Highway Safety Improvement Program

Data Driven Decisions

Indiana
Highway Safety Improvement Program
2014 Annual Report

Prepared by: IN

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

As required under 23 U.S.C. § 148(h), the following is the annual report to the Federal Highway Administration (FHWA) from the Indiana Department of Transportation (INDOT) for federal fiscal year (FFY) 2014. The content of this report combines information regarding the implementation status of the Highway Safety Improvement Program (HSIP) and associated sub-programs including the High Risk Rural Roads Program (HRRRP). This combined HSIP report, does not include the annual rail-highway crossing safety report as required under 23 U.S.C. § 130(g). INDOT is exercising the option provided to the states by 23 U.S.C. § 148 guidance, of preparing and submitting to FHWA separate reports.

The format of the annual HSIP report is in accordance with the FHWA online reporting tool. The focus of the report centers on development and implementation of the core federal aid safety program and associated safety spending in Indiana for FFY 2014, beginning October 1, 2013 and ending on September 31, 2014. In addition to the core safety programs, this report discusses the ongoing evolution of the INDOT asset management program mechanism for setting spending priorities for all projects on roads under INDOT jurisdiction.

In 2013, the estimated vehicle miles of travel increased 0.90% above 2012, while the number of fatalities and incapacitating (serious) injuries dropped by 6.27%. As a result, the 5-year rolling average rate of combined fatalities and serious injuries dropped to a rate of 0.97 per VMT in 2013 compared to a rate of 1.01 in 2012.

In FFY 2014, the expected obligation of federal safety program funds from all programs will be about $57.7 million dollars (by September 30, 2014). An improved level of obligation given changing program priorities under the INDOT asset management system was expected.

All projects approved for funding in HSIP or HRRRP programs are required to address at least one of the emphasis areas defined in the Indiana Strategic Highway Safety Plan (SHSP) document. The selection and prioritization of all safety projects on roads under INDOT jurisdiction, including those funded with HSIP and HRRRP funds utilize asset management processes. The submission of the documents that describe INDOT's countermeasure selection methodology originally took place in September of 2008 with the submission of the FFY 2008 HSIP/HRRRP report. The document titled "Highway Safety Improvement Program Local Project Selection Guidance," issued on December 1, 2010 and "Special Rules for Eligibility of Highway Safety Improvement Projects," issued August 1, 2013, describes the selection methodology for local HSIP projects.

For roads under INDOT jurisdiction, an established selection process for safety projects regardless of funding program, prioritizes locations of highest need in terms of reducing the

severity and frequency of crashes, and to select the most appropriate and cost effective countermeasures available. The INDOT Office of Traffic Safety (OTS) ensures that each candidate safety project has a cost effective choice of proposed solution(s), the eligibility for federal safety program funding is determined and the relative priority of the candidate project's needs is established. All safety program projects address one or more of the emphasis areas enumerated in the Indiana SHSP.

INDOT fiscal policy is to make one-third of its total FHWA apportionment from HSIP available to local public agencies for safety projects on local system roads. Individual Metropolitan Planning Organizations (MPO), receive annual apportionments of obligation authority, while predetermined amounts of obligation authority are set-aside for the use of rural public highway agencies. The "Highway Safety Improvement Program Local Project Selection Guidance," provides local agencies guidance on the structure and content of applications for HSIP and HRRRP project funding. INDOT maintains a web-based information source on the various state and local safety programs, which is accessible at, http://www.in.gov/indot/2357.htm.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP MAP-21 Reporting Guidance dated February 13, 2013 and consists of four sections: program structure, progress in implementing HSIP projects, progress in achieving safety performance targets, and assessment of the effectiveness of the improvements.

Program Structure

Program Administration

How are Highway Safety Improvement Program funds allocated in a State?

☒ Central

☐ District

☐ Other

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

In the State of Indiana, Local Public Agencies (LPAs) operate and maintain all local public roads. INDOT policy is to make one third of its total annual apportionment of HSIP funding available to local public agencies for safety projects on local system roads. An annual apportionment of obligation authority is assigned to each Metropolitan Planning Organization (MPO) serving Group 1 and Group 2 urban areas. A standardized population formula is used to determine the assigned funding made available to individual MPOs. For public agencies in rural (non MPO area) group 3 (incorporated cities and towns) and rural Group 4 (counties and un-incorporated towns), a predetermined amount of HSIP funds are made available for funding eligible projects. The aforementioned population formula is also used to determine the total

amount of the HSIP allotted for projects located in rural areas.

Rules have been established allowing LPAs to apply to INDOT for determination of project eligibility to utilized HSIP funds. These rules are contained in the INDOT guidance document titled, *Highway Safety Improvement Program Local Project Selection Guidance*. The latest INDOT version of this guidance document was approved by INDOT's Highway Safety Advisory Committee on December 10, 2010, and is on file at the FHWA Indiana Division Office. This document is also posted on the INDOT web site at: http://www.in.gov/indot/files/LocalHSIPProjectSelectionGuidance.pdf

Guidance and outreach efforts are routinely made by INDOT and the Local Technical Assistance Program (LTAP), in regard to selection of HSIP and HRRRP projects. INDOT's guidance to LPAs advocates the value of low cost systemic safety improvements to proactively address the risk of severe crashes on their entire roadway system, along with the treatment of locations with high risk of frequent severe crashes involving fatality or incapacitating (Class A) injury. Systemic projects are gaining increasing acceptance by LPAs. Notably, many applications have been submitted by LPAs to assist them in funding systemic projects to upgrade the retro-reflectivity of local regulatory and warning signs.

In urban areas, the MPOs serving Group 1 and 2 urban areas are tasked to perform initial screening of proposed safety improvements and select candidate projects subject to INDOT determination of HSIP eligibility. To provide a similar level of planning support to rural public agencies, INDOT has collaborated with the Indiana Local Technical Assistance Program (LTAP). INDOT sponsors an ongoing program with LTAP called the *Hazard Elimination Project for Local Roads and Streets* (HELPERS) Program. The HELPERS Program coordinates with rural planning organizations (RPOs) as well as rural counties, cities and towns to assist them in identifying, analyzing and prioritizing their needs in regard to severe crash reduction.

The HELPERS Program advises LPAs regarding management of safety risks and assists rural area LPAs in submitting project level funding proposals to INDOT for determination of HSIP project eligibility. The INDOT Office of traffic Safety makes a determination of eligibility for all applications to utilize HSIP or HRRRP funding.

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

☒ Design

☒ Planning

☐ Maintenance

☒ Operations

☐ Governors Highway Safety Office

☒ Other: Other-Local Agency Assistance Divison and Budget & Project Accounting Division

☒ Other: Other-Capital Asset Management

Briefly describe coordination with internal partners.

The INDOT Office of Traffic Safety (OTS) leads INDOT's coordinated efforts to identify locations with safety needs, plan improvements, prioritize and program traffic safety improvement projects on the Indiana State system of highways. OTS works with each of INDOT's district offices, and the divisions of Design, Planning, Traffic Engineering, LPA & Grant Administration, Capital Asset Management Office and Budget Divisions.

In the areas of finance, budget and project prioritization/programming, the Manager of the OTS acts as the chair to the INDOT Traffic Safety Asset Management Team to prioritize all proposed safety projects located on the INDOT system of highways. The six INDOT district traffic engineering offices act as voting members of the team and the INDOT Office of Capital Project Funds Management provides coordination with INDOTs other asset teams and upper management. The Traffic Safety Asset Management Team acts to deliberate the relative need and priority of proposed traffic safety projects on INDOT managed roadways. The overall budgeting of obligation authority for safety projects on both the state and local road systems is coordinated with the Division of Budget and Project Accounting.

For approved safety projects on the state highway system, the relevant INDOT district office is responsible for project programming and entry of the project into the State Transportation Improvement Plan (STIP) and any relevant local Transportation Improvement Plan (TIP). They also manage design and construction projects in coordination with INDOT Design and Construction Divisions, via a project manager assigned to the project to coordinate all project development tasks.

Regarding internal coordination of local safety projects, the OTS performs review of all proposed projects for compliance with eligibility requirements as defined in Indiana's Strategic Highway Safety Plan. Eligible projects are recommended to the INDOT Division of LPA & Grant Administration for funding approval and inclusion in the STIP and relevant TIP document. The LPA & Grants Division also develops an interagency agreement with the LPA to guide project development. The relevant INDOT district then assigns a project manager to coordinate development of the constriction project.

In addition, OTS consults with Design Division regarding new safety improvement design practices and the Office of Traffic Engineering Administration, regarding new Standards and Specifications. OTS also coordinates with the Research Division regarding the approval of safety related research efforts under the Joint Transportation Research Project (JTRP) and to plan implementation of successful research products.

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

☒ Metropolitan Planning Organizations

☒ Governors Highway Safety Office

☐ Local Government Association

☒ Other: Other-Local Technical Assistance Program

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-Project administration and funding approval resides with Division of Local Public Agencies and Grants Adminisration

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

In response to the increased HSIP apportionments under MAP-21, INDOT has engaged in new strategies to increase the obligation of funds to construct worthy safety improvement projects.

The number of systemic improvement types has been expanded along with expanded selection of hot spot safety improvement projects. One third of the total percentage of HSIP funds is made available to local agencies, resulting in more opportunity to combat severe crash risk in both urban and rural areas.

Regarding the process used by INDOT to conduct HSIP eligibility review for proposed local safety projects; urban LPAs must first submit to their local Metropolitan Planning Organizations (MPOs) for preliminary selection and funding prioritization. Rural group 3 and group 4 LPAs first submit their proposed projects to the LTAP HELPERS Program for compliance review, prior to INDOT determination of eligibility for HSIP or HRRRP funding.
INDOT determines eligibility in accordance with the emphasis area defined in the Indiana SHSP and HSIP Local Project Selection Guidance documents. If a proposed local project is found to be eligible for HSIP or HRRRP funding, the Division of LPA and Grant Administration provides oversight of project agreements between INDOT and the LPA to govern project development. The LPA and Grant Administration Division also supports the programming of safety projects by administering inclusion of projects on Local and State Transportation Improvement Plans and authorizing funding year for, scheduling of plan development and construction contract letting. Once a project is placed in Active status on the INDOT scheduling system, the INDOT district office assigns a project manager to coordinate the design and environmental documentation with the project sponsor agency, designer, and various INDOT Divisions and offices in order to bring the project to a construction contract letting.

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-Centerline and Edgeline Rumble Stripes	☒ Other: Other-Traffic Signal Visibility Improvement	

Program: **Median Barrier**

Date of Program Methodology: **10/1/2010**

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

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 50

☒ Weighted ranking factors including safety need, roadway geometry and cost effectivness 50

Program: **Intersection**

Date of Program Methodology: **10/1/2010**

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-roadway conditions and sight distance

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

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☒ Cost Effectiveness 50

☒ Weighted factors addressing safety need and cost effectivness 50

Program: **Horizontal Curve**

Date of Program Methodology: **10/1/2013**

What data types were used in the program methodology?

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

☐ Other	☐ Lane miles	☒ Roadside features
	☐ Other	☐ Other

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☒ Probability of specific crash types

☒ Excess proportions of specific crash types

☐ Other

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

☒ Yes

☐ No

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

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☒Competitive application process

☒Selection committee

☐Other

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

☒Relative Weight in Scoring

☐Rank of Priority Consideration

☐Ranking based on B/C	
☐Available funding	
☐Incremental B/C	
☐Ranking based on net benefit	
☒Cost Effectiveness	50
☒Weighted Factors including safety need, roadway geometry and cost effectivness	50

Program: **Rural State Highways**

Date of Program Methodology: **10/1/2010**

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

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	50
☒ Weighted factors based on safety need and cost effectivness	50

Program: **Crash Data**

Date of Program Methodology: 10/1/2010

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

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	50
☐ Incremental B/C	
☐ Ranking based on net benefit	
☒ Cost Effectiveness	50

Program: **Roadway Departure**

Date of Program Methodology: **10/1/2010**

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

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 50

☒ Weighted factors based on safety need and cost effectivness 50

Program: **Sign Replacement And Improvement**

Date of Program Methodology: **10/1/2010**

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-Geometric Features

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-Retroreflectivity of Existing Signs

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 100

Program: **Local Safety**

Date of Program Methodology: **10/1/2010**

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-Geometric Features, marking and signs

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	
☐ Available funding	
☐ Incremental B/C	
☐ Ranking based on net benefit	
☒ Cost Effectiveness	50
☒ Weighted scoring based on safety need and cost effectivness	50

Program: **Pedestrian Safety**

Date of Program Methodology: **10/1/2010**

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-Geometrics features and land use

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

☐Available funding

☐Incremental B/C

☐Ranking based on net benefit

☒Cost Effectiveness 50

☒Weighted factors using safety need and cost effectivness 50

Program: **Other-Centerline and Edgeline Rumble Stripes**

Date of Program Methodology: 10/1/2012

What data types were used in the program methodology?

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

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 50

☒Weighted factors using safety need and cost effectivness 50

Program: **Other-Traffic Signal Visibility Improvement**

Date of Program Methodology: **10/1/2012**

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☒Relative severity index

☐Crash rate

☐Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☒ Excess proportions of specific crash types

☐ Other

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 50

☒ Weighted factors using safety need and cost effectivness 50

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

32

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

☒ Cable Median Barriers

☒ Traffic Control Device Rehabilitation

☒ Install/Improve Signing

☒ Upgrade Guard Rails

☐ Safety Edge

☒ Add/Upgrade/Modify/Remove Traffic Signal

☒ Rumble Strips

☐ Pavement/Shoulder Widening

☐ Install/Improve Pavement Marking and/or Delineation

☐ Clear Zone Improvements

☐ Install/Improve Lighting

☐ Other

What process is used to identify potential countermeasures?

☒ Engineering Study

☒ Road Safety Assessment

☐ Other:

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

☐ Highway Safety Manual

☐ Road Safety audits

☐ Systemic Approach

☒ Other: Other-No Change

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

INDOT is seeking to achieve a balance between obligations of HSIP funds towards implementation of systemic improvements and supporting safety improvements at individual locations with high incidence or risk of severe crash outcomes. Project identification methods include conducting system wide analysis to identify both individual locations with high potential for severe crashes or wide spread needs for systemic improvements. Also, projects may be programmed as a result of identification by other means such as public complaints filtered through one of the INDOT district offices.

Candidate locations on roads under INDOT jurisdiction are subject to an initial engineering review process similar to a road safety assessment (RSA), in order to identify safety needs and appropriate countermeasures. The INDOT Office of Traffic Safety (OTS) conducts these reviews with support of the INDOT district offices.

The process used to program traffic safety projects on INDOT system roads requires selection and prioritization by state fiscal year. Traffic Safety Asset Management (TSAM) Team produces a proposed list of safety improvement projects for programming in each fiscal year. A uniform scoring process is utilized to provide proposed projects with weighted scores that utilize the history of crashes and their severity, traffic volume and road inventory data to a uniform set of criteria in order to assess the relative intensity of safety needs. The process also considers the cost effectiveness of the proposed solution and other factors to generate a weighted score that encompasses the relative need and effectiveness of a proposed safety improvement project. The TSAM team then reviews and deliberates the relative priority of each proposed project and assigns a priority grade for targeted fiscal year of construction. An Executive Finance Committee later considers the proposed projects and then ratifies the safety program for the target year of the TSAM Team.

In regard to candidate projects on the local road system, OTS makes all eligibility determinations for HSIP and HRRRP funding. The necessary information to determine eligibility for HSIP/HRRRP funding typically consists of a Road Safety Audit (RSA) report. An exception is the submission of eligibility information for certain approved systemic project types that may be provided via an INDOT approved form. Projects located in metropolitan planning areas must first be selected by the relevant MPO prior to eligibility review by INDOT. Rural LPAs are asked to first work with the LTAP HELPERS Program that acts to advise the LPA and pre-screen applications for compliance with federal and state regulations. The HELPERS Program often provides valuable advice to the LPAs regarding best practices for traffic safety and facilitates the conduct of appropriate RSA procedures.

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)	39283347	75 %	36294681.18	63 %
HRRRP (SAFETEA-LU)	1901999	4 %	516448.42	1 %
HRRR Special Rule	48996	0 %	0	0 %
Penalty Transfer - Section 154				
Penalty Transfer – Section 164	10846546	21 %	20937644.5	36 %
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)				
State and Local Funds				

Totals	52080888	100%	57748774.1	100%

Obligated total includes planned transfers from Advance Construction to the 164-HE program planned to occure before October 1, 2014.

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

$15,251,332.00

How much funding is obligated to local safety projects?

$20,208,686.00

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

$207,208.00

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

$207,208.00

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?

$6,972,168.00

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

MAP-21 makes it clear that cost effectiveness is to be considered in project selection decisions, and it's recognized that this may become a future requirement for most federal aid funding decisions. However, guidance under MAP-21 is currently unclear as to how the risk of future crashes can be accommodated under current cost effectiveness methodologies. The determination of project eligibility to utilize HSIP funds in a cost effective manner is typically based on past history of crashes. However, crash past history is not a perfect indicator of future crash risk under changing traffic demand. Also, useful predictive functions in the Highway Safety Manual, they are still limited to specific situations. As a result safety improvement projects that are seemingly promising candidates for HSIP funding are rejected due to an inability to meet cost effectiveness criteria. The lack of guidance regarding the application of risk factors relative to cost effectiveness has had the effect of stifling innovation in regard to trying new types of crash countermeasures. Improved guidance by FHWA would be welcome in regard to assessment of future traffic safety risk, in assessing changing land use and changing travel demand.

The High Risk Rural Roads Program is ineffective and should be abandoned. It's far more likely that HSIP funds are used to make safety improvements on rural local roads. The requirement that ties safety improvement funds to roadway functional class is not an element that rural local agencies typically consider when prioritizing safety improvements, therefore proposed projects often do not qualify for this funding program. In addition, many local roads lack accurate volume data, making a comparison of crash rate averages a difficult task. Analysis of current severe crash trends has not indicated a difference that can be directly attributed to functional class. Improved response to severe crash risk on rural local roads could be achieved by dedicating a percentage of HSIP funding to safety improvements on rural roads found to have a higher than nominal crash history regardless of functional class.

At a minimum state DOT's should be permitted to conduct the calculation of the current special rule requirement. State DOTs are more familiar with current status of roadway functional class and changing urban/rural boundaries. The current calculation conducted by NHTSA is dependent on data from the FARS system that has an inherent time lag and the functional class definitions and urban/rural boundaries don't always match with current data.

In regard to rural road safety, INDOT plans to engage with LTAP and interested LPA agencies to look for improved data analysis and project selection methods to address risk on mid to high speed local roads. In addition we are hopeful that new guidance regarding the application of crash risk will result in new methodologies to address cost effectiveness analysis and allow for more flexibility regarding determination of project eligibility.

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

INDOT has developed an Asset Management system to address the need for safety improvement actions and to prioritize potential safety improvement projects and actions that improves INDOTs ability to select and produce high value safety projects. Candidate safety projects undergo weighted scoring that emphasizes the need to address high severity crash locations with the construction of cost effective crash countermeasures.

The primary program goal for the Traffic Safety Asset Class is the reduction in the frequency of severe (fatal and incapacitating injury) crashes. Current available analysis tools are designed to consider all injury crashes to be serious so fatal and injury crashes are used for prioritization of countermeasure proposals. For most crash studies conducted at specific locations (sites) property damage data is also used to reveal a complete picture of prevailing crash patterns. For sites on the INDOT system and in most local urban areas, traffic volume data is available to establish nominal and substantive crash rates. Unfortunately, most rural local roads lack recent volume data so a crash loss index was developed under a joint transportation research project with Purdue University. Socioeconomic data and road characteristics are used to develop a local expected road crash loss and crash loss density that is compared to existing crash history to determine relative safety need at a site or road segment. Prior to project programming a site investigation is performed for all crash studies using Road Safety Audit principles to determine if or how the road's design and maintenance characteristics influence crashes and to establish an appropriate and effective set of countermeasures.

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
14000	Roadway Pavement surface - high friction surface	3.93 Miles	1020191.74	1500642.79	HSIP (Section 148)	Rural Principal Arterial - Interstate	29009	70	State Highway Agency	Roadway Departure	Increase pvmt friction
100785	Roadway signs and traffic control Roadway signs and traffic control - other	0.01 Miles	746400	2001535.17	HSIP (Section 148)	Urban Principal Arterial - Other	35650	45	State Highway Agency	Intersections	Improve visibility
201391	Roadway Roadway widening - add lane(s) along segment	0.52 Miles	2400561.18	2901026.33	HSIP (Section 148)	Urban Principal Arterial - Other	39083	40	State Highway Agency	Intersections	Improve visibility
301112	Roadway Pavement surface - miscellaneous	1.56 Miles	3366213.46	3366213.46	Penalty Transfer – Section 164	Urban Principal Arterial - Other	19482	30	State Highway Agency	Intersections	Improve visibility

401082	Roadway Roadway widening - add lane(s) along segment	0.95 Miles	3909335.46	4147840.28	HSIP (Section 148)	Urban Principal Arterial - Other	29958	40	State Highway Agency	Intersections	Redesign Int approach
801025	Roadway delineation Raised pavement markers	83.07 Miles	232288.94	232288.94	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Improve mrkg visibility
810117	Roadway delineation Raised pavement markers	54696 Numbers	290377.14	290377.14	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Improve mrkg visibility
810158	Roadway delineation Raised pavement markers	17973 Numbers	165779.95	165779.95	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Improve mrkg visibility
901298	Interchange design Interchange design - other	0.32 Miles	3017366.31	3363097.72	HSIP (Section 148)	Urban Principal Arterial - Interstate	36983	65	State Highway Agency	Interchange Design	Separate traffic flow
1000001	Intersection geometry Auxiliary lanes - extend acceleration/deceleration lane	0.398 Miles	2629161.77	3581305.4	Penalty Transfer – Section 164	Urban Minor Arterial	12420	55	State Highway Agency	Intersections	Redesign Int approach

1006555	Interchange design Interchange design - other	0.281 Miles	199405.63	221561.81	HSIP (Section 148)	Urban Principal Arterial - Interstate	36250	70	State Highway Agency	Intersections	Redesign Int approach
1006632	Advanced technology and ITS Congestion detection / traffic monitoring system	12 Numbers	347490.33	347490.33	Penalty Transfer – Section 164	Urban Principal Arterial - Other	10000	35	State Highway Agency	Data	Install vehicle loops
1172173	Roadway signs and traffic control Roadway signs (including post) - new or updated	3773 Numbers	745274.5	745274.5	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Improve visibility
1172191	Roadway delineation Raised pavement markers	171 Miles	249774.55	249774.55	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Improve mrkg visibility
1173441	Roadway delineation Raised pavement markers	19890 Numbers	203682.16	203682.16	Penalty Transfer – Section 164	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Improve mrkg visibility
1173462	Intersection traffic control Modify traffic signal - modernization/replacem	3 Numbers	367152	367152	HSIP (Section 148)	Rural Principal Arterial -	8500	55	State Highway Agency	Intersections	Improve visibility

	ent					Other					
1173659	Roadside Barrier - cable	1.16 Miles	639380.43	639380.43	Penalty Transfer – Section 164	Rural Principal Arterial - Interstate	29009	70	State Highway Agency	Roadway Departure	Install cable barrier
1173660	Roadside Barrier - cable	19.39 Miles	1341384.74	1358051.41	Penalty Transfer – Section 164	Rural Principal Arterial - Interstate	31195	70	State Highway Agency	Roadway Departure	Install cable barrier
1173676	Roadside Barrier - cable	67 Miles	400158.55	412158.55	HSIP (Section 148)	Rural Principal Arterial - Interstate	13978	70	State Highway Agency	Roadway Departure	Install cable barrier
1296177	Roadway delineation Roadway delineation - other	235 Miles	756003.57	756003.57	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Install rumble stripes
1296284	Roadside Barrier - cable	9.64 Miles	640374.67	654769.11	Penalty Transfer – Section 164	Rural Principal Arterial - Interstate	35263	70	State Highway Agency	Roadway Departure	Install cable barrier

1296287	Roadside Barrier - cable	40.29 Miles	2115164.61	2144664.61	HSIP (Section 148)	Rural Principal Arterial - Interstate	31700	70	State Highway Agency	Roadway Departure	Install cable barrier
1296292	Intersection traffic control Modify traffic signal - modernization/replacement	32 Numbers	362603.5	368070.5	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Intersections	Increase signal visibility
1296293	Roadway delineation Roadway delineation - other	10.42 Miles	323332.93	323332.93	HSIP (Section 148)	Rural Minor Arterial	4718	55	State Highway Agency	Lane Departure	Install cl rumble stripes
1296329	Roadway delineation Roadway delineation - other	11.3 Miles	323219.91	323219.91	HSIP (Section 148)	Rural Principal Arterial - Other	5180	55	State Highway Agency	Roadway Departure	Install rumble stripes
1296915	Roadway delineation Roadway delineation - other	124.5 Miles	442267	442267	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Roadway Departure	Install rumble stripes
1297604	Roadway Pavement surface - high friction surface	4.33 Miles	1641692.19	1824102.44	HSIP (Section 148)	Rural Principal Arterial - Interstate	35076	70	State Highway Agency	Roadway Departure	Surface Treatment

1297605	Roadway Pavement surface - high friction surface	4.61 Miles	415414.08	460889.08	HSIP (Section 148)	Urban Minor Arterial	5196	40	State Highway Agency	Roadway Departure	Surface Treatment
1297610	Roadway Pavement surface - high friction surface	5.61 Miles	1025847.81	1138146.42	HSIP (Section 148)	Rural Principal Arterial - Other	9047	60	State Highway Agency	Roadway Departure	Surface Treatment
1297626	Roadway Pavement surface - high friction surface	6.35 Miles	1471529.75	1632616.75	HSIP (Section 148)	Urban Major Collector	9044	60	State Highway Agency	Roadway Departure	Surface Treatment
1297627	Roadway Pavement surface - high friction surface	6.22 Miles	1399469.25	1405469.25	Penalty Transfer – Section 164	Rural Principal Arterial - Other	13938	60	State Highway Agency	Roadway Departure	Surface Treatment
1298212	Intersection traffic control Systemic improvements - signal-controlled	1 Numbers	121418.61	122667.61	Penalty Transfer – Section 164	Rural Principal Arterial - Other	12682	55	State Highway Agency	Intersections	Flasher to signal
1382014	Intersection traffic control Modify traffic signal - modernization/replacement	1 Numbers	34360	315354.45	HSIP (Section 148)	Rural Principal Arterial - Other	6550	55	State Highway Agency	Intersections	Flasher to signal

1382538	Intersection traffic control Modify traffic signal - modernization/replacement	9 Numbers	1477747.08	1480597.08	HSIP (Section 148)	Urban Principal Arterial - Other	32370	40	State Highway Agency	Intersections	Improve Traffic Control
1382777	Intersection traffic control Modify traffic signal - modernization/replacement	1 Numbers	103939.25	103939.25	HSIP (Section 148)	Urban Principal Arterial - Other	14916	55	State Highway Agency	Intersections	Increase signal visibility
1382872	Roadside Roadside - other	0.37 Miles	117720.24	117720.24	Penalty Transfer – Section 164	Urban Principal Arterial - Other	16075	30	State Highway Agency	Pedestrians	Construct ADA Ramps
1382911	Roadside Barrier - cable	4.85 Miles	388241.55	429224.88	HSIP (Section 148)	Urban Principal Arterial - Interstate	41572	55	State Highway Agency	Roadway Departure	Install cable barrier
1382914	Roadway delineation Raised pavement markers	43748 Numbers	271024.29	271024.29	HSIP (Section 148)	Rural Principal Arterial - Other	8500	55	State Highway Agency	Lane Departure	Guidance with RPM's
1401053	Miscellaneous	1 Numb	33696	37440	HSIP (Sectio	Various road class	5500	35	Other Local	Data	Unified Planning

		ers			n 148)				Agency		Work
140110 0	Miscellaneous	1 Numbers	104347	115941.11	HSIP (Section 148)	Various road class	5500	35	Other Local Agency	Data	Unified Planning Work
140110 5	Miscellaneous	1 Numbers	90000	112500	HSIP (Section 148)	Various road class	5500	35	Other Local Agency	Data	Unified Planning Work
140111 6	Miscellaneous	1 Numbers	80000	88889	HSIP (Section 148)	Various road class	5500	35	Other Local Agency	Data	Unified Planning Work
140112 5	Miscellaneous	1 Numbers	47012	52236	HSIP (Section 148)	Various road class	5500	35	Other Local Agency	Data	Unified Planning Work
980257 0	Roadway Pavement surface - miscellaneous	2.41 Miles	879603.3	1339735.88	HSIP (Section 148)	Urban Principal Arterial - Other	19860	35	State Highway Agency	Roadway Departure	HMA Overlay
810294	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.25 Miles	1269086.17	1457359.85	HSIP (Section 148)	Urban Minor Arterial	8000	35	City of Municipal Highway Agency	Intersections	Improve geometrics
810298	Intersection geometry Auxiliary lanes -	0.12 Miles	2000335.8	2225928.67	HSIP (Sectio	Urban Minor	12400	35	City of Municip	Intersections	Improve geometrics

	miscellaneous/other/unspecified				n 148)	Arterial			al Highway Agency		
810299	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.2 Miles	995391.69	1105990.77	HSIP (Section 148)	Urban Major Collector	1300	35	City of Municipal Highway Agency	Intersections	Improve geometrics
1006047	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.5 Miles	253476.9	281641	HSIP (Section 148)	Urban Minor Arterial	5500	35	City of Municipal Highway Agency	Intersections	Improve geometrics
1006057	Roadway signs and traffic control Roadway signs (including post) - new or updated	122 Numbers	40500	45000	HSIP (Section 148)	Urban Local Road or Street	5500	35	City of Municipal Highway Agency	Improved signage	Improved signs
1006063	Roadway signs and traffic control Roadway signs (including post) - new or updated	243 Numbers	40250.58	40250.58	Penalty Transfer – Section 164	Urban Local Road or Street	5500	35	Town or Township Highway Agency	Improved signage	Improved signs
1006069	Intersection traffic control Intersection flashers - add overhead	2 Numb	26884.57	29871.74	HSIP (Sectio	Urban Local Road or	5500	35	Town or Township	Intersections	Install a flashing

	(continuous)	ers			n 148)	Street			Highway Agency		beacon
1006094	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.11 Miles	446491.02	504671.54	HSIP (Section 148)	Urban Minor Arterial	5500	40	Town or Township Highway Agency	Intersections	Improve geometrics
1006112	Roadway signs and traffic control Roadway signs (including post) - new or updated	3209 Numbers	1064478.74	1182754.15	HRRRP (SAFETEA-LU)	Various road class	5500	55	County Highway Agency	Improved signage	Improve retroreflectivity
1006476	Intersection traffic control Intersection flashers - add overhead (continuous)	3 Numbers	281032.26	312258.07	HSIP (Section 148)	Urban Local Road or Street	5500	30	City of Municipal Highway Agency	Intersections	Install a flashing beacon
1173043	Roadway signs and traffic control Roadway signs (including post) - new or updated	220 Numbers	399496.84	443885.38	HSIP (Section 148)	Urban Local Road or Street	5500	55	County Highway Agency	Improved signage	Improve retroreflectivity
1173078	Roadway signs and traffic control Roadway signs (including post) - new or updated	102 Numbers	91454.4	101616	HSIP (Section 148)	Urban Local Road or Street	5500	35	City of Municipal Highway Agency	Improved signage	Improve retroreflectivity

1173111	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.11 Miles	139403.49	154892.78	HSIP (Section 148)	Urban Principal Arterial - Other	5500	35	City of Municipal Highway Agency	Intersections	Improve geometrics
1173115	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.1 Miles	482965.82	536628.7	HSIP (Section 148)	Urban Major Collector	5500	45	City of Municipal Highway Agency	Intersections	Improve geometrics
1173116	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.1 Miles	288235.12	320261.26	HSIP (Section 148)	Urban Minor Arterial	5500	30	City of Municipal Highway Agency	Intersections	Improve geometrics
1173165	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.1 Miles	173927.52	193252.81	HSIP (Section 148)	Urban Principal Arterial - Other	5500	45	City of Municipal Highway Agency	Intersections	Improve geometrics
1173169	Intersection traffic control Modify traffic signal - add emergency vehicle preemption	18 Numbers	352670.84	391856.5	HRRRP (SAFETEA-LU)	Various road class	5500	35	City of Municipal Highway Agency	Intersections	Improve signal visibility

1173227	Roadside Barrier- metal	0.75 Miles	179212.5	199125	HSIP (Section 148)	Urban Local Road or Street	5500	35	City of Municipal Highway Agency	Roadway Departure	Install guardrail
1173288	Roadway signs and traffic control Roadway signs (including post) - new or updated	1894 Numbers	123369	137076.67	HSIP (Section 148)	Urban Local Road or Street	5500	35	Town or Township Highway Agency	Improved signage	Improve retroreflectivity
1297291	Roadway signs and traffic control Roadway signs (including post) - new or updated	2347 Numbers	51180.03	56866	HRRRP (SAFETEA-LU)	Rural Local Road or Street	5500	55	County Highway Agency	Improved signage	Improve retroreflectivity
1297753	Roadside Barrier- metal	0.34 Miles	233884.52	259871.69	HSIP (Section 148)	Various road class	5500	55	County Highway Agency	Roadway Departure	Install guardrail
1298004	Roadway signs and traffic control Roadway signs and traffic control - other	2153 Numbers	22250	124475	HRRRP (SAFETEA-LU)	Various road class	5500	35	City of Municipal Highway Agency	Data	Sign inventory
1382200	Roadway Roadway - other	1.23 Miles	225000	377673.33	HSIP (Section 148)	Urban Minor Arterial	5500	35	City of Municipal Highway	Intersections	Improve geometrics

									Agency		
1382775	Pedestrians and bicyclists Modify existing crosswalk	0.1 Miles	212432.4	252362	HRRRP (SAFETEA-LU)	Rural Local Road or Street	5500	40	County Highway Agency	Pedestrians	Improve crossing
1382793	Roadway signs and traffic control Roadway signs (including post) - new or updated	2813 Numbers	697463.3	697463.3	HSIP (Section 148)	Rural Local Road or Street	5500	55	County Highway Agency	Improved signage	Improve retroreflectivity
1382796	Roadway signs and traffic control Roadway signs and traffic control - other	34 Numbers	254130	282367.25	HRRRP (SAFETEA-LU)	Rural Local Road or Street	5500	55	County Highway Agency	Improved signage	Improve retroreflectivity
1382807	Intersection traffic control Systemic improvements - signal-controlled	1 Numbers	104400	116000	HSIP (Section 148)	Urban Local Road or Street	5500	40	City of Municipal Highway Agency	Intersections	Install traffic signal
1382870	Roadway signs and traffic control Roadway signs (including post) - new or updated	1172 Numbers	388819.08	432021.21	HSIP (Section 148)	Urban Local Road or Street	5500	35	City of Municipal Highway Agency	Improved signage	Improved signs
1382938	Roadway signs and traffic control Roadway signs	407 Numb	135000	150000	HSIP (Sectio	Urban Local	550	35	City of Municip	Improved	Sign

	(including post) - new or updated	ers			n 148)	Road or Street	0		al Highway Agency	signage	inventory
1383062	Intersection traffic control Modify traffic signal - modernization/replacement	28 Numbers	441853.35	513518.25	HSIP (Section 148)	Urban Local Road or Street	5500	55	County Highway Agency	Intersections	Improve signal visibility
1383085	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	2.91 Miles	228733.98	254148.87	HSIP (Section 148)	Urban Principal Arterial - Other	32370	40	Other Local Agency	Bicyclists	Install ped/bikeway
1383189	Intersection traffic control Modify traffic signal - miscellaneous/other/unspecified	43 Numbers	700885.53	778761.7	HSIP (Section 148)	Various road class	5500	55	County Highway Agency	Intersections	Improve signal visibility
1006120	Intersection geometry Auxiliary lanes - miscellaneous/other/unspecified	0.08 Miles	48996.49	54360.09	HRRR Special Rule	Rural Major Collector	6490	55	State Highway Agency	Intersections	Improve geometrics
1297140	Shoulder treatments Widen shoulder - paved or other	2.2 Miles	560657.7	628703	HRRRP (SAFETEA-LU)	Rural Local Road or Street	5000	45	County Highway Agency	Intersections	Widen shoulders

1382779	Miscellaneous	1 Numbers	207208	207208	HSIP (Section 148)	Various road class	5500	55	State Highway Agency	Data	ARIES Update
1172483	Intersection traffic control Modify control - all-way stop to roundabout	0.323 Miles	2085670.95	2124107.5	HSIP (Section 148)	Urban Local Road or Street	3500	35	Town or Township Highway Agency	Intersections	Construct a roundabout

Projects with the Improvement Category of Miscellaneous consist of non-infrastructure improvements to traffic safety data systems or traffic safety planning and education efforts undertaken by metropolitan planning organizations as part of their Unified Planning Work Programs.

Progress in Achieving Safety Performance Targets

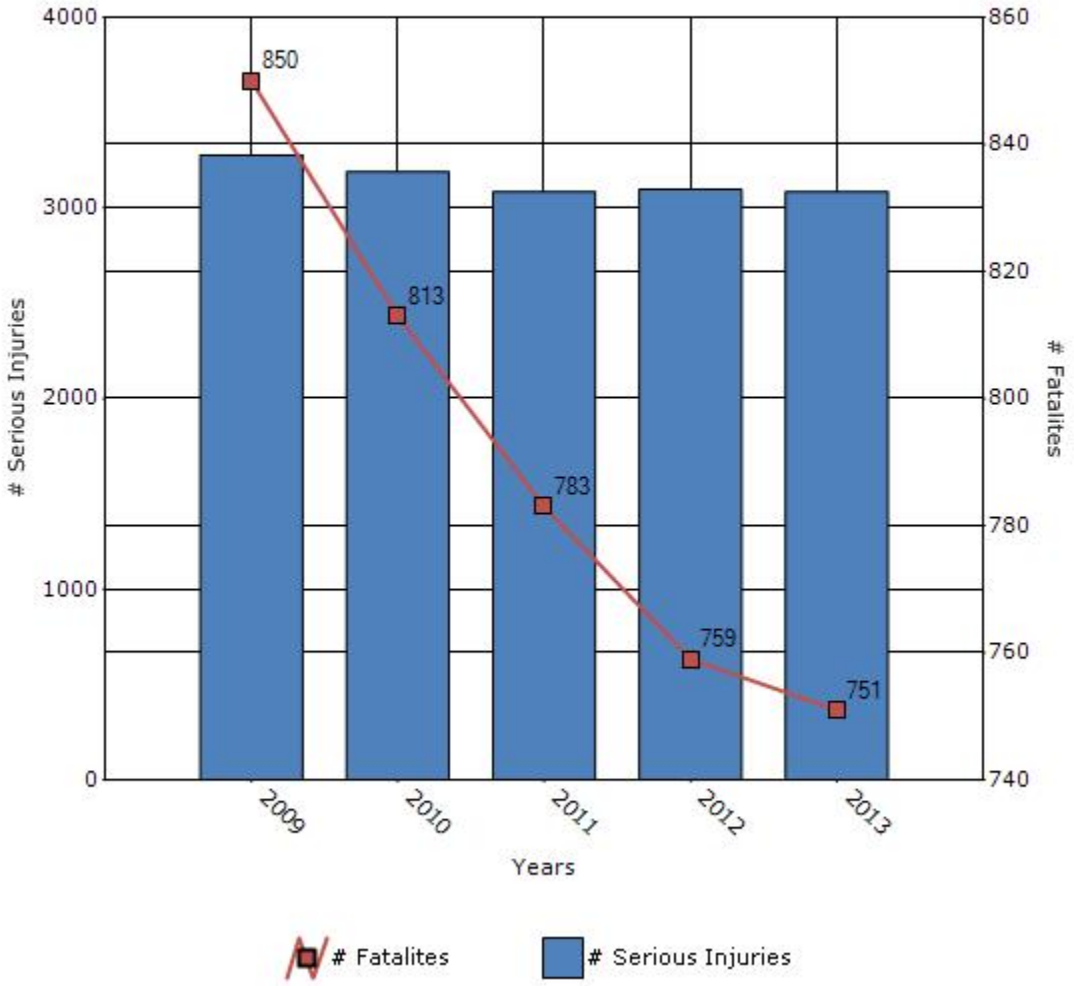
Overview of General Safety Trends

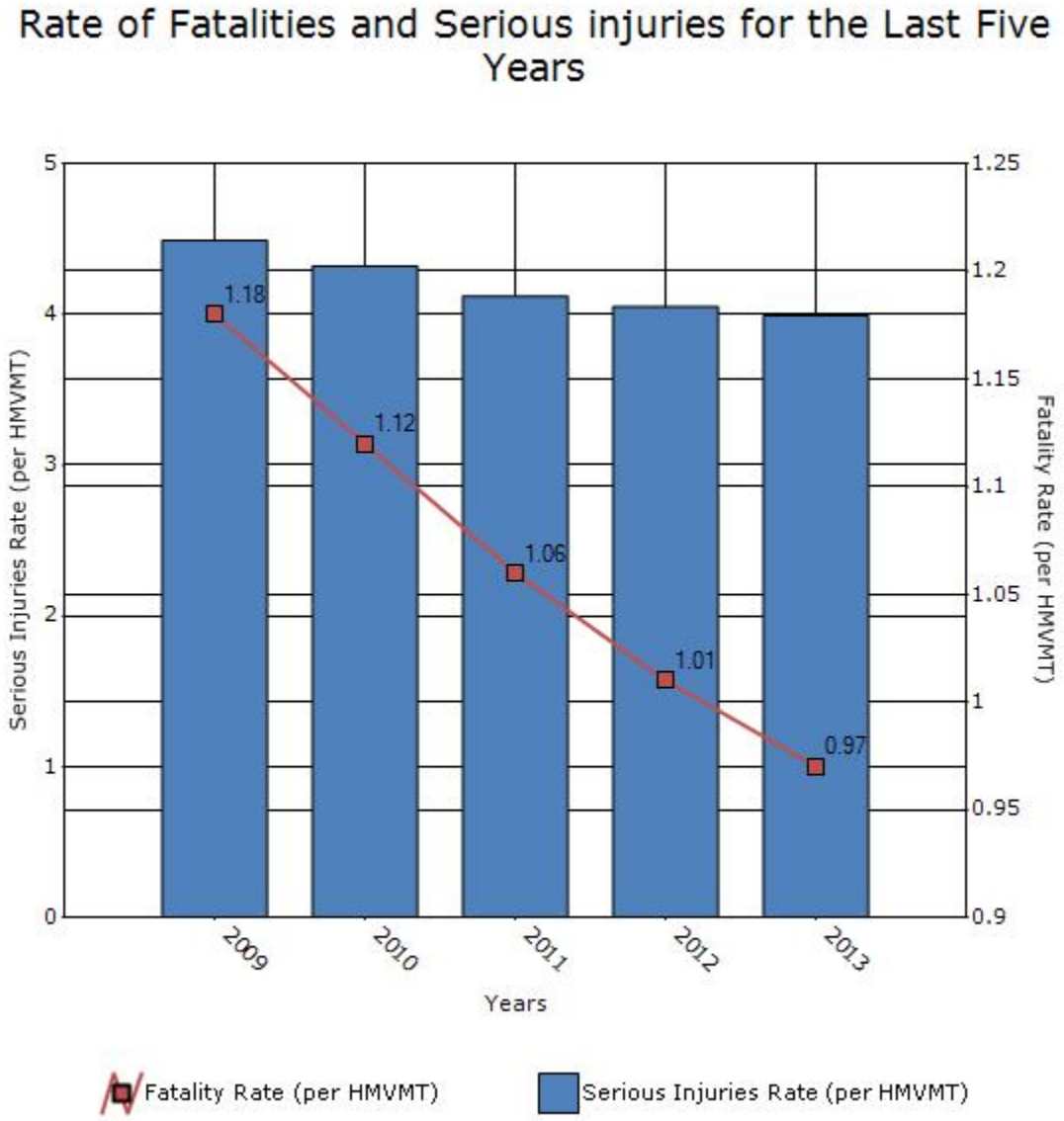
Present data showing the general highway safety trends in the state for the past five years.

Performance Measures*	2009	2010	2011	2012	2013
Number of fatalities	850	813	783	759	751
Number of serious injuries	3277	3190	3086	3098	3086
Fatality rate (per HMVMT)	1.18	1.12	1.06	1.01	0.97
Serious injury rate (per HMVMT)	4.49	4.32	4.12	4.05	3.99

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

Number of Fatalities and Serious injuries for the Last Five Years



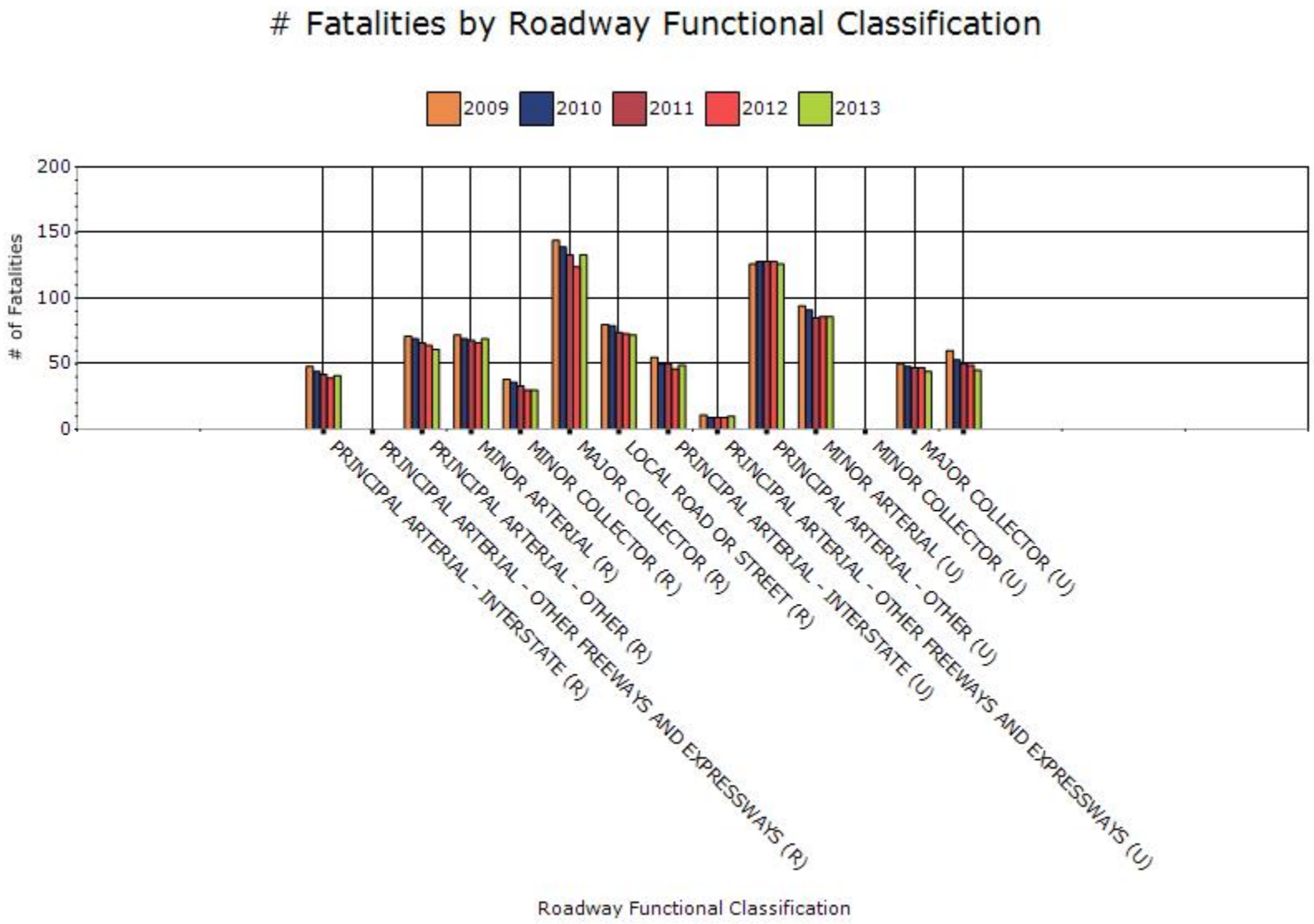

Rate of Fatalities and Serious injuries for the Last Five Years
Serious Injuries Rate (per HMVMT)
Fatality Rate (per HMVMT)
Years
1.18
1.12
1.06
1.01
0.97
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
Serious Injuries Rate (per HMVMT)

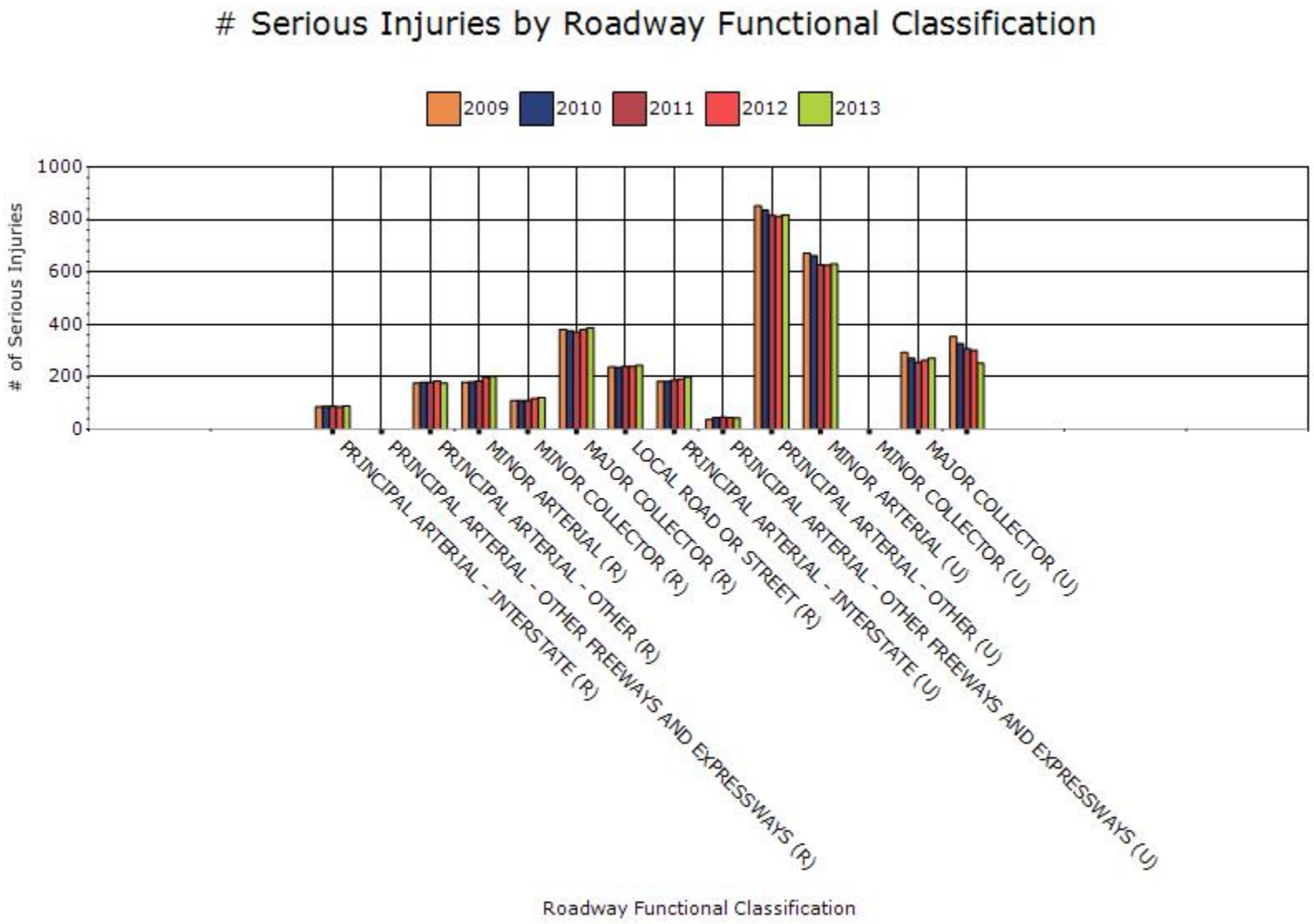
To the maximum extent possible, present performance measure* data by functional classification and ownership.

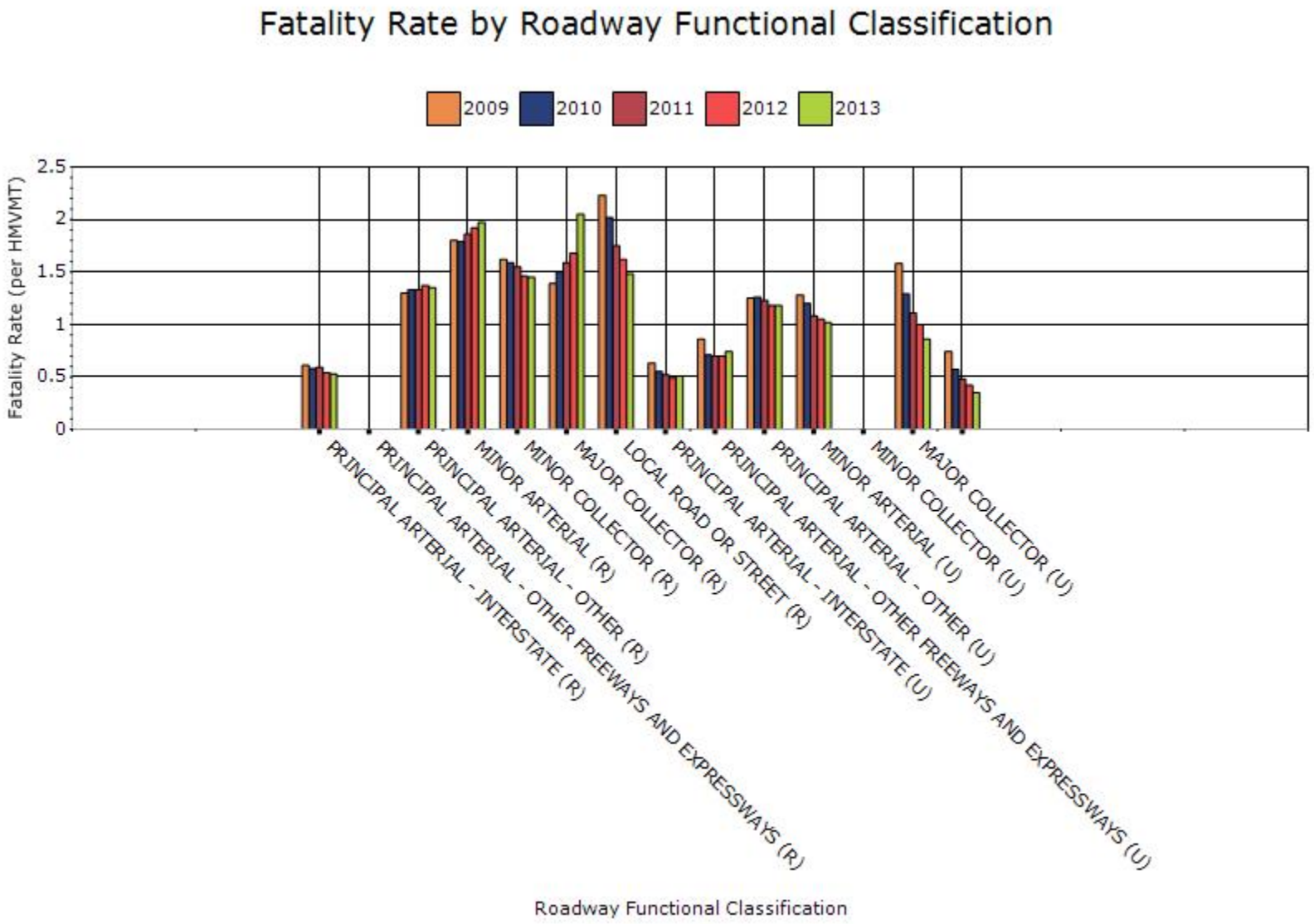
Year - 2013

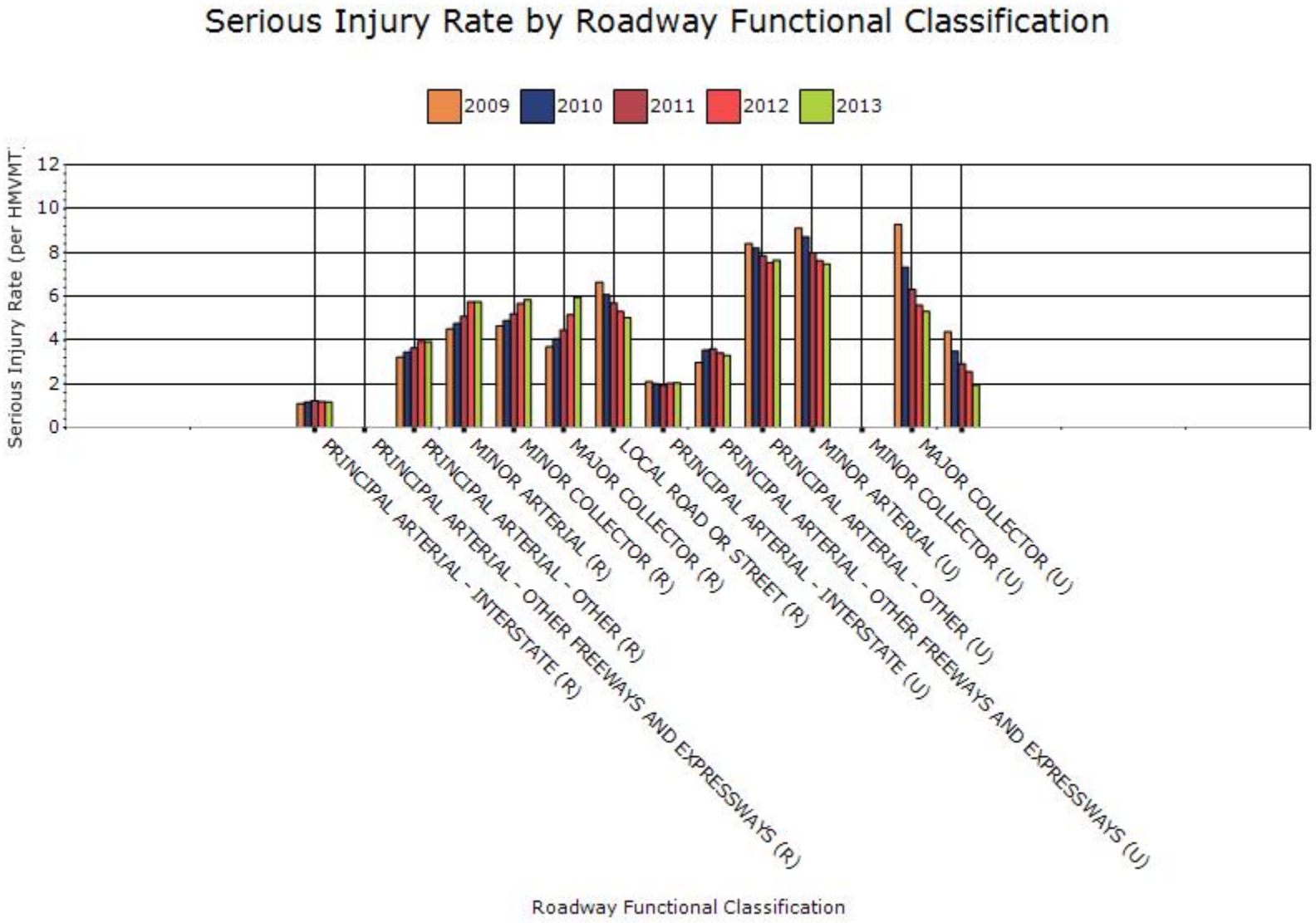
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	41	89	0.53	1.16
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0	0	0
RURAL PRINCIPAL ARTERIAL - OTHER	61	177	1.35	3.93
RURAL MINOR ARTERIAL	69	201	1.97	5.74
RURAL MINOR COLLECTOR	30	121	1.45	5.84
RURAL MAJOR COLLECTOR	133	387	2.05	5.96
RURAL LOCAL ROAD OR STREET	72	245	1.48	5.02
URBAN PRINCIPAL	49	200	0.51	2.05

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	10	44	0.74	3.3
URBAN PRINCIPAL ARTERIAL - OTHER	126	818	1.18	7.65
URBAN MINOR ARTERIAL	86	631	1.02	7.48
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	44	272	0.86	5.31
URBAN LOCAL ROAD OR STREET	45	252	0.35	1.95


Fatalities by Roadway Functional Classification
2009
2010
2011
2012
2013
# of Fatalities
200
150
100
50
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

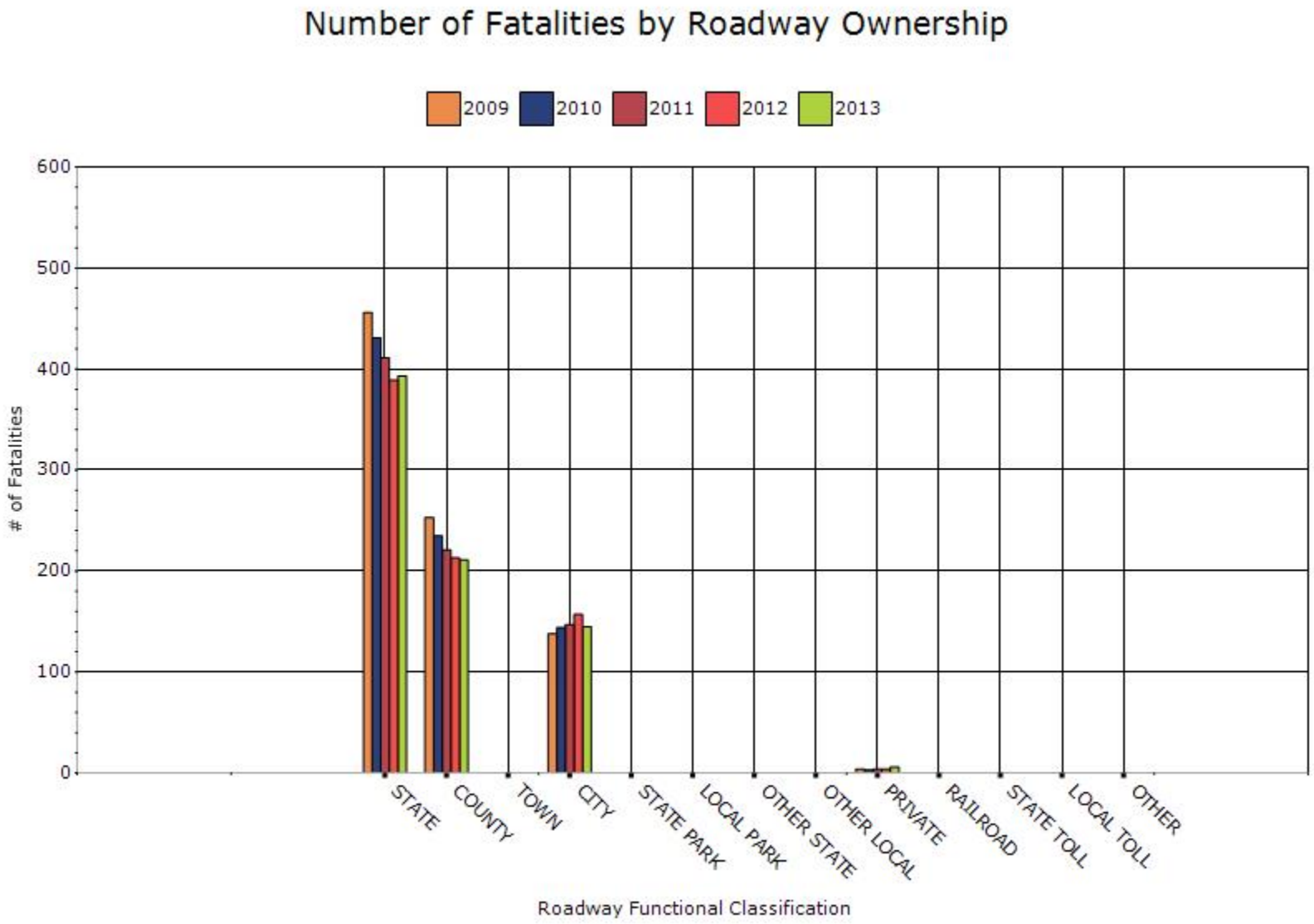

Serious Injuries by Roadway Functional Classification
2009
2010
2011
2012
2013
1000
800
600
400
200
0
# of Serious Injuries
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

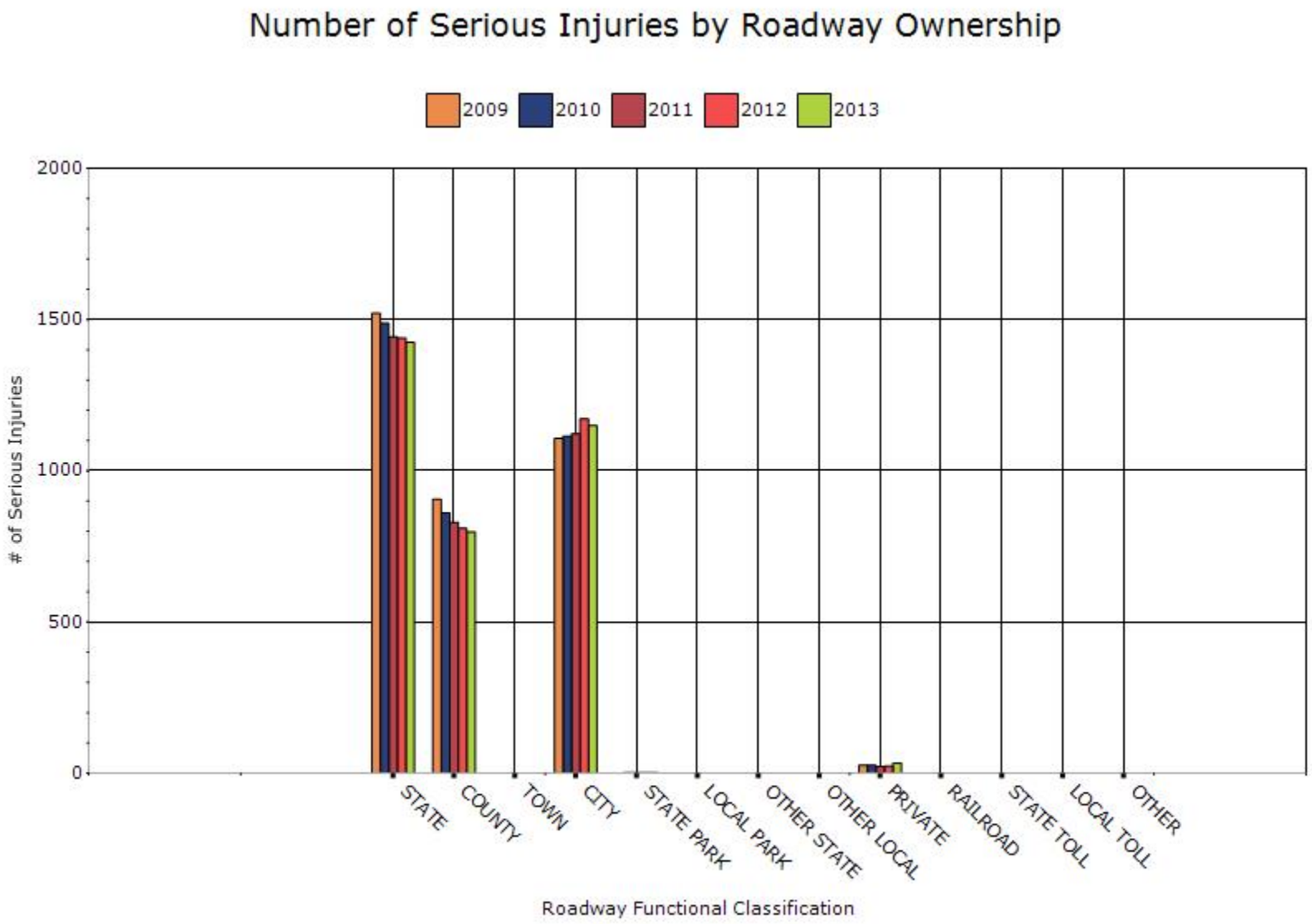

Fatality Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
2.5
2
1.5
1
0.5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)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

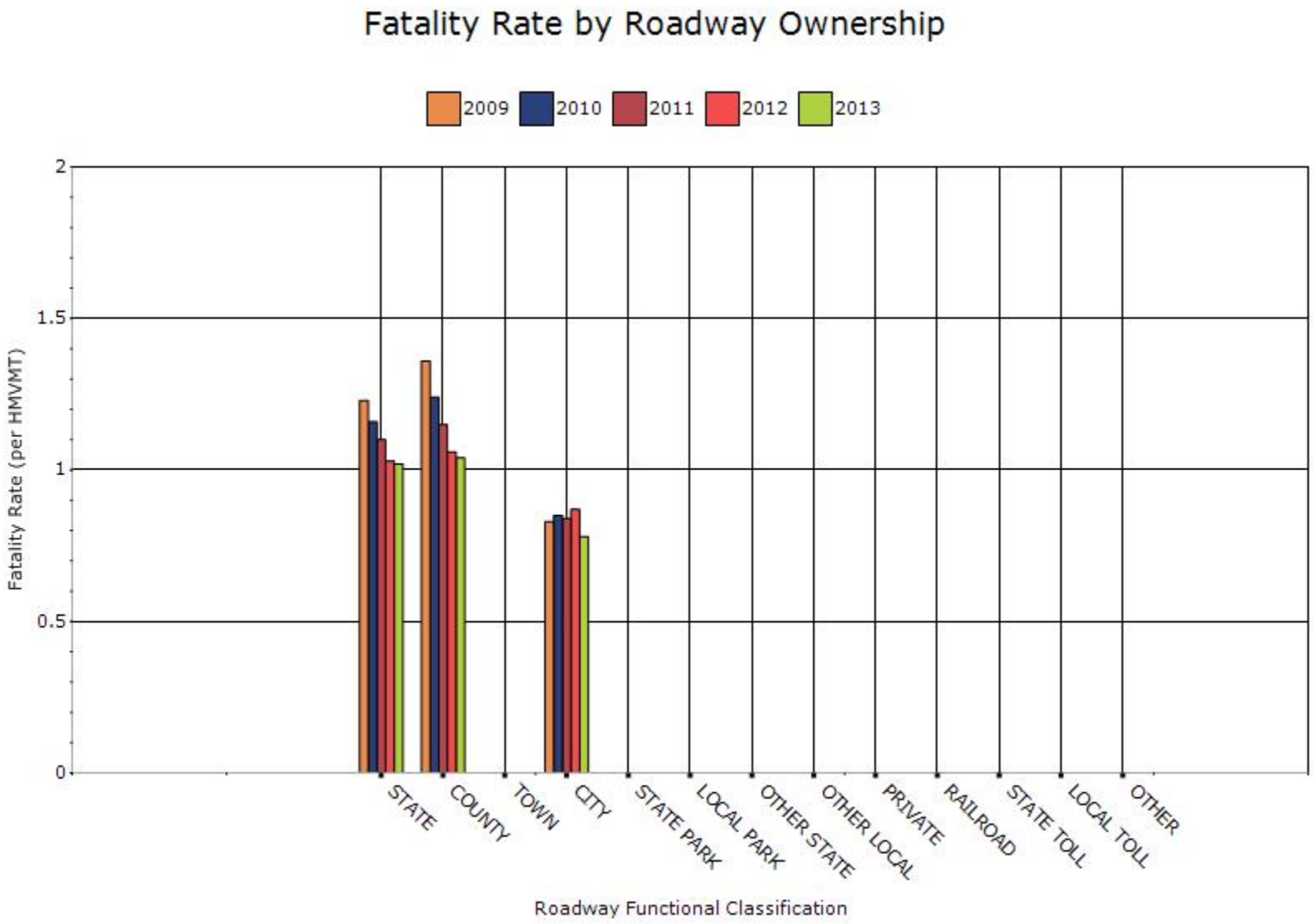

Serious Injury Rate by Roadway Functional Classification
2009
2010
2011
2012
2013
Serious Injury Rate (per HMVMT)
0
2
4
6
8
10
12
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (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

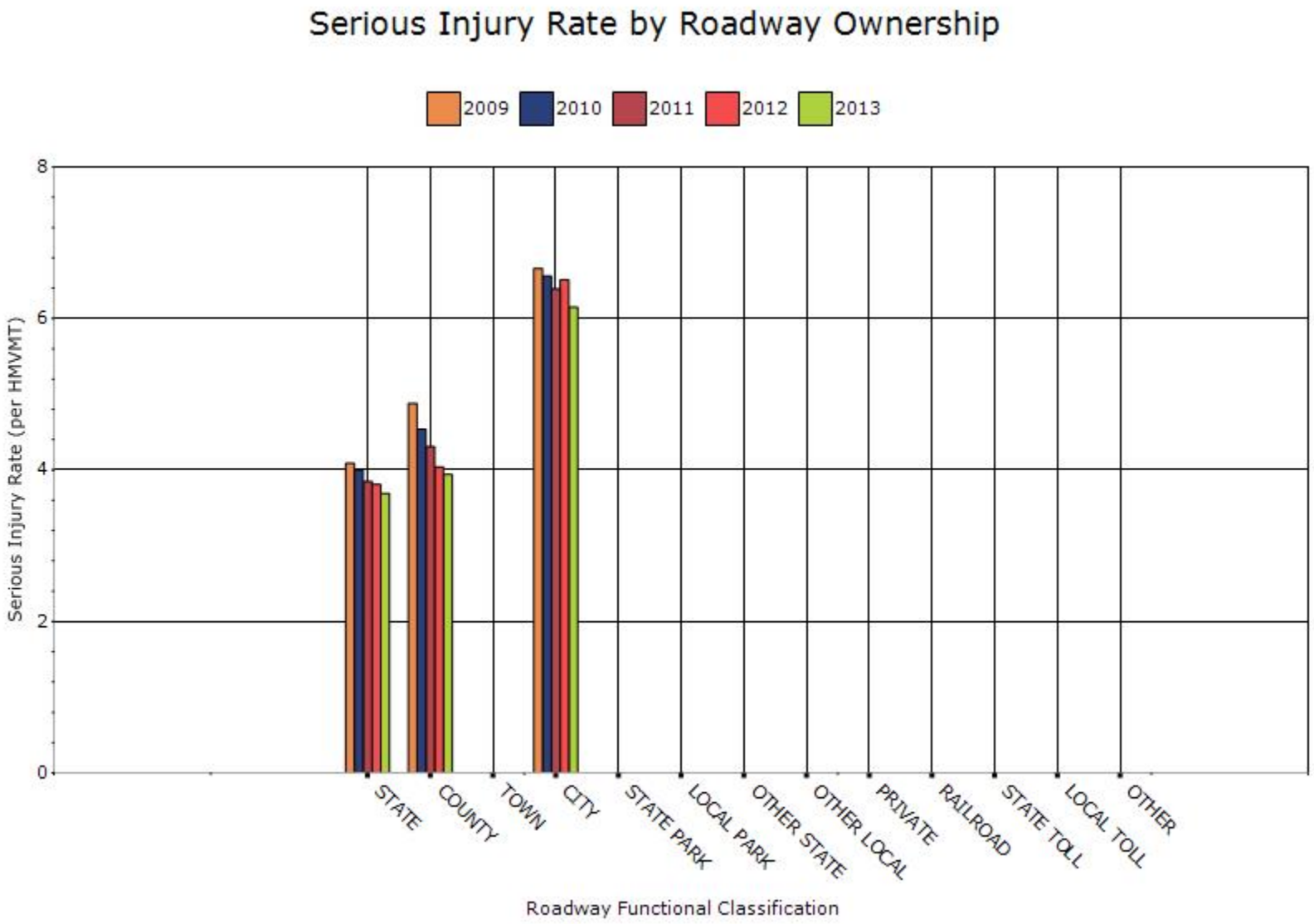
Year - 2013

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	393	1425	1.02	3.69
COUNTY HIGHWAY AGENCY	211	798	1.04	3.94
TOWN OR TOWNSHIP HIGHWAY AGENCY	0	0	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	145	1150	0.78	6.15
STATE PARK, FOREST, OR RESERVATION AGENCY	0	2	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)	6	34	0	0
RAILROAD	0	0	0	0
STATE TOLL AUTHORITY	0	0	0	0
LOCAL TOLL AUTHORITY	0	0	0	0
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0	0	0	0


Number of Fatalities by Roadway Ownership
2009
2010
2011
2012
2013
600
500
400
300
200
100
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
2000
1500
1000
500
0
# of Serious Injuries
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Fatality Rate by Roadway Ownership
2009
2010
2011
2012
2013
Fatality Rate (per HMVMT)
2
1.5
1
0.5
0
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Serious Injury Rate by Roadway Ownership
2009
2010
2011
2012
2013
Serious Injury Rate (per HMVMT)
0
2
4
6
8
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification

At present INDOT does not separate crash or VMT data to differentiate between Interstate Freeways and Other Freeways. Also data for Urban Major and Minor Collectors are not separated into the two classifications.

Statewide Crash data at present does not sufficiently differentiate between incorporated municipalities designated cities and towns and unincorporated towns. For this reason all crashes in these areas are listed under Cities and Municipal areas.

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

In 2013, the estimated vehicle miles of travel increased 0.90% above 2012, while the number of police reported fatalities and incapacitating (serious) injuries dropped by 6.27%. As a result, the 5 year rolling average rate of combined fatalities and serious injuries dropped to a rate of 0.97 per VMT in 2013 from a rate of 1.01 in 2012.

Statewide 2013 crash data shows that Indiana did not exceed the four performance goals outlined in the SHSP, the 5 year rolling average of Fatalities, Severe (Incapacitating) Injuries, Fatality Rate and Severe Injury Rate. The spike in severe crashes on rural roads that was experienced in 2012 was not repeated in 2013.

Crashes resulting from vehicle departure from the travel lanes (including roadway departure, head-on and opposite direction sideswipe) continue to be the most numerous harmful events. For 2013 the 5 year rolling average percentage of fatalities resulting from single vehicle lane departures make up 48.7% of all Indiana motor vehicle fatalities, compared to the 5 year average of 49.6% calculated in 2012. As a result, INDOT has developed several systemic improvement types aimed at reducing the incidence and consequences of lane departure crashes.

Fatalities as a result of intersection crashes make up the second worst type of harmful event. In 2013 the 5 year average of intersection fatalities contributed 24.2% of total traffic fatalities, similar to the 24.6% average from 2012. INDOT is advancing systemic improvements to increase the visibility of both signalized and unsignalized intersections. INDOT is also placing increased emphasis on timely modernization of traffic signals, and increased use of innovative intersection types to reduce traffic conflicts; such as Roundabouts, J Turns and Michigan Left Turn designs.

Indiana is also concerned with the incidence of fatalities involving vulnerable road users such as pedestrians, bicycle and motorcycle riders, and is working with our partners on education efforts. In 2013 the 5 year rolling average of pedestrian fatalities rose to 8.2%, from the 7.8% average in 2012. The 5 year average percentage of fatalities that involve bicyclists held steady at 1.7%. The number of motorcycle and moped crashes was lower in 2013 compared to 2012, but it should be noted that nationally motorcycle/moped crashes were unusually high. On the basis of 5 year rolling averages motorcycle and moped fatalities accounted for 17.0% in 2012 and held relatively steady at 16.9 for 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	2009	2010	2011	2012	2013

Performance Measures					
Fatality rate (per capita)	0.746	0.752	0.756	0.732	0.612
Serious injury rate (per capita)	1.73	1.646	1.67	1.666	1.324
Fatality and serious injury rate (per capita)	2.48	2.398	2.424	2.396	1.934

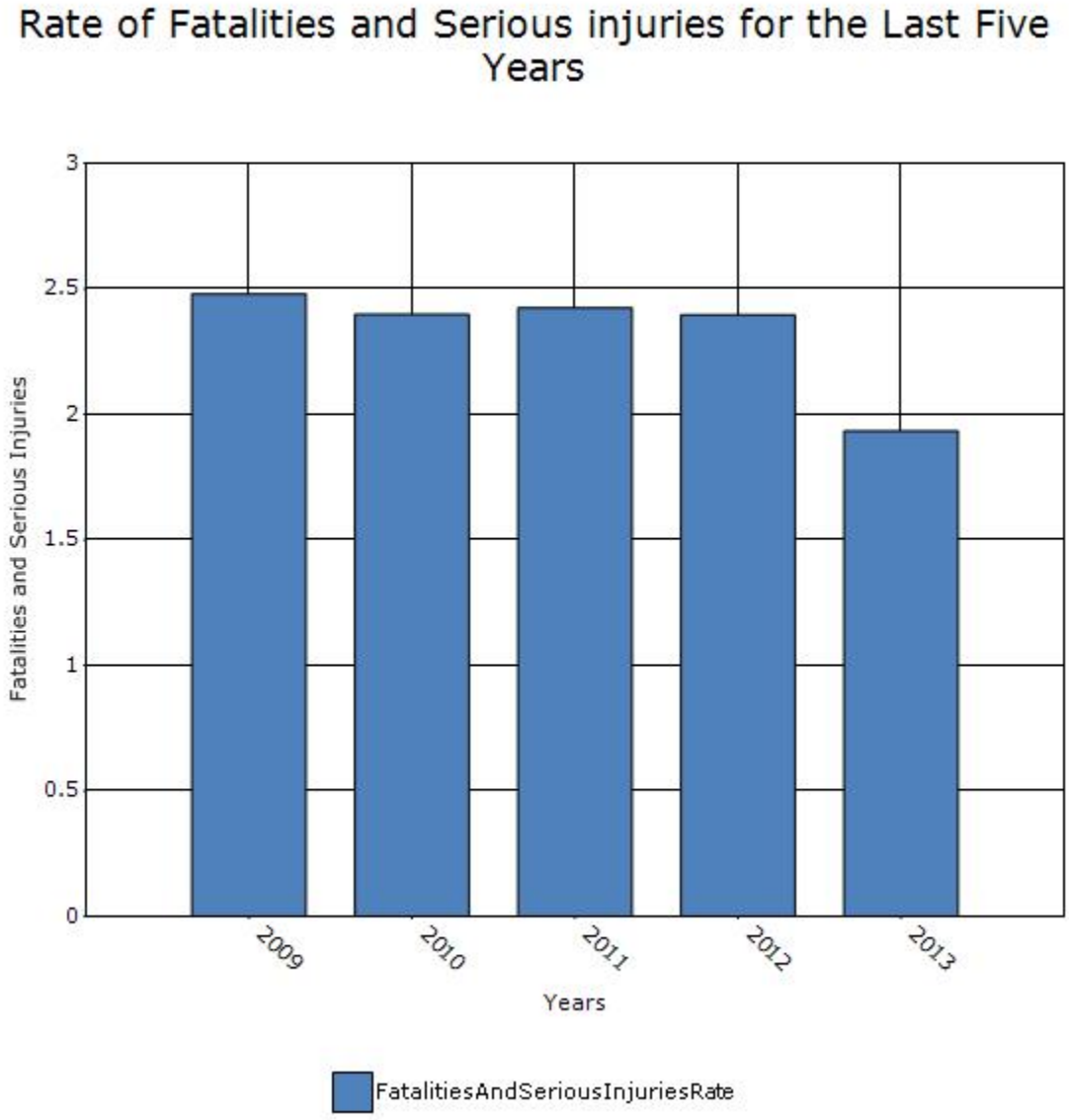
*Performance measure data is presented using a five-year rolling average.

Fatality Rate using FARS (drivers & pedestrains over 65 per 1,000 population)
FARS Fatalites / FHWA # over 65 per capita = Fatality (F) Rate
Serious Injury Rate using Indiana ARIES (drivers & pedestrains over 65 per 1,000 population)
ARIES Incapacitating (Serious Injuries) / FHWA # over 65 per capita = Serious Injury (SI) Rate

Combined Fatal and Serious Injury Rate (drivers & pedestrians over 65 per 1,000 population)
(Fatalities + Serious Injuries) / FHWA # over 65 per capita = Combined F + SI Rate

CALCULATE RATE for 2009
(2009 F+SI/2009 Indiana population figure) + (2008 F+SI/2008 Indiana population figure) + (2007 F+SI/2007 Indiana population figure) + (2006 F+SI/2006 Indiana population figure) + (2005 F+SI/2005 Indiana population figure) / 5
(2.29+2.31+2.50+2.44+2.86)/5 = 2.48, Rounded 2.5

CALCULATE RATE for 2011
(2011 F+SI/2011 Indiana population figure) + (2010 F+SI/2018 Indiana population figure) + (2009 F+SI/2009 Indiana population figure¿) + (2008 F+SI/2008 Indiana population figure) + (2007 F+SI/2007 Indiana population figure) / 5
(2.57+2.45+2.29+2.31+2.50)/5 = 2.42, Rounded 2.4



Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program Evaluation)

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

☐ None

☐ Benefit/cost

☒ Policy change

☐ Other:

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

☐ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☒ Organizational Changes

☐ None

☐ Other:

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

Due to organizational changes at INDOT that place administration of all local project under the Division of LPA & Grant Administration, greater emphasis has been placed on

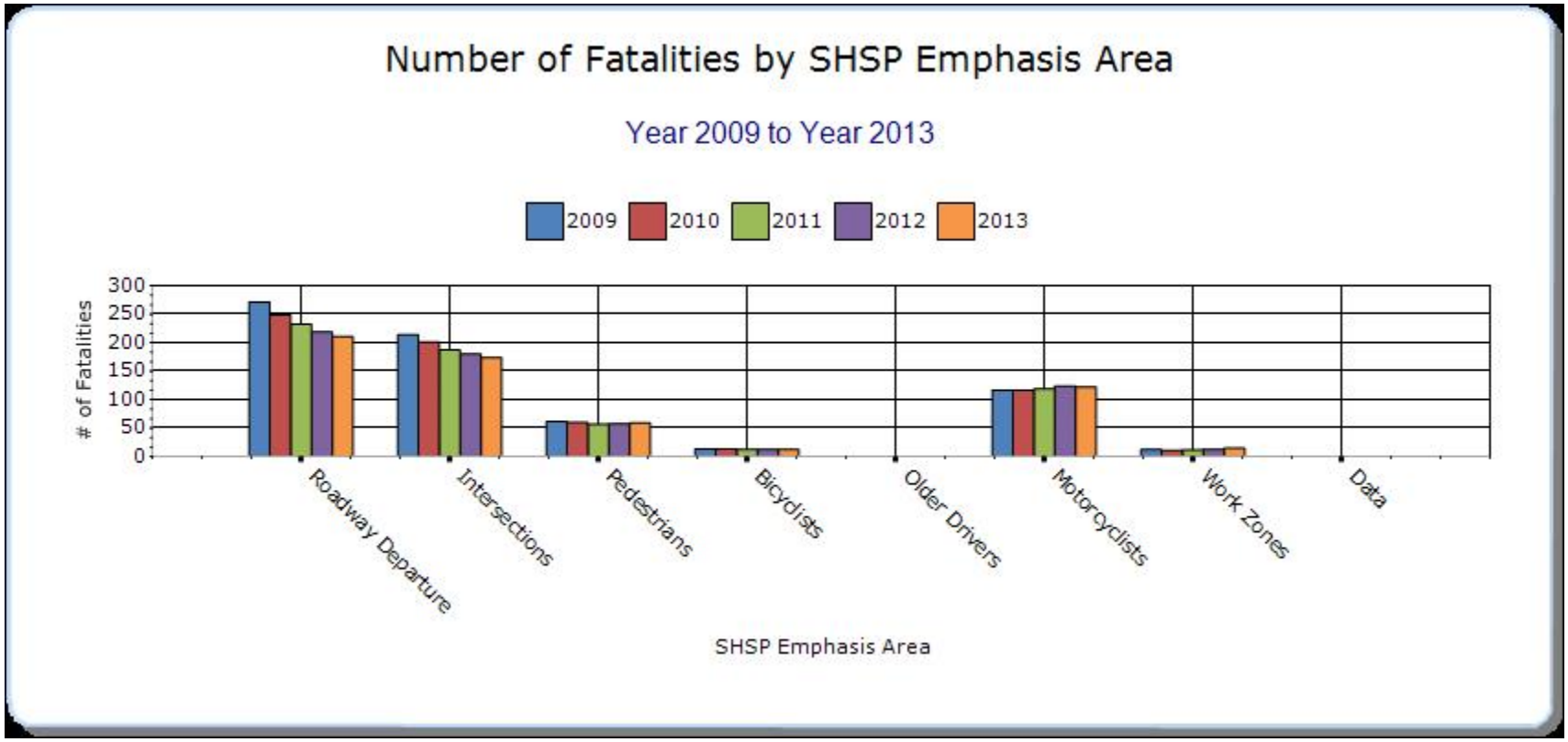
MPOs to make good choices in selecting safety improvements for HSIP funding. As a result INDOT has requested each of the Indiana MPOs to submit a document describing the data driven process that will be used by the MPO to select candidate projects. The submitted procedures are reviewed for approval by the multi-agency Highway Safety Advisory Committee (HSAC). These individual MPO developed process documents will give the local agencies a clear set of criteria when applying for funding, at the same time allowing for local input into the project selection process, and improving the ability of INDOT or FHWA to conduct future process reviews.

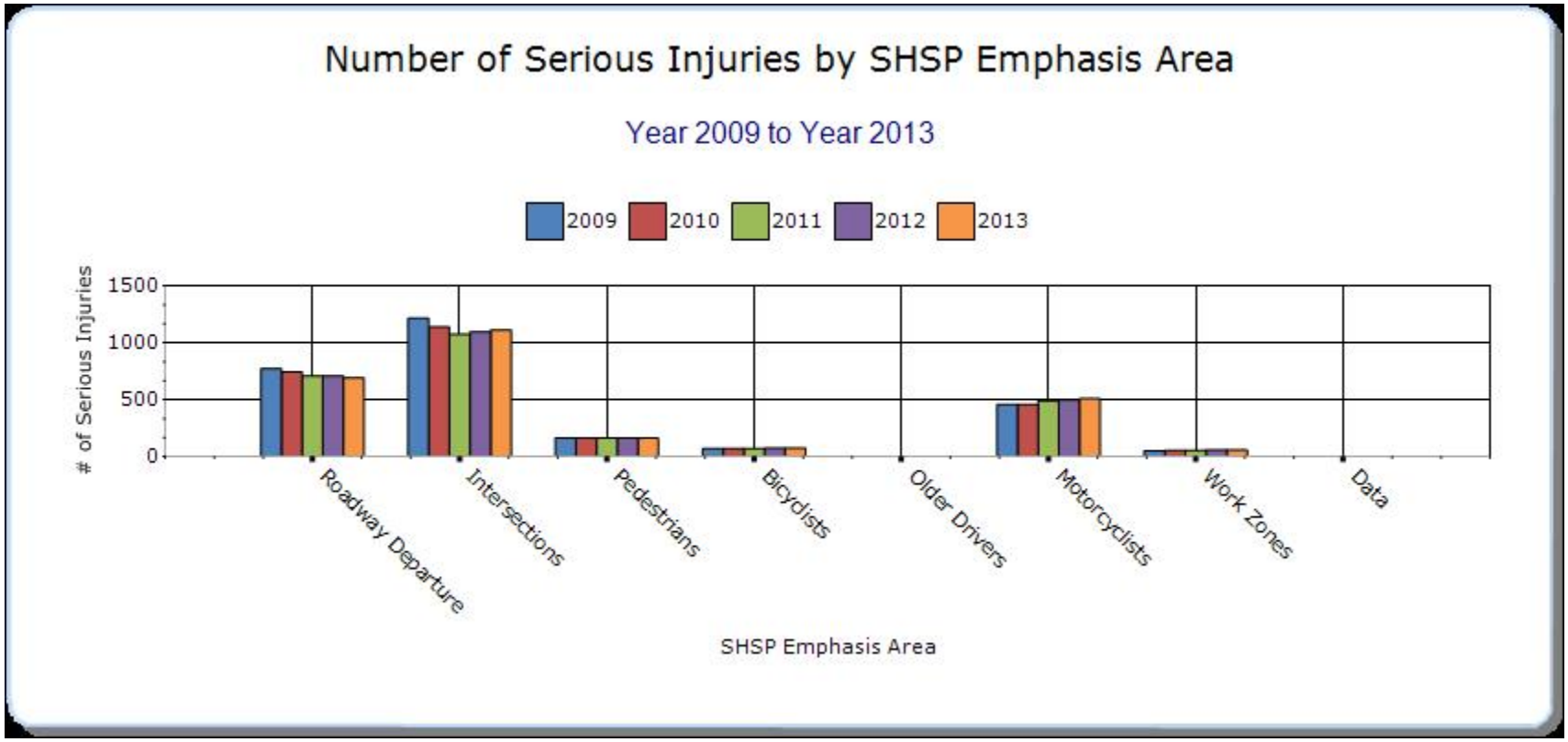
SHSP Emphasis Areas

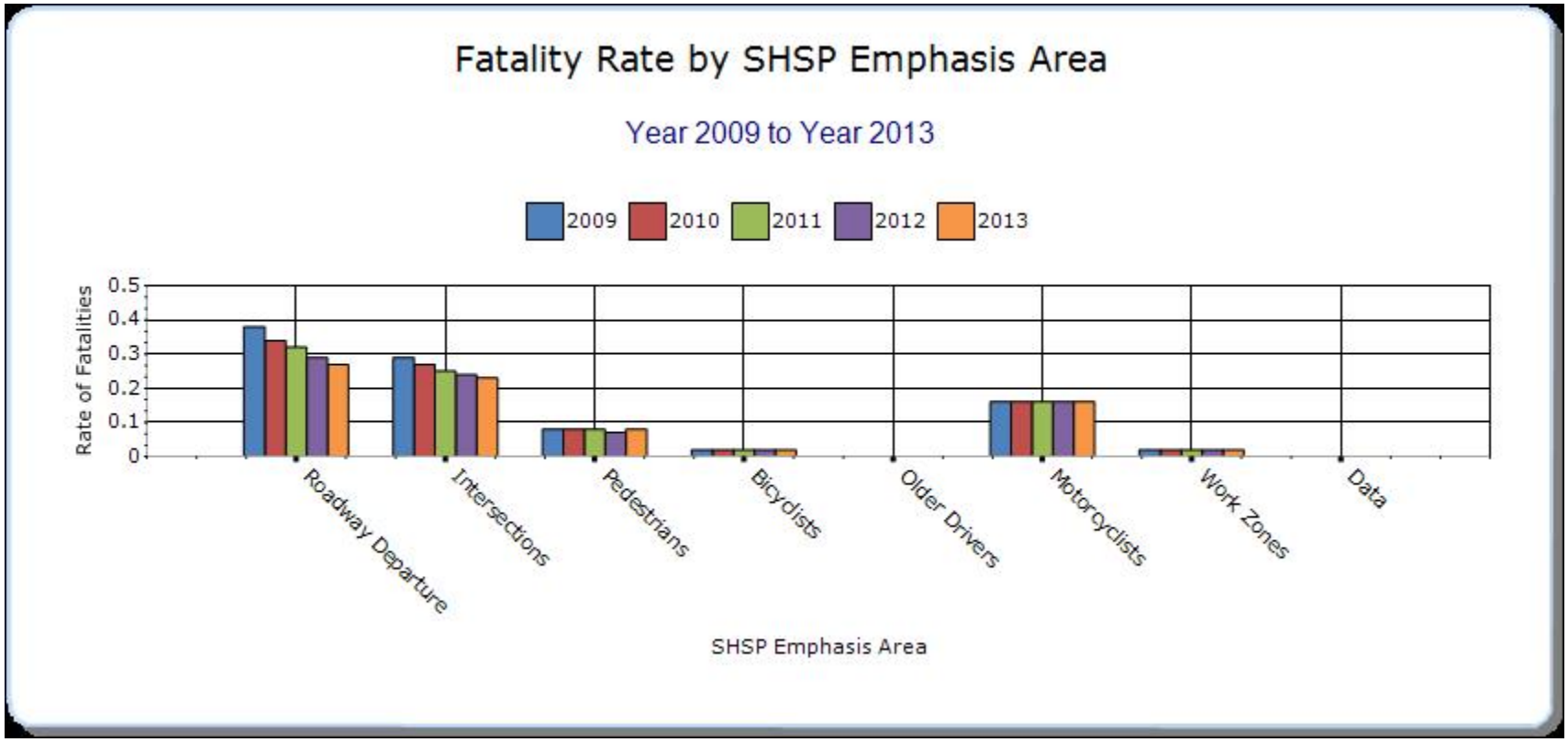
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

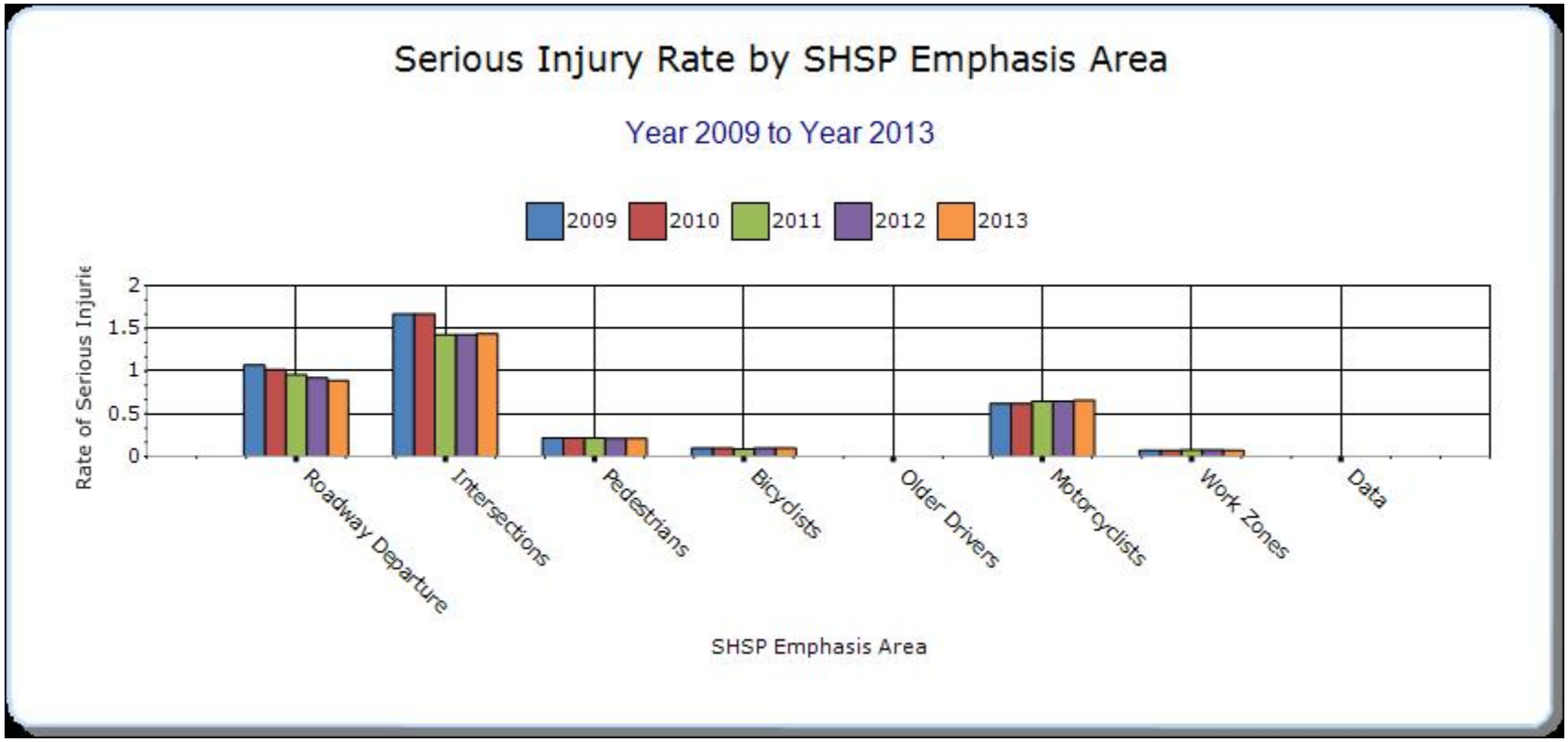
Year - 2013

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	Run-off-road	210.8	691.8	0.27	0.89	0	0	0
Intersections	Intersection	174	1111	0.23	1.44	0	0	0
Pedestrians	Vehicle/pedestrian	59.2	161.8	0.08	0.21	0	0	0
Bicyclists	Vehicle/bicycle	12.2	76.4	0.02	0.1	0	0	0
Motorcyclists	Motorcycle & Moped	122	508.6	0.16	0.66	0	0	0
Work Zones	Work Zone	14.8	57	0.02	0.07	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
300
250
200
150
100
50
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Number of Serious Injuries by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
1500
1000
500
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
0.5
0.4
0.3
0.2
0.1
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area


Serious Injury Rate by SHSP Emphasis Area
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
2
1.5
1
0.5
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
SHSP Emphasis Area

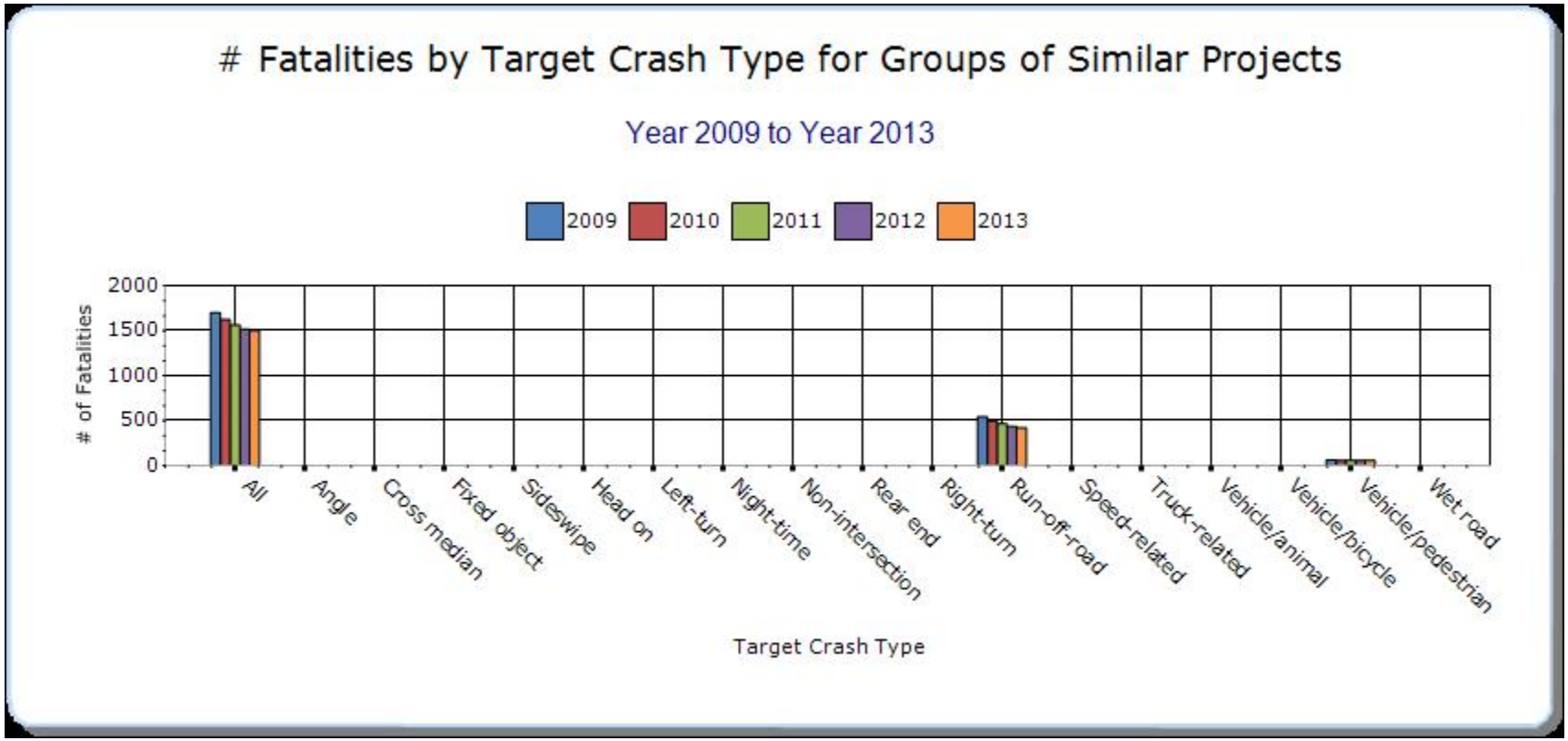
Groups of similar project types

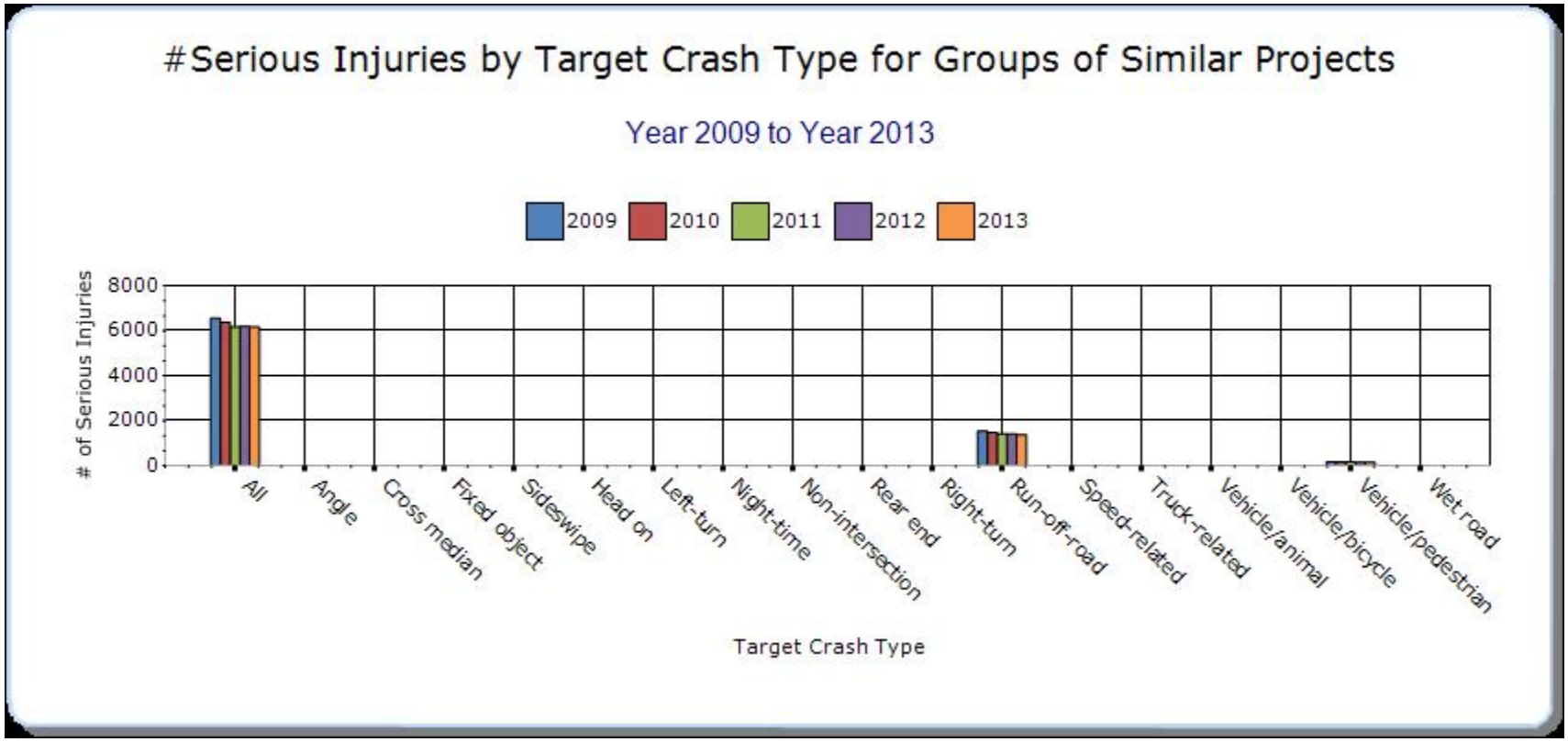
Present the overall effectiveness of groups of similar types of projects.

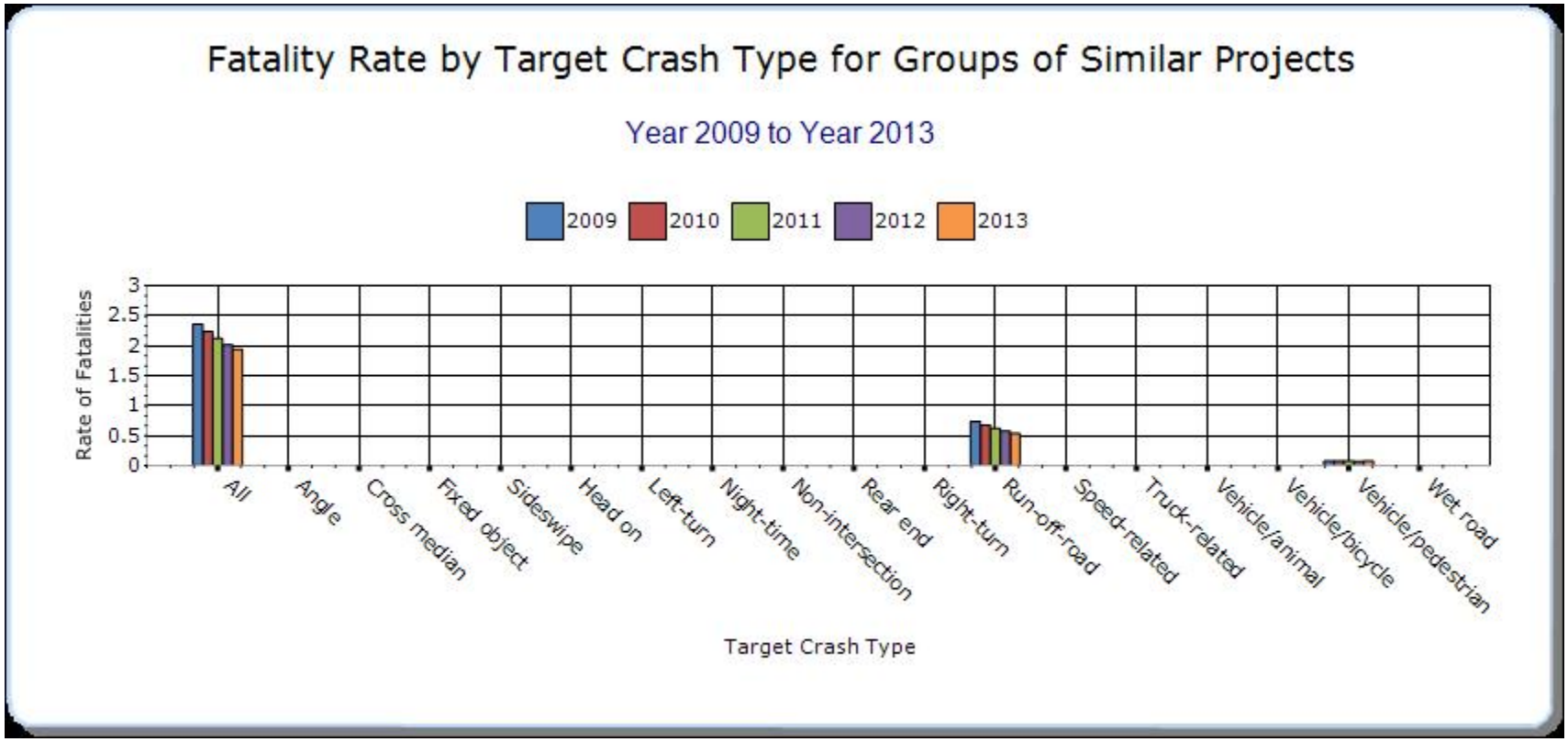
Year - 2013

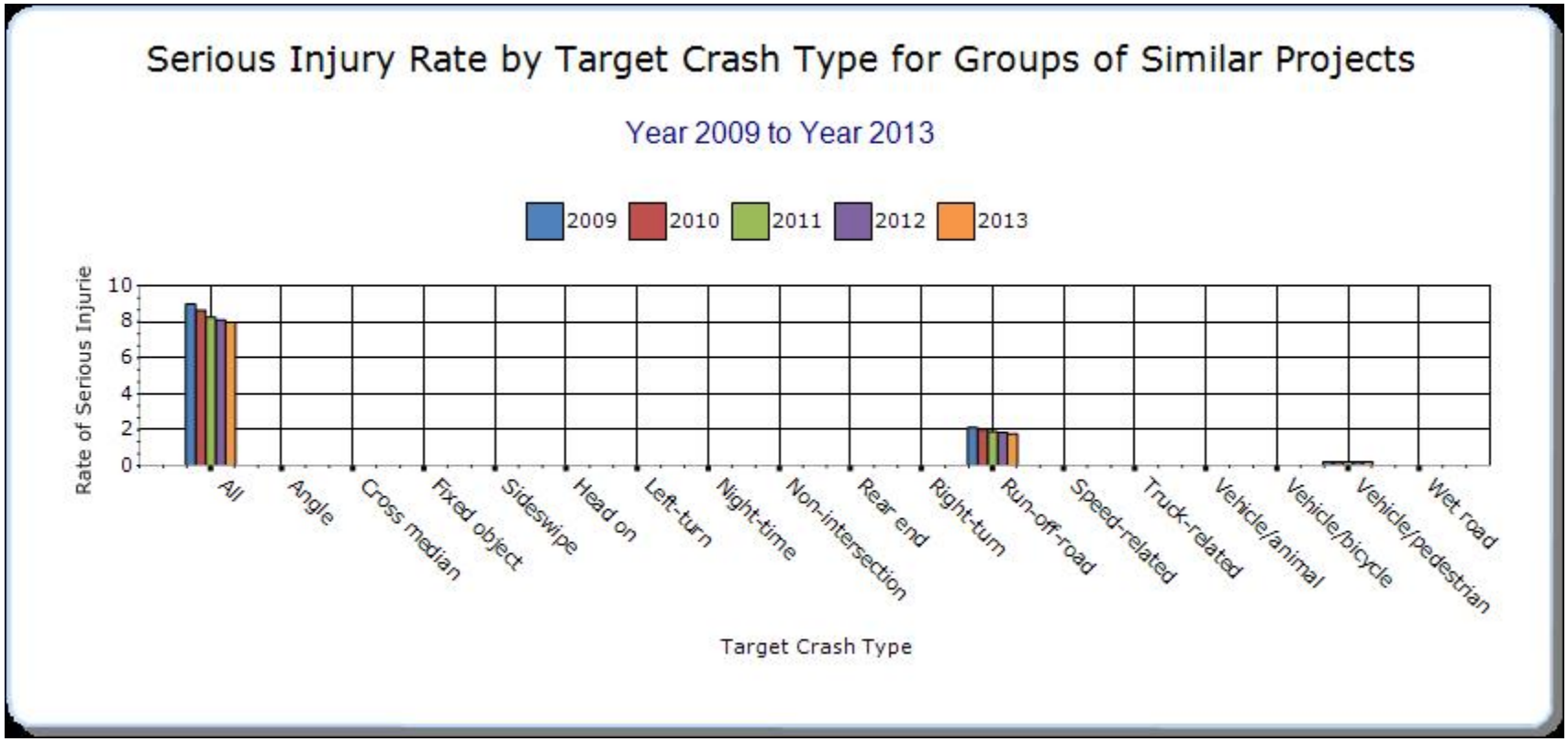
HSIP Sub-program Types	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Intersection	Intersection Crashes	174	1111	0.23	1.44	0	0	0
Median Barrier	Run-off-road	211	692	0.27	0.89	0	0	0
Other-Traffic Signal Visibility Improvement	Intersection Crashes	174	1111	0.23	1.44	0	0	0
Other-Centerline and Edgeline Rumble Stripes	Run-off-road & Head On	351	1124	0.45	1.45	0	0	0
Pedestrian Safety	Vehicle/pedestrian	59	162	0.08	0.21	0	0	0
Local Safety	Local Roads	319	1706	0.83	4.44	0	0	0
Sign Replacement And Improvement	All	751	3086	0.97	3.99	0	0	0
Rural State Highways	Rural State Highways	309	844	1.06	1.95	0	0	0
Crash Data	All	751	3086	0.97	3.99	0	0	0

Roadway Departure	Run-off-road	211	692	0.27	0.89	0	0	0




#Serious Injuries by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
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 Groups of Similar Projects
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
3
2.5
2
1.5
1
0.5
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



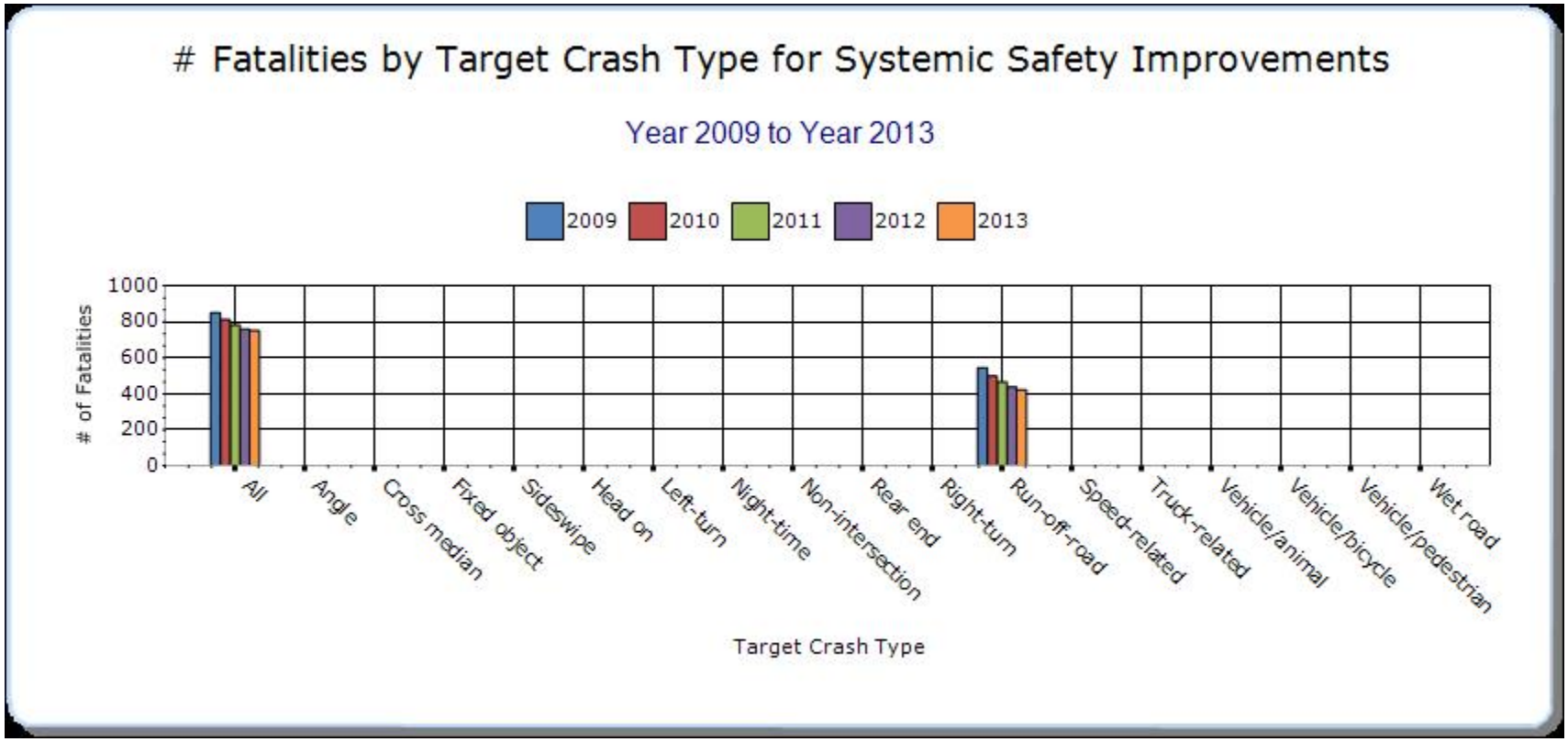
In regard to the subprograms for Rural State Highways and Local Safety, the rates for fatalities and serious injuries are calculated using the INDOT estimate of Vehicle Miles of Travel (HMVMT) broken down to subcomponents for Rural State Highways and for Local Roads respectively. All other subprograms crash rates are calculated using INDOT estimated HMVMT for All Roads.

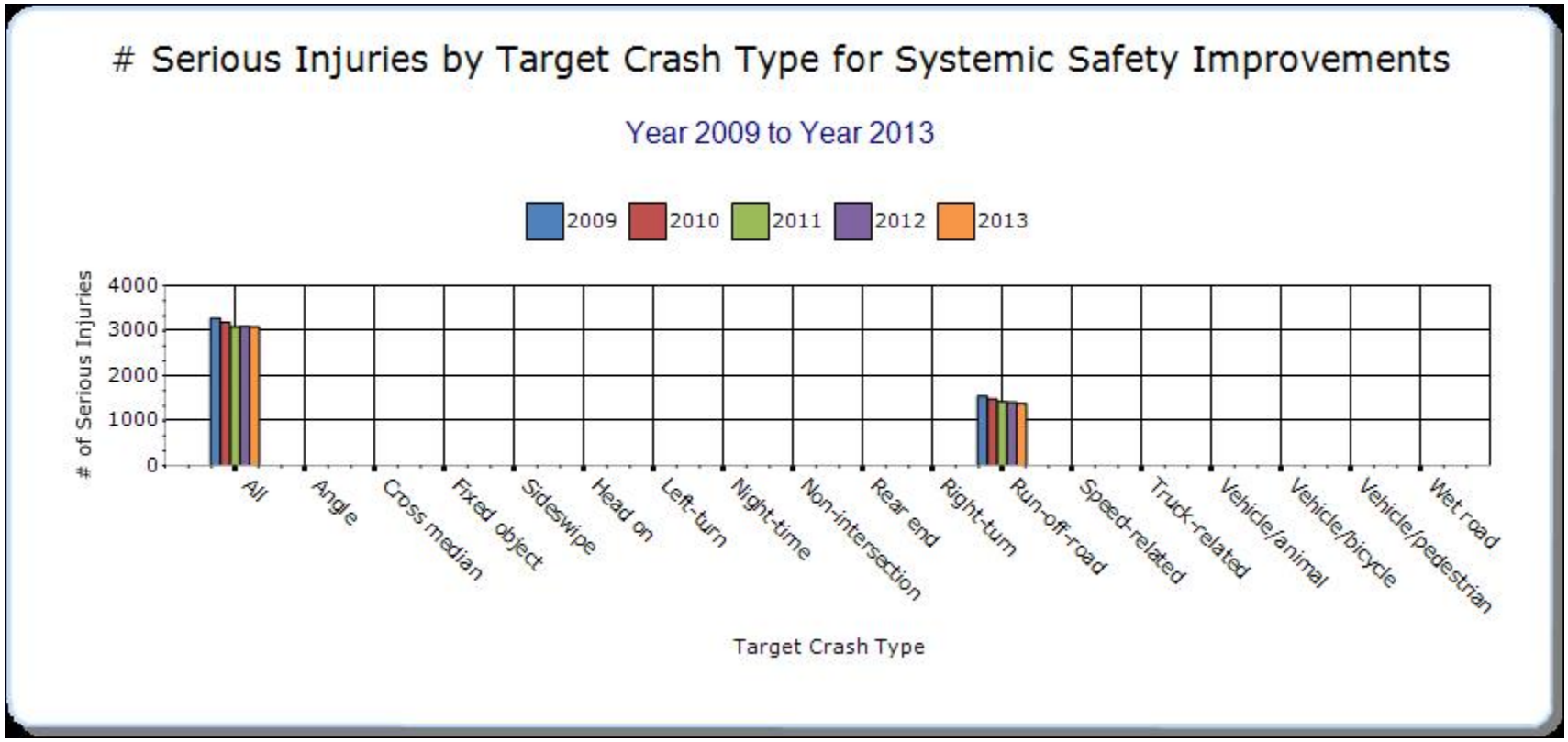
Systemic Treatments

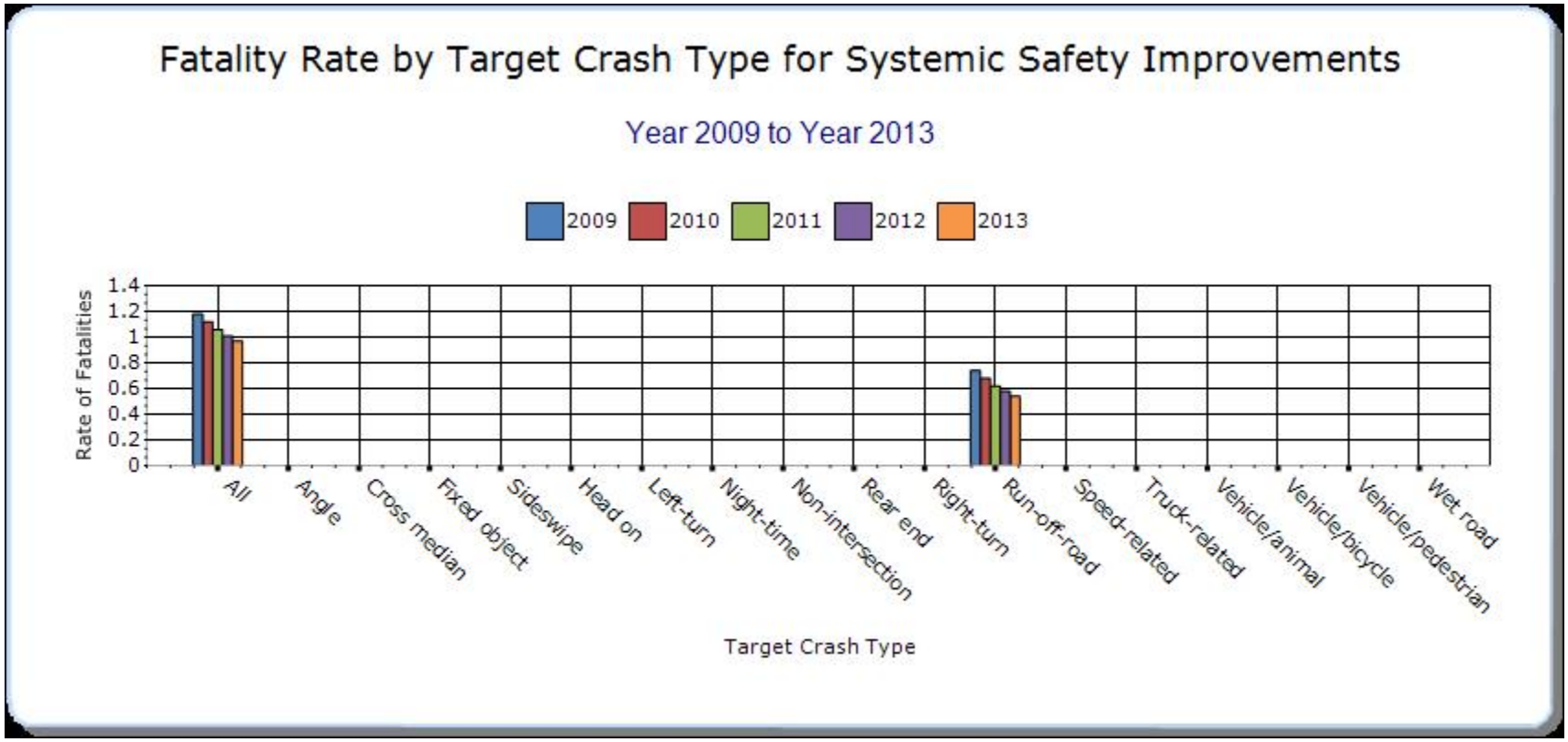
Present the overall effectiveness of systemic treatments.

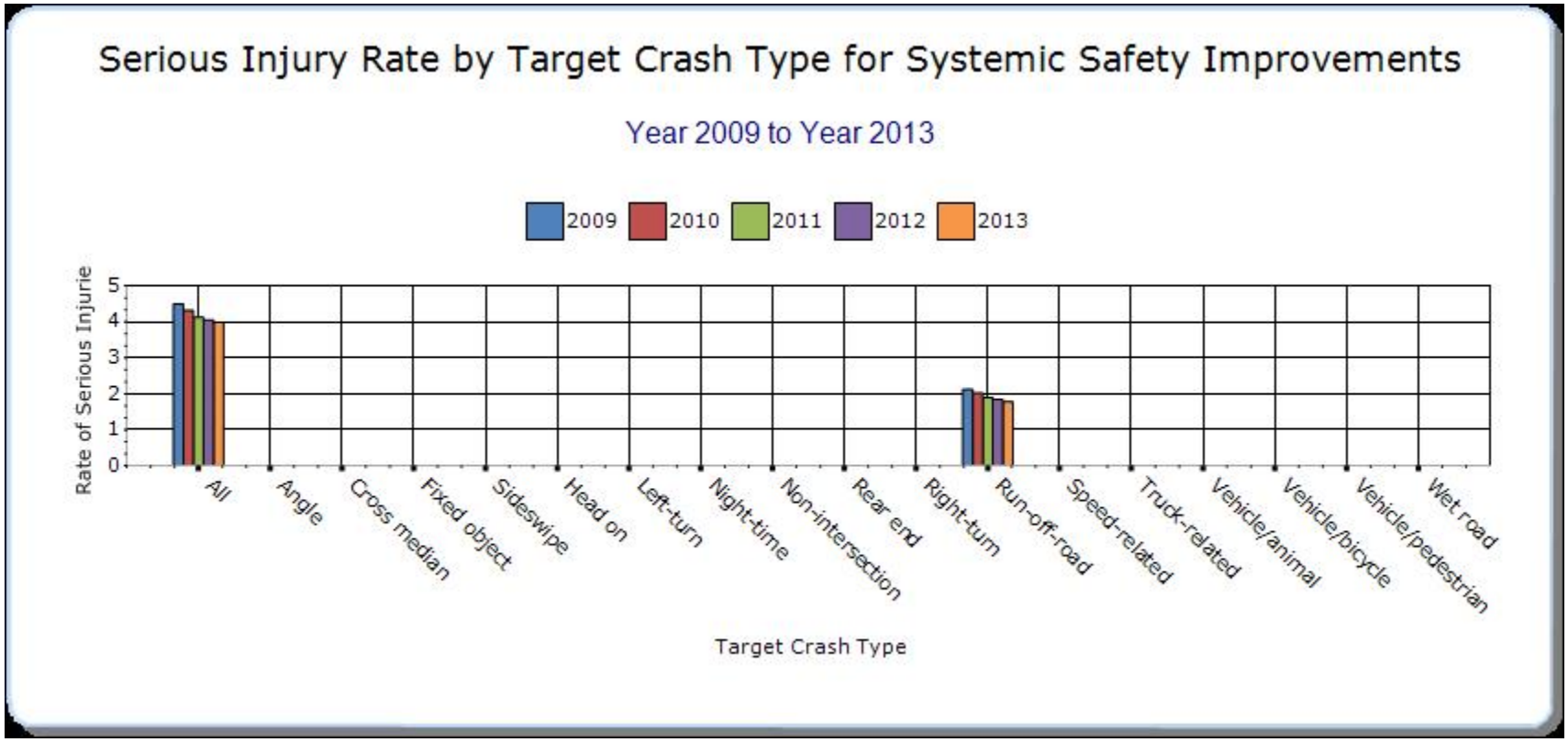
Year - 2013

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	751	3086	0.97	3.99	0	0	0
Cable Median Barriers	Run-off-road	211	692	0.27	0.89	0	0	0
Rumble Strips	Run-off-road & Head On	351	1124	0.45	1.45	0	0	0
Add/Upgrade/Modify/Remove Traffic Signal	Intersection Crashes	174	1111	0.23	1.44	0	0	0
Upgrade Guard Rails	Run-off-road	211	692	0.27	0.89	0	0	0
Traffic Control Device Rehabilitation	Intersection Crashes	174	1111	0.23	1.44	0	0	0


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Fatalities
1000
800
600
400
200
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
# of Serious Injuries
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 Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Fatalities
1.4
1.2
1
0.8
0.6
0.4
0.2
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injury Rate by Target Crash Type for Systemic Safety Improvements
Year 2009 to Year 2013
2009
2010
2011
2012
2013
Rate of Serious Injurie
5
4
3
2
1
0
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type

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

The combined efforts of Indiana's engineering, education, law enforcement, and emergency medical communities are contributing to an overall decline in serious crash outcomes. A trend of fewer severe crashes and increasing percentage of property damage crashes has occurred since the beginning of the HSIP. The extent of contribution by HSIP projects to improved safety is difficult to quantify with current data sources and analysis capabilities, but it's clear that safety programs are a factor influencing the downward trend in severe crash outcomes. Fatal and injury crash trends experienced a somewhat consistent rate between the start of SAFTEA-LU in 2005 through 2007 then experienced a larger downward trend in 2008 and 2009 as VMT declined. Since 2010 through 2013, VMT has resumed its previous growth trends but a lower incidence of severe outcome crashes in most of the monitored emphasis areas continues in calendar year 2013.

When comparing 2013 to 2012, the estimated vehicle miles of travel increased by 0.91%. Over the same period, the total number of crashes reported increased by 4.63%; but incapacitating injuries dropped 10.14% and fatalities also decreased slightly by 0.26%.

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)
0101055 US 31, Miami County Line to Fulton County Line	Rural Principal Arterial - Other	Roadside	Roadside grading	1	4	55	317	377	3	6	63	347	419	0
0300179 ST 1006, Washington Street at Defenbaugh Street in Kokomo	Urban Minor Arterial	Intersection geometry	Auxiliary lanes - extend existing left-turn lane	0	0	1	8	9	0	1	1	3	5	0.11
0400309 18th Street @ Kossuth Street	Urban Minor Arterial	Intersection geometry	Auxiliary lanes - add left-turn lane	0	0	21	97	118	0	0	10	40	50	2.86
0300432 Landin Road and North River Road	Urban Minor Arterial	Intersection geometry	Auxiliary lanes - add left-turn lane	0	0	6	10	16	1	0	3	9	13	0.03

987189A US 31, At SR 4	Rural Principal Arterial - Other	Intersection traffic control	Modify traffic signal - modernization/replacement	0	5	3	19	27	0	2	4	25	31	0.55
977190A US 31, At New Rd, 2.0 miles N of SR 4	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add left-turn lane	0	5	3	19	27	0	2	4	25	31	0.38
0500670 SR 46 @ E Pearl Street	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	0	0	6	6	1	0	2	6	9	9.54
0014090 SR 49, SW diagonal ramp at interchange with SR 49 (incl Safety Revisions)	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add left-turn lane	0	1	2	9	12	0	1	2	7	10	0.11
9620730 SR 57, At Boonville/New Harmony Rd	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	3	0	9	15	27	0	1	10	22	33	0.39
982073A SR 57, At Boonville/New Harmony Rd	Urban Principal Arterial -	Intersection traffic control	Modify traffic signal - modernization/replacement	3	0	9	15	27	0	1	10	22	33	1.1

	Other													
0200721 ST 1002, 6th Street and Fisher Street intersection, 3900 feet N of US 24	Rural Minor Arterial	Intersection geometry	Auxiliary lanes - extend acceleration/deceleration lane	0	0	3	15	18	0	0	3	12	15	0.14
0500181 ST 1029, SR 15 (Main St) to 9th Street	Urban Minor Arterial	Roadway	Roadway - other	0	2	4	19	25	0	0	3	8	11	1.24
9800730 US 136, At Hendricks/Marion County Line (Raceway Rd), 2.2 miles W of SR 134	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add left-turn lane	0	1	2	11	14	0	1	1	13	15	0.57
990073A US 136, At Marion/Hendricks Co Line (Raceway Rd)	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	0	1	2	11	14	0	1	1	13	15	0.17
0600543 US 150, At W Washington	Rural Minor	Roadside	Roadside grading	0	1	3	3	7	0	0	1	0	1	5.45

School Road, 4.64 miles W of SR 135(parcel 13)	Arterial													
0401232 US 231, At Stardust Road (925 S.), 0.50 mile S of I-70 (incl. channelization)	Rural Principal Arterial - Other	Intersection geometry	Auxiliary lanes - miscellaneous/other/unspecified	0	0	5	8	13	0	0	0	6	6	0.29
0300965 US 24, US 24 from SR 13 to S jct of SR 9	Rural Principal Arterial - Other	Roadway	Roadway - restripe to revise separation between opposing lanes and/or shoulder widths	0	0	8	21	29	0	1	10	35	46	0.03
0401315 US 30, Pavement Marking - SR 5 to I-69	Rural Principal Arterial - Other	Roadway	Rumble strips - center	5	7	67	246	325	3	1	48	179	231	2.43
9901910 US 35, At Rosser Dr, 0.8 mile S of SR 119	Rural Minor Arterial	Roadway	Roadway widening - add lane(s) along segment	0	0	0	1	1	0	0	0	2	2	0
0600466 US 421, At Michigan Road	Rural Principal Arterial - Other	Intersection geometry	Intersection geometry - other	0	0	0	2	2	0	0	1	2	3	0

0401026 IR 1004, CR 200E (Airport Road) at "S" curve, .25 mi N of CR 300S	Rural Minor Arterial	Roadway	Superelevation / cross slope	0	0	1	3	4	0	0	0	3	3	0.02
9901440 SR 103, From 2.56 km N of US 40 to 3.04 km N of US 40	Rural Major Collector	Roadside	Roadside grading	0	1	2	5	8	0	0	1	5	6	0.33
0300010 SR 64, At SR 135	Rural Major Collector	Intersection traffic control	Modify traffic signal - modernization/replacement	0	3	26	107	136	0	2	20	83	105	1.89
9902630 SR 64, At SR 135	Rural Major Collector	Intersection geometry	Intersection geometry - other	0	3	26	107	136	0	2	20	83	105	0.89
9901090 SR 8, At CR 500E	Rural Major Collector	Roadside	Barrier - other	0	0	3	13	16	0	1	0	13	14	0.03
0400648 ST 1014, At Township Line Road	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add left-turn lane	0	1	21	65	87	0	1	18	79	98	0.07
0500960 ST 1018, 17th at	Urban Minor	Intersection geometry	Auxiliary lanes - miscellaneous/other/unspe	0	0	7	23	30	0	0	5	13	18	1.06

Fee Lane	Collector		cified											
0002700 US 20 at Quince Road	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement	0	0	7	14	21	0	0	4	8	12	7.64
8351230 US 20 at Quince Road	Urban Minor Arterial	Intersection geometry	Intersection geometry - other	0	0	7	14	21	0	0	4	8	12	0.14
9902610 US 50, At Deer Creek Rd (CR 75E)	Urban Principal Arterial - Other	Intersection geometry	Auxiliary lanes - add left-turn lane	0	0	1	2	3	0	0	0	2	2	0.01
0600216 US 52, CR 250 W/McCormick Road - Commision # 01-079-132	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	0	12	30	43	0	1	12	36	49	0
0600201 IR 1001, Programmatic signing for Martin County	Rural Minor Arterial	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	0	0	3	6	9	0	0	0	4	4	2.46
9136320 SR 114, At N Cullen St, 3.5 miles E	Urban Principal Arterial -	Intersection geometry	Intersection geometry - other	0	0	2	1	3	0	0	1	5	6	0.07

of I-65	Other													
0500107 SR 25, Intersection with CR 375W	Rural Minor Arterial	Intersection geometry	Auxiliary lanes - extend existing left-turn lane	0	0	1	6	7	0	0	2	7	9	0
0800324 SR 28, At SR 213 (Parcel 4) remove house basement, garage, well and septic	Rural Principal Arterial - Other	Roadway	Roadway - other	0	0	4	4	8	0	0	6	8	14	0
0501052 IR 1001 (N Railroad St/ Washington Ave & Adams Ave), Programmatic Sign Improvement in Town of Fowler	Rural Principal Arterial - Other	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	0	0	10	0	10	0	1	6	5	12	0

Optional Attachments

Sections	Files Attached

Glossary

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

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

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

HMVMT means hundred million vehicle miles traveled.

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

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

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

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

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

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

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

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