Highway Safety Improvement Program
Data Driven Decisions

Tennessee
Highway Safety Improvement Program
2014 Annual Report

Prepared by: TN

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 Tennessee Highway Safety Improvement Program (HSIP) is managed by the Project Safety Office which is located in the Strategic Transportation Investments Division. The Project Safety Office consists of two units. The Safety Data Unit processes crash data and selects HSIP project locations. The Safety Project Unit manages project implementation logistics i.e. sets schedules for funding, meetings, site visits for Road Safety Audit Reviews (RSAR), etc. This report displays the initiation, selection process and evaluation process of infrastructure-related highway safety projects. The Tennessee Highway Safety Improvement Program (HSIP) consists of the following programs:

Hazard Elimination Safety Program

High Risk Rural Roads Program

Local Roads Safety Initiative

Crash Data Improvement Program

Roadway Departure Action Plan

Shoulder Widening Initiative

Ramp Queue Program

The Project Safety Office manages two other safety programs that are not funded with HSIP funds. The Spot Safety Improvement Program is developed by the Regional Traffic Engineer and the Project Safety Office. The purpose of this program is to identify and recommend improvements to state routes or intersections to state routes. The integrity and safety of the state roadway system will be the first consideration on all projects. The Expedited Project Delivery Program is managed by Project Coordination and Investigation Office which is located in the Strategic Transportation Investments Division. The purpose of this program is to identify and recommend improvement options that are feasible, cost effective, and provide improved safety and mobility.

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.

The Local Road Safety initiative was developed for counties with the highest number of fatal and incapacitating injury crashes per mile of local roads from the available data provided by the Tennessee Department of Safety (TDOS) and TDOT. A list was generated by the Tennessee Department of Safety (TDOS) ranking counties not wholly located in an MPO based on serious injuries and fatalities per mile of county roads. This ranked list is used to select counties to implement improvements. The Safety Data Office uses a consultant to assist in the review of statewide local traffic crash reports, organize electronic crash reports by date, review crash location and roadway classifications and enter the reports into the Tennessee Roadway Information Management System (TRIMS).

After the consultant reviews the reports, they meet with the local governments to present their findings and potential locations for safety improvements. Next, road safety audits are conducted on the roads that were discussed. Then, the guidance from the Road Safety Audits are made into no-plans contracts and let to bid as a TDOT construction contract.

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

☒Design

☒Planning

☒Maintenance

☒Operations

☐Governors Highway Safety Office

☒Other: Other-Traffic engineers

☒Other: Other-Environmental

Briefly describe coordination with internal partners.

The TDOT Project Safety Office collects and processes crash data, identifies projects and organizes Road Safety Audit Reviews (RSARs) for those projects. The TDOT Environmental Division provides environmental clearance documents. In the event that a project needs to be designed, the TDOT Design Division develops construction plans and provides guidance on No-Plans Contracts. The Design Division is also part of the RSA team that provides ideas and concepts during the site visit. All safety projects are coordinated with each MPO and RPO.

TDOT Traffic engineers, both from the headquarters office and the regional office, participate on RSARs and provide guidance, concepts, ideas and history on projects. They also ensure that the correct representative attends from the local government. The TDOT Regional

Construction Divisions provides additional guidance on right of way needs. The TDOT Maintenance Division maintains safety projects after completion

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

☒Metropolitan Planning Organizations

☐Governors Highway Safety Office

☒Local Government Association

☒Other: Other-Tennessee Department of Safety is an integral part of the program. Also Rural Planning Organizations (RPO) and local governments.

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-None

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

Tennessee has several noteworthy practices:

1. The Road Safety Audit report is written with enough detail that the report itself is used as the construction plans when the project is bid out for contract. These are called “no plans contracts”.

2. Several safety projects are bundled together and let as one safety project. This allows TDOT to award several projects for construction at one time and receive better bid prices on the safety projects.

3. The Project Safety Office and the Environmental Division developed a Memorandum of Understanding to expedite environmental clearance on safety projects.

4. The Local Roads Safety Initiative targets safety projects on local roads in rural counties that have limited access to resources, only counties, or sections of counties, not represented by a MPO. The entire project, from road safety audit review to construction, is completed by TDOT.

5. Since 2008, HSIP funds have been used on safety improvements for resurfacing projects. Safety improvements include rumble strips/stripes, guardrail, shoulder widening, and the use of the Safety Edge.

6. In order to identify crash data on local roads, TDOT updated the Tennessee Roadway Identification Management System (TRIMS) to include local roadway data elements. This project was completed in April 2012.

7. In 2013, TDOT received a National Roadway Safety Award in the Infrastructure Category for J-Turn Intersections.

Program Methodology

Select the programs that are administered under the HSIP.

☐ Median Barrier	☒ Intersection	☐ Safe Corridor
☐ Horizontal Curve	☐ Bicycle Safety	☐ Rural State Highways
☐ Skid Hazard	☒ Crash Data	☐ Red Light Running Prevention
☒ Roadway Departure	☐ Low-Cost Spot Improvements	☐ Sign Replacement And Improvement
☒ Local Safety	☐ Pedestrian Safety	☐ Right Angle Crash
☐ Left Turn Crash	☒ Shoulder Improvement	☐ Segments

☒Other: Other-High Risk Rural Road (HRRR)

☒Other: Other-Ramp Queue

☒Other: Other-Hazard Elimination Safety Program (HESP)

☒Other: Other-High-fricion Surface Safety Initiative

Program: **Intersection**

Date of Program Methodology: **9/1/2005**

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

☒ Other-The projects are developed for all locations that meet the criteria for the program.

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
- ☒ Ranking based on severity. 2

Program: **Crash Data**

Date of Program Methodology: **1/1/2010**

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-The projects are developed for all locations that meet the criteria for the program.

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

☒Ranking based on severity 2

Program: **Roadway Departure**

Date of Program Methodology: **5/1/2010**

What data types were used in the program methodology?

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

crashes only

☐ Other

☐ Lane miles

☐ Roadside features

☐ Other

☐ Other

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-The projects are developed for all locations that meet the criteria for the program.

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
- ☒ Ranking based on severity 2

Program: **Local Safety**

Date of Program Methodology: **2/28/2010**

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-The projects are developed for all locations that meet the criteria for the program.

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

☒Based on severity 2

Program: **Shoulder Improvement**

Date of Program Methodology: **5/11/2012**

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 departures	☒ Lane miles	☐ Roadside features
	☐ Other	☒ Other-Shoulder width

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☒ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☐ Other

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	1
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Other	
☒ Ranking based on severity	2

Program: **Other-High Risk Rural Road (HRRR)**

Date of Program Methodology: **4/17/2013**

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

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-The projects are developed for all locations that meet the criteria for the program.

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

☒ Ranking based on severity 2

Program: **Other-Ramp Queue**

Date of Program Methodology: **11/1/2008**

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
		☒ Other-The intent of this program is to identiify locations where the queue extends onto the mainline.

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-As projects are identified.

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	
☒ Ramp queue projects are initiated when the ramp queue problem is identified.	2

Program: **Other-Hazard Elimination Safety Program (HESP)**

Date of Program Methodology: **4/17/2013**

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

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-The projects are developed for all locations that meet the criteria for the program.

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
- ☒ Ranking based on severity 2

Program: **Other-High-fricion Surface Safety Initiative**

Date of Program Methodology: **5/23/2013**

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

☐ Other

☐ Population

☐ Lane miles

☐ Other

☒ Other-Number of crashes in the curve.

☐ Functional classification

☐ Roadside features

☐ 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-Number of crashes on Horizontal curves.

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-The projects are developed for all locations that meet the criteria for the program.

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	
☒ Number of crashes	2

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

25

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 Other-High friction surface treatment program

What process is used to identify potential countermeasures?

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

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-None

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

None

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)	123838797	74 %	52346116	56 %
HRRRP (SAFETEA-LU)	236897	0 %	726747	1 %
HRRR Special Rule	0	0 %	0	0 %
Penalty Transfer - Section 154	23975090	14 %	20322081	22 %
Penalty Transfer – Section 164	17994081	11 %	17293982	19 %
Incentive Grants - Section 163	0	0 %	0	0 %
Incentive Grants (Section 406)	0	0 %	0	0 %
Other Federal-aid Funds (i.e. STP, NHPP)	2000000	1 %	2000000	2 %
State and Local Funds				

Totals	168044865	100%	92688926	100%

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

$14,021,633.00

How much funding is obligated to local safety projects?

$14,021,633.00

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

$7,865,396.00

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

$7,865,396.00

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

$0.00

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

$0.00

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

None

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

None

General Listing of Projects

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

Project	Improvement Category	Output	HSIP Cost	Total Cost	Funding Category	Functional Classification	AADT	Speed	Roadway Ownership	Relationship to SHSP	
										Emphasis Area	Strategy
Bedford Co, Various Routes	Roadway Roadway - other	3.74 Miles	96000	96000	Penalty Transfer - Section 154	Various Routes	0	40	State Highway Agency	Minimizing the consequences of leaving the road	
Blount Co, SR-115	Roadway Roadway - other	2.58 Miles	142000	142000	Penalty Transfer - Section 154	Rural Minor Arterial	1070	50	State Highway Agency	Minimizing the consequences of leaving the road	
Blount Co, SR-33	Roadway Roadway - other	0.21 Miles	40000	40000	Penalty Transfer - Section 154	Urban Minor Arterial	16750	30	State Highway Agency	Minimizing the consequences of leaving the road	
Bradley Co, SR-2	Roadway Roadway - other	427 Miles	128000	128000	Penalty Transfer - Section	Urban Principal Arterial - Other	8640	55	State Highway Agency	Minimizing the consequences of leaving	

					154					the road	
Bradley Co, SR-60	Roadway Roadway - other	0.03 Miles	87000	87000	Penalty Transfer - Section 154	Urban Principal Arterial - Other Freeways and Expressways	32420	55	State Highway Agency	Minimizing the consequences of leaving the road	
Campbell Co, SR-9	Intersection traffic control Intersection traffic control - other	0 Miles	177000	177000	Penalty Transfer - Section 154	Rural Major Collector	880	45	State Highway Agency	Intersections	
Campbell Co, I-75	Roadway Roadway - other	15.5 Miles	562000	562000	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	28480	70	State Highway Agency	Minimizing the consequences of leaving the road	
Campbell/Cocke Co, I-75/I-40	Miscellaneous	0 Miles	1002000	1002000	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	27500	70	State Highway Agency	Minimizing the consequences of leaving the road	

Chester Co, SR-100	Roadway Roadway - other	0 Miles	30000	30000	Penalty Transfer - Section 154	Rural Minor Arterial	3040	55	State Highway Agency	Minimizing the consequences of leaving the road	
Davidson Co, SR-155	Roadway Roadway - other	0.3 Miles	10000	10000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	39340	45	State Highway Agency	Minimizing the consequences of leaving the road	
Davidson Co, SR-251	Roadway Roadway - other	0.85 Miles	40000	40000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	28230	40	State Highway Agency	Minimizing the consequences of leaving the road	
Davidson Co, SR-6	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	10720	40	State Highway Agency	Minimizing the consequences of leaving the road	
Decatur Co, SR-69	Roadway Roadway - other	117 Miles	40000	40000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	11340	55	State Highway Agency	Minimizing the consequences of leaving the road	

Dekalb/Wilson Co, SR-26	Roadway Roadway - other	626 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Arterial	4680	55	State Highway Agency	Minimizing the consequences of leaving the road	
Dekalb Co, SR-53	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Rural Minor Arterial	2310	55	State Highway Agency	Minimizing the consequences of leaving the road	
Dekalb/Warren Co, SR-56	Roadway Roadway - other	7.96 Miles	40000	40000	HSIP (Section 148)	Rural Minor Arterial	3610	55	State Highway Agency	Minimizing the consequences of leaving the road	
Fayette Co, SR-1	Roadway signs and traffic control Roadway signs and traffic control - other	0.31 Miles	22000	22000	Penalty Transfer - Section 154	Rural Minor Arterial	3430	55	State Highway Agency	Minimizing the consequences of leaving the road	
Fayette Co, SR-15	Roadway Roadway -	0 Miles	5000	5000	Penalty Transfer -	Rural Principal Arterial -	18060	70	State Highway	Minimizing the consequenc	

	other				Section 154	Other			Agency	es of leaving the road	
Fayette Co, SR-76	Roadway signs and traffic control Roadway signs and traffic control - other	0.14 Miles	2000	2000	Penalty Transfer - Section 154	Rural Minor Arterial	7390	35	State Highway Agency	Minimizing the consequences of leaving the road	
Franklin Co, SR-15	Roadway Roadway - other	0.3 Miles	40000	40000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	4550	45	State Highway Agency	Minimizing the consequences of leaving the road	
Grainger Co, SR-131	Roadway signs and traffic control Roadway signs and traffic control - other	0.35 Miles	15000	15000	Penalty Transfer - Section 154	Rural Major Collector	1350	40	State Highway Agency	Minimizing the consequences of leaving the road	
Hancock Co,	Roadway Roadway -	1.62	20000	20000	Penalty Transfer	Rural Minor	3020	50	State Highway	Minimizing the	

SR-31	other	Miles			- Section 154	Arterial			Agency	consequences of leaving the road	
Hardeman Co, SR-15	Roadway Roadway - other	422 Miles	20000	20000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	12850	45	State Highway Agency	Minimizing the consequences of leaving the road	
Hardeman Co, SR-15	Roadway Roadway - other	422 Miles	60000	60000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	12850	45	State Highway Agency	Minimizing the consequences of leaving the road	0
Hardin Co, SR-128	Roadway Roadway - other	216 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Arterial	6100	55	State Highway Agency	Minimizing the consequences of leaving the road	
Henderson Co, SR-100	Roadway Roadway - other	0 Miles	30000	30000	Penalty Transfer - Section 154	Rural Minor Arterial	4130	55	State Highway Agency	Minimizing the consequences of leaving the road	
Henderson Co, SR-20	Roadway Roadway -	0.58 Miles	40000	40000	Penalty Transfer -	Urban Principal Arterial -	18610	40	State Highway	Minimizing the consequenc	

	other				Section 154	Other			Agency	es of leaving the road	
Houston Co, SR-49	Roadway Roadway - other	3.92 Miles	168000	168000	Penalty Transfer - Section 154	Rural Minor Arterial	5650	50	State Highway Agency	Minimizing the consequenc es of leaving the road	
Humphreys Co, SR-1	Intersection traffic control Intersection traffic control - other	1.59 Miles	35000	35000	Penalty Transfer - Section 154	Rural Minor Arterial	9330	45	State Highway Agency	Reduce lane-departure crashes	
Knox Co, LR-01053	Intersection geometry Intersection geometry - other	0.37 Miles	80000	80000	Penalty Transfer - Section 154	Urban Minor Arterial	25680	30	State Highway Agency	Reduce lane-departure crashes	
Knox Co, SR-169	Intersection geometry Intersection geometry - other	0 Miles	20000	20000	Penalty Transfer - Section 154	Urban Minor Arterial	23620	50	State Highway Agency	Reduce lane-departure crashes	
Knox Co, SR-33	Roadway Roadway -	0.44	40000	40000	Penalty Transfer	Urban Minor	5520	35	State Highway	Minimizing the	

	other	Miles			- Section 154	Arterial			Agency	consequences of leaving the road	
Knox Co, LR-0D734	Roadway Roadway - other	2.43 Miles	40000	40000	Penalty Transfer - Section 154	Rural Local Road or Street	500	35	State Highway Agency	Minimizing the consequences of leaving the road	
Knox Co, I-140	Roadway Roadway - other	0 Miles	5000	5000	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	0	45	State Highway Agency	Minimizing the consequences of leaving the road	
Knox Co, I-275	Roadway Roadway - other	0.17 Miles	39000	39000	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	30300	55	State Highway Agency	Minimizing the consequences of leaving the road	
Lake Co, SR-78	Roadway Roadway - other	3 Miles	40000	40000	Penalty Transfer - Section 154	Rural Minor Arterial	4400	40	State Highway Agency	Minimizing the consequences of leaving the road	
Lawrence Co, SR-6	Roadway Roadway -	0.17 Miles	40000	40000	Penalty Transfer -	Urban Principal Arterial -	11360	55	State Highway	Minimizing the consequenc	

	other				Section 154	Other			Agency	es of leaving the road	
Lawrence Co, SR-6	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	18230	35	State Highway Agency	Minimizing the consequences of leaving the road	
Lincoln Co, SR-10	Roadway Roadway - other	11.95 Miles	205000	205000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	2980	55	State Highway Agency	Minimizing the consequences of leaving the road	
Loudon Co, SR-33	Intersection traffic control Intersection traffic control - other	0 Miles	5000	5000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	13540	50	State Highway Agency	Reduce lane-departure crashes	
Loudon Co, LR-01247	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Urban Minor Arterial	6490	30	State Highway Agency	Minimizing the consequences of leaving the road	
Loudon Co, SR-	Intersection traffic	0	316490	316490	Penalty Transfer	Rural Minor	6840	45	State Highway	Reduce lane-departure	

2	control Intersection traffic control - other	Miles			- Section 154	Arterial			Agency	crashes	
Macon Co, SR-10	Roadway Roadway - other	18 Miles	2000000	2000000	Penalty Transfer - Section 154	Rural Minor Arterial	5500	55	State Highway Agency	Minimizing the consequences of leaving the road	
Madison Co, SR-20	Intersection geometry Intersection geometry - other	0 Miles	20000	20000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	15550	40	State Highway Agency	Reduce lane-departure crashes	
Marshall Co, SR-11	Roadway Roadway - other	0.11 Miles	5000	5000	Penalty Transfer - Section 154	Rural Minor Arterial	3160	30	State Highway Agency	Minimizing the consequences of leaving the road	
Maury Co, SR-6	Roadway Roadway - other	0.34 Miles	20000	20000	Penalty Transfer - Section 154	Urban Principal Arterial - Other Freeways and Expressway	20210	65	State Highway Agency	Minimizing the consequences of leaving the road	

						s					
McMinn Co, SR-2	Roadway Roadway - other	2.75 Miles	20000	20000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	14340	45	State Highway Agency	Minimizing the consequences of leaving the road	
McMinn Co, SR-30	Roadway Roadway - other	48 Miles	20000	20000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	21670	50	State Highway Agency	Minimizing the consequences of leaving the road	
McMinn Co, SR-30	Roadway Roadway - other	0 Miles	60000	60000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	9020	50	State Highway Agency	Minimizing the consequences of leaving the road	
McMinn Co, SR-305	Roadway Roadway - other	59 Miles	20000	20000	Penalty Transfer - Section 154	Urban Minor Arterial	8320	30	State Highway Agency	Minimizing the consequences of leaving the road	
McMinn Co, SR-2	Roadway Roadway - other	0 Miles	60000	60000	Penalty Transfer - Section	Urban Principal Arterial - Other	14340	45	State Highway Agency	Minimizing the consequences of leaving	

					154					the road	
McMinn Co, I-75	Roadway Roadway - other	0 Miles	60000	60000	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	38210	70	State Highway Agency	Minimizing the consequences of leaving the road	
Monroe Co, SR-33	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	13600	45	State Highway Agency	Minimizing the consequences of leaving the road	
Monroe Co, SR-68	Roadway Roadway - other	0.4 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Arterial	9750	55	State Highway Agency	Minimizing the consequences of leaving the road	
Moore Co, SR-55	Roadway Roadway - other	3.92 Miles	40000	40000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	7330	55	State Highway Agency	Minimizing the consequences of leaving the road	
Obion Co, SR-5	Roadway Roadway - other	615 Miles	20000	20000	Penalty Transfer - Section	Rural Minor Arterial	2960	55	State Highway Agency	Minimizing the consequences of leaving	0

					154					the road	
Obion Co, SR-5	Roadway Roadway - other	228 Miles	20000	20000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	5430	55	State Highway Agency	Minimizing the consequences of leaving the road	
Overton Co, SR-52	Roadway Roadway - other	0 Miles	60000	60000	Penalty Transfer - Section 154	Rural Minor Arterial	1390	55	State Highway Agency	Minimizing the consequences of leaving the road	
Overton/Pickett Co, SR-52	Roadway Roadway - other	7.33 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Arterial	1390	55	State Highway Agency	Minimizing the consequences of leaving the road	
Perry Co, SR-13	Roadway Roadway - other	314 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Arterial	610	55	State Highway Agency	Minimizing the consequences of leaving the road	
Pickett Co, SR-111	Roadway Roadway - other	114 Miles	313000	313000	Penalty Transfer - Section	Rural Principal Arterial - Other	7180	55	State Highway Agency	Minimizing the consequences of leaving	

					154					the road	
Polk Co, SR-40	Roadway Roadway - other	23.56 Miles	5000	5000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	5380	55	State Highway Agency	Minimizing the consequences of leaving the road	
Rhea Co, SR-29	Intersection geometry Intersection geometry - other	0.27 Miles	50000	50000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	18510	45	State Highway Agency	Reduce lane-departure crashes	
Roane Co, SR-70	Intersection geometry Intersection geometry - other	0 Miles	25000	25000	Penalty Transfer - Section 154	Urban Minor Collector	12410	45	State Highway Agency	Reduce lane-departure crashes	
Roane Co, LR-01203	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Urban Minor Arterial	480	30	State Highway Agency	Minimizing the consequences of leaving the road	
Robertson Co, SR-257	Intersection geometry Intersection geometry -	0 Miles	40000	40000	Penalty Transfer - Section	Rural Major Collector	3660	55	State Highway Agency	Reduce lane-departure crashes	

	other				154						
Robertson Co, SR-76	Roadway Roadway - other	0.6 Miles	40000	40000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	16800	40	State Highway Agency	Minimizing the consequences of leaving the road	
Scott Co, SR-63	Roadway Roadway - other	312 Miles	60000	60000	Penalty Transfer - Section 154	Rural Minor Arterial	5840	55	State Highway Agency	Minimizing the consequences of leaving the road	
Statewide	Miscellaneous	0 Miles	31000	31000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	0	0	State Highway Agency	Guidance for preparing Road Safety Audit Reports	
Sullivan Co, SR-36	Intersection geometry Intersection geometry - other	0 Miles	30000	30000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	25370	35	State Highway Agency	Reduce lane-departure crashes	
Sullivan Co, SR-36	Roadway Roadway - other	116 Miles	40000	40000	Penalty Transfer - Section	Urban Principal Arterial - Other	25370	45	State Highway Agency	Minimizing the consequences of leaving	

					154					the road	
Sullivan Co, SR-93	Roadway Roadway - other	0.25 Miles	40000	40000	Penalty Transfer - Section 154	Urban Principal Arterial - Other Freeways and Expressways	24790	50	State Highway Agency	Minimizing the consequences of leaving the road	
Sullivan Co, I-81	Roadway Roadway - other	0 Miles	25000	25000	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	32010	65	State Highway Agency	Minimizing the consequences of leaving the road	
Sumner Co, SR-174	Roadway Roadway - other	0.32 Miles	37000	37000	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	13900	30	State Highway Agency	Minimizing the consequences of leaving the road	0
Sumner Co, SR-76	Roadway Roadway - other	10.34 Miles	5000	5000	HSIP (Section 148)	Urban Minor Collector	4100	45	State Highway Agency	Minimizing the consequences of leaving the road	
Sumner Co, SR-	Intersection geometry	0.25	15300	15300	Penalty Transfer	Urban Principal	1136	55	State Highway	Reduce lane-departure	0

6	Intersection geometry - other	Miles			- Section 154	Arterial - Other	0		Agency	crashes	
Tipton Co, SR-14	Roadway Roadway - other	4.39 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Arterial	6090	55	State Highway Agency	Minimizing the consequences of leaving the road	
Tipton Co, SR-3	Intersection geometry Intersection geometry - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	29020	55	State Highway Agency	Reduce lane-departure crashes	
Tipton Co, SR-3	Intersection geometry Intersection geometry - other	0 Miles	30000	30000	Penalty Transfer - Section 154	Rural Principal Arterial - Other	17720	55	State Highway Agency	Reduce lane-departure crashes	
Washington Co, LR-01365	Roadway Roadway - other	0 Miles	40000	40000	Penalty Transfer - Section 154	Rural Minor Collector	1740	40	County Highway Agency	Minimizing the consequences of leaving the road	
Williamson Co, SR-11	Roadway Roadway -	0.02 Miles	206000	206000	Penalty Transfer -	Rural Minor Arterial	3950	55	State Highway	Minimizing the consequenc	

	other				Section 154				Agency	es of leaving the road	
Williamson Co, SR-397	Intersection traffic control Intersection traffic control - other	0.67 Miles	166400	166400	Penalty Transfer - Section 154	Urban Principal Arterial - Other	24510	55	State Highway Agency	Reduce lane-departure crashes	
Wilson Co, SR-10	Roadway Roadway - other	0.06 Miles	386000	386000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	12250	30	State Highway Agency	Minimizing the consequences of leaving the road	
Wilson Co, SR-26	Intersection traffic control Intersection traffic control - other	0.47 Miles	11000	11000	Penalty Transfer - Section 154	Urban Principal Arterial - Other	15740	45	State Highway Agency	Reduce lane-departure crashes	
Grundy Co, I-24	Roadway Roadway - other	0.42 Miles	1239000	1239000	Penalty Transfer – Section 164	Rural Principal Arterial - Interstate	33390	55	State Highway Agency	Minimizing the consequences of leaving the road	

Macon Co, SR-10	Roadway Roadway - other	18 Miles	14960982	14960982	Penalty Transfer – Section 164	Rural Minor Arterial	5500	55	State Highway Agency	Minimizing the consequences of leaving the road	
Polk Co, SR-40	Roadway Roadway - other	23.56 Miles	1094000	1094000	Penalty Transfer – Section 164	Rural Principal Arterial - Other	5380	55	County Highway Agency	Minimizing the consequences of leaving the road	

Please see attached HSIP Project Listings.

Progress in Achieving Safety Performance Targets

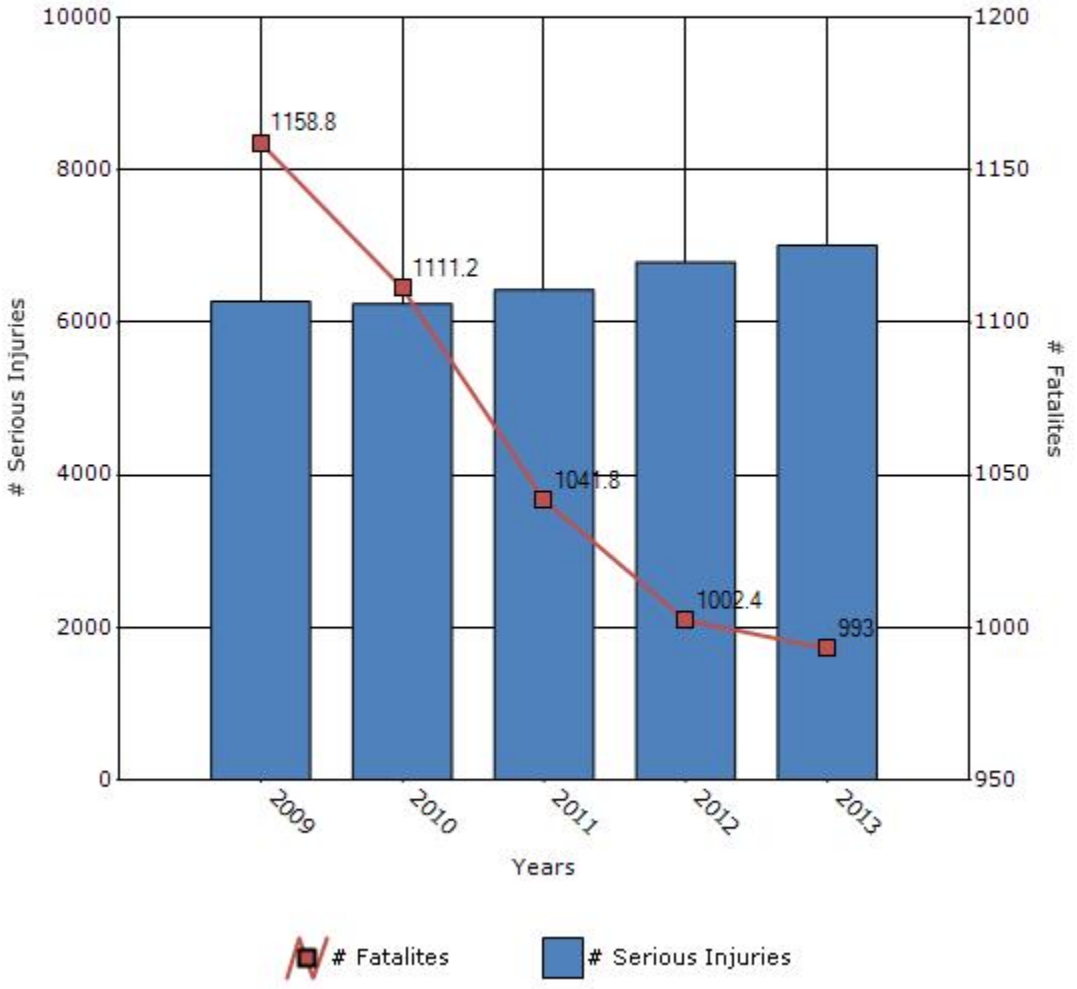
Overview of General Safety Trends

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

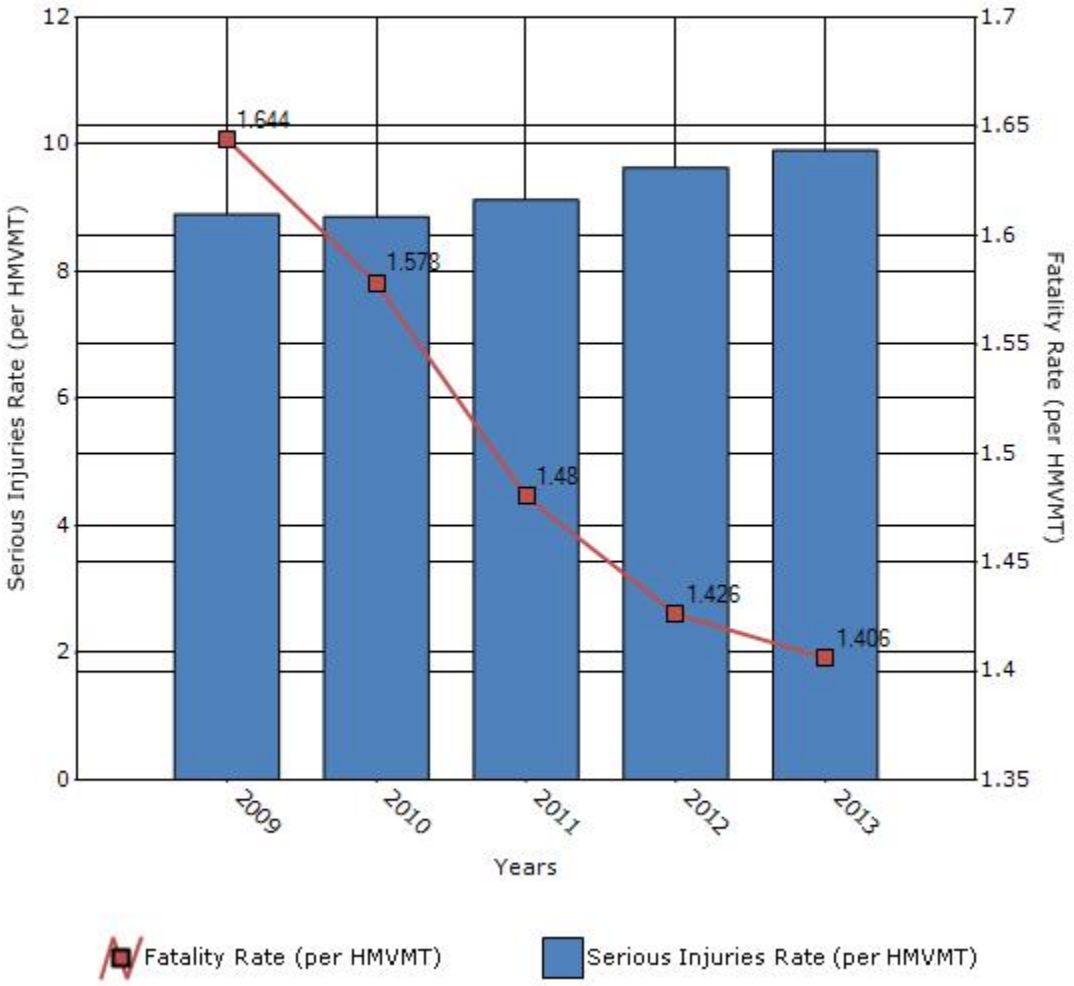
Performance Measures*	2009	2010	2011	2012	2013
Number of fatalities	1158.8	1111.2	1041.8	1002.4	993
Number of serious injuries	6275	6242.6	6429.4	6790	7008.8
Fatality rate (per HMVMT)	1.644	1.578	1.48	1.426	1.406
Serious injury rate (per HMVMT)	8.9	8.862	9.126	9.636	9.906

*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

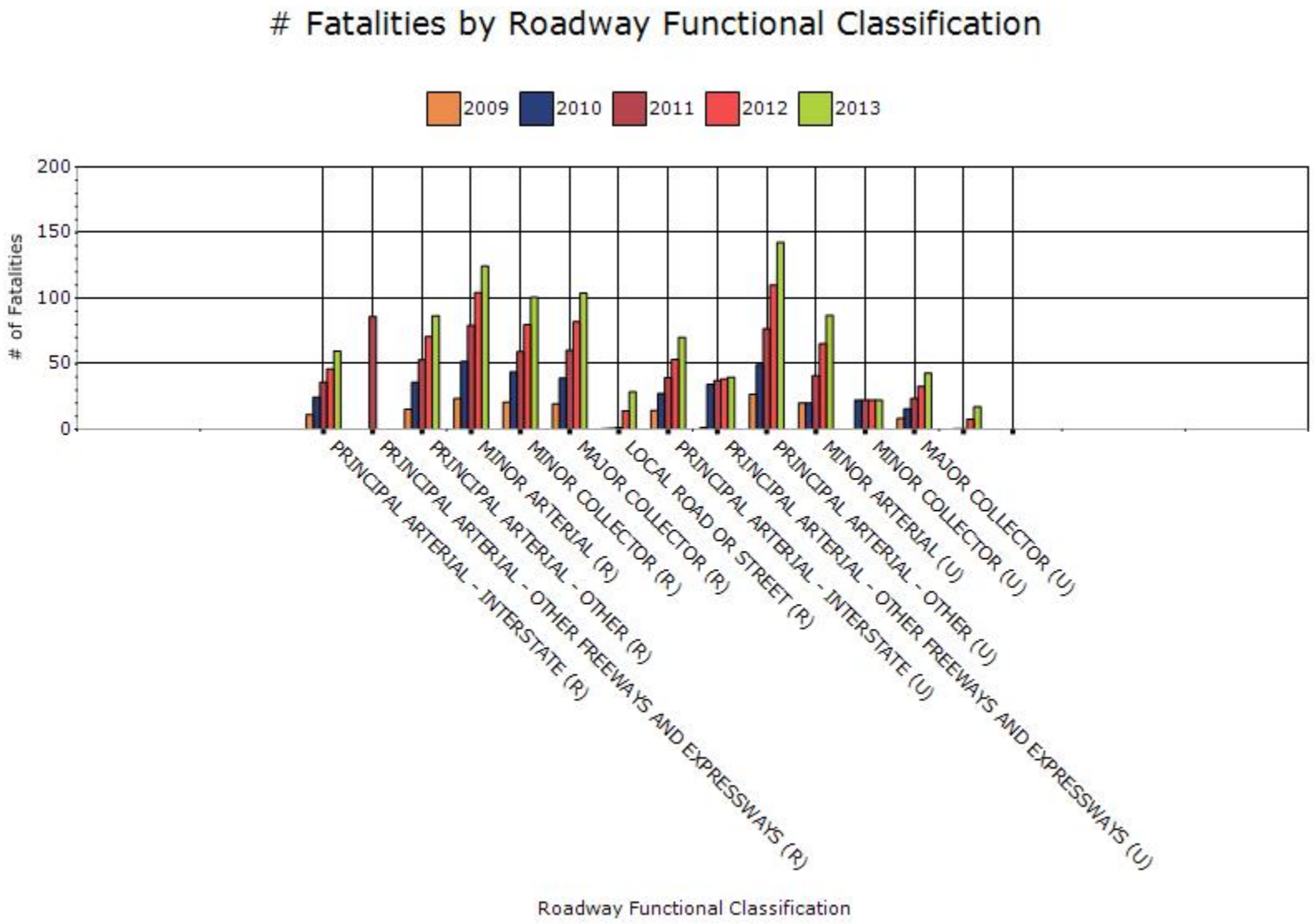


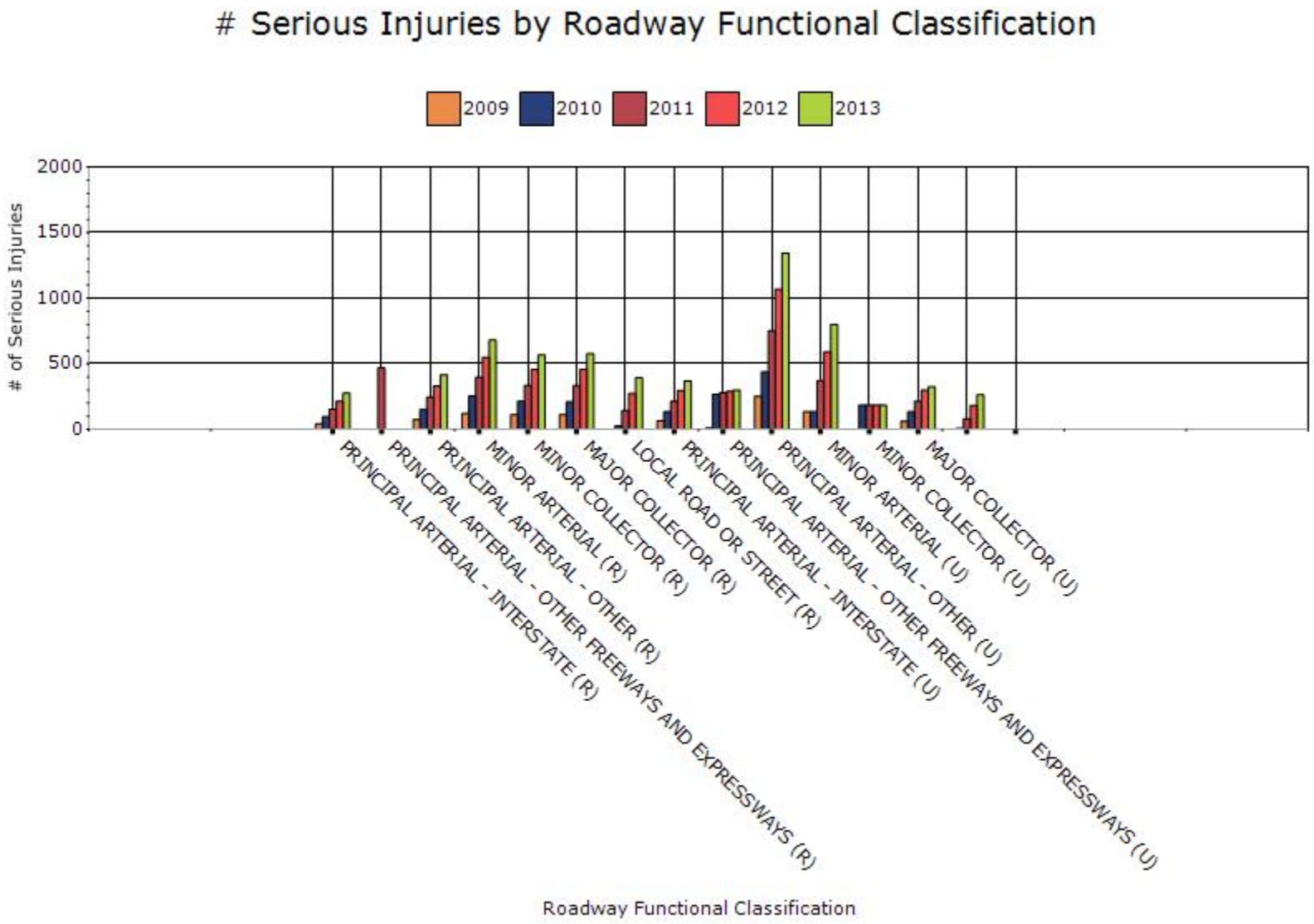
To the maximum extent possible, present performance measure* data by functional classification and ownership.

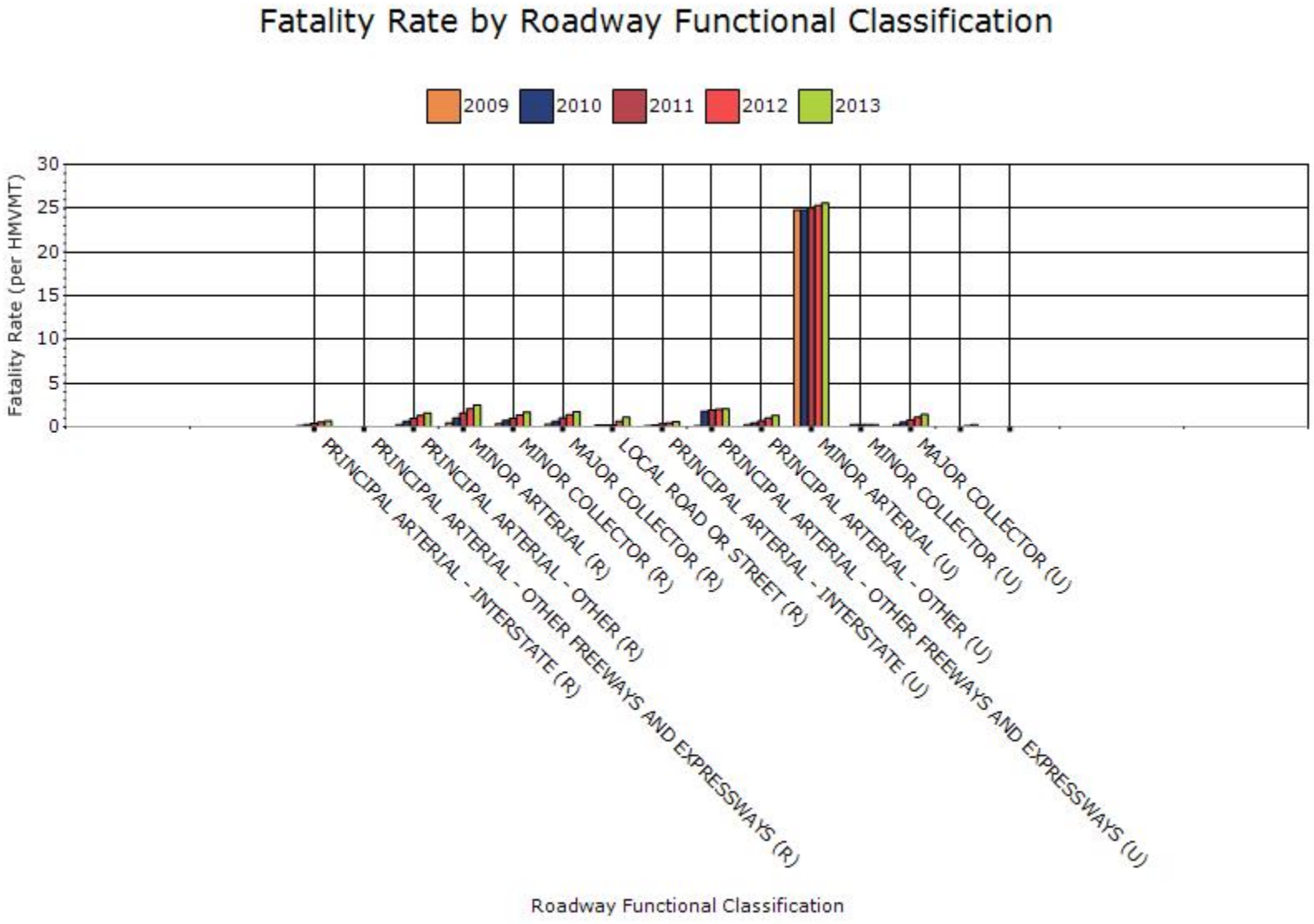
Year - 2013

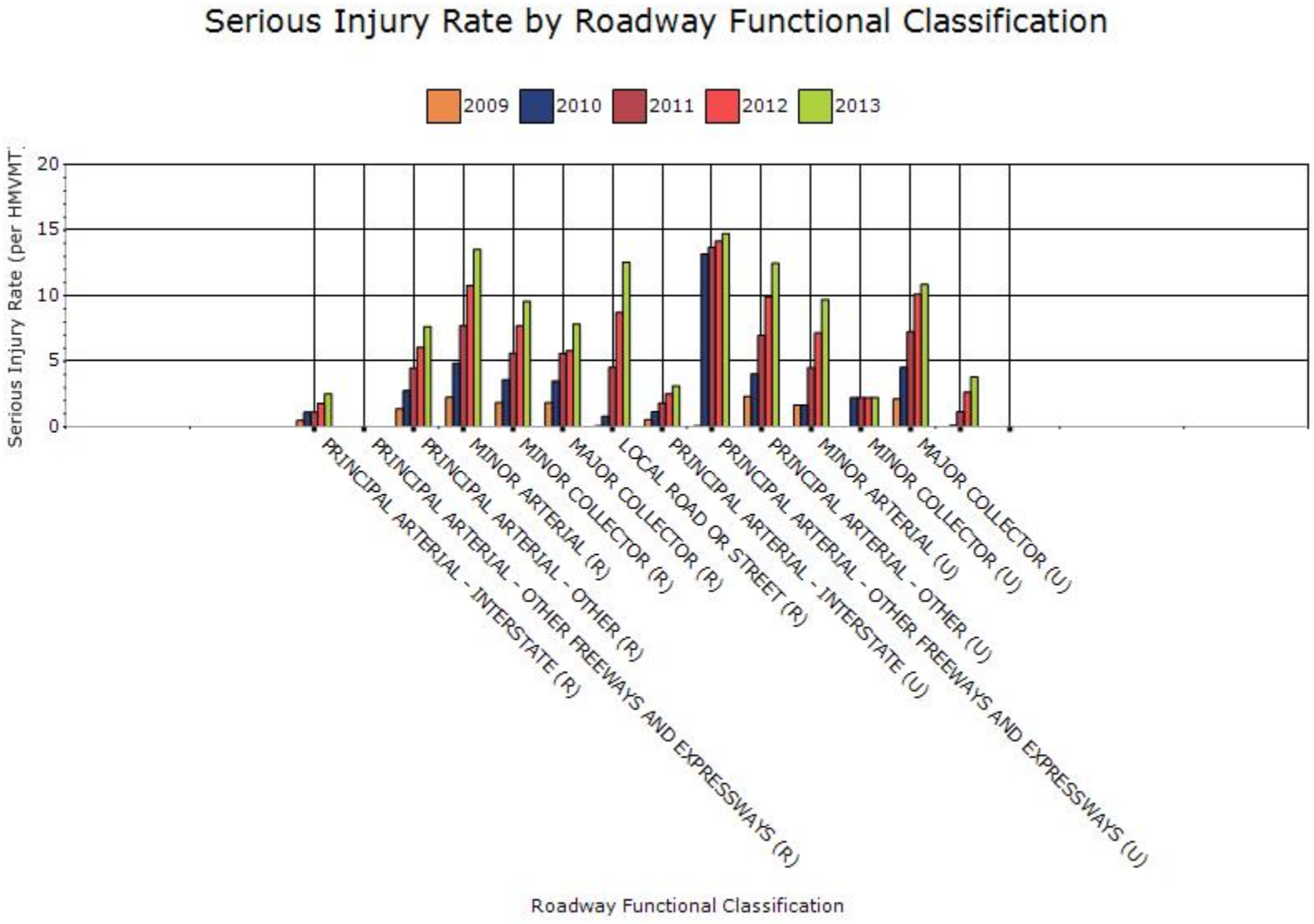
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	59.8	275.6	0.69	2.52
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0	0	0
RURAL PRINCIPAL ARTERIAL - OTHER	86.6	417.6	1.59	7.65
RURAL MINOR ARTERIAL	124.4	680.8	2.5	13.53
RURAL MINOR COLLECTOR	100.8	567.2	1.7	9.56
RURAL MAJOR COLLECTOR	103.8	576.2	1.75	7.84
RURAL LOCAL ROAD OR STREET	28.6	392.8	1.1	12.55
URBAN PRINCIPAL	70.2	368.8	0.59	3.11

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	39.8	300.2	2.07	14.74
URBAN PRINCIPAL ARTERIAL - OTHER	142.6	1344.2	1.32	12.47
URBAN MINOR ARTERIAL	87	800.4	25.61	9.7
URBAN MINOR COLLECTOR	22.4	185.2	0.27	2.24
URBAN MAJOR COLLECTOR	43	323.2	1.44	10.86
URBAN LOCAL ROAD OR STREET	17.4	262.8	0.25	3.81
OTHER	0	0	0	0


Fatalities by Roadway Functional Classification
2009
2010
2011
2012
2013
200
150
100
50
0
# of Fatalities
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
2000
1500
1000
500
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

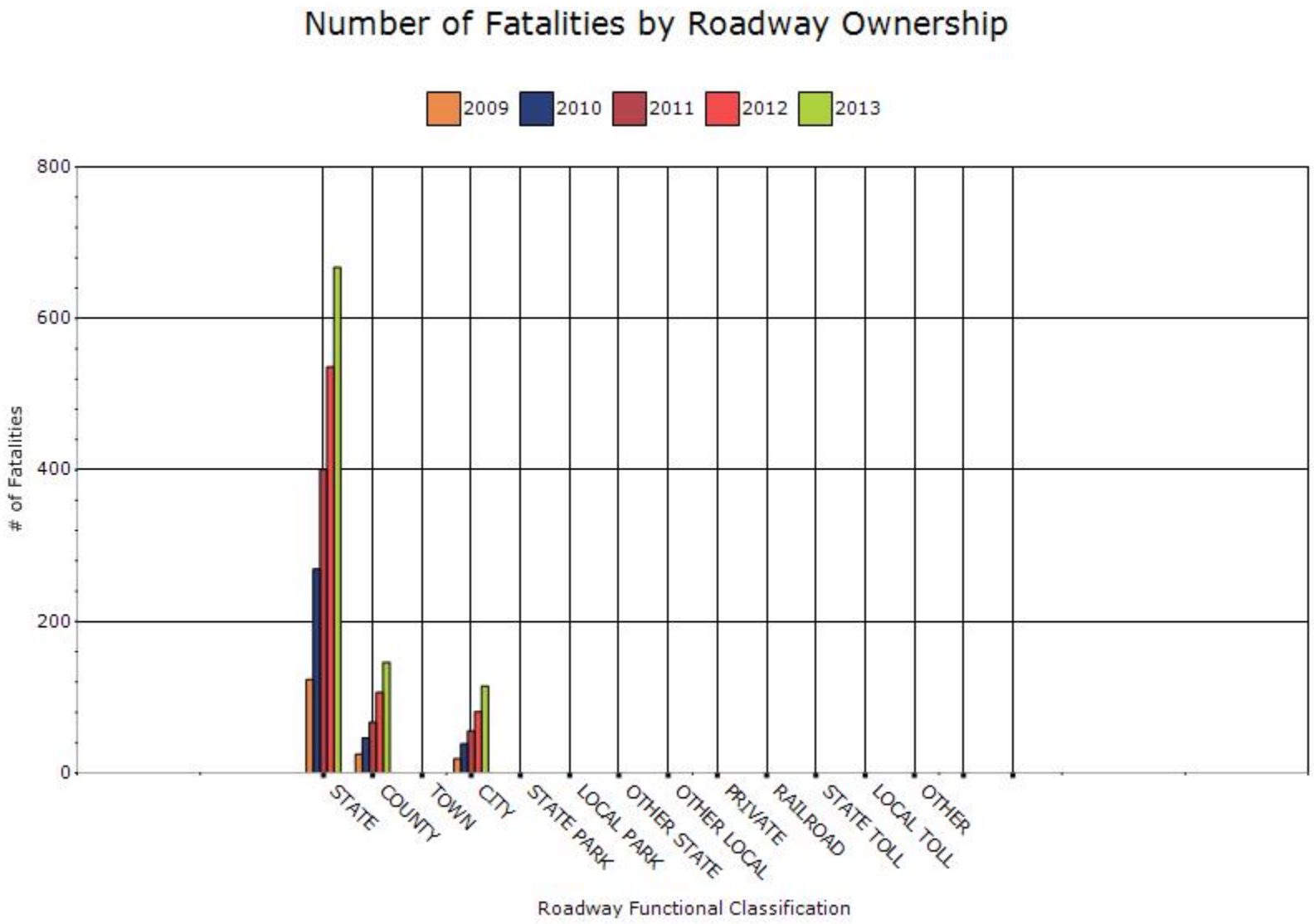

Fatality Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
30
25
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

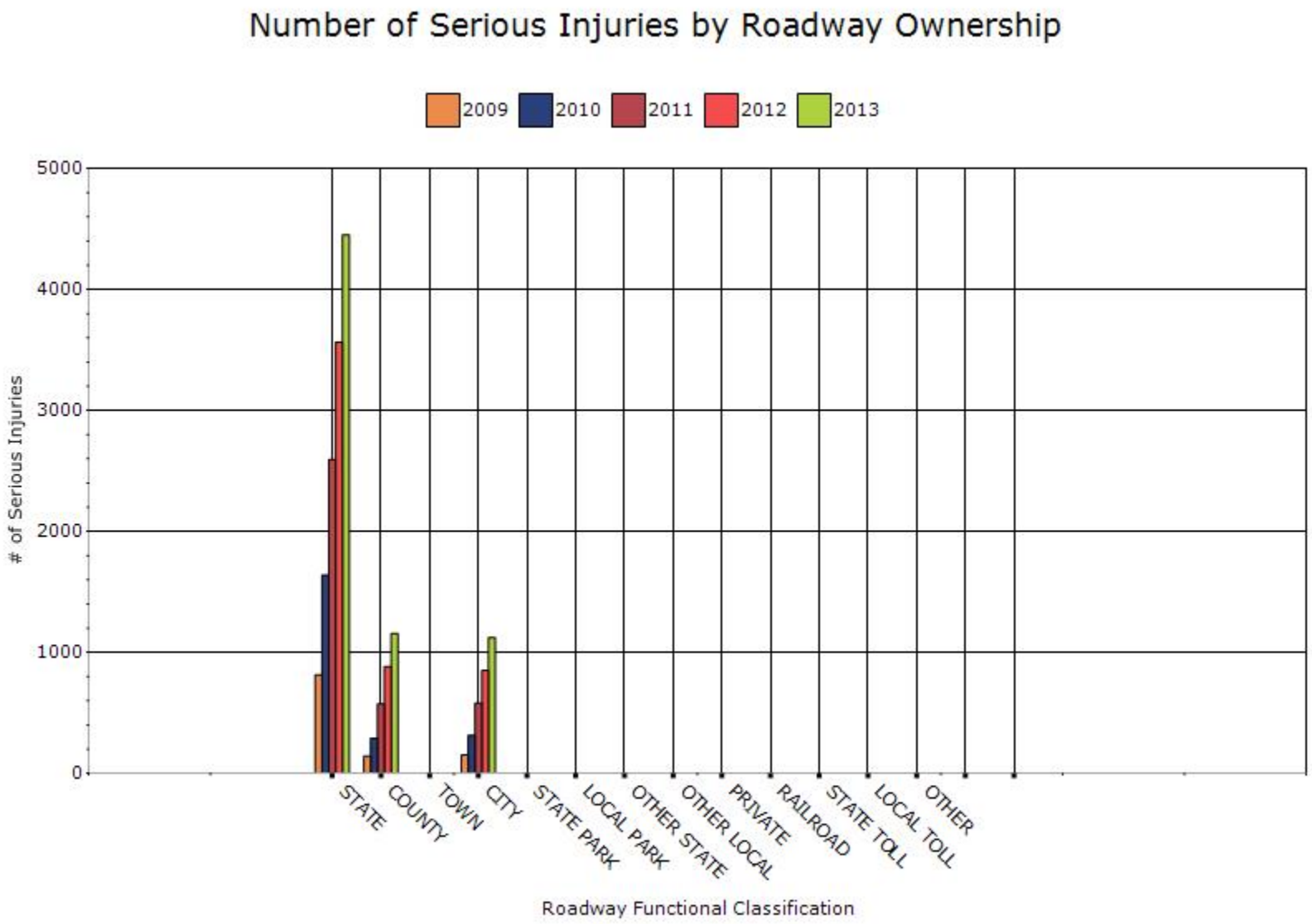

Serious Injury Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Serious Injury Rate (per HMVMT)
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR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

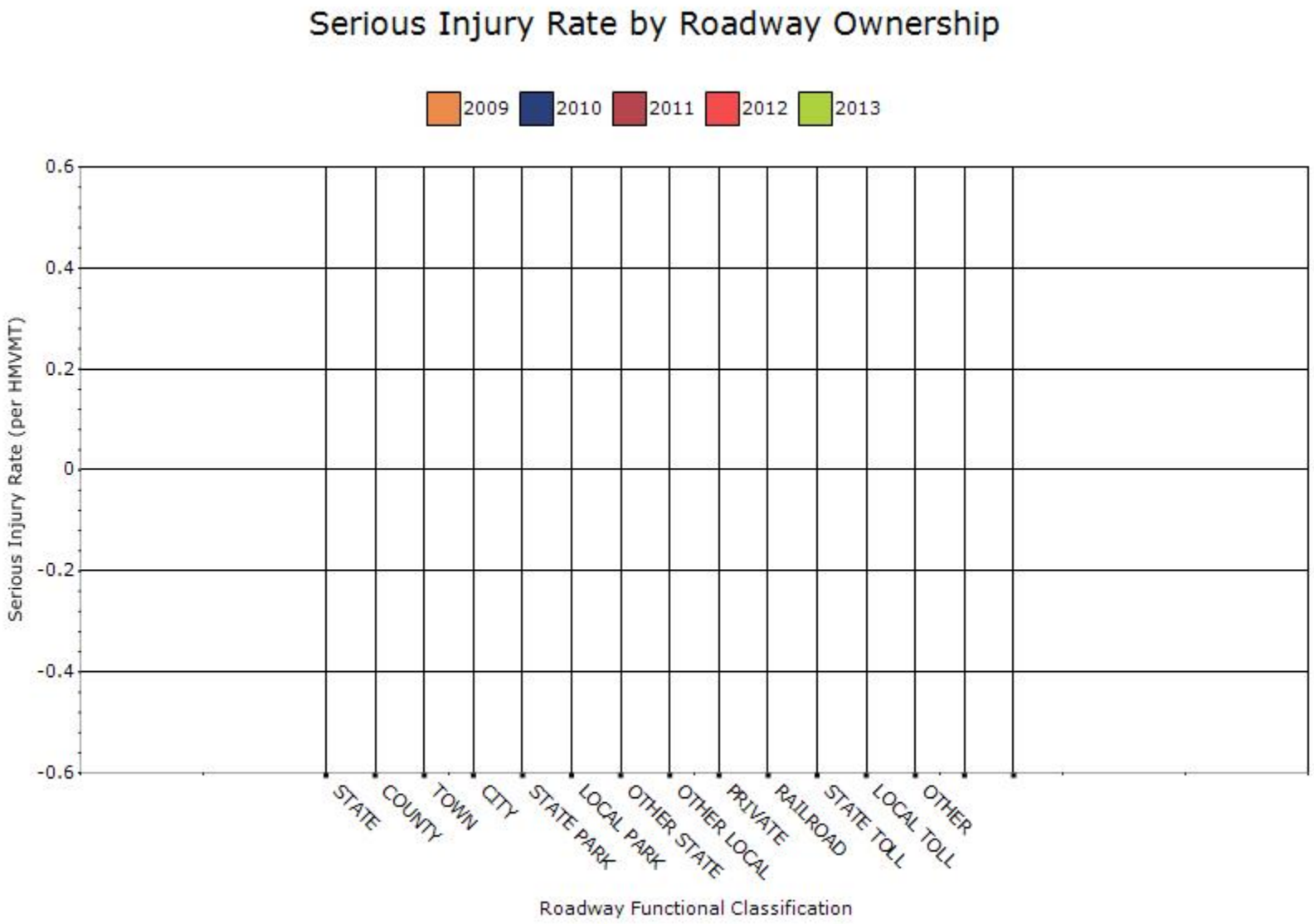
Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	667.4	4450.8	0	0
COUNTY HIGHWAY AGENCY	146.2	1155.4	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	0	0	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	114.8	1122.4	0	0
STATE PARK, 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
INDIAN TRIBE NATION	0	0	0	0

OTHER	0	0	0	0


Number of Fatalities by Roadway Ownership
2009
2010
2011
2012
2013
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.

None

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)	405	417	542	544	520
Serious injury rate (per capita)	15	15	17	20	12
Fatality and serious injury rate (per capita)	420	432	559	564	532

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

Serious Injury Calculations:

The TITAN database was queried for 2008-2012 traffic crashes for person types 01 (driver) and person type 05 (pedestrian), age equal to or greater than 65; and injury class code =03 (incapacitating injury). **The number of** drivers and pedestrians combined reflects seriously injured drivers and pedestrians involved in traffic crashes and constitute the *Numerator*.

Data for Tennessee population age 65 and over was sourced from US Census **B**ureau of **E**stimates for the respective years 2008-2012. The respective population estimates were calculated in thousands; i.e. 816.996, 837.344, 856.664, 877.625, and 918.507 for the respective years 2008-2012; and constitute the *Denominator*. The Numerator divided by the Denominator yields the serious injury rate.

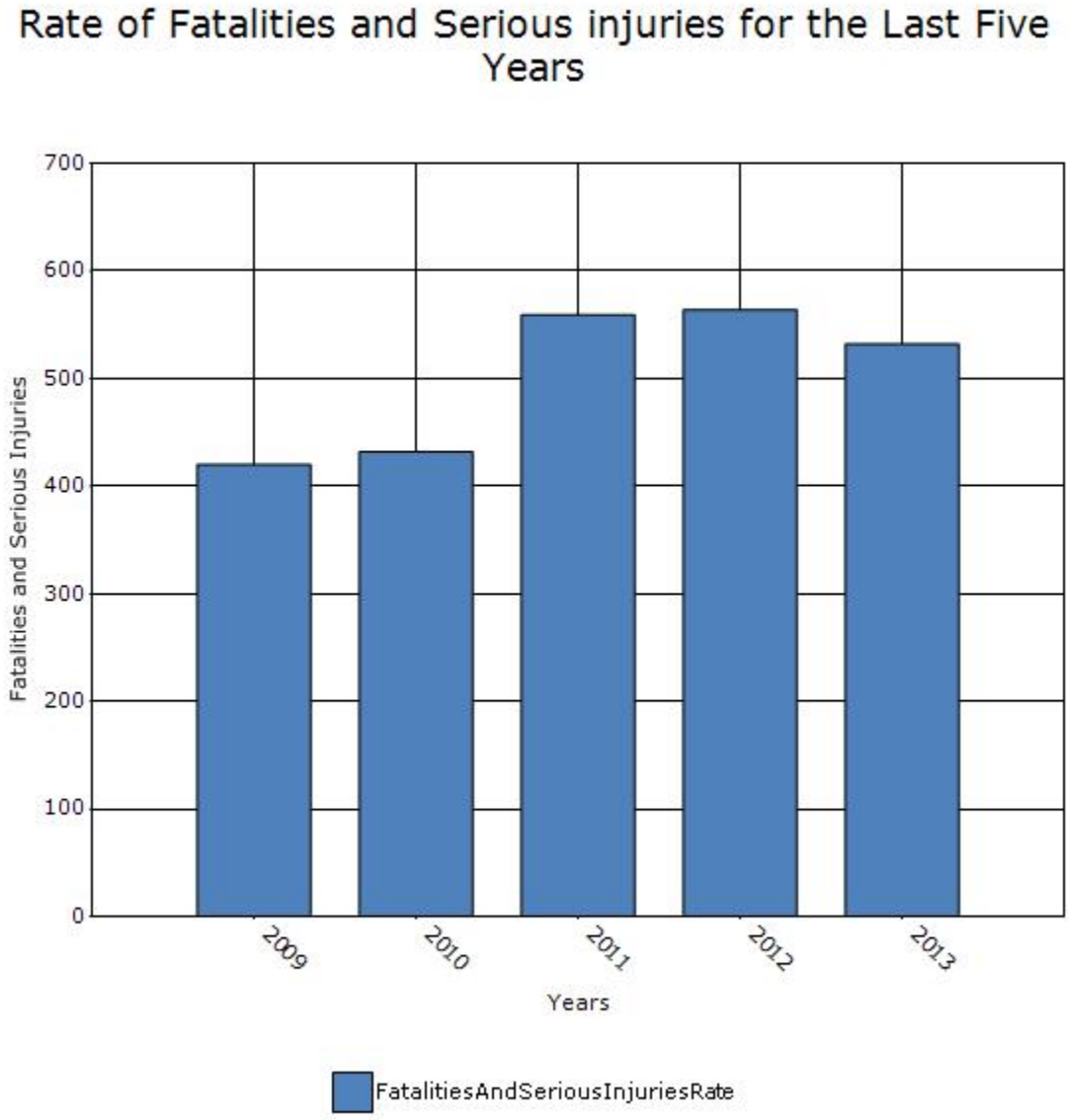
Fatal Injury Calculations: **The** Tennessee Fatality and Analysis Reporting System (TNFARS) is the source for drivers and pedestrians age 65 and over killed in traffic crashes. The fatality numbers for drivers and pedestrians age 65 and over constitute the *Numerator.*

Data for Tennessee population age 65 and over was sourced from US Census **B**ureau of **E**stimates for the respective years 2008-2012. The respective population estimates were

calculated in thousands; i.e. 816.996, 837.344, 856.664, 877.625, and 918.507 for the respective years 2008-2012; and constitute the *Denominator*.

The Proportion: Numerator divided by Denominator yields the fatality rate. For example for 2008; fatality rate (per capita) = 135/816.996; yielding fatality rate of 0.1652 per thousand population. For 2009-2012; fatality rates were calculated as 115/837.344, 129/856.664, 128/877.625 and 145/918.4507 for 2009-2012 respectively; with 2012* data being preliminary.

Note: The above methodology calculates serious injury and fatality rates combined for drivers and pedestrians age 65 and over also. The numerators are replaced with total for drivers and pedestrians with serious injuries and total for driver and pedestrian fatalities for respective years. However, the Denominators require no change and remain the same for the respective years.



Does the older driver special rule apply to your state?

Yes

If yes, describe the approach to include respective strategies to address the increase in those rates in the State SHSP.

<p style="margin: 0in 0in 10pt; text-align: justify;">Strategies for improving older driver and pedestrian facilities are in the current Tennessee Strategic Highway Safety Plan (SHSP). Tennessee is in the process of updating the SHSP and have included strategies in the following emphasis areas: Infrastructure Improvements,

vulnerable users, and operational improvements.</p>

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-Tennessee continues to track each safety related project to ensure timeliness delivery. Tennessee also conducts crash data investigations following a Road Safety audit for at least three years. This ensures that the low-cost safety countermeasures reduced the number and severity of the crashes

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.

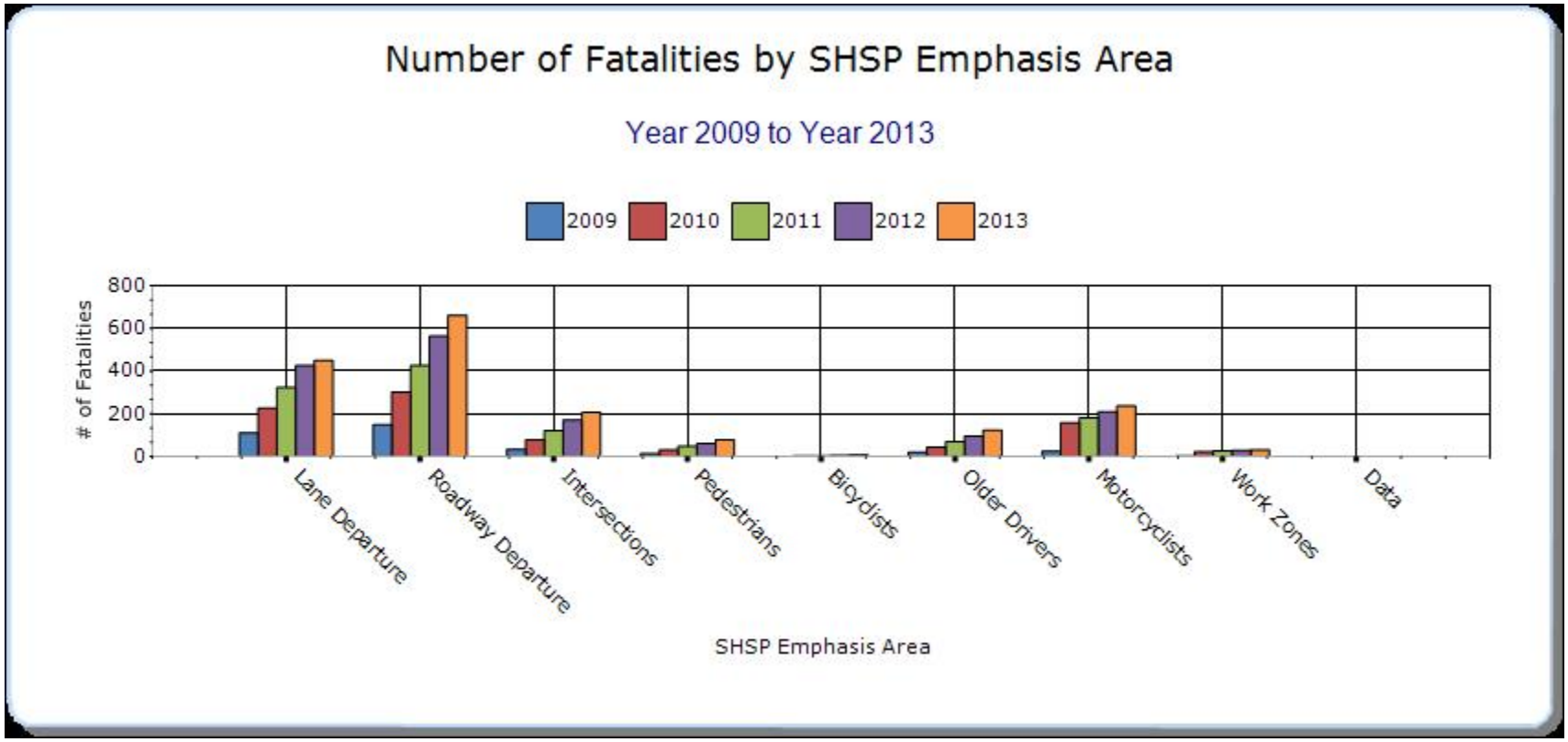
The Strategic Transportation Investments Division provides strategic support for projects that addresses safety, congestion, and economic development needs across the state. This includes **the** Expedited Project Delivery (EPD) **Program**. **The goal of the EPD program is to address immediate** issues on the highway system and propose the proper solution. The Division will also conduct operational analysis of non-highway transportation projects **that** impact the highway system. **This division reports to the Chief Engineer for TDOT.**

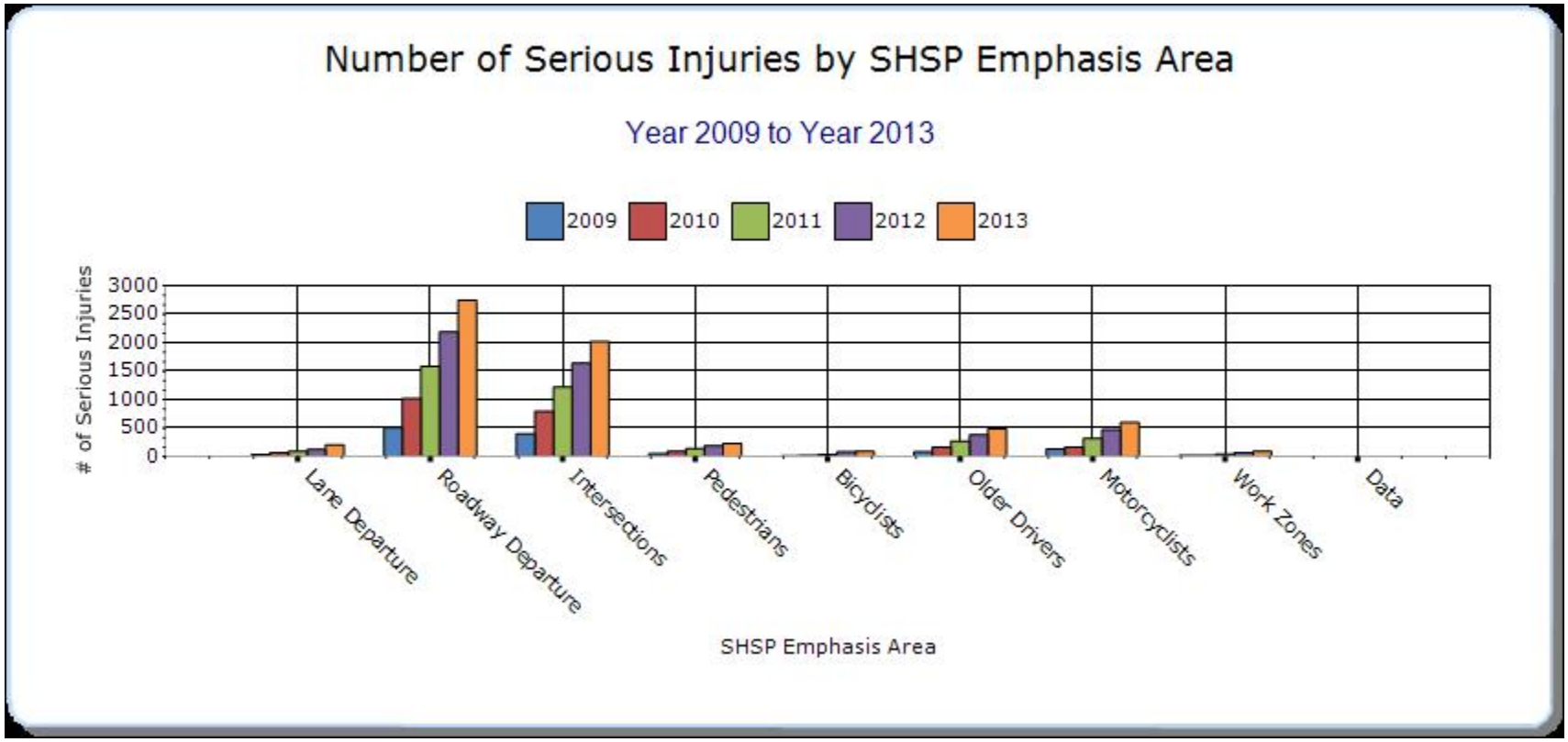
SHSP Emphasis Areas

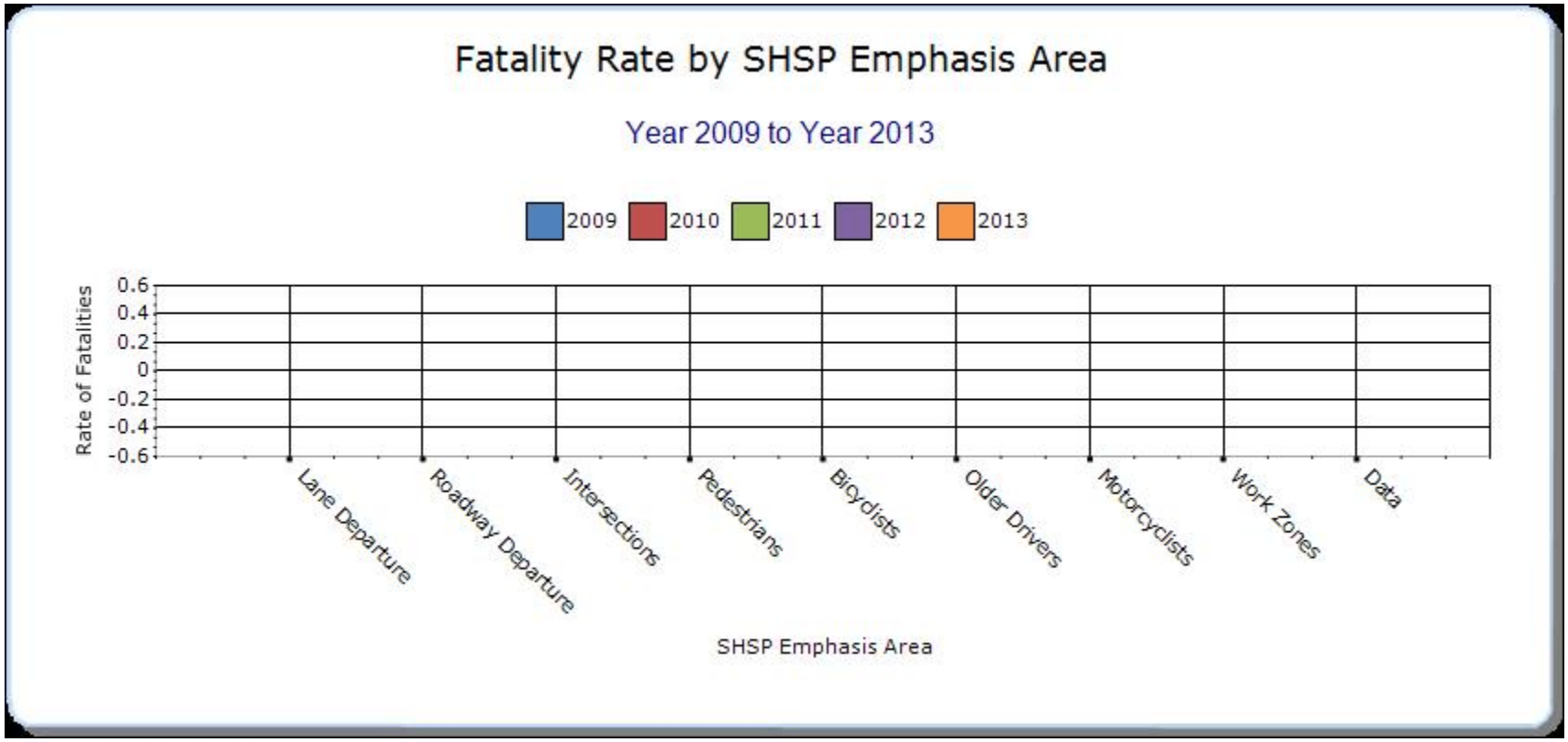
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

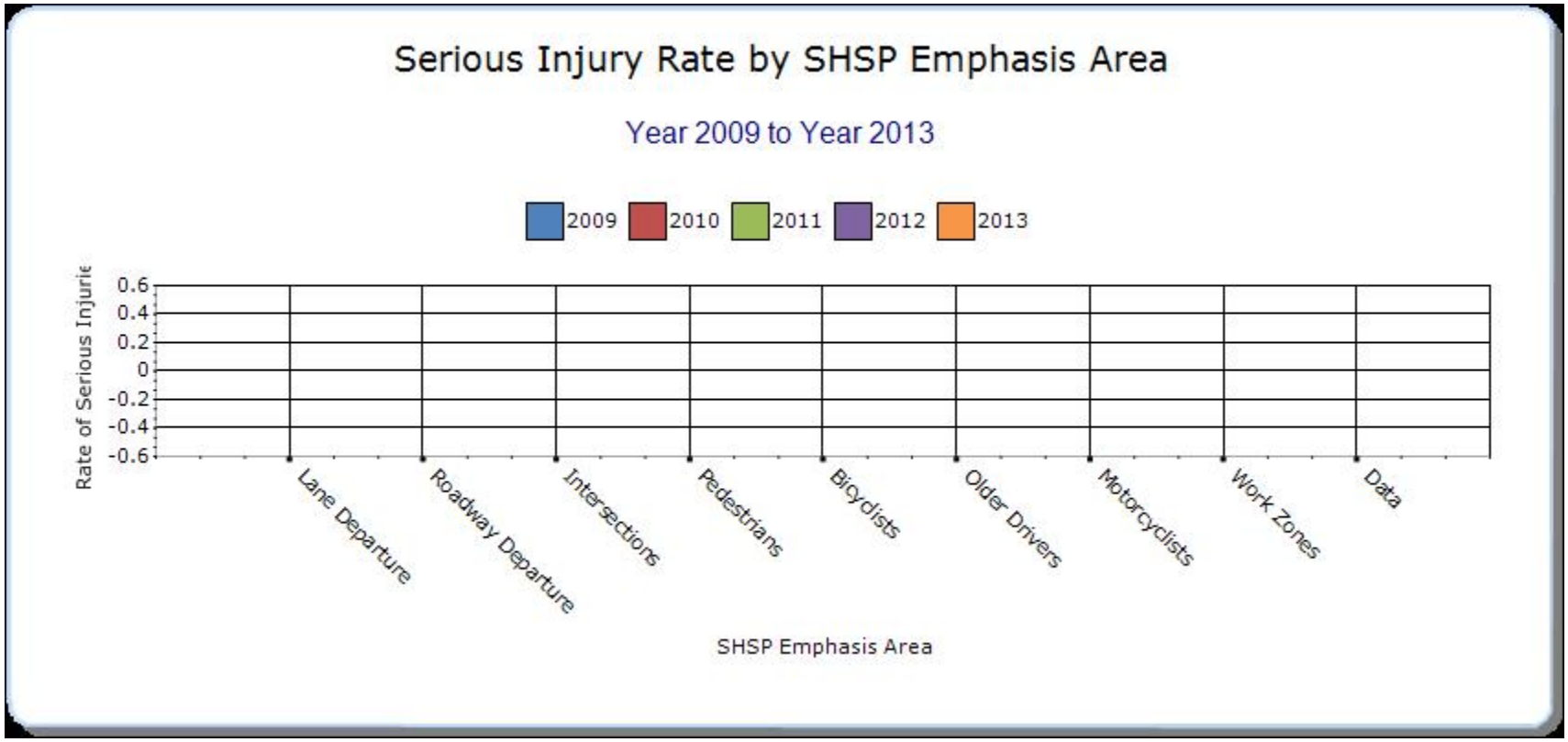
Year - 2013

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	All	449.6	203.4	0	0	0	0	0
Roadway Departure	All	662	2746.4	0	0	0	0	0
Intersections	All	206.8	2023.4	0	0	0	0	0
Pedestrians	All	78.4	229.8	0	0	0	0	0
Bicyclists	All	6.8	92.6	0	0	0	0	0
Older Drivers	All	123.8	485.6	0	0	0	0	0
Motorcyclists	All	236.8	598.6	0	0	0	0	0
Work Zones	All	31.8	93.4	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
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
3000
2500
2000
1500
1000
500
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
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



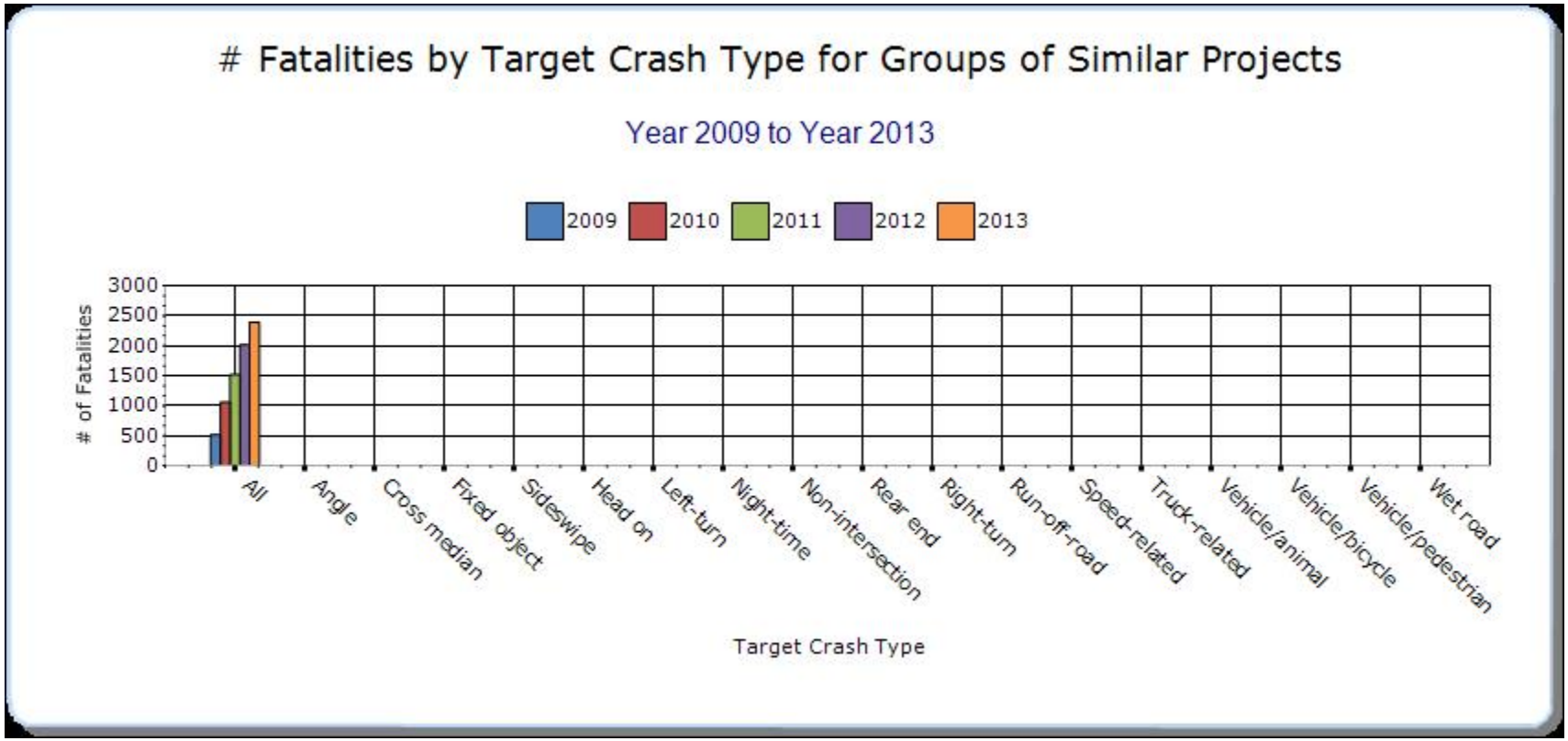
Please be advised that the data for 2013 is preliminary, and is consistently lower than the numbers provided by the FHWA. This will have a tendency to show a decrease for 2013. When NHTSA releases the final numbers for 2013, we will use those to recalculate and update the numbers for next year's report

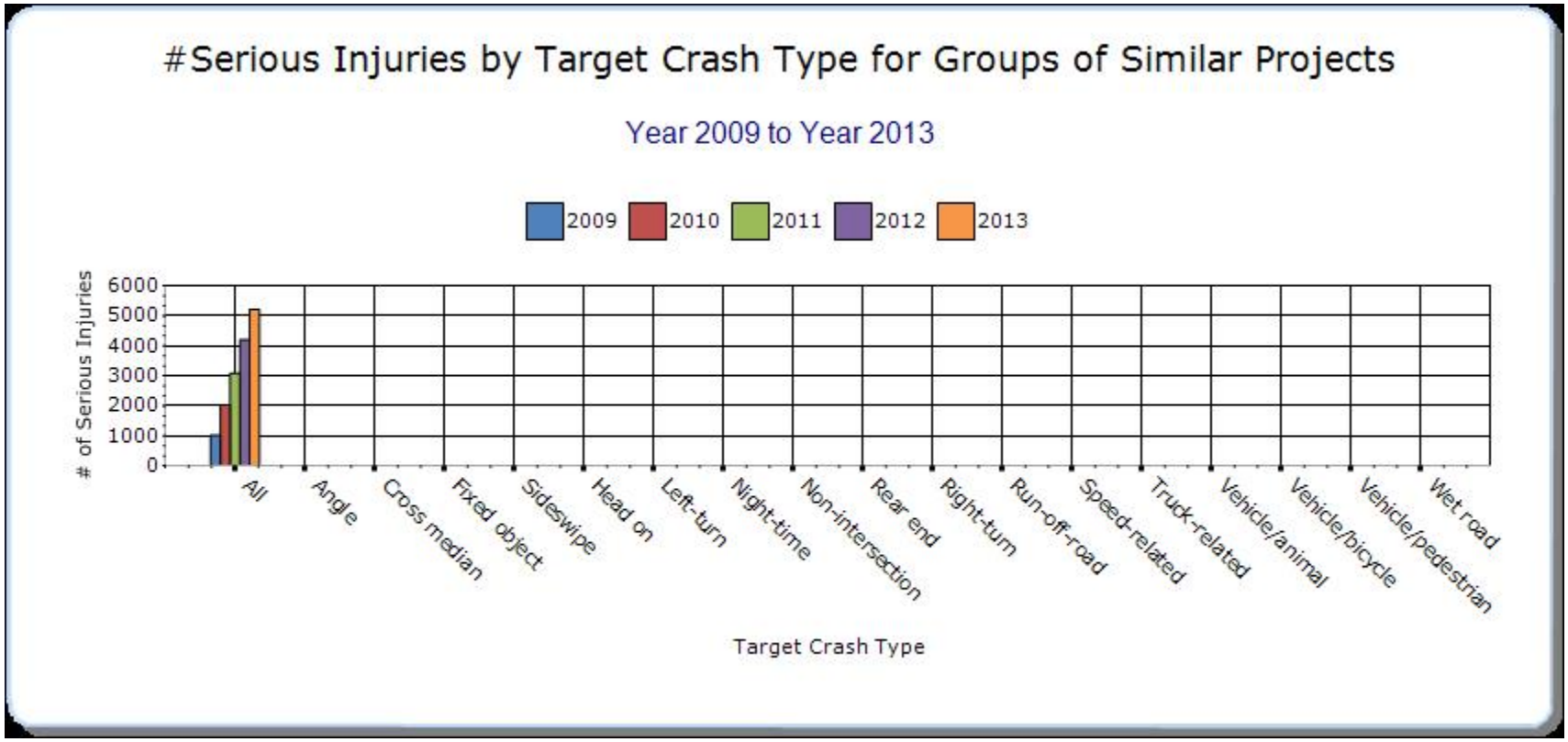
Groups of similar project types

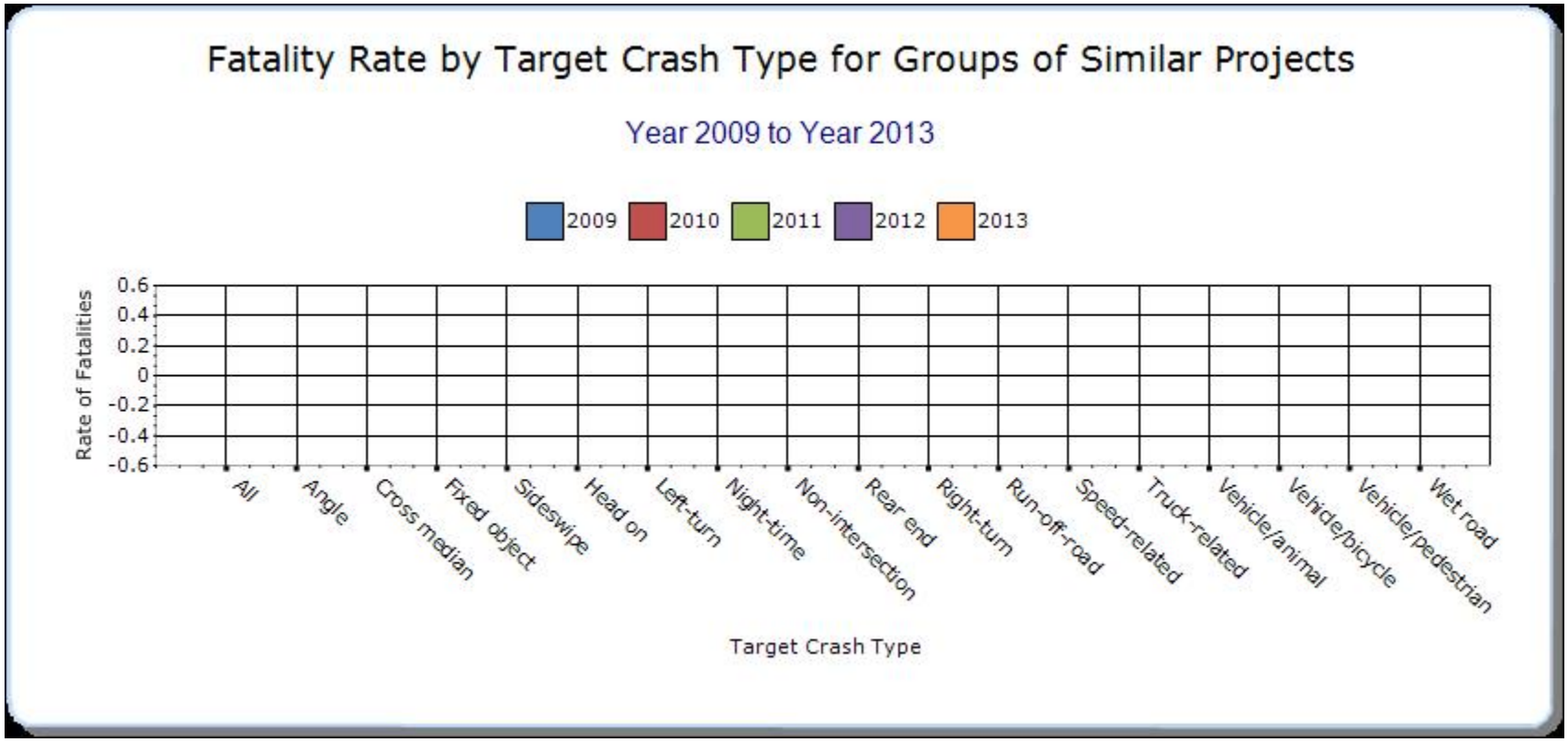
Present the overall effectiveness of groups of similar types of projects.

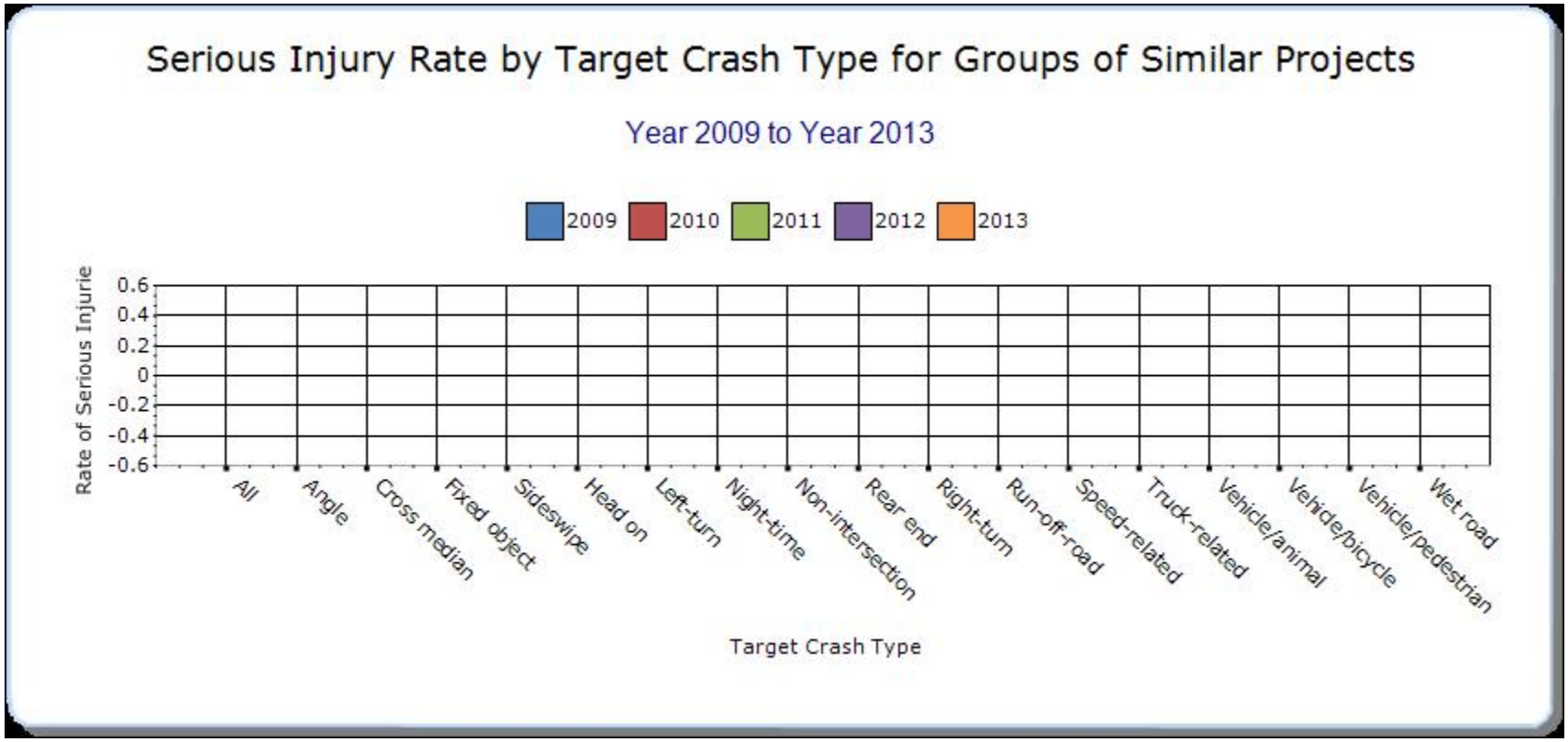
Year - 2013

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
Other-Hazard Elimination Safety Program (HESP)	All	111.4	33.8	0	0	0	0	0
Shoulder Improvement	All	508.4	144.6	0	0	0	0	0
Other-High-fricion Surface Safety Initiative	All	397	110.8	0	0	0	0	0
Local Safety	All	0.6	2.2	0	0	0	0	0
Crash Data	All	0	0	0	0	0	0	0
Roadway Departure	All	662	2746.4	0	0	0	0	0
Other-High Risk Rural Road (HRRR)	All	0	0	0	0	0	0	0
Other-Ramp Queue	All	508.4	144.6	0	0	0	0	0
Intersection	All	206.8	2023.4	0	0	0	0	0


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
3000
2500
2000
1500
1000
500
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


#Serious Injuries by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
6000
5000
4000
3000
2000
1000
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



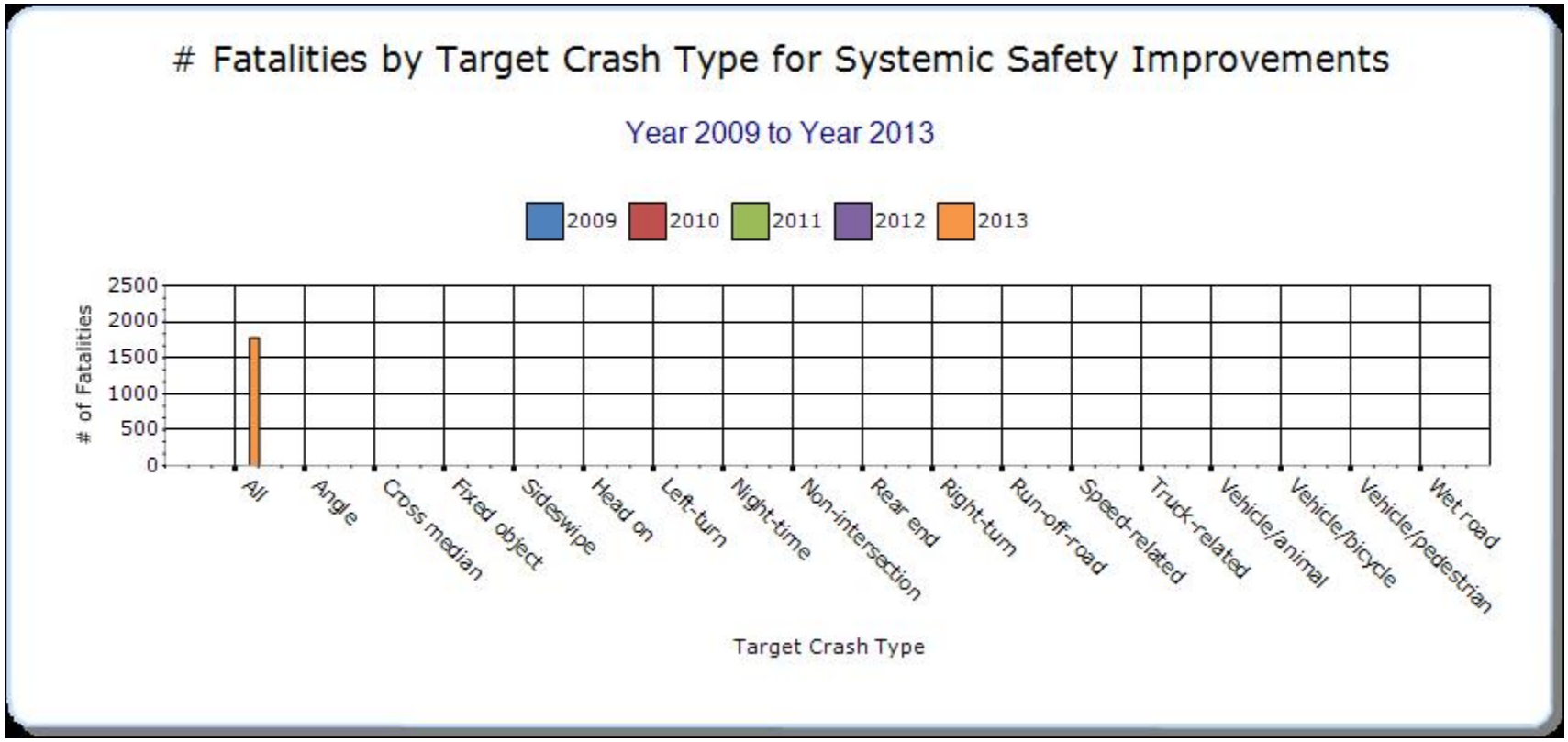
A group rate cannot be conducted on a state level as a group. Each project/location has to have an individual rate. For this reason and due to the number of projects, Tennessee will not be conducting project rates.

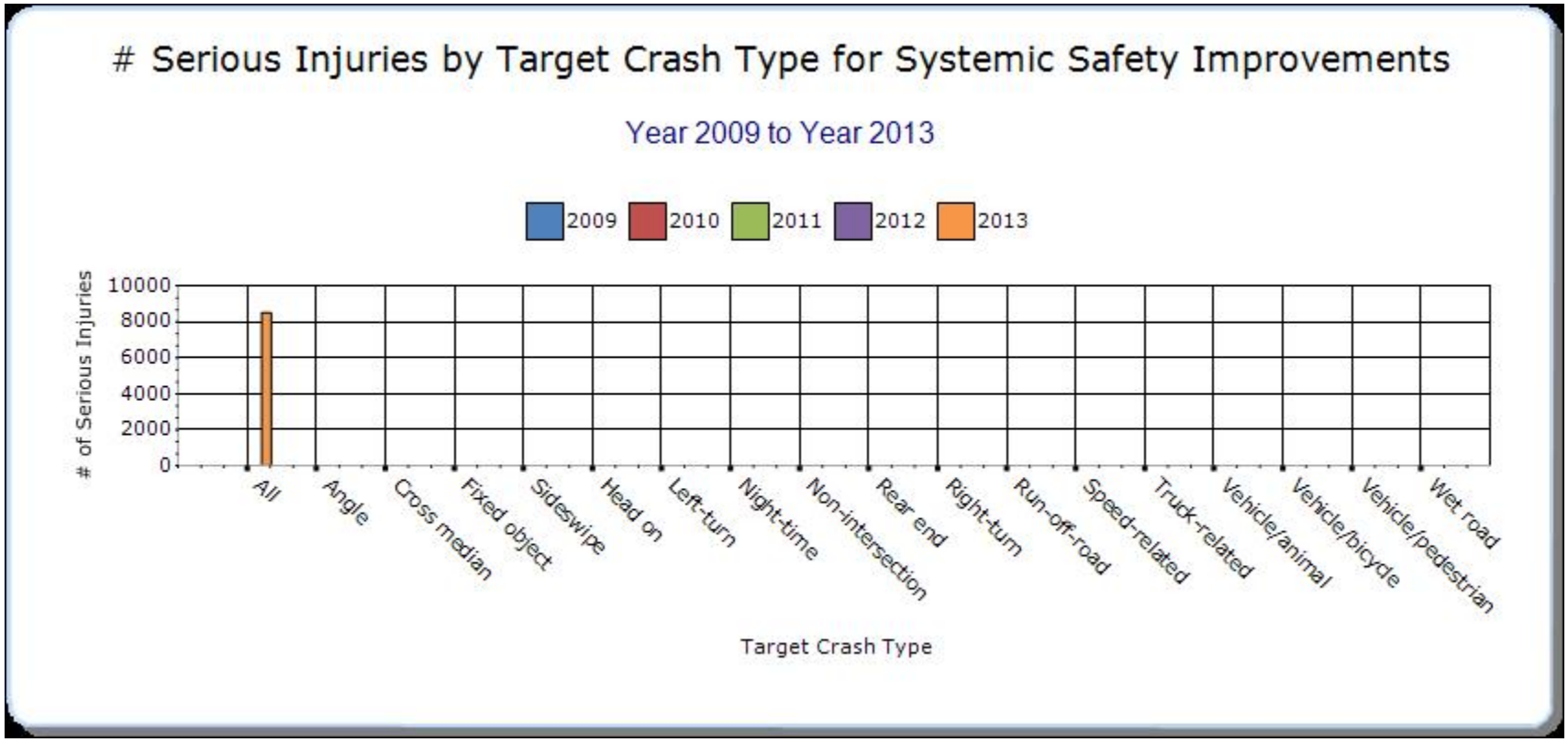
Systemic Treatments

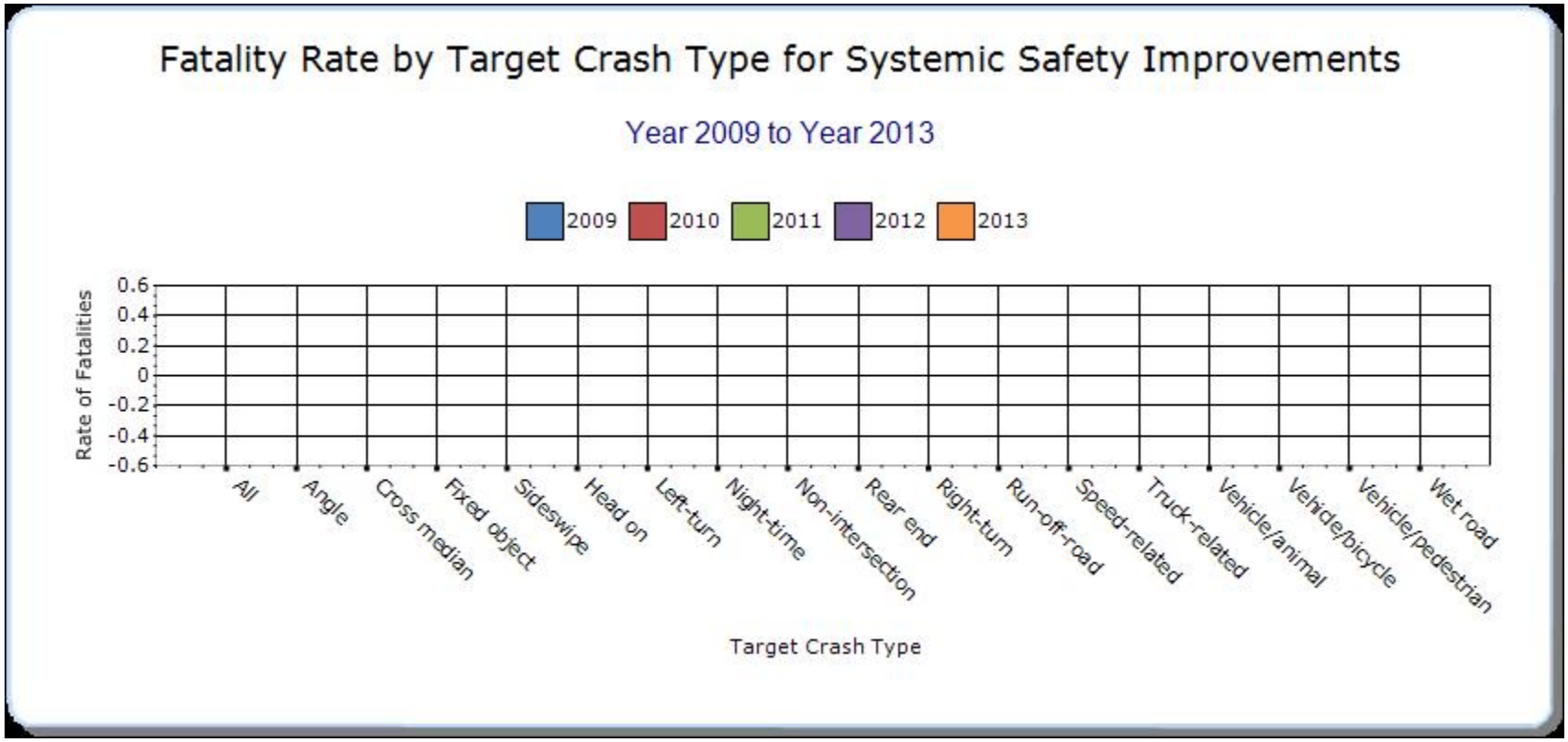
Present the overall effectiveness of systemic treatments.

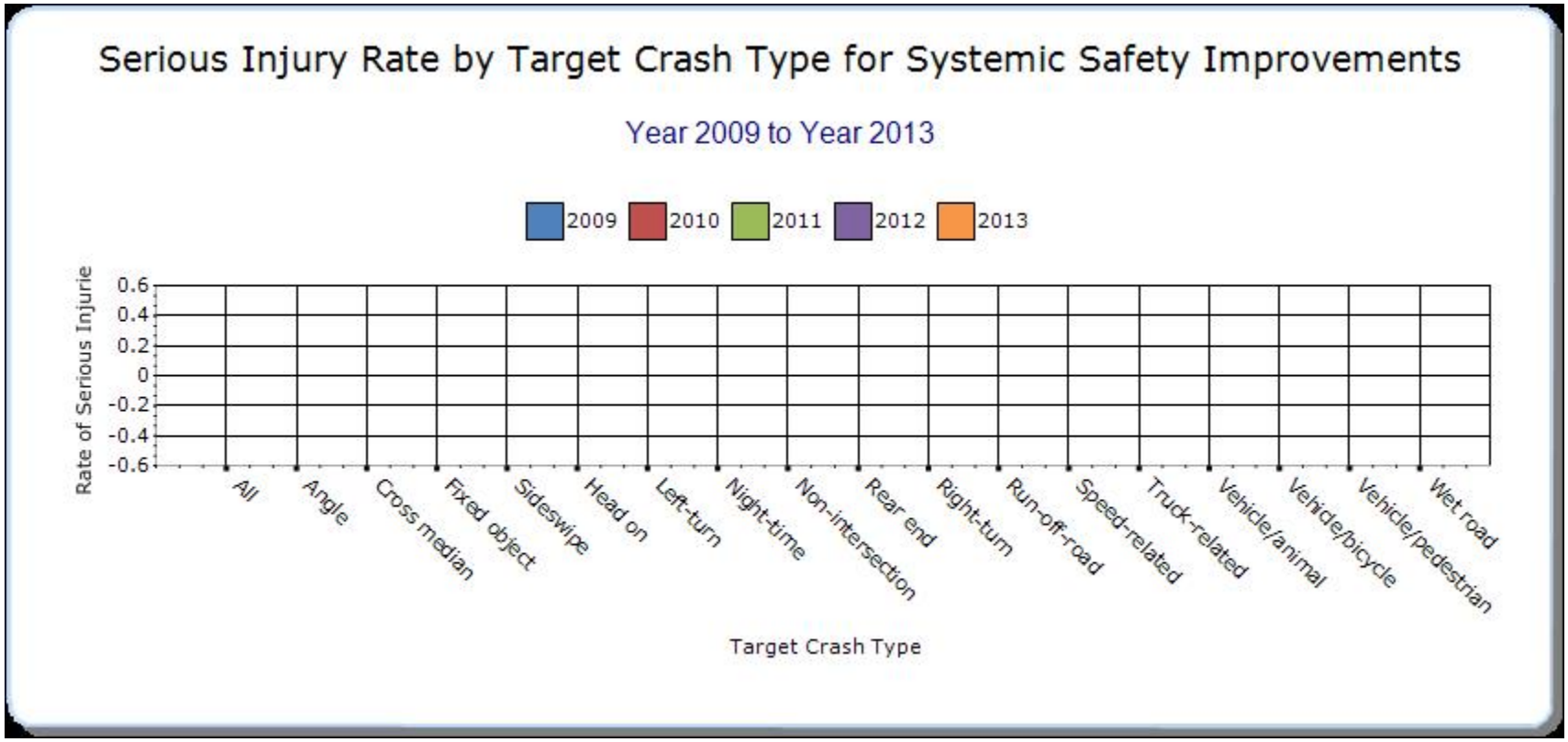
Year - 2013

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
Install/Improve Signing	All	590.6	2834.8	0	0	0	0	0
Install/Improve Pavement Marking and/or Delineation	All	592.6	2834.8	0	0	0	0	0
Other-High friction surface treatment program	All	592.6	2834.8	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
2500
2000
1500
1000
500
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
10000
8000
6000
4000
2000
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.

None

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)
Cheatham SR 12	Rural Minor Arterial	Roadway	Roadway widening - add lane(s) along segment	0	0	1	18	19	0	0	0	5	5	$0.00
Bradley SR 311	Urban Principal Arterial - Other	Intersection traffic control	Intersection traffic control - other	0	0	11	22	33	0	0	7	20	27	$0.00
Bedford SR 5	Urban Principal Arterial - Other	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	0	0	3	17	20	0	0	3	2	5	$0.00
Campbell SR 9	Rural Major Collector	Roadway	Roadway - other	0	0	2	9	11	0	0	1	11	12	$0.00
Davidson SR 65	Rural Minor Arterial	Intersection traffic control	Intersection traffic control - other	0	0	4	5	9	0	0	4	10	14	$0.00

Dickson/Williamson I-40	Rural Principal Arterial - Interstate	Miscellaneous	Cable Barrier	0	0	19	41	60	1	0	11	40	52	$0.00
McMinn SR 30	Urban Principal Arterial - Other	Miscellaneous	Crosswalk	0	0	2	12	14	0	0	1	11	12	$0.00
Rutherford SR 266	Rural Major Collector	Roadway	Roadway - other	1	3	25	37	66	0	2	15	37	54	$0.00
Shelby SR 3	Urban Principal Arterial - Other	Miscellaneous	Safety Improvements	0	0	3	17	20	0	1	4	7	12	$0.00
Shelby SR 176	Urban Principal Arterial - Other	Intersection traffic control	Intersection traffic control - other	0	0	6	59	65	0	0	5	32	37	$0.00
Greene SR 70	Rural Minor Arterial	Miscellaneous	Intersection and Miscellaneous Safety Improvements	0	2	4	25	31	0	0	4	10	14	$0.00
Davidson I 40 Ramp	Rural Principal Arterial -	Miscellaneous	Channelization & turn lanes	1	0	10	29	40	0	0	16	23	39	$0.00

	Interstate													
Monroe SR 33	Rural Principal Arterial - Other	Miscellaneous	Channelization and turn lanes	0	1	7	22	30	0	0	0	6	6	$0.00
Roane I 40	Rural Principal Arterial - Interstate	Miscellaneous	Turn Lanes and Signing	0	0	5	3	8	0	0	1	3	4	$0.00
Sullivan SR 126	Urban Minor Arterial	Miscellaneous	Intersection Improvements Turn Lanes	0	1	12	20	33	0	5	14	15	34	$0.00
Hickman SR 48	Rural Minor Arterial	Miscellaneous	Turn Lanes and Signing	0	0	5	3	8	0	0	1	3	4	$0.00
Hickman SR 100	Rural Minor Arterial	Miscellaneous	Turn Lanes and Signing	0	1	2	3	6	1	0	3	3	7	$0.00
Knox SR 33	Urban Principal Arterial - Other	Miscellaneous	Signing, Marking, Channelization, Turn Lane	1	2	20	26	49	1	3	10	34	48	$0.00
Davidson SR 11	Urban Principal	Roadway delineation	Roadway delineation - other	0	1	2	17	20	0	0	1	10	11	$0.00

	Arterial - Other Freeways and Expressways													

Optional Attachments

Sections	Files Attached
Progress in Implementing Projects: General Listing of Projects	Jessica Final 1Q21_2014-08-27_02-57-44-PM(1).xlsx

Glossary

5 year rolling average means the average of five individual, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT means hundred million vehicle miles traveled.

Non-infrastructure projects are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP) means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systemic safety improvement means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.