Highway Safety Improvement Program

Data Driven Decisions

Kentucky
Highway Safety Improvement Program
2014 Annual Report

Prepared by: KY

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

Kentucky's HSIP funds are administered from the Division of Traffic Operations in KYTC's Central Office. Each Highway District has an HSIP Coordinator that works closely with Central Office and District Personnel to conduct a Road Safety Audit (RSA) on potential improvement locations. The RSA teams are multi-disciplinary and represent the following highway functions; planning, highway design, traffic operations, maintenance, and construction. The Cabinet also requests that members from local Area Development Districts (ADDs) participate in the process. Highway Districts are encouraged to submit candidate projects after completing all established guidelines for funding consideration. Funding levels to date have been sufficient to implement projects submitted that meet the eligibility guidelines for the program**.**

The program methodology used by the Transportation Cabinet during the time period of this report was generally the same as in the previous years. With completion of the document titled "Kentucky Roadway Departure Safety Implementation Plan" in July 2010, there has been significant reliance on the recommended approach to supplement the traditional process directed to high-crash locations with systematic application of low-cost, cost-effective countermeasures. More specifically, the systematic approach could be characterized as the reverse of the traditional approach in that low-cost, effective countermeasures are first identified and then the crash database is queried to identify highway sections that have targeted crashes at or above a crash threshold that would insure cost-effective deployment of these countermeasures.

The HSIP supports Kentucky's Strategic Highway Safety Plan (SHSP). The mission of the SHSP is "to reduce Kentucky's highway fatalities and injuries." In conformance with program guidelines, the HSIP seeks to adhere to the SHSP through a data-driven approach for funding safety improvements.

Implementation of HSIP projects have been evaluated and results have been documented in the form of benefits and costs. Included were projects involving the following countermeasures, with their respective B/C ratios:
Rumble Stripes: 11:1
Cable Median Barrier: 7:1
High-Friction Surfaces: 44:1

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.

A Safety Circuit Rider program continues to function as the primary means of identifying and implementing projects on local roads through the HSIP. The focus of this program is to provide technical assistance to improve safety on local roads and streets.

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.

Kentucky's HSIP funds are administered from the Division of Traffic Operations in KYTC's Central Office. Each Highway District has a HSIP Coordinator who works closely with the Central Office and other Highway District personnel to conduct Road Safety Audits (RSAs) of potential improvement locations. The RSA teams are multidisciplinary and represent the following highway functions; planning, design, traffic operations, maintenance, and construction. Highway districts are encouraged to submit candidate projects after completing all established guidelines for funding considerations.

HSIP projects are selected and prioritized based on their correlation with Kentucky's Strategic Highway Safety Plan. There are presently 10 emphasis areas within the SHSP and efforts are made to implement projects consistent with the goals and objectives of the SHSP.

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

☒Metropolitan Planning Organizations

☐Governors Highway Safety Office

☐Local Government Association

☐Other:

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

☐ Multi-disciplinary HSIP steering committee

☒ Other: Other-No changes since last year

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

HSIP staff also request that representatives from local Area Development Districts (ADDs) participate in the process of identifying potential projects through a RSA on local roads.

The Governor's Office of Highway Safety is responsible for development of the Strategic Highway Safety Plan and therefore directly associated with the required correlation between HSIP and SHSP. Efforts have been made to use data-driven analysis to identify emphasis areas of high potential to affect safety. Some of these emphasis areas, primarily "Roadway Departure" and "Intersections" are consistent with the HSIP project selection process.

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: **7/1/2011**

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 2

☐ Incremental B/C

☒ Ranking based on net benefit 1

☐ Other

Program: **Intersection**

Date of Program Methodology: **9/1/2012**

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

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-Prioritized list

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 2

☐ Incremental B/C

☒ Ranking based on net benefit 1

☐ Other

Program: **Skid Hazard**

Date of Program Methodology: **7/1/2011**

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-Prioritized list based on EB

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 2

☐ Incremental B/C

☒ Ranking based on net benefit 1

☐ Other

Program: **Roadway Departure**

Date of Program Methodology: **7/1/2011**

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-Prioritized list

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 2

☐ Incremental B/C

☒ Ranking based on net benefit 1

☐ Other

Program: **Low-Cost Spot Improvements**

Date of Program Methodology: **7/1/2013**

What data types were used in the program methodology?

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

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-Potential

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 1
- ☐ Incremental B/C
- ☐ Ranking based on net benefit
- ☐ Other

Program: **Sign Replacement And Improvement**

Date of Program Methodology: **7/1/2011**

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

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-Prioritized list

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	2
☐ Incremental B/C	
☒ Ranking based on net benefit	1
☐ 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	☒ 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: Other-No changes

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

Local Risk Mitigation Projects have minimum eligibility criteria to be considered for funding. Districts complete a Road Safety Audit on potential projects while Central Office HISP staff may gather some basic roadway inventory data. Then all potential projects are analyzed to determine present risk factors and a score is assigned to each project location by the District and an independent Central Office review team. The prioritized statewide list of projects is then submitted to the Secretary of Transportation through the State Highway Engineer's Office for approval based on available funding. The selected projects are developed by the appropriate Highway District and delivered by the Central Office HSIP staff through the Cabinet's standard Construction Procurement process.

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)	37628089	100 %	26501468	97 %
HRRRP (SAFETEA-LU)	0	0 %	856000	3 %
HRRR Special Rule				
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	37628089	100%	27357468	100%

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

$427,000.00

How much funding is obligated to local safety projects?

$427,000.00

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

$427,000.00

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

$427,000.00

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?

$38,000,000.00

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

MAP-21 was enacted in 2012 and with that came new guidance and requirements, as well as additional funding. The Kentucky Transportation Cabinet utilized Kentucky's Strategic Highway Safety Plan to draft a Highway Safety Improvement Program Investment Plan to guide Transportation Safety obligations and spending. Once the Investment Plan was completed and shared with the FHWA Kentucky Division, Kentucky moved forward with the implementation of the plan which includes emphasis areas for the obligation of HSIP funding for upcoming fiscal years and also to program and invest unobligated funds from previous fiscal years. For the past several years Kentucky has strived to put a program in place to fully implement programmed HSIP improvements through the federal procurement process instead of relying upon force account work to complete improvements. This came with several challenges including the amount of time required to develop a project for safety improvements that includes all of the federal requirements for advertised bid letting as well as the planning and coordination required to include projects in KYTC's Highway Plan for both internal communication and communication with the FHWA Kentucky Division.

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

No additional comments.

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
028 US 60 MP 21.7 - 21.9	Roadway Pavement surface - high friction surface	0.2 Miles	70000	70000	HSIP (Section 148)	Rural Minor Arterial	3997	45	State Highway Agency	Roadway Departure	Install high-friction surface treatments
042 US 45 MP 25.361 - 25.361	Intersection traffic control Intersection traffic control - other	1 Numbers	133403.51	133403.51	HSIP (Section 148)	Urban Principal Arterial - Other	2042	45	State Highway Agency	Intersections	Ensure appropriate signal clearance intervals
073 I-24 MP 1.5 - 18	Roadside Barrier - cable	16.5 Miles	2500000	2500000	HSIP (Section 148)	Rural Principal Arterial - Interstate	27620	70	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
079 I 24 MP 52 - 52	Roadway Pavement surface - high friction surface	1 Numbers	140000	140000	HSIP (Section 148)	Rural Principal Arterial - Interstate	25999	70	State Highway Agency	Roadway Departure	Install high-friction surface treatments

District 1 Striping	Roadway delineation Roadway delineation - other	55.61 Miles	107684	107684	HSIP (Section 148)	Various routes throughout District	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
024 I-24 MP 85.5 - 93.373	Roadside Barrier - cable	7.873 Miles	1125000	1125000	HSIP (Section 148)	Rural Principal Arterial - Interstate	30028	70	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
030 KY 2127 MP 0 - 5.762	Roadway Roadway - other	5.762 Miles	250000	250000	HSIP (Section 148)	Urban Local Road or Street	744	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
District 2 Striping	Roadway delineation Roadway delineation - other	44.54 Miles	194901	194901	HSIP (Section 148)	Various routes throughout District	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
Ramp signing upgrades - Various routes	Intersection traffic control Intersection signing - miscellaneous/other/unspecified	23 Miles	725000	725000	HSIP (Section 148)	Various routes	00	00	State Highway Agency	Intersections	Enhance signs and markings in curves
031 KY 2326 MP 2.04 - 2.361	Roadside Barrier- metal	0.321 Miles	47573	47573	HSIP (Section 148)	Rural Local Road or Street	797	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives

District 3 Striping	Roadway delineation Roadway delineation - other	358.19 Miles	410804	410804	HSIP (Section 148)	Various routes throughout District	3765	55	State Highway Agency	Roadway Departure	Improve roadway delineation
Bridge end treatments - Barren/Monroe Counties	Roadside Barrier end treatments (crash cushions, terminals)	6 Miles	290000	290000	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
082 KY 1638 MP 0 - 4.264	Shoulder treatments Widen shoulder - paved or other	4.264 Miles	698832	698832	HSIP (Section 148)	Rural Minor Arterial	7230	55	State Highway Agency	Roadway Departure	Improve recovery areas
090 KY 162 MP 0 - 8.157	Roadside Removal of roadside objects (trees, poles, etc.)	8.157 Miles	125000	125000	HSIP (Section 148)	Rural Minor Collector	482	55	State Highway Agency	Roadway Departure	Improve recovery areas
090 KY 605 MP 9.69 - 9.8	Roadway Pavement surface - high friction surface	0.11 Miles	75000	75000	HSIP (Section 148)	Rural Minor Collector	2045	35	State Highway Agency	Roadway Departure	Install high-friction surface treatments
109 KY 76 MP 1.455 - 6.981	Roadside Barrier end treatments (crash cushions, terminals)	5.526 Miles	360000	360000	HSIP (Section	Rural Major Collector	2121	55	State Highway	Roadway Departure	Incorporate proven countermea

					148)				Agency		sures
115 KY 555 MP 0 - 14.659	Roadside Barrier end treatments (crash cushions, terminals)	14.659 Miles	1230000	1230000	HSIP (Section 148)	Rural Principal Arterial - Other	3537	55	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
District 4 Striping	Roadway delineation Roadway delineation - other	362.98 Miles	486685	486685	HSIP (Section 148)	Various routes throughout District	2940	55	State Highway Agency	Roadway Departure	Improve roadway delineation
037 KY 420 MP 0 - 2.145	Roadway signs and traffic control Roadway signs and traffic control - other	2.145 Miles	40000	40000	HSIP (Section 148)	Rural Minor Collector	3717	35	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
056 HFS - Ramp from EB to KY 913 NB	Roadway Pavement surface - high friction surface	1 Numbers	90000	90000	HSIP (Section 148)	Rural Principal Arterial - Interstate	90948	70	State Highway Agency	Roadway Departure	Install high-friction surface treatments
056 HFS - Ramp from I 265 NB to WB	Roadway Pavement surface - high friction surface	1 Numbers	90000	90000	HSIP (Section 148)	Rural Principal Arterial - Interstate	90948	70	State Highway Agency	Roadway Departure	Install high-friction surface treatments
056 HFS - Ramp from I 265 WB to NB	Roadway Pavement surface - high friction surface	1 Numbers	120000	120000	HSIP (Section	Urban Principal Arterial -	121423	50	State Highway	Roadway Departure	Install high-friction surface

					148)	Interstate			Agency		treatments
056 HFS - Ramp from NB to I 265 EB	Roadway Pavement surface - high friction surface	1 Numbers	130000	130000	HSIP (Section 148)	Urban Principal Arterial - Interstate	121423	50	State Highway Agency	Roadway Departure	Install high-friction surface treatments
056 HFS - Ramp from I 265 NB to NB	Roadway Pavement surface - high friction surface	1 Numbers	130000	130000	HSIP (Section 148)	Urban Principal Arterial - Interstate	68814	55	State Highway Agency	Roadway Departure	Install high-friction surface treatments
056 I-65 MP 135.31 - 135.61	Roadway delineation Delineators post-mounted or on barrier	0.3 Miles	100000	100000	HSIP (Section 148)	Urban Principal Arterial - Interstate	121423	50	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
056 KY 146 MP 2.38 - 2.45	Roadway Pavement surface - high friction surface	0.07 Miles	50000	50000	HSIP (Section 148)	Urban Minor Arterial	8917	45	State Highway Agency	Roadway Departure	Install high-friction surface treatments
056 KY 2845 MP 0.58 - 0.65	Roadway Pavement surface - high friction surface	0.07 Miles	40000	40000	HSIP (Section 148)	Urban Minor Arterial	7587	35	State Highway Agency	Roadway Departure	Install high-friction surface treatments
093 I-71 MP 15 - 17.7	Roadside Barrier - cable	2.7 Miles	400000	400000	HSIP (Section	Rural Principal Arterial -	48179	70	State Highway	Roadway Departure	Incorporate proven countermea

					148)	Interstate			Agency		sures
112 KY 625 MP 6.574 - 6.68	Roadside Barrier- metal	0.106 Miles	16000	16000	HSIP (Section 148)	Rural Minor Collector	275	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
District 5 Striping	Roadway delineation Roadway delineation - other	67.69 Miles	88709	88709	HSIP (Section 148)	Various routes throughout District	9900	55	State Highway Agency	Roadway Departure	Improve roadway delineation
008 KY 16 MP 0 - 2.483	Roadway Pavement surface - miscellaneous	2.483 Miles	200000	200000	HSIP (Section 148)	Rural Minor Collector	4129	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
008 US 42 MP 0 - 2.236	Roadway Pavement surface - miscellaneous	2.236 Miles	200000	200000	HSIP (Section 148)	Rural Minor Arterial	13204	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
019 I-275	Roadway Pavement surface - high friction surface	1 Numbers	75000	75000	HSIP (Section 148)	Urban Principal Arterial - Interstate	68647	65	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
039 I 71 MP 62.8 - 63.6	Roadway Pavement surface - high friction surface	0.8 Miles	950000	950000	HSIP (Section	Rural Principal Arterial -	29521	70	State Highway	Roadway Departure	Fund roadway departure

					148)	Interstate			Agency		initiatives
039 I 71 MP 63.5 - 63.7	Roadway Pavement surface - high friction surface	0.2 Miles	120000	120000	HSIP (Section 148)	Rural Principal Arterial - Interstate	29521	70	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
039 I-71 MP 59.85 - 69.6	Roadway Pavement surface - miscellaneous	9.75 Miles	1115500	1115500	HSIP (Section 148)	Rural Principal Arterial - Interstate	29521	70	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
039 I-71 MP 62.8 - 63.6	Roadway Pavement surface - high friction surface	0.8 Miles	950000	950000	HSIP (Section 148)	Rural Principal Arterial - Interstate	29521	70	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
041 KY 22 MP 5.758 - 7.28	Roadway Pavement surface - miscellaneous	1.522 Miles	250000	250000	HSIP (Section 148)	Rural Minor Arterial	3431	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
059 I-275	Roadway Pavement surface - high friction surface	1 Numbers	70000	70000	HSIP (Section 148)	Urban Principal Arterial - Interstate	99106	65	State Highway Agency	Roadway Departure	Install high-friction surface treatments
059 KY 1303 MP 0.562 - 0.842	Roadway Pavement surface - miscellaneous	0.28 Miles	250000	250000	HSIP (Section	Rural Minor Arterial	3431	45	State Highway	Roadway Departure	Fund roadway departure

					148)				Agency		initiatives
059 KY 1501 MP 0.3 - 0.95	Roadway Pavement surface - high friction surface	0.65 Miles	250000	250000	HSIP (Section 148)	Urban Minor Collector	4293	35	State Highway Agency	Roadway Departure	Install high-friction surface treatments
059 KY 536 MP 7.47 - 7.525	Roadway Pavement surface - high friction surface	0.055 Miles	35000	35000	HSIP (Section 148)	Rural Major Collector	7209	45	State Highway Agency	Roadway Departure	Install high-friction surface treatments
059 KY 8 MP 1.24 - 1.55	Roadside Barrier- metal	0.31 Miles	42105	42105	HSIP (Section 148)	Urban Principal Arterial - Other	5360	30	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
094 KY 330 MP 0.057 - 0.076	Roadside Barrier- metal	0.019 Miles	15000	15000	HSIP (Section 148)	Rural Major Collector	447	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
112 I-71 MP 38 - 38.808	Roadside Barrier - cable	0.808 Miles	103000	103000	HSIP (Section 148)	Rural Principal Arterial - Interstate	31369	70	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
District 6 Horizontal Alignment Signage	Roadway signs and traffic control Curve-related warning signs	40 Miles	323748	323748	HSIP (Section	Various routes througho	7561	55	State Highway	Roadway Departure	Enhance signs and markings in

	and flashers				148)	ut District			Agency		curves
District 6 Striping	Roadway delineation Roadway delineation - other	180.69 Miles	332909	332909	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
025 KY 1927 MP 3.766 - 6.826	Roadway signs and traffic control Roadway signs and traffic control - other	3.06 Miles	20000	20000	HSIP (Section 148)	Rural Major Collector	3140	55	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
025 US 60 MP 14.563 - 15.613	Roadway Superelevation / cross slope	1.05 Miles	382000	382000	HSIP (Section 148)	Rural Minor Arterial	8480	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
034 KY 1975 MP 2.928 - 5.41	Roadway signs and traffic control Roadway signs and traffic control - other	2.482 Miles	13500	13500	HSIP (Section 148)	Rural Minor Collector	1674	55	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
034 KY 353 MP 5.237 - 5.715	Roadway Superelevation / cross slope	0.478 Miles	291000	291000	HSIP (Section 148)	Rural Major Collector	3198	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
034 US 25 MP 2.699 - 8.14	Roadway signs and traffic control Roadway signs and traffic control	5.441 Miles	20500	20500	HSIP (Section	Rural Principal Arterial -	3183	45	State Highway	Roadway Departure	Enhance signs and markings in

	- other				148)	Other			Agency		curves
057 KY 169 MP 5.052 - 6.752	Roadway Superelevation / cross slope	1.7 Miles	650000	650000	HSIP (Section 148)	Rural Minor Arterial	3006	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
057 KY 169 MP 16.685 - 19.18	Roadway Superelevation / cross slope	2.495 Miles	277500	277500	HSIP (Section 148)	Rural Minor Arterial	3006	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
076 KY 388 MP 10.102 - 12.397	Roadway signs and traffic control Roadway signs and traffic control - other	2.295 Miles	21500	21500	HSIP (Section 148)	Rural Major Collector	994	45	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
076 KY 52 MP 4.15 - 4.854	Roadway Superelevation / cross slope	0.704 Miles	250000	250000	HSIP (Section 148)	Rural Minor Arterial	11451	35	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
076 US 421 MP 0 - 12.571	Roadway signs and traffic control Roadway signs and traffic control - other	12.571 Miles	40100	40100	HSIP (Section 148)	Rural Minor Arterial	3627	45	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
084 KY 152 MP 0 - 10.09	Roadway signs and traffic control Roadway signs and traffic control	10.09 Miles	51000	51000	HSIP (Section	Rural Major Collector	440	45	State Highway	Roadway Departure	Enhance signs and markings in

	- other				148)				Agency		curves
084 US 68 MP 14.27 - 17.542	Roadway signs and traffic control Roadway signs and traffic control - other	3.272 Miles	20000	20000	HSIP (Section 148)	Rural Minor Arterial	5249	55	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
087 KY 11	Roadside Barrier- metal	0.025 Miles	18000	18000	HSIP (Section 148)	Rural Minor Arterial	7399	35	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
120 KY 169 MP 2.121 - 3.44	Roadway Superelevation / cross slope	1.319 Miles	500000	500000	HSIP (Section 148)	Rural Major Collector	3174	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
District 7 Striping	Roadway delineation Roadway delineation - other	200.32 Miles	237538	237538	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
100 KY 196 MP 5.3 - 8.2	Roadway signs and traffic control Roadway signs and traffic control - other	2.9 Miles	6000	6000	HSIP (Section 148)	Rural Minor Collector	1290	55	State Highway Agency	Roadway Departure	Enhance signs and markings in curves
100 KY 70 MP 3.55 - 13.814	Roadway Superelevation / cross slope	10.264 Miles	350000	350000	HSIP (Section	Rural Major Collector	2165	35	State Highway	Roadway Departure	Fund roadway departure

					148)				Agency		initiatives
100 KY 90 MP 0 - 4.136	Shoulder treatments Widen shoulder - paved or other	4.136 Miles	824000	824000	HSIP (Section 148)	Rural Minor Arterial	14462	55	State Highway Agency	Roadway Departure	Improve recovery areas
102 KY 1505 MP 8.1 - 8.5	Roadway Pavement surface - high friction surface	0.4 Miles	70000	70000	HSIP (Section 148)	Rural Minor Collector	1038	55	State Highway Agency	Roadway Departure	Install high-friction surface treatments
116 KY 90 MP 8.71 - 9.1	Roadway Pavement surface - high friction surface	0.39 Miles	215000	215000	HSIP (Section 148)	Rural Minor Arterial	7751	55	State Highway Agency	Roadway Departure	Install high-friction surface treatments
District 8 Striping	Roadway delineation Roadway delineation - other	18.8 Miles	28664	28664	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
010 KY 3294 MP 1.416 - 6.811	Roadside Barrier- metal	5.395 Miles	1100000	0	HSIP (Section 148)	Rural Minor Collector	2650	35	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
035 KY 57 MP 2.109 - 4.386	Roadway Superelevation / cross slope	2.277 Miles	397465	397465	HSIP (Section	Rural Major Collector	1998	25	State Highway	Roadway Departure	Fund roadway departure

					148)				Agency		initiatives
103 KY 519 MP 3.37 - 3.912	Roadside Barrier- metal	0.542 Miles	90000	90000	HSIP (Section 148)	Rural Minor Arterial	8501	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
103 US 60 MP 11.668 - 12.02	Roadside Barrier- metal	0.352 Miles	35000	35000	HSIP (Section 148)	Rural Major Collector	4636	45	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
District 9 Striping	Roadway delineation Roadway delineation - other	401.61 Miles	458953	458953	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
013 KY 30 MP 11.288 - 11.699	Roadside Barrier- metal	0.411 Miles	42000	42000	HSIP (Section 148)	Rural Major Collector	1157	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
033 KY 52 MP 5.415 - 5.84	Intersection geometry Auxiliary lanes - add left-turn lane	0.425 Miles	498225	498225	HSIP (Section 148)	Rural Minor Arterial	1943	55	State Highway Agency	Intersections	Supplemental signal heads
District 10 Striping	Roadway delineation Roadway delineation - other	278.41 Miles	337254	337254	HSIP (Section	Various	00	00	State Highway	Roadway Departure	Improve roadway delineation

					148)				Agency		
Barrier end treatments - Barren/Monroe Counties	Roadside Barrier end treatments (crash cushions, terminals)	13.733 Miles	176000	176000	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
007 KY 2402 MP 0.6 - 0.7	Roadway Pavement surface - high friction surface	0.1 Miles	38518	38518	HSIP (Section 148)	Rural Minor Arterial	5340	35	State Highway Agency	Roadway Departure	Install high-friction surface treatments
026 ky 3472 MP 0.1 - 0.5	Roadway Pavement surface - high friction surface	0.4 Miles	67436	67436	HSIP (Section 148)	Rural Local Road or Street	4277	25	State Highway Agency	Roadway Departure	Install high-friction surface treatments
061 KY 11 MP 21.577 - 21.941	Roadside Barrier- metal	0.364 Miles	45000	45000	HSIP (Section 148)	Rural Major Collector	1787	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
063 KY 638 MP 3.252 - 8.062	Roadside Barrier- metal	4.81 Miles	221100	221100	HSIP (Section 148)	Rural Minor Collector	465	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
063 KY 80 MP 0 - 4.2	Roadside Barrier end treatments (crash	4.2 Miles	450000	450000	HSIP (Secti	Rural Principal	7592	45	State Highwa	Roadway Departur	Incorporate proven

	cushions, terminals)				on 148)	Arterial - Other			y Agency	e	countermeasures
118 KY 204 MP 1.672 - 11.248	Roadside Barrier- metal	9.576 Miles	140000	140000	HSIP (Section 148)	Rural Minor Collector	1066	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
118 KY 26 MP 9.48 - 9.916	Roadside Barrier- metal	0.436 Miles	45000	45000	HSIP (Section 148)	Rural Major Collector	4725	55	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
District 11 Striping	Roadway delineation Roadway delineation - other	81.13 Miles	119606	119606	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
Barrier end treatments - Various locations	Roadside Barrier end treatments (crash cushions, terminals)	22 Miles	550000	550000	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Incorporate proven countermeasures
036 KY 404 MP 2.048 - 2.195	Roadside Barrier- metal	0.147 Miles	16400	16400	HSIP (Section 148)	Rural Major Collector	1836	35	State Highway Agency	Roadway Departure	Fund roadway departure initiatives
036 KY 777 MP 3 - 3.246	Roadside Barrier- metal	0.246 Miles	32000	32000	HSIP (Section	Rural Minor	226	45	State Highway	Roadway Departur	Fund roadway departure

					148)	Collector			Agency	e	initiatives
098 KY 194 MP 18.4 - 19	Roadway Pavement surface - high friction surface	0.6 Miles	200000	200000	HSIP (Section 148)	Rural Minor Arterial	2076	55	State Highway Agency	Roadway Departure	Install high-friction surface treatments
District 12 Striping	Roadway delineation Roadway delineation - other	277.34 Miles	321168	321168	HSIP (Section 148)	Various	00	00	State Highway Agency	Roadway Departure	Improve roadway delineation
KTC Technical Assistance	Non-infrastructure Data/traffic records	1 Numbers	200000	200000	HSIP (Section 148)	N/A	00	00	State Highway Agency	Data	Technical assistance
Safety Circuit Rider Program	Non-infrastructure Outreach	1 Numbers	177000	177000	HSIP (Section 148)	N/A	0	0	State Highway Agency	N/A	Safety Circuit Rider program
Project Design Funding	Non-infrastructure Transportation safety planning	1 Numbers	1900000	1900000	HSIP (Section 148)	N/A	00	00	State Highway Agency	N/A	Incorporate proven countermeasures

Progress in Achieving Safety Performance Targets

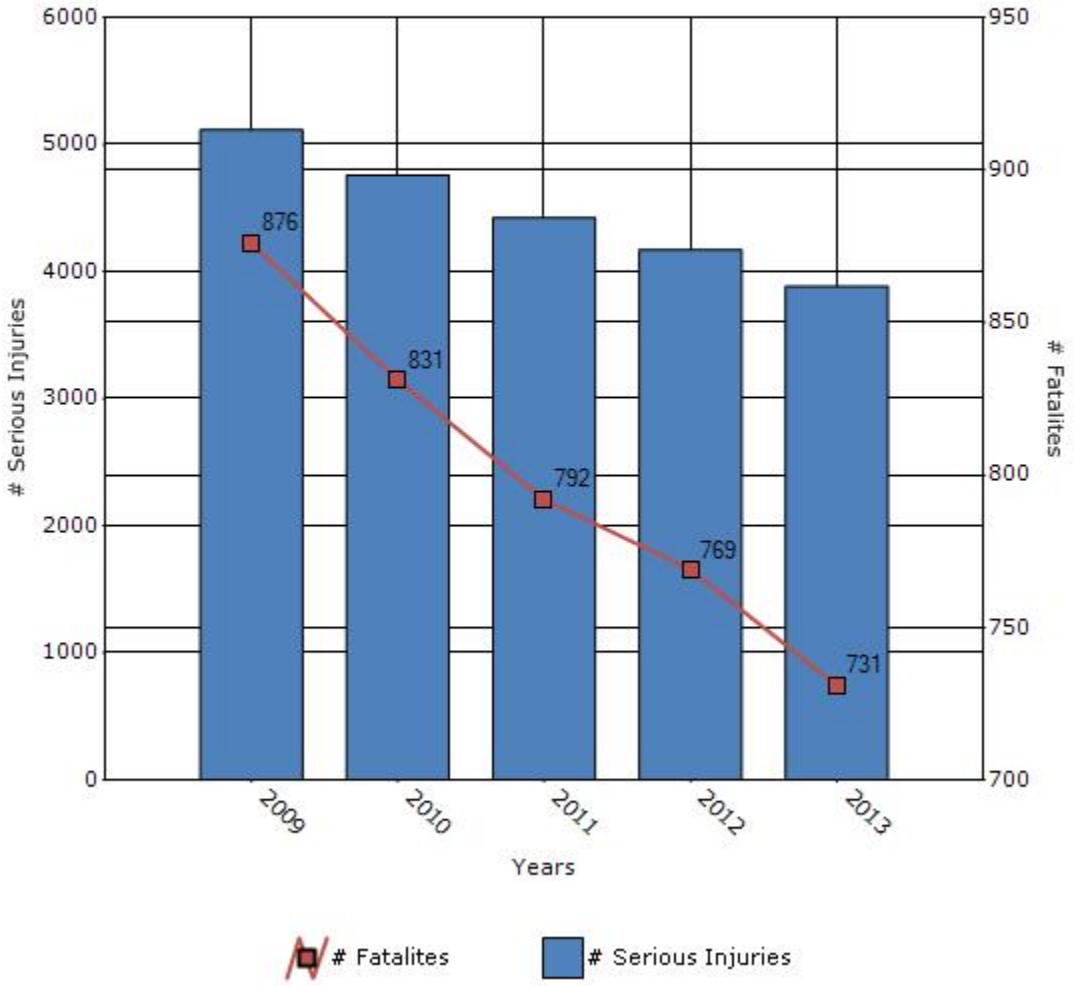
Overview of General Safety Trends

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

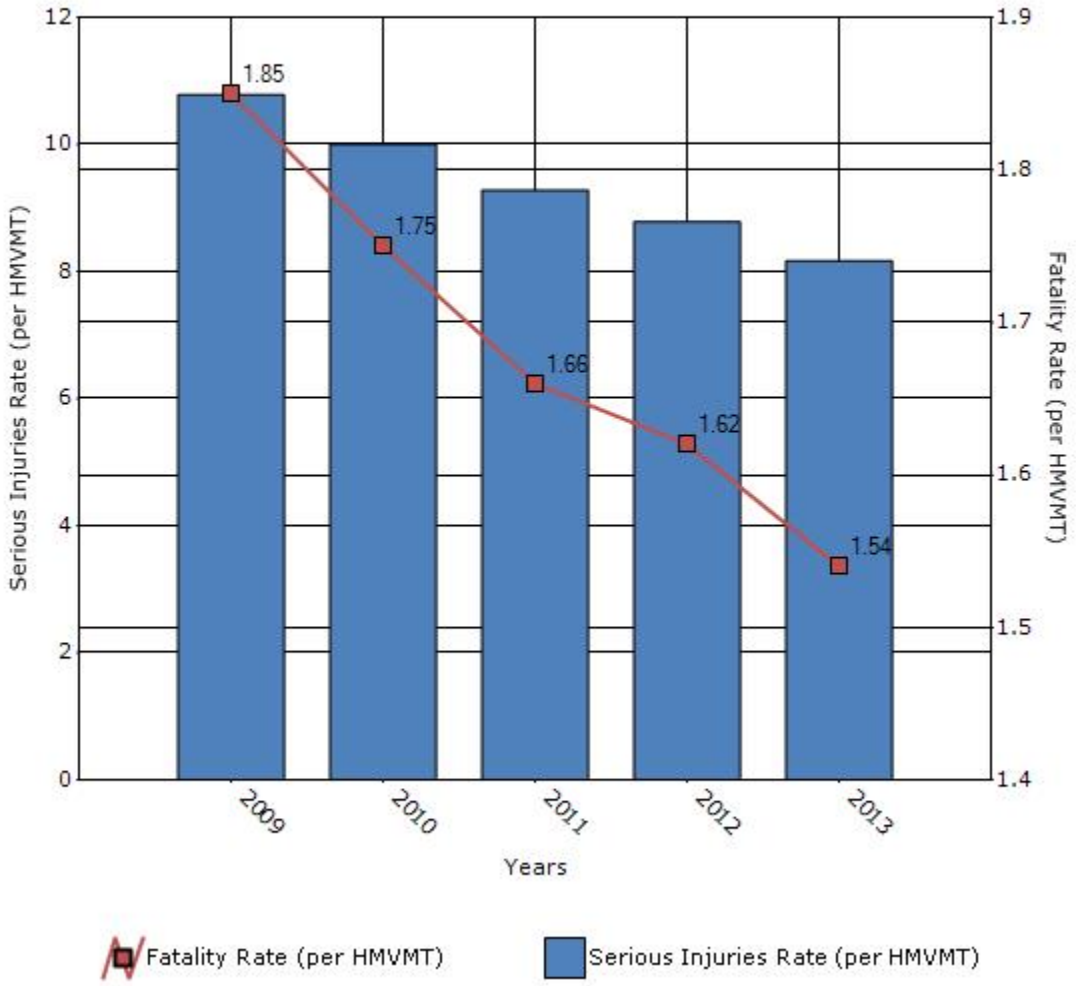
Performance Measures*	2009	2010	2011	2012	2013
Number of fatalities	876	831	792	769	731
Number of serious injuries	5115	4758	4425	4173	3884
Fatality rate (per HMVMT)	1.85	1.75	1.66	1.62	1.54
Serious injury rate (per HMVMT)	10.78	10	9.28	8.78	8.17

*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

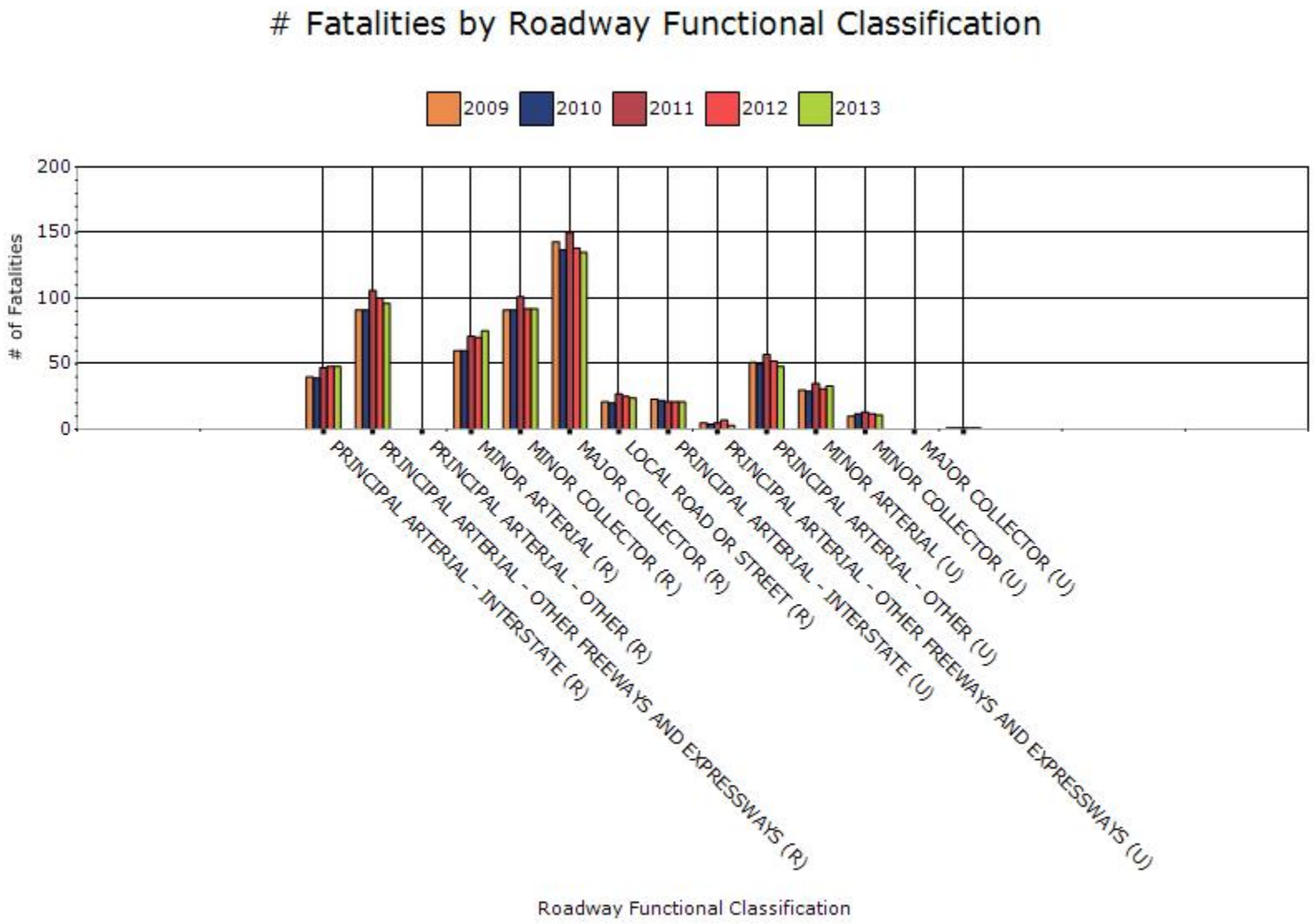


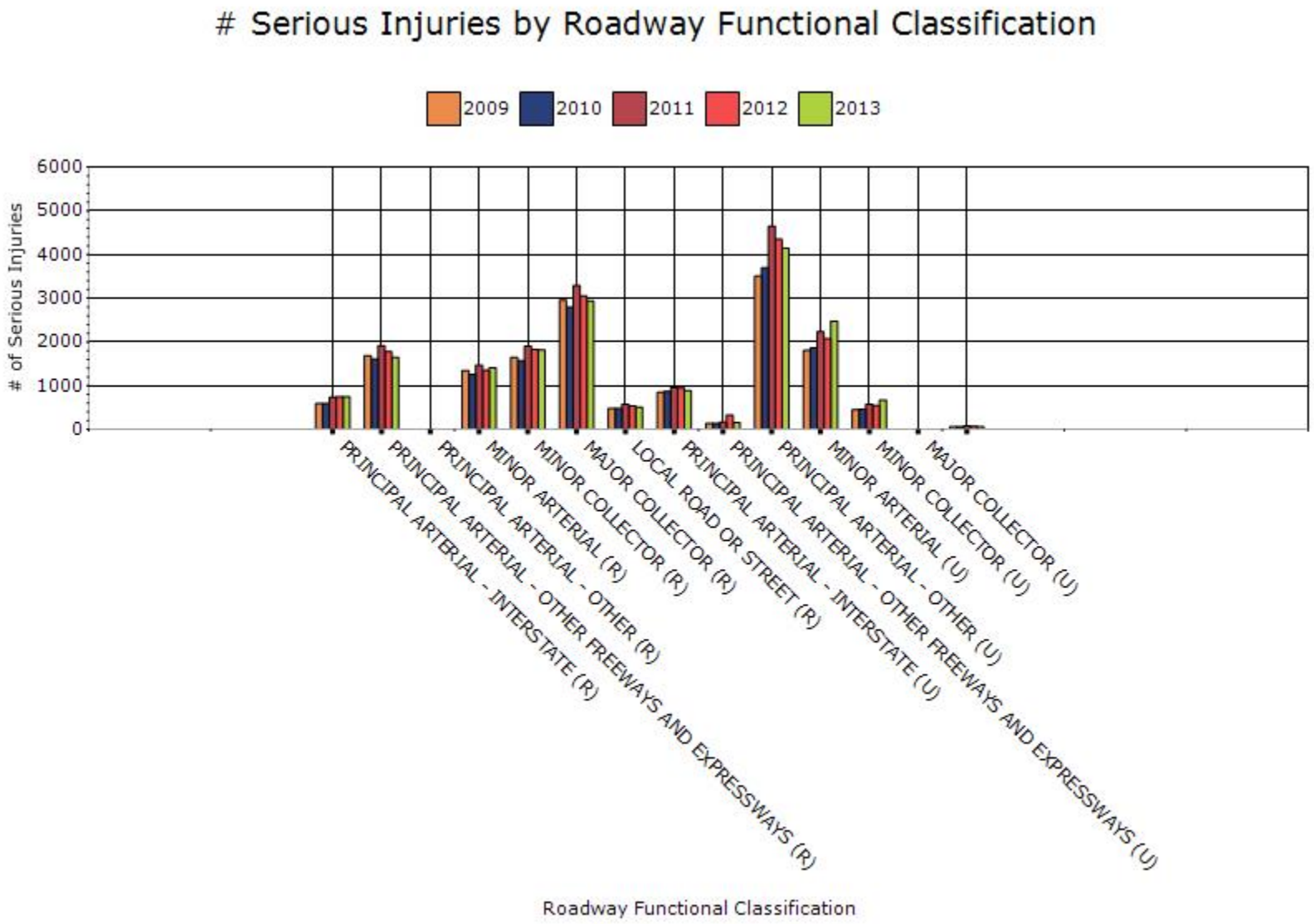
To the maximum extent possible, present performance measure* data by functional classification and ownership.

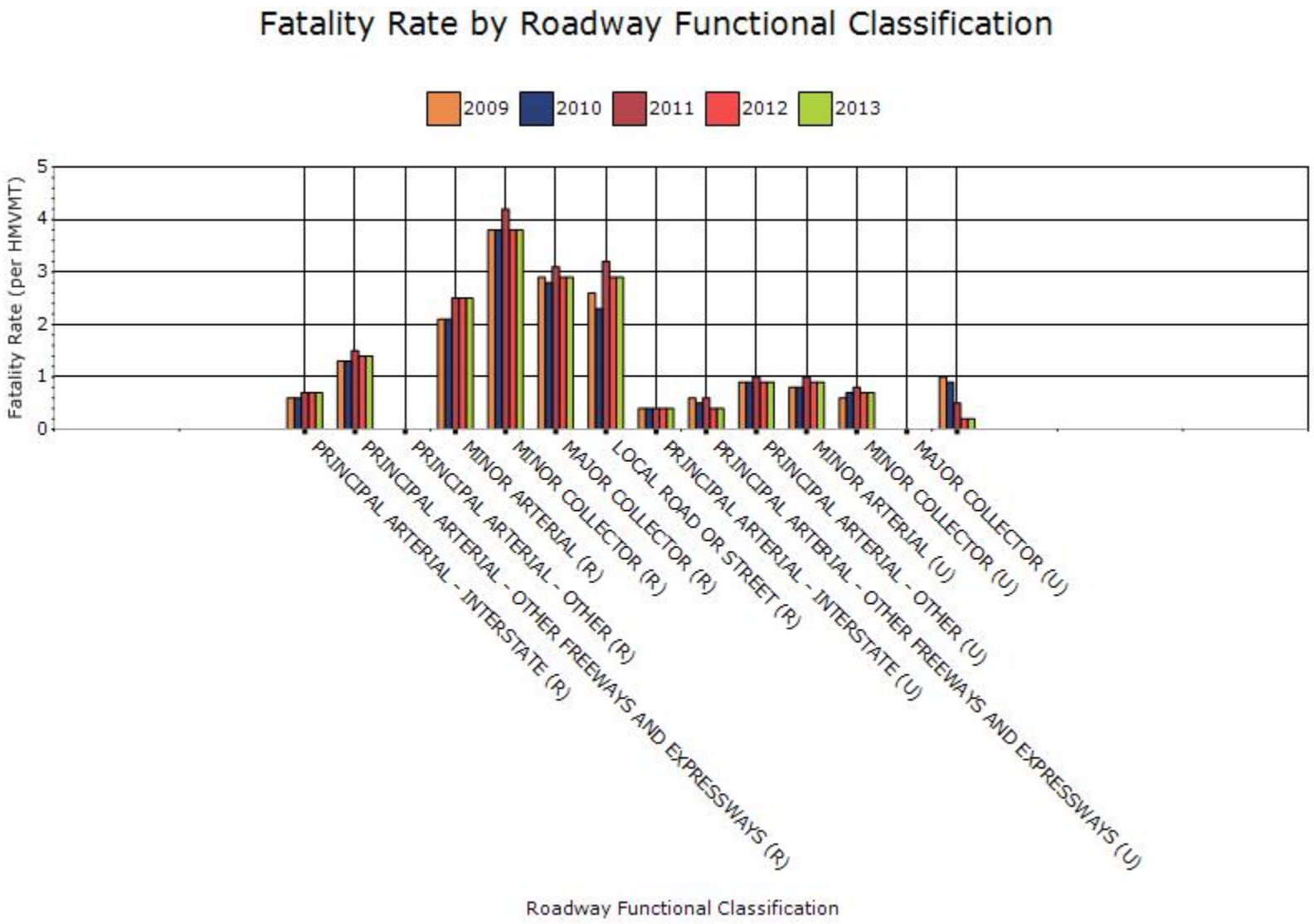
Year - 2013

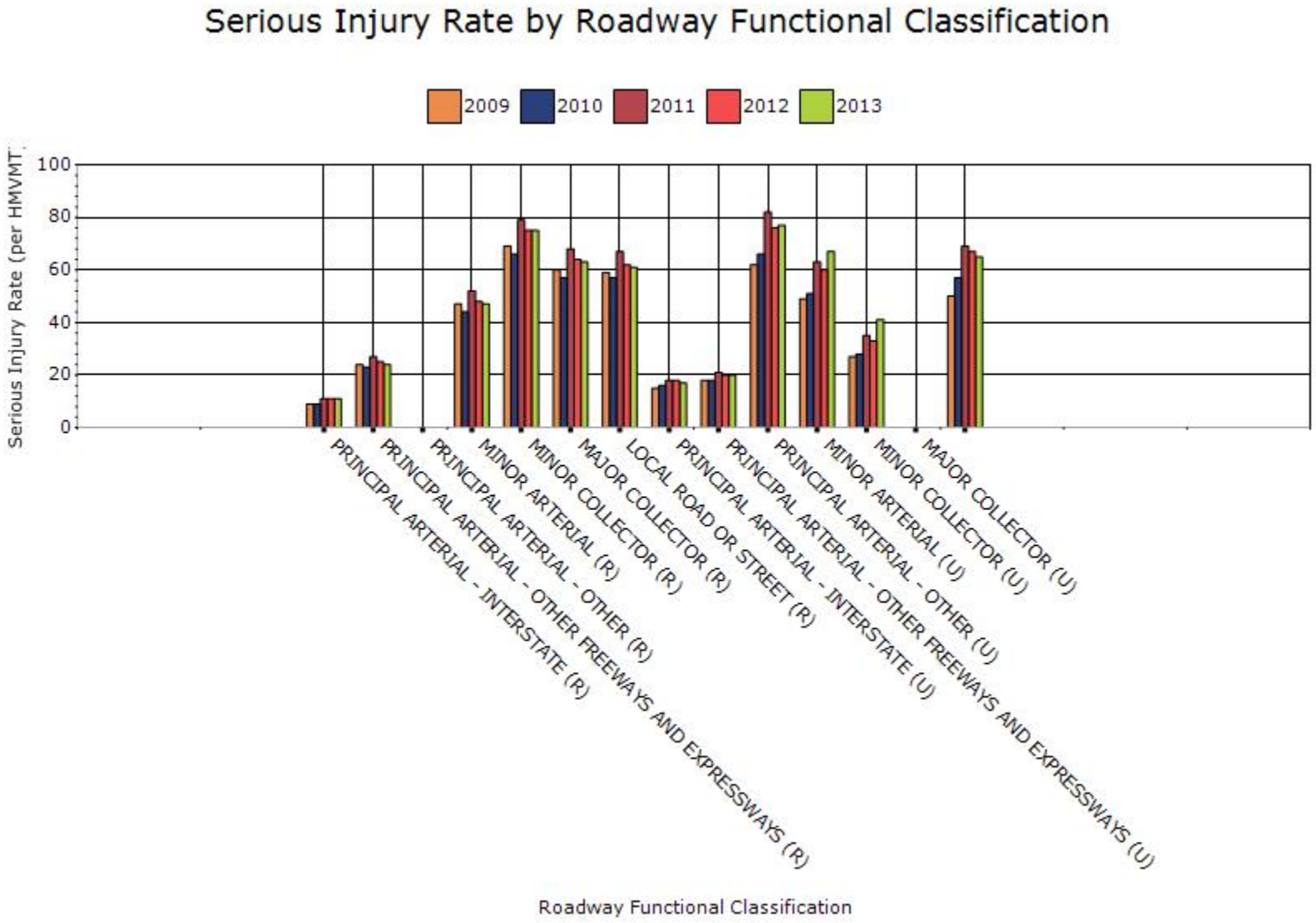
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	48	749	0.7	11
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	96	1648	1.4	24
RURAL PRINCIPAL ARTERIAL - OTHER	0	0	0	0
RURAL MINOR ARTERIAL	75	1408	2.5	47
RURAL MINOR COLLECTOR	92	1820	3.8	75
RURAL MAJOR COLLECTOR	135	2938	2.9	63
RURAL LOCAL ROAD OR STREET	24	510	2.9	61
URBAN PRINCIPAL	21	885	0.4	17

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	3	161	0.4	20
URBAN PRINCIPAL ARTERIAL - OTHER	48	4147	0.9	77
URBAN MINOR ARTERIAL	33	2476	0.9	67
URBAN MINOR COLLECTOR	11	672	0.7	41
URBAN MAJOR COLLECTOR	0	0	0	0
URBAN LOCAL ROAD OR STREET	1	64	0.2	65


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

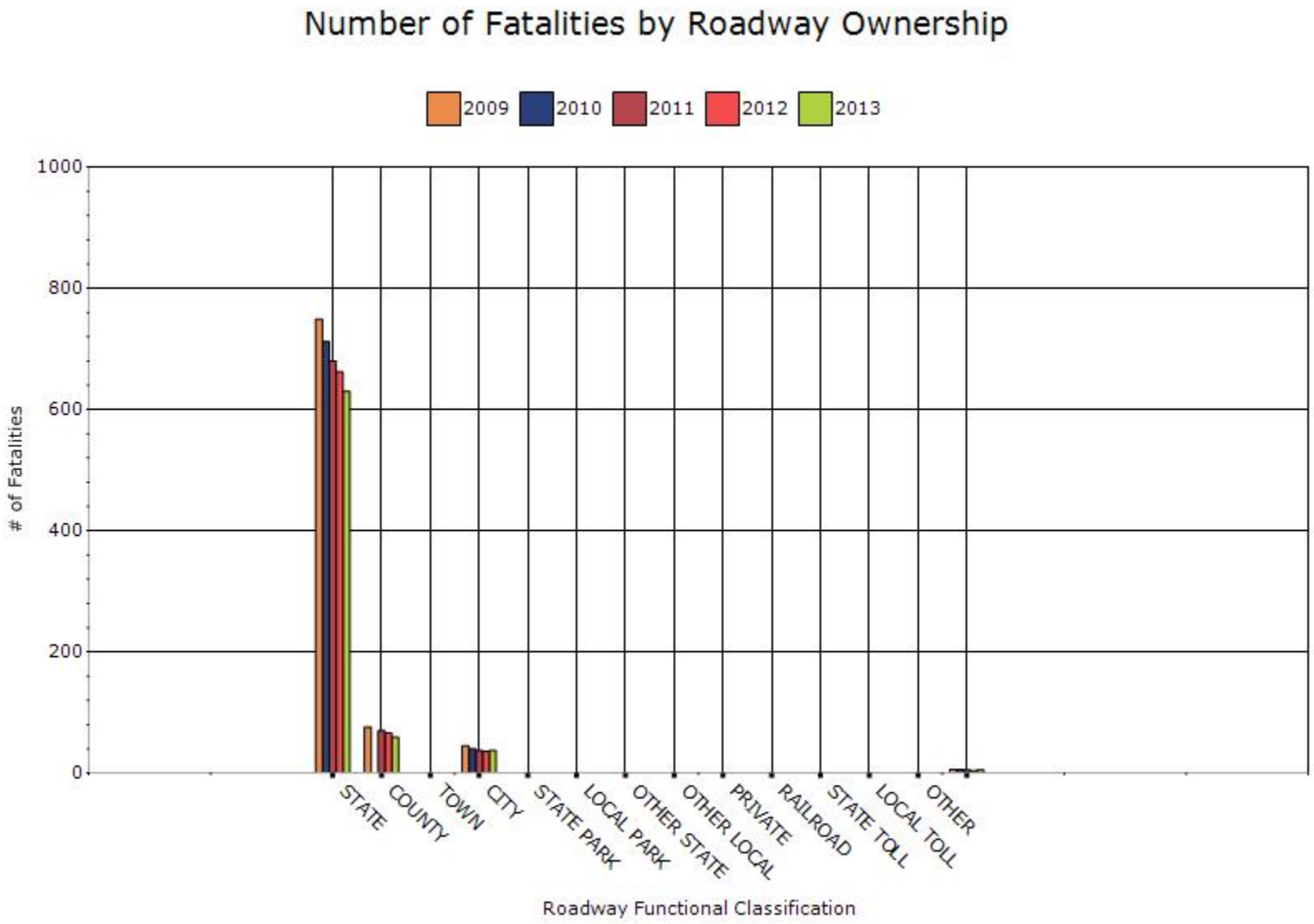

Serious Injuries by Roadway Functional Classification
2009
2010
2011
2012
2013
# of Serious Injuries
6000
5000
4000
3000
2000
1000
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR 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

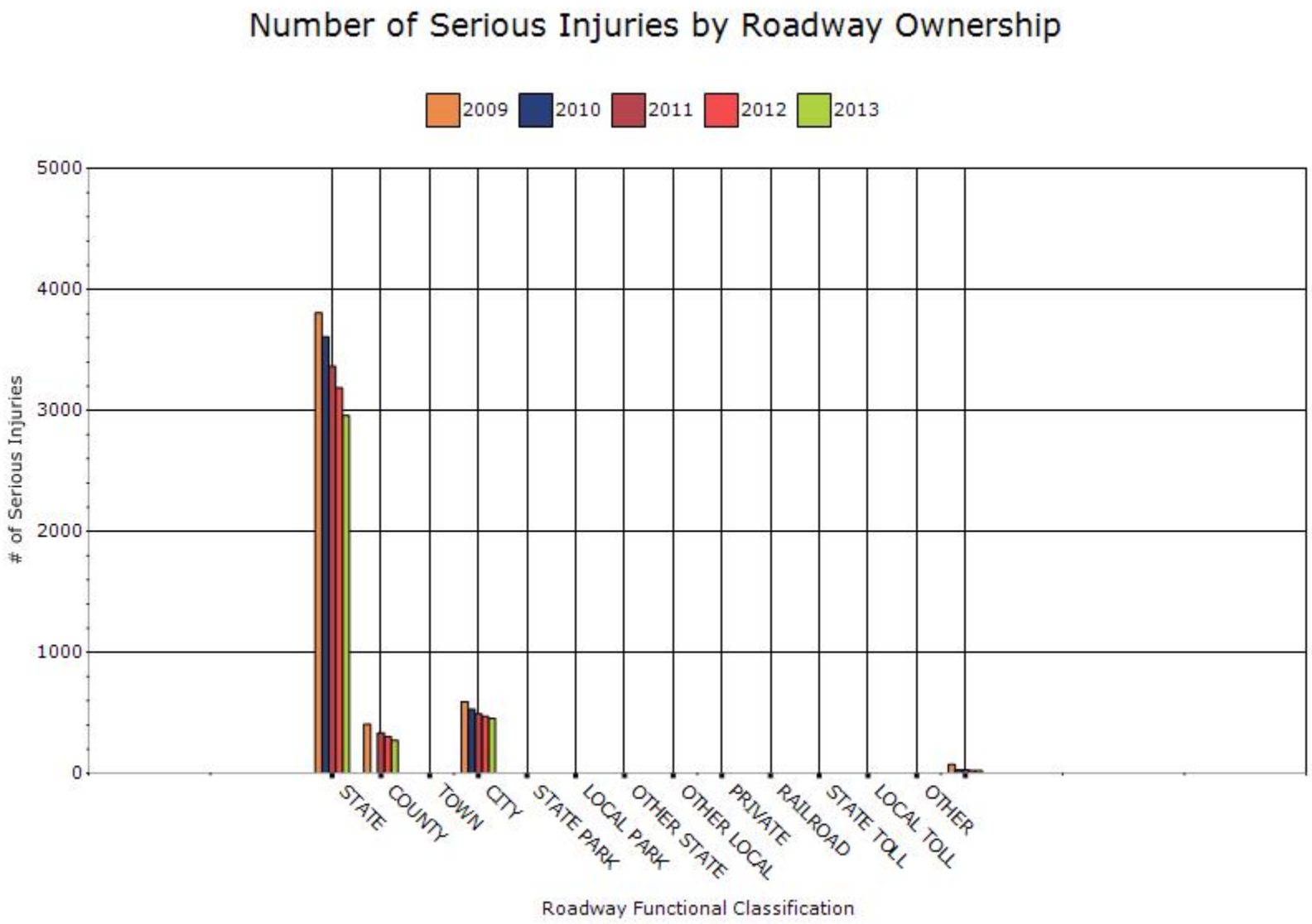

Fatality Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
0
1
2
3
4
5
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL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

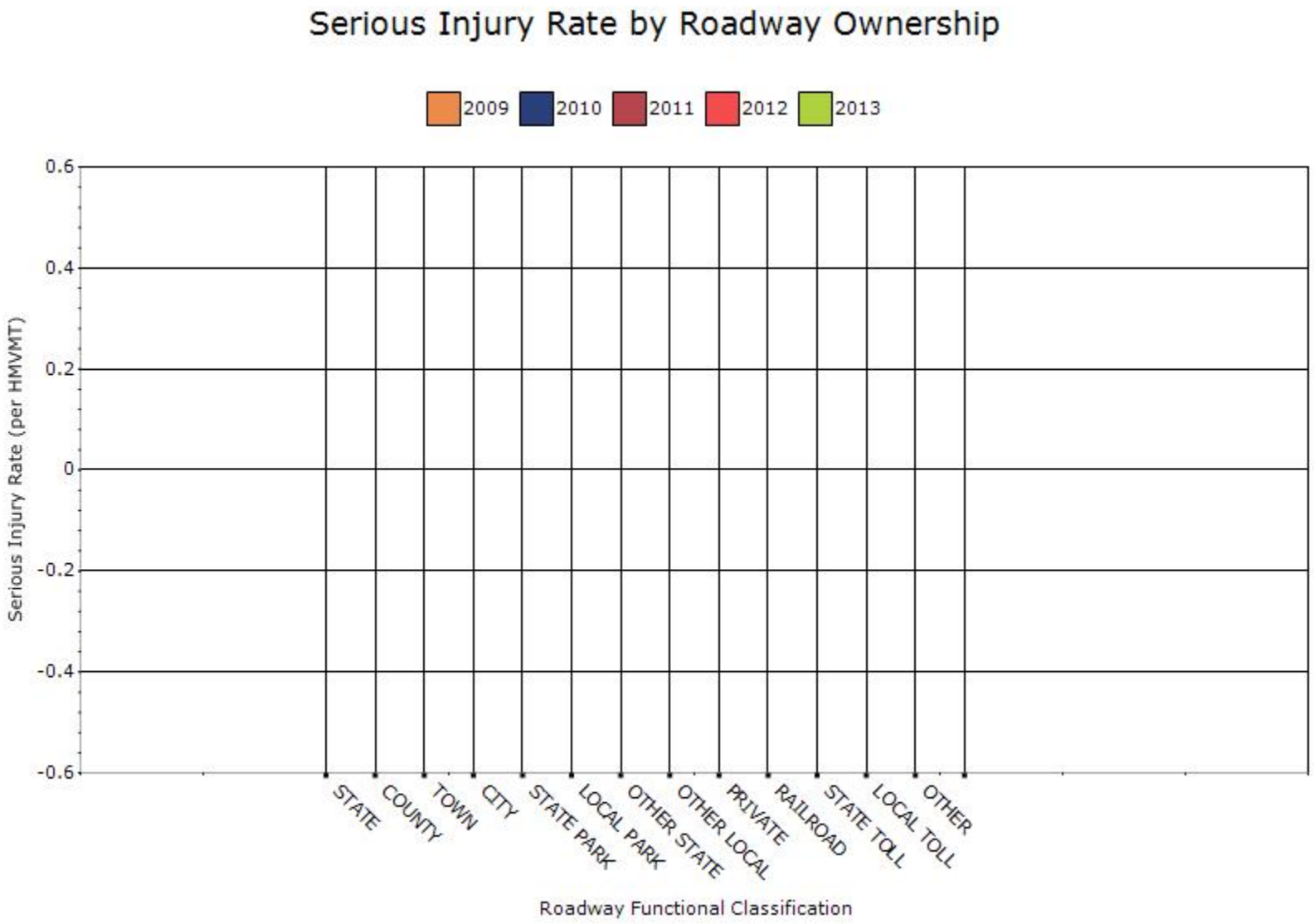
Year - 2013

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	630	2956	0	0
COUNTY HIGHWAY AGENCY	59	273	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	0	0	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	37	455	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
OTHER	5	21	0	0


Number of Fatalities by Roadway Ownership
2009
2010
2011
2012
2013
1000
800
600
400
200
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
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.

Fatalities decreased by 14.5 percent from 746 in 2012 to 638 in 2013, representing 108 fewer fatalities. These numbers of fatalities vary from those shown in Question 24 which presents the fatalities as 5-year moving averages. The fatality rate of 1.36 per 100 MVM was the lowest in Kentucky in more than 30 years.

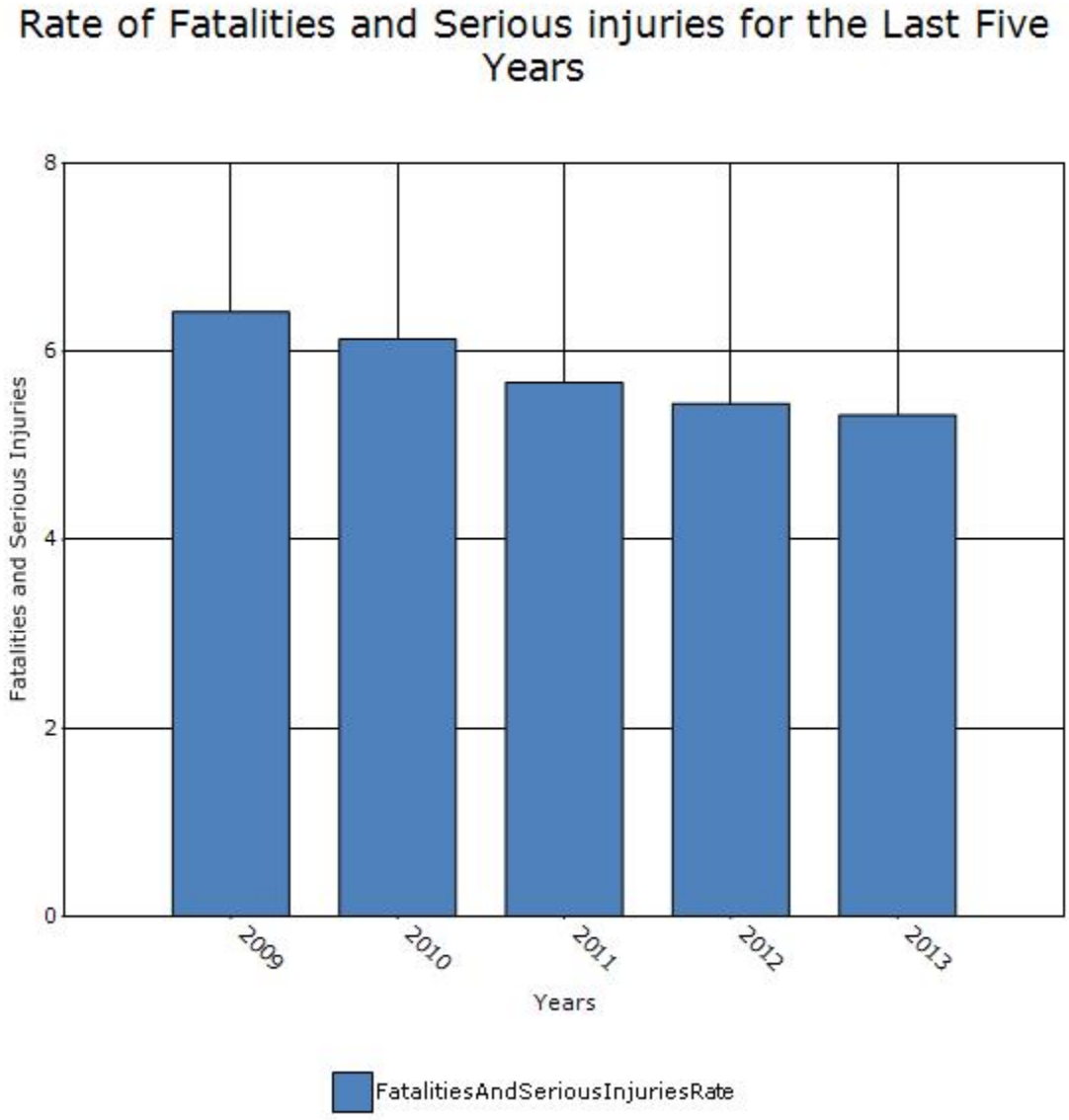
Application of Special Rules

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)	1.22	1.16	1.07	1.04	1.06
Serious injury rate (per capita)	5.202	4.97	4.602	4.41	4.272
Fatality and serious injury rate (per capita)	6.422	6.134	5.672	5.448	5.328

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

Methodology used as recommended in detailed explanation of "Older Drivers and Pedestrians Special Rule Interim Guidance" dated February 13, 2013. For the reporting date of August 31, 2014, the comparison 5-year periods were expected to be 2006-2010 and 2008-2012. Updated data on population 65 years and older were obtained from FHWA website. Our calculations show the 5-year moving average values of Fatal + Serious Injuries for 2006-2010 was 6.13 as compared to 5.45 for the period 2008-2012.



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.

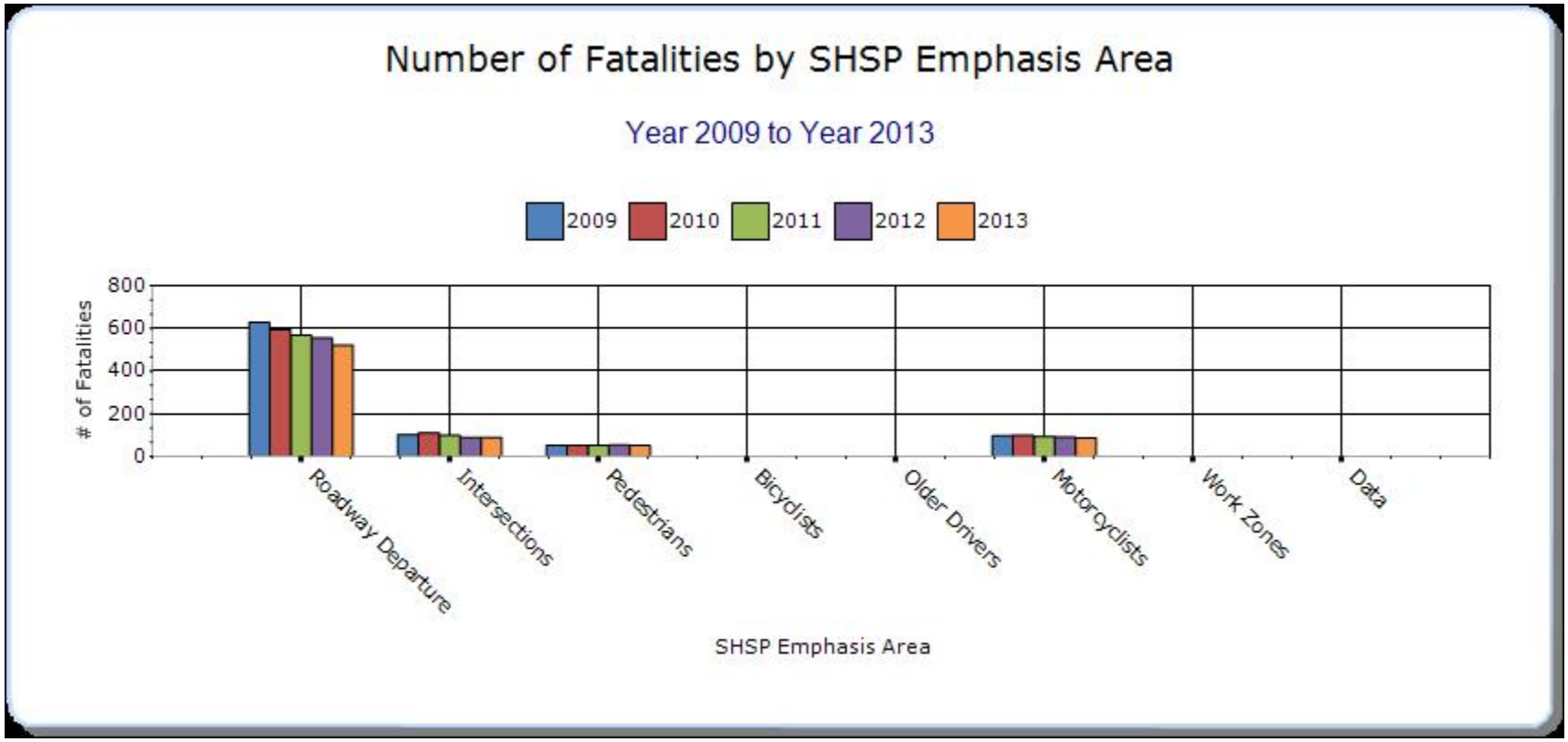
An effort has been made to focus on fatalities and serious injuries (Incapacitating - Type A) and present trends with 5-year moving averages for those parameters. No major changes have been made in overall program management or direction.

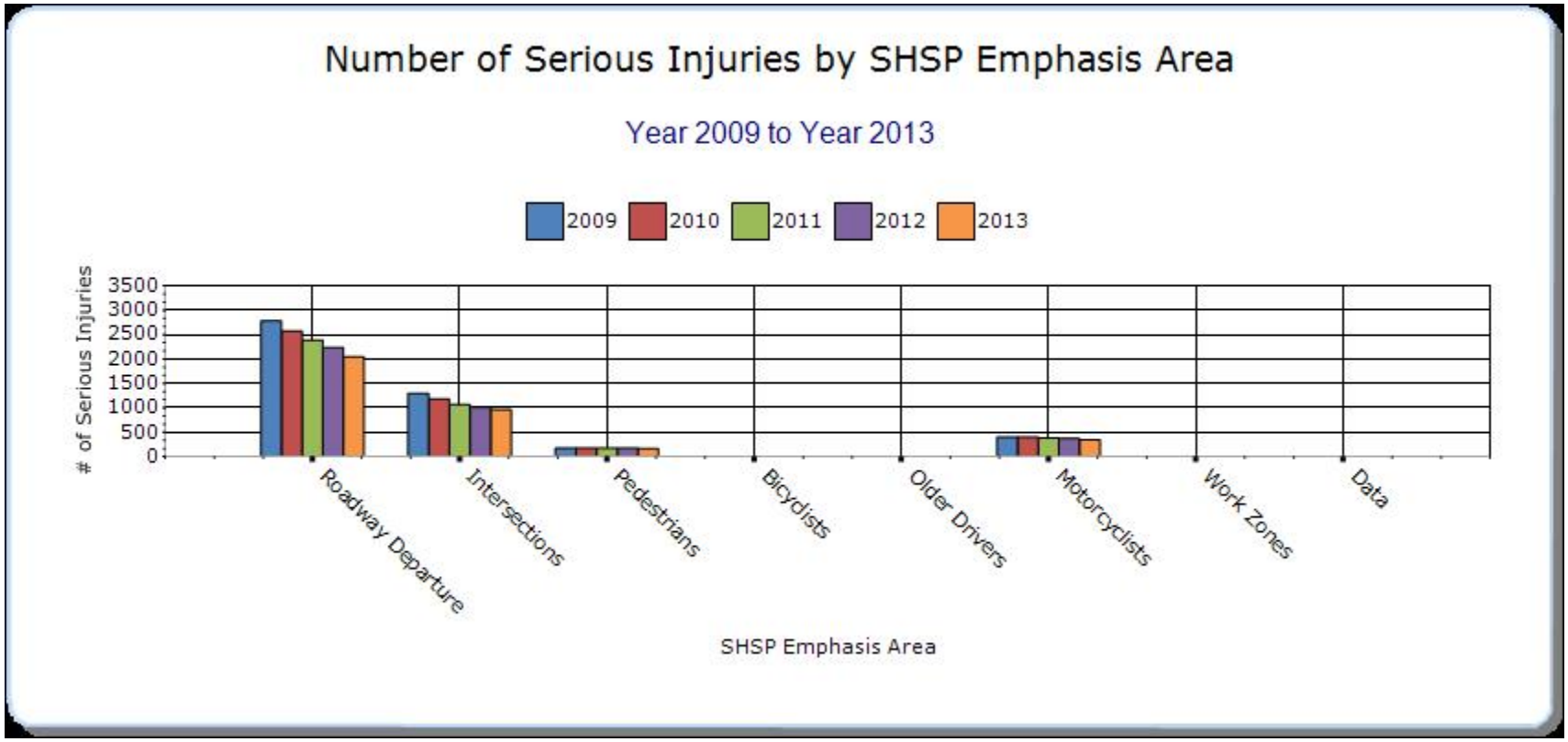
SHSP Emphasis Areas

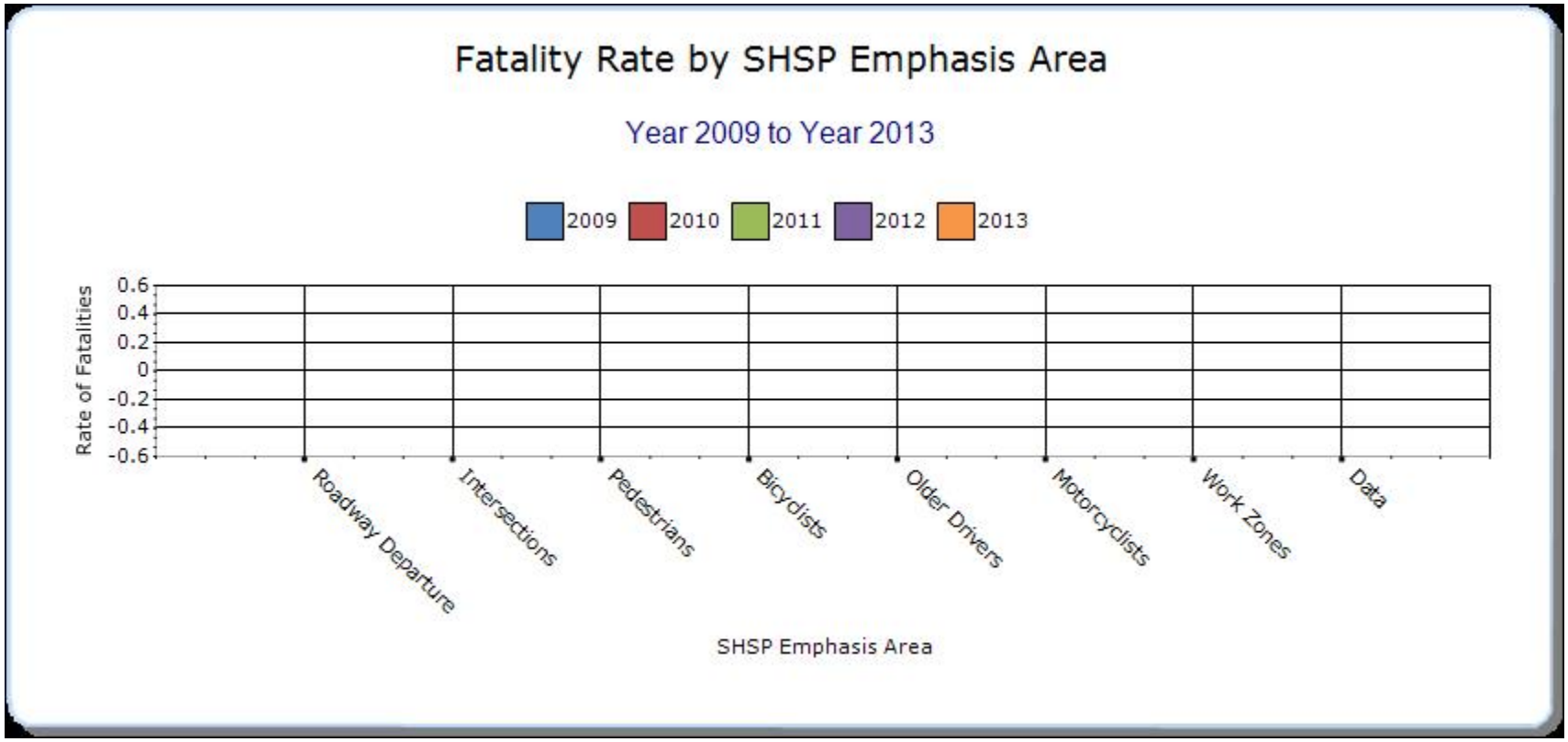
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

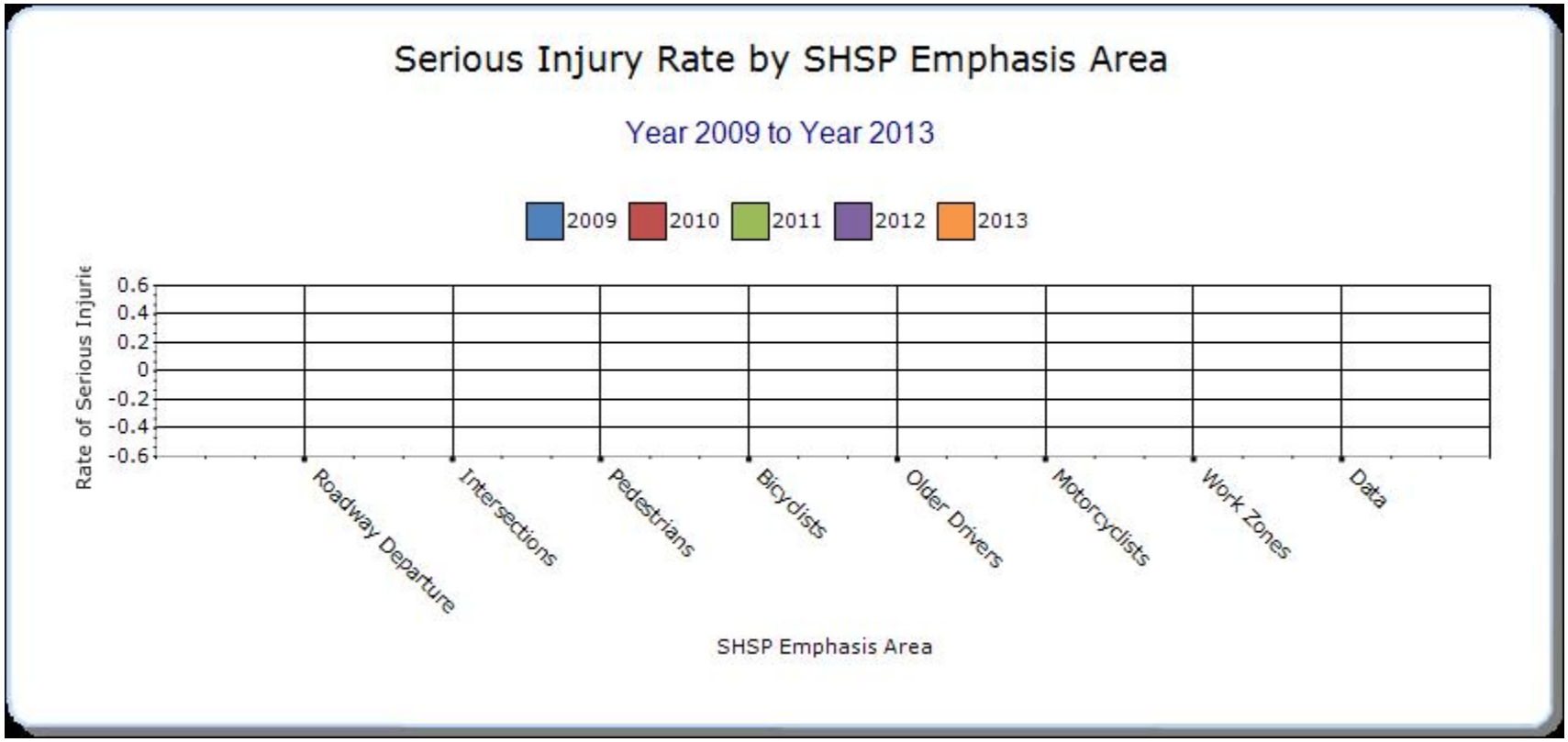
Year - 2013

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
Roadway Departure	Lane Departure	521.4	2042.2	0	0	0	0	0
Intersections	Crashes within limits of intersection	89	962.8	0	0	0	0	0
Motorcyclists	Motorcycle-related	88	346.8	0	0	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
800
600
400
200
0
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
3500
3000
2500
2000
1500
1000
500
0
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
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

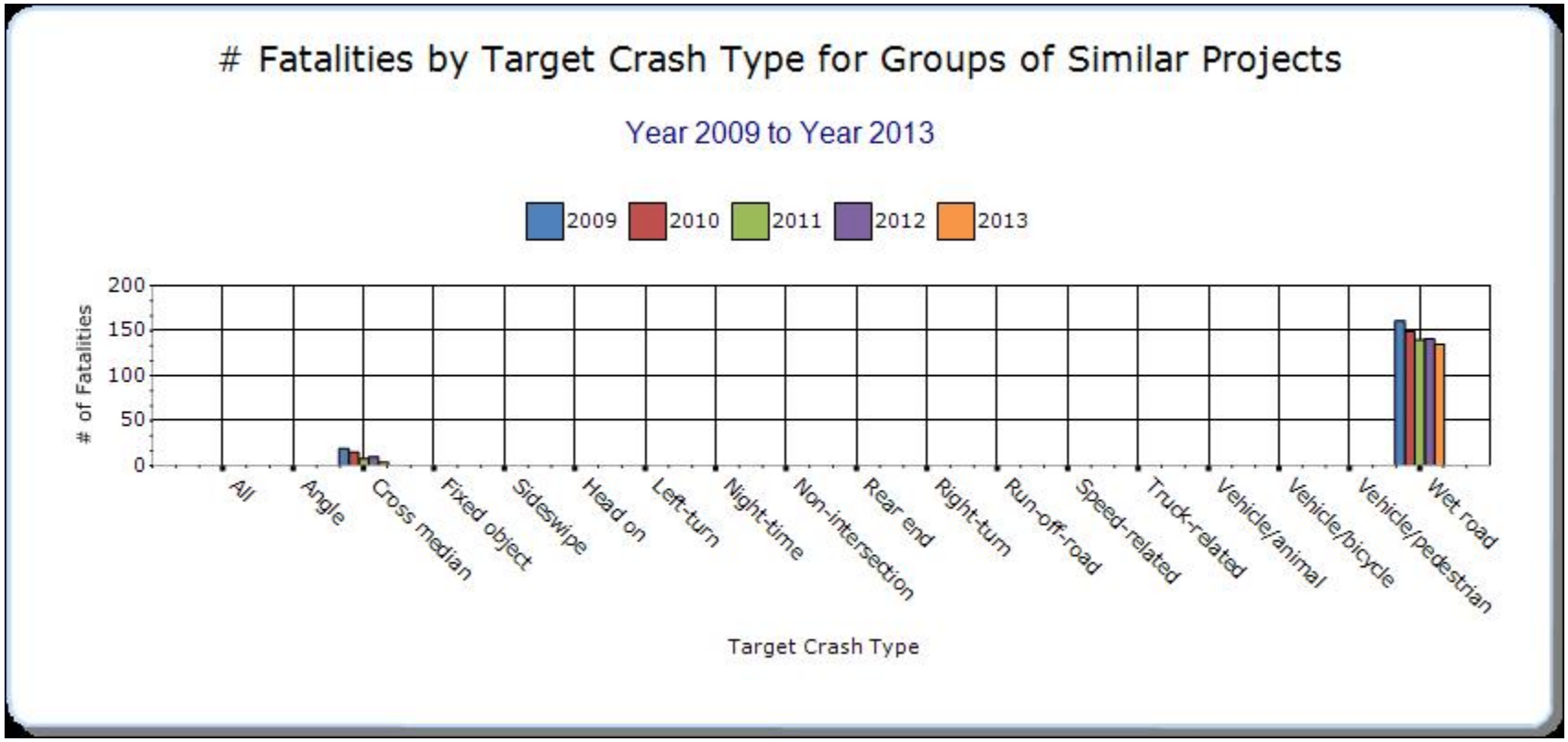

Serious Injury Rate by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

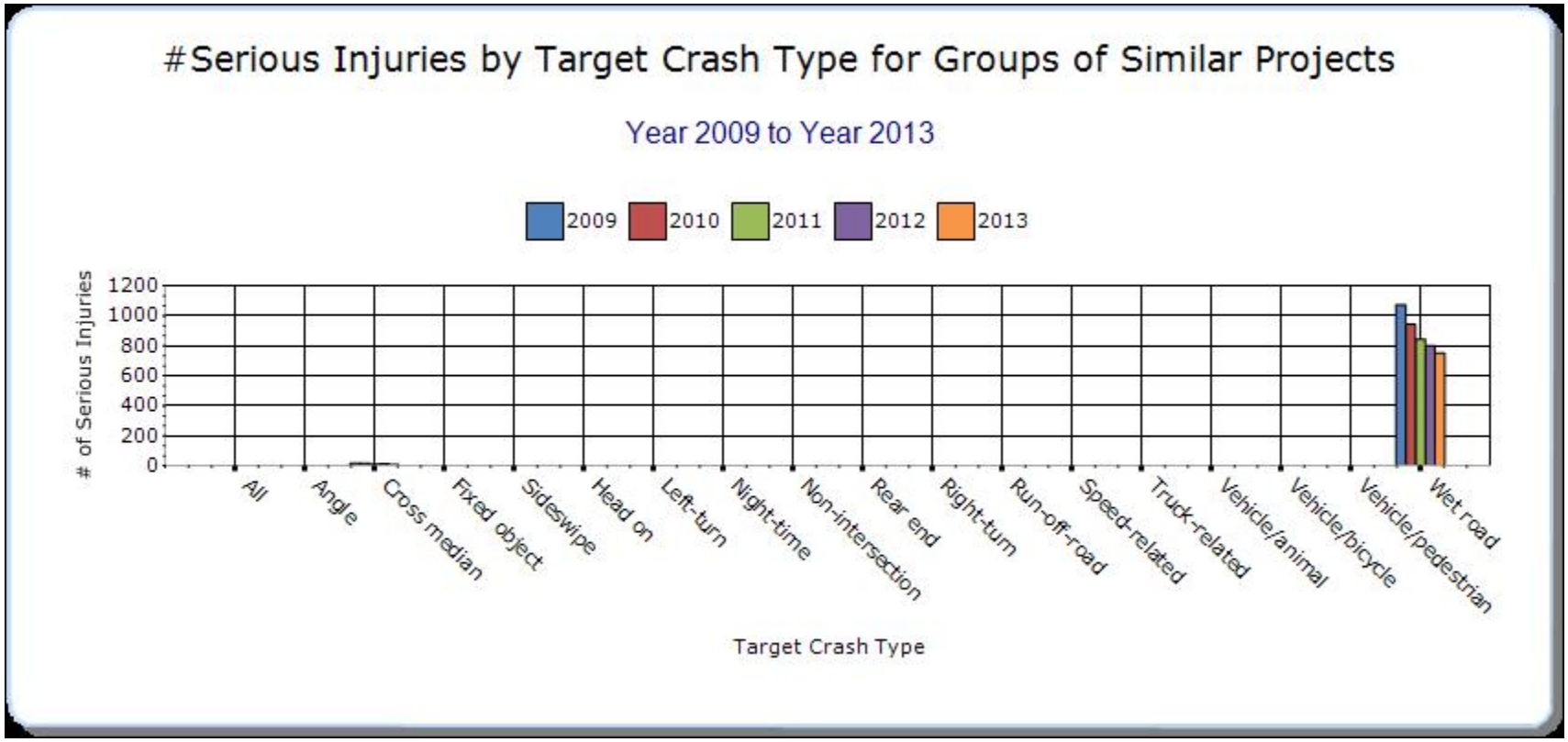
Groups of similar project types

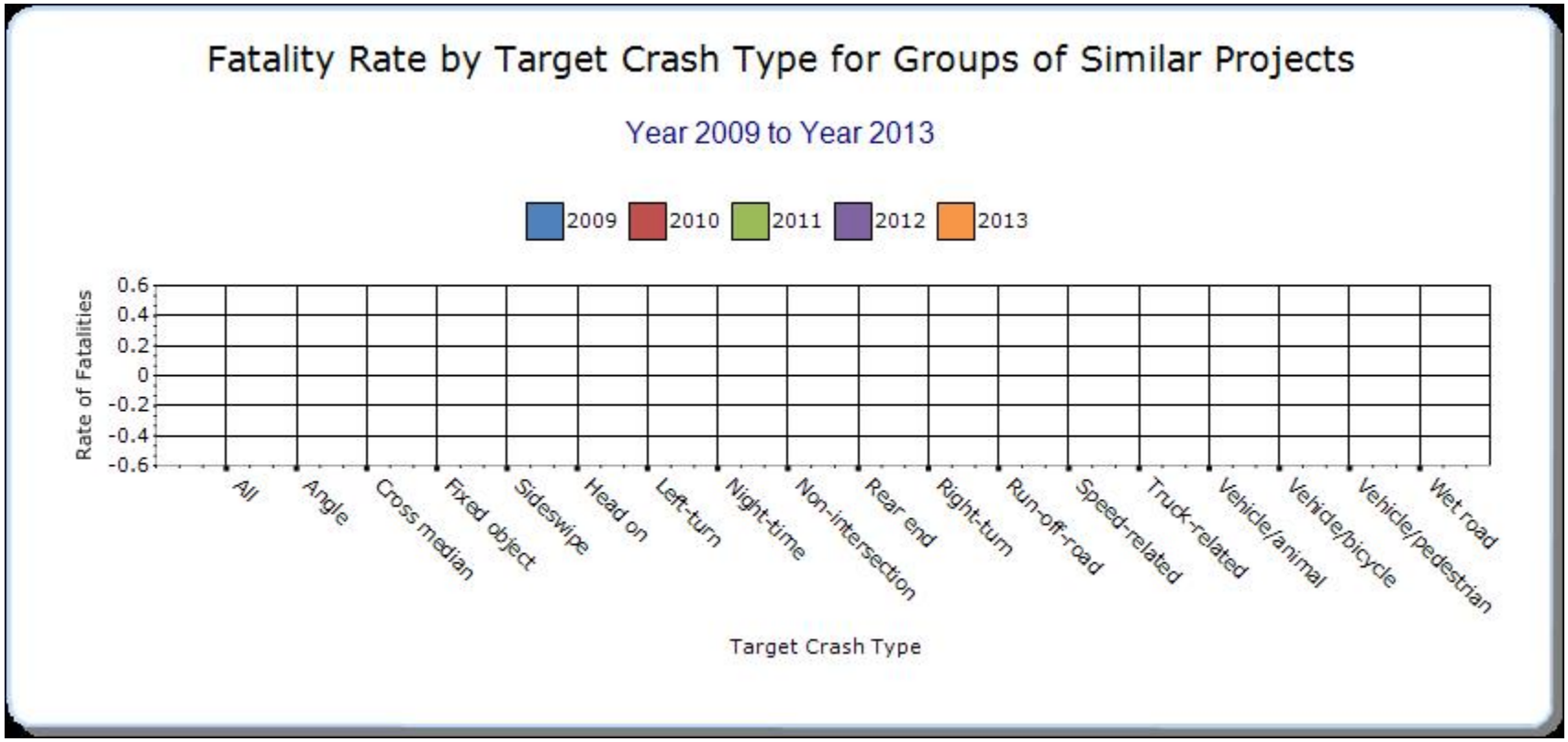
Present the overall effectiveness of groups of similar types of projects.

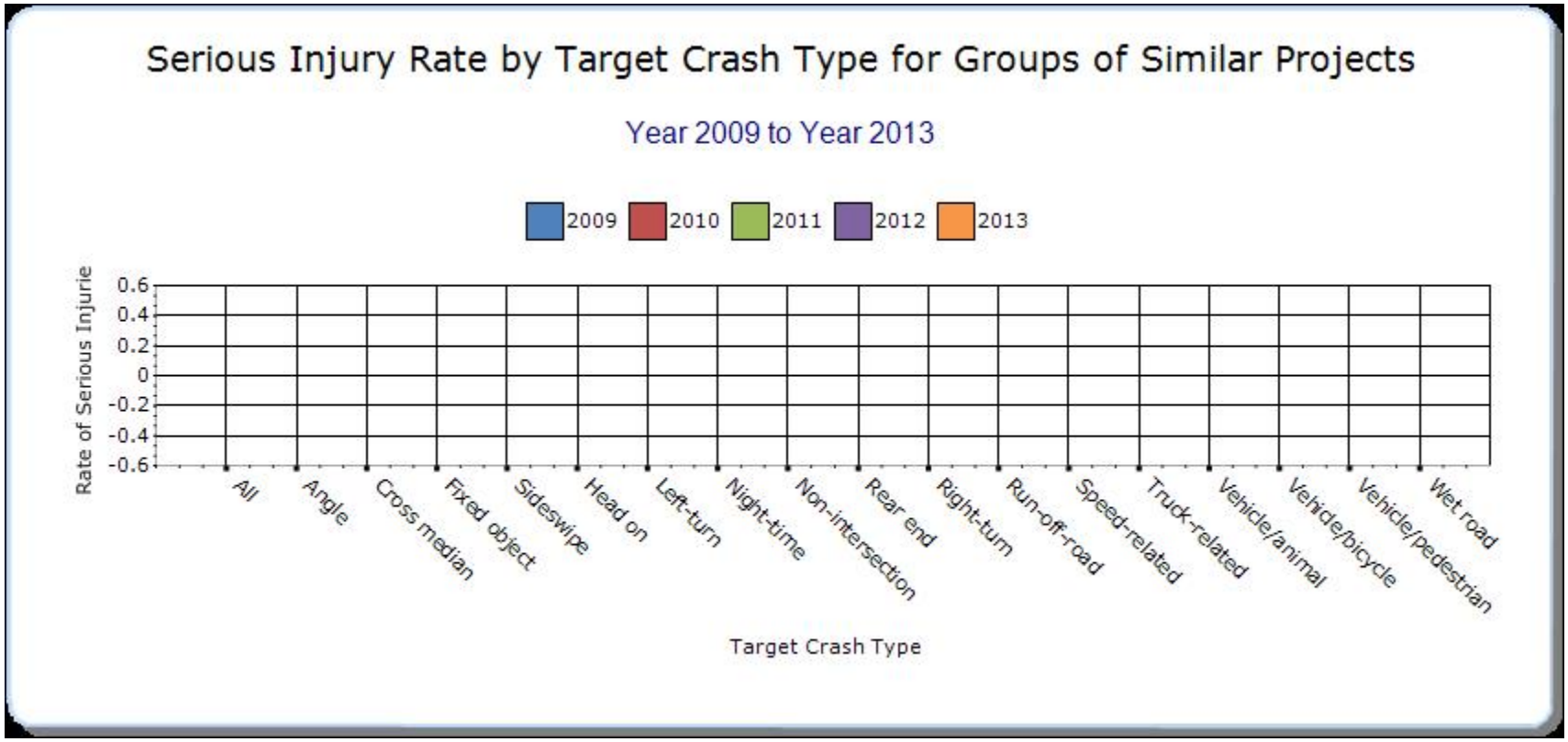
Year - 2013

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
Roadway Departure	Lane Departure	521	2042	0	0	39539	0	0
Skid Hazard	Wet road	135	751	0	0	64078	0	0
Median Barrier	Cross median	4	7	0	0	87	0	0
Intersection	Crashes within intersection	89	963	0	0	32350	0	0


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
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 Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
1200
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 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

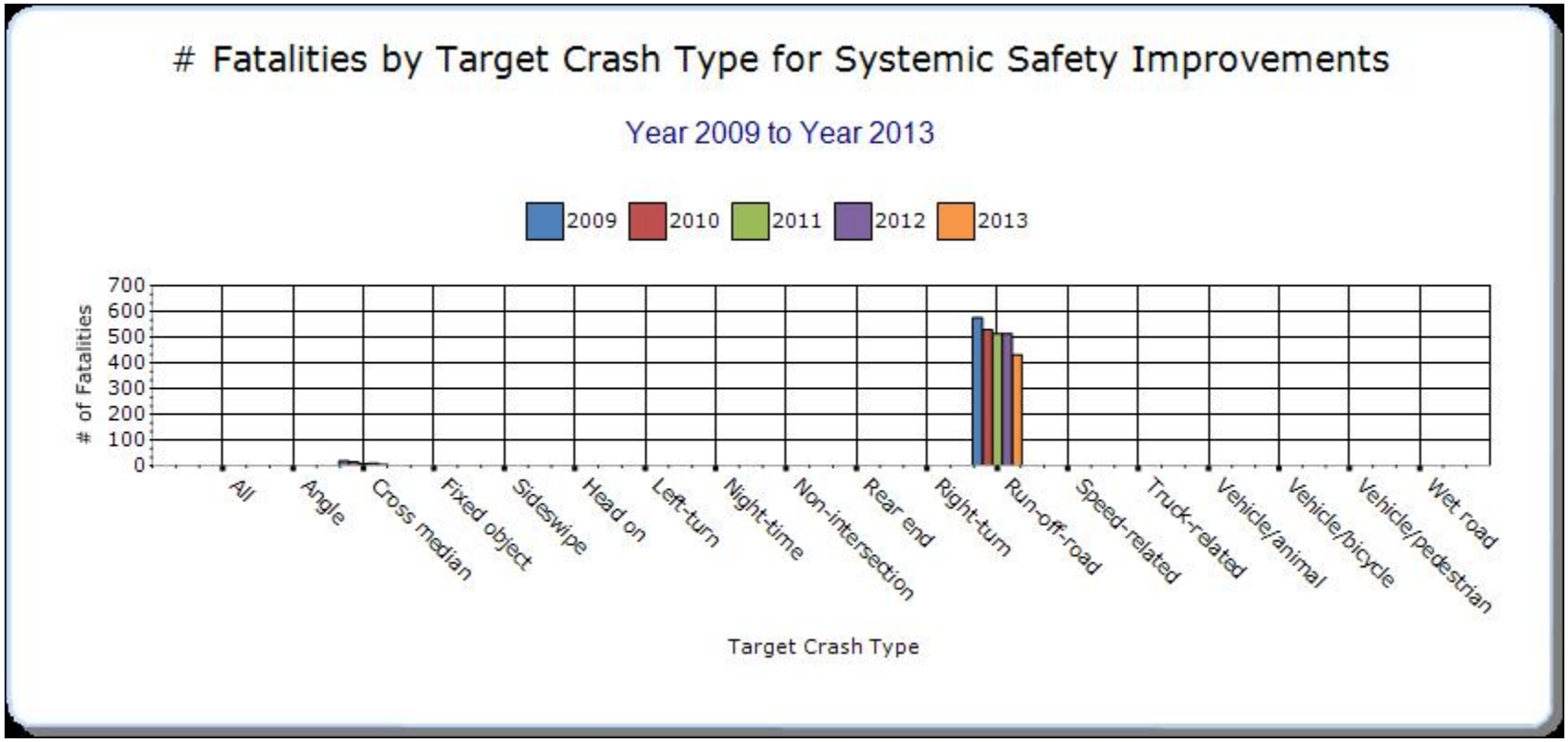

Serious Injury Rate by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related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

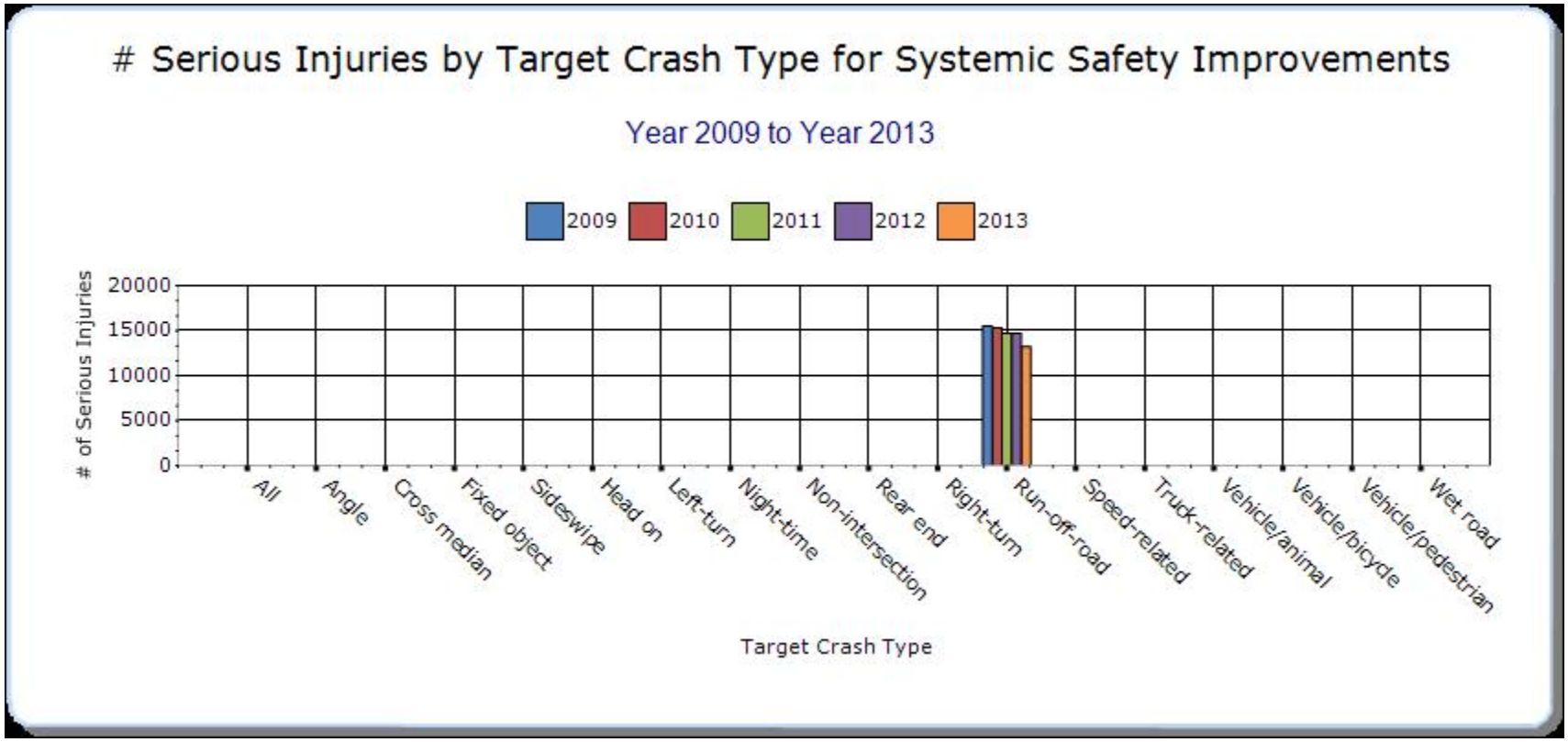
Systemic Treatments

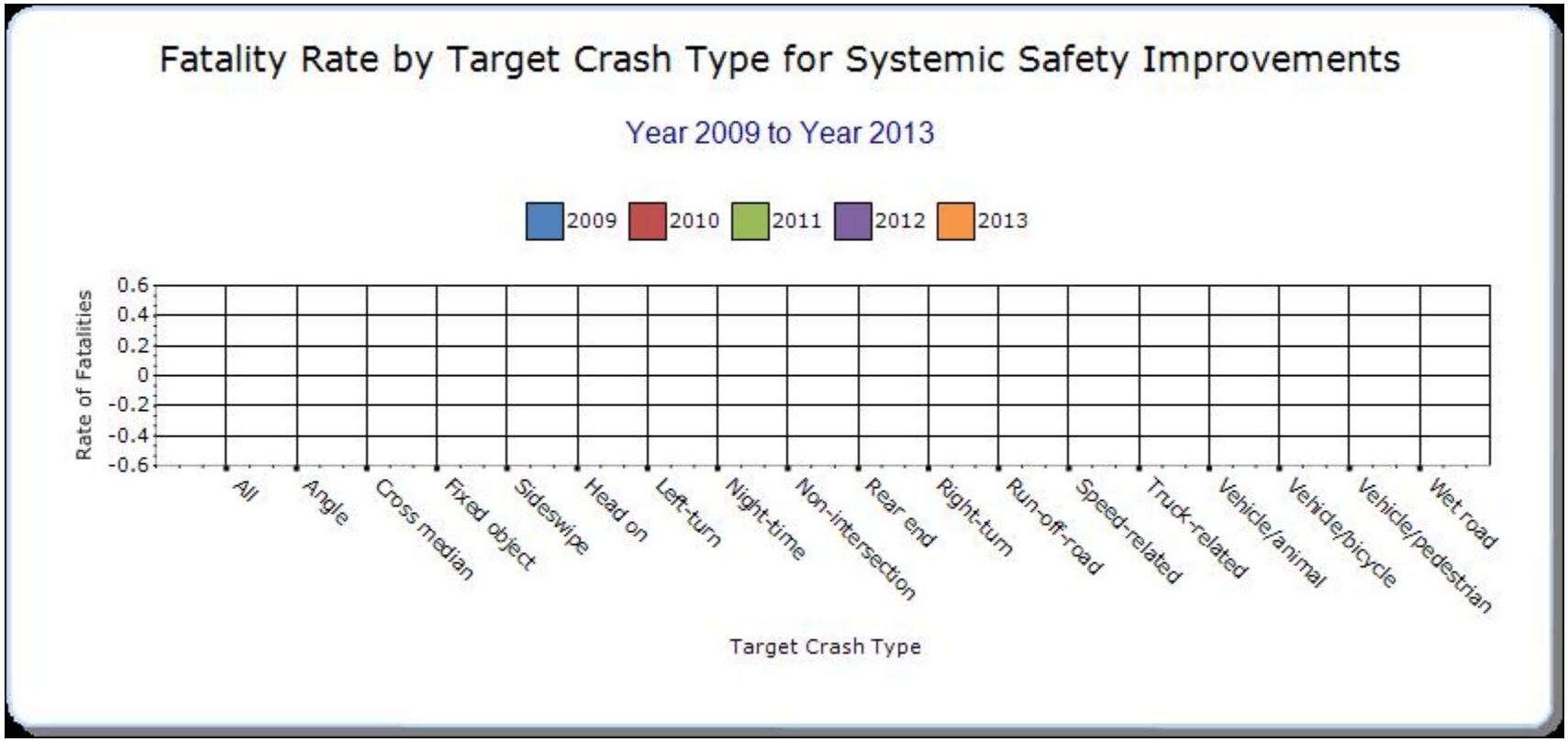
Present the overall effectiveness of systemic treatments.

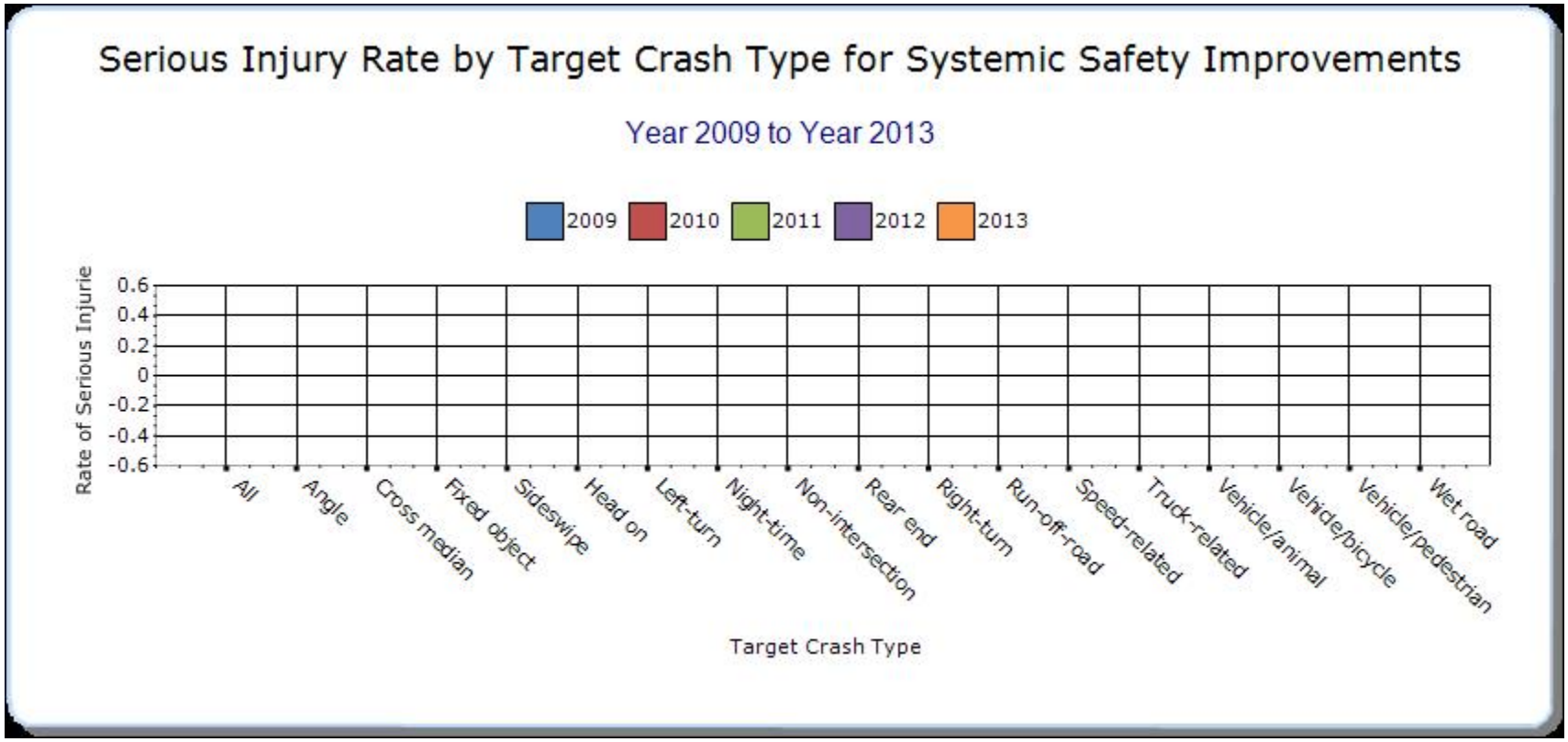
Year - 2013

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	432	13259	0	0	32153	0	0
Cable Median Barriers	Cross median	4	7	0	0	87	0	0


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
700
600
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 Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
20000
15000
10000
5000
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
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 Injury Rate by Target Crash Type for Systemic Safety Improvements
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
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.

B/C Analysis for Countermeasure Treatments

Rumble Stripes: Edgelines 157 miles; Centerlines 88 miles; Both Edgelines & Centerlines 48 miles

B/C Economic: 11:1

High -Friction Installations: 31 sites

B/C Economic: 44:1

Cable Barrier Installations: 65.7 miles

B/C Economic: 7:1

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)

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.