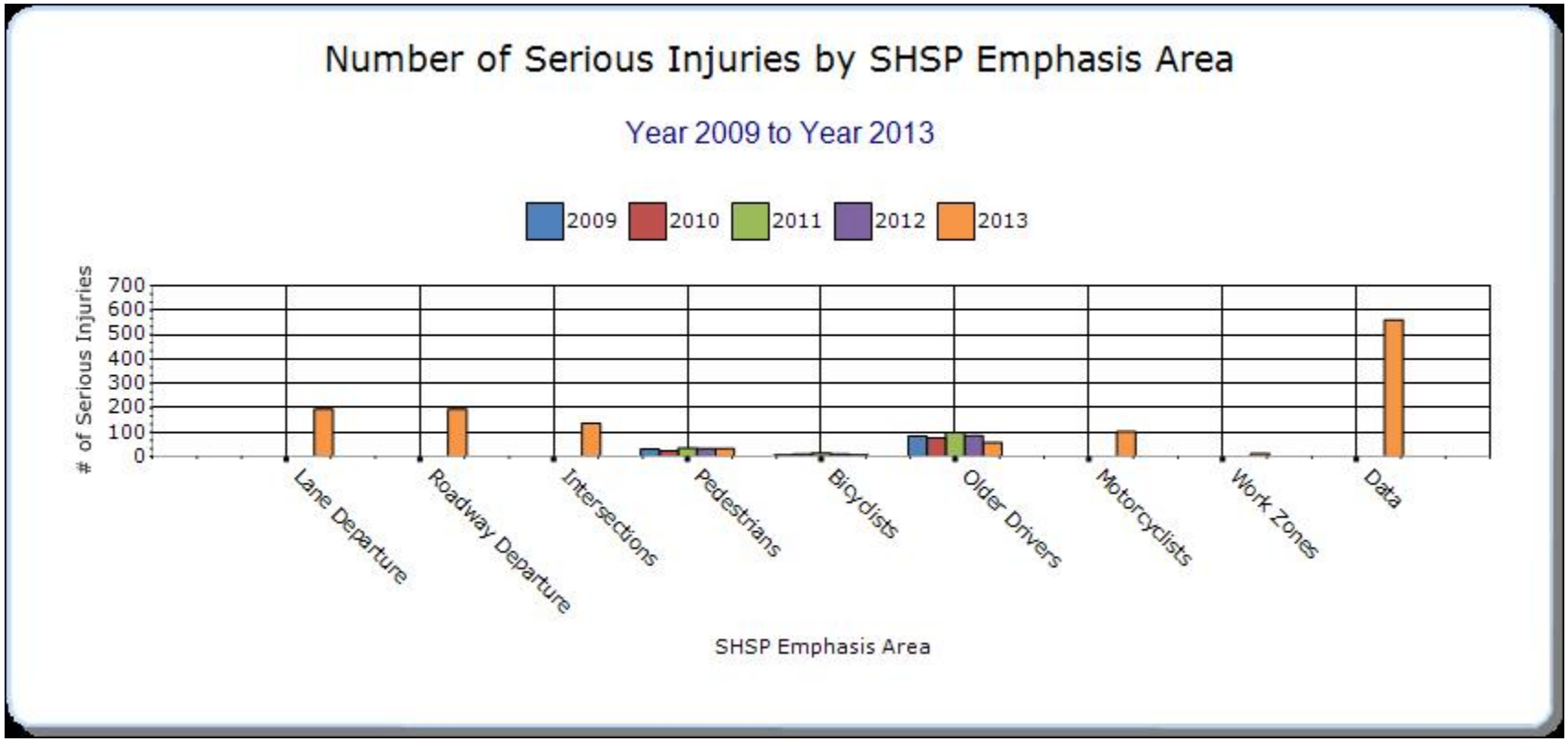
SHSP Emphasis Areas

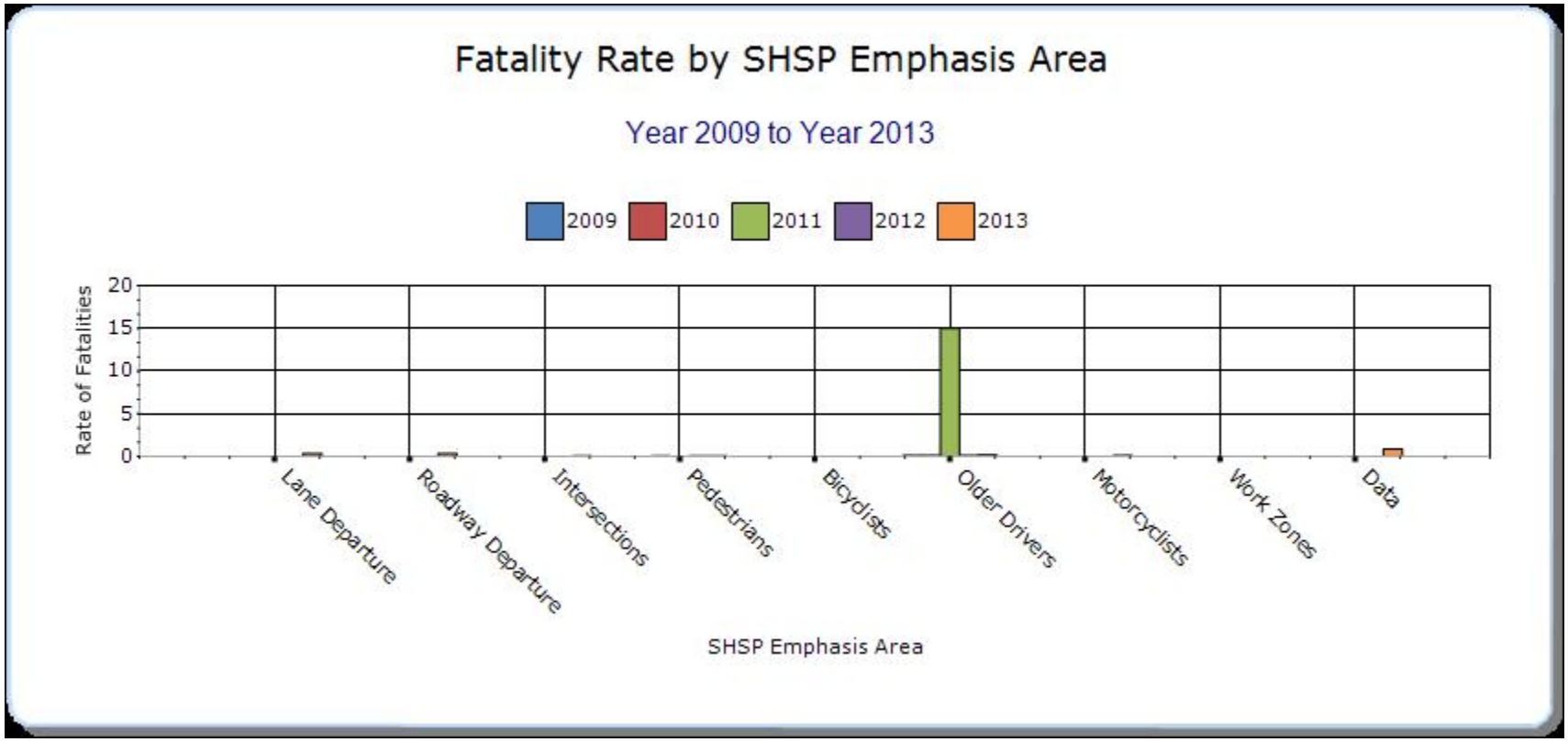
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

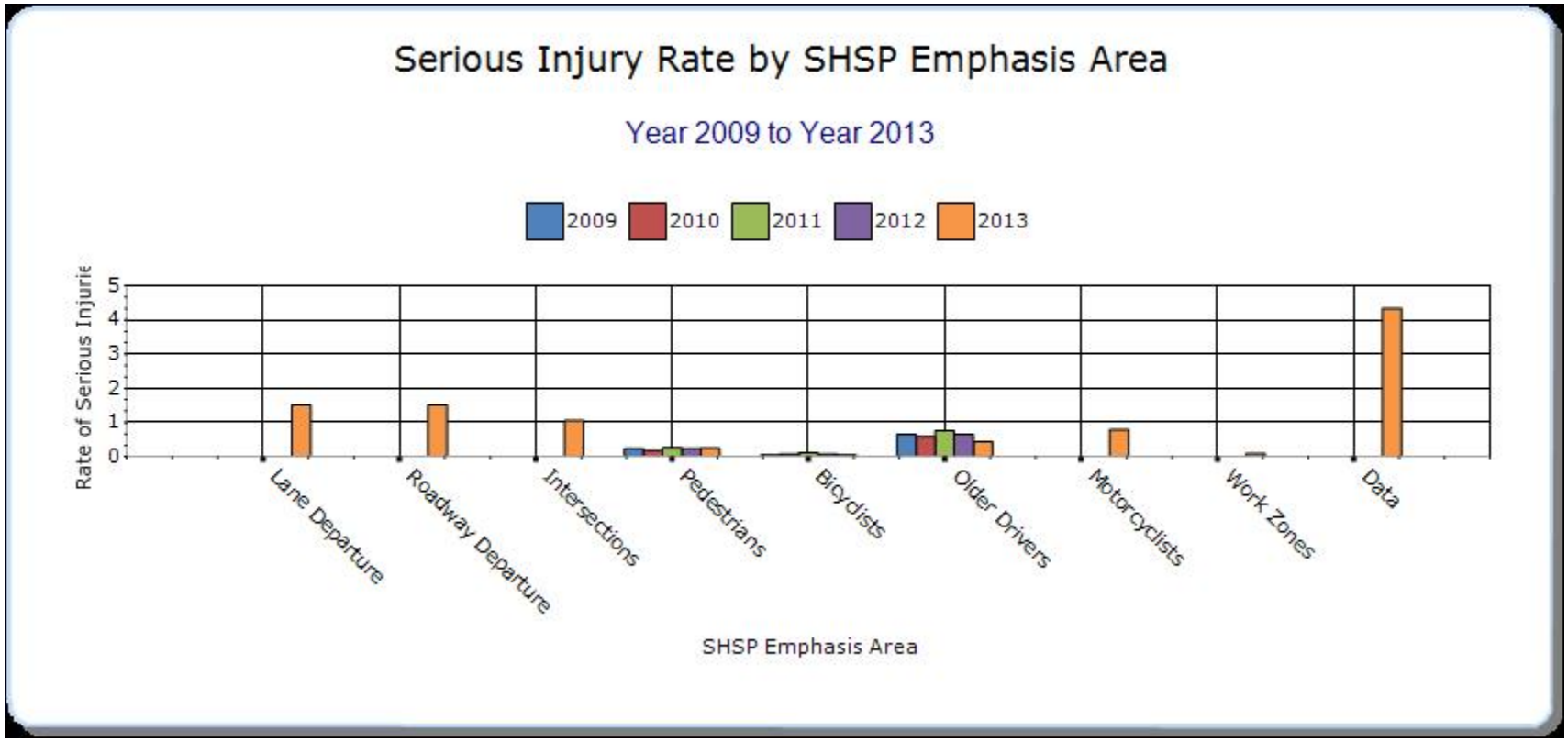
Year - 2013

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
Lane Departure	Sideswipe	47.2	194.2	0.37	1.51	0	0	0
Roadway Departure	Run-off-road	47.2	194.2	0.37	1.51	0	0	0
Intersections	Rear end	13.4	136	0.1	1.05	0	0	0
Pedestrians	Vehicle/pedestrian	7.8	32	0.06	0.25	0	0	0
Bicyclists	Vehicle/bicycle	0.8	7	0.01	0.05	0	0	0
Older Drivers	All	23	57.4	0.18	0.44	0	0	0
Motorcyclists	All	16.8	102.4	0.13	0.79	0	0	0
Work Zones	All	2.8	11.8	0.02	0.09	0	0	0
Data	All	114.2	560.2	0.89	4.34	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
140
120
100
80
60
40
20
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 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
700
600
500
400
300
200
100
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
20
15
10
5
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 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
5
4
3
2
1
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

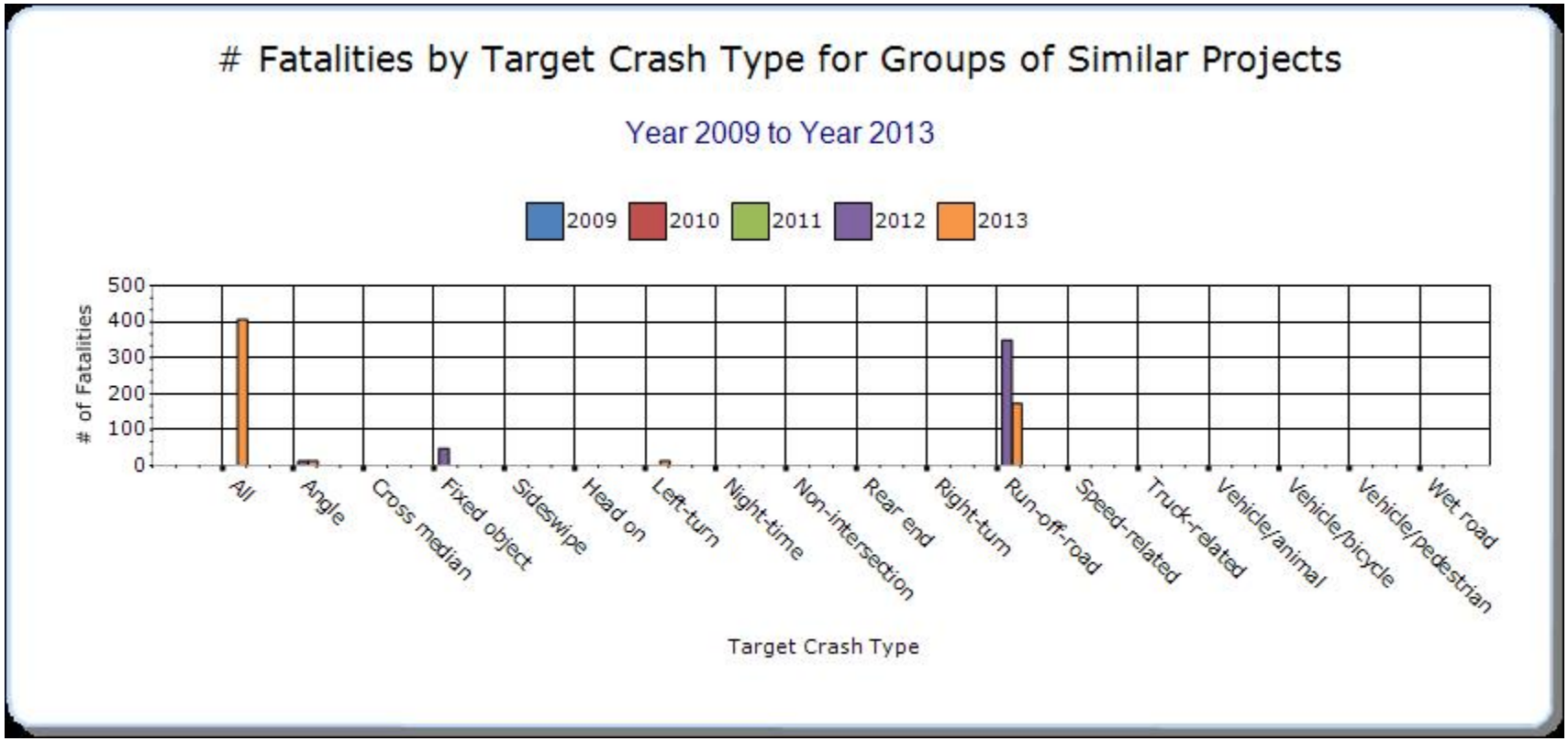
Groups of similar project types

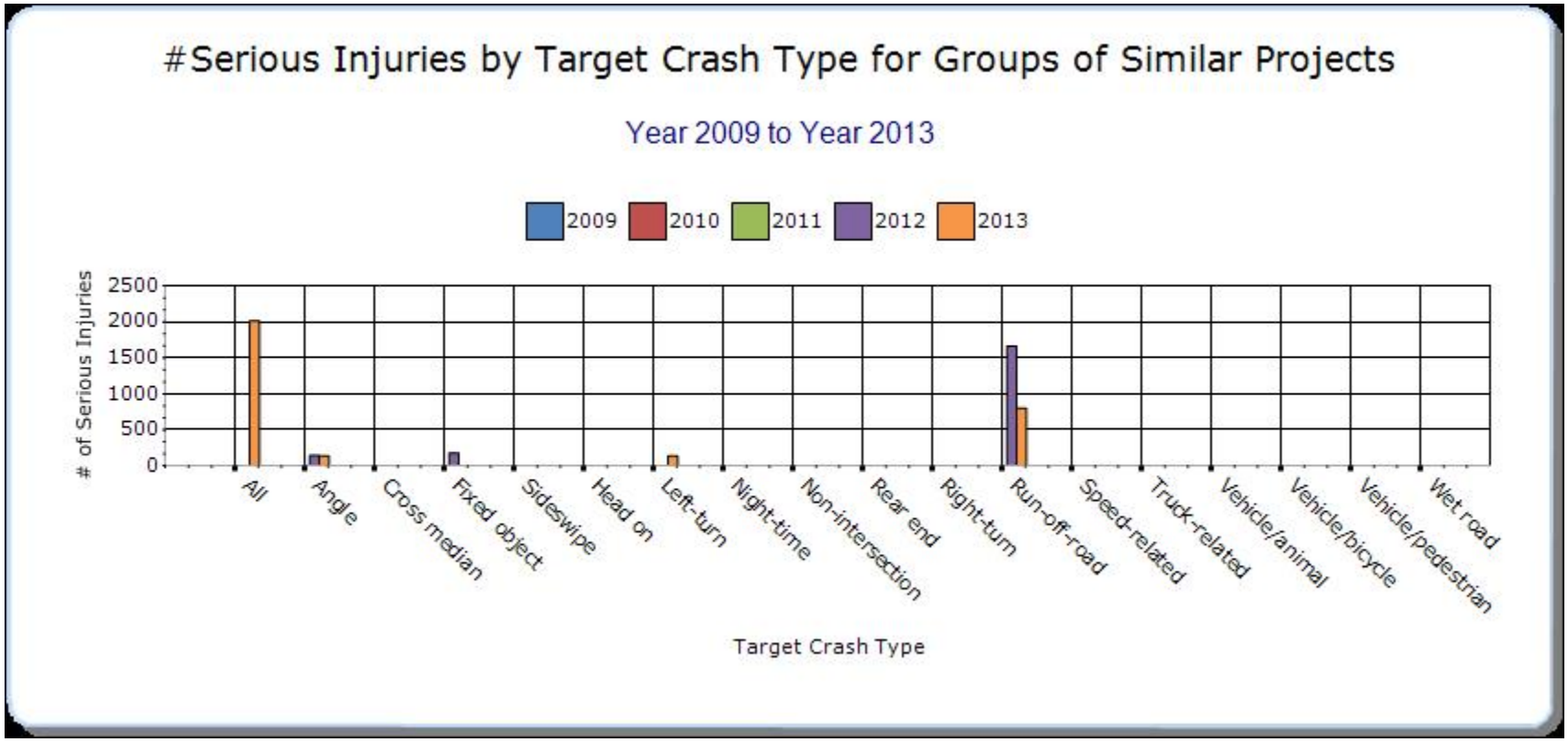
Present the overall effectiveness of groups of similar types of projects.

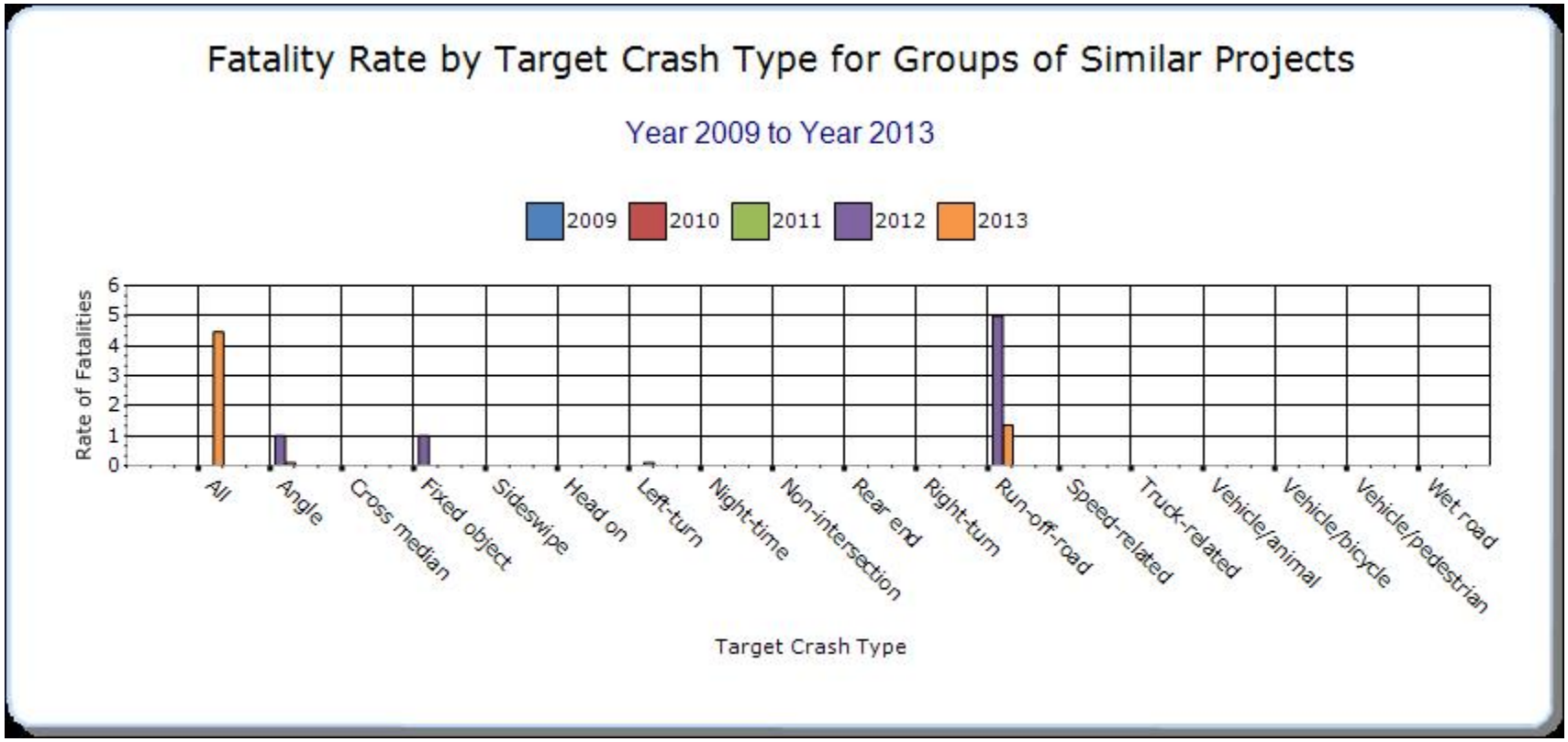
Year - 2013

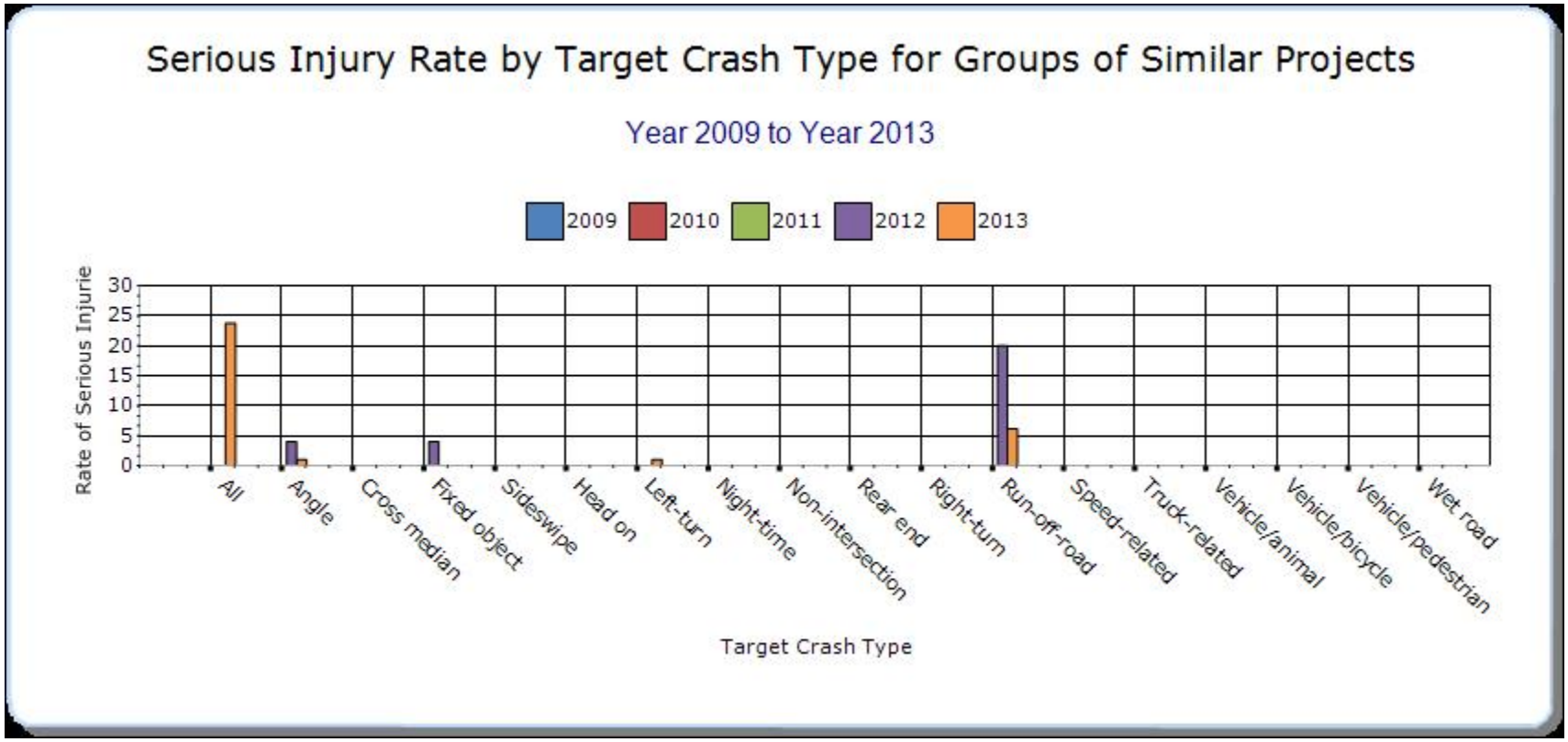
HSIP Sub-program Types	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Intersection	All	13.4	136	0.1	1.05	0	0	0
Local Safety	All	31.8	198.4	1.55	9.68	0	0	0
Low-Cost Spot Improvements	All	114.2	560.2	0.89	4.34	0	0	0
Crash Data	All	114.2	560.2	0.89	4.34	0	0	0
Segments	All	89.8	391.2	0.7	3.03	0	0	0
Sign Replacement And Improvement	Run-off-road	114.2	560.2	0.89	4.34	0	0	0
Right Angle Crash	Angle	13.4	136	0.1	1.05	0	0	0
Horizontal Curve	All	43.2	168.2	0.33	1.3	0	0	0
Roadway Departure	Run-off-road	47.2	194.2	0.37	1.51	0	0	0
Left Turn Crash	Left-turn	13.4	136	0.1	1.05	0	0	0
Median Barrier	Run-off-	11.4	42.8	0.09	0.33	0	0	0

	road							


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
500
400
300
200
100
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
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 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
2500
2000
1500
1000
500
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
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 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
0
1
2
3
4
5
6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type

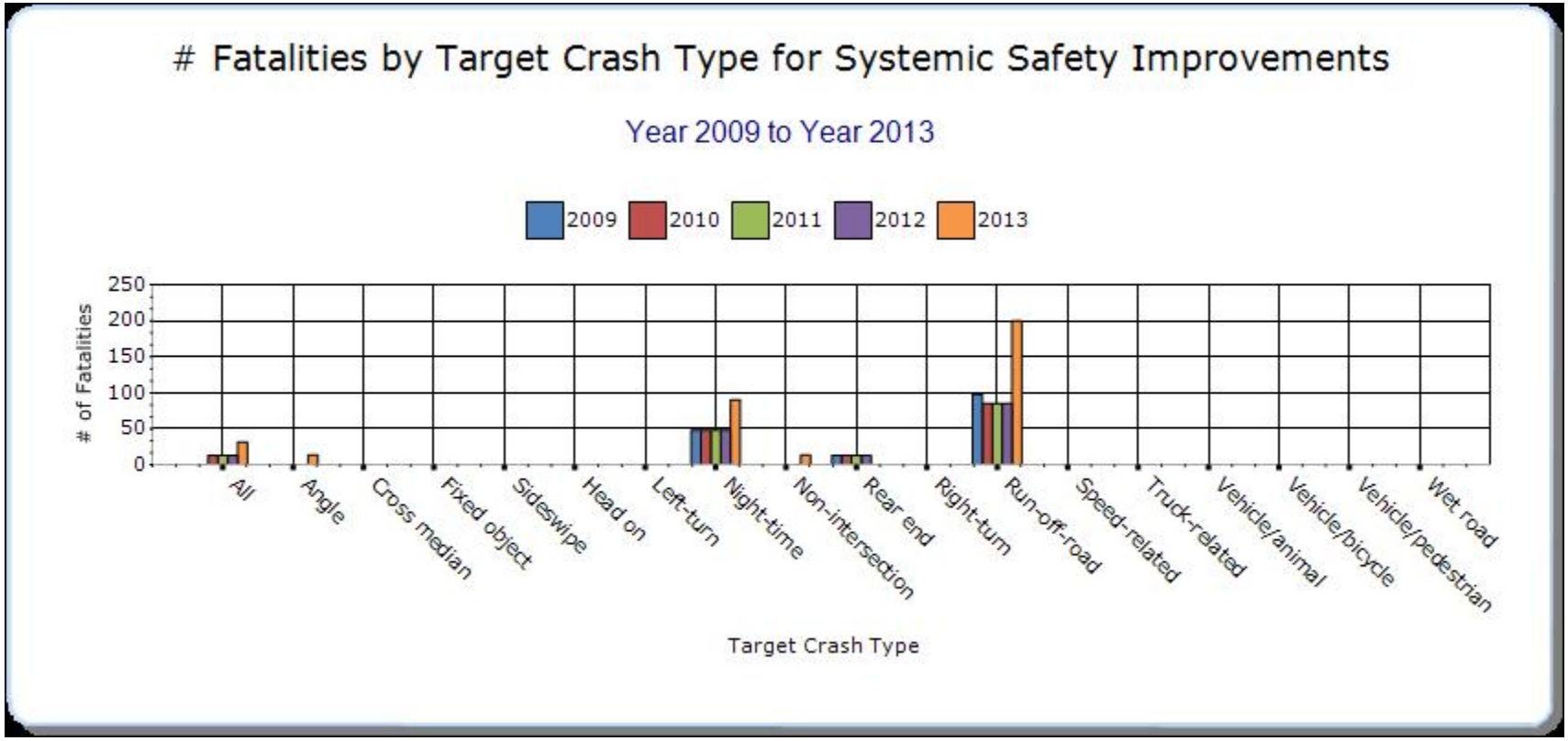

Serious Injury Rate by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
30
25
20
15
10
5
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type

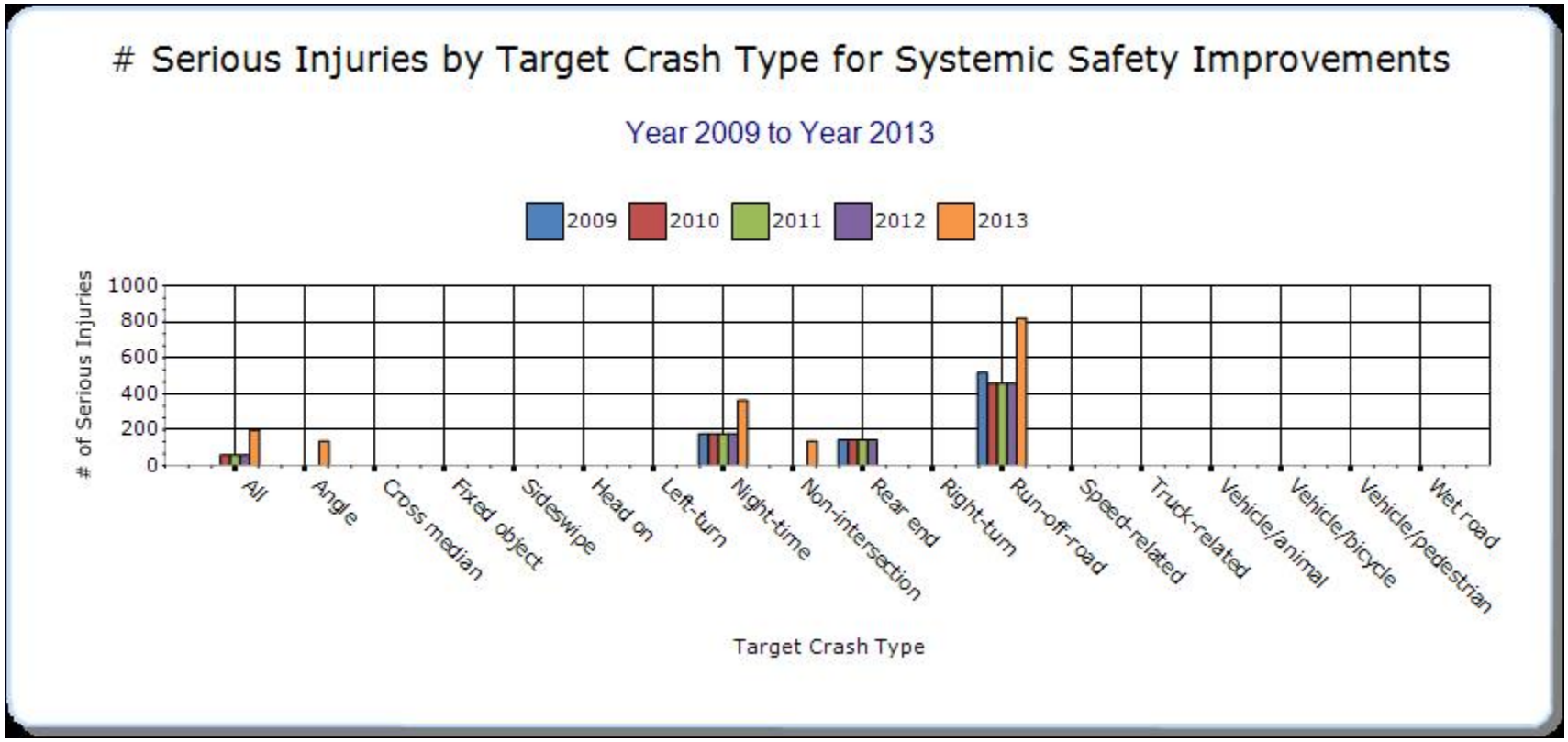
Systemic Treatments

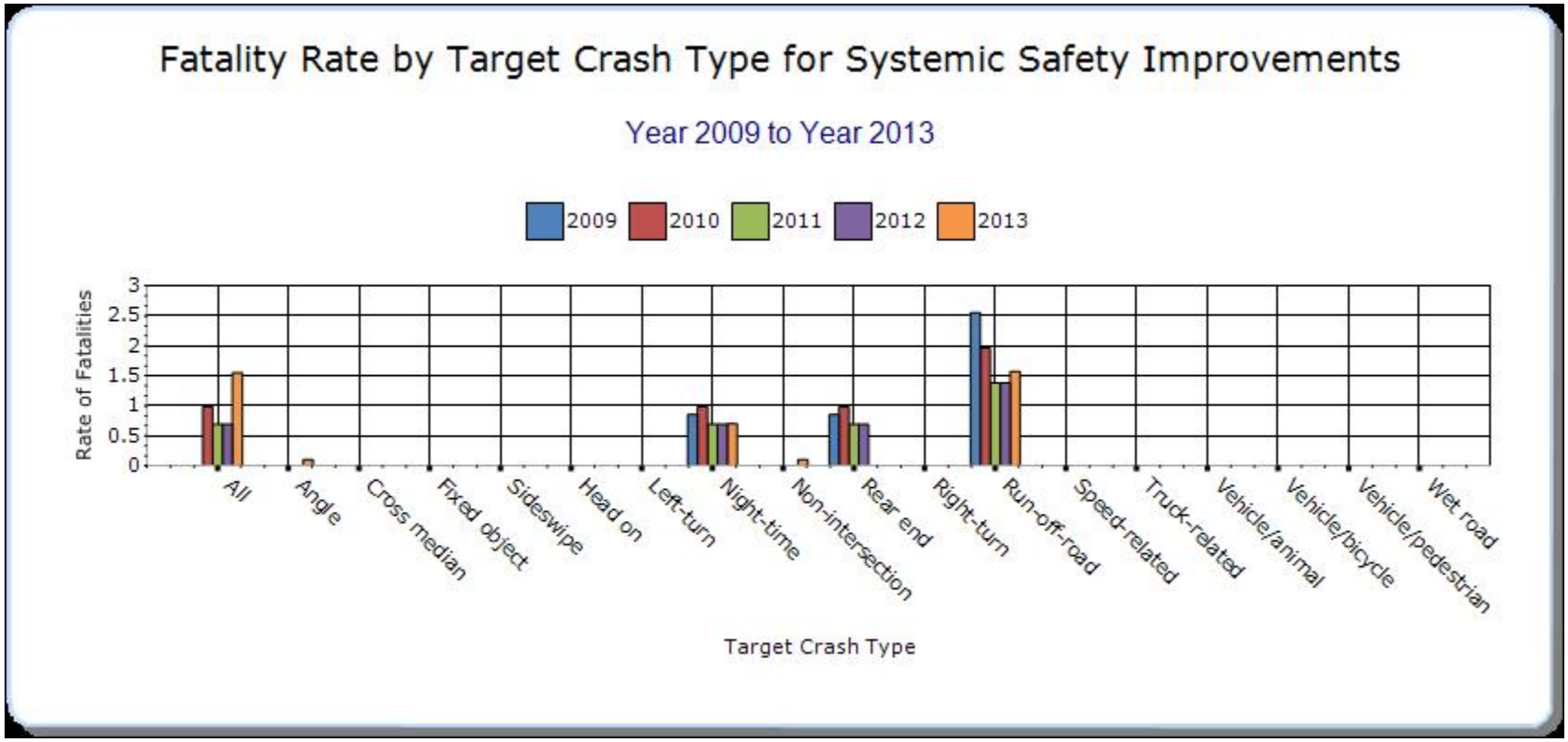
Present the overall effectiveness of systemic treatments.

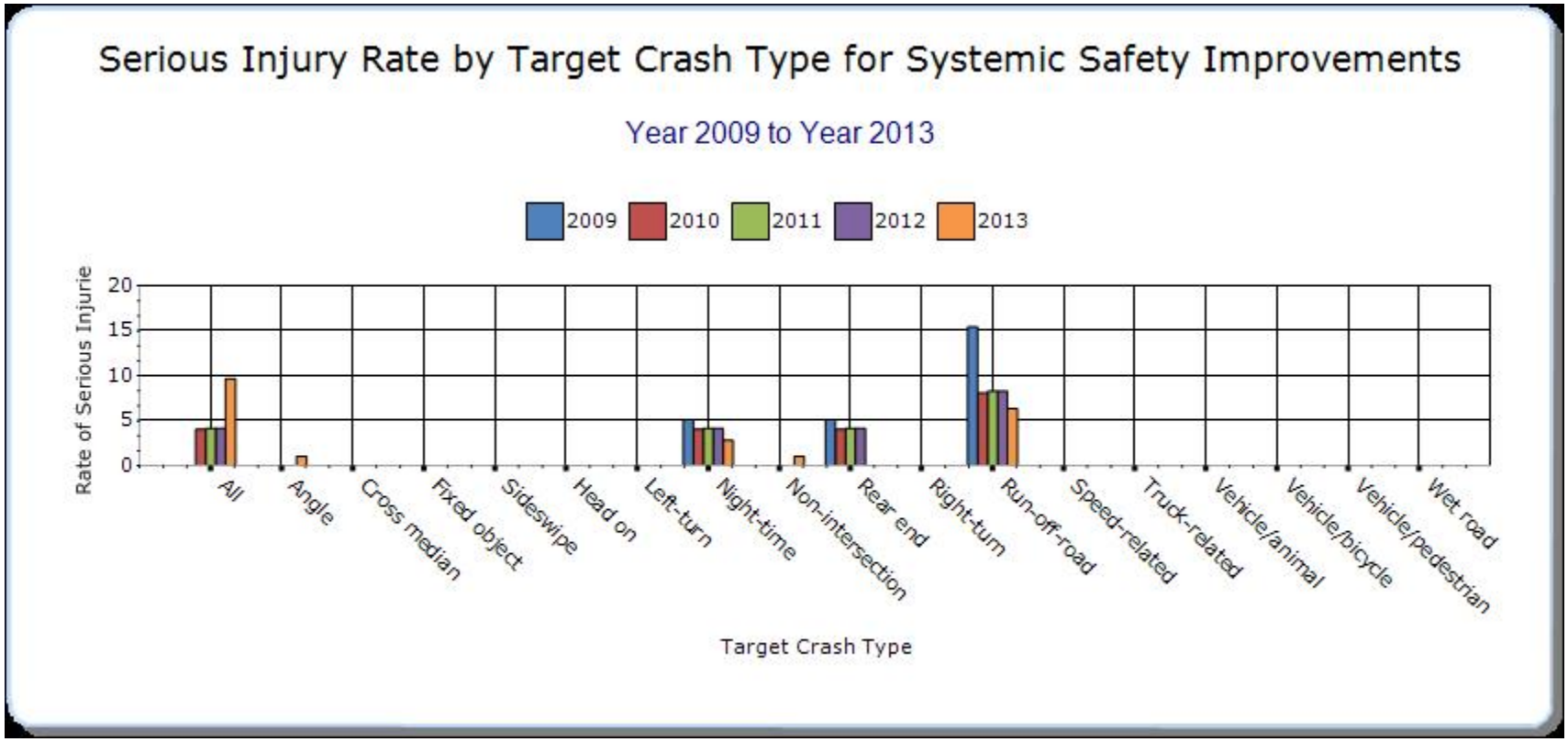
Year - 2013

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
Rumble Strips	Run-off-road	47.2	194.2	0.37	1.51	0	0	0
local safety	All	31.8	198.4	1.55	9.68	0	0	0
Other-intersections	Non-intersection	13.4	136	0.1	1.05	0	0	0
Install/Improve Signing	Night-time	43.2	168.2	0.33	1.3	0	0	0
Other-F--terminal Replacements	Run-off-road	47.2	194.2	0.37	1.51	0	0	0
Cable Median Barriers	Run-off-road	11.4	42.8	0.09	0.33	0	0	0
Install/Improve Pavement Marking and/or Delineation	Night-time	47.2	194.2	0.37	1.51	0	0	0
Add/Upgrade/Modify/Remove Traffic Signal	Angle	13.4	136	0.1	1.05	0	0	0
Other-Other Median Barriers	Run-off-road	47.2	194.2	0.37	1.51	0	0	0
Upgrade Guard Rails	Run-off-road	47.2	194.2	0.37	1.51	0	0	0


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
250
200
150
100
50
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
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 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
1000
800
600
400
200
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
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 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
3
2.5
2
1.5
1
0.5
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
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 Injury Rate by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
20
15
10
5
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type

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

The systemic approach to safety involves improvements to roadways that are widely implemented based on high-risk roadway features correlated with particular severe crash types. This method is very different from the traditional approach used in network screening in that locations receiving improvements are not necessarily required to have a demonstrated crash history. Systemic improvements serve as a strong complement to improvements identified through network screening, together treating the most hazardous sites and reducing the risk of severe crashes across the entire network.

Systemic countermeasure programs have also been shown to be more effective at reducing the overall number of crashes in the state than spot improvements, meaning that successful management of these programs will be essential in reaching State performance targets for reduction of fatalities and severe injuries. Whereas spot improvement projects only influence the safety at a single site or small area, systemic countermeasures are installed in entire towns, districts, or statewide with the potential to treat a large number of safety concerns and change driver behaviors. This is typically accomplished by implementing a large number of low-cost countermeasures that generally have a proportionally large safety benefit. Thus, it is the intent of the NH HSIP to use systemic countermeasure treatments as a significant means to improve highway safety in the State.

The systemic approach is iterative, flexible, and applicable to a variety of systems, locations, and crash types. Similar to the network screening approach, systemic planning involves problem identification, countermeasure selection, and project prioritization. The first step in the systemic process is to analyze system-wide crash and roadway data to target crash types (e.g., lane departure) and associated roadway risk factors (e.g., curves or roadside hazards) that make a significant contribution to the number of fatal and severe injury crashes in the State. Sites with these risk factors are identified and prioritized by potential for future severe crashes based on AADT, crash predictions for that roadway type, roadway characteristics, etc. Appropriate low-cost countermeasures (e.g., rumble strips) are then proposed to effectively address the specific crash types on roads with the identified risk factors. Finally, the chosen countermeasures are installed systemically at the selected sites.

Provide project evaluation data for completed projects (optional).

Location	Functional Class	Improvement Category	Improvement Type	Bef-Fatal	Bef-Serious Injury	Bef-Other Injury	Bef-PDO	Bef-Total	Aft-Fatal	Aft-Serious Injury	Aft-Other Injury	Aft-PDO	Aft-Total	Evaluation Results (Benefit/ Cost Ratio)
Barrington US 202/NH 9	Rural Major Collector	Intersection geometry	Intersection geometrics - modify skew angle	0	0	8	1	9	?	?	?	?	0	6.23
Derry NH 28/ Kilrea Rd	Urban Minor Arterial	Intersection geometry	Auxiliary lanes - add left-turn lane	0	0	2	2	4	?	?	?	?	0	1.14
Lee Us 4/NH 125	Rural Principal Arterial - Other	Intersection traffic control	Modify control - modifications to roundabout	0	0	3	17	20	?	?	?	?	0	?
Pittsfield NH 28/NH 107	Rural Minor Arterial	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	0	0	1	2	3	?	?	?	?	0	1.96
Epping-Hampton NH 101	Rural Principal Arterial -	Roadside	Barrier- metal	0	2	14	3	19	?	?	?	?	0	4.8

	Other													
Manchester - Hanover/Maple, Maple/Spruce & Beech/Cilley	Urban Minor Collector	Intersection traffic control	Modify control - two-way stop to all-way stop	0	0	5	0	5	?	?	?	?	0	?

Optional Attachments

Sections	Files Attached

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.