



Highway Safety Improvement Program
Data Driven Decisions

Virginia
Highway Safety Improvement Program
2015 Annual Report

Prepared by: VA

Disclaimer

Protection of Data from Discovery & Admission into Evidence

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section [HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Table of Contents

Disclaimer.....	ii
Executive Summary.....	1
Introduction	4
Program Structure	4
Program Administration	4
Program Methodology.....	7
Progress in Implementing Projects	24
Funds Programmed.....	24
General Listing of Projects	27
Progress in Achieving Safety Performance Targets	50
Overview of General Safety Trends	50
Application of Special Rules	65
Assessment of the Effectiveness of the Improvements (Program Evaluation)	67
SHSP Emphasis Areas	69
Groups of similar project types.....	74
Systemic Treatments.....	79
Project Evaluation	85
Glossary.....	94

Executive Summary

This State Fiscal Year (FY) 2015 annual report to the Federal Highway Administration (FHWA) describes the Virginia Department of Transportation (VDOT)'s strategic use of MAP-21 funding of the Commonwealth's Highway Safety Improvement Programs (HSIP) for the period July 2014 to June 2015.

MAP-21 continues the HSIP as a core program under Sections 148 and 130 of US Code Title 23 and increased the HSIP allocations in Federal Fiscal Year (FFY) 2015. Under Section 154, surface transportation program and national highway performance program funds are transferred to be used for HSIP eligible proposals because Virginia does not have all the required components in its Open Container legislation. As a result, VDOT's HSIP is composed of the following sub-programs utilizing the above mentioned federal funding sources (23 USC Sections):

- A) Highway Safety Projects (HSP): Section 148
- B) Bicycle and Pedestrian Safety Projects (BPSP): Section 148
- C) Penalty Transfer-Open Container (OC) Projects: Section 154

A link to the HSIP guidelines, safety proposal submission documentation, and resource information is provided on-line at http://www.virginiadot.org/business/tes_app_pro.asp

Virginia's Strategic Highway Safety Plan

In 2013, VDOT completed a multi-agency and disciplinary, engineering, education, enforcement, and emergency response (4-E) update of the Commonwealth's Strategic Highway Safety Plan (SHSP). In 2013, FHWA's Virginia Division approved Virginia's SHSP. VDOT continues to coordinate with its safety partners and implement the SHSP engineering strategies to drive investment decisions to improve safety and reduce deaths and injuries for this FY2015 reporting period.

Many safety partners are working towards reducing the number and severity of vehicle crashes on the Commonwealth's highways. Virginia's HSIP is structured to focus on infrastructure safety emphasis areas that may be improved with low cost minimal environmental impact (no right of way) engineering countermeasures, namely:

- A) Intersection geometry and traffic control
- B) Roadway and roadside improvements
- C) Bicycle and pedestrian risk reductions

New FY2016 Projects

The Commonwealth of Virginia is committed to developing and maintaining a safe, multimodal transportation system. For the development of Virginia's transportation FY 2016 Six-Year Improvement Program (SYIP), the HSIP project selection structure and approach was previously modified to follow the updated SHSP and the MAP-21 allowances. HSIP staff developed annual HSIP spending targets for each district based on the combined proportions of lane-miles, vehicle miles travelled and deaths plus severe injuries to consider multiple year project development. The district spending targets are based on level FHWA funding in future years. Districts considered systemic, corridor and intersection improvements for all users on priority routes and intersections identified in the crash data. Districts submitted safety proposals and these proposals included high crash locations, long roadway segments, and systemic highway and pedestrian risk locations.

Highway Safety Performance

This report provides safety performance measures for deaths and severe injuries and the associated rates per 100 million vehicle miles travelled (HMVMT). Since 2001, injury crashes have declined to about 45 thousand per year (almost a 20 percent reduction from the 1990's). Severe injuries have decreased by approximately 63 percent since 2001, some 7.8 percent per year. Injuries per capital have also continued to decline for the last 20 years.

Traffic deaths per population in Virginia remained fairly stable for about 15 years after the declines that were seen in the early 1990's. However, 2007 saw a peak in fatal crashes resulting in 1,026 deaths, the first time deaths exceeded 1,000 since the early 1990's. Since 2007, a 25 percent in reduction has been experienced, although traffic deaths increased slightly in 2011 and 2012 the year 2014 decline to 700.

Severe traffic crash decreases indicate the effectiveness of improved driver regulations, safer cars, education, enforcement, emergency services, and engineering solutions in reducing

related injuries.

This report documents the following elements of the federally funded HSIP using the FHWA MAP-21 (2015) reporting guidance:

- 1) Program administration and methodology;
- 2) Progress in administrating safety projects;
- 3) Evaluation of effectiveness of completed projects;

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

If District, how are the HSIP funds allocated?

Formula

Crash Data

Population

Other

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

Virginia previously programmed SAFETEA-LU and prior HSIP funds on local roads. Approximately a third of active projects are on local roads. Some local projects needed more funds due to increased scope and/or impacts. As such, local agency projects were provided additional HSIP allocations needed to fund the cost estimates for construction (thus obligation). New procedures and requirements for locally administered HSIP projects were developed and approved by the agency in 2015.

Local roads safety proposals when submitted are required to follow the same prioritization method as VDOT proposals. The proposed project must fit into the localities strategic safety plan. It should be data driven as well as have the support of the local governing body. Localities should submit their proposals through the local VDOT District Office for inclusion in the district submittal for review. The locality maintains its own data system with regards to crash history and local support for the proposal. Local roads account for 40 percent of all crashes and 20 percent of all fatal and serious injury crashes on Virginia's highways. However, local safety projects have received up to 30 percent of Virginia's HSIP funds for implementation and completion of their safety projects. VDOT has been providing the state match to these safety projects for the past several years.

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.

To facilitate and expedite the scoping of HSIP projects, HSIP staff visited each District and trained regarding MAP-21 requirements, the updated SHSP Emphasis Areas, related safety data available, and the multi-disciplinary team needed to provide sound scope, cost, and schedule information. Traffic, planning, design and programming and sometimes VDOT Residency (county) liaison staff attended the briefings. The SHSP three percent reduction targets by Emphasis Areas were also presented. Finally, the briefing provided information on Systemic Treatment eligibility in MAP-21 and related information available from the FHWA.

As in the past, HSIP staff presented the target of allocating ten percent to bike and pedestrian safety projects was presented. At least ninety percent of HSIP Section 148 of the previously unallocated future funds would be programmed on existing and new highway safety projects.

District staff submitted safety proposal funding requests with the following set of priorities for managing the target annual HSIP obligation from FY2016 to 21:

1. Additional funding needs to complete existing HSIP projects or those ongoing projects with a specific safety benefit needing additional funds.
2. New safety projects that could be designed and advertised within FY2016
3. New safety projects that could be potentially started in FY2016 and 17 but would need additional time and funding to be designed and awarded for construction in future years.

Projects were programmed with the appropriate FY allocations needed for a specific phase to be delivered from FY 2016 to 2021.

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

- Metropolitan Planning Organizations
- Governors Highway Safety Office
- Local Government Association
- Other: Other-District/Design/Pe and Planning Staff

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

- Multi-disciplinary HSIP steering committee
- Other: Other-District/Design/PE and Planning Staff

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

For the FY2015 HSIP, Virginia has implemented its new guidelines and policy for submission to the HSIP. For the first time in five years VDOT is accepting local administered safety projects providing they meet the minimum criteria as described in the new VDOT HSIP Implementation Manual.

Program Methodology

Select the programs that are administered under the HSIP.

- | | | |
|---|---|---|
| <input type="checkbox"/> Median Barrier | <input checked="" type="checkbox"/> Intersection | <input type="checkbox"/> Safe Corridor |
| <input type="checkbox"/> Horizontal Curve | <input checked="" type="checkbox"/> Bicycle Safety | <input type="checkbox"/> Rural State Highways |
| <input type="checkbox"/> Skid Hazard | <input checked="" type="checkbox"/> Crash Data | <input type="checkbox"/> Red Light Running Prevention |
| <input checked="" type="checkbox"/> Roadway Departure | <input type="checkbox"/> Low-Cost Spot Improvements | <input type="checkbox"/> Sign Replacement And Improvement |
| <input type="checkbox"/> Local Safety | <input checked="" type="checkbox"/> Pedestrian Safety | <input type="checkbox"/> Right Angle Crash |
| <input type="checkbox"/> Left Turn Crash | <input type="checkbox"/> Shoulder Improvement | <input type="checkbox"/> Segments |
| <input type="checkbox"/> Other: | | |

Program: Intersection

Date of Program Methodology: 7/1/2014

What data types were used in the program methodology?

Crashes

- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only
- Other

Exposure

- Traffic
- Volume
- Population
- Lane miles
- Other

Roadway

- Median width
- Horizontal curvature
- 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

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

- Yes
- No

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

- Yes
- No

How are highway safety improvement projects advanced for implementation?

- Competitive application process
- selection committee
- Other

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

- Relative Weight in Scoring
- Rank of Priority Consideration

- Ranking based on B/C 1
- Available funding 3
- Incremental B/C

- Ranking based on net benefit
- Other
- Targeted K+A crashes/people 2

Program: Bicycle Safety

Date of Program Methodology: 7/1/2014

What data types were used in the program methodology?

Crashes

- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only
- Other-Risk Reduction

Exposure

- Traffic
- Volume
- Population
- Lane miles
- Other

Roadway

- Median width
- Horizontal curvature
- 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-Available facilities

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
- Incremental B/C
- Ranking based on net benefit
- Cost Effectiveness 10
- Community Support and comprehensive network plan 15
- Problem identification inc crashes and risk 30
- Solution study and selection to mitigate risk 45

Program: Crash Data

Date of Program Methodology: 7/1/2014

What data types were used in the program methodology?

- | <i>Crashes</i> | <i>Exposure</i> | <i>Roadway</i> |
|--|---|---|
| <input checked="" type="checkbox"/> All crashes | <input checked="" type="checkbox"/> Traffic | <input type="checkbox"/> Median width |
| <input type="checkbox"/> Fatal crashes only | <input checked="" type="checkbox"/> Volume | <input type="checkbox"/> Horizontal curvature |
| <input type="checkbox"/> Fatal and serious injury crashes only | <input type="checkbox"/> Population | <input checked="" type="checkbox"/> Functional classification |
| <input type="checkbox"/> Other | <input type="checkbox"/> Lane miles | <input type="checkbox"/> Roadside features |

Other Other**What project identification methodology was used for this program?**

- Crash frequency
- Expected crash frequency with EB adjustment
- Equivalent property damage only (EPDO Crash frequency)
- EPDO crash frequency with EB adjustment
- Relative severity index
- Crash rate
- Critical rate
- Level of service of safety (LOSS)
- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment
- Excess expected crash frequency using method of moments
- Probability of specific crash types
- Excess proportions of specific crash types
- Other

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

- Yes
- No

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

- Yes
- No

How are highway safety improvement projects advanced for implementation?

- Competitive application process
- selection committee
- Other

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

- Relative Weight in Scoring
- Rank of Priority Consideration

- Ranking based on B/C 1
- Available funding 3
- Incremental B/C
- Ranking based on net benefit
- Other
- Targeted K+A crashes/people 2

Program: Roadway Departure

Date of Program Methodology: 7/1/2014

What data types were used in the program methodology?

Crashes

Exposure

Roadway

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> All crashes | <input checked="" type="checkbox"/> Traffic | <input checked="" type="checkbox"/> Median width |
| <input type="checkbox"/> Fatal crashes only | <input checked="" type="checkbox"/> Volume | <input checked="" type="checkbox"/> Horizontal curvature |
| <input checked="" type="checkbox"/> Fatal and serious injury crashes only | <input type="checkbox"/> Population | <input checked="" type="checkbox"/> Functional classification |
| <input type="checkbox"/> Other | <input type="checkbox"/> Lane miles | <input checked="" type="checkbox"/> Roadside features |
| | <input type="checkbox"/> Other | <input type="checkbox"/> Other |

What project identification methodology was used for this program?

- Crash frequency
- Expected crash frequency with EB adjustment
- Equivalent property damage only (EPDO Crash frequency)
- EPDO crash frequency with EB adjustment
- Relative severity index
- Crash rate
- Critical rate
- Level of service of safety (LOSS)
- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment
- Excess expected crash frequency using method of moments
- Probability of specific crash types
- Excess proportions of specific crash types
- Other

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

- Yes

No

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

 Yes No

How are highway safety improvement projects advanced for implementation?

 Competitive application process selection committee Other

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

 Relative Weight in Scoring Rank of Priority Consideration Ranking based on B/C 1 Available funding 3 Incremental B/C Ranking based on net benefit Other Targeted K+A crashes and people 2

Program: Pedestrian Safety

Date of Program Methodology: 7/1/2014

What data types were used in the program methodology?

Crashes

- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only
- Other-Risk Reduction

Exposure

- Traffic
- Volume
- Population
- Lane miles
- Other

Roadway

- Median width
- Horizontal curvature
- 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-Community Support and Missing sidewalk

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
- Incremental B/C
- Ranking based on net benefit

<input checked="" type="checkbox"/> Cost Effectiveness	10
<input checked="" type="checkbox"/> Community support, benefit-need and pedestrian accessibility	15
<input checked="" type="checkbox"/> Problem identification in crashes and risk	30
<input checked="" type="checkbox"/> Solution proposed for improvement to mitigate risk	45

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

25

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

- | | |
|--|---|
| <input type="checkbox"/> Cable Median Barriers | <input checked="" type="checkbox"/> Rumble Strips |
| <input checked="" type="checkbox"/> Traffic Control Device Rehabilitation | <input checked="" type="checkbox"/> Pavement/Shoulder Widening |
| <input checked="" type="checkbox"/> Install/Improve Signing | <input checked="" type="checkbox"/> Install/Improve Pavement Marking and/or Delineation |
| <input checked="" type="checkbox"/> Upgrade Guard Rails | <input type="checkbox"/> Clear Zone Improvements |
| <input type="checkbox"/> Safety Edge | <input type="checkbox"/> Install/Improve Lighting |
| <input checked="" type="checkbox"/> Add/Upgrade/Modify/Remove Traffic Signal | <input type="checkbox"/> Other |

What process is used to identify potential countermeasures? Engineering Study Road Safety Assessment Other:**Identify any program methodology practices used to implement the HSIP that have changed since the last reporting period.** Highway Safety Manual Road Safety audits Systemic Approach Other:**Describe any other aspects of the Highway Safety Improvement Program methodology on which you would like to elaborate.**

About 85 percent of the roadway centerline miles are maintained by VDOT on three systems: interstate, primary, and secondary (county) roadways except for secondary roads in Arlington and Henrico Counties. Statewide transportation safety planning on VDOT maintained systems is performed centrally by HSIP staff in the Traffic Engineering Division each year.

Listings and maps of high crash routes and intersections following the SHSP Emphasis Areas were provided to VDOT district staff to identify candidate locations for project development. On the VDOT systems the following safety planning data is available:

- Intersections ranked by Deaths (type K) plus Severe Injuries (type A) in the most recent 3 years within each jurisdiction. Those locations in the top 5 percent are first priority. Those between the top 5 and 15 percent are second priority and the remainders are lower priority.
- For Roadway Departure emphasis, each route (ID) segment within a jurisdiction was ranked by the number of K plus A severe injury plus visible injuries (type B) for the most recent 5 years. The first priority route segments are those with at least one percent of the jurisdictions KAB injuries. The second priority is routes with less than one percent but more than two KAB injuries per year (10 in five years).
- For Speed and Bicycle and Pedestrian crash the same route ranking and priority thresholds were used but only for K+A injuries.

To aid the safety planning and project development, VDOT's HSIP recommends conducting crash analysis and Roadway Safety Assessments (RSA) or a documented safety engineering study at identified high crash locations and corridors. RSA guidelines were developed and posted on VDOT's HSIP web page with outreach and training of VDOT, locality, and MPO engineering and planning staff. In addition to crash analysis tools, VDOT staff has access to roadway traffic volume, cross-section and pavement condition inventory in the RNS to support the RSA process and HSIP benefit-cost analysis. Further, a new crash analysis screening method and Engineering Safety Review (RSA) process were developed for reviewing 1 to 3R projects that are federally funded. In the past, some urban jurisdictions have used HSIP funds to identify high crash locations, prioritize for study and conduct RSAs to propose projects for funding.

VDOT has updated the safety project economic evaluation methodology to its present form in 2006. Refinements have occurred since SAFETEA-LU in the emphasis areas identified in Virginia's Strategic Highway Safety Plan; in transportation safety planning methods; and in the economic benefit values used in the benefit -cost economic analysis used to evaluate proposed projects. All guidelines, project submittal forms, and benefit-cost spreadsheets (including crash modification factors) are provided on the VDOT HSIP web page. Eligible highway safety project proposals must meet the following requirements:

- (1) Proposed improvements are at locations identified through analysis of crashes.
- (2) Projects must be relevant to the program purpose of reducing crashes and/or their consequences using HSIP eligible treatments. The treatments should implement and target the emphasis area strategies in Virginia's 2012-16 Strategic Highway Safety Plan (SHSP).

(3) Improvement project studies that evaluate potential engineering countermeasures (physical changes to the travel way improvements and/or use of traffic control devices) require a PE seal after July 1, 2010.

(4) All projects with known crash modification factors (CMF) must have an economic analysis to show the proposed safety benefits exceed the project cost (Benefit/Cost > 1). If CMF's are unknown for a treatment then the estimated factor or expected risk reductions should be documented.

(5) All projects should upgrade non-standard safety features to existing standards, when those features are within the scope (that is, the treatment addresses targeted crashes) and work area of the project proposal study.

(6) Project effectiveness is evaluated with a before/after crash analysis three years after completion.

VDOT's HSIP has promoted and programmed systemic safety treatments for several years. Projects such as high friction surfacing, rumble strips, guard rail, enhanced markings and signing, signal timing, signal head and battery backup upgrades are several types of systemic treatments recently implemented. When appropriate CMF information is available the B/C analysis is requested. However, system wide assessment of roadway inventory and associated crashes has not been performed to define low unit cost systemic treatments.

Identified locations were assessed by VDOT district staff to conduct RSAs/engineering studies and then analyzed to propose safety improvements based on expected benefit-cost (B/C) ratio. The economic evaluation procedure compiles crashes by type and severity (KABCO scale), and applies a crash modification factor (CMF) to determine the annualized benefits from reductions expected for the total project cost. Engineering studies submitted each year are reviewed and evaluated by central office HSIP staff. Modifications are negotiated on the project scope and cost estimates. The improvement projects with the greatest return on the dollar that target the most crashes in each District are approved based on the targeted Highway Safety funds. Projects that are prioritized by HSIP staff are then programmed by District staff in the VDOT Six-Year Improvement Program (SYIP) for final Commonwealth Transportation Board (CTB) approval (typically in June of each year, but can be added at any monthly meeting). District staff delivers the projects by functional area depending on the type of project. HSIP staff work with the districts to refine the project scopes and funding during the design and construction process. District Local

Assistance project coordinators oversee locally administered project design and construction.

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)	52983155	79 %	40741157	84 %
HRRRP (SAFETEA-LU)	0	0 %	226893	0 %
HRRR Special Rule				
Penalty Transfer - Section 154	13782750	21 %	7773223	16 %
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	66765905	100%	48741273	100%
---------------	----------	------	----------	------

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

\$8,077,033.00

How much funding is obligated to local safety projects?

\$8,288,412.00

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

\$1,016,667.00

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

\$665,000.00

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

\$0.00

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

0 %

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

One of the major impediments that VDOT faces with obligating its Penalty Transfer Section 154 funds is the shortness in time that the Traffic Engineering Division has to obligate the funds once the final Obligation Authority is release. This coming fiscal year Traffic Engineering will facilitate a financial planning meeting with all of the interested parties to identify the process for streamlining this particular issue.

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

VDOT has implemented a new Highway Safety Implementation Manual, new Benefit-Cost Ratio for traditional spot improvements and in the process of developing a BCR Worksheet for identifying systemic improvements. Virginia has also developed specific PSI base upon HSM SPFs.

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
100546	Intersection traffic control Modify traffic signal - modify signal mounting (spanwire to mast arm)	4 Numbers	2380626	4127730	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
104681	Roadway delineation Raised pavement markers	0 Miles	907565	1030000	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
10468 2	Shoulder treatments Widen shoulder - paved or other	0 Miles	931506	171924 7	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
10468 3	Shoulder treatments Widen shoulder - paved or other	0 Miles	1147000	374678 9	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
105470	Roadway Rumble strips - edge or shoulder	38.6 Miles	4860750	4902128	Penalty Transfer - Section 154	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
105486	Roadway Pavement surface - high friction surface	0 Miles	2270416	3160000	HSIP (Section 148)	Urban Major Collector	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
105736	Roadway delineation Improve retroreflectivity	0 Miles	149491	166101	HRRRP (SAFETE A-LU)	Rural Minor Arterial	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
105800	Non-infrastructure Road safety audits	31 Miles	315000	350000	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
10580 8	Roadway Rumble strips - edge or shoulder	15 Miles	574382	212438 2	Penalty Transfer - Section 154	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
10580 9	Roadway Pavement surface - high friction surface	3.8 Miles	698165	123016 5	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
105831	Roadway Roadway - other	0 Miles	1539926	3039926	Penalty Transfer - Section 154	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
105832	Intersection traffic control Intersection traffic control - other	2 Number s	111707	500000	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic control devices.
106239	Roadway Pavement surface - high friction	4.65 Miles	1807221	2150000	HSIP (Section 148)	Rural Major Collector	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel

	surface										lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
106293	Intersection traffic control Intersection traffic control - other	3 Numbers	760743	930000	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	State Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic control devices.
106485	Intersection traffic control Modify traffic signal - add backplates	0 Miles	328994	1343046	HSIP (Section 148)	Rural Major Collector	0	0	State Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic control devices.
10467	Intersection	0 Miles	550233	653111	HSIP	Rural	0	0	State	Intersectio	Reduce

2	traffic control Modify traffic signal - add flashing yellow arrow				(Section 148)	Principal Arterial - Other			Highway Agency	ns	frequency and severity of crashes and improve traffic control devices.
10474 3	Intersection traffic control Modify traffic signal - modify signal mounting (spanwire to mast arm)	0 Miles	839948	100000 0	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
10613 3	Roadside Barrier- metal	0 Miles	190000	200000	HSIP (Section 148)	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
10065 5	Alignment Horizontal and vertical alignment	0.4 Miles	1151206	401477 3	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
10468 4	Shoulder treatments Widen shoulder - paved or other	5.29 Miles	170000	185425 7	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety

											devices.
96752	Pedestrians and bicyclists Pedestrian signal	0.08 Miles	300155	649441	HSIP (Section 148)	Urban Minor Arterial	0	0	State Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user awareness and educate roadway users , comply with traffic control devices.
93669	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0.4 Miles	208807	382090	HSIP (Section 148)	Urban Minor Arterial	0	0	City of Municipal Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user awareness and educate roadway users , comply with

											traffic control devices.
104363	Intersection geometry Intersection geometry - other	0.1 Miles	353009	654222	HSIP (Section 148)	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
106536	Roadside Roadside - other	0.26 Miles	180478	315000	HSIP (Section 148)	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve

											roadside safety devices.
94529	Intersection geometry Auxiliary lanes - add left-turn lane	0.09 Miles	134197	243156	HSIP (Section 148)	Urban Principal Arterial - Other	1500 0	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
86490	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	401834	563000	HSIP (Section 148)	Urban Minor Arterial	1800 0	0	City of Municipal Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
94531	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	279191	538870	HSIP (Section 148)	Urban Principal Arterial - Other	1700 0	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.

99403	Alignment Vertical alignment or elevation change	0.43 Miles	2947347	471767 4	HSIP (Section 148)	Rural Minor Arterial	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Crashes and improve roadside safety devices.
98371	Intersection traffic control Intersection traffic control - other	1 Number s	1549047	212899 9	HSIP (Section 148)	Urban Minor Arterial	0	0	State Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic control devices.
89904	Intersection traffic control Intersection traffic control - other	1 Number s	122213	160875	HSIP (Section 148)	Urban Principal Arterial - Other	2500 0	0	City of Municipal Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic

											control devices.
98372	Intersection geometry Intersection geometry - other	1 Number s	812227	337278 1	HSIP (Section 148)	Urban Minor Arterial	0	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve Intersection Geometry.
104687	Intersection traffic control Modify traffic signal - modify signal mounting (spanwire to mast arm)	0.12 Miles	275760	368804	HSIP (Section 148)	Urban Minor Arterial	2600 0	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
104703	Roadside Drainage improvements	6.67 Miles	813312.4 9	160000 0	HSIP (Section 148)	Rural Minor Arterial	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and

											improve roadside safety devices.
86678	Intersection traffic control Intersection traffic control - other	1 Numbers	77078	125000	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
98095	Intersection geometry Auxiliary lanes - add left-turn lane	0.09 Miles	232837	561591	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
100656	Pedestrians and bicyclists Install sidewalk	0.67 Miles	490247	594720	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user

											awareness and educate roadway users , comply with traffic control devices.
104674	Roadway Roadway - other	8.96 Miles	3231233	3543436	HSIP (Section 148)	Rural Major Collector	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
104686	Intersection traffic control Intersection traffic control - other	1 Number s	300000	375000	HSIP (Section 148)	Rural Principal Arterial - Other	3100 0	0	State Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic

											control devices.
93938	Intersection traffic control Modify control - modifications to roundabout	1 Numbers	269878	639580	HSIP (Section 148)	Urban Major Collector	0	0	City of Municipal Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
100559	Pedestrians and bicyclists Install sidewalk	0.12 Miles	129865	441290	HSIP (Section 148)	Urban Minor Arterial	3600	0	State Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user awareness and educate roadway users , comply with traffic control devices.
104673	Roadway Roadway -	3.24 Miles	2207297	2311144	HSIP (Section	Rural Minor Arterial	0	0	State Highway	Roadway Departure	Reduce likelihood of

	other				148)				Agency		vehicles leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
10063 2	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0.367 Miles	102112	127574 3	HSIP (Section 148)	Urban Major Collector	0	0	State Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user awareness and educate roadway users , comply with traffic control devices.

96939	Intersection geometry Auxiliary lanes - add right-turn lane	0.09 Miles	389451	943841	HSIP (Section 148)	Rural Major Collector	5000	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
95423	Intersection traffic control Intersection traffic control - other	0.2 Miles	77402	513900	HRRRP (SAFETE A-LU)	Rural Major Collector	5600	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
97029	Intersection geometry Auxiliary lanes - add left-turn lane	0.2 Miles	1177545	1919718	HSIP (Section 148)	Urban Major Collector	0	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
93347	Shoulder treatments Widen	0.317 Miles	965367	2315710	HSIP (Section 148)	Urban Major Collector	6000	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles

	shoulder - paved or other										leaving travel lanes and Identify locations with a large number of Carshes and improve roadside safety devices.
103461	Intersection traffic control Intersection traffic control - other	1 Number s	481267	785000	HSIP (Section 148)	Rural Minor Arterial	0	0	State Highway Agency	Intersectio ns	Reduce frequency and severity of crashes and improve traffic control devices.
104668	Alignment Alignment - other	0.263 Miles	1331370	160190 5	HSIP (Section 148)	Rural Minor Arterial	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes and Identify locations with a large number of

											Carshes and improve roadside safety devices.
96733	Pedestrians and bicyclists Install sidewalk	0.19 Miles	139146	318323	HSIP (Section 148)	Urban Minor Arterial	0	0	State Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user awareness and educate roadway users , comply with traffic control devices.
100560	Pedestrians and bicyclists Install sidewalk	0.36 Miles	207969	487262	HSIP (Section 148)	Urban Minor Arterial	0	0	State Highway Agency	Pedestrians	Reduce frequency and severity of crashes at intersections /segments, Improve user awareness

											and educate roadway users , comply with traffic control devices.
84358	Intersection traffic control Intersection traffic control - other	1 Number s	2756301	235610 4	HSIP (Section 148)	Rural Major Collector	9700	0	State Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
86544	Intersection traffic control Intersection traffic control - other	1 Number s	464279	910700	HSIP (Section 148)	Urban Principal Arterial - Other	1200 0	45	City of Municipal Highway Agency	Intersections	Reduce frequency and severity of crashes and improve traffic control devices.
105493	Non-infrastructure Data/traffic records	1 Number s	350000	350000	HSIP (Section 148)	Rural Principal Arterial - Interstate			State Highway Agency	Data	Enhancements for data integration, continue to

											improve data reporting and mapping.

Progress in Achieving Safety Performance Targets

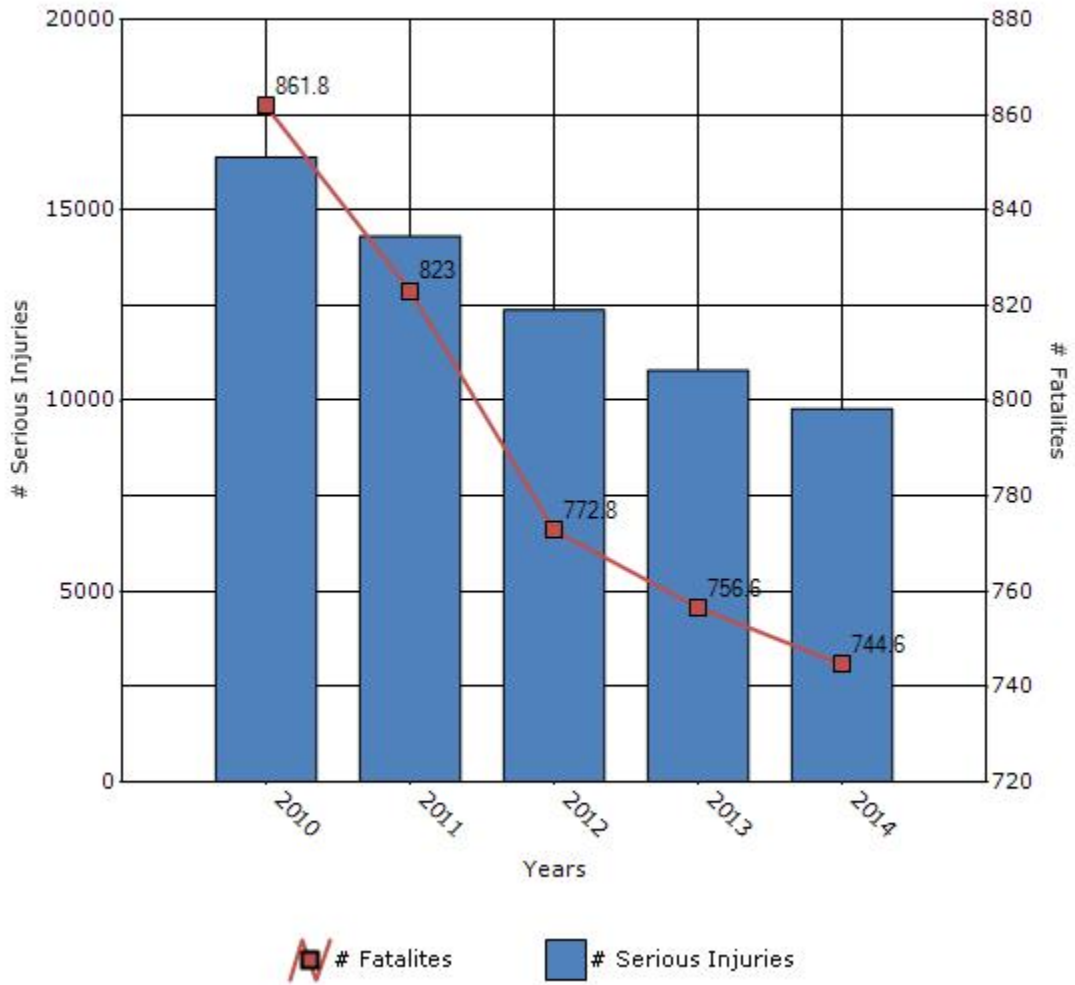
Overview of General Safety Trends

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

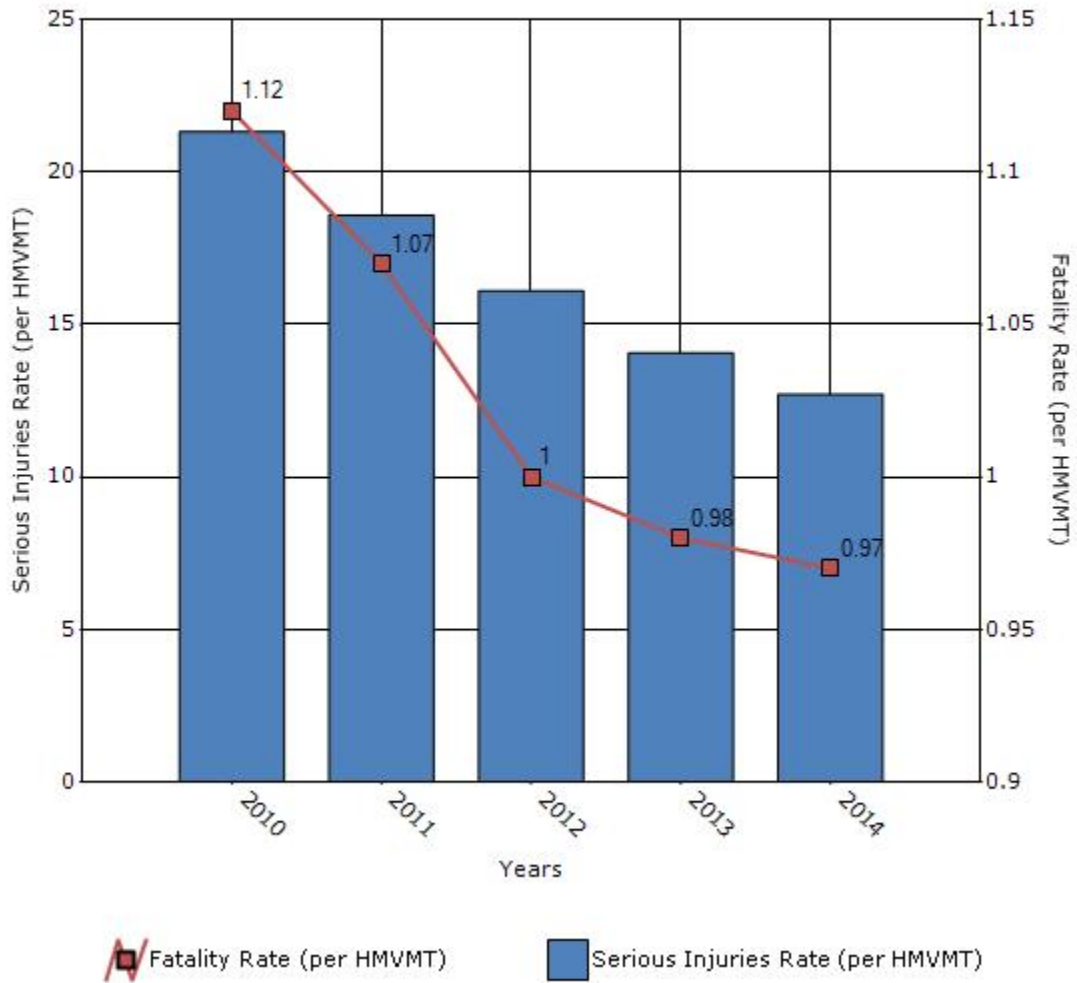
Performance Measures*	2010	2011	2012	2013	2014
Number of fatalities	861.8	823	772.8	756.6	744.6
Number of serious injuries	16386.8	14314.2	12377.8	10798.6	9780
Fatality rate (per HMVMT)	1.12	1.07	1	0.98	0.97
Serious injury rate (per HMVMT)	21.31	18.58	16.1	14.06	12.71

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

Number of Fatalities and Serious injuries for the Last Five Years



Rate of Fatalities and Serious injuries for the Last Five Years



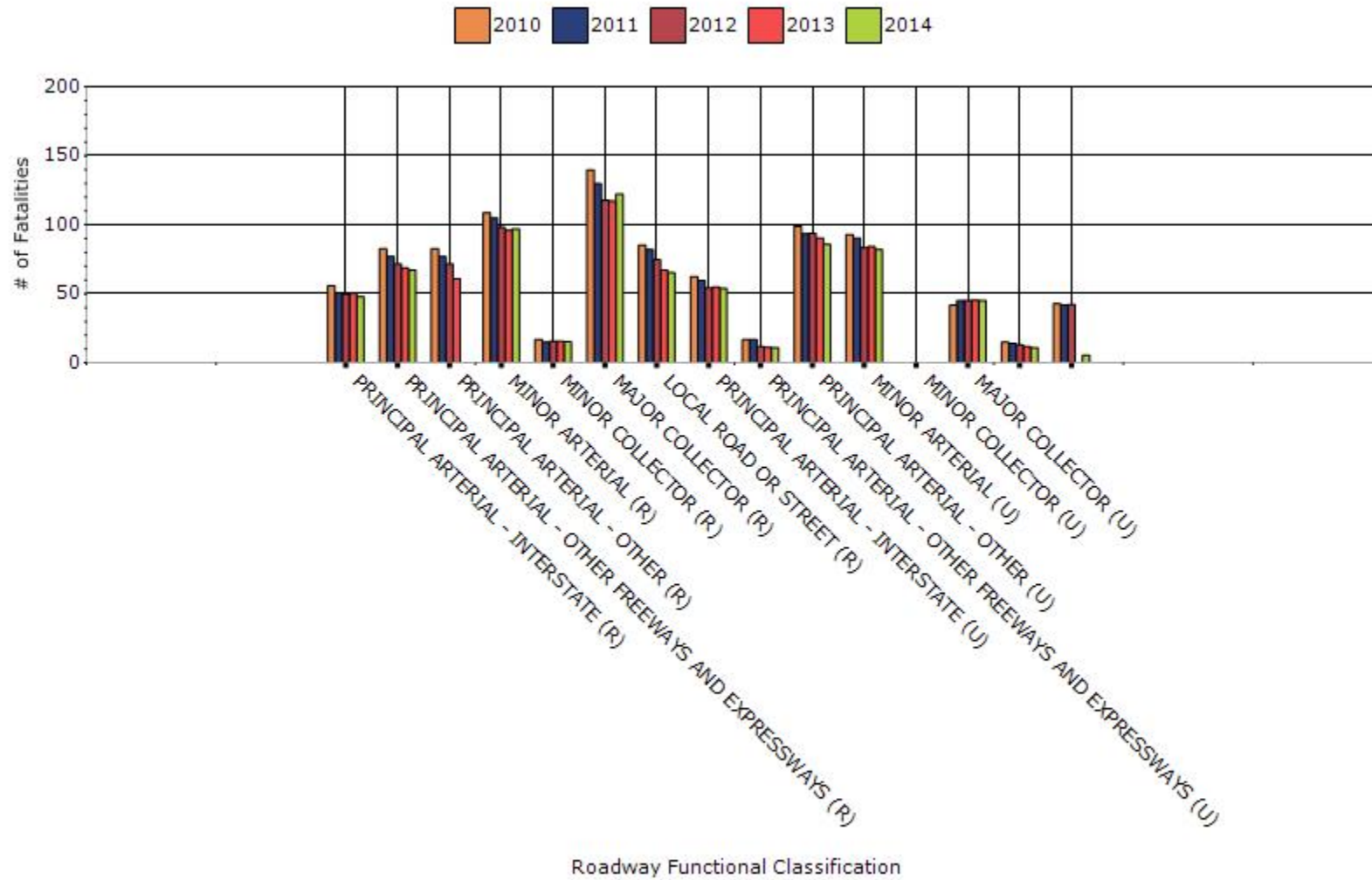
To the maximum extent possible, present performance measure* data by functional classification and ownership.

Year - 2014

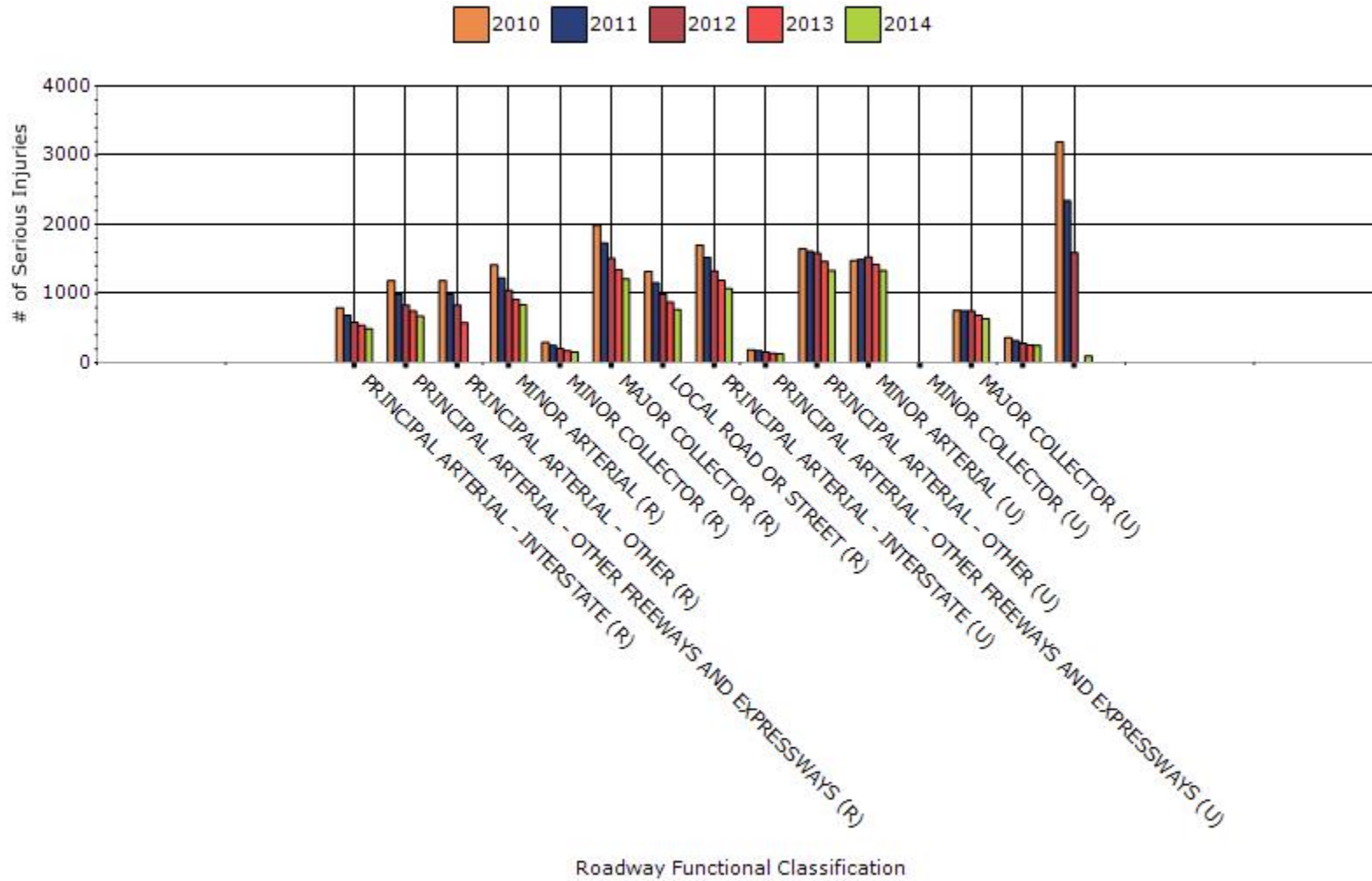
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	48	492.8	0.52	5.3
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	67.4	675.6	1.08	10.79
RURAL PRINCIPAL ARTERIAL - OTHER	0	0	0	0
RURAL MINOR ARTERIAL	97	836.2	1.87	16.11
RURAL MINOR COLLECTOR	15.2	155.4	2.79	28.57
RURAL MAJOR COLLECTOR	122.2	1210.6	2.45	24.25
RURAL LOCAL ROAD OR STREET	65.2	766.2	2.17	25.47
URBAN PRINCIPAL	54	1075.4	0.35	7.06

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	11	127.4	0.33	3.81
URBAN PRINCIPAL ARTERIAL - OTHER	85.8	1335	0.68	10.61
URBAN MINOR ARTERIAL	82.2	1334.2	0.79	12.86
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	45.2	637.6	1.1	15.59
URBAN LOCAL ROAD OR STREET	11	252.6	0.57	13.15
OTHER	5.6	95.2	0	0

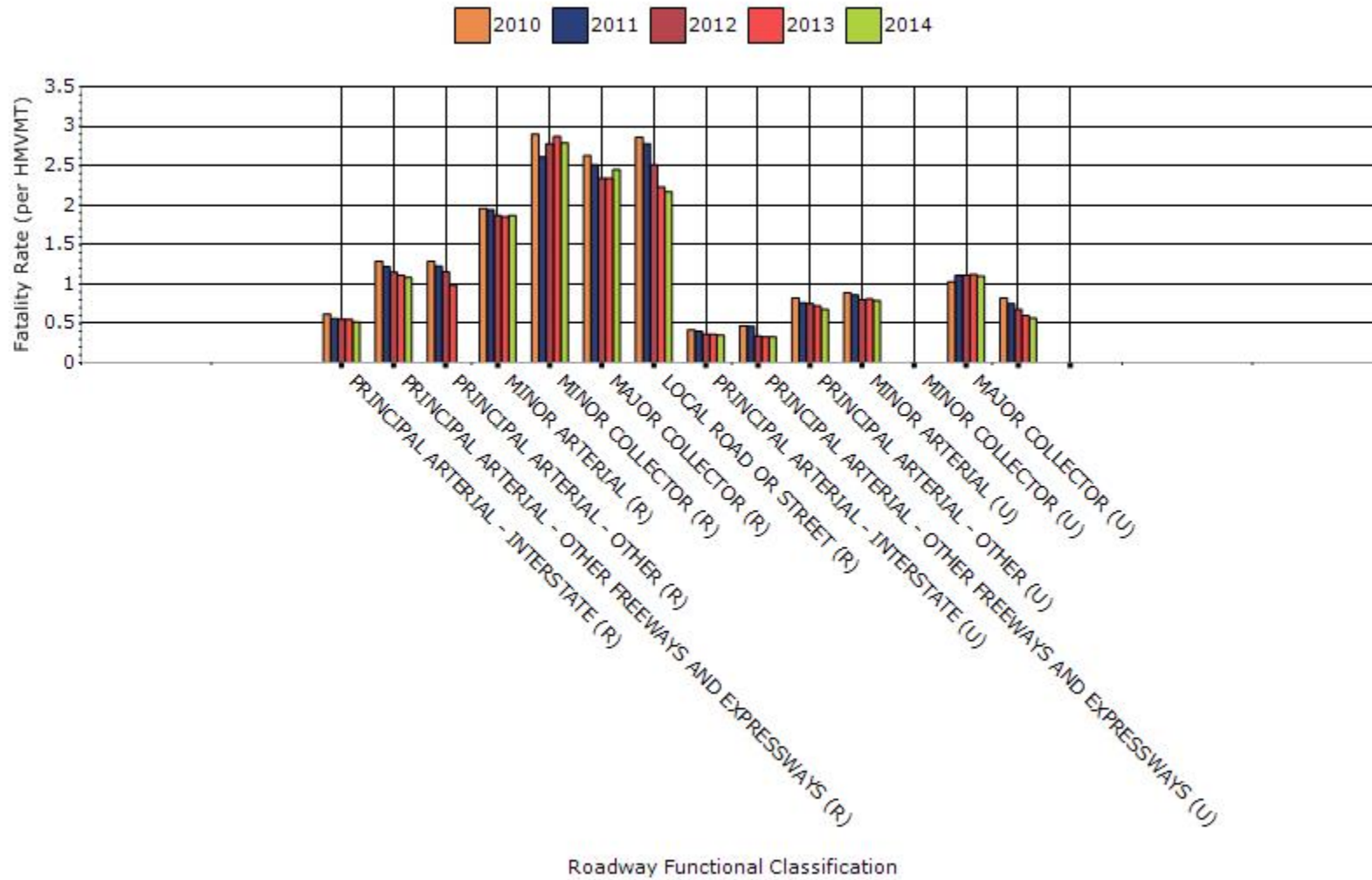
Fatalities by Roadway Functional Classification



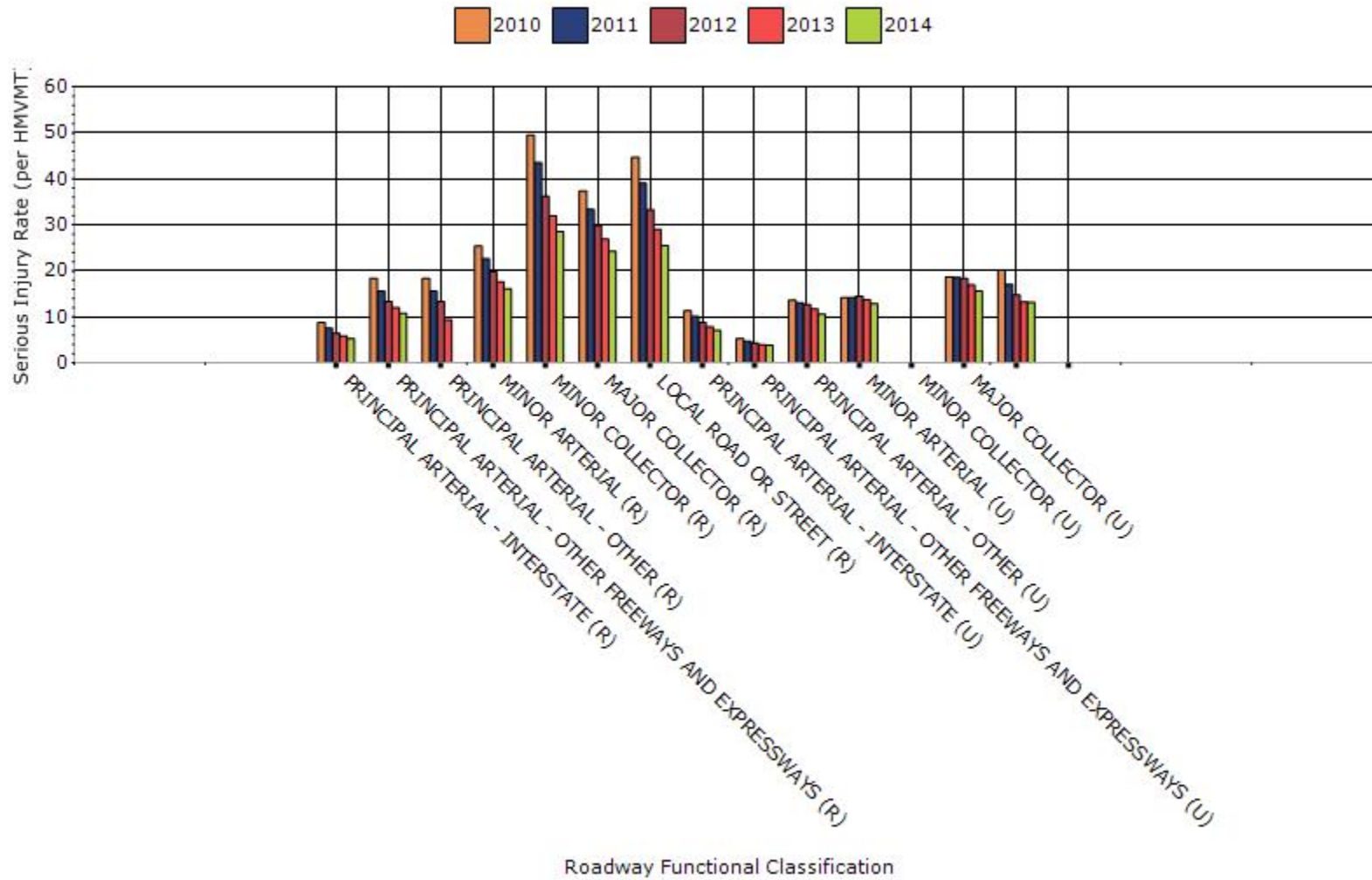
Serious Injuries by Roadway Functional Classification



Fatality Rate by Roadway Functional Classification



Serious Injury Rate by Roadway Functional Classification

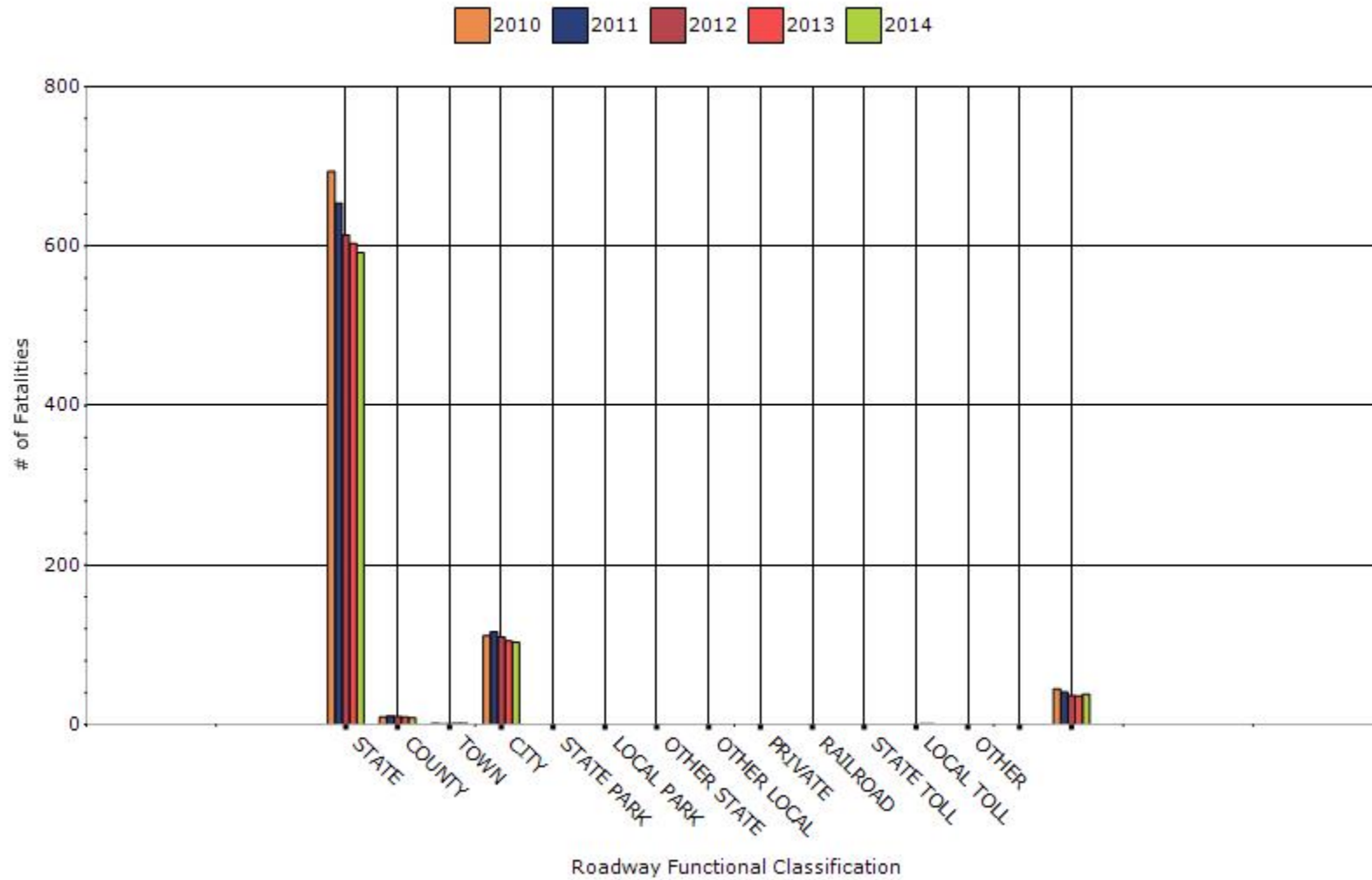


Year - 2014

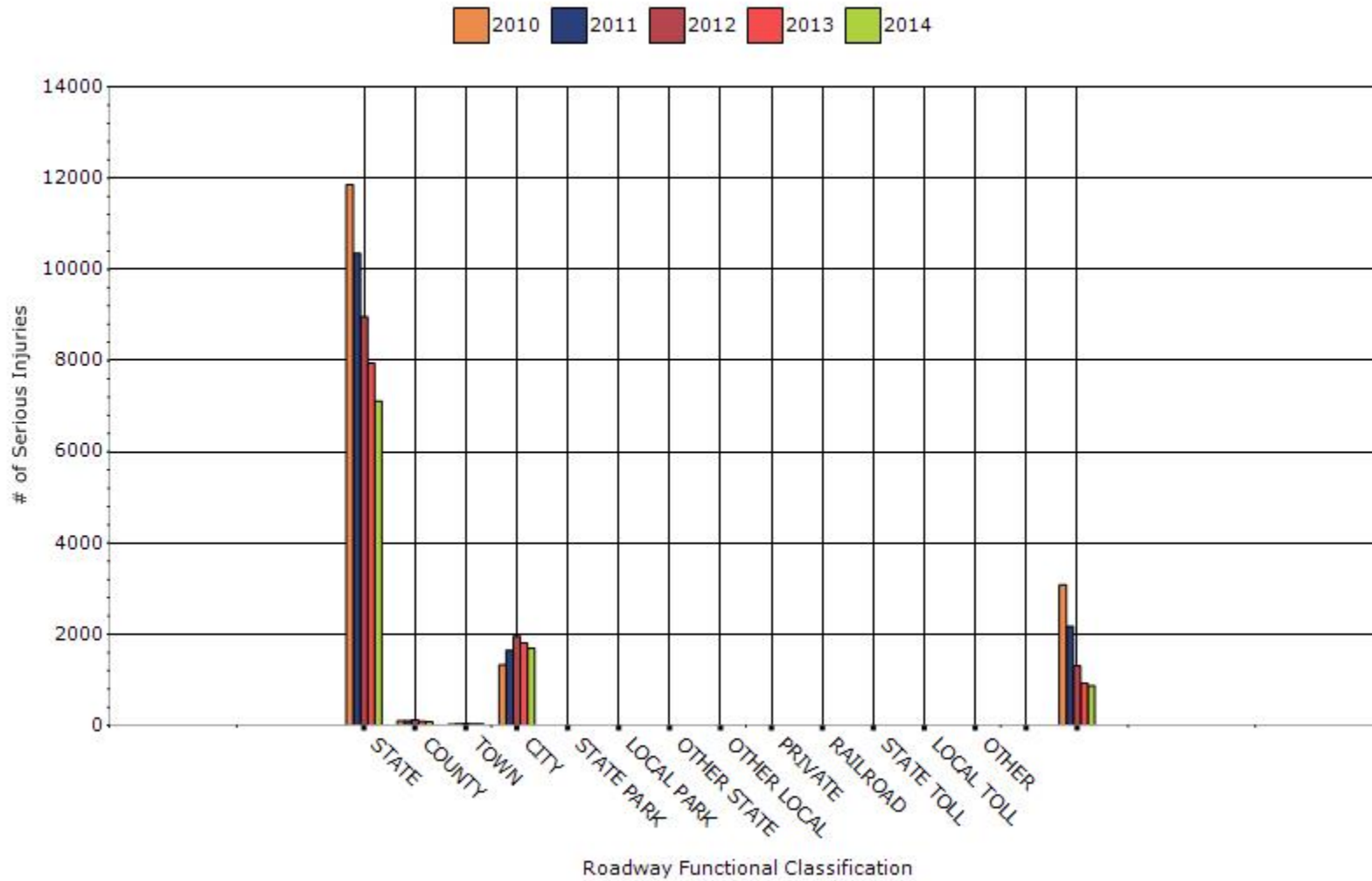
Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	591.8	7111.6	0.93	11.21
COUNTY HIGHWAY AGENCY	8.6	80.6	0.71	6.55
TOWN OR TOWNSHIP HIGHWAY AGENCY	1.4	29.2	0.26	6.57
CITY OF MUNICIPAL HIGHWAY AGENCY	103.2	1687.6	0.75	12.38
STATE PARK, FOREST, OR RESERVATION AGENCY	0	0.8	0	0.11
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	0.2	0.6	0.23	0.68
LOCAL TOLL AUTHORITY	0.8	7	0.21	2.81
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0.4	2.2	NaN	NaN
INDIAN TRIBE NATION	0	0	0	0

OTHER	38.2	865.6	NaN	NaN
--------------	------	-------	-----	-----

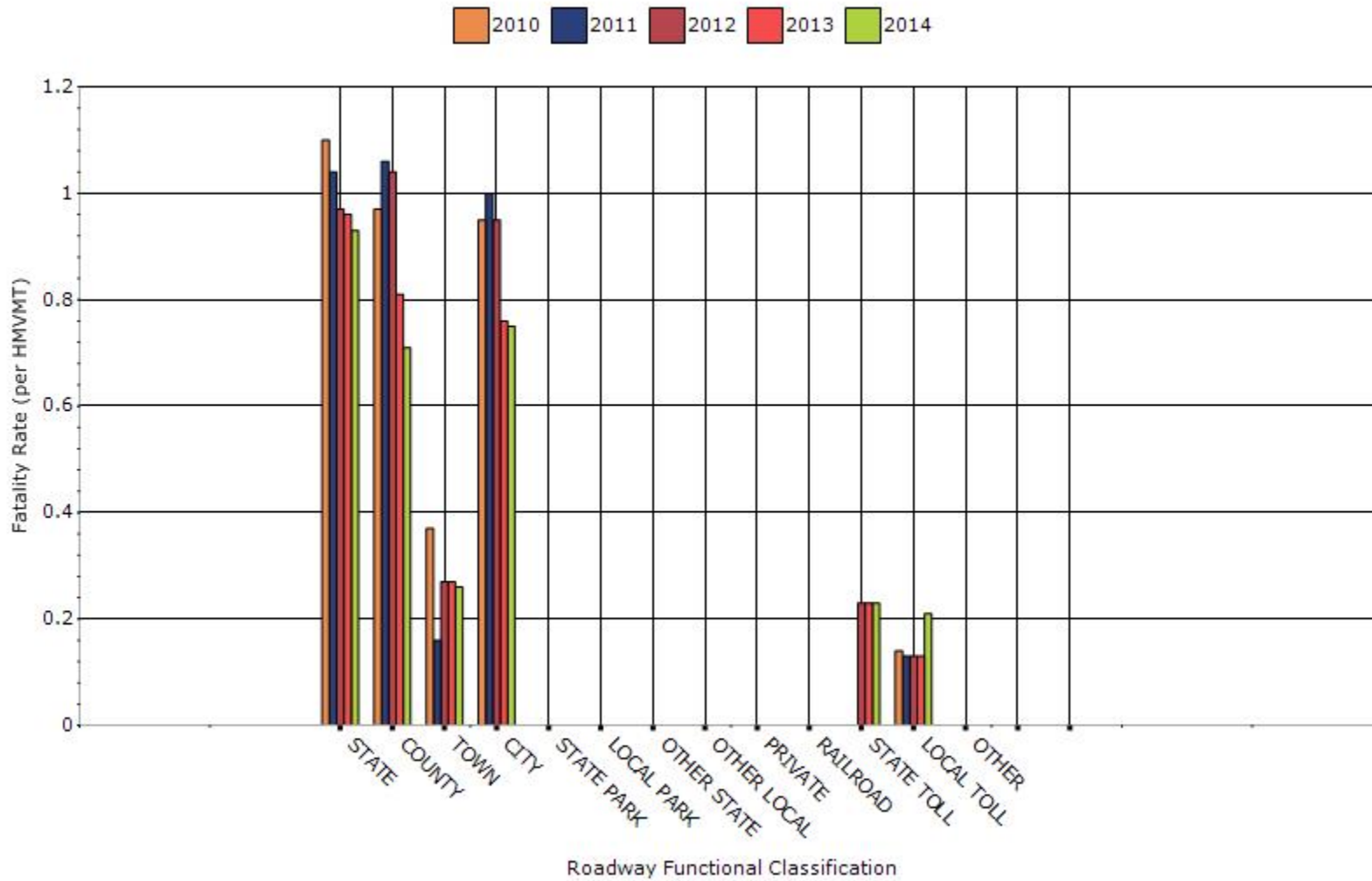
Number of Fatalities by Roadway Ownership



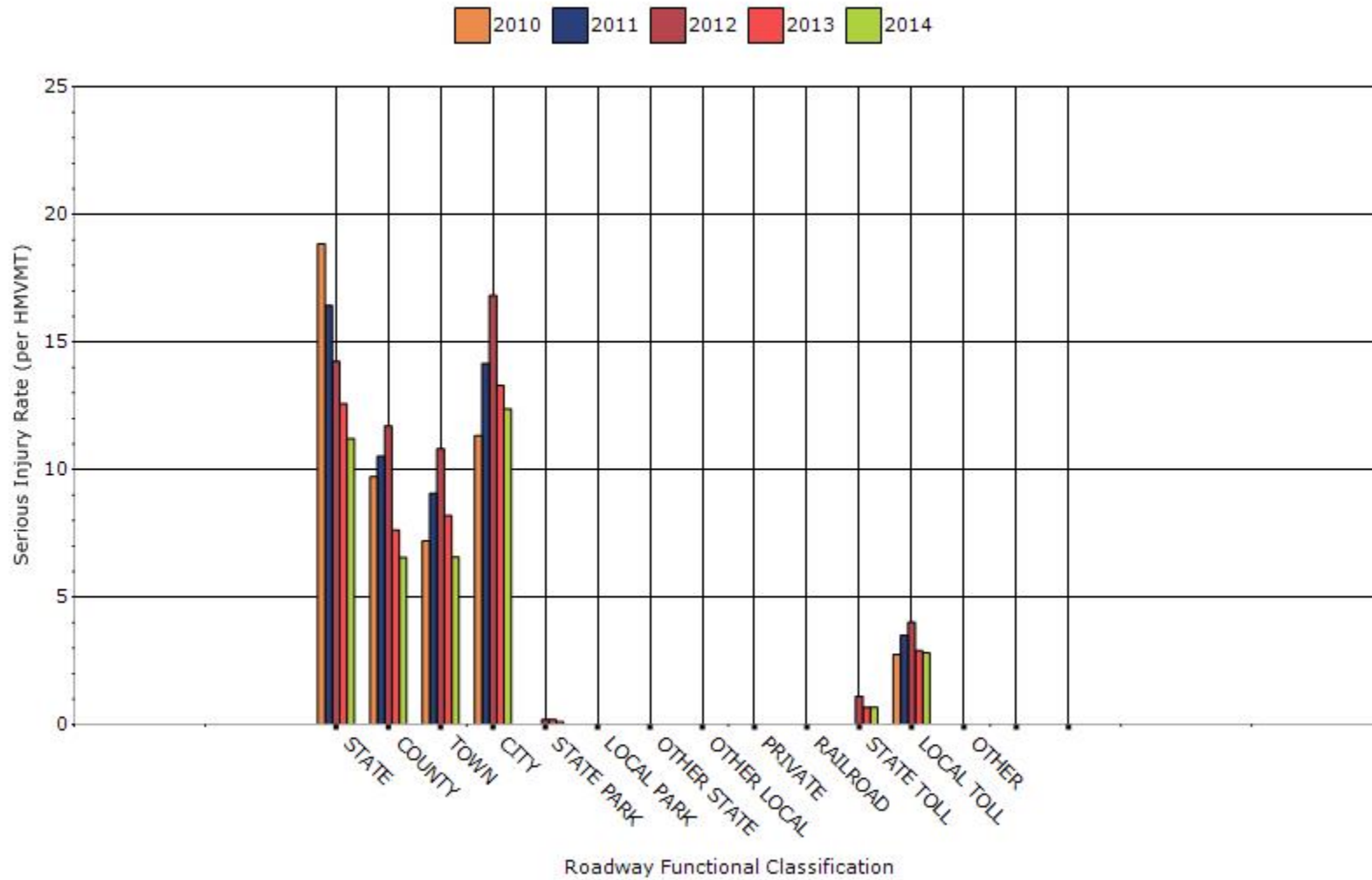
Number of Serious Injuries by Roadway Ownership



Fatality Rate by Roadway Ownership



Serious Injury Rate by Roadway Ownership



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

The following statistics denotes Virginia crash experience a 5.53 percent decrease on fatalities, a 2.66 percent decrease on injuries and a 1.22 percent decrease on total reported crashes from 2013.

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)	1.91	1.834	1.76	1.71	1.796
Serious injury rate (per capita)	29.93	26.69	23.37	20.58	18.55
Fatality and serious injury rate (per capita)	31.84	28.52	25.13	22.29	20.35

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

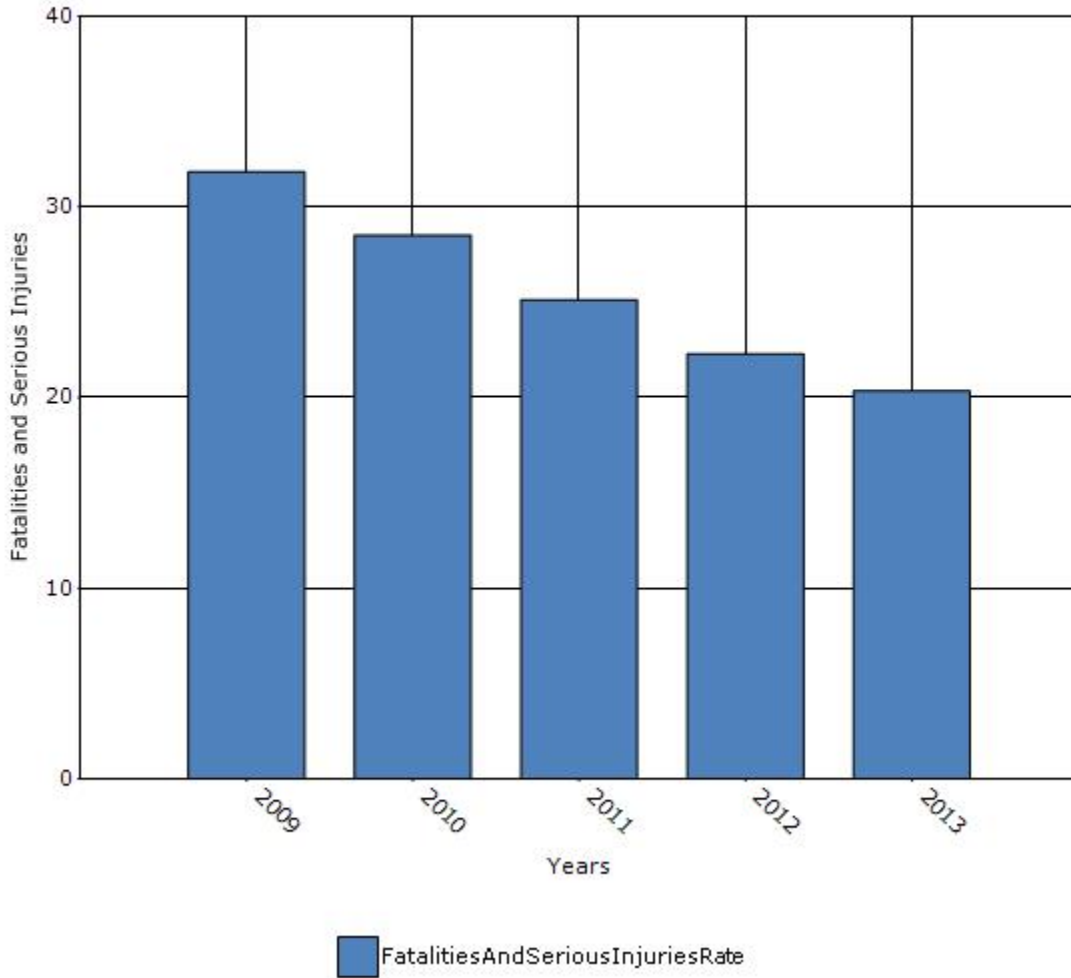
Report will not allow to upload year 2014 Average.

Fatal rate 1.95

Serious Injury 15.51

Fatal and Serious Injury 17.45

Rate of Fatalities and Serious injuries for the Last Five Years



Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program Evaluation)

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

- None
- Benefit/cost
- Policy change
- Other: Other-Developed in-house HSIP Project Tracking tool to measure the expenditure and project schedule for project delivery.

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

- Shift Focus to Fatalities and Serious Injuries
- Include Local Roads in Highway Safety Improvement Program
- Organizational Changes
- None
- Other: Other-The local administered projects are now being included in this year's HSIP plan.

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

VDOT has developed a HSIP Implementation Guide Manual which includes direction on the use of the new BCR worksheet as well as how to apply for systemic improvements. VDOT has also develop in-house and HSIP Project Tracking Tool to assist with ensuring the timely delivery of its safety projects. Also, VDOT publishes it's top 100 PSI locations including segments and intersections to aid in the identification of potential safety projects.

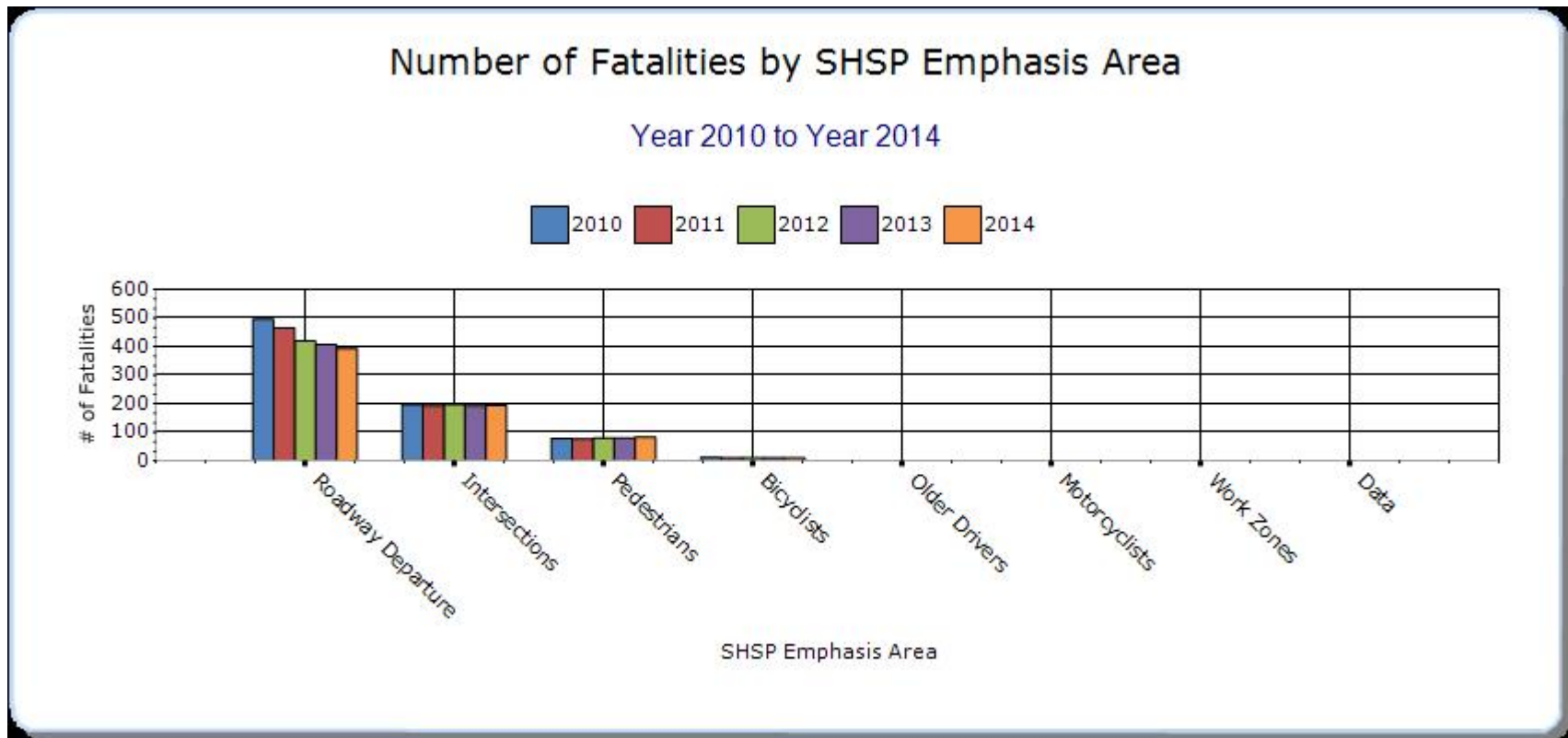
For the first time in five years VDOT has open its HSIP to local administered projects. New guidance for these projects are included in the new Implementation Manual.

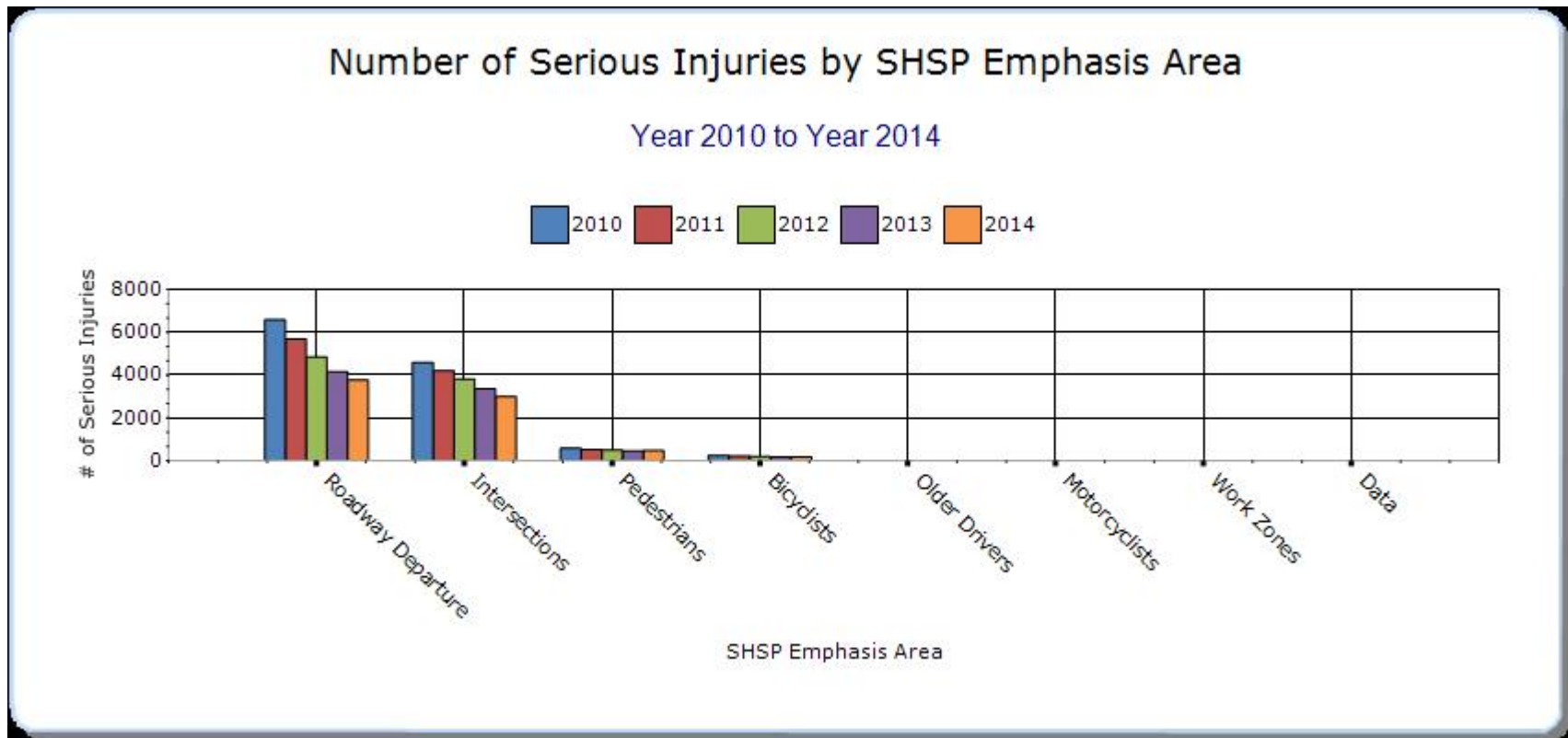
SHSP Emphasis Areas

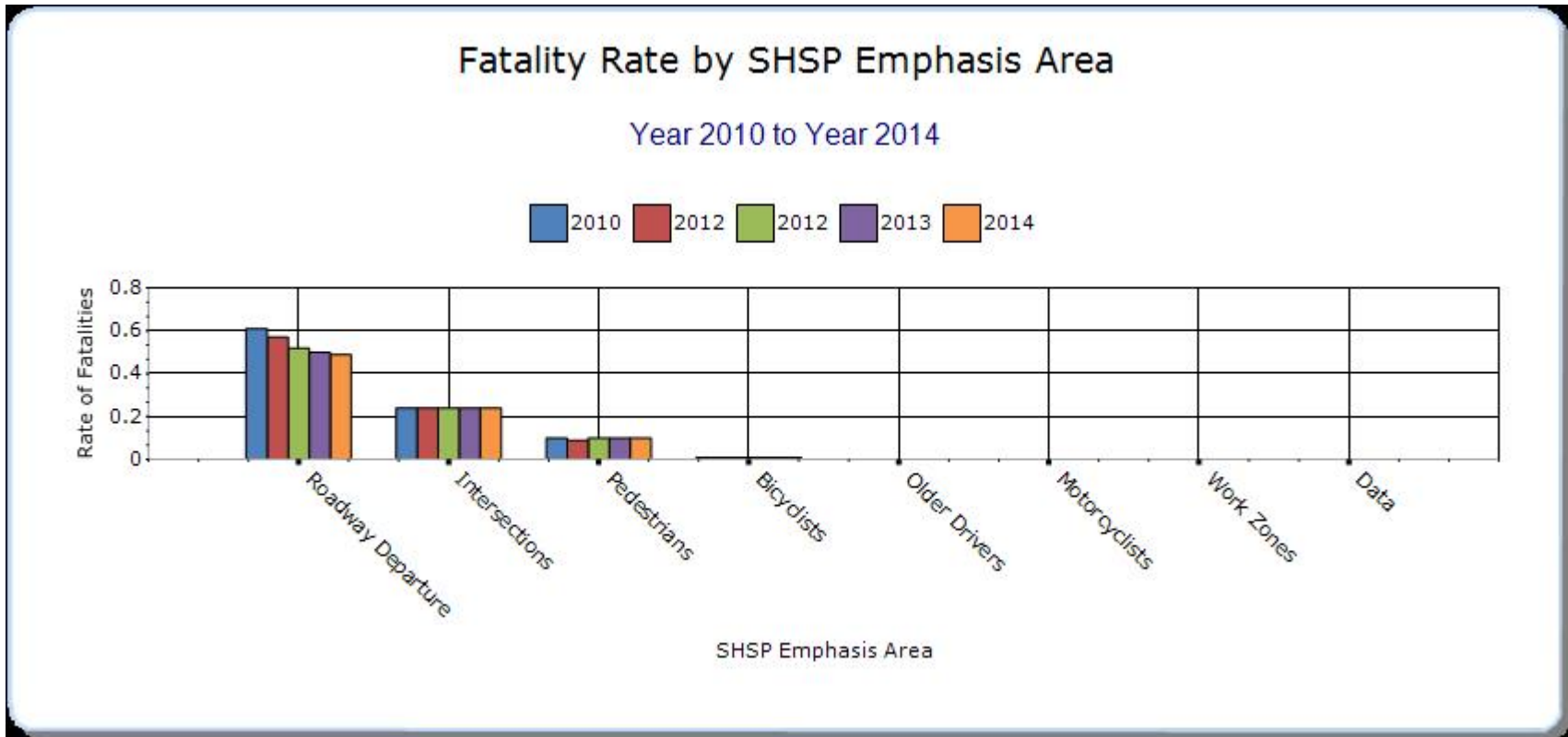
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

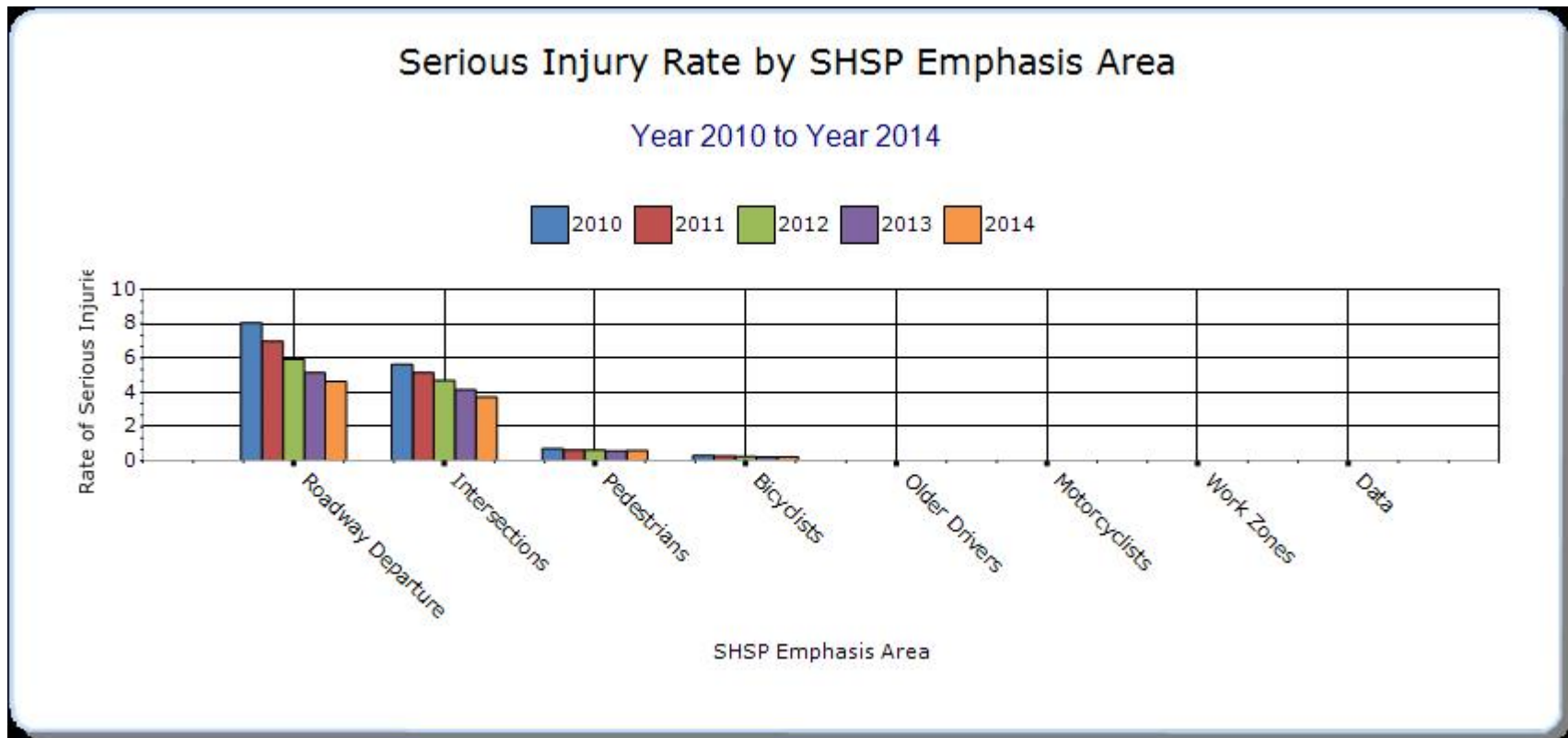
Year - 2013

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		407	4168.2	0.5	5.14	0	0	0
Intersections		192.2	3366.2	0.24	4.15	0	0	0
Pedestrians		79.2	470.2	0.1	0.58	0	0	0
Bicyclists		9.8	190	0.01	0.23	0	0	0







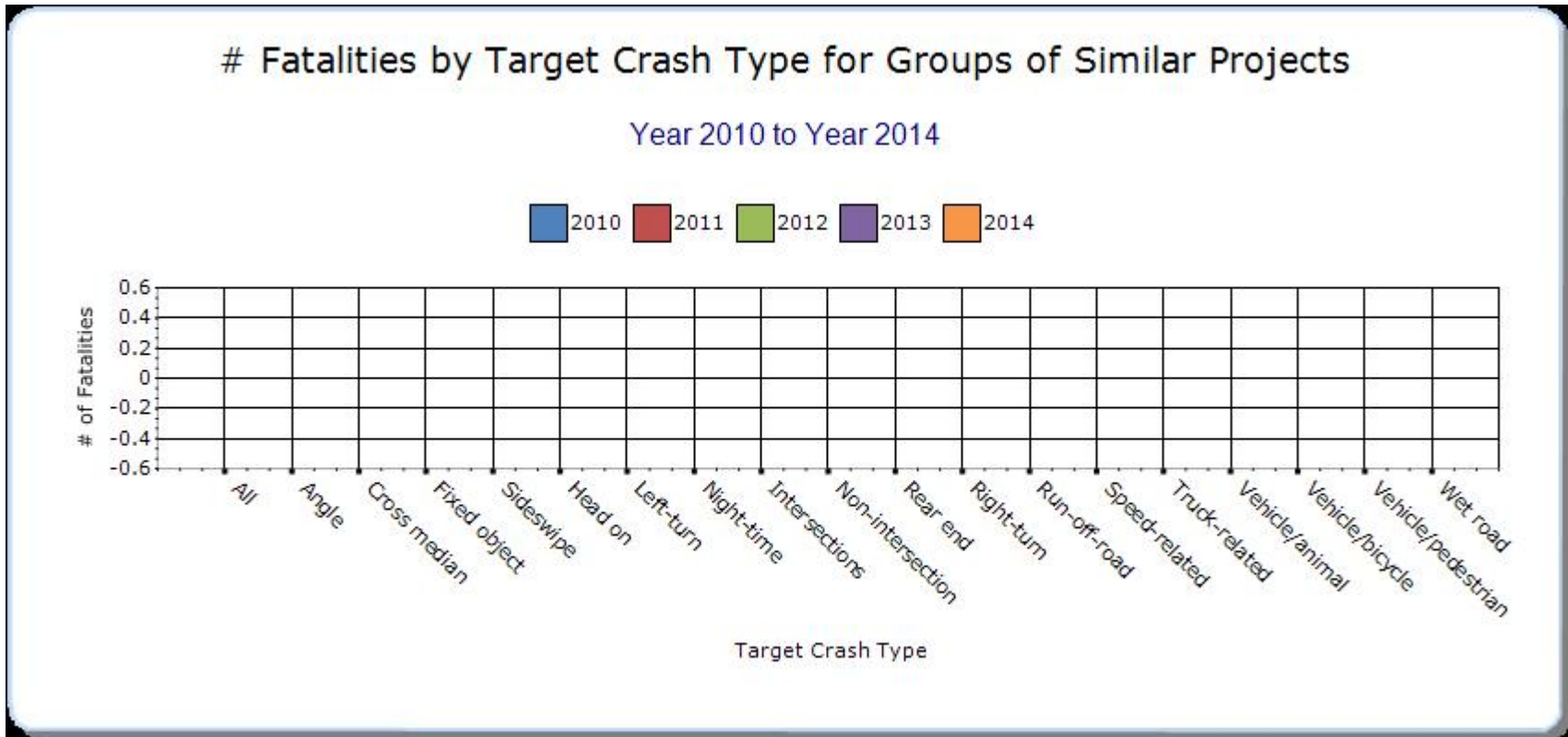


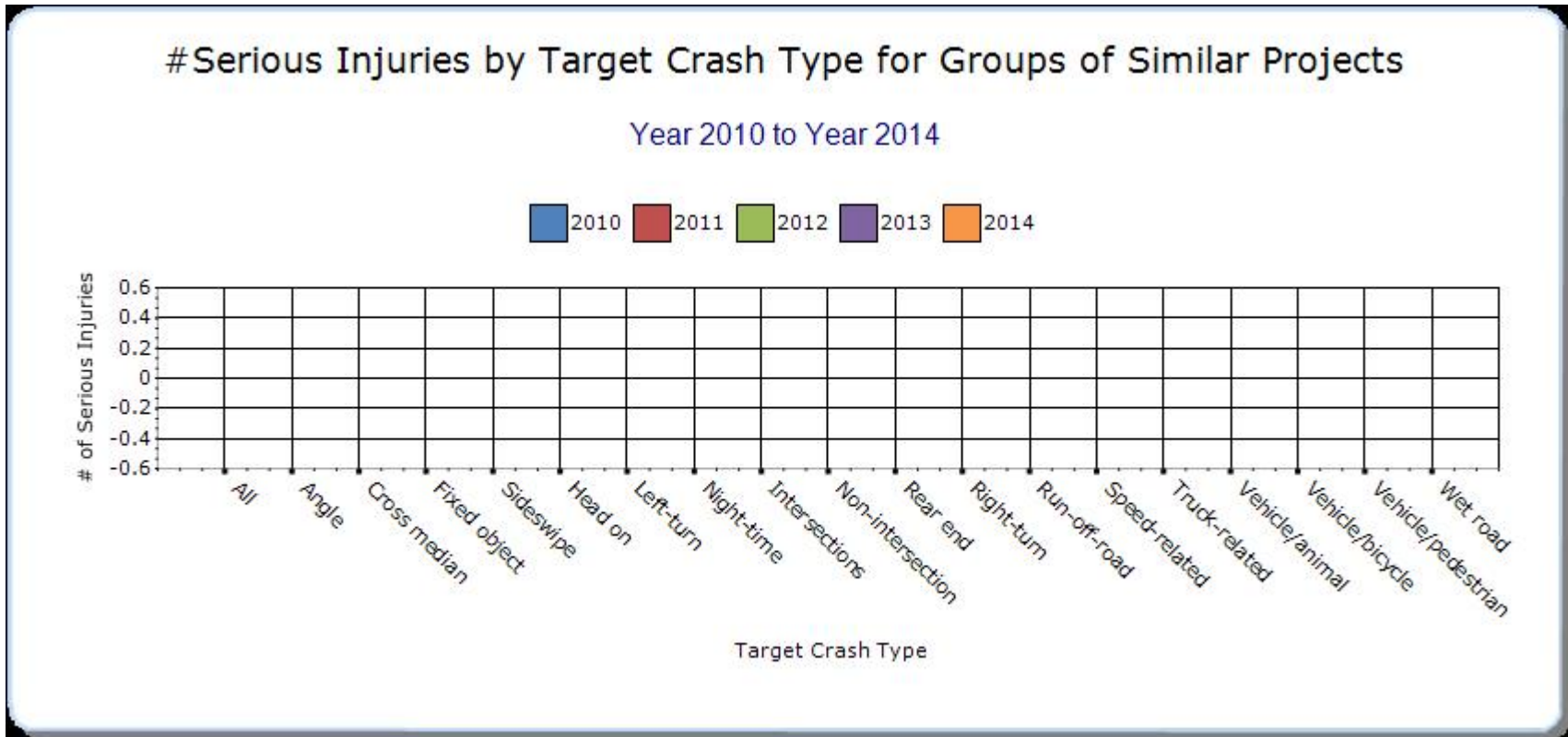
Groups of similar project types

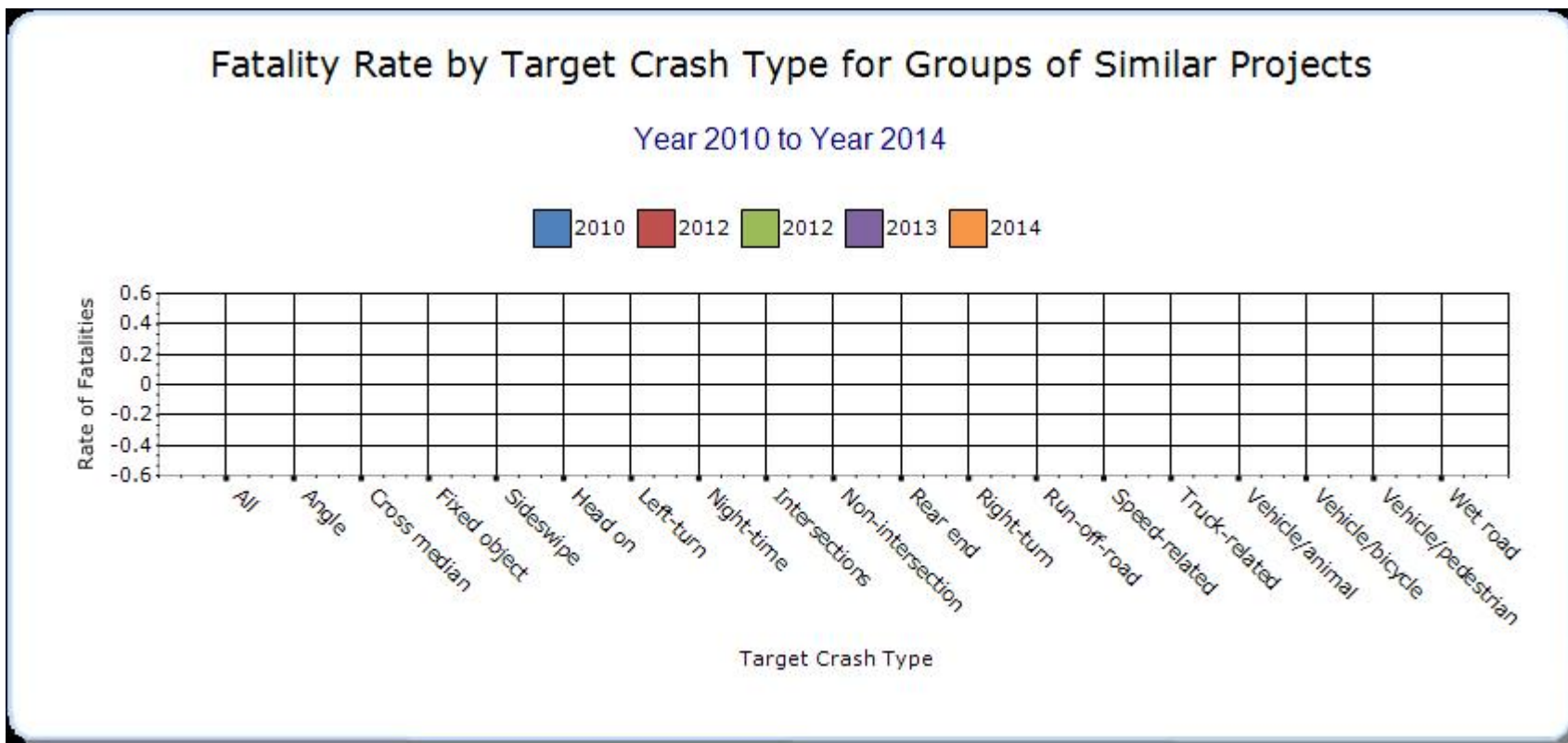
Present the overall effectiveness of groups of similar types of projects.

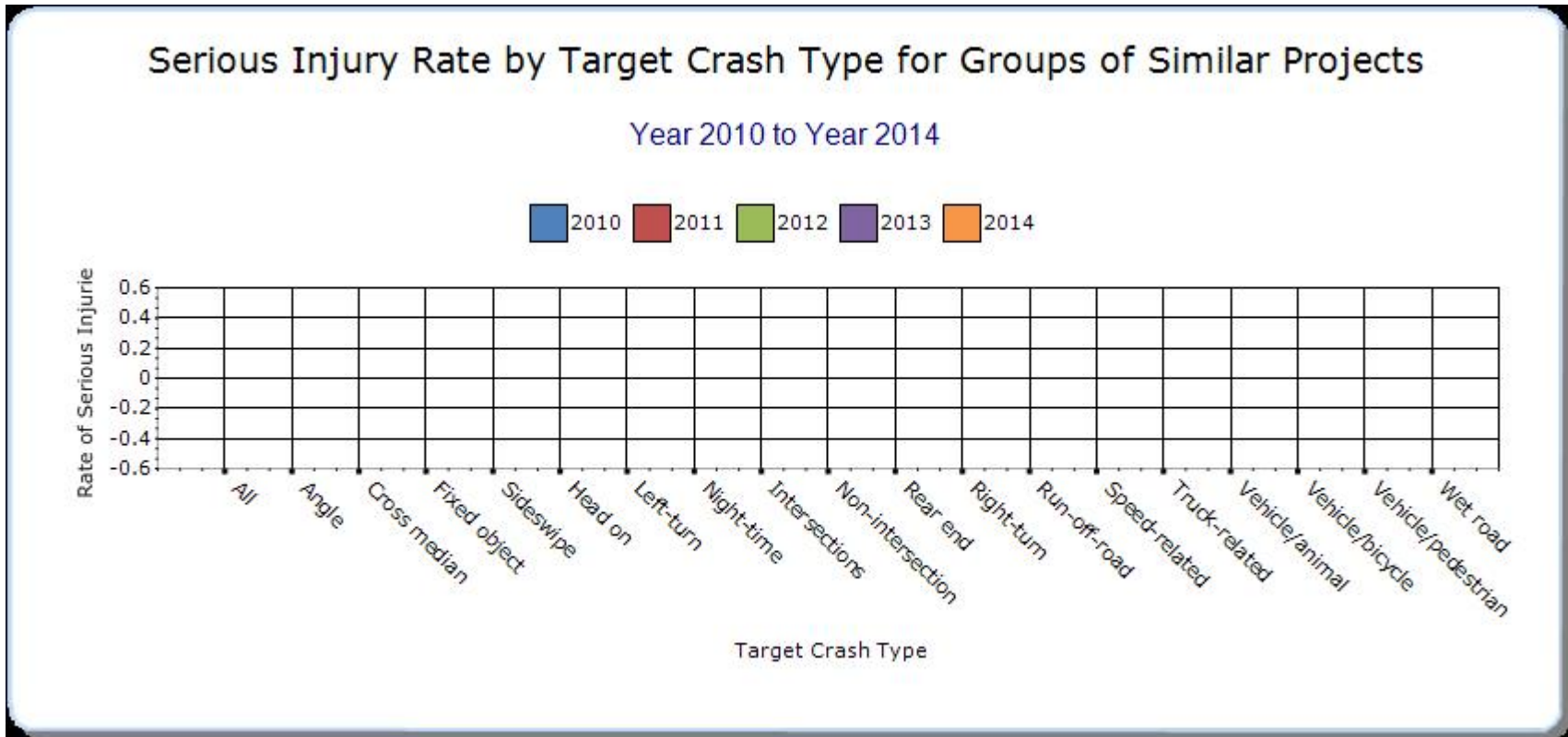
Year - 2014

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
Crash Data		744.6	9780	0.97	12.71	0	0	0
Roadway Departure		393.4	3763.8	0.49	4.64	0	0	0
Bicycle Safety		83.4	482.2	0.1	0.6	0	0	0
Intersection		194.2	3007.8	0.24	3.71	0	0	0





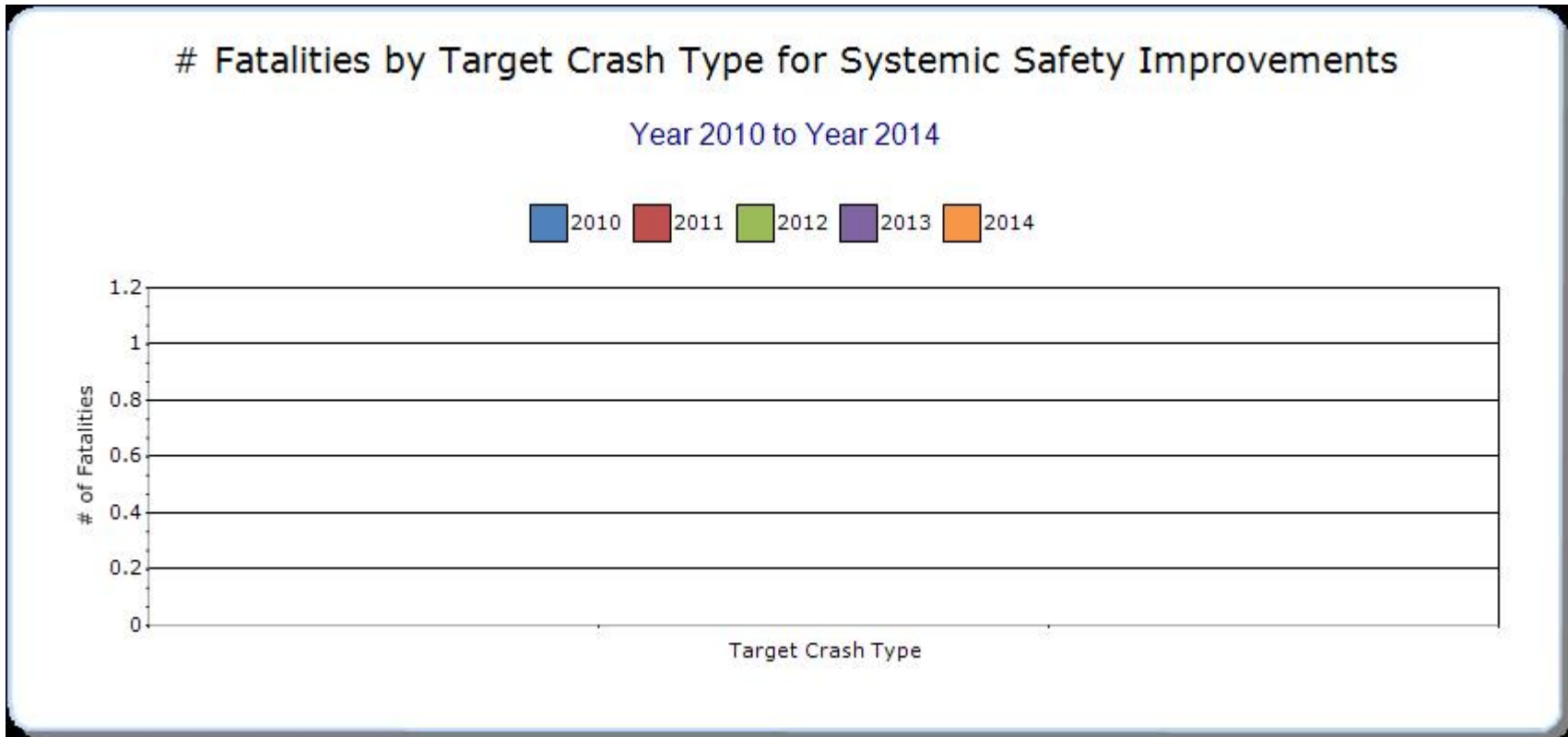


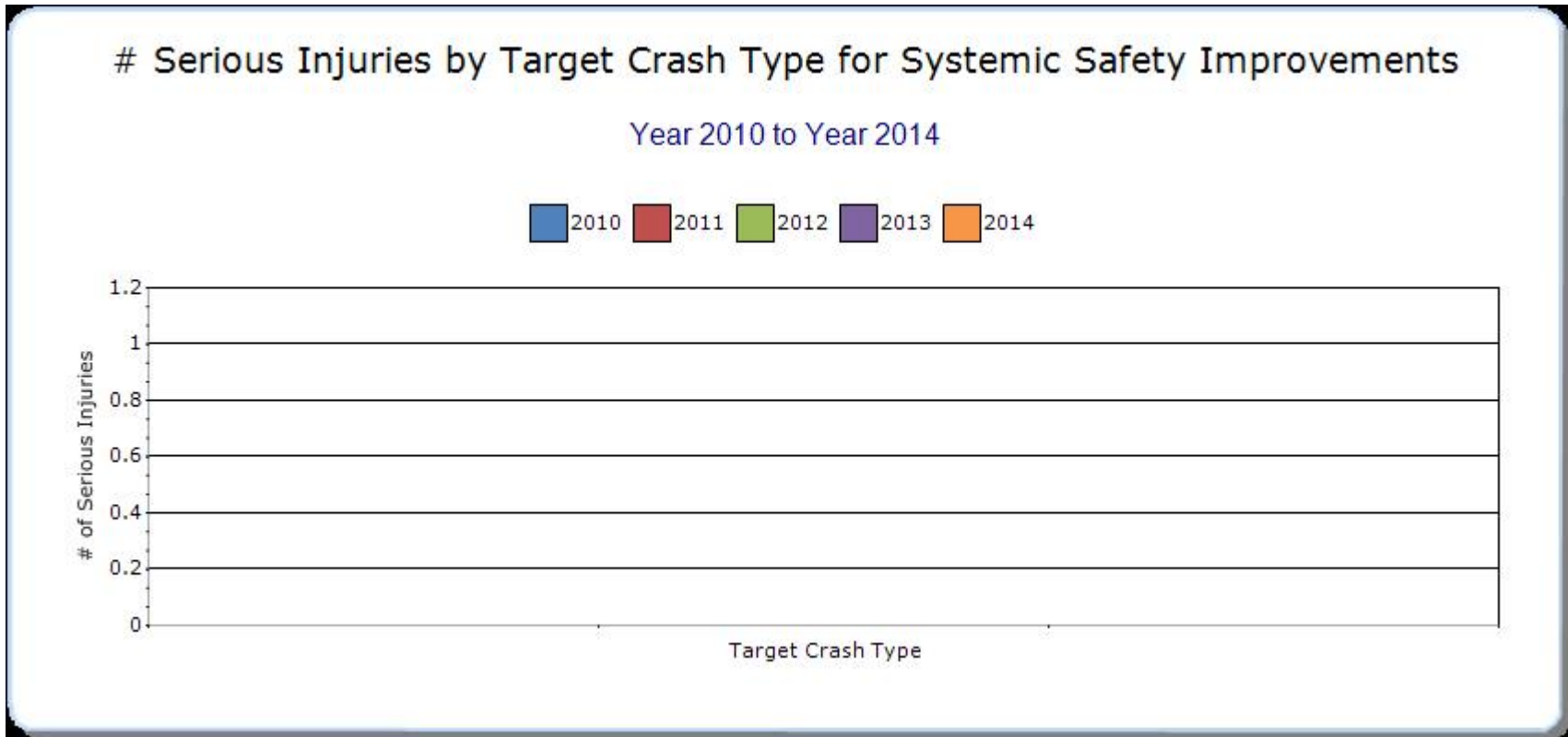


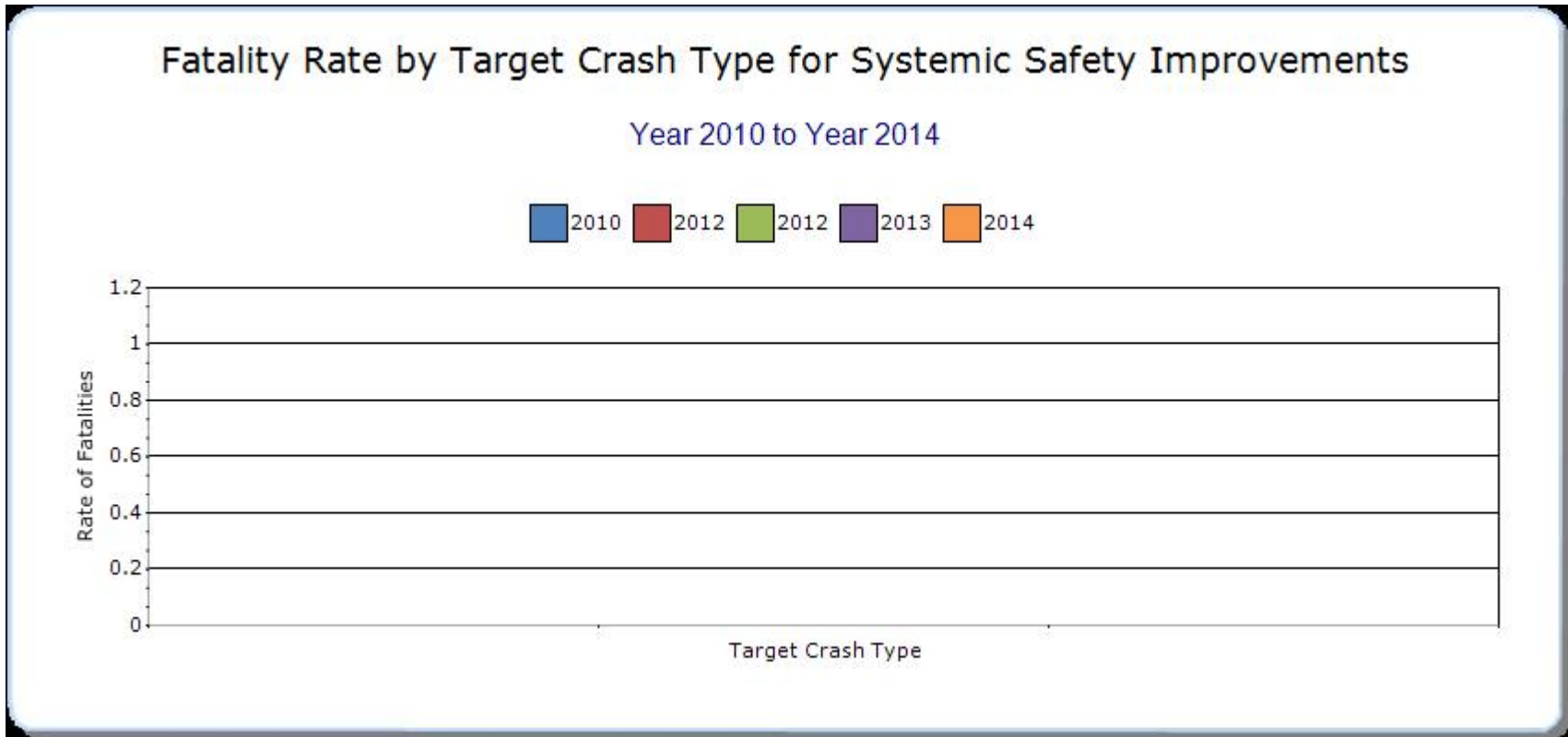
Systemic Treatments

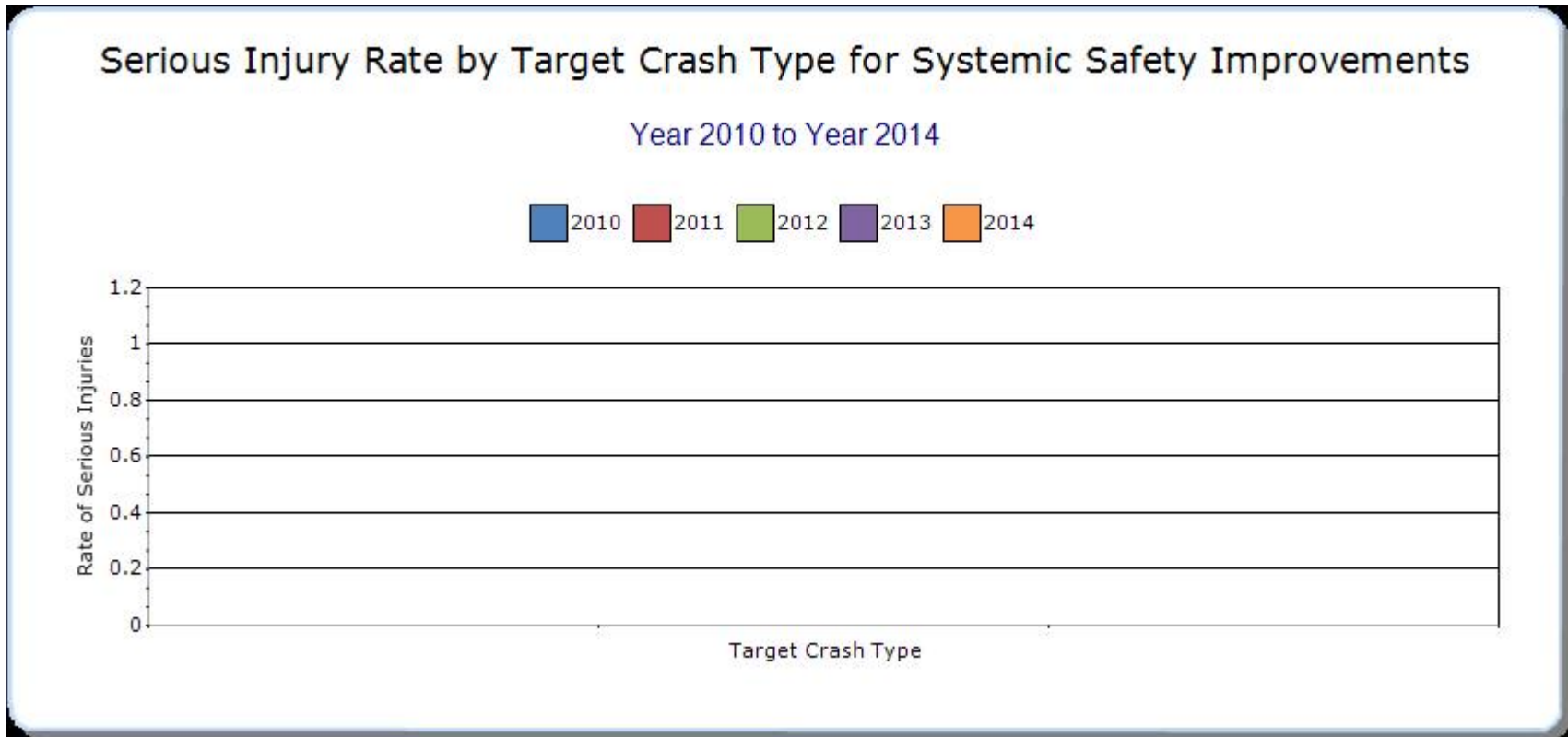
Present the overall effectiveness of systemic treatments.

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









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

Last year Virginia experience the lowest number of highway fatal crashes in its history with an all time low of 700 persons killed on our highways. Due to the development of the its in-house HSIP Project Tracking Tool VDOT has seen its HSIP project delivery rise from a 77% to a high of 96% project delivery rate.

Highway Safety Performance

This report provides safety performance measures for deaths and severe injuries and the associated rates per 100 million vehicle miles travelled (HMVMT). Since 2001, injury crashes have declined to about 45 thousand per year (almost a 20 percent reduction from the 1990's). Severe injuries have decreased by approximately 63 percent since 2001, some 7.8 percent per year. Injuries per capital have also continued to decline for the last 20 years.Highway Safety Performance

This report provides safety performance measures for deaths and severe injuries and the associated rates per 100 million vehicle miles travelled (HMVMT). Since 2001, injury crashes have declined to about 45 thousand per year (almost a 20 percent reduction from the 1990's). Severe injuries have decreased by approximately 63 percent since 2001, some 7.8 percent per year. Injuries per capital have also continued to decline for the last 20 years.

Traffic deaths per population in Virginia remained fairly stable for about 15 years after the declines that were seen in the early 1990's. However, 2007 saw a peak in fatal crashes resulting in 1,026 deaths, the first time deaths exceeded 1,000 since the early 1990's. Since 2007, a 25 percent in reduction has been experienced, although traffic deaths increased slightly in 2011 and 2012 the year 2014 decline to 700.

Severe traffic crash decreases indicate the effectiveness of improved driver regulations, safer cars, education, enforcement, emergency services, and engineering solutions in reducing related injuries.

Project Evaluation

Provide project evaluation data for completed projects (optional).

Location	Functional Class	Improvement Category	Improvement Type	Bef-Fatal	Bef-Serious Injury	Bef-All Injuries	Bef-PDO	Bef-Total	Aft-Fatal	Aft-Serious Injury	Aft-All Injuries	Aft-PDO	Aft-Total	Evaluation Results (Benefit/Cost Ratio)
98898	Rural Principal Arterial - Interstate	Roadway	Rumble strips - edge or shoulder	0	6	4	6	16	0	3	5	6	14	3.77
86475	Rural Minor Arterial	Shoulder treatments	Pave existing shoulders	0	4	5	5	14	0	0	0	1	1	.1
93548	Rural Principal Arterial - Other	Roadway delineation	Raised pavement markers	1	2	1	4	8	0	0	0	2	2	.06
93549	Rural Principal Arterial - Other	Roadway delineation	Raised pavement markers	0	8	11	16	35	0	0	4	9	13	.13
97570	Rural	Roadway	Improve retroreflectivity	4	8	31	59	102	3	4	36	31	74	33.92

	Principal Arterial - Other	delineation												
90193	Rural Minor Arterial	Shoulder treatments	Widen shoulder - paved or other	0	5	7	19	31	0	4	9	8	21	11.95
95638	Rural Minor Arterial	Intersection traffic control	Intersection traffic control - other	0	2	4	4	10	0	1	2	0	3	.21
89662	Rural Minor Arterial	Roadway	Rumble strips - edge or shoulder	0	1	1	7	9	1	1	1	5	8	1.65
97611	Rural Minor Arterial	Roadside	Drainage improvements	0	0	1	1	2	0	0	0	0	0	0
92061	Rural Principal Arterial - Interstate	Roadside	Barrier - other	0	5	3	14	22	1	1	10	7	19	1.2
92060	Rural Principal Arterial - Interstate	Roadside	Barrier - other	0	3	6	22	31	0	4	6	19	29	5.06
81466	Rural	Shoulder	Pave existing shoulders	0	3	2	7	12	0	1	2	4	7	.48

	Principal Arterial - Interstate	treatments												
94835	Urban Principal Arterial - Other	Intersection traffic control	Modify traffic signal - modernization/replacement	0	2	0	5	7	0	0	1	3	4	.33
95410	Rural Principal Arterial - Other	Intersection traffic control	Intersection flashers - add miscellaneous/other/unspecified	0	5	1	2	8	0	0	3	1	4	4.36
95408	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement3	0	2	0	3	5	0	0	0	1	1	.39
81445	Urban Minor Arterial	Alignment	Horizontal curve realignment	1	2	9	4	16	0	0	1	0	1	-1.67
81446	Urban Minor Arterial	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	0	0	2	2	4	0	0	1	0	1	.05
17522	Urban Major Collector	Alignment	Alignment - other	0	0	3	12	15	0	0	3	6	9	.15
86502	Urban	Intersection	Auxiliary lanes - add left-turn	0	1	0	1	2	0	0	0	1	1	.04

	Minor Arterial	geometry	lane											
94630	Rural Principal Arterial - Other	Intersection traffic control	Modify traffic signal - modernization/replacement	0	2	10	8	20	0	0	1	1	2	.19
86497	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - extend existing left-turn lane	0	2	7	6	15	0	2	2	1	5	.32
86508	Urban Principal Arterial - Other	Pedestrians and bicyclists	Pedestrian signal	0	0	0	0	0	0	0	0	0	0	0
95532	Urban Principal Arterial - Other Freeways and Expressways	Roadway	Rumble strips - edge or shoulder	0	5	9	11	25	0	0	0	0	0	0
95511	Urban Principal Arterial - Other	Roadway	Rumble strips - edge or shoulder	1	7	4	8	20	0	0	0	0	0	0

	Freeways and Expressways													
96768	Rural Minor Arterial	Intersection traffic control	Intersection flashers - add miscellaneous/other/unspecified	0	3	0	2	5	0	1	0	2	3	1.99
71721	Urban Major Collector	Pedestrians and bicyclists	Install new "smart" crosswalk	1	1	2	1	5	0	0	0	0	0	0
95836	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	0	5	17	22	0	1	27	27	55	37.49
89658	Urban Principal Arterial - Other	Roadway	Rumble strips - center	0	4	8	7	19	0	4	4	10	18	1.61
95503	Urban Minor Arterial	Intersection traffic control	Intersection traffic control - other	0	1	12	13	26	0	0	2	4	6	4.09
94868	Urban Minor Arterial	Intersection traffic control	Intersection traffic control - other	0	4	8	35	47	0	0	1	22	23	15.68
97673	Urban	Intersection	Modify traffic signal -	0	0	10	17	27	0	0	9	4	13	6.86

	Minor Arterial	traffic control	modernization/replacement											
92243	Urban Principal Arterial - Interstate	Roadway	Rumble strips - edge or shoulder	0	7	22	59	88	0	4	9	54	67	216.42
97674	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	2	9	16	27	0	0	3	12	15	10.22
97671	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	3	8	17	28	0	3	10	19	32	21.81
97675	Urban Principal Arterial - Other	Intersection traffic control	Modify traffic signal - modernization/replacement	0	0	4	10	14	0	0	1	4	5	6.82
97672	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	1	3	7	11	0	0	6	2	8	5.45
90254	Urban Principal Arterial - Other	Lighting	Continuous roadway lighting	1	5	31	58	95	0	6	40	47	93	91.63
90210	Urban	Lighting	Continuous roadway lighting	0	0	9	16	25	0	1	13	9	23	28.93

	Principal Arterial - Other													
90212	Urban Principal Arterial - Other	Lighting	Continuous roadway lighting	0	1	11	20	32	0	2	12	9	23	29.16
90203	Urban Principal Arterial - Other	Lighting	Continuous roadway lighting	0	3	18	30	51	0	0	11	9	20	22.18
95496	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	3	9	10	22	1	0	7	8	16	10.91
90209	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting	0	1	22	37	60	0	3	17	20	40	113.62
94225	Urban Principal Arterial -	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	0	7	22	59	88	0	4	9	54	67	

	Other													
97261	Rural Principal Arterial - Interstate	Shoulder treatments	Shoulder treatments - other	2	51	30	155	238	4	26	28	123	181	16.19
89449	Rural Principal Arterial - Other	Roadway delineation	Roadway delineation - other	0	4	9	25	38	0	8	13	26	47	6.04
81345	Urban Principal Arterial - Other	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0	0	2	0	2	0	1	0	0	1	
77162	Urban Principal Arterial - Other	Lighting	Continuous roadway lighting	0	0	1	0	1	0	1	0	0	1	

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.