Highway Safety Improvement Program

Data Driven Decisions

North Carolina
Highway Safety Improvement Program
2014 Annual Report

Prepared by: NC

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 purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic procedure that identifies, investigates and addresses specific safety concerns throughout the state. The ultimate goal of the HSIP is to reduce the number of traffic crashes, injuries, and fatalities by reducing the potential for and the severity of these incidents of public roadways.

North Carolina recognizes traffic crashes as a significant problem that continues to challenge the state. In 2013, there were over 240,000 reported traffic crashes that resulted in 1,264 persons killed and over 100,000 injuries on our roadways. The socioeconomic impact of these crashes is severe, resulting in a loss of over $10.1 billion to the economy of North Carolina annually. This impact translates to a crash cost to the state of over $1 million every hour and approximately $28 million every day and a staggering social impact as well. North Carolina has established a vision to have a multi-disciplinary, multi-agency highway safety approach to research, planning, investigation, design, construction, maintenance, operation and evaluation of transportation systems, which results in reduced fatalities, injuries and economic losses, related to crashes. In addition,

there is a coordinated strategic effort to address emerging safety issues. In January 2008 the Executive Committee for Highway Safety met to reexamine their goals. The committee agreed to adopt a 2.5% reduction in annual fatalities each year over the next 20 years as the new goal.

This “HSIP Report” describes North Carolina DOT’s implementation and effectiveness of its Highway Safety Improvement Program. These reports satisfy the requirements under Title 23 of the Code of Federal Regulations, Part 924 (23 CFR 924). The NCDOT Rail Division is developing the “Railway-Highway Crossing Report” as a separate report submission. North Carolina DOT has opted to use the 2013 Calendar Year as the reporting period for the “HSIP Report”; however, some of our 2014 plans, goals, and methods are included in this report.

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.

In North Carolina, the local county governments are not responsible for the maintenance of rural highways. NCDOT highway network covers nearly 80,000 roadway miles which includes rural roadways classified as local; municipal governments maintain some downtown streets, residential streets and subdivision roads.

As a future goal, NCDOT is currently working with the UNC Highway Safety Research Center (HSRC) to develop a low cost safety improvements training course that will focus on municipalities. NCDOT is hopeful that the low cost safety improvements training course will help municipalities gain confidence

with problem identification, countermeasure selection and project evaluation.

NCDOT receives crash data from the Department of Motor Vehicles and has the capability to identify potentially hazardous locations on all publicly traveled North Carolina roadways.

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

☒Design

☒Planning

☐Maintenance

☒Operations

☒Governors Highway Safety Office

☐Other:

Briefly describe coordination with internal partners.

The design, planning, and operations units within NCDOT play a significant role within the State Highway Safety Plan. These units utilize safety data during their planning phase in many ways. NCDOT's Policy to Projects process uses data regarding pavement condition, traffic congestion and road safety, as well as input from local government and NCDOT staff to determine transportation priorities. MPO's and RPO's utilize traffic crash data to develop transportation plans. Many resurfacing projects are utilizing safety edge treatments to reduce the potential for overcorrection-type crashes. The Governor's Highways Safety Program oversees a variety of important safety campaigns, including "Booze It and Lose It" and "Click It or Ticket It."

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

☒Metropolitan Planning Organizations

☒Governors Highway Safety Office

☒Local Government Association

☒Other: Other-NC State Highway Patrol

☒Other: Other-Rail Division and Bike/Ped Division

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.

NCDOT continues to enhance the HSIP steering committee by utilizing various stakeholders.

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: **8/27/2013**

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 crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☐ Other	☒ Other-Freeway

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-Median Width

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

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Intersection**

Date of Program Methodology: **8/27/2013**

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 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-Frontal Impact Crashes

☒ Other-Percent Frontal Impact Crashes

☒ Other-Frequency of Crashes during Dark Conditions

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	1
☐ Available funding	
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	
☒ Regional Priority	2
☒ Division Priority	2
☒ Severity Index	4
☒ Potential Hazardous Listing or RSA Location	5

Program: **Safe Corridor**

Date of Program Methodology: **8/27/2013**

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 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

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

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Horizontal Curve**

Date of Program Methodology: **8/27/2013**

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 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-Road Departure Crashes in a Curve

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

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Bicycle Safety**

Date of Program Methodology: **8/27/2013**

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 crashes only	☐ Population	☐ Functional classification
☒ Other-Bicycle Crashes	☐ 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-Bicycle Crashes

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	1
☐Available funding	
☐Incremental B/C	
☐Ranking based on net benefit	
☐Other	
☒Regional Priority	2
☒Division Priority	2
☒Severity Index	4
☒Potentially Hazardous Listing	5

Program: **Roadway Departure**

Date of Program Methodology: **8/27/2013**

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 crashes only	☐ Population	☐ Functional classification
☒ Other-Roadway Departure Crashes	☐ 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-Percent Roadway Departure Crashes

☒ Other-Percent Night Crashes

☒ Other-Percent Wet Condition Crashes

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 1

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

☒ Regional Priority 2

☒ Division Priority 2

☒ Severity Index 4

☒ Potentially Hazardous Listing or RSA Location 5

Program: **Pedestrian Safety**

Date of Program Methodology: **8/27/2013**

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 crashes only	☐ Population	☐ Functional classification
☒ Other-Pedestrian Crashes	☐ 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-Pedestrian Crashes

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	1
☐ Available funding	
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	
☒ Regional Priority	2
☒ Division Priority	2
☒ Severity Index	4
☒ Potentially Hazardous Listing or RSA	5

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

0

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

☐ Cable Median Barriers

☐ Rumble Strips

☐ Traffic Control Device Rehabilitation

☐ Pavement/Shoulder Widening

☐ Install/Improve Signing

☐ Install/Improve Pavement Marking and/or Delineation

☐ Upgrade Guard Rails

☐ Clear Zone Improvements

☐ Safety Edge

☐ Install/Improve Lighting

☐ Add/Upgrade/Modify/Remove Traffic Signal

☐ Other

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.

NCDOT is continuing to develop safety performance functions and will utilize the ISDM application on future STIP projects. NCDOT is actively working on new systemic programs to implement wide edge lines, enhanced curve warning signs and safety edge treatments.

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)	102567073	87 %	41062376	51 %
HRRRP (SAFETEA-LU)	1197990	1 %	3678894	5 %
HRRR Special Rule				
Penalty Transfer - Section 154				
Penalty Transfer – Section 164	0	0 %	22023429	27 %
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)				
State and Local Funds	14378723	12 %	14378723	18 %

Totals	118143786	100%	81143422	100%

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

$0.00

How much funding is obligated to local safety projects?

$0.00

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

$450,000.00

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

$450,000.00

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?

$28,500,000.00

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

NCDOT is responsible for the safety of nearly 80,000 miles of rural and urban highways. Cities and towns are responsible for over 21,000 miles of streets; most of this mileage is downtown and residential streets. While NCDOT administers HSIP funds, most municipalities are hesitant to participate due to the federal guidelines. Local governments are unwilling to administer the competitive bidding process. The complex federal safety program process discourages many opportunities to utilize the HSIP for low-cost safety projects. In some cases administrative costs may be higher than the project costs.

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

In an attempt to assess the safety of our roads, the Safety Evaluation Group of the Traffic Safety Systems Management Section has evaluated hundreds of countermeasure projects. The methodologies used in these evaluations offer various philosophies and ideas, in an effort to provide objective countermeasure crash reduction results. This information is provided so the benefit or lack of benefit for this type of project can be recognized and utilized for future projects. As the Safety Evaluation Group completes additional reviews for these types of countermeasures, we will be able to provide objective and definite information regarding actual crash reduction factors. These evaluations can be found on our website at: https://connect.ncdot.gov/resources/safety/Pages/Safety-Evaluation.aspx.

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
SF-4905C	Roadside Barrier- metal	1 Miles	53100	59000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
SF-4912H	Roadway Rumble strips - unspecified or other	2 Miles	90000	100000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5201B	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	265500	295000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5201C	Intersection geometry Intersection geometrics - realignment to increase cross street offset	2 Numbers	175500	195000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5205H	Alignment Alignment - other	1 Numbers	22500	25000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-	Alignment Horizontal curve	1 Numbe	665100	739000	HRRRP (SAFETE		0	0	State Highway		

5206L	realignment	rs			A-LU)				Agency		
W-5206N	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	49500	55000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5206O	Roadway Superelevation / cross slope	1 Numbers	697500	775000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5210F	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	67500	75000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5212L	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	72000	80000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5509	Shoulder treatments Widen shoulder - paved or other	8 Miles	135000	150000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
SF-4904G	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	279000	310000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
SF-4904H	Roadway Superelevation / cross slope	1 Numbers	20463	22737	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
SF-	Intersection traffic control Modify traffic signal -	1 Numbe	227141	252379	HRRRP (SAFETE		0	0	State Highway		

4911B	miscellaneous/other/unspecified	rs			A-LU)				Agency		
W-5203L	Shoulder treatments Widen shoulder - paved or other	4 Miles	81000	90000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5211B	Intersection geometry Intersection geometry - other	1 Numbers	90000	100000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5214I	Roadside Barrier- metal	1 Miles	9990	11100	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
W-5214J	Roadside Barrier- metal	2 Miles	214700	238556	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
Z-5400FH	Railroad grade crossings Railroad grade crossing gates	1 Numbers	369000	410000	HRRRP (SAFETEA-LU)		0	0	State Highway Agency		
SF-4908I	Intersection traffic control Modify traffic signal - miscellaneous/other/unspecified	1 Numbers	1045	1161	HSIP (Section 148)		0	0	State Highway Agency		
SF-5102A	Advanced technology and ITS Dynamic message signs	3 Numbers	143850	159833	HSIP (Section 148)		0	0	State Highway Agency		

SF-5110A	Intersection traffic control Modify traffic signal - miscellaneous/other/unspecified	1 Numbers	25501	28334	HSIP (Section 148)		0	0	State Highway Agency		
SF-5114A	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	4567	5074	HSIP (Section 148)		0	0	State Highway Agency		
W-4004	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Miles	12873	14303	HSIP (Section 148)		0	0	State Highway Agency		
W-5001	Shoulder treatments Shoulder treatments - other	7 Miles	54000	60000	HSIP (Section 148)		0	0	State Highway Agency		
W-5106	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Miles	255289	283654	HSIP (Section 148)		0	0	State Highway Agency		
W-5120	Shoulder treatments Shoulder treatments - other	14 Miles	25795	28661	HSIP (Section 148)		0	0	State Highway Agency		
W-5202I	Roadway Pavement surface - high friction surface	2 Miles	965795	1073106	HSIP (Section 148)		0	0	State Highway Agency		
W-5205J	Intersection geometry Auxiliary lanes - add left-turn	1 Numbe	13500	15000	HSIP (Section		0	0	State Highway		

	lane	rs			148)				Agency		
W-5208J	Roadway Roadway widening - add lane(s) along segment	1 Miles	90000	100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5210H	Access management Raised island - install new	5 Numbers	90000	100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5212H	Roadway signs and traffic control Roadway signs and traffic control - other	1 Miles	495000	550000	HSIP (Section 148)		0	0	State Highway Agency		
W-5212K	Roadside Barrier- metal	1 Miles	720000	800000	HSIP (Section 148)		0	0	State Highway Agency		
W-5213E	Roadside Barrier- metal	1 Miles	40838	45376	HSIP (Section 148)		0	0	State Highway Agency		
W-5214K	Roadside Barrier- metal	1 Miles	9000	10000	HSIP (Section 148)		0	0	State Highway Agency		
W-5304	Intersection geometry Intersection geometrics - modify skew angle	1 Numbers	958500	1065000	HSIP (Section 148)		0	0	State Highway Agency		
SI-	Roadway Superelevation /	1 Numbe	450000	500000	HSIP (Section		0	0	State Highway		

4803	cross slope	rs			148)				Agency		
W-4700	Shoulder treatments Pave existing shoulders	4 Miles	1122127	1246808	HSIP (Section 148)		0	0	State Highway Agency		
W-4705	Intersection traffic control Systemic improvements - signal-controlled	1 Numbers	270000	300000	HSIP (Section 148)		0	0	State Highway Agency		
W-5107	Interchange design Convert at-grade intersection to interchange	4 Numbers	900000	1000000	HSIP (Section 148)		0	0	State Highway Agency		
W-5114	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	675000	750000	HSIP (Section 148)		0	0	State Highway Agency		
W-5132	Intersection geometry Auxiliary lanes - add right-turn lane	1 Numbers	101428	112698	HSIP (Section 148)		0	0	State Highway Agency		
W-5202F	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	69133	76814	HSIP (Section 148)		0	0	State Highway Agency		
W-5202G	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	321617	357352	HSIP (Section 148)		0	0	State Highway Agency		
W-	Intersection geometry Auxiliary lanes - modify	1 Numbe	285772	317524	HSIP (Section		0	0	State Highway		

5202H	right-turn lane offset	rs			148)				Agency		
W-5202J	Intersection traffic control Modify traffic signal - add flashing yellow arrow	1 Numbers	18000	20000	HSIP (Section 148)		0	0	State Highway Agency		
W-5202K	Intersection geometry Auxiliary lanes - add left-turn lane	21 Numbers	45000	50000	HSIP (Section 148)		0	0	State Highway Agency		
W-5202L	Intersection traffic control Modify traffic signal - add flashing yellow arrow	6 Numbers	31500	35000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203M	Shoulder treatments Widen shoulder - paved or other	6 Miles	22500	25000	HSIP (Section 148)		0	0	State Highway Agency		
W-5204A	Interchange design Convert at-grade intersection to interchange	2 Numbers	540000	600000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205I	Intersection traffic control Intersection traffic control - other	1 Numbers	3150	3500	HSIP (Section 148)		0	0	State Highway Agency		
W-5205L	Shoulder treatments Shoulder grading	1 Miles	234000	260000	HSIP (Section 148)		0	0	State Highway Agency		
W-	Access management Change in access - close or restrict	1 Miles	54900	61000	HSIP (Section		0	0	State Highway		

5205M	existing access				148)				Agency		
W-5205O	Alignment Alignment - other	2 Numbers	153000	170000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205P	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	49500	55000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205Q	Roadway Pavement surface - high friction surface	1 Miles	158400	176000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205R	Intersection traffic control Intersection traffic control - other	1 Numbers	68400	76000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AA	Access management Raised island - install new	1 Numbers	112500	125000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AB	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	72000	80000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AC	Intersection traffic control Intersection traffic control - other	1 Numbers	27000	30000	HSIP (Section 148)		0	0	State Highway Agency		
W-	Intersection geometry Intersection geometry -	1 Numbe	91872	102080	HSIP (Section		0	0	State Highway		

5206F	other	rs			148)				Agency		
W-5206I	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	832500	925000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206Z	Intersection geometry Intersection geometrics - miscellaneous/other/unspecified	3 Numbers	90000	100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5207G	Alignment Vertical alignment or elevation change	1 Numbers	90000	100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5207J	Roadway Pavement surface - miscellaneous	1 Miles	4500	5000	HSIP (Section 148)		0	0	State Highway Agency		
W-5208H	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Miles	629100	699000	HSIP (Section 148)		0	0	State Highway Agency		
W-5208I	Lighting Intersection lighting	1 Numbers	130950	145500	HSIP (Section 148)		0	0	State Highway Agency		
W-5209E	Alignment Horizontal curve realignment	1 Numbers	520324	578138	HSIP (Section 148)		0	0	State Highway Agency		

W-5209F	Intersection geometry Intersection geometrics - modify skew angle	1 Numbers	180000	200000	HSIP (Section 148)		0	0	State Highway Agency		
W-5212D	Roadway Rumble strips - edge or shoulder	18 Miles	10099	11221	HSIP (Section 148)		0	0	State Highway Agency		
W-5213D	Roadside Barrier- metal	3 Miles	396000	440000	HSIP (Section 148)		0	0	State Highway Agency		
W-5214E	Roadside Barrier- metal	1 Miles	75600	84000	HSIP (Section 148)		0	0	State Highway Agency		
W-5316	Intersection geometry Auxiliary lanes - add left-turn lane	1 Miles	227474	252749	HSIP (Section 148)		0	0	State Highway Agency		
W-5318	Shoulder treatments Widen shoulder - paved or other	12 Miles	4431749	4924166	HSIP (Section 148)		0	0	State Highway Agency		
W-5334	Roadway Pavement surface - high friction surface	1 Miles	1044000	1160000	HSIP (Section 148)		0	0	State Highway Agency		
W-5501	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	525000	583333	HSIP (Section 148)		0	0	State Highway Agency		

W-5505	Alignment Horizontal curve realignment	1 Numbers	1021500	1135000	HSIP (Section 148)		0	0	State Highway Agency		
W-5510	Access management Raised island - install new	1 Miles	360000	400000	HSIP (Section 148)		0	0	State Highway Agency		
W-5511	Alignment Horizontal curve realignment	1 Miles	90000	100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5512	Alignment Horizontal curve realignment	1 Numbers	225000	250000	HSIP (Section 148)		0	0	State Highway Agency		
Y-4117B	Railroad grade crossings Protective devices	2 Numbers	328110	410138	HSIP (Section 148)		0	0	State Highway Agency		
Z-5400FE	Railroad grade crossings Surface treatment	1 Numbers	303750	379688	HSIP (Section 148)		0	0	State Highway Agency		
Z-5400FF	Railroad grade crossings Upgrade railroad crossing signal	1 Numbers	312750	390938	HSIP (Section 148)		0	0	State Highway Agency		
Z-5400JE	Railroad grade crossings Surface treatment	1 Numbers	10890	13613	HSIP (Section 148)		0	0	State Highway Agency		

SS-PE	Non-infrastructure Transportation safety planning	100 Numbers	1078950	1198833	HSIP (Section 148)		0	0	State Highway Agency		
W-5207C	Roadway Rumble strips - edge or shoulder	6 Miles	1767	1963	HSIP (Section 148)		0	0	State Highway Agency		
W-5207D	Intersection geometry Intersection geometry - other	1 Numbers	517500	575000	HSIP (Section 148)		0	0	State Highway Agency		
I-5210D	Roadway Pavement surface - miscellaneous	7 Miles	400000	444444	HSIP (Section 148)		0	0	State Highway Agency		
W-5143	Alignment Horizontal curve realignment	1 Miles	22500	25000	HSIP (Section 148)		0	0	State Highway Agency		
W-5202M	Roadway delineation Longitudinal pavement markings - remarking	40 Miles	1015023	1127803	HSIP (Section 148)		0	0	State Highway Agency		
W-5203O	Intersection geometry Auxiliary lanes - add right-turn lane (free-flow)	1 Numbers	12600	14000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203P	Shoulder treatments Widen shoulder - paved or other	4 Miles	112500	125000	HSIP (Section 148)		0	0	State Highway Agency		

W-5203Q	Access management Median crossover - directional crossover	2 Numbers	198000	220000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203R	Shoulder treatments Widen shoulder - paved or other	5 Miles	126000	140000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203S	Shoulder treatments Widen shoulder - paved or other	4 Miles	108000	120000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203T	Access management Median crossover - directional crossover	2 Numbers	130500	145000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203U	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	110250	122500	HSIP (Section 148)		0	0	State Highway Agency		
W-5203V	Roadway delineation Longitudinal pavement markings - remarking	101 Miles	810000	900000	HSIP (Section 148)		0	0	State Highway Agency		
W-5203W	Access management Change in access - close or restrict existing access	2 Numbers	65250	72500	HSIP (Section 148)		0	0	State Highway Agency		
W-5203X	Access management Change in access - close or restrict existing access	2 Numbers	117000	130000	HSIP (Section 148)		0	0	State Highway Agency		

W-5204G	Roadway Pavement surface - miscellaneous	4 Miles	126000	140000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205F	Intersection geometry Intersection geometry - other	1 Numbers	131400	146000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205I	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	27000	30000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205S	Shoulder treatments Widen shoulder - paved or other	4 Miles	58500	65000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205T	Intersection traffic control Intersection traffic control - other	1 Numbers	31500	35000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205U	Roadway Roadway widening - curve	1 Miles	27000	30000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205W	Roadside Removal of roadside objects (trees, poles, etc.)	1 Numbers	4500	5000	HSIP (Section 148)		0	0	State Highway Agency		
W-5205X	Roadway Pavement surface - high friction surface	1 Miles	9000	10000	HSIP (Section 148)		0	0	State Highway Agency		

W-5206AD	Roadway Superelevation / cross slope	1 Numbers	31500	35000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AE	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Numbers	45000	50000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AF	Intersection geometry Auxiliary lanes - add auxiliary through lane	1 Numbers	40500	45000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AG	Pedestrians and bicyclists Pedestrian bridge	1 Numbers	90000	100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AI	Roadway delineation Longitudinal pavement markings - remarking	100 Numbers	585000	650000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AJ	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	45000	50000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206AK	Roadway Rumble strips - edge or shoulder	3 Miles	135000	150000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206K	Shoulder treatments Widen shoulder - paved or other	1 Numbers	733500	815000	HSIP (Section 148)		0	0	State Highway Agency		

W-5206M	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	360000	400000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206Q	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Miles	40500	45000	HSIP (Section 148)		0	0	State Highway Agency		
W-5206W	Pedestrians and bicyclists Pedestrian signal - install new at intersection	1 Numbers	77400	86000	HSIP (Section 148)		0	0	State Highway Agency		
W-5207E	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	261000	290000	HSIP (Section 148)		0	0	State Highway Agency		
W-5208K	Roadside Barrier - cable	4 Miles	9000	10000	HSIP (Section 148)		0	0	State Highway Agency		
W-5208L	Roadside Barrier- metal	2 Miles	9000	10000	HSIP (Section 148)		0	0	State Highway Agency		
W-5209G	Roadway Pavement surface - high friction surface	2 Miles	643500	715000	HSIP (Section 148)		0	0	State Highway Agency		
W-5210G	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	76500	85000	HSIP (Section 148)		0	0	State Highway Agency		

W-5210I	Intersection geometry Auxiliary lanes - modify auxiliary through lane	1 Numbers	22500	25000	HSIP (Section 148)		0	0	State Highway Agency		
W-5210J	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Miles	9000	10000	HSIP (Section 148)		0	0	State Highway Agency		
W-5212G	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	306000	340000	HSIP (Section 148)		0	0	State Highway Agency		
W-5212M	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	22500	25000	HSIP (Section 148)		0	0	State Highway Agency		
W-5213C	Roadside Barrier- metal	7 Miles	1107000	1230000	HSIP (Section 148)		0	0	State Highway Agency		
W-5213F	Roadway Pavement surface - high friction surface	2 Miles	445500	495000	HSIP (Section 148)		0	0	State Highway Agency		
W-5214L	Shoulder treatments Pave existing shoulders	3 Miles	45000	50000	HSIP (Section 148)		0	0	State Highway Agency		
W-5214M	Access management Raised island - install new	1 Numbers	13500	15000	HSIP (Section 148)		0	0	State Highway Agency		

W-5214N	Roadside Barrier- metal	3 Miles	4500	5000	HSIP (Section 148)		0	0	State Highway Agency		
W-5214O	Roadway Roadway widening - travel lanes	1 Miles	67500	75000	HSIP (Section 148)		0	0	State Highway Agency		
W-5214P	Roadside Barrier- metal	6 Miles	4500	5000	HSIP (Section 148)		0	0	State Highway Agency		
W-5214Q	Roadside Barrier- metal	1 Miles	9000	10000	HSIP (Section 148)		0	0	State Highway Agency		
W-5315	Roadside Barrier- metal	5 Miles	4978955	5532172	HSIP (Section 148)		0	0	State Highway Agency		
W-5507	Shoulder treatments Widen shoulder - paved or other	1 Numbers	990000	1100000	HSIP (Section 148)		0	0	State Highway Agency		
W-5513	Intersection traffic control Modify control - two-way stop to roundabout	4 Numbers	180000	200000	HSIP (Section 148)		0	0	State Highway Agency		
W-5514	Access management Raised island - install new	1 Numbers	270000	300000	HSIP (Section 148)		0	0	State Highway Agency		

W-5515	Shoulder treatments Widen shoulder - paved or other	5 Miles	36000	40000	HSIP (Section 148)		0	0	State Highway Agency		
W-5517	Non-infrastructure Transportation safety planning	1000 Numbers	890633	989592	HSIP (Section 148)		0	0	State Highway Agency		
W-5518	Interchange design Convert at-grade intersection to interchange	1 Miles	270000	300000	HSIP (Section 148)		0	0	State Highway Agency		
W-5519	Access management Change in access - close or restrict existing access	7 Miles	360000	400000	HSIP (Section 148)		0	0	State Highway Agency		
W-5520	Access management Change in access - close or restrict existing access	2 Miles	526500	585000	HSIP (Section 148)		0	0	State Highway Agency		
W-5600	Interchange design Convert at-grade intersection to interchange	3 Numbers	459000	510000	HSIP (Section 148)		0	0	State Highway Agency		
SS-PE	Non-infrastructure Transportation safety planning	100 Numbers	166458	184953	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-	Non-infrastructure	1000	468000	5200000	Penalty		0	0	State		

4447	Transportation safety planning	Numbers	0		Transfer – Section 164				Highway Agency		
W-5011	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	90000	100000	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5203N	Intersection geometry Auxiliary lanes - modify left-turn lane offset	1 Numbers	36000	40000	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5206AH	Access management Raised island - install new	1 Numbers	144000	160000	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5208H	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1 Miles	561600	624000	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-	Roadside Barrier- metal	1 Miles	22500	25000	Penalty Transfer		0	0	State Highway		

5212K					– Section 164				Agency		
W-5300	Intersection traffic control Modify traffic signal timing - general retiming	546 Numbers	1800000	2000000	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5317	Roadside Barrier - cable	18 Miles	823093	914548	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5321	Roadside Barrier - concrete	5 Miles	1985737	2206374	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5508	Non-infrastructure Data/traffic records	19572 Miles	450000	500000	Penalty Transfer – Section 164		0	0	State Highway Agency		
W-5516	Alignment Horizontal and vertical alignment	3 Miles	450000	500000	Penalty Transfer –		0	0	State Highway		

					Section 164				Agency		
W-5517	Non-infrastructure Transportation safety planning	1000 Numbers	9100371	10111523	Penalty Transfer – Section 164		0	0	State Highway Agency		

Progress in Achieving Safety Performance Targets

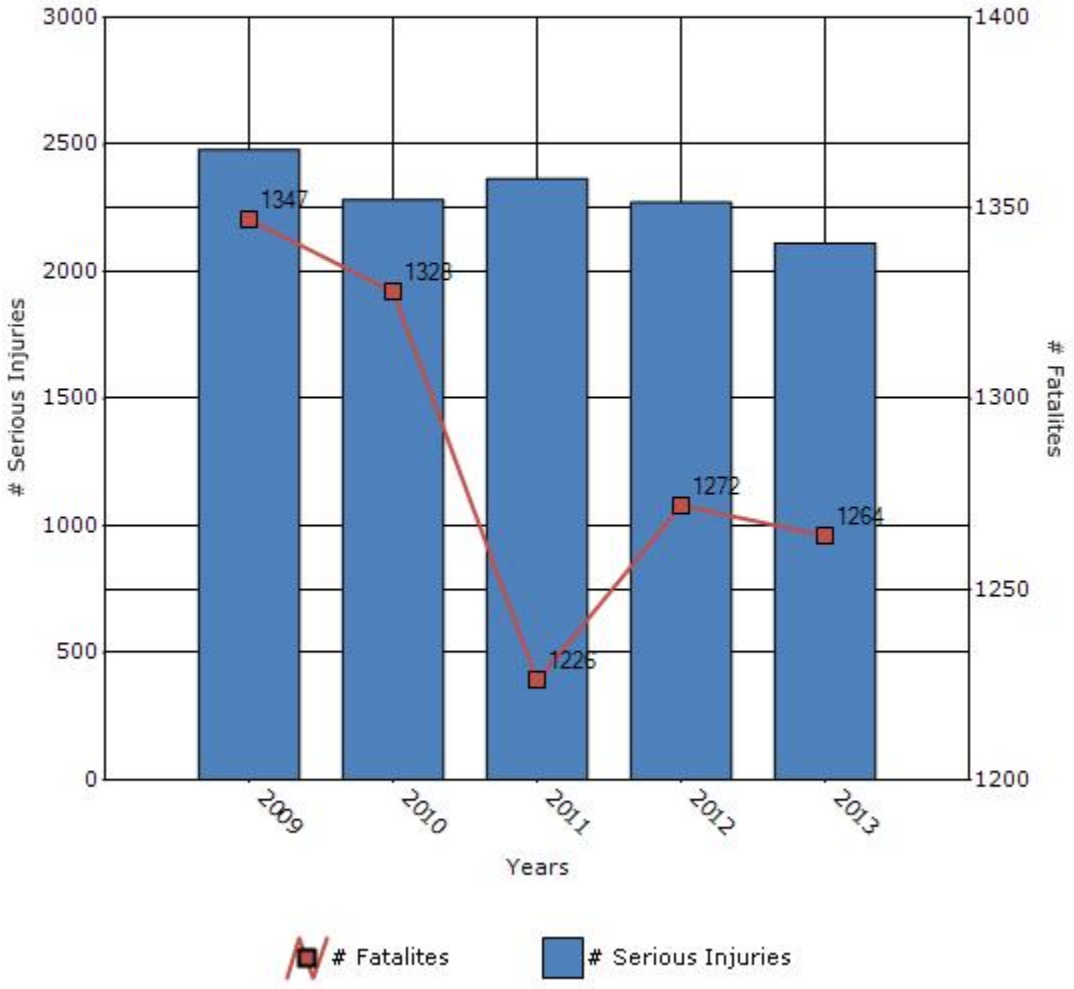
Overview of General Safety Trends

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

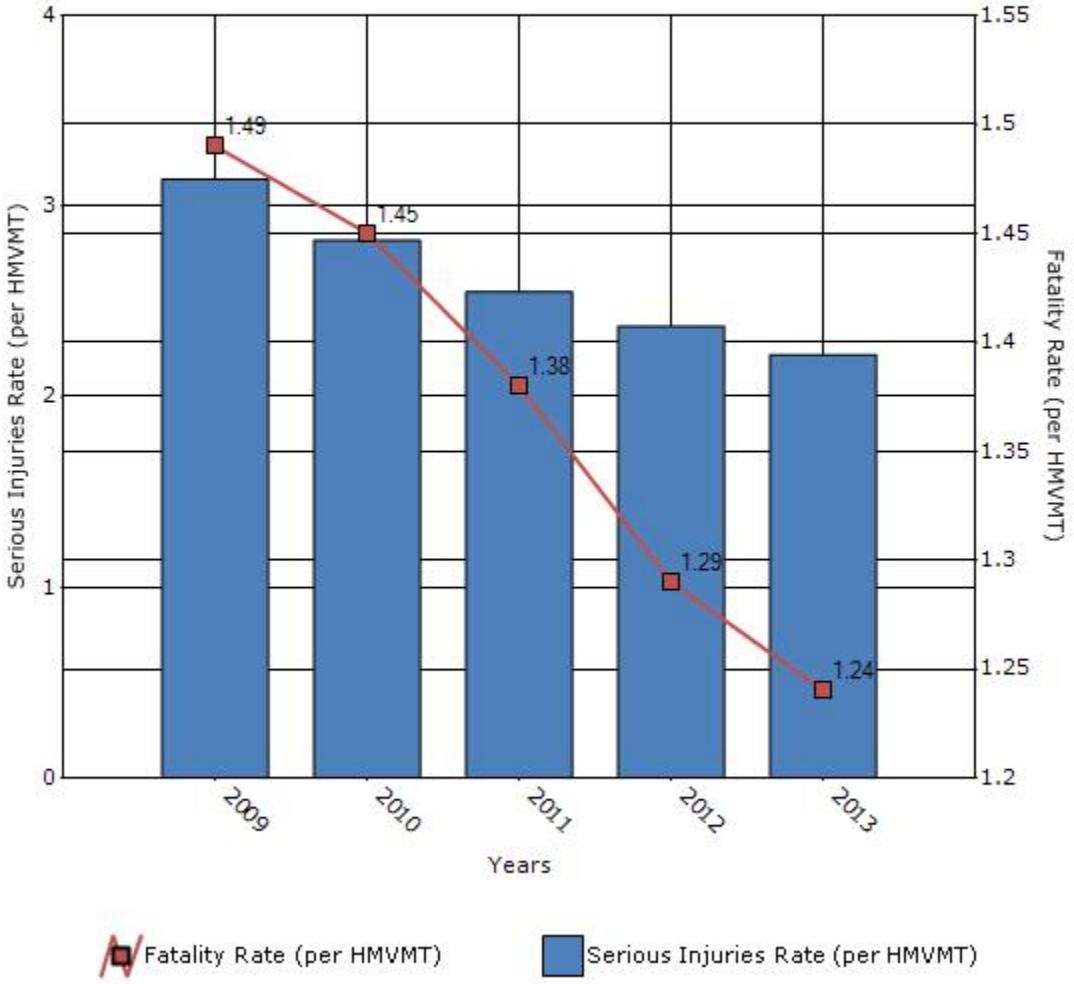
Performance Measures*	2009	2010	2011	2012	2013
Number of fatalities	1347	1328	1226	1272	1264
Number of serious injuries	2480	2283	2366	2272	2112
Fatality rate (per HMVMT)	1.49	1.45	1.38	1.29	1.24
Serious injury rate (per HMVMT)	3.14	2.82	2.55	2.37	2.22

*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



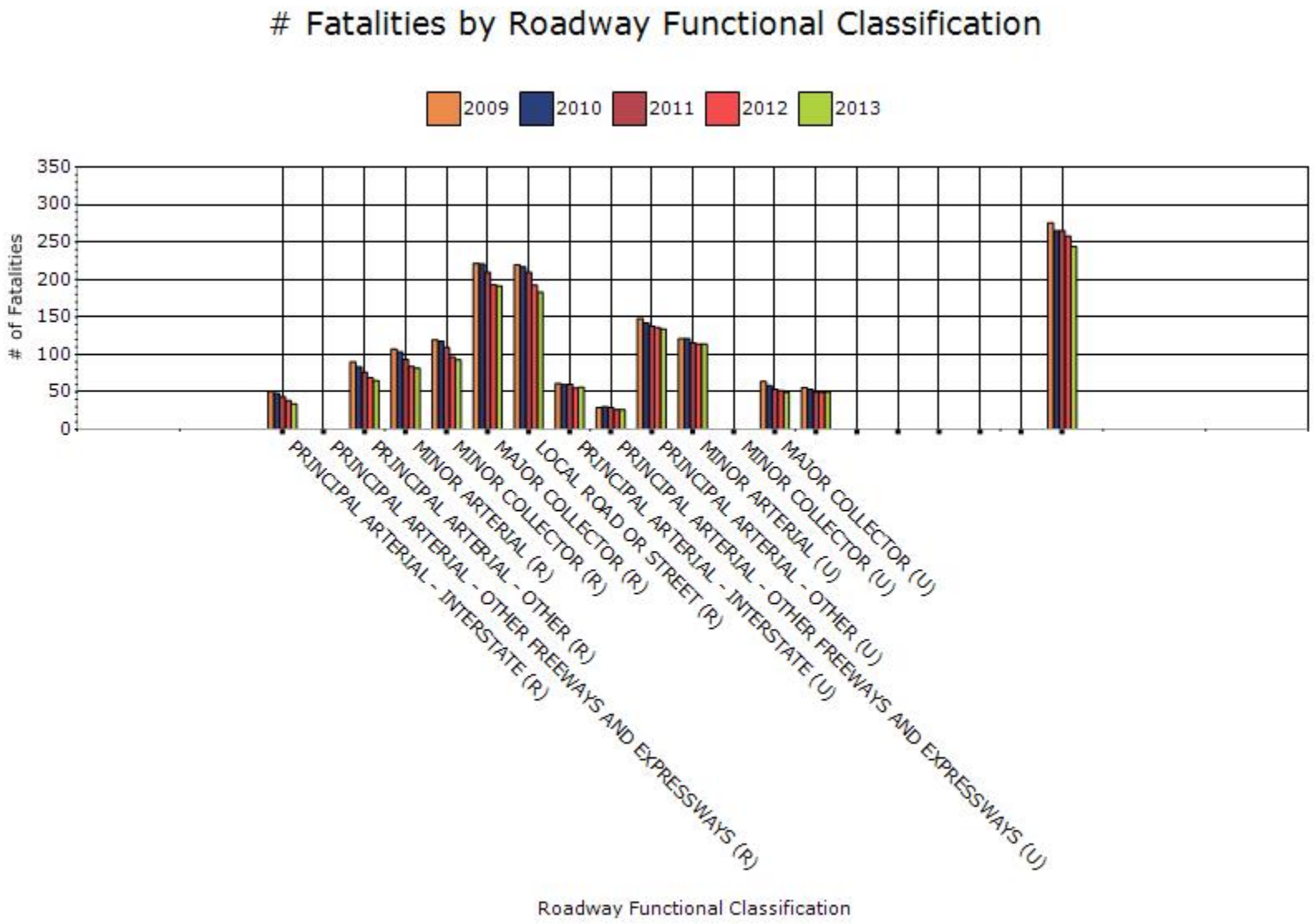
To the maximum extent possible, present performance measure* data by functional classification and ownership.

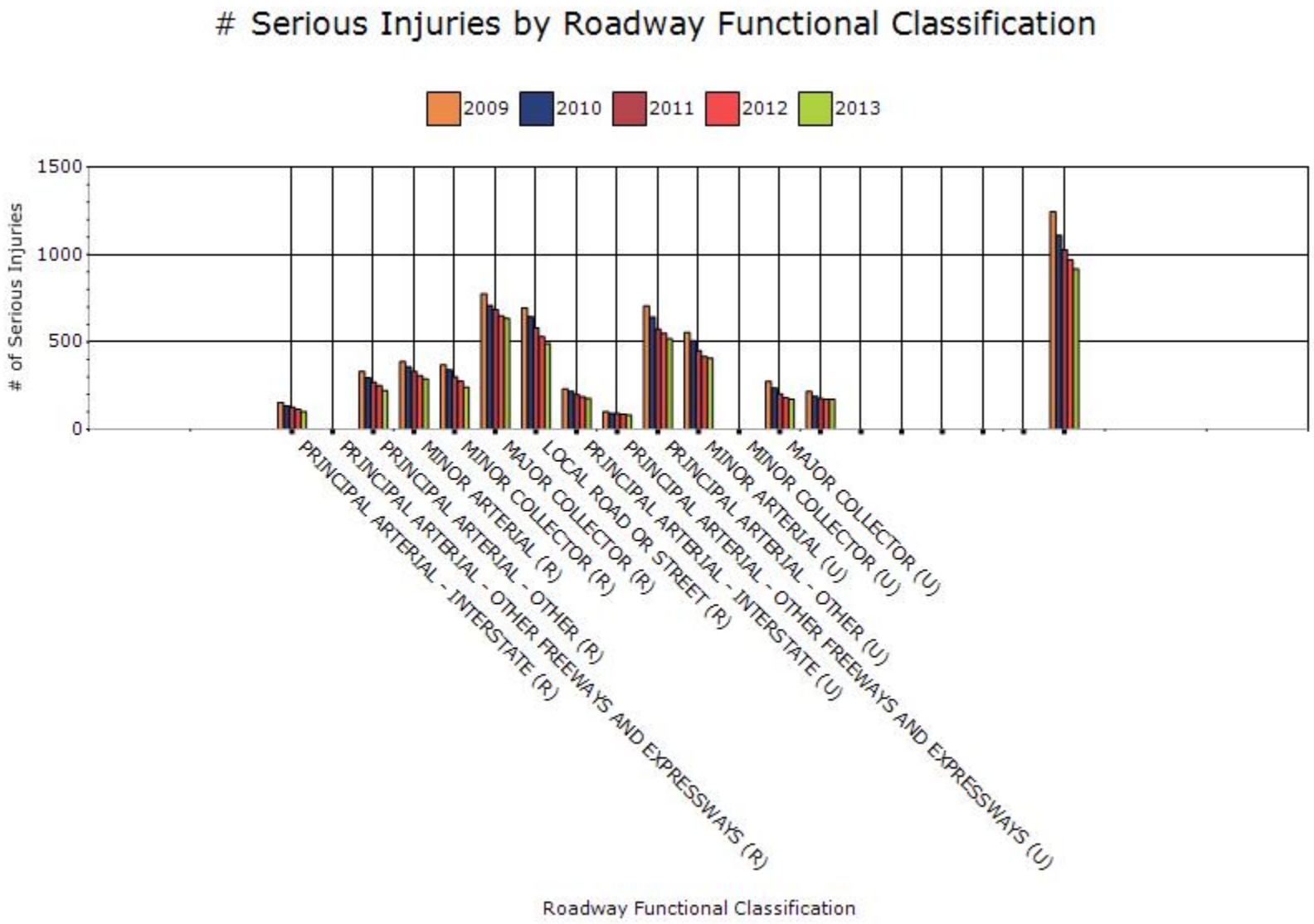
Year - 2013

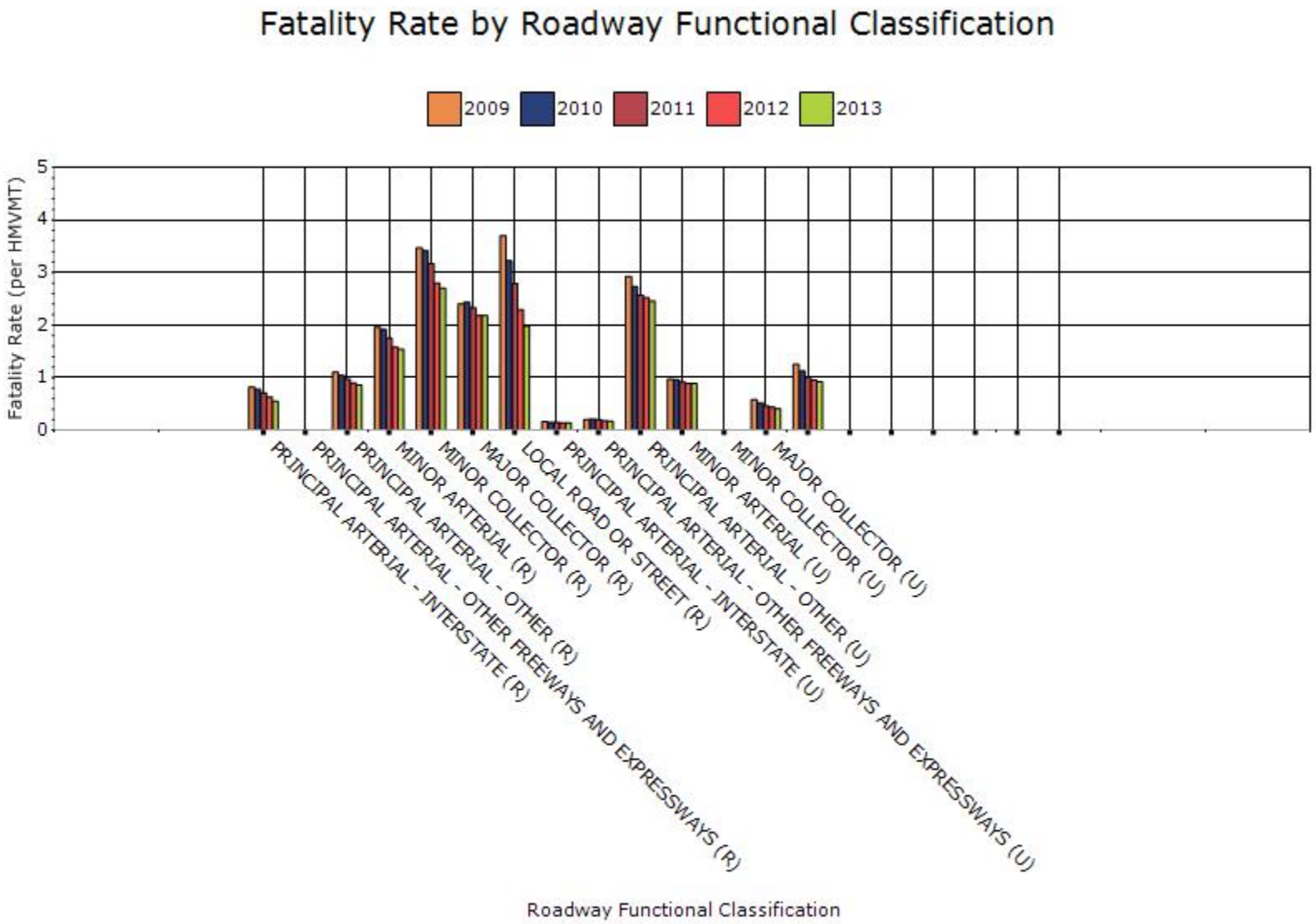
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	33.8	101.8	0.55	1.65
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0.4	0	0.72
RURAL PRINCIPAL ARTERIAL - OTHER	65.2	222	0.86	2.93
RURAL MINOR ARTERIAL	81.6	288.2	1.54	5.46
RURAL MINOR COLLECTOR	92.8	241	2.7	7.02
RURAL MAJOR COLLECTOR	191.2	634	2.18	7.23
RURAL LOCAL ROAD OR STREET	183	491	1.98	5.31
URBAN PRINCIPAL	56.2	177.8	0.14	0.44

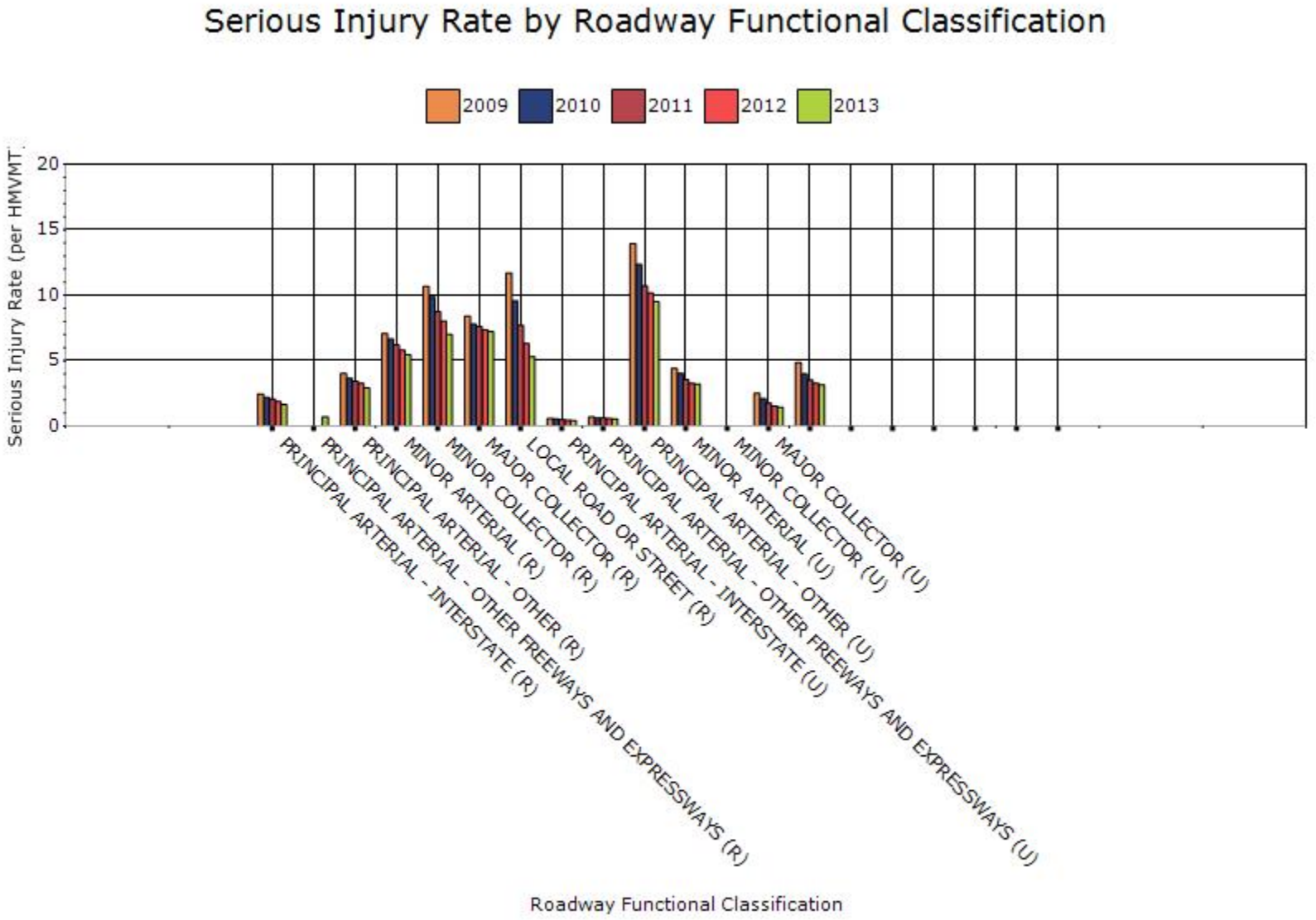
ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	26.2	81.6	0.17	0.54
URBAN PRINCIPAL ARTERIAL - OTHER	133.8	517.8	2.46	9.51
URBAN MINOR ARTERIAL	113.6	408.2	0.89	3.21
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	49.4	173.2	0.41	1.44
URBAN LOCAL ROAD OR STREET	50	172	0.92	3.15
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

UNKNOWN	244	917	0	0


Fatalities by Roadway Functional Classification
2009
2010
2011
2012
2013
# of Fatalities
350
300
250
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

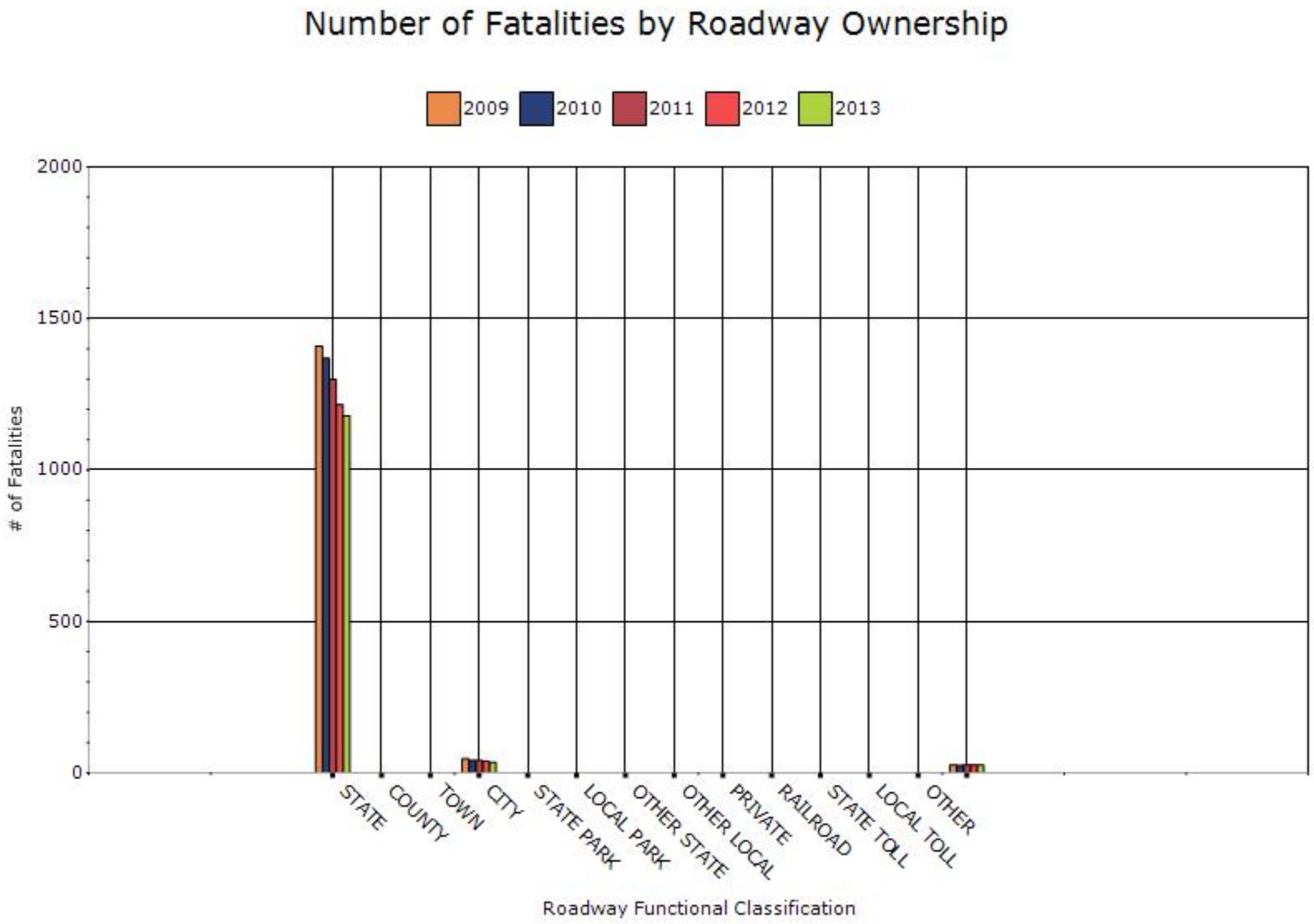

Serious Injuries by Roadway Functional Classification
2009
2010
2011
2012
2013
1500
1000
500
0
# of Serious Injuries
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL 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

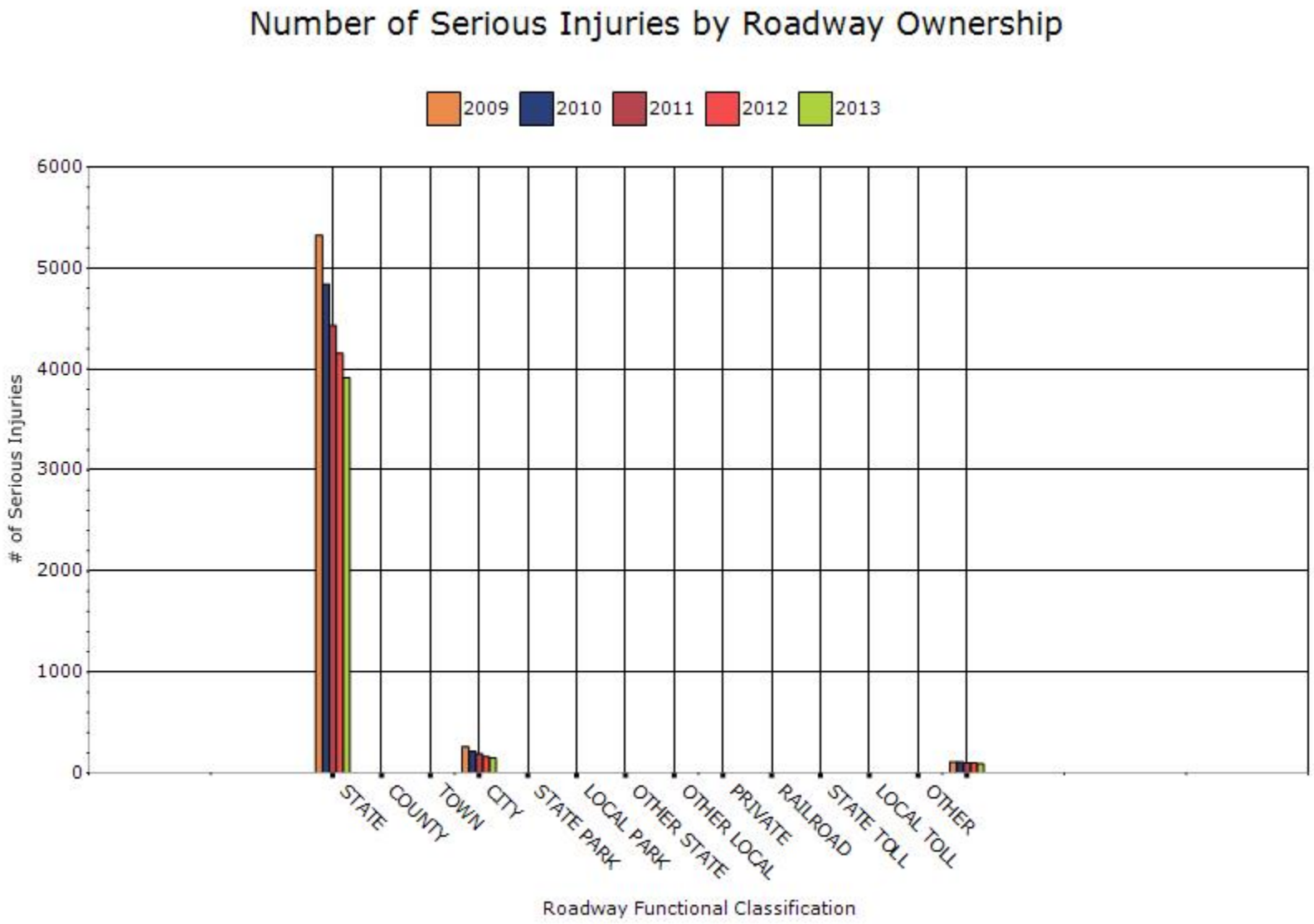

Fatality Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
0
1
2
3
4
5
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL 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

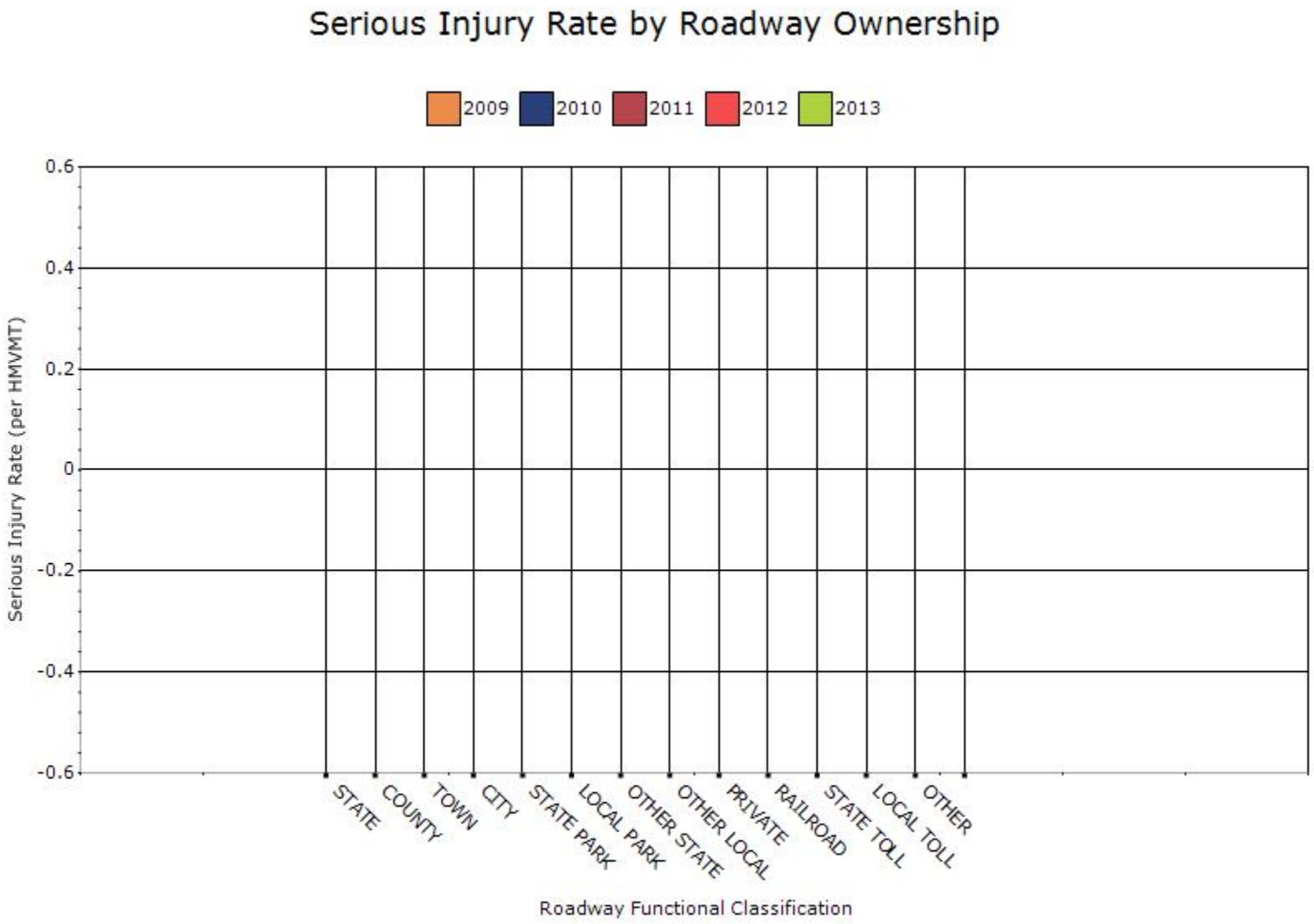
Year - 2013

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	1178.8	3913.2	0	0
COUNTY HIGHWAY AGENCY	0	0	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	0	0	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	34.8	148.4	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
UNKNOWN	26.2	90.8	0	0


Number of Fatalities by Roadway Ownership
2009
2010
2011
2012
2013
2000
1500
1000
500
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
6000
5000
4000
3000
2000
1000
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
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
2009
2010
2011
2012
2013
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.

The N.C. Department of Transportation is committed to measuring and improving performance. The department's Organizational Performance Dashboard, which is featured on NCDOT's web page, serves as an indicator of how well we are meeting our mission and goals. One major NCDOT goal is **"Making our transportation network safer".** This is defined as the total number of statewide fatalities on NC roads per 100 million vehicle miles traveled for the calendar year to date. The fatality rate gauge shown on our Performance Dashboard is accompanied by a trend chart of the total number of fatalities, crashes and injuries by year. The Performance Dashboard can be found at https://apps.dot.state.nc.us/dot/dashboard/

Many staff members within NCDOT have a work performance metric for highway safety included in their year-end appraisal.

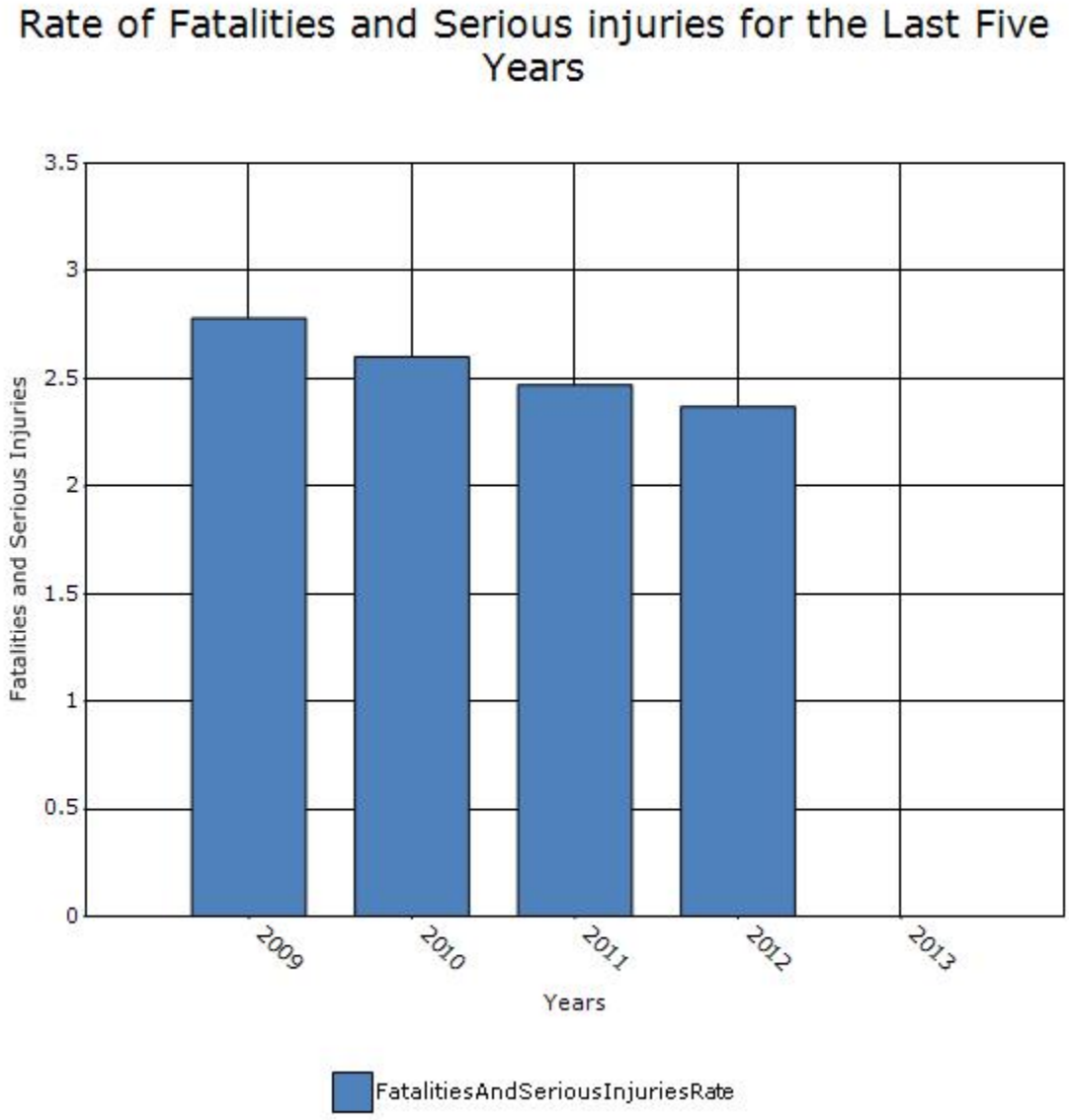
Application of Special Rules

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)	1.43	1.39	1.29	1.22	0
Serious injury rate (per capita)	1.35	1.21	1.18	1.15	0
Fatality and serious injury rate (per capita)	2.78	2.6	2.47	2.37	0

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

For each year: Fatal rate = (Number of fatalities for drivers and pedestrians over the age of 65) / (Population Figure shown in "Section 142: Older Drivers and Pedestrians Special Rule Interim Guidance") The numbers are presented as the 5-year rolling average.



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: Other-Other-Decline in the fatal rates

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-Other: Many NCDOT staff members have a performance metric for highway safety listed in their year-end appraisal

☒ Other: Other-More systemic programs are being incorporated in the HSIP.

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

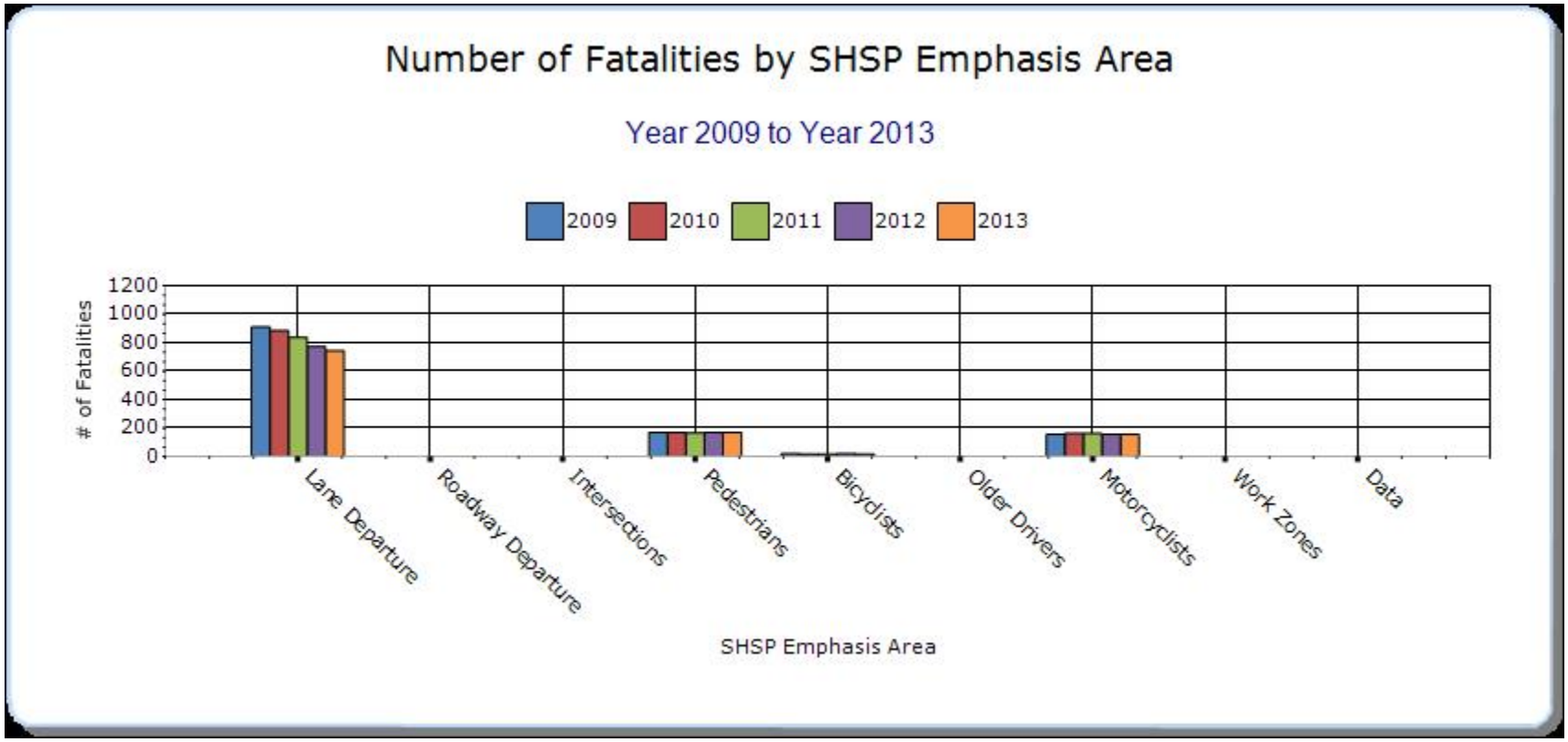
The use of safety edge is being accepted by highway operations staff as not simply a safety enhancement but also a maintenance enhancement. Safety edge will be required on all contract resurfacing that is let by the Central and Division offices. NCDOT has initiated a project to study the impacts of wide edge markings on two-lane rural roads. 60% of all highway fatalities in North Carolina are a result of roadway departure crashes. The Traffic Safety Systems Section is working with all 14 highway divisions to systemically treat hundreds of identified curve locations with enhanced warning signs.

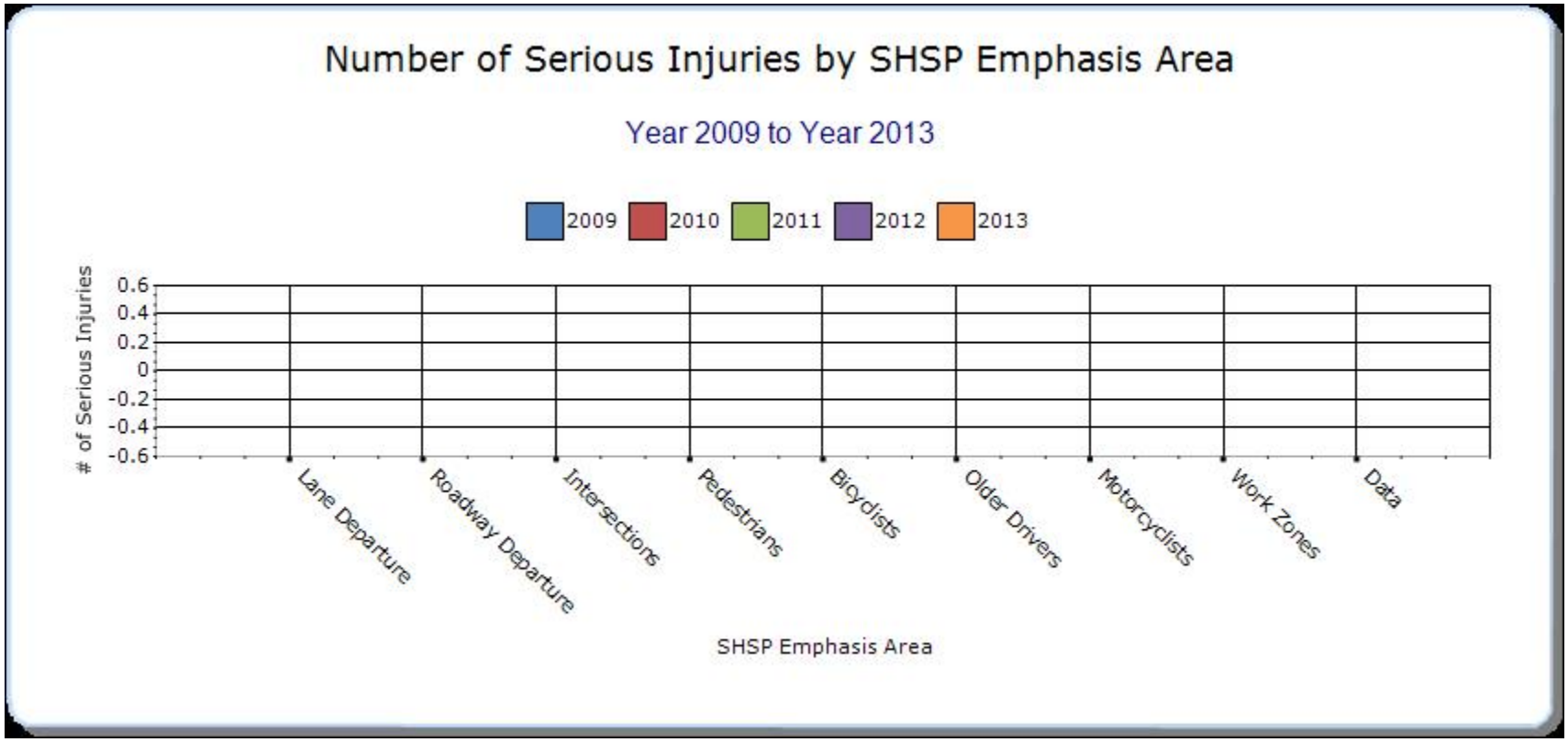
SHSP Emphasis Areas

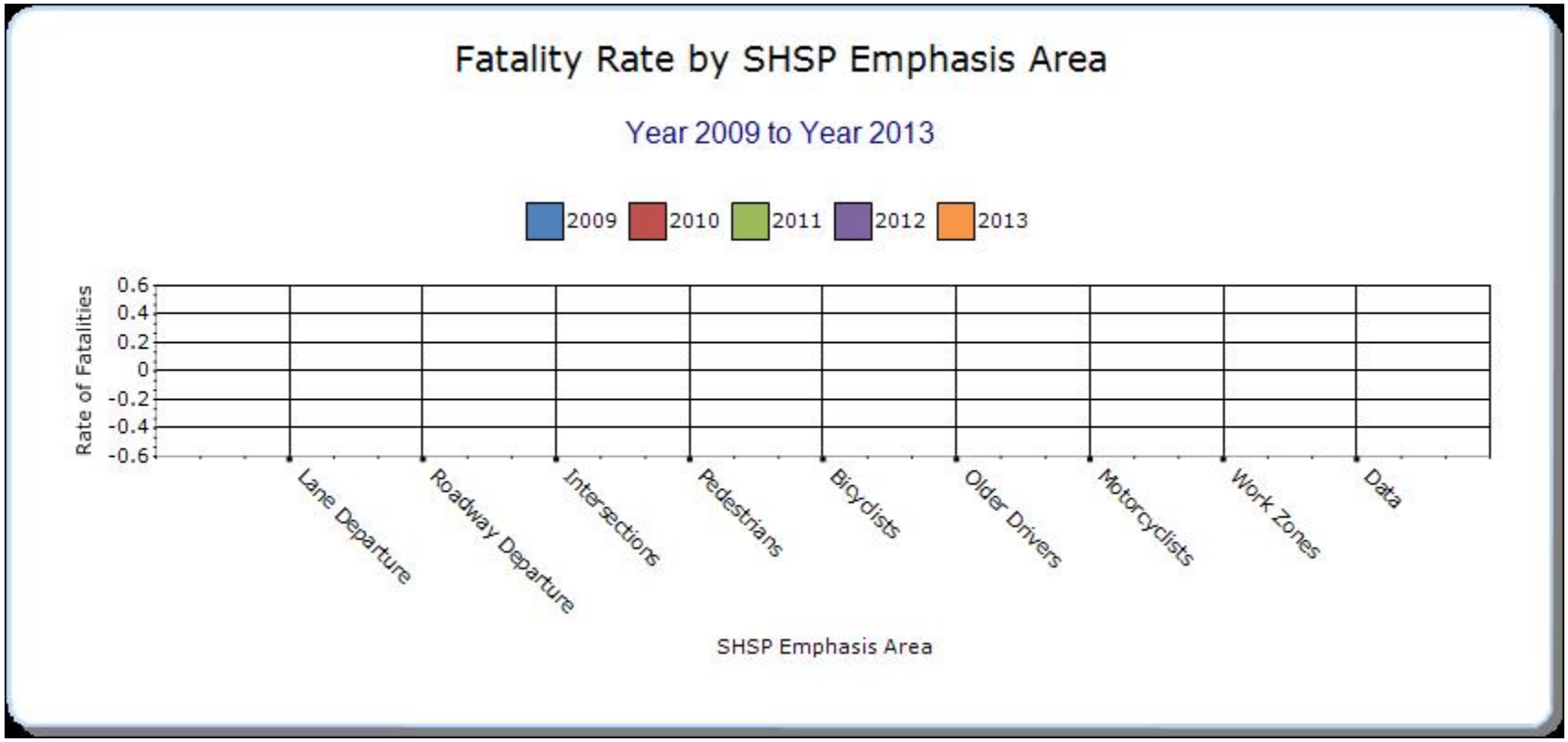
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

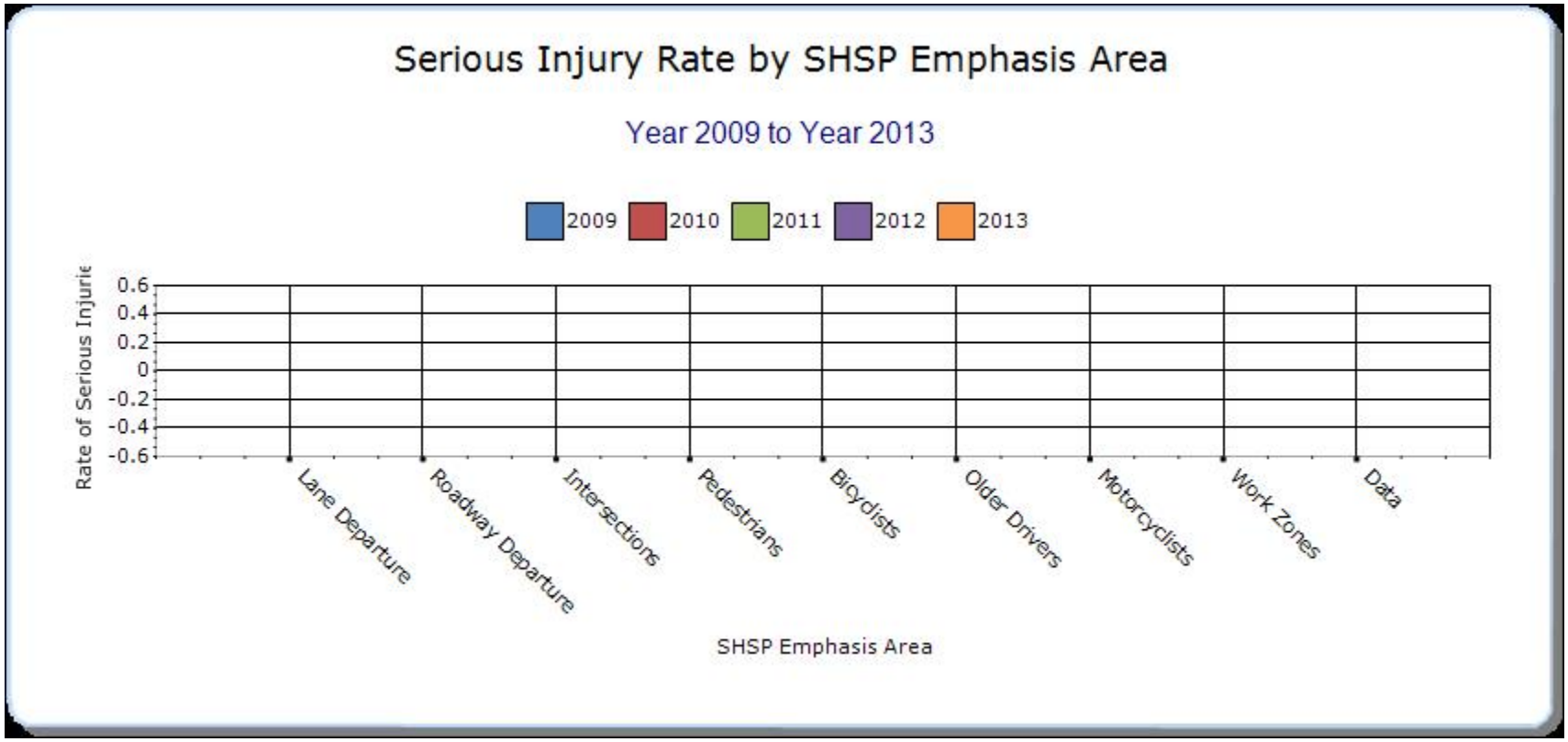
Year - 2013

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	Run-off-road	744.2	0	0	0	55420.6	0.58	0
Pedestrians	Vehicle/pedestrian	168.4	0	0	0	1965.4	0.13	0
Bicyclists	Vehicle/bicycle	19.2	0	0	0	664.4	0.02	0
Motorcyclists	Motorcycle Involved	155.4	0	0	0	3896.8	0.12	0
Curb agressive driving	Speed-related	428	0	0	0	73414	0.33	0
Reducing impaired driving	Alcohol Involved	402.8	0	0	0	10951	0.32	0
Increasing seat belt use	Unbelted Occupants	397.4	0	0	0	0	0.31	0
Making truck travel safer	Truck-related	77	0	0	0	6141.8	0.06	0


Number of Fatalities by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
1200
1000
800
600
400
200
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
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
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
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

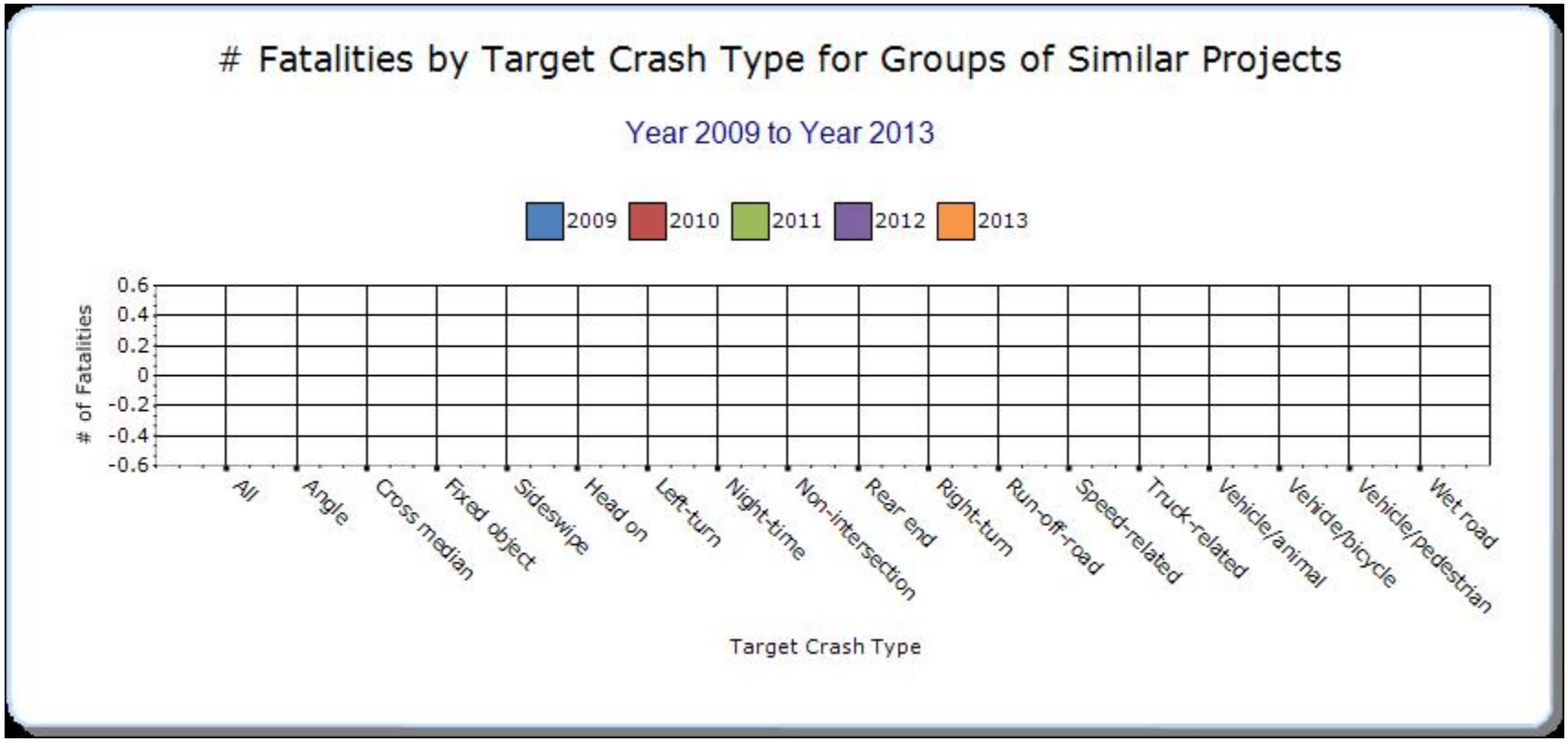

Serious Injury Rate by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

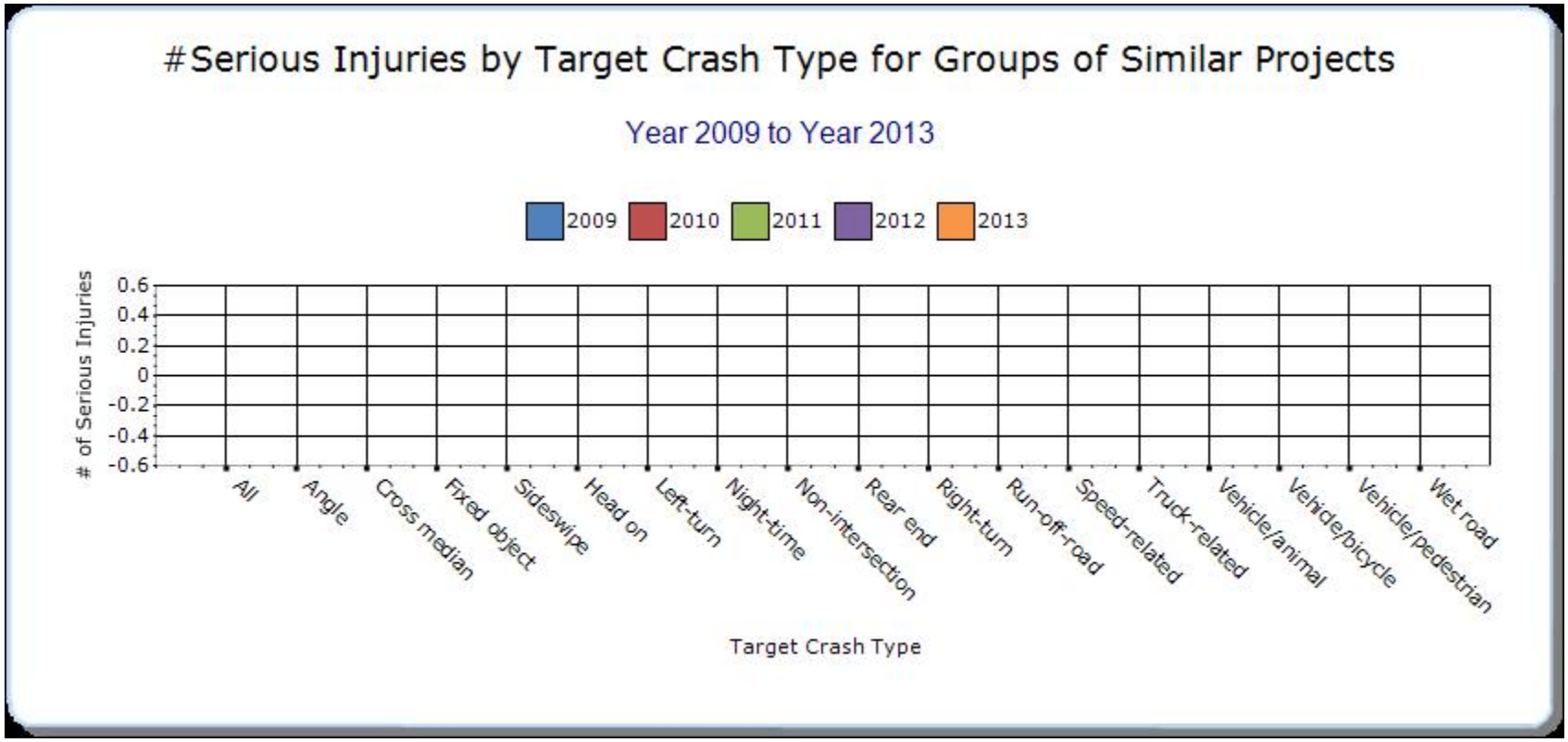
Groups of similar project types

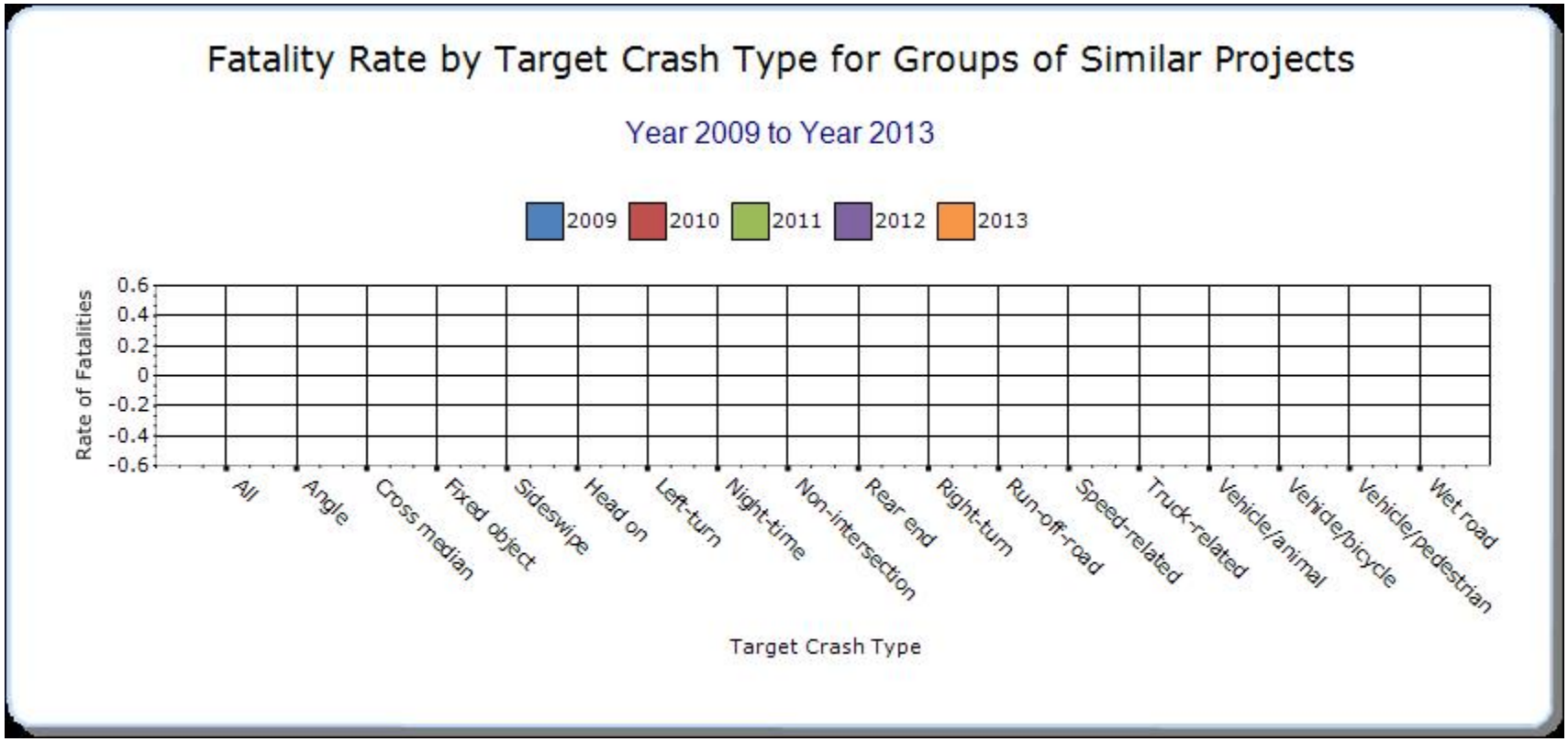
Present the overall effectiveness of groups of similar types of projects.

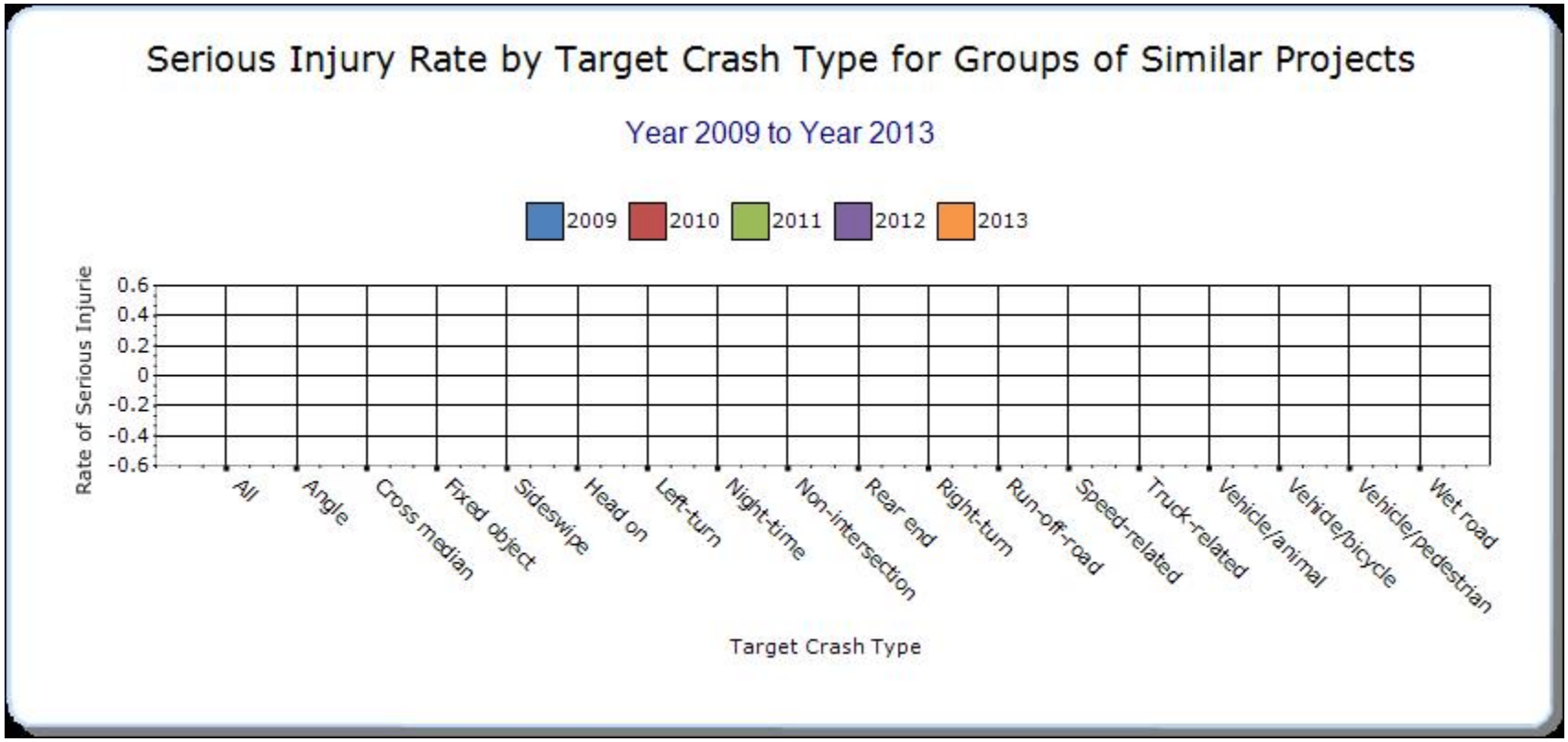
Year - 2013

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


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# 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
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
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
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
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



Project evaluations for safety projects can be found at the link below.

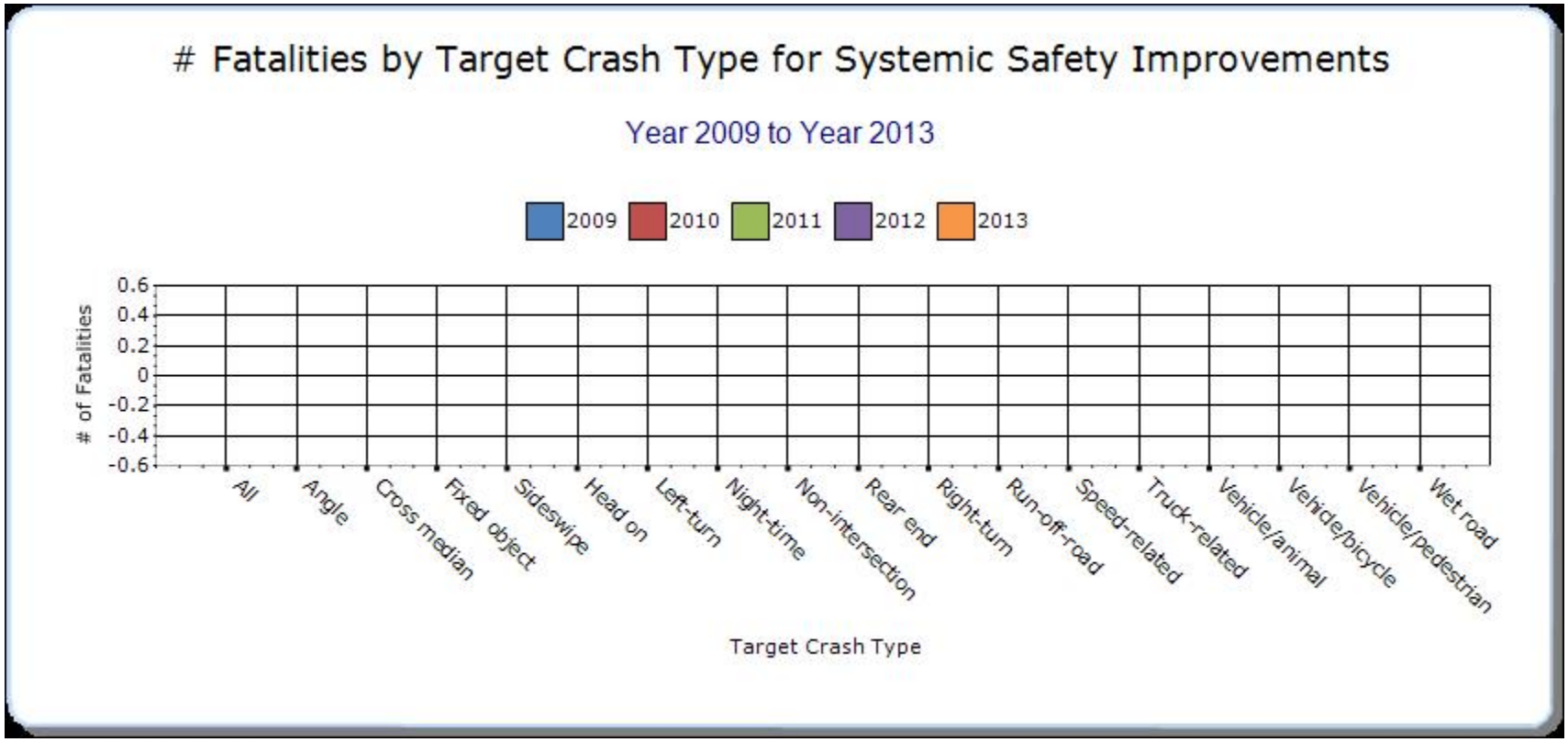
https://connect.ncdot.gov/resources/safety/Pages/Safety-Evaluation.aspx

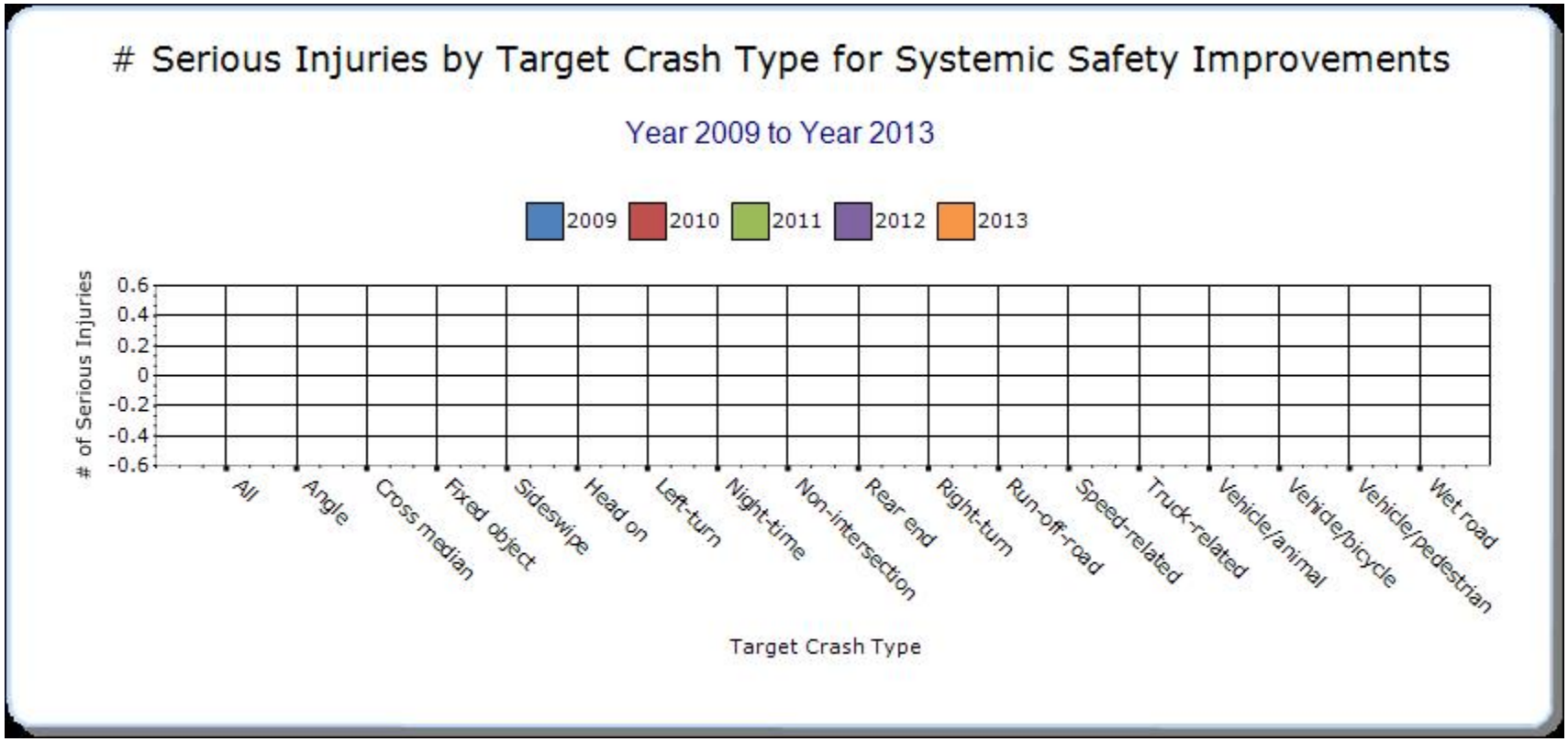
Systemic Treatments

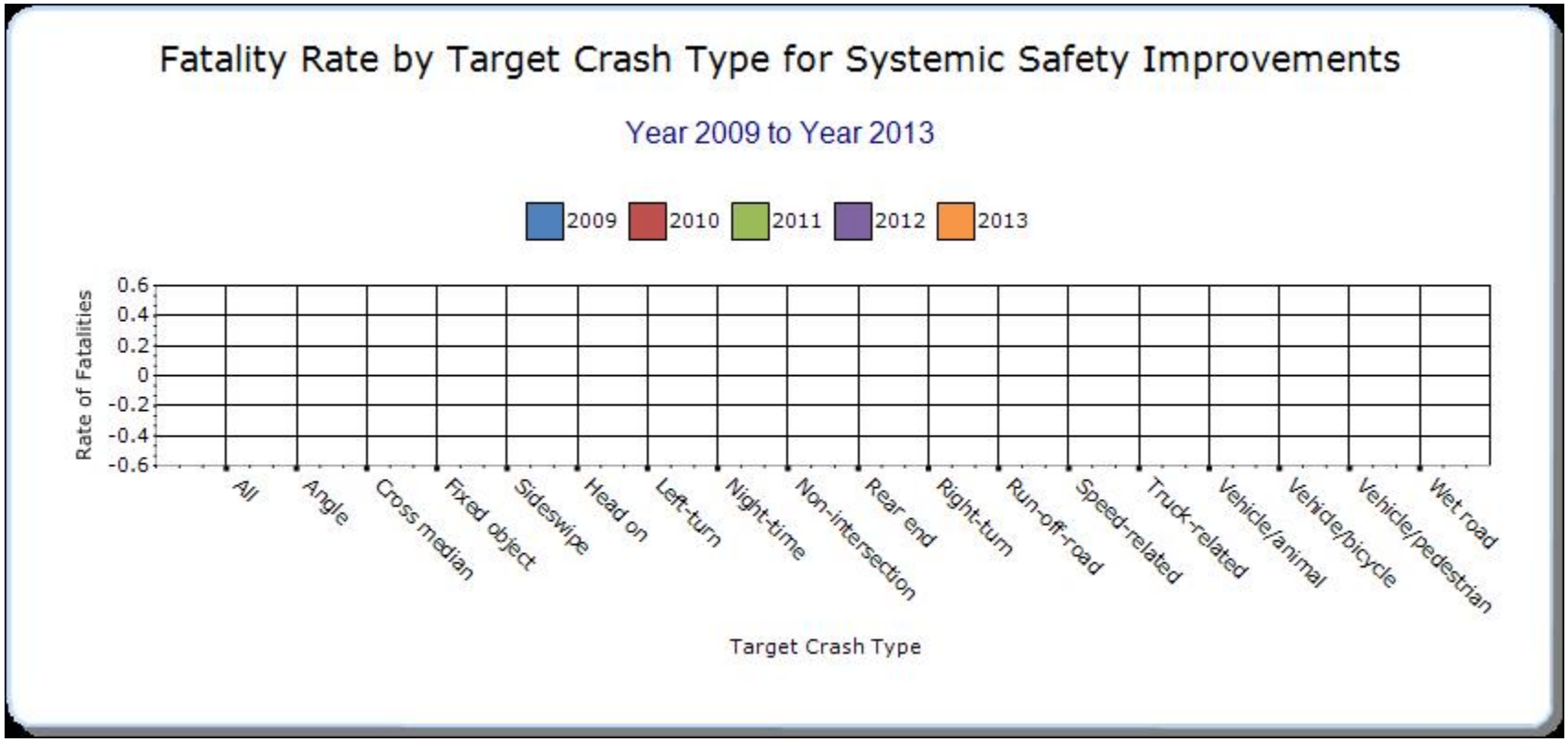
Present the overall effectiveness of systemic treatments.

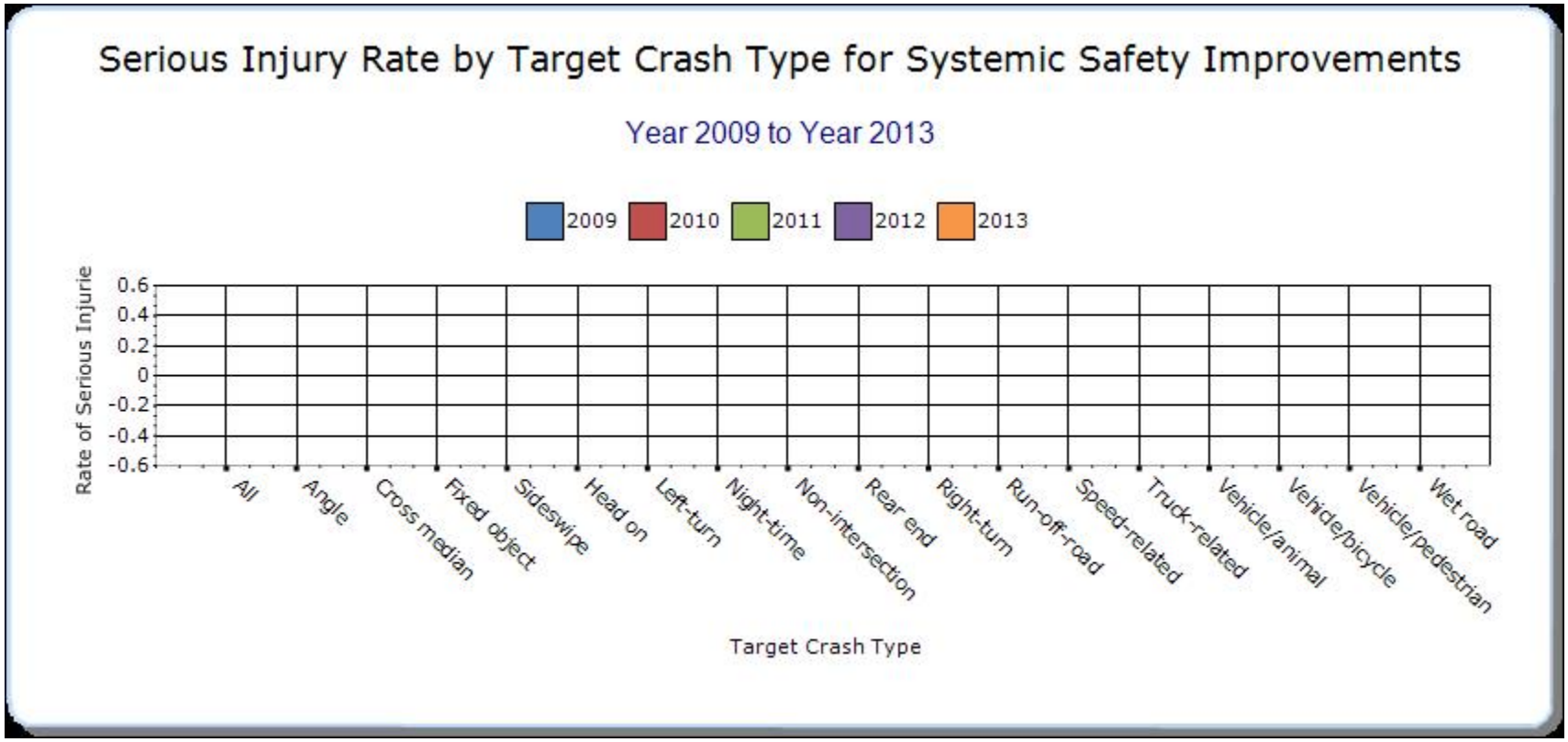
Year - 2013

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
See information below		0	0	0	0	0	0	0


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# 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
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
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
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
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
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



Currently, no evaluations for systemic treatments are available. Theses types of treatements will be studied at a later date.

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

The North Carolina Highway Safety Improvement Program (HSIP) is an organized and systematic safety process developed to identify, analyze, investigate and improve potentially hazardous locations with concentrations and patterns of correctable crashes. The program is able to determine locations that exceed minimum warranting criteria that are based on multiple factors that, in most cases, include severity, frequency, and crash type. The program is presently structured into six distinct phases:

I. Development of warranting criteria
II. Identification of of potentially hazardous locations meeting minimum warrant criteria
III. Detailed crash analysis of program locations
IV. Engineering field investigation of program locations and evaluation of potential recommendations (where appropriate)
V. Project development
VI. Implement countermeasures
VII. Evaluation of countermeasures implemented with HSIP funds

The warrants developed by the Traffic Safety Systems Section (TSSS) have consistently shown the ability to identify intersections, sections, and bicycle/pedestrian intersections with severe injuries and chronic crash patterns. The Regional Traffic Engineers utilize thorough investigations, traffic operations and safety expertise and proven tools such as signal warrant studies, sight distance measurements, Crash Reduction Factors and Benefit to Cost analysis to ensure that effective projects are developed. Projects are selected through a competitive Benefit to Cost based program. Evaluations completed by the Traffic Safety Systems Section have shown that the average project yields a 14 to one return.

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)
See Information below.														

In an attempt to assess the safety of our roads, the Safety Evaluation Group of the Traffic Safety Systems Management Section has evaluated hundreds of projects. The methodologies used in NCDOT's evaluations offer various philosophies and ideas, in an effort to provide objective countermeasure crash reduction results. This information is gathered so the benefit or lack of benefit for this type of project can be recognized and utilized for future projects. As the Safety Evaluation Group completes additional reviews for various types of countermeasures, we will be able to provide objective and definite information regarding actual crash reduction factors.

Completed project evaluations can be found at the link below:

https://connect.ncdot.gov/resources/safety/Pages/Safety-Evaluation.aspx

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.