



Highway Safety Improvement Program
Data Driven Decisions

Minnesota
Highway Safety Improvement Program
2015 Annual Report

Prepared by: MN

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

Minnesota distributes HSIP funds based on the percentage of serious injuries and fatalities. This approach uses the Strategic Highway Safety Plan as a basis. Road Safety Plans for Minnesota districts and counties have further directed the focus of safety funds to lower-cost, systemic strategies. MnDOT is currently in the process of updating the 8 Minnesota district plans. The plans will be completed in the next 6 months.

Definition of Terms:

MnDOT: Minnesota Department of Transportation

Greater Minnesota: Minnesota is split into 8 MnDOT districts. District 5 is the Metro District. All other districts when referred to as a collective, are called Greater Minnesota.

OTST: MnDOT's Office of Traffic, Safety and Technology. MnDOT's Central Office Safety Unit resides within OTST.

SALT: MnDOT's Office of State Aid for Local Transportation. This is the MnDOT office that works most directly with local agencies.

ATP: Area Transportation Partnership. Boundaries are synonymous with MnDOT district investment boundaries. The partnerships have, as their members metropolitan and non-metropolitan stakeholders and can include Metropolitan planning organizations, Regional Development Commissions, cities, counties, townships, transit providers, tribal governments, other interests and MnDOT.

SFY: State Fiscal Year

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.

MnDOT distributes funds to local roads through the Greater Minnesota Combined Solicitation. The latest solicitations, conducted in March 2015, distributed over \$17M over four years (2016-2019) of local projects for HSIP Funds. OTST, with representatives from State-Aid, prioritizes the local HSIP projects for each ATP. Districts are given the opportunity to comment on the prioritization of projects.

The allocation of HSIP funds is based on the distribution of fatal and A-injury crashes. Funds are distributed as follows:

Step 1: Funds are split based on % of K and A crashes in each District.

Step 2: Funds are split again based on % of K and A crashes occurring on State vs. local system.

The resulting "HSIP Goals" and local/state split of this fund are shown in the table attached to the Program Administration section. The file shows 2009-2011 crash data was used to distribute funds for SFY 2017 and beyond.

The 2014 Minnesota Strategic Highway Safety Plan (SHSP) is the main guidance for project selection and evaluation. The goal for this solicitation is that 70% of Greater Minnesota projects and 30% of Metro projects be systemic. **Systemic projects make up 72% of all the projects awarded for Minnesota in 2014. Historically, a subset of that program, local projects in Greater Minnesota, is comprised of approximately 95% systemic projects since 2007.**

Additionally, Minnesota has funded a County Safety Plan for each of its 87 counties and 8 districts. These plans have been completed and are being implemented. They provide each county and district with a prioritized list of low-cost, systemic projects. The District safety plans are currently being revised and should be completed by April 2016.

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

- Design
- Planning
- Maintenance
- Operations
- Governors Highway Safety Office
- Other: Other-MnDOT District Traffic Engineers

Briefly describe coordination with internal partners.

MnDOT's office of Traffic, Safety and Technology (OTST) works closely with the State Aid for Local Transportation (SALT) office as well as district traffic engineers in the distribution of HSIP funds.

A representative from the state aid office sits on the both the steering and selection committees for

HSIP. The offices work together to educate local agencies and district personnel on the HSIP program. Once projects are selected the state aid office coordinates with the local agencies and provides support as necessary.

The HSIP project selection committee asks for input from the district traffic engineers during the selection and award processes. District traffic engineers provide vital background information on proposed projects as well as adding the local perspective. Additionally, local partners are asked to provide some documentation that the district traffic engineer is aware of and supportive of their prospective project if it impacts MnDOT roadways.

MnDOT also holds quarterly TEO (Traffic Engineering Organization) Safety Subcommittee meetings, at which additional HSIP coordination occurs.

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

- Metropolitan Planning Organizations
- Governors Highway Safety Office
- Local Government Association
- Other: Other-City Engineer Safety Committee
- Other: Other-County Engineer Safety Committee

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-Beginning with FY 2017, projects will be programmed in a more centralized project selection process as described in question 9.

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

Beginning with projects programmed in SFY 2017, Minnesota has changed the way it administers state projects. Decisions are made at the central office level rather than the district level. Prior to SFY 2017 projects, only the local HSIP projects are selected by Central Office. District projects were approved by the district personnel in the past, but will now go through Central Office in a more formalized process.

The first solicitation, occurring in March 2015 was the first solicitation to utilize the new process. There is another solicitation currently active using the new process, with applications due November 1, 2015. This solicitation is looking to program both local and district projects through SFY 2020.

The local and district projects follow the same deadlines to allow for better project coordination between the two groups.

Program Methodology

Select the programs that are administered under the HSIP.

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

Program: Other-MnDOT funds these countermeasures through HSIP.

Date of Program Methodology: 10/1/2007

What data types were used in the program methodology?

Crashes

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

Exposure

- Traffic
- Volume
- Population
- Lane miles
- Other

Roadway

- Median width
- Horizontal curvature
- Functional classification
- Roadside features
- Other-Road surface: In one particular county, gravel roads make up almost half of the system but fewer than 15 percent of all severe crashes occur on these roads.

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-Severe Crash Rate

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

- Yes
- No

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

- Yes
- No

How are highway safety improvement projects advanced for implementation?

- Competitive application process
- selection committee
- Other

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

Relative Weight in Scoring Rank of Priority Consideration Ranking based on B/C 1 Available funding Incremental B/C Ranking based on net benefit Other Road Safety Plan 1

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

72

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

 Cable Median Barriers Rumble Strips Traffic Control Device Rehabilitation Pavement/Shoulder Widening Install/Improve Signing Install/Improve Pavement Marking and/or Delineation Upgrade Guard Rails Clear Zone Improvements Safety Edge Install/Improve Lighting Add/Upgrade/Modify/Remove Traffic Signal Other

What process is used to identify potential countermeasures?

- Engineering Study
- Road Safety Assessment
- Other: Other-County and District Safety Plans

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-District Road Safety Plans are currently under revision.
- Other: Other-Critical Crash Rates

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

HSIP funds are distributed in three distinct solicitations:

Met Council HSIP (Metro District and local projects)

Greater Minnesota Local HSIP (All State Aid eligible agencies in Greater Minnesota)

Greater Minnesota MnDOT District HSIP (All Greater Minnesota Districts)

All three solicitations utilize risk based analysis (Road Safety Plans) to select projects. The Greater Minnesota MnDOT District HSIP solicitation was revised starting with projects programmed in SFY 2017 and beyond to more closely resemble the Greater Minnesota Local HSIP solicitation. This includes approval from Central Office Traffic and additional checks and balances to ensure proper funding categories are assigned to each project.

Lower cost, systemic treatments (lighting, signage, rumble strips and enhanced edgelines) are the focus of the Greater Minnesota projects. Any entity that is eligible for State Aid funds can apply directly to the Greater Minnesota Local HSIP solicitation. Cities and Tribal Governments that are not State Aid eligible must apply for HSIP funds through their county.

In the Metro District, systemic projects are funded as well as projects that address a spot location safety concern. Metro District projects and local metro projects compete side by side for the Metro HSIP funds in the Met Council solicitation.

Critical crash rates have been formally added to the Greater Minnesota District and Local solicitations as a tool for evaluating spot improvement projects.

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) | 27481740 | 75 % | 15588539.86 | 72 % |
| HRRRP (SAFETEA-LU) | | | | |
| HRRR Special Rule | | | | |
| Penalty Transfer - Section 154 | | | | |
| Penalty Transfer - Section 164 | 9288487 | 25 % | 5972126 | 28 % |
| Incentive Grants - Section 163 | 0 | 0 % | 0 | 0 % |
| Incentive Grants (Section 406) | | | | |
| Other Federal-aid Funds (i.e. STP, NHPP) | | | | |
| State and Local Funds | | | | |

| | | | | |
|---------------|----------|------|-------------|------|
| Totals | 36770227 | 100% | 21560665.86 | 100% |
|---------------|----------|------|-------------|------|

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

\$18,143,214.00

How much funding is obligated to local safety projects?

\$7,117,317.00

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

\$485,000.00

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

\$1,069,137.00

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?

\$16,937,255.00

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

A process review is being conducted this year with representation from both MnDOT and FHWA. This is being done to better understand the disconnect between programming and obligation.

For each year of the STIP, up to \$29.9M in safety projects are identified and selected for funding. Because Minnesota has a practice of spending all of its Federal dollars within any given fiscal year, some safety projects may be coded to something other than HSIP depending on the fiscal resources available to the department in that year.

Minnesota's HSIP program has consisted mainly of stand-alone safety projects. Each district is also required to spend an additional 2X HSIP on safety add-ons to other projects in their program. Some higher cost projects, such as roundabouts, while eligible for HSIP funds, have normally been funded through other programs.

Beginning with SFY 2017, the more centralized process for programming MnDOT projects should make it easier to utilize more HSIP funds. Minnesota will be able to shift dollars from one district to another more easily to utilize any left over funds. MnDOT has also moved to a more balanced letting schedule in the past year. This should allow for fewer surprises in cost estimates and project schedules at the end of the fiscal year.

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

N/A

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 |
| '5506-26','5503-44' | Intersection traffic control Modify control - traffic signal to roundabout | 2 Numbers | 1315356.08 | 2738755.72 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Intersections | Provide roundabouts at appropriate locations |
| '5203-102S','5203-52006A','150-070-001','5203-102','150-116-009' | Intersection traffic control Modify control - traffic signal to roundabout | 2 Numbers | 630000 | 1260000 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Intersections | Provide roundabouts at appropriate locations |
| '1906-67','1907-107' | Roadside Barrier - cable | 7 Miles | 889852.58 | 988725.09 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between opposite |

| | | | | | | | | | | | |
|-----------------------------|---|-----------|---|--------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | travel directions |
| '002-030-006','002-030-008' | Roadway delineation Improve retroreflectivity | 21 Miles | 0 | 282835 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '002-618-030' | Intersection traffic control Modify control - traffic signal to roundabout | 1 Numbers | 0 | 495000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Provide roundabouts at appropriate locations |
| '113-020-005' | Pedestrians and bicyclists Medians and pedestrian refuge areas | 1 Numbers | 0 | 140461 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Provide buffer space between opposite travel directions |

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|-----------------------------|--|-----------|---|---------|--------------------|--|---|---|-----------------------|-------------------|---|
| '004-070-007' | Roadway Rumble strips - edge or shoulder | 20 Miles | 0 | 27565.4 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '007-070-001','007-070-002' | Shoulder treatments Widen shoulder - paved or other | 15 Miles | 0 | 532764 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '010-030-007' | Pedestrians and bicyclists Pedestrian signal - modify existing | 7 Numbers | 0 | 482112 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Optimize signal operations with phasing, timing, coordination and clearance |

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|-----------------------------|--|-----------|----------|----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | intervals |
| '012-615-028','012-070-004' | Shoulder treatments Widen shoulder - paved or other | 3 Miles | 223257.9 | 223257.9 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '013-630-016' | Pedestrians and bicyclists Install new crosswalk | 1 Numbers | 0 | 225000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '013-030-004' | Shoulder treatments Widen shoulder - paved or other | 1 Numbers | 0 | 422456 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '015-607-023','015- | Shoulder treatments | 14 | 329373.9 | 329373.9 | HSIP (Section | | 0 | 0 | County Highway | Roadway | Eliminate shoulder |

| | | | | | | | | | | | |
|------------------------------------|--|---------------|-------|-------|--------------------|--|---|---|-----------------------|-------------------|---|
| 070-005' | Widen shoulder - paved or other | Miles | 3 | 3 | n 148) | | | | Agency | Departure | drop-offs, provide safety edges and wider or pave shoulders |
| '016-070-010','016-070-011' | Intersection traffic control Intersection signing - add basic advance warning | 24 Numbers | 0 | 35708 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '016-070-013' | Lighting Intersection lighting | 1 Numbers | 0 | 21600 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '017-605-022','017-070-002' | Roadway Rumble strips - edge or shoulder | 12 Miles | 41580 | 41580 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge |

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|---------------|---|-----------|---|-------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | line rumble strips on roads with narrow or no shoulders |
| '021-070-007' | Roadway signs and traffic control Curve-related warning signs and flashers | 9 Numbers | 0 | 12393 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Lane Departure | Provide wider shoulders, enhanced pavement markings and chevrons for high risk curves |
| '025-070-008' | Roadway Rumble strips - edge or shoulder | 5 Miles | 0 | 38313 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |

| | | | | | | | | | | | |
|---------------|---|---------------|--------|--------|--------------------|--|---|---|-----------------------|-------------------|---|
| '132-030-003' | Pedestrians and bicyclists Pedestrian signal - modify existing | 16 Numbers | 684455 | 684455 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Optimize signal operations with phasing, timing, coordination and clearance intervals |
| '027-030-032' | Roadway delineation Longitudinal pavement markings - new | 10 Miles | 0 | 100238 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '027-030-036' | Pedestrians and bicyclists Pedestrian signal - modify existing | 55 Numbers | 0 | 248443 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Optimize signal operations with phasing, timing, coordination |

| | | | | | | | | | | | |
|---|---|------------|---|--------|--------------------|--|---|---|-----------------------|---------------|---|
| | | | | | | | | | | | n and clearance intervals |
| '141-211-014' | Intersection traffic control Modify traffic signal - add additional signal heads | 9 Numbers | 0 | 707300 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '141-030-031','141-030-030','141-030-025','141-030-032' | Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists | 54 Numbers | 0 | 673091 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '027-619-022' | Lighting Intersection lighting | 1 Numbers | 0 | 21624 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |

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|---------------|---|-----------|--------|--------|--------------------|--|---|---|-----------------------|-------------------|---|
| '027-716-010' | Lighting Intersection lighting | 1 Numbers | 0 | 22462 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '107-030-007' | Pedestrians and bicyclists Pedestrian signal - Pedestrian Hybrid Beacon | 3 Numbers | 129725 | 129725 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Optimize signal operations with phasing, timing, coordination and clearance intervals |
| '030-070-006' | Roadway delineation Improve retroreflectivity | 35 Miles | 0 | 262538 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no |

| | | | | | | | | | | | |
|---|---|------------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | shoulders |
| '037-070-005' | Roadway Rumble strips - edge or shoulder | 5 Miles | 0 | 0 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '068-617-007','039-070-005','068-617-006','039-617-008' | Shoulder treatments Widen shoulder - paved or other | 25 Miles | 459520.14 | 510577.93 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '040-070-004' | Lighting Intersection lighting | 30 Numbers | 0 | 178279 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation |

| | | | | | | | | | | | |
|------------------------------------|---|---------------|---------------|---------------|-----------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | and lighting |
| '040-070-003' | Roadway signs and traffic control Curve-related warning signs and flashers | 50 Numbers | 0 | 63554 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Lane Departure | Provide wider shoulders, enhanced pavement markings and chevrons for high risk curves |
| '043-070-009','043-070-010' | Roadway delineation Longitudinal pavement markings - new | 128 Miles | 205073.5 1 | 205073.5 1 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '046-641-007','046-070-002' | Shoulder treatments Widen shoulder - paved or | 7 Miles | 247360 | 247360 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges |

| | | | | | | | | | | | |
|---------------|--|-------------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | other | | | | | | | | | | and wider or pave shoulders |
| '048-070-010' | Roadway delineation Longitudinal pavement markings - new | 260 Miles | 60975 | 60975 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '049-070-014' | Intersection traffic control Pavement markings - add advance stop ahead | 116 Numbers | 213300 | 213300 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '051-070-003' | Roadway delineation Improve retroreflectivity | 33 Miles | 142471.97 | 142471.97 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge |

| | | | | | | | | | | | |
|---|--|------------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|--|
| | | | | | | | | | | | line rumble strips on roads with narrow or no shoulders |
| '054-070-004','054-070-006','054-639-036','054-070-005','054-639-037','054-624-011','054-649-005' | Shoulder treatments Widen shoulder - paved or other | 20 Miles | 421961.93 | 421961.93 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '056-070-018','056-070-015','056-070-016','056-070-017' | Roadway widening - curve | 94 Numbers | 1066000 | 1066000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Provide wider shoulders, enhanced pavement markings and chevrons for high-risk |

| | | | | | | | | | | | |
|-----------------------------------|---|------------|------------|------------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | curves |
| '057-070-004','057-603-035' | Shoulder treatments Widen shoulder - paved or other | 13 Miles | 0 | 182052.74 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '5811-58X03','5811-12S','5811-12' | Intersection geometry Auxiliary lanes - add left-turn lane | 1 Numbers | 1018856.57 | 1132062.85 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Intersections | Provide auxiliary lanes |
| '059-070-004' | Roadway delineation Improve retroreflectivity | 13.5 Miles | 0 | 70861.4 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '065-070- | Roadway Rumble | 7 Miles | 0 | 14388.57 | HSIP (Section | | 0 | 0 | County Highway | Roadway | Install enhanced |

| | | | | | | | | | | | |
|--|---|------------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|--|
| 007' | strips - edge or shoulder | | | | n 148) | | | | Agency | Departure | pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '066-070-012' | Roadside Removal of roadside objects (trees, poles, etc.) | 12 Numbers | 222113.7 | 222113.7 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate roadside hazards |
| '066-070-013','066-629-014','066-070-015','066-070-014','066-621-004' | Shoulder treatments Widen shoulder - paved or other | 7 Miles | 675572.69 | 675572.69 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '069-070-016' | Intersection traffic control Pavement | 77 Numbers | 108933.3 | 108933.3 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing |

| | | | | | | | | | | | |
|-----------------------------|---|-------------|----------|----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | markings - add advance stop ahead | | | | | | | | | | enhanced signing, delineation and lighting |
| '069-070-021','069-070-022' | Roadway delineation Longitudinal pavement markings - new | 97 Miles | 130084.2 | 130084.2 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '069-070-015' | Lighting Intersection lighting | 57 Numbers | 117000 | 117000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '069-070-013' | Roadway signs and traffic control | 117 Numbers | 117000 | 117000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Lane Departure | Provide wider shoulders, enhanced |

| | | | | | | | | | | | |
|--------------------------|--|-----------|---|----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | Curve-related warning signs and flashers | | | | | | | | | | pavement markings and chevrons for high risk curves |
| '069-070-014' | Roadway Rumble strips - edge or shoulder | 3 Miles | 0 | 92761.92 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '8821-270','069-070-017' | Advanced technology and ITS Advanced technology and ITS - other | 7 Numbers | 0 | 322554 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Provide dynamic warning signs to alert drivers of conflicts at stop-controlled intersections |

| | | | | | | | | | | | |
|---|--|---------------|----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| '070-030-008','07005-117' | Pedestrians and bicyclists Pedestrian signal - modify existing | 37 Numbers | 0 | 307000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Pedestrians | Optimize signal operations with phasing, timing, coordination and clearance intervals |
| '071-070-030','071-070-028','071-070-029','071-070-025','071-070-027','071-070-026' | Shoulder treatments Widen shoulder - paved or other | 12 Miles | 0 | 509506.12 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder drop-offs, provide safety edges and wider or pave shoulders |
| '073-070-011' | Advanced technology and ITS Advanced technology and ITS - other | 1 Numbers | 85230.12 | 85230.12 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Provide dynamic warning signs to alert drivers of conflicts at stop- |

| | | | | | | | | | | | |
|---------------------|---|----------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | controlled intersections |
| '074-070-004' | Roadway delineation Longitudinal pavement markings - new | 42 Miles | 47841.11 | 47841.11 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '077-070-006' | Roadway delineation Improve retroreflectivity | 43 Miles | 225292.32 | 225292.32 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '079-070-007','079- | Shoulder treatments | 6 Miles | 269968.23 | 269968.23 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Eliminate shoulder |

| | | | | | | | | | | | |
|---|---|-----------|------------|------------|--------------------|--|---|---|-----------------------|---------------|---|
| 602-039,'079-625-015' | Widen shoulder - paved or other | | | | n 148) | | | | Agency | | drop-offs, provide safety edges and wider or pave shoulders |
| '080-070-004' | Lighting Intersection lighting | 2 Numbers | 0 | 26280 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '082-615-028' | Intersection geometry Auxiliary lanes - add right-turn lane | 1 Numbers | 0 | 354240 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Provide auxiliary lanes |
| '8601-63','8602-50','8604-43','8602-97517' | Interchange design Interchange design - other | 1 Numbers | 2109948.58 | 2345864.73 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Intersections | Use indirect left-turn treatments and access management to minimize |

| | | | | | | | | | | | |
|-----------------------------|---|-----------|---|------------|--------------------|--|---|---|-----------------------|-------------------|---|
| | | | | | | | | | | | conflicts at divided highway intersections |
| '086-070-011' | Lighting Intersection lighting | 8 Numbers | 0 | 108000 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Intersections | Improve intersection visibility by providing enhanced signing, delineation and lighting |
| '087-070-007','087-070-006' | Roadway delineation Improve retroreflectivity | 24 Miles | 0 | 190485 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '1480-169','2180-106' | Roadside Barrier - cable | 22 Miles | 0 | 2118384.15 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between |

| | | | | | | | | | | | opposite travel directions |
|---------------|---|-----------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| '088-070-039' | Roadway Rumble strips - edge or shoulder | 226 Miles | 341526.57 | 341526.57 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '8825-503' | Roadway delineation Improve retroreflectivity | 34 Miles | 841106.4 | 934562.67 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '8828-134' | Roadway Rumble | 255 Miles | 330673.81 | 367415.34 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Roadway Departure | Install enhanced |

| | | | | | | | | | | | |
|---------------|--|----------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | strips - edge or shoulder | | | | n 148) | | | | Agency | | pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '088-070-044' | Roadway delineation Improve retroreflectivity | 85 Miles | 429300.53 | 429300.53 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '8822-171' | Roadway signs and traffic control Curve-related warning signs and | 0 Miles | 0 | 0 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Lane Departure | Provide wider shoulders, enhanced pavement markings and chevrons for |

| | | | | | | | | | | | |
|--------------------------------|--|-------------|-----------|-----------|--------------------|--|---|---|-----------------------|-------------------|---|
| | flashers | | | | | | | | | | high risk curves |
| '8822-164' | Roadway Rumble strips - edge or shoulder | 326 Miles | 284576.47 | 316196.08 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Roadway Departure | Install enhanced pavement markings and edge line rumble strips on roads with narrow or no shoulders |
| '088-070-046' | Roadway signs and traffic control Curve-related warning signs and flashers | 231 Numbers | 0 | 202680 | HSIP (Section 148) | | 0 | 0 | County Highway Agency | Lane Departure | Provide wider shoulders, enhanced pavement markings and chevrons for high risk curves |
| '6406-24','018-070-010','7305- | Advanced technology and ITS Advanced | 5 Numbers | 292050 | 592000 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Intersections | Provide dynamic warning signs to |

| | | | | | | | | | | | |
|--|--|-----------|-----------|-----------|--------------------------------|--|---|---|-----------------------|-------------------|---|
| 117','8816-2274','1806-74','7102-132' | technology and ITS - other | | | | | | | | | | alert drivers of conflicts at stop-controlled intersections |
| '1380-85' | Roadside Barrier - cable | 7 Miles | 881202.22 | 979113.58 | HSIP (Section 148) | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between opposite travel directions |
| '1805-78','1809-90' | Intersection geometry Auxiliary lanes - add left-turn lane | 1 Numbers | 345000 | 595568 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Intersections | Provide auxiliary lanes |
| '2773-12','2775-24','2732-104' | Roadside Barrier - cable | 5 Miles | 1056608.2 | 1056608 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between opposite travel directions |
| '037-070-005' | Roadway delineation Improve retroreflectiv | 5 Miles | 122400 | 135853 | Penalty Transfer – Section | | 0 | 0 | County Highway Agency | Roadway Departure | Install enhanced pavement markings |

| | | | | | | | | | | | |
|------------------------------|---|-----------|-----------|-----------|--------------------------------|--|---|---|----------------------|----------------|---|
| | ity | | | | 164 | | | | | | and edge line rumble strips on roads with narrow or no shoulders |
| '7102-131' | Roadside Barrier - cable | 4 Miles | 533400 | 533400 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between opposite travel directions |
| '8816-2144' | Non-infrastructure Transportation safety planning | 1 Numbers | 584137 | 584137 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Data | Develop an action plan with recommended strategies across safety disciplines and partners |
| '1480-169','2180-106' | Roadside Barrier - cable | 22 Miles | 763844.65 | 763844.65 | Penalty Transfer – | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between |

| | | | | | | | | | | | |
|--|--|------------|------------|---------|--------------------------------|--|---|---|----------------------|--|---|
| | | | | | Section 164 | | | | | | opposite travel directions |
| '2701-51','6243-16','0214-44','1017-103','2762-98' | Roadside Barrier - cable | 11 Miles | 2037139.15 | 2037139 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Lane Departure | Provide buffer space between opposite travel directions |
| '8822-171' | Roadway signs and traffic control Curve-related warning signs and flashers | 50 Numbers | 44597 | 44597 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Lane Departure | Provide wider shoulders, enhanced pavement markings and chevrons for high risk curves |
| '880C-TZDC-16' | Non-infrastructure Transportation safety planning | 6 Numbers | 485000 | 485000 | Penalty Transfer – Section 164 | | 0 | 0 | State Highway Agency | Toward Zero Deaths Regional Coordinators | Develop workshops for safety leaders and practitioners to establish a common |

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|---|
| | | | | | | | | | | | understandi ng of traffic safety culture |
| | | | | | | | | | | | |

Progress in Achieving Safety Performance Targets

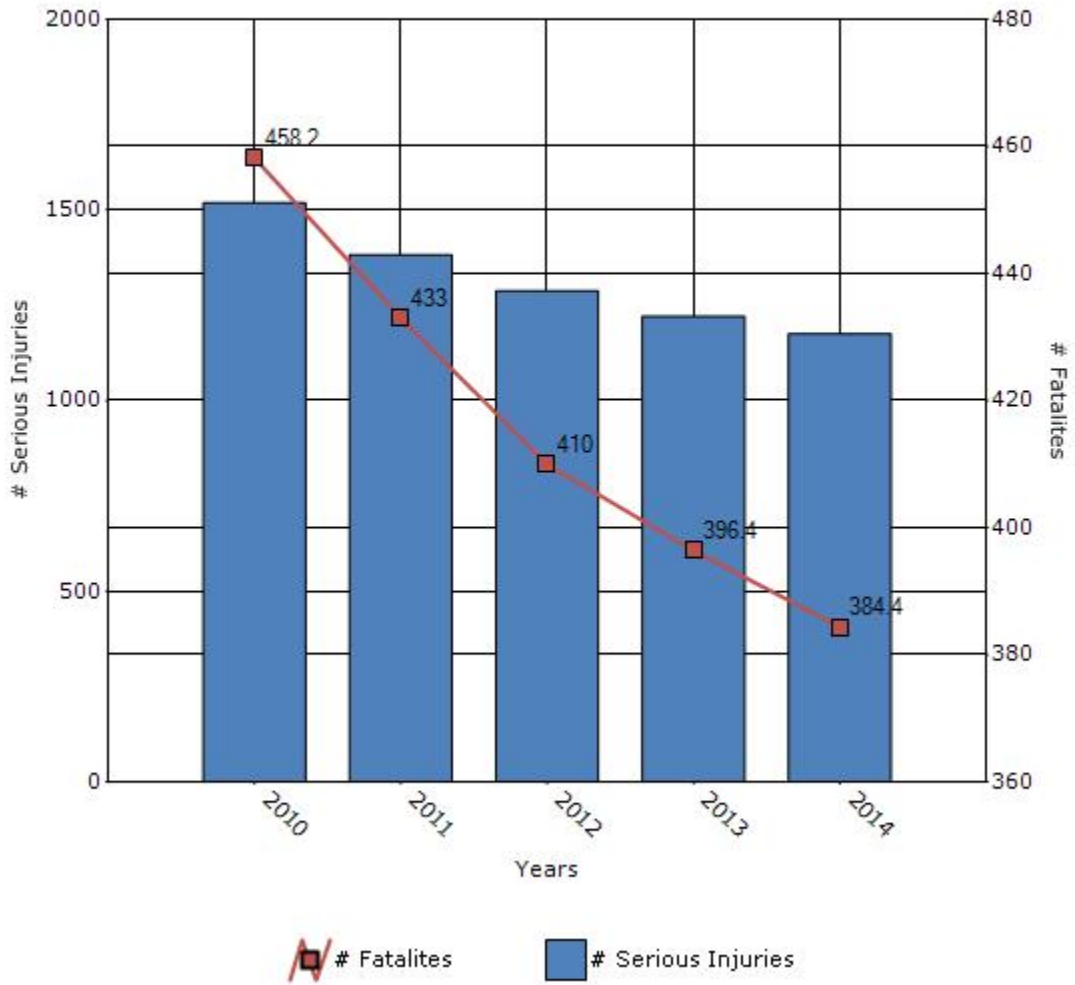
Overview of General Safety Trends

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

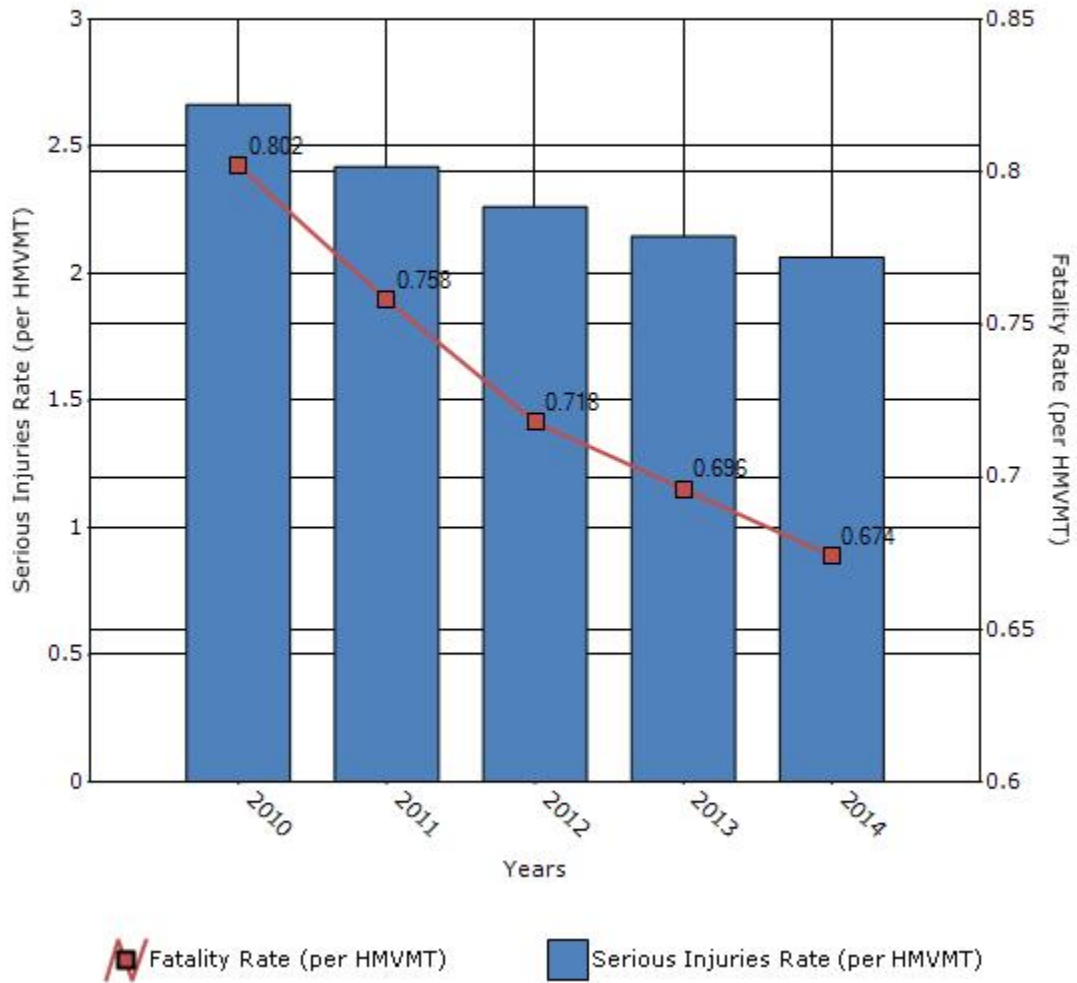
| Performance Measures* | 2010 | 2011 | 2012 | 2013 | 2014 |
|---------------------------------|-------|-------|--------|-------|--------|
| Number of fatalities | 458.2 | 433 | 410 | 396.4 | 384.4 |
| Number of serious injuries | 1519 | 1382 | 1288.4 | 1221 | 1175.6 |
| Fatality rate (per HMVMT) | 0.802 | 0.758 | 0.718 | 0.696 | 0.674 |
| Serious injury rate (per HMVMT) | 2.664 | 2.42 | 2.262 | 2.146 | 2.064 |

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

Number of Fatalities and Serious injuries for the Last Five Years



Rate of Fatalities and Serious injuries for the Last Five Years



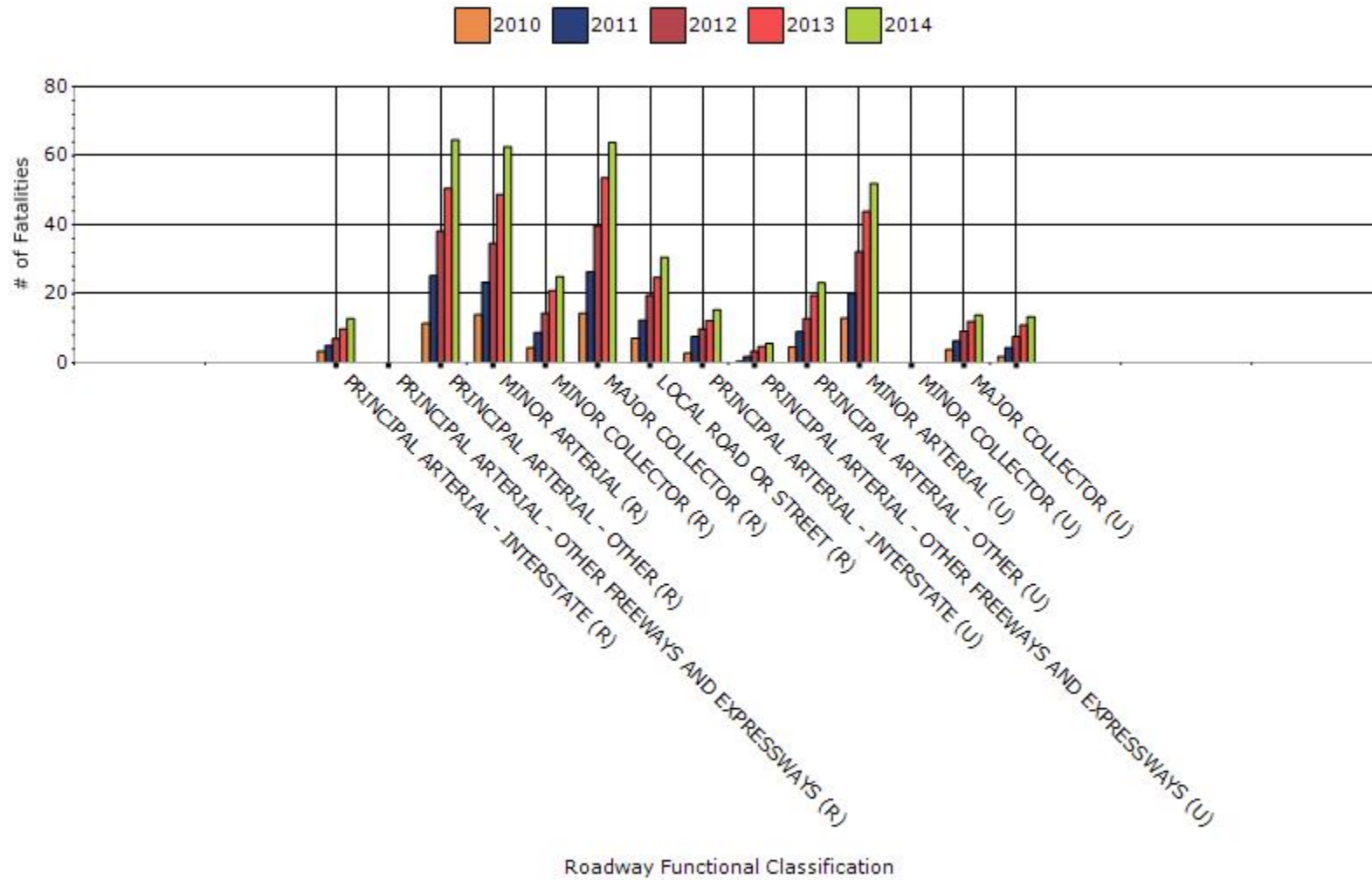
To the maximum extent possible, present performance measure* data by functional classification and ownership.

Year - 2014

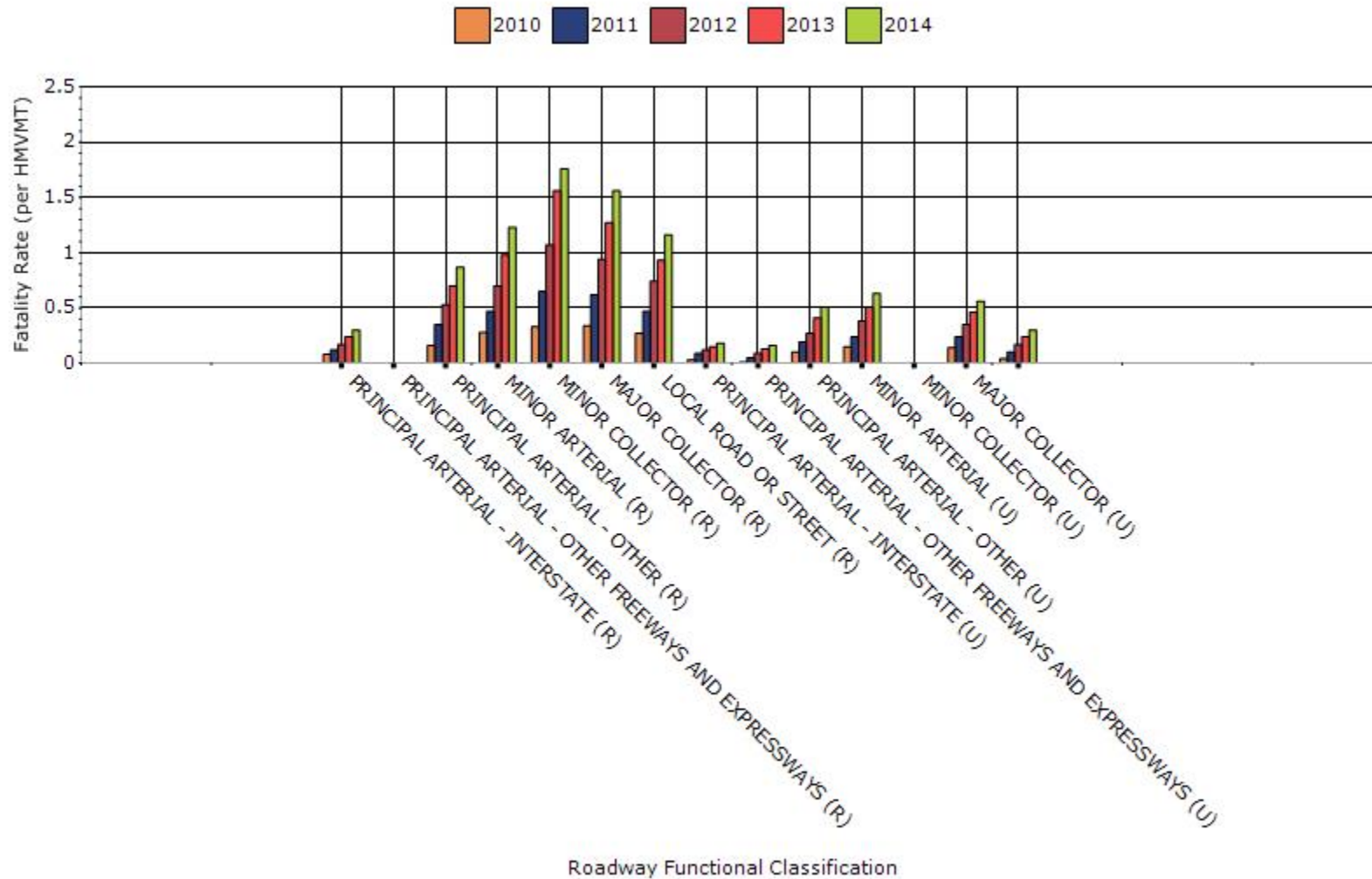
| Function Classification | Number of fatalities | Number of serious injuries | Fatality rate (per HMVMT) | Serious injury rate (per HMVMT) |
|---|----------------------|----------------------------|---------------------------|---------------------------------|
| RURAL PRINCIPAL ARTERIAL - INTERSTATE | 12.8 | 27.2 | 0.3 | 0.67 |
| RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS | 0 | 0 | 0 | 0 |
| RURAL PRINCIPAL ARTERIAL - OTHER | 64.6 | 123.2 | 0.87 | 1.73 |
| RURAL MINOR ARTERIAL | 62.6 | 126 | 1.23 | 2.63 |
| RURAL MINOR COLLECTOR | 25 | 57.2 | 1.76 | 4.31 |
| RURAL MAJOR COLLECTOR | 63.8 | 156.6 | 1.56 | 3.81 |
| RURAL LOCAL ROAD OR STREET | 30.6 | 81.6 | 1.16 | 3.18 |
| URBAN PRINCIPAL | 15.4 | 82 | 0.18 | 0.97 |

| | | | | |
|--|------|-------|------|------|
| ARTERIAL - INTERSTATE | | | | |
| URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS | 5.6 | 40.4 | 0.16 | 1.15 |
| URBAN PRINCIPAL ARTERIAL - OTHER | 23.2 | 31.8 | 0.51 | 0.7 |
| URBAN MINOR ARTERIAL | 52 | 113.6 | 0.63 | 1.4 |
| URBAN MINOR COLLECTOR | 0 | 0 | 0 | 0 |
| URBAN MAJOR COLLECTOR | 13.8 | 221.4 | 0.56 | 8.6 |
| URBAN LOCAL ROAD OR STREET | 13.4 | 82.2 | 0.3 | 1.83 |

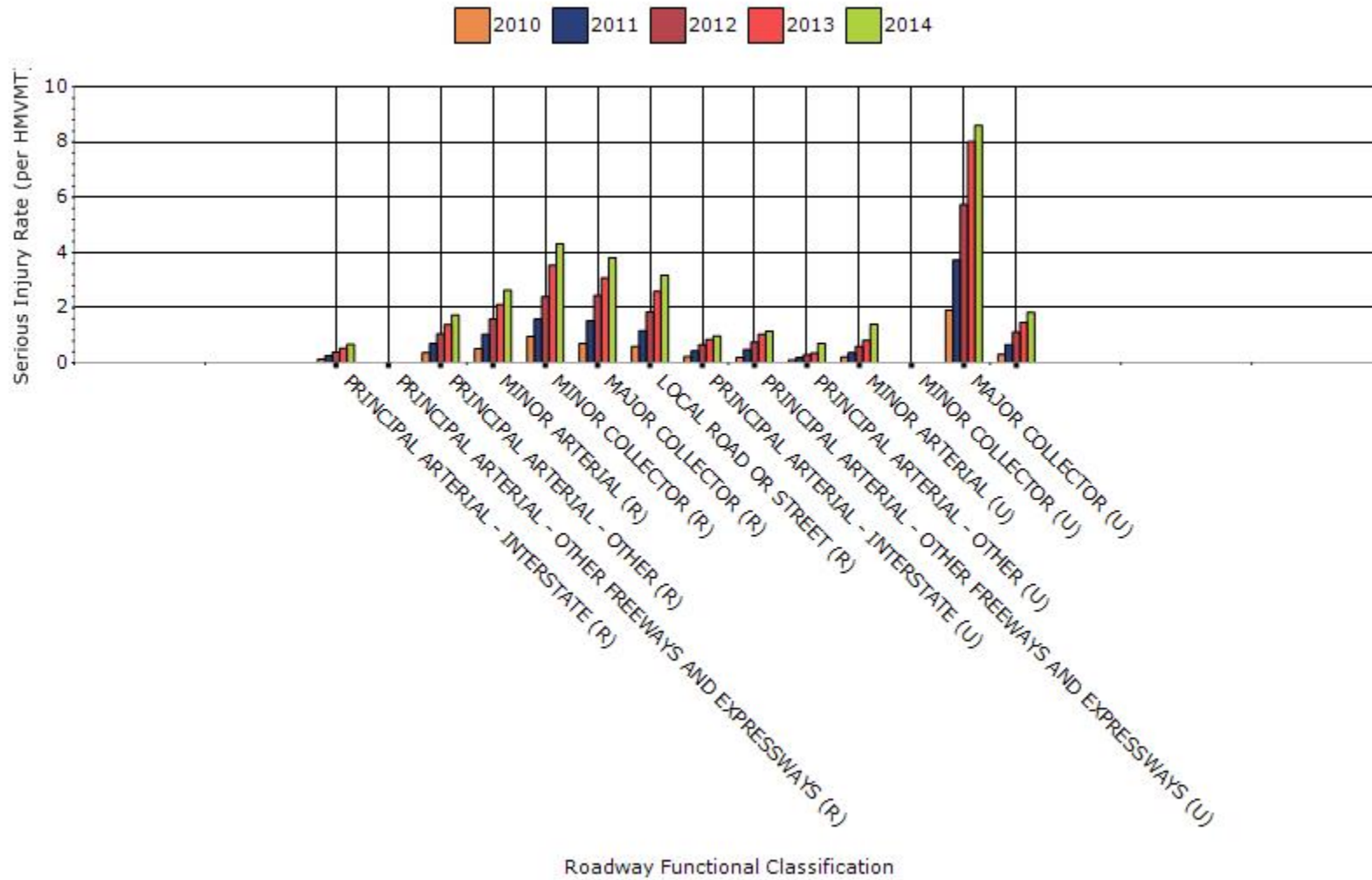
Fatalities by Roadway Functional Classification



Fatality Rate by Roadway Functional Classification



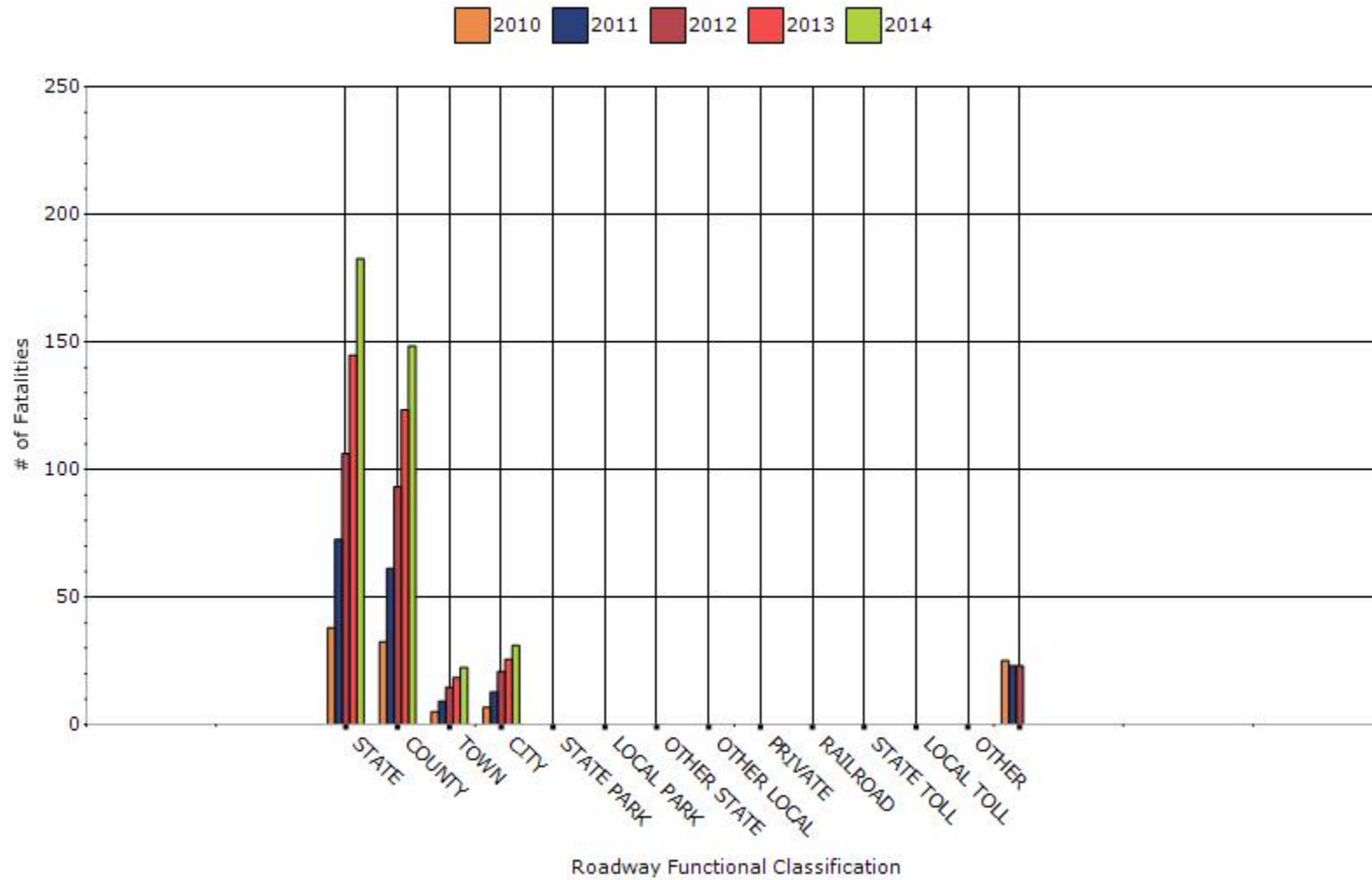
Serious Injury Rate by Roadway Functional Classification



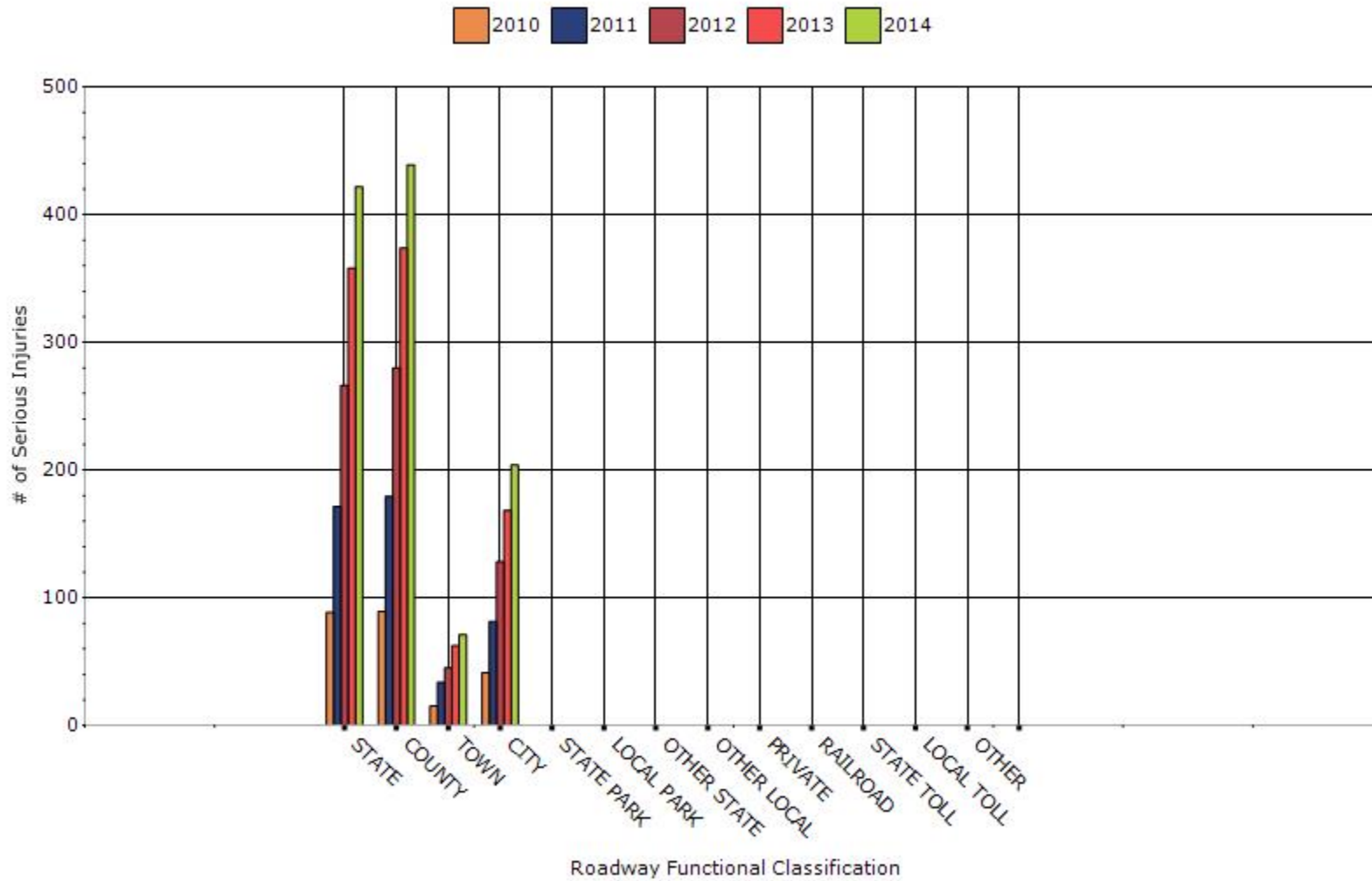
Year - 2014

| Roadway Ownership | Number of fatalities | Number of serious injuries | Fatality rate (per HMVMT) | Serious injury rate (per HMVMT) |
|---|----------------------|----------------------------|---------------------------|---------------------------------|
| STATE HIGHWAY AGENCY | 182.6 | 421.8 | 0.56 | 1.28 |
| COUNTY HIGHWAY AGENCY | 148.4 | 439 | 1.08 | 3.21 |
| TOWN OR TOWNSHIP HIGHWAY AGENCY | 22.4 | 71 | 1.76 | 5.75 |
| CITY OF MUNICIPAL HIGHWAY AGENCY | 31 | 204 | 0.34 | 2.12 |
| STATE PARK, FOREST, OR RESERVATION AGENCY | 0 | 0 | 0 | 0 |
| LOCAL PARK, FOREST OR RESERVATION AGENCY | 0 | 0 | 0 | 0 |
| OTHER STATE AGENCY | 0 | 0 | 0 | 0 |
| OTHER LOCAL AGENCY | 0 | 0 | 0 | 0 |
| PRIVATE (OTHER THAN RAILROAD) | 0 | 0 | 0 | 0 |
| RAILROAD | 0 | 0 | 0 | 0 |
| STATE TOLL AUTHORITY | 0 | 0 | 0 | 0 |
| LOCAL TOLL AUTHORITY | 0 | 0 | 0 | 0 |
| OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY) | 0 | 0 | 0 | 0 |
| OTHER | 0 | 0 | 0 | 0 |

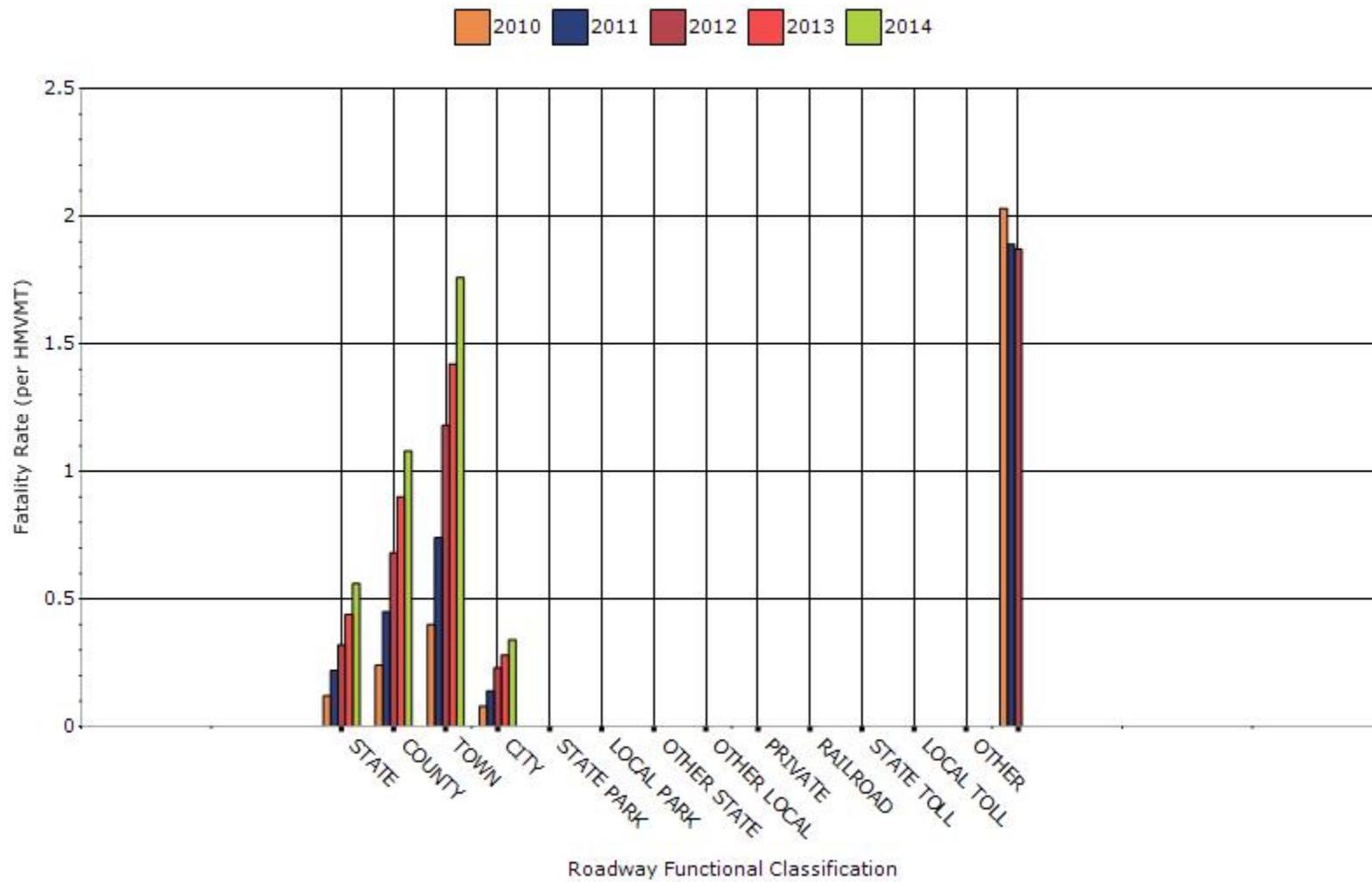
Number of Fatalities by Roadway Ownership



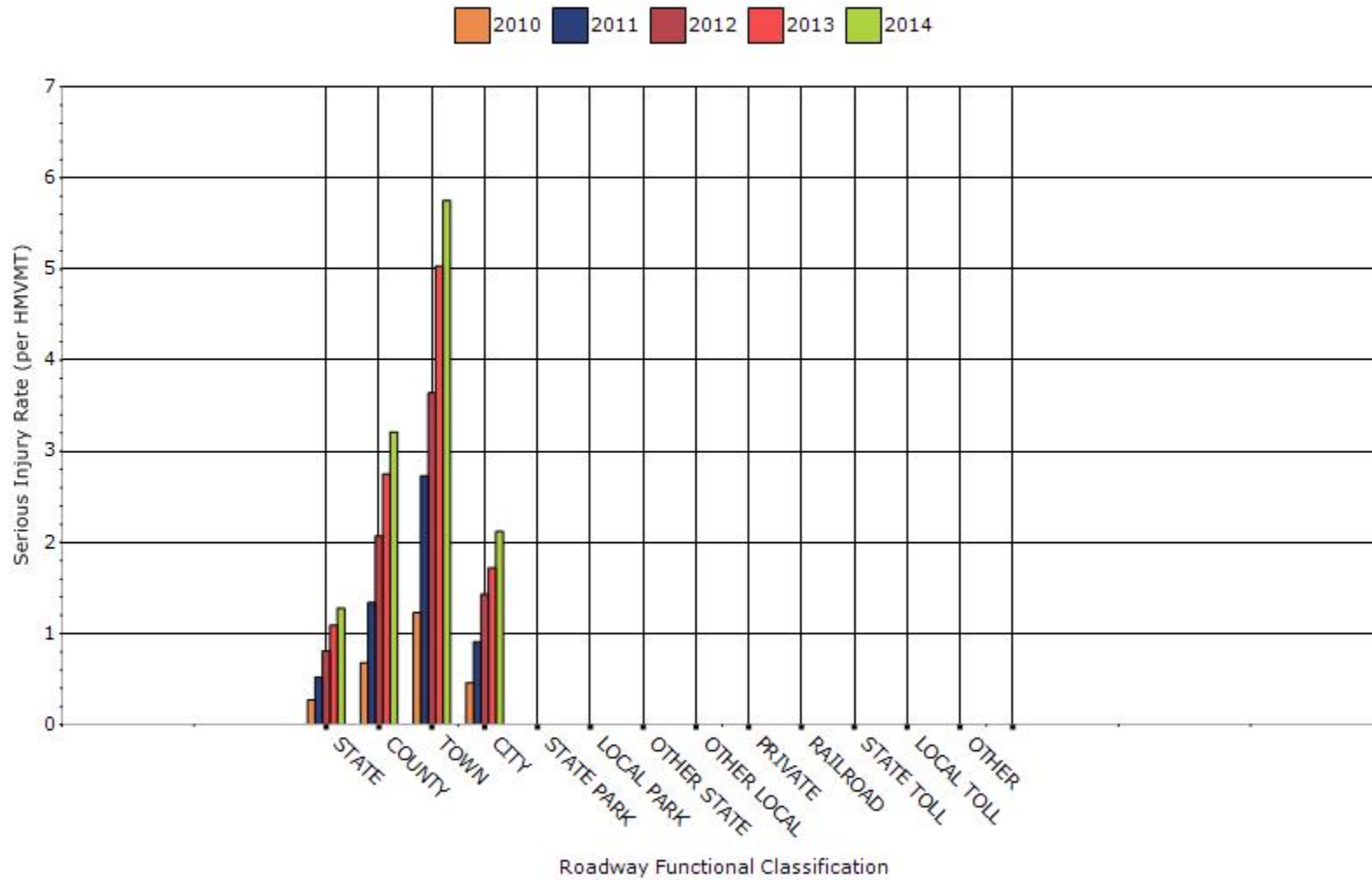
Number of Serious Injuries by Roadway Ownership



Fatality Rate by Roadway Ownership



Serious Injury Rate by Roadway Ownership



The numbers reported for serious injuries and fatalities on township roads include township roads and all other crashes in Minnesota not on State, County or City Roads.

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

In 2014, Minnesota experienced a total of 361 traffic fatalities. That is a 6.7% decrease from 2013. The decrease is encouraging in light of the fact that traffic fatalities have decreased sharply during the past decade. The VMT based fatality rate for 2014 is 0.63, one of the lowest in the nation. The VMT fatality rate continues to show improvement over the last two decades.

While Minnesota saw a slight increase in the number of property damage crashes during 2014, all other types of injury crashes were down from 2013.

Application of Special Rules

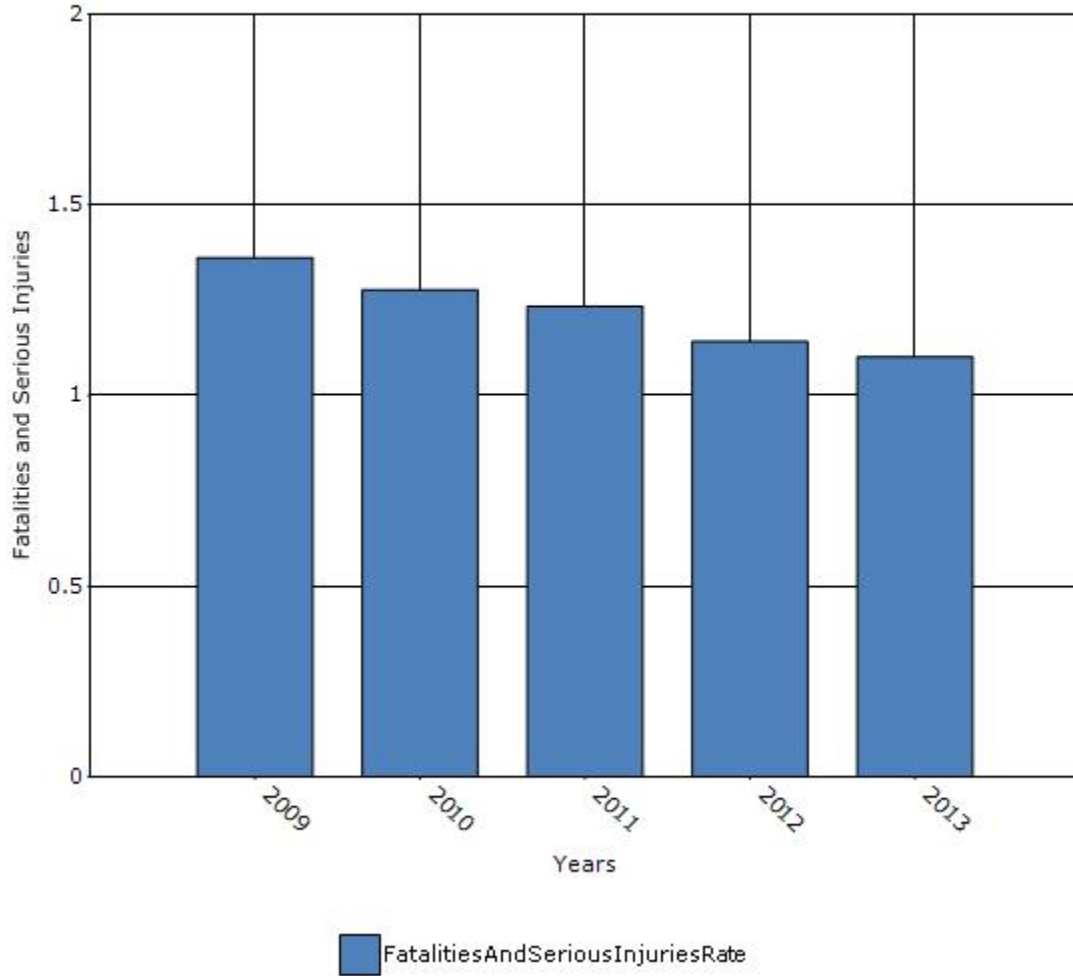
Present the rate of traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65.

| Older Driver Performance Measures | 2009 | 2010 | 2011 | 2012 | 2013 |
|--|-------------|-------------|-------------|-------------|-------------|
| Fatality rate (per capita) | 0.524 | 0.5 | 0.486 | 0.454 | 0.438 |
| Serious injury rate (per capita) | 0.822 | 0.764 | 0.734 | 0.692 | 0.668 |
| Fatality and serious injury rate (per capita) | 1.362 | 1.278 | 1.234 | 1.142 | 1.102 |

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

See also attached Excel file with formulas and graphs.

Rate of Fatalities and Serious injuries for the Last Five Years



Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program Evaluation)

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

None

Benefit/cost

Policy change

Other: Other-Minnesota is tracking the number of miles touched by HSIP as an indicator of success. Each group of countermeasures will be studied for their effectiveness at reducing fatal and serious injury crashes. Six inch edgelines was the first countermeasure with enough years of data to be studied properly. As more years, of data are collected, Minnesota will conduct more studies.

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.

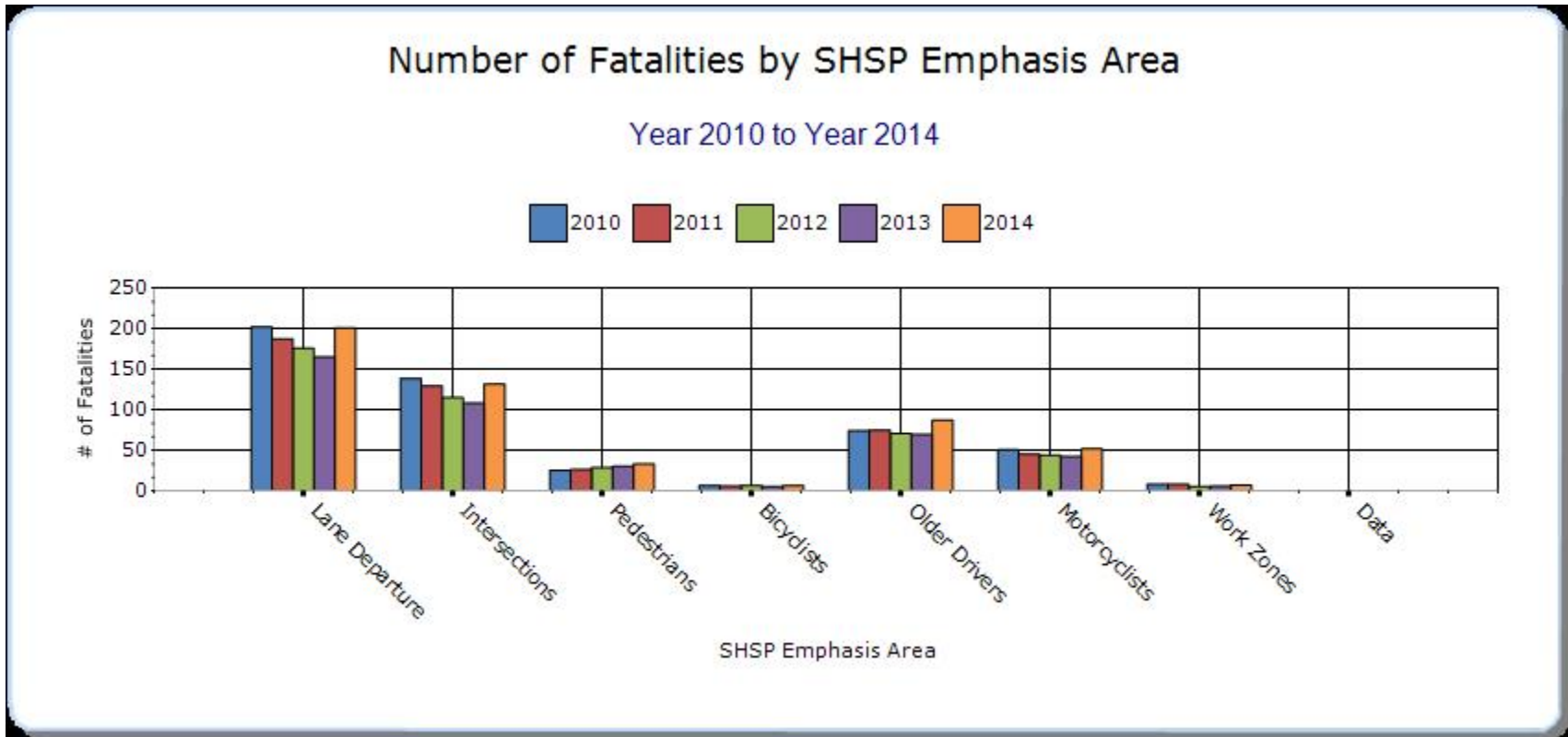
N/A

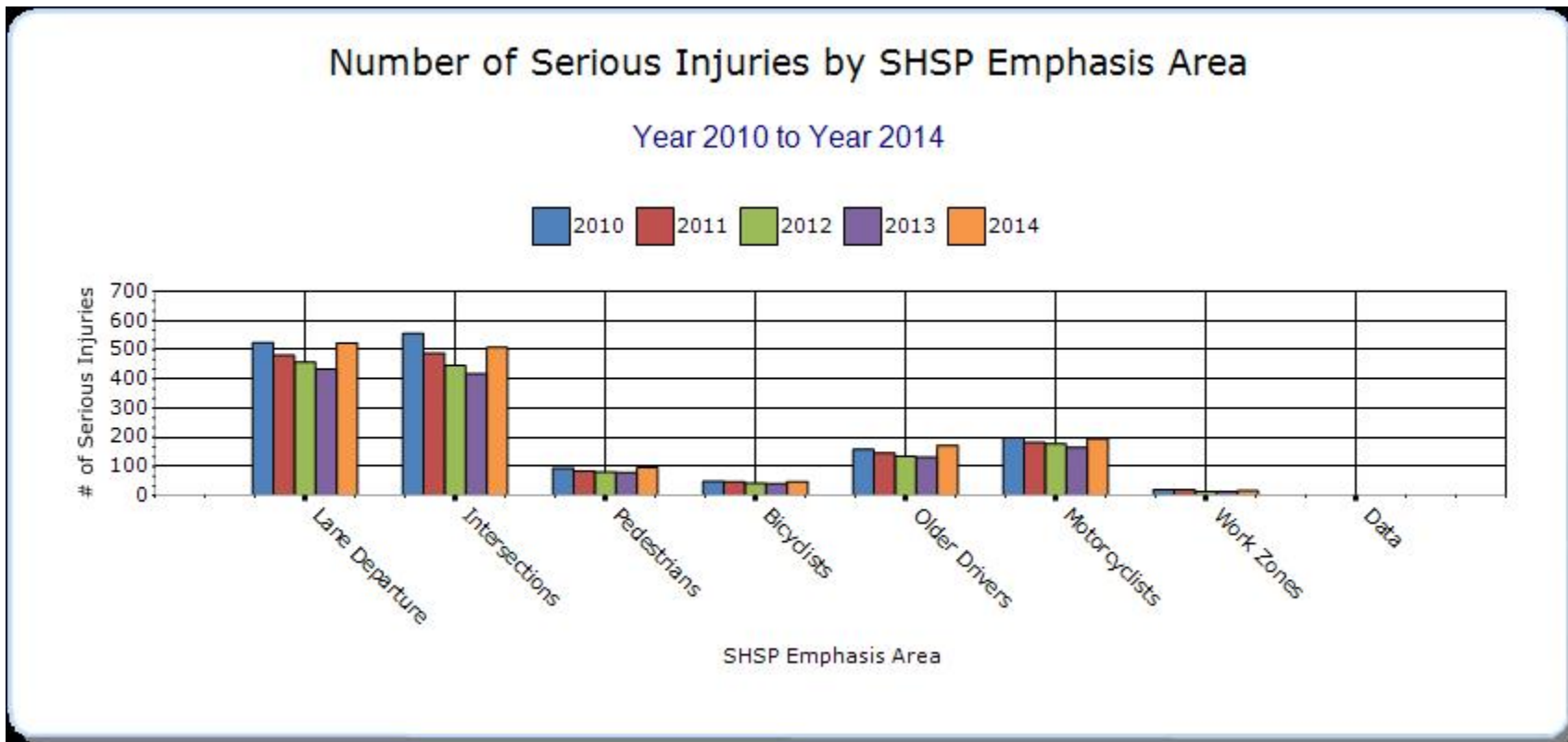
SHSP Emphasis Areas

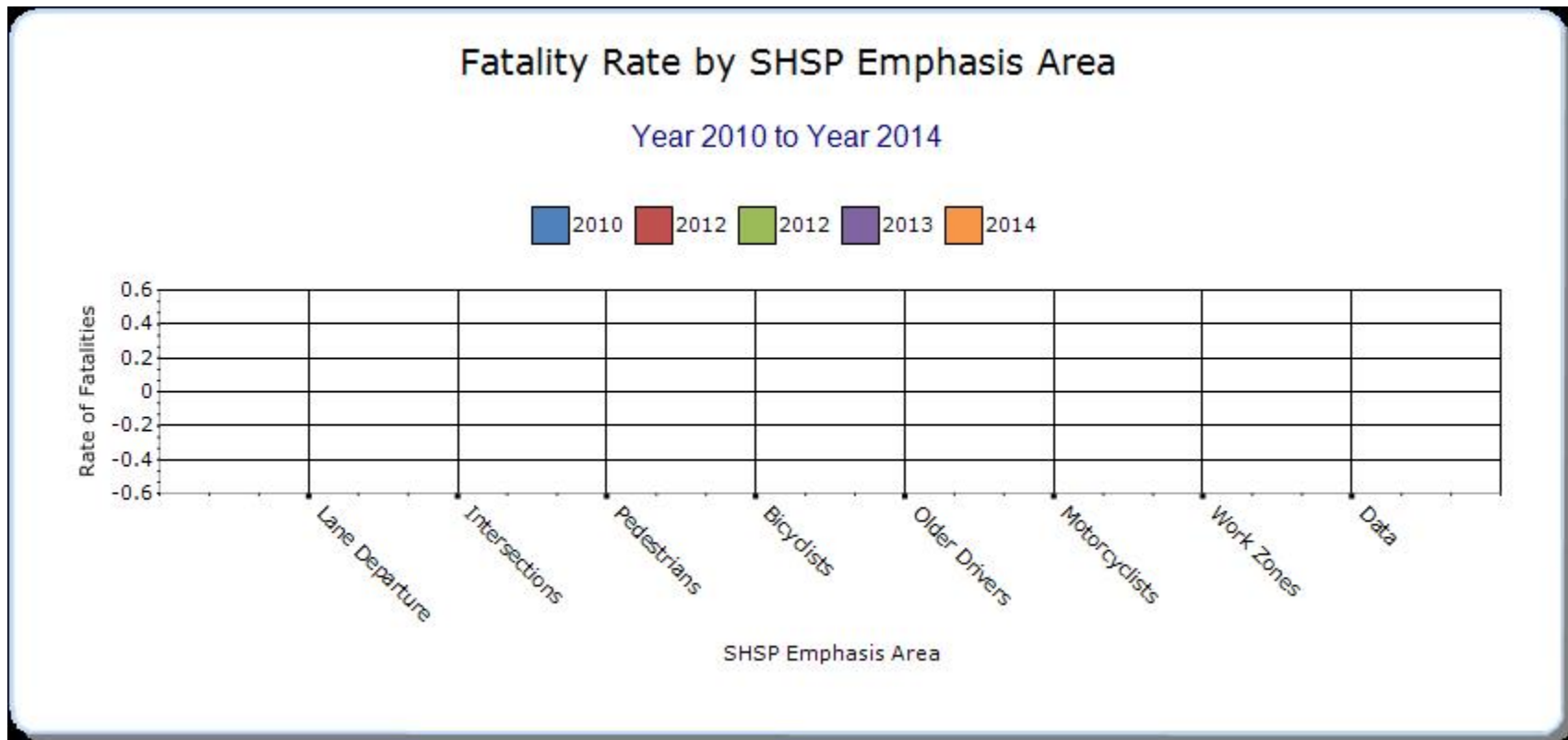
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

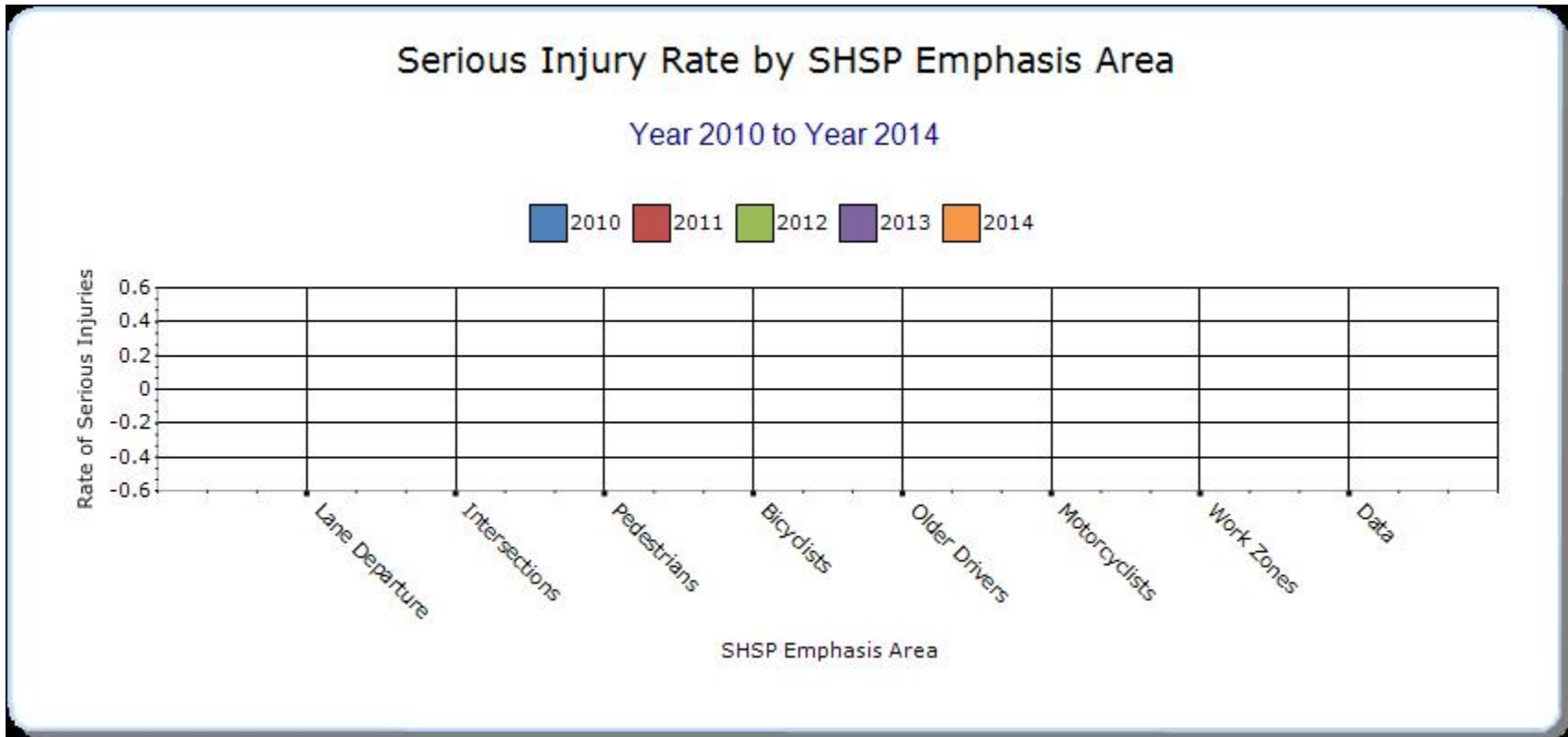
Year - 2013

| HSIP-related SHSP Emphasis Areas | Target Crash Type | Number of fatalities | Number of serious injuries | Fatality rate (per HMVMT) | Serious injury rate (per HMVMT) | Other-1 | Other-2 | Other-3 |
|----------------------------------|-------------------|----------------------|----------------------------|---------------------------|---------------------------------|---------|---------|---------|
| Lane Departure | | 165.2 | 433.8 | 0 | 0 | 0 | 0 | 0 |
| Intersections | | 108 | 417 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | | 30.2 | 78.2 | 0 | 0 | 0 | 0 | 0 |
| Bicyclists | | 5.6 | 40.2 | 0 | 0 | 0 | 0 | 0 |
| Older Drivers | | 69.4 | 131 | 0 | 0 | 0 | 0 | 0 |
| Motorcyclists | | 42.4 | 164.2 | 0 | 0 | 0 | 0 | 0 |
| Work Zones | | 5.8 | 13 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | |





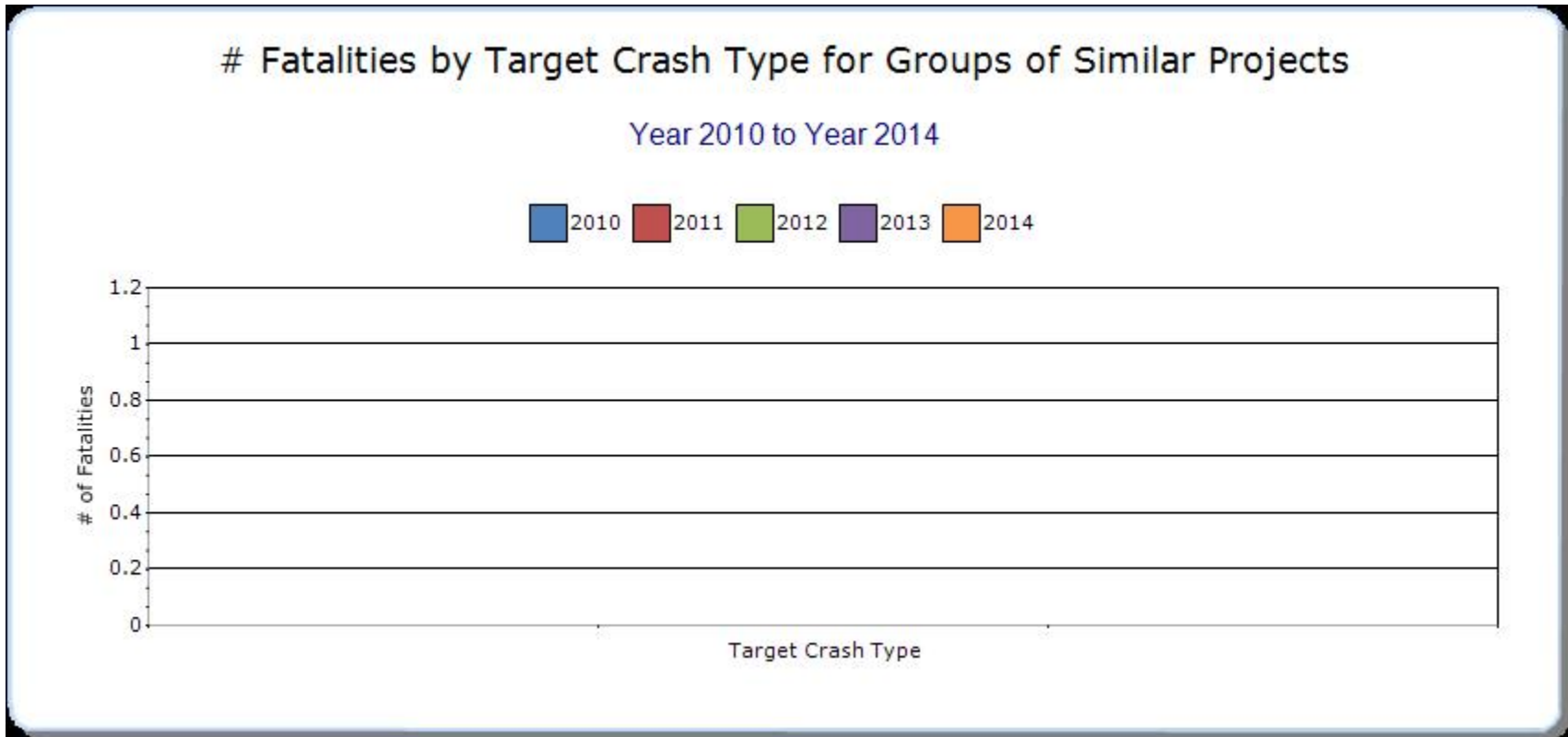


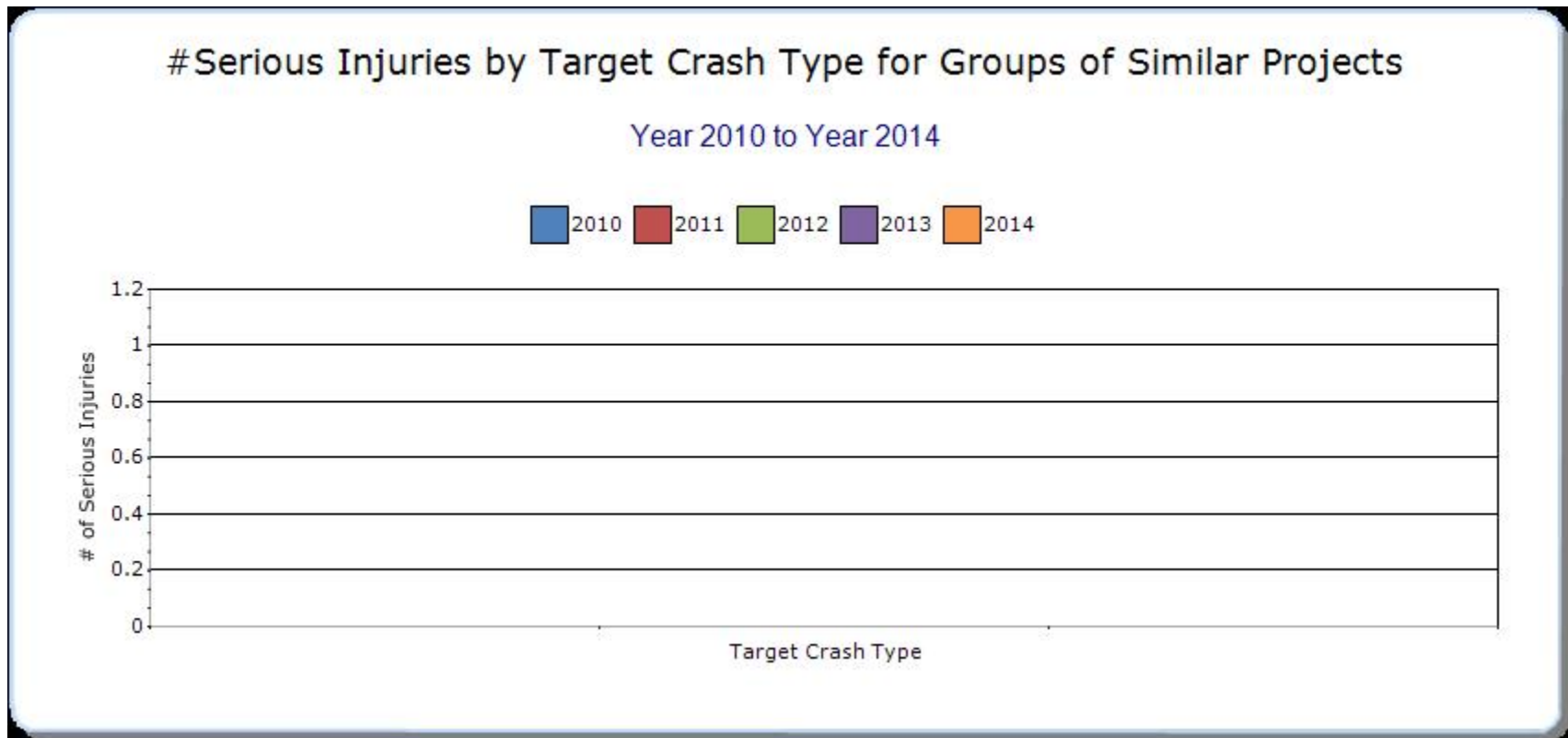


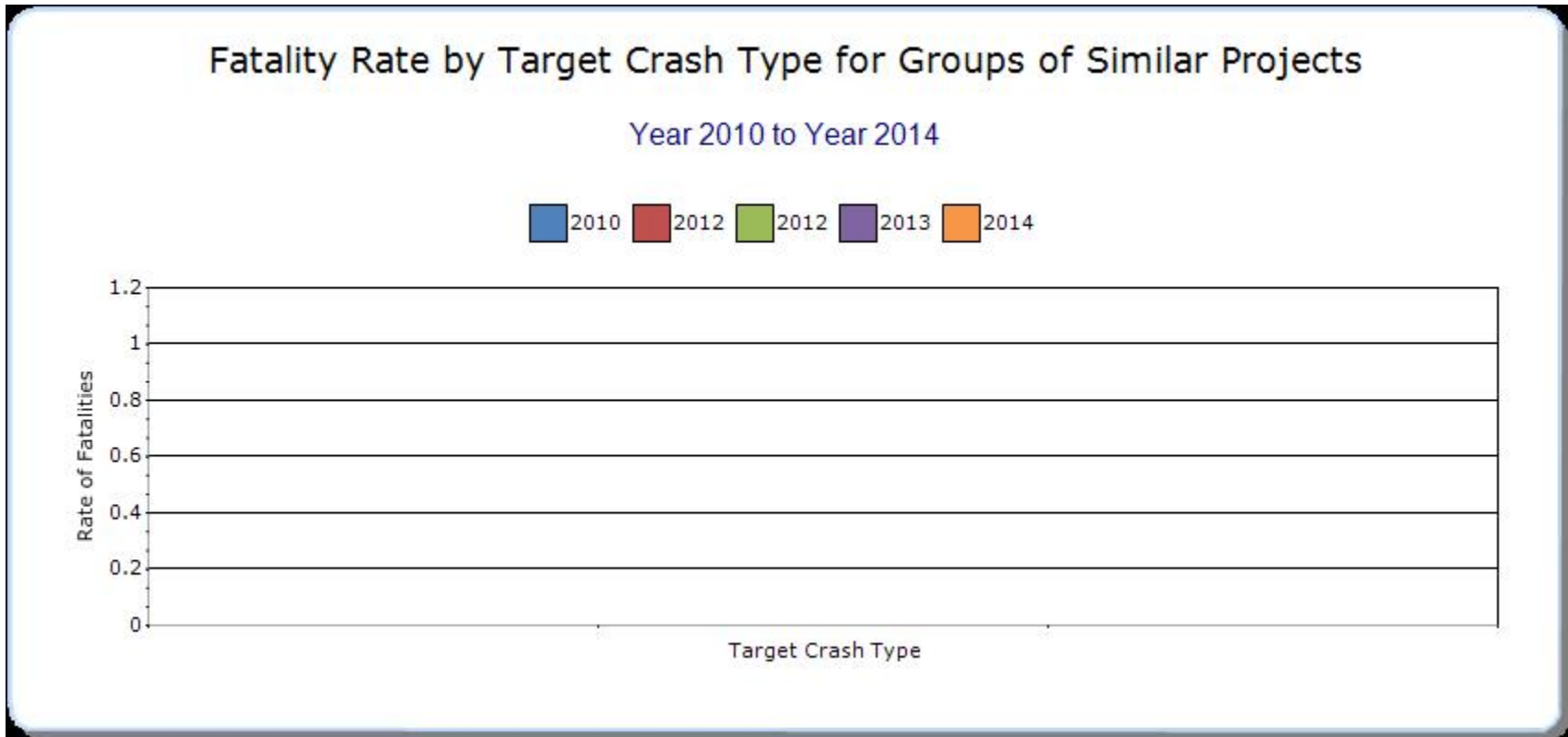
Groups of similar project types

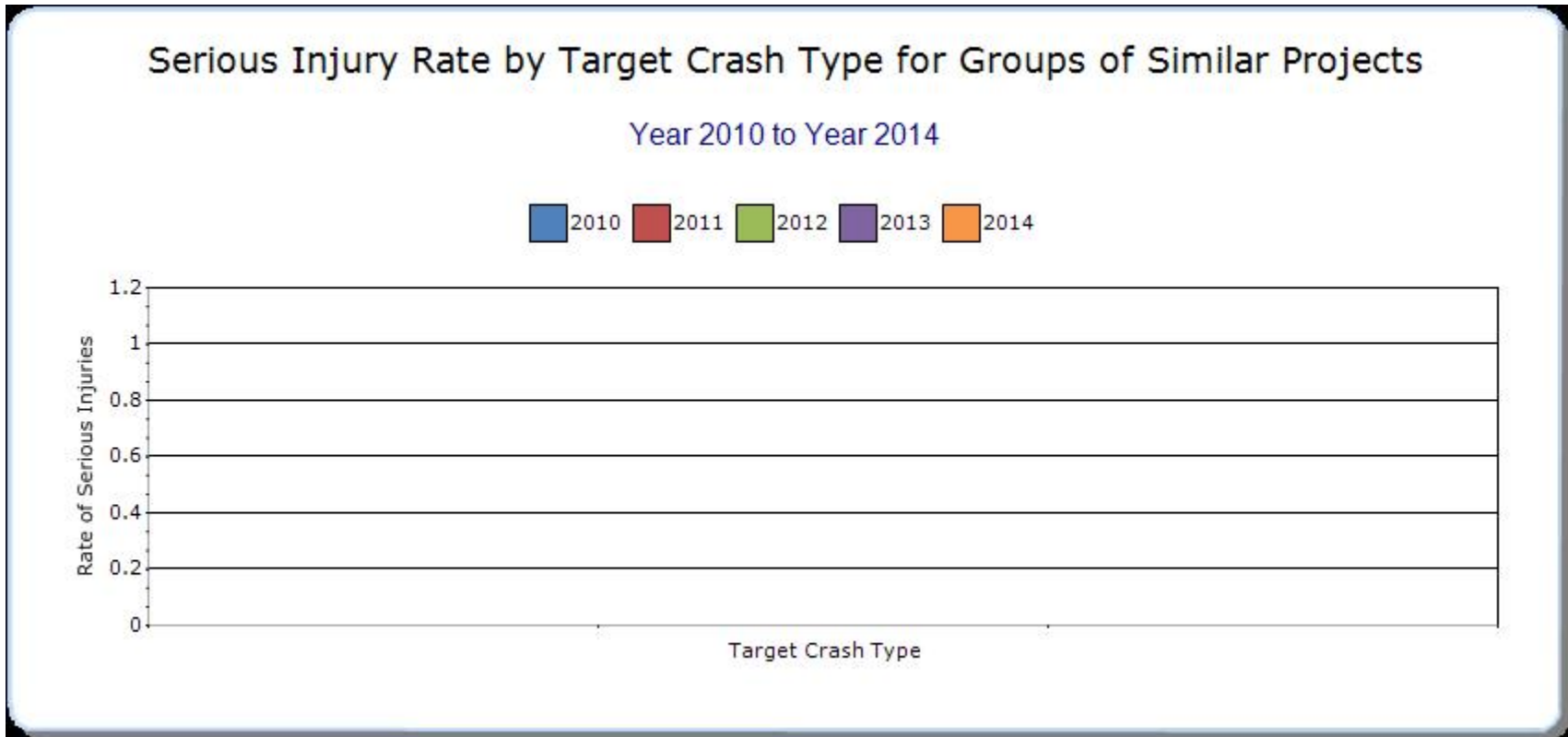
Present the overall effectiveness of groups of similar types of projects.

| 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 |
|------------------------|-------------------|----------------------|----------------------------|---------------------------|---------------------------------|---------|---------|---------|
| | | | | | | | | |





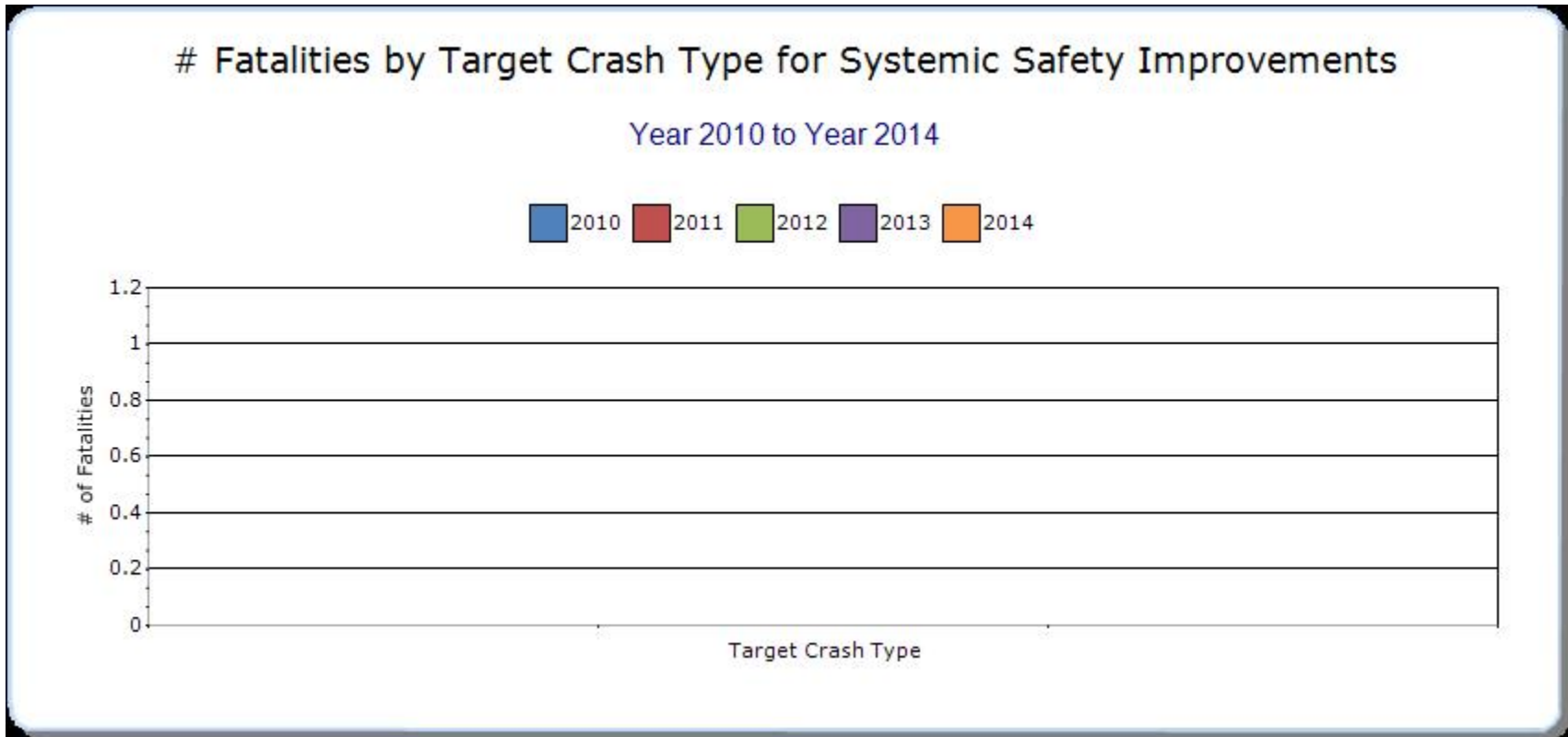


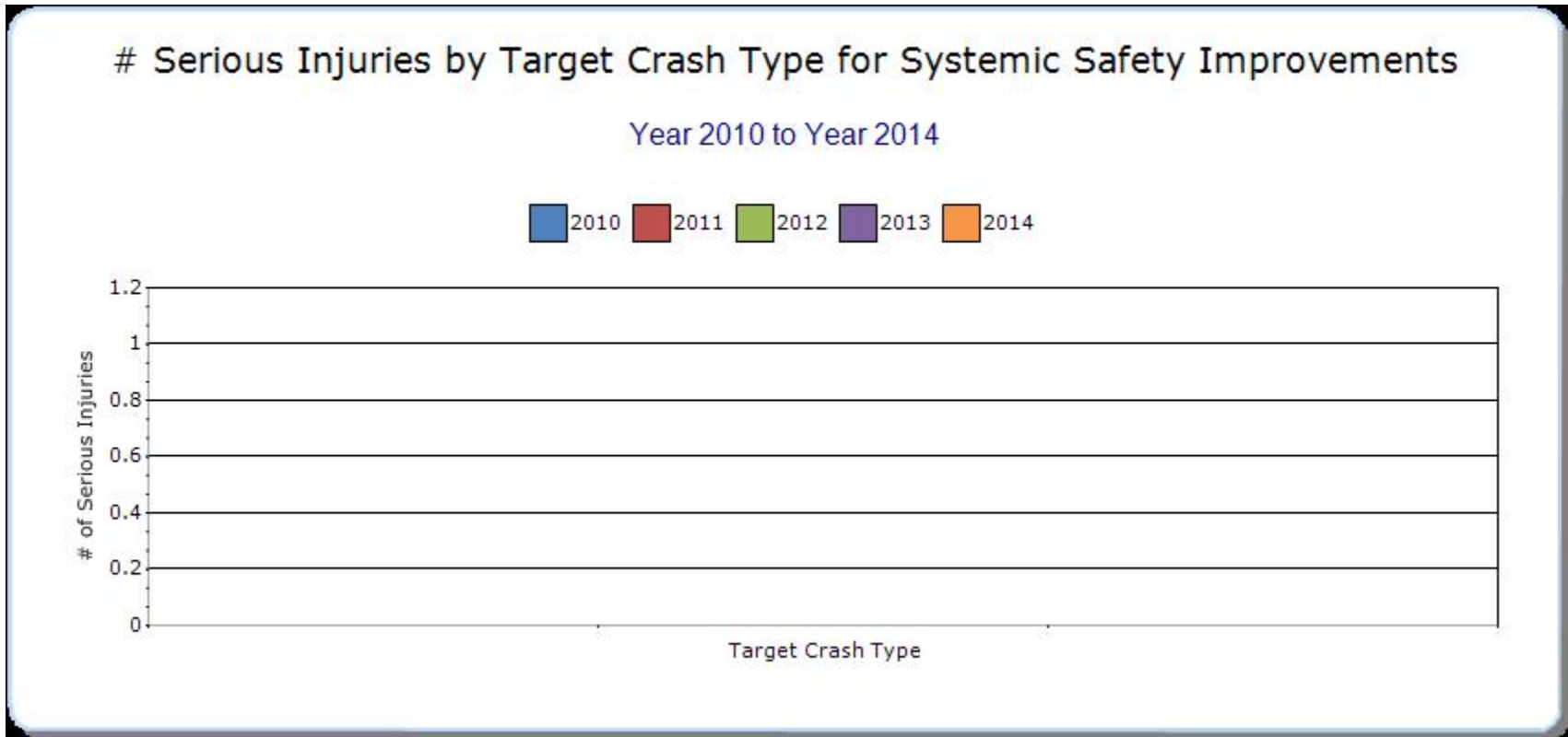


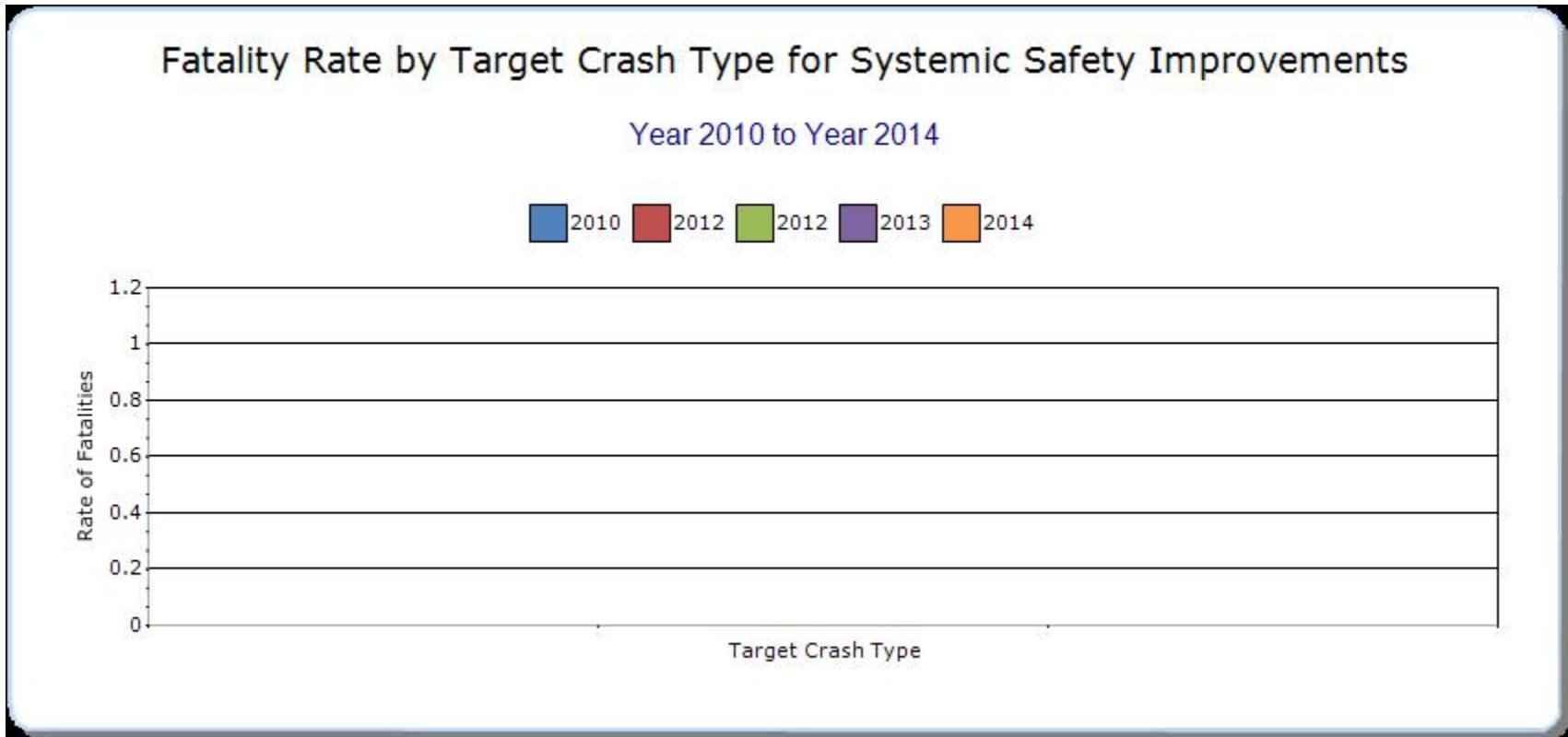
Systemic Treatments

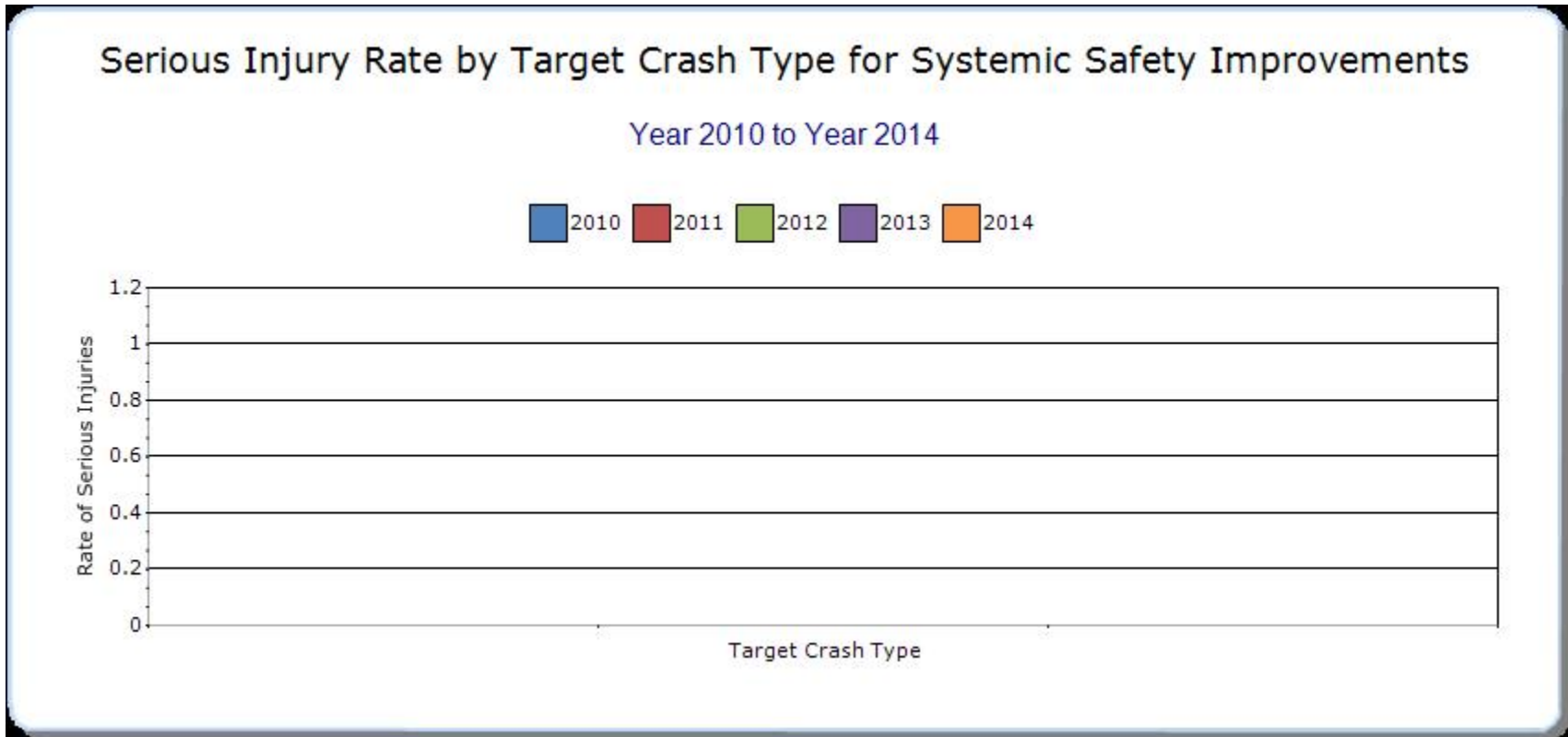
Present the overall effectiveness of systemic treatments.

| Systemic improvement | Target Crash Type | Number of fatalities | Number of serious injuries | Fatality rate (per HMVMT) | Serious injury rate (per HMVMT) | Other-1 | Other-2 | Other-3 |
|----------------------|-------------------|----------------------|----------------------------|---------------------------|---------------------------------|---------|---------|---------|
| | | | | | | | | |









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

Minnesota is trying to balance out our investment between prevention and reduction. Projects focusing on prevention tend to be low-cost systemic projects touching a large number of miles with our HSIP dollars. Local HSIP projects in rural areas tend to fall under the prevention category. Reduction refers to the high crash locations that focus more dollars on fewer miles. Projects in the Metro area tend to be in the reduction category.

Project Evaluation

Provide project evaluation data for completed projects (optional).

| Location | Functional Class | Improvement Category | Improvement Type | Bef-Fatal | Bef-Serious Injury | Bef-All Injuries | Bef-PD | Bef-Total | Aft-Fatal | Aft-Serious Injury | Aft-All Injuries | Aft-PD | Aft-Total | Evaluation Results (Benefit/Cost Ratio) |
|-----------------------------------|------------------|------------------------------|---|-----------|--------------------|------------------|--------|-----------|-----------|--------------------|------------------|--------|-----------|---|
| Various RCI locations | | Intersection geometry | Intersection geometry - other | 3 | 3 | 27 | 22 | 55 | 0 | 0 | 11 | 20 | 31 | |
| Various - Single Lane Roundabouts | | Intersection traffic control | Modify control - all-way stop to roundabout | 5 | 8 | 101 | 117 | 231 | 1 | 2 | 49 | 157 | 209 | |
| | | | | | | | | | | | | | | |

I wanted to add these evaluations to question 33, but there was no way to enter before/after studies. Please see attached reports for additional information.

Also see attached reports on Network Analysis of Minnesota's Toward Zero Deaths Regions and Six-Inch Edgeline Evaluation.

Optional Attachments

Sections

Files Attached

Program Structure: Program Administration

[HSIP Distribution.xlsx](#)

Progress in Achieving Safety Performance Targets:
Application of Special Rules

[FHWA Older Driver Metric.xlsx](#)

Glossary

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

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

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

HMVMT means hundred million vehicle miles traveled.

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

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

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

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

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

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

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

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