Indiana
Highway Safety Improvement Program
2013 Annual Report

Prepared by: IN
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 fiscal year 2013. The content of this report combines information regarding the implementation status of the Highway Safety Improvement Program (HSIP) and associated sub-programs such as 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. This report focuses on development and implementation of the core federal aid safety program, and associated safety spending in the State of Indiana for federal fiscal year (FFY) 2013, beginning October 1, 2012 and ending on September 30, 2013. 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.

The estimated FFY 2013 obligation of safety program funds is $24,866,492.39. The amount is somewhat lower than in FFY 2012 at $27,576,308. This result was expected given changing program priorities under the INDOT Asset Management System.

In response to the passage of MAP-21, INDOT is working to increase the size and scope of its safety program. Two major changes in safety funding occurred in FFY 2013. First, the annual HSIP apportionment rose from $29 million in FFY 2012 to $51 million is FFY 2013. Second, Indiana was encumbered with a $20.2 million penalty transfer to the 164-HE program, resulting in $18.7 million of additional apportionment to the safety program.

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. Asset management processes are used in the selection and prioritization of all safety projects on roads under INDOT jurisdiction, including those funded with HSIP and HRRRP funds. 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.

For Roads under jurisdiction of INDOT, 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 HSIP (or HRRRP) funding is determined and the relative priority of the candidate project’s needs is established.

For Local HSIP projects, the selection methodology is described in 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. 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. MAP-21 caused overall HSIP apportionment growth in FY 2013, and as a result, the total allocated to Local HSIP projects in FFY 2013 also grew to approximately $17 million dollars. The annual apportionment of obligation authority is assigned to each Metropolitan Planning Organization (MPO), as well as predetermined amounts of obligation authority that are identified for the use of rural Group III and Group IV public 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](http://www.in.gov/indot/2357.htm).

In 2012, the estimated vehicle miles of travel increased 2.83% above 2011, yet the number of police reported crashes in Indiana remained at a low level, of 188,765 reported events. This number of crash events is only slightly higher than the historic low of 188,179 events reported in 2011. These two years comprise the lowest recorded number of reported crashes since the inception of Indiana’s electronic crash reporting system in 2003. Severe crashes on rural roads experienced unexpectedly higher numbers spring and early summer of 2012, while severe crashes in urban areas continued the long term downward trend. Data from the first half of 2013 indicates that crash patterns on both urban and rural roadways have returned to a downward trend.
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. Predetermined amounts of HSIP funds assigned to two accounts for the use of rural public agencies in Group 3 (incorporated cities and
towns) and rural Group 4 (counties and un-incorporated towns). The aforementioned population formula is used to determine the amounts of the HSIP apportionment to be reserved for the use of safety improvement 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](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 eligibility determination. To provide a similar level of planning support to rural group 3 and group 4 areas, INDOT has collaborated with the Indiana 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), counties, rural area smaller cities and towns to assist them in to determine their highest priority needs in regard to severe crash reduction, screening of candidate projects, and assisting the LPAs in submitting project level funding proposals to INDOT for determination of HSIP project eligibility. The OTS performs eligibility evaluations for all applications to utilize HSIP or HRRRP funding.

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

- Design
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, Operations, 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 Office of Traffic Safety performs review of all proposed projects that have first been screened for compliance with INDOT’s HSIP Local Project Selection Guidance. Approved projects are programmed and turned over to the INDOT Division of LPA & Grant Administration for inclusion in the STIP and relevant TIP document. This 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 construction project.

In addition, OTS consults with Design Division regarding new safety improvement design practices, Operations Division 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 implement successful research results.

**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-INDOT has expanded the number of eligible systemic project types from 10 to 18 this year.

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 HSIP eligibility review of local safety projects, urban LPAs must first submit to their local Metropolitan Planning Organizations (MPOs) for funding prioritization and preliminary selection. Rural group 3 and group 4 LPAs first submitted 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/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 provides programming support by administering inclusion of projects on Local and State Transportation Improvement Plans, 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 of the project 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
- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only

Exposure
- Traffic
- Volume
- Population

Roadway
- Median width
- Horizontal curvature
- Functional classification
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 50
  including safety need, roadway geometry and cost effectiveness

Program: Intersection
Date of Program Methodology: 10/1/2010
What data types were used in the program methodology?

<table>
<thead>
<tr>
<th></th>
<th>Crashes</th>
<th>Exposure</th>
<th>Roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>All crashes</td>
<td></td>
<td>Traffic</td>
<td>Median width</td>
</tr>
<tr>
<td>Fatal crashes only</td>
<td></td>
<td>Volume</td>
<td>Horizontal curvature</td>
</tr>
<tr>
<td>Fatal and serious injury crashes only</td>
<td></td>
<td>Population</td>
<td>Functional classification</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Lane miles</td>
<td>Roadside features</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Other</td>
<td>Other-roadway conditions</td>
</tr>
</tbody>
</table>

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 effectiveness 50
Program: Rural State Highways
Date of Program Methodology: 10/1/2010

What data types were used in the program methodology?

<table>
<thead>
<tr>
<th>Crashes</th>
<th>Exposure</th>
<th>Roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>All crashes</td>
<td>Traffic</td>
<td>Median width</td>
</tr>
<tr>
<td>Fatal crashes only</td>
<td>Volume</td>
<td>Horizontal curvature</td>
</tr>
<tr>
<td>Fatal and serious injury</td>
<td>Population</td>
<td>Functional classification</td>
</tr>
<tr>
<td>crashes only</td>
<td></td>
<td>Roadside features</td>
</tr>
<tr>
<td>Other</td>
<td>Lane miles</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Relative Weight in Scoring</th>
<th>Rank of Priority Consideration</th>
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</thead>
<tbody>
<tr>
<td>Ranking based on B/C</td>
<td>50</td>
</tr>
<tr>
<td>Available funding</td>
<td></td>
</tr>
<tr>
<td>Incremental B/C</td>
<td></td>
</tr>
<tr>
<td>Ranking based on net benefit</td>
<td></td>
</tr>
<tr>
<td>Cost Effectiveness</td>
<td>50</td>
</tr>
</tbody>
</table>
Weighted factors based on 50 safety need and cost effectiveness

Program: Indiana Highway Safety Improvement Program

Date of Program Methodology: 10/1/2010

What data types were used in the program methodology?

Crashes  Exposure  Roadway
- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only
- Other

- Traffic
- Volume
- Population
- Lane miles
- Other

- Median width
- Horizontal curvature
- Functional classification
- Roadside features
- Other

What project identification methodology was used for this program?

- Crash frequency
- Expected crash frequency with EB adjustment
- Equivalent property damage only (EPDO Crash frequency)
- EPDO crash frequency with EB adjustment
- Relative severity index
- Crash rate
- Critical rate
Level of service of safety (LOSS)

Excess expected crash frequency using SPFs

Excess expected crash frequency with the EB adjustment

Excess expected crash frequency using method of moments

Probability of specific crash types

Excess proportions of specific crash types

Other

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

Yes

No

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

Yes

No

How are highway safety improvement projects advanced for implementation?

Competitive application process

selection committee

Other

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

Relative Weight in Scoring

Rank of Priority Consideration
Program: Roadway Departure

Date of Program Methodology: 10/1/2010

What data types were used in the program methodology?

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

Exposure
- Traffic
- Volume
- Population
- Lane miles
- Other

Roadway
- Median width
- Horizontal curvature
- Functional classification
- Roadside features
- Other

What project identification methodology was used for this program?
- Crash frequency
- Expected crash frequency with EB adjustment
- Equivalent property damage only (EPDO Crash frequency)
- EPDO crash frequency with EB adjustment
- Relative severity index
- Crash rate
- Critical rate
- Level of service of safety (LOSS)
- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment
- Excess expected crash frequency using method of moments
- Probability of specific crash types
- Excess proportions of specific crash types
- Other

Are local roads (non-state owned and operated) included or addressed in this program?
- Yes
- No

If yes, are local road projects identified using the same methodology as state roads?
- Yes
- No

How are highway safety improvement projects advanced for implementation?
- Competitive application process
- Selection committee
- Other

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

Date of Program Methodology: 10/1/2010

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

- **Roadway**
  - Median width
  - Horizontal curvature
  - Functional classification
  - Roadside features
  - 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
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
✓ All crashes
☐ Fatal crashes only
☐ Fatal and serious injury crashes only

Exposure
☐ Traffic
✓ Volume
☐ Population

Roadway
☐ Median width
✓ Horizontal curvature
☐ Functional classification
What project identification methodology was used for this program?

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

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

- [x] Yes
- [ ] No

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

- [x] Yes
How are highway safety improvement projects advanced for implementation?

- Competitive application process
- Selection committee

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 effectiveness

Program: Pedestrian Safety

Date of Program Methodology: 10/1/2010
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-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 effectiveness  50
Program: Other-Centerline and Edgeline Rumble Stripes

Date of Program Methodology: 10/1/2012

What data types were used in the program methodology?

<table>
<thead>
<tr>
<th>Crashes</th>
<th>Exposure</th>
<th>Roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ All crashes</td>
<td>☒ Traffic</td>
<td>☐ Median width</td>
</tr>
<tr>
<td>☐ Fatal crashes only</td>
<td>☐ Volume</td>
<td>☐ Horizontal curvature</td>
</tr>
<tr>
<td>☒ Fatal and serious injury crashes only</td>
<td>☐ Population</td>
<td>☐ Functional classification</td>
</tr>
<tr>
<td>☐ Other</td>
<td>☐ Lane miles</td>
<td>☐ Roadside features</td>
</tr>
<tr>
<td>☐ Other</td>
<td></td>
<td>☐ Other</td>
</tr>
</tbody>
</table>

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
Program: Other-Traffic Signal Visibility Improvement

Date of Program Methodology: 10/1/2012

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

**Roadway**
- Median width
- Horizontal curvature
- Functional classification
- Lane miles
- 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).
What proportion of highway safety improvement program funds address systemic improvements?

25

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

- 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:

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 obligation of HSIP funds towards systemic improvements and still 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 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, INDOT OTS makes all eligibility determinations for HSIP and HRRRP funding. The necessary information to determine eligibility for HSIP/HRRRP funding typically consists of an RSA report. An exception is the submission of eligibility information for certain approved systemic project types, that may be provided via an INDOT form. Projects located in metropolitan planning areas must first be selected by the relevant MPO prior to INDOT review. For rural Group III and Group IV areas, LPAs are asked to first work with the LTAP HELPERS Program that acts to prescreen the applications for compliance with federal and state regulations. The HELPERS Program often provides valuable advice to the LPAs regarding best safety practices and conducting appropriate RSA procedures.
## Progress in Implementing Projects

### Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

- [ ] Calendar Year
- [ ] State Fiscal Year
- [X] Federal Fiscal Year

Enter the programmed and obligated funding for each applicable funding category.

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>Programmed*</th>
<th>Obligated</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSIP (Section 148)</td>
<td>32732635</td>
<td>93 %</td>
</tr>
<tr>
<td>HRRRP (SAFETEA-LU)</td>
<td>1877488</td>
<td>5 %</td>
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<tr>
<td>HRRR Special Rule</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Penalty Transfer - Section 154</td>
<td>458000</td>
<td>1 %</td>
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<tr>
<td>Penalty Transfer – Section 164</td>
<td>0</td>
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<td>Incentive Grants - Section 163</td>
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<tr>
<td>Incentive Grants (Section 406)</td>
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<td>-</td>
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<tr>
<td>Other Federal-aid Funds (i.e. STP, NHPP)</td>
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<td>-</td>
</tr>
<tr>
<td>State and Local Funds</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
How much funding is programmed to local (non-state owned and maintained) safety projects?
33 %

How much funding is obligated to local safety projects?
$5,871,493.00

How much funding is programmed to non-infrastructure safety projects?
$0.00

How much funding is obligated to non-infrastructure safety projects?
$0.00

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?

$25,500,000.00

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

Both SAFTEA-LU and MAP-21 make it clear that cost effectiveness should be considered in project selection decisions, and it's recognized that this may become a future requirement for all 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. Often based on past history of crashes, safety improvement projects that are seemingly promising candidates for HSIP funding are rejected due to an inability to meet cost effectiveness criteria. While there are useful predictive functions in the Highway Safety Manual, they are limited to specific situations. The lack of guidance regarding the application of risk factors has had the effect of stifling innovation in regard to trying new types of crash countermeasures.

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 to tie safety improvement funds to roadway functional class makes it very difficult for rural local agencies to qualify their typical types of projects for this fund. 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 the HRRRP. A suggestion, or requirements in the HSIP that a minimum of 5% of program funds be directed to safety improvements on low volume rural roads would likely be just as effective in combating severe crash outcomes on these road types.

INDOT plans to engage with interested LPA and MPO entities to look for new project alternatives to address risk on mid to high speed local roads, and new methodologies to address cost effectiveness analysis. In addition we are hopeful that new guidance regarding the application of crash risk will result in more flexibility regarding 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, the cost effectiveness and relative priority of projects that should greatly improve the selection and production of high value safety projects moving forward. Candidate safety projects undergo weighted scoring that emphasizes the elimination of high severity crash types and construction of a cost effective solution.

Reduction of severe crashes (fatal and incapacitating injury) are primary program goals but the current available analysis tools are designed to consider all injury crashes to be severe 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 an “On-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 | Outpu | HSIP Cost | Total Cost | Fundi | Functiona | AAD | Spe | Roadwa | Relationship to SHSP |
|---------|----------------------|-------|-----------|------------|-------| Classific| T | ed | y | Area | Strategy |
| 0902207 US 150 At Cross Street | Intersection geometry Auxiliary lanes - modify left-turn lane offset | 1 Numbers | 811104 | 965798 | HSIP (Section 148) | Rural Major Collector | 141 | 55 | State Highway Agency | Improving the design and operation of highway intersections |
| 100867 SR 56, .8 Miles E of Thuermer Hollow Road. | Alignment Horizontal curve realignment | 1 Numbers | 3725691 | 457415 | HSIP (Section 148) | Rural Principal Arterial - Other | 731 | 55 | State Highway Agency | Keeping vehicles in the roadway |
| 101253 US 50, At George | Intersection geometry Auxiliary lanes - miscellaneous/other/uns | 1 Numbers | 437217 | 480721 | HSIP (Section 148) | Urban Principal Arterial - | 137 | 55 | State Highway | Improving the design and |
| | | | | | | | | | | | |

37
<table>
<thead>
<tr>
<th>Street</th>
<th>Specified</th>
<th>1 Numbers</th>
<th>674000</th>
<th>674000</th>
<th>HSIP (Section 148)</th>
<th>Urban Principal Arterial - Other</th>
<th>152</th>
<th>55</th>
<th>State Highway Agency</th>
<th>Reducing vehicle-train crashes</th>
<th>Collisions involving Trains at Railroad-Highway Grade Crossings</th>
</tr>
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<tbody>
<tr>
<td>400458 US 50, George Street at CSX and US 50</td>
<td>Railroad grade crossings Railroad grade crossing gates</td>
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<td>1005693 US 52, CR 700 W</td>
<td>Intersection geometry Auxiliary lanes - miscellaneous/other/unspecifed</td>
<td>1 Numbers</td>
<td>702828</td>
<td>1044208</td>
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<td>Urban Principal Arterial - Other</td>
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<td>Collisions at un-signalized intersections</td>
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<td>1005695 US 52, CR 700 W</td>
<td>Intersection traffic control Modify traffic signal - add additional signal heads</td>
<td>1 Numbers</td>
<td>110021</td>
<td>110021</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
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<td>Improving the design and operation of</td>
<td>Collisions at un-signalized intersections</td>
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<td>HSIP Numbers</td>
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<td>State Highway Agency</td>
<td>Hwy Improvements</td>
<td>Run Off Road Collisions</td>
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<tr>
<td>710609 SR 61, 0.70 mi N of N jct SR 241</td>
<td>Alignment Horizontal and vertical alignment</td>
<td>State Highway Agency</td>
<td>Keeping vehicles in the roadway</td>
<td>Run Off Road Collisions</td>
<td></td>
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<tr>
<td>810061 SR 8, From 1.05 miles E of I-69 to 2.32 miles E of I-69 in Auburn. See logs.</td>
<td>Intersection traffic control Modify traffic signal - modernization/replacement</td>
<td>State Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Collisions at signalized intersections</td>
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<td></td>
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<tr>
<td>1006219 Various Locations in the Fort Wayne District</td>
<td>Roadway delineation Raised pavement markers</td>
<td>State Highway Agency</td>
<td>Keeping vehicles in the roadway</td>
<td>Run Off Road Collisions</td>
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<td>1297095 SR 38, SR 38 signals at (12th and Main)</td>
<td>Intersection traffic control Modify traffic signal - modernization/replacement</td>
<td>State Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Collisions at signalized intersections</td>
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<td>Street) New Castle</td>
<td>0201343 0 3, From Smith Street to US 50</td>
<td>Roadway Roadway widening - add lane(s) along segment</td>
<td>1 Miles</td>
<td>3452064.0 222</td>
<td>413616 6</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>262 00</td>
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<td>Keeping vehicles in the roadway</td>
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<td>Run Off Road Collisions</td>
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<td>965197</td>
<td>965798</td>
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<td>Rural Major Collector</td>
<td>141 20</td>
<td>55</td>
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<td>Improving the design and operation of highway intersections</td>
<td>Collisions at signalized intersections</td>
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<td>1005799 IR 1001,</td>
<td>Roadway signs and traffic control Roadway</td>
<td>332 Numb</td>
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<td>41000</td>
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<td>Increasing driver</td>
<td>Collisions at un-</td>
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<tr>
<td>Sign Replacement in Elkhart County</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1</td>
<td>45000</td>
<td>50000</td>
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<td>County Highway Agency</td>
<td>Increasing driver safety awareness</td>
<td>Collisions at un-signalized intersections</td>
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<td>Sign Replacements in Lawrence County</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1</td>
<td>45000</td>
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<td>Collisions at un-signalized intersections</td>
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<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
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<td>Project Number</td>
<td>Description</td>
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<td>Traffic Control</td>
<td>Roadway Signs (Including Posts) - New or Updated</td>
<td>County Highway Agency</td>
<td>Increasing Driver Safety Awareness</td>
<td>Collisions at Un-Signalized Intersections</td>
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<td>1006791 IR 1001, Update Regulatory, Warning &amp; Guide Signs to Meet MUTCD Requirements</td>
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<td>1173450 IR 1001, Sign Inventory, Various Locations in Knox County</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
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<td>50000</td>
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<tr>
<td>1172355 VA VARI, Various locations in Pike County</td>
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<td>549521</td>
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<td>Collisions at un-signalized intersections</td>
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<td>1006022 VA VARI,</td>
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<td>Collisions at un-</td>
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<td>Collisions at un-signalized intersections</td>
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<td>Improving the design and operation of highway intersections</td>
<td>Improving information and decision support systems</td>
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<tr>
<td>1173545 IR 1001, Sign Inventory Blackford County</td>
<td>Intersection geometry Intersection geometrics - miscellaneous/other/uns pecified</td>
<td>1 Numbers</td>
<td>541996</td>
<td>602218</td>
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<td>Improving the design and operation of highway intersections</td>
<td>Collisions at un-signalized intersections</td>
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<td>1006061 ST 1071, 206th St. at Overdorf Rd. intersection, 0.97 mi. W. of 206th/SR 37 intersection</td>
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<td>1 Numbers</td>
<td>0</td>
<td>25000</td>
<td>HSIP (Section 148)</td>
<td>Multiple</td>
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<td>55</td>
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<td>Improving the design and operation of highway intersections</td>
<td>Improving information and decision support systems</td>
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<td>1298004 VA VARI, City of Aurora,</td>
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<td>HSIP (Section 148)</td>
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<td>County Highway Agency</td>
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<td>Improving information and decision support systems</td>
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<td>Numb.2</td>
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<td>HSIP (Section 148)</td>
<td>Multiple</td>
<td>City of Municipal Highway Agency</td>
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<td>Improving information and decision support systems</td>
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<td>1173106 ST 1033, 56th Street and Franklin Road</td>
<td>Roadside Barrier- metal</td>
<td>1</td>
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<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>City of Municipal Highway Agency</td>
<td>Keeping vehicles in the roadway</td>
<td>Minimizing the consequences of leaving the roadway</td>
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<td>1297198 ST 1007, Sign inventory for the Town of</td>
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<td>Increasing driver safety awareness</td>
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<td>Gosport</td>
<td>Highway Safety Improvement Program</td>
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<td>1173494 ST 1001, Sign Inventory in Montpelier</td>
<td>Improving the design and operation of highway intersections</td>
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<td>1006383 VA 1033, Upgrade regulatory, warning &amp; guide</td>
<td>Improving driver safety awareness</td>
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<td>Multiple Locations in Lebanon</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>994 Numbers</td>
<td>148636</td>
<td>165152</td>
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<td>Increasing driver safety awareness</td>
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<td>1005900 ST 1001, Various City streets in Bicknell</td>
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<td>1189 Numbers</td>
<td>181161</td>
<td>201291</td>
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<td>1172004 ST 1001, Sign Replacements at various locations in City of Auburn</td>
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<td>Improving the design and operation of highway intersections</td>
<td>Improving information and decision</td>
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<td>1297182 IR 1006, Various locations</td>
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<td>HSIP (Section 148)</td>
<td>Multiple</td>
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<td>City of Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Improving information and decision</td>
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<td>Project Number</td>
<td>Location Description</td>
<td>Roadway Signs and Traffic Control</td>
<td>Nbrs</td>
<td>HSIP Section</td>
<td>Count</td>
<td>City or County Agency</td>
<td>Improvement Objective</td>
<td>Support Systems</td>
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<td>1173459 VA 1012, Various locations within the City of Madison</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1 Numbers</td>
<td>45000</td>
<td>50000</td>
<td>Multiple</td>
<td>City of Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Improving information and decision support systems</td>
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<td>1173675 ST 1009, Various locations within the City of Batesville</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1 Numbers</td>
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<td>50000</td>
<td>Multiple</td>
<td>City of Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Improving information and decision support systems</td>
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<tr>
<td>1006068 VA 0037, Various locations</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>257 Numbers</td>
<td>36999</td>
<td>41110</td>
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<td>Improving the design and Increasing driver safety awareness</td>
<td>Increasing driver safety awareness</td>
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<tr>
<td>Project Number</td>
<td>Description</td>
<td>Intersection geometry</td>
<td>Numbers</td>
<td>HSIP (Section 148)</td>
<td>Agency/County</td>
<td>Improvement</td>
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<td>1006567</td>
<td>Intersection geometry: Auxiliary lanes - miscellaneous/other/unspecified.</td>
<td>1 Numb Numb</td>
<td>294738</td>
<td>327487</td>
<td>Urban Local Road or Street</td>
<td>0 45</td>
<td>Town or Township Highway Agency</td>
<td>Collisions at un-signalized intersections</td>
<td>IR311 &amp; IR158 in Terre Haute</td>
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<td>1172484</td>
<td>Intersection traffic control: Modify control - all-way stop to roundabout.</td>
<td>1 Numb Numb</td>
<td>844309</td>
<td>938123</td>
<td>Urban Major Collector</td>
<td>0 55</td>
<td>County Highway Agency</td>
<td>Collisions at un-signalized intersections</td>
<td>IR1019, Roundabout construction at the intersection of CR 625E and CR 150S.</td>
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<td>1173167</td>
<td>Pedestrians and bicyclists: Install new crosswalk.</td>
<td>2 Numb Numb</td>
<td>137159</td>
<td>152400</td>
<td>Multiple</td>
<td>0 0</td>
<td>City of Municipal</td>
<td>Making walking and</td>
<td>ST 1001, Pedestrian</td>
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<td>Crossings in Center and Washington Townships</td>
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<td>Highways Agency</td>
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<td>street crossing easiers</td>
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<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>900 Numbers</td>
<td>90000</td>
<td>100000</td>
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<td>Multiple</td>
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<td>City of Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Increasing driver safety awareness</td>
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<td>1005760 ST 1001, Citywide. The attached application lists all of the signs that will be replaced</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>167 Numbers</td>
<td>16650</td>
<td>18500</td>
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<td>Town or Township Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Increasing driver safety awareness</td>
</tr>
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<td>Roadway signs and</td>
<td>1</td>
<td>45000</td>
<td>50000</td>
<td>HSIP</td>
<td>Multiple</td>
<td>0</td>
<td>45</td>
<td>City of</td>
<td>Improving</td>
<td>Improving</td>
</tr>
<tr>
<td>ST 1001, Union City</td>
<td>traffic control Roadway signs (including post) - new or updated</td>
<td>Numbers</td>
<td>(Section 148)</td>
<td>Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections and decision support systems</td>
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<tr>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1 Numbers</td>
<td>12150</td>
<td>13500</td>
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<td>Improving the design and operation of highway intersections and decision support systems</td>
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<td>1173510 VA 1033, Sign inventory for Town of Eaton</td>
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<td>Randolph County</td>
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<td>1173512 IR 1001, Sign inventory Randolph County</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
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<td>50000</td>
<td>HSIP (Section 148)</td>
<td>Improving the design and operation of highway intersections and decision support systems</td>
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<td>1173521</td>
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<td>1</td>
<td>27000</td>
<td>30000</td>
<td>HSIP</td>
<td>Multiple</td>
<td>0</td>
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<td>County</td>
<td>Improving</td>
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<tr>
<td>VA VARI, Sign Inventory</td>
<td>Town of Centerville</td>
<td>traffic control Roadway signs (including post) - new or updated</td>
<td>Numb ers</td>
<td>(Sectio n 148)</td>
<td>Highwa y Agency</td>
<td>Improvin g the design and operation of highway intersections</td>
<td>Informatio n and decision support systems</td>
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<td>1173487 ST 1001, Sign Inventory in Churubusco</td>
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<td>1 Numbers</td>
<td>27000</td>
<td>30000</td>
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<td>City of Municipal Highway Agency</td>
<td>Improvin g the design and operation of highway intersections</td>
<td>Improving informatio n and decision support systems</td>
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<tr>
<td>1173486 IR 1001, Fayette County sign inventory</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1 Numbers</td>
<td>45540</td>
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<td>0</td>
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<td>Improving informatio n and decision support systems</td>
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<td>1005843</td>
<td>Intersection traffic</td>
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<td>Urban</td>
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<td>Improvin</td>
<td>Collisions</td>
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<td>Description</td>
<td>Number of Nums</td>
<td>HSIP Numbers</td>
<td>Agency</td>
<td>Improvement Goals</td>
<td>Effectiveness Goals</td>
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<td>IR 1027, CR 20 from CR 7 to Minuteman Drive, Signal upgrades</td>
<td>control Modify traffic signal - modernization/replacement</td>
<td></td>
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<td>Highway Agency</td>
<td>Increasing the design and operation of highway intersections</td>
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<tr>
<td>1006052 VA VARI, Various sign locations in the Town of Zionsville</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>381 Numbers</td>
<td>38184</td>
<td>Minor Arterial</td>
<td>Traffic signal modernization/replacement</td>
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<tr>
<td>1006067 VA 0037, Various locations throughout the Town of Clarks Hill</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1 Numbers</td>
<td>12000</td>
<td>Urban Road or Street</td>
<td>Improving the design and operation of highway intersections</td>
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<td>1172159</td>
<td>Roadway signs and</td>
<td>900</td>
<td>90000</td>
<td>Multiple</td>
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<td>Traffic Control Solutions</td>
<td>Number</td>
<td>HSIP Code</td>
<td>Multiple</td>
<td>Agency</td>
<td>Design and Operation of Highway Intersections</td>
<td>Improving the Design and Operation of Highway Intersections</td>
<td>Minimizing the Consequences of Leaving the Roadway</td>
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<td>IR 1001, Various Roads in Hancock County outside of the Indianapolis MPA &amp; Anderson MPA</td>
<td>traffic control Roadway signs (including post) - new or updated</td>
<td>Numb ers</td>
<td>(Section 148)</td>
<td>Township Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
<td>Townshi p Highwa y Agency</td>
<td>g the design and operation of highway intersecti ons</td>
<td>driver safety awareness</td>
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<tr>
<td>1173509 ST 1001, Sign Inventory in Hartford City</td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>1 Numb ers</td>
<td>35280</td>
<td>39200</td>
<td>HSIP (Section 148)</td>
<td>Multiple</td>
<td>0 0</td>
<td>County Highwa y Agency</td>
<td>Improving the design and operation of highway intersecti ons</td>
<td>Improving informatio n and decision support systems</td>
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<tr>
<td>1173227 ST 1001, Various locations within the City of Greenwood</td>
<td>Roadside Barrier- metal</td>
<td>3 Numb ers</td>
<td>35100</td>
<td>39000</td>
<td>HSIP (Section 148)</td>
<td>Multiple</td>
<td>0 0</td>
<td>Town or Townshi p Highwa y Agency</td>
<td>Improvin g the design and operation of highway intersecti ons</td>
<td>Minimizin g the conseque nces of leaving the roadway</td>
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</table>
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.

<table>
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<tr>
<th>Performance Measures*</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>Number of fatalities</td>
<td>901</td>
<td>850</td>
<td>813</td>
<td>783</td>
<td>762</td>
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<tr>
<td>Number of serious injuries</td>
<td>3721</td>
<td>3563</td>
<td>3505</td>
<td>3419</td>
<td>3444</td>
</tr>
<tr>
<td>Fatality rate (per HMVMT)</td>
<td>1.24</td>
<td>1.16</td>
<td>1.1</td>
<td>1.04</td>
<td>1.01</td>
</tr>
<tr>
<td>Serious injury rate (per HMVMT)</td>
<td>5.19</td>
<td>4.92</td>
<td>4.8</td>
<td>4.61</td>
<td>4.55</td>
</tr>
</tbody>
</table>

*Performance measure data is presented using a five-year rolling average.
Number of Fatalities and Serious injuries for the Last Five Years

- 2008: 3,012
- 2009: 850
- 2010: 813
- 2011: 783
- 2012: 762

Legend:
- Blue bars: # Serious Injuries
- Red squares: # Fatalites
Rate of Fatalities and Serious injuries for the Last Five Years

<table>
<thead>
<tr>
<th>Years</th>
<th>Serious Injuries Rate (per HMVMT)</th>
<th>Fatality Rate (per HMVMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1.24</td>
<td>1.24</td>
</tr>
<tr>
<td>2009</td>
<td>1.16</td>
<td>1.16</td>
</tr>
<tr>
<td>2010</td>
<td>1.11</td>
<td>1.11</td>
</tr>
<tr>
<td>2011</td>
<td>1.04</td>
<td>1.04</td>
</tr>
<tr>
<td>2012</td>
<td>1.01</td>
<td>1.01</td>
</tr>
</tbody>
</table>
To the maximum extent possible, present performance measure* data by functional classification and ownership.

### Year - 2012

<table>
<thead>
<tr>
<th>Function Classification</th>
<th>Number of fatalities</th>
<th>Number of serious injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - INTERSTATE</td>
<td>39</td>
<td>86</td>
<td>0.54</td>
<td>1.19</td>
</tr>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - OTHER</td>
<td>64</td>
<td>184</td>
<td>1.37</td>
<td>3.94</td>
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<tr>
<td>RURAL MINOR ARTERIAL</td>
<td>66</td>
<td>198</td>
<td>1.92</td>
<td>5.74</td>
</tr>
<tr>
<td>RURAL MINOR COLLECTOR</td>
<td>30</td>
<td>118</td>
<td>1.46</td>
<td>5.66</td>
</tr>
<tr>
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<td>124</td>
<td>381</td>
<td>1.68</td>
<td>5.15</td>
</tr>
<tr>
<td>RURAL LOCAL ROAD OR STREET</td>
<td>73</td>
<td>239</td>
<td>1.62</td>
<td>5.3</td>
</tr>
<tr>
<td>URBAN PRINCIPAL</td>
<td>46</td>
<td>193</td>
<td>0.49</td>
<td>2.02</td>
</tr>
<tr>
<td>Class</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>ARTERIAL - INTERSTATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS</td>
<td>9</td>
<td>45</td>
<td>0.7</td>
<td>3.41</td>
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<tr>
<td>URBAN PRINCIPAL ARTERIAL - OTHER</td>
<td>128</td>
<td>813</td>
<td>1.18</td>
<td>7.53</td>
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<tr>
<td>URBAN MINOR ARTERIAL</td>
<td>86</td>
<td>6</td>
<td>1.05</td>
<td>7.63</td>
</tr>
<tr>
<td>URBAN MINOR COLLECTOR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>URBAN MAJOR COLLECTOR</td>
<td>47</td>
<td>263</td>
<td>1</td>
<td>5.61</td>
</tr>
<tr>
<td>URBAN LOCAL ROAD OR STREET</td>
<td>49</td>
<td>303</td>
<td>0.42</td>
<td>2.56</td>
</tr>
<tr>
<td>OTHER</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
# Fatalities by Roadway Functional Classification

![Bar chart showing fatalities by roadway functional classification for years 2008 to 2012. The chart compares different types of roadways including 'Principal Arterial', 'Minor Collector', 'Major Collector', 'Principal Arterial - Other', 'Minor Arterial - Other', 'Major Road or Street', 'Minor Arterial', 'Principal Arterial - Expressways', and 'Other'. The x-axis represents the different types of roadways, while the y-axis shows the number of fatalities. The years are color-coded: 2008 (orange), 2009 (blue), 2010 (red), 2011 (green), and 2012 (purple).]
Fatality Rate by Roadway Functional Classification

Roadway Functional Classification
Serious Injury Rate by Roadway Functional Classification

Roadway Functional Classification

- Major Arterial (R)
- Principal Arterial (R)
- Minor Collector (R)
- Local Road or Street (U)
- Minor Arterial - Other (R)
- Principal Arterial - Other (R)
- Major Collector (U)
- Local Road or Street (U)
- Minor Arterial (U)
- Principal Arterial (U)
- Interstate (U)
- Other Freeways and Expressways (U)
- Other (U)
<table>
<thead>
<tr>
<th>Roadway Ownership</th>
<th>Number of fatalities</th>
<th>Number of serious injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE HIGHWAY AGENCY</td>
<td>389</td>
<td>1439</td>
<td>1.03</td>
<td>3.81</td>
</tr>
<tr>
<td>COUNTY HIGHWAY AGENCY</td>
<td>213</td>
<td>810</td>
<td>1.06</td>
<td>4.04</td>
</tr>
<tr>
<td>TOWN OR TOWNSHIP HIGHWAY AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CITY OF MUNICIPAL HIGHWAY AGENCY</td>
<td>157</td>
<td>1172</td>
<td>0.87</td>
<td>6.51</td>
</tr>
<tr>
<td>STATE PARK, FOREST, OR RESERVATION AGENCY</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LOCAL PARK, FOREST OR RESERVATION AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER STATE AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>OTHER LOCAL AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PRIVATE (OTHER THAN RAILROAD)</td>
<td>4</td>
<td>24</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>2013</td>
<td>2014</td>
<td>2015</td>
<td>Totals</td>
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<tr>
<td>----------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>RAILROAD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>STATE TOLL AUTHORITY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LOCAL TOLL AUTHORITY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>INDIAN TRIBE NATION</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>OTHER</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Number of Fatalities by Roadway Ownership

- 2008
- 2009
- 2010
- 2011
- 2012

Roadway Functional Classification

# of Fatalities

- State
- County
- Town
- City
- Local Park
- Other State
- Other Local
- Railroad
- State Toll
- Local Toll
- Other Public
- Other
Number of Serious Injuries by Roadway Ownership

- 2008
- 2009
- 2010
- 2011
- 2012

# of Serious Injuries

Roadway Functional Classification:
- State
- County
- Town
- City
- State Park
- Other State
- Private
- Railroad
- State Toll
- Local Toll
- Other Public
- Tribe
- Other
Fatality Rate by Roadway Ownership

- 2008
- 2009
- 2010
- 2011
- 2012

Fatality Rate (per HHVMT)

Roadway Functional Classification

State, County, Town, City, State Park, Other State, Other Local, Railroad, State Toll, Local Toll, Tribe, Other
Serious Injury Rate by Roadway Ownership

- 2008
- 2009
- 2010
- 2011
- 2012

Roadway Functional Classification

Serious Injury Rate (per HAVMT)

- 10
- 8
- 6
- 4
- 2
- 0
Describe any other aspects of the general highway safety trends on which you would like to elaborate.

Statewide 2012 crash data shows that Indiana came close to meeting, but did not exceed the four performance goals outlined in the SHSP. Severe crashes on rural roads experienced a large spike in the spring and early summer of 2012, while severe crashes in urban areas continued on a downward trend. While there is no confirmed explanation for the one year increase, data from the first half of 2013 indicates that crash patterns in both urban and rural areas have returned to a more typical downward trend.

Crashes resulting from vehicle departure from the travel lanes, (including roadway departure, head-on and opposite direction sideswipe) continue to be the most harmful type of events. After discovery and correction of an error that caused an over count of head on events, the average percentage of fatalities resulting from single vehicle lane departures make up 46% of all 2012 Indiana motor vehicle fatalities, and the most recent 5 year rolling average is 49%. 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 2012 intersection fatalities again contributed 22% of the 2012 traffic fatality total. In response, 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. The percentage of pedestrian fatalities was at 8.9%, representing a 0.47% increase over the previous 5 year rolling average. The percentage of fatalities that involve bicyclists held steady 1.8% of the 5 year rolling average. Motorcycle and moped crashes in 2012 experienced an increase of 33 fatalities over 2011 totals. In terms of the 5 year rolling average, the percentage of all fatalities is 17.8%.

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

<table>
<thead>
<tr>
<th>Older Driver</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrians</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Performance Measures

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatality rate (per capita)</td>
<td>0.69</td>
<td>0.86</td>
<td>0.8</td>
<td>0.8</td>
<td>0</td>
</tr>
<tr>
<td>Serious injury rate (per capita)</td>
<td>1.82</td>
<td>1.9</td>
<td>2.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fatality and serious injury rate (per capita)</td>
<td>2.73</td>
<td>2.66</td>
<td>2.67</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

---

**FARS**

FATALITIES+SERIOUS INJURIES/FHWA
Population Totals per capita per year averaged over 5 years = 5-Year Average of Fatalities and Serious Injuries for Drivers and Pedestrians 65+ years of age

CALCULATED RATE FOR 2011:

\[
\frac{(100+269/131)+(12+247/130)+(89+235/129)+(77+249/128)+(112+229/125)}{5}=2.6723671 = 2.7
\]

CALCULATED RATE FOR 2009:

\[
\frac{(89+235/129)+(77+249/128)+(112+229/125)}{3}=2.1714286
\]
\[ \frac{9}{125} + \left( \frac{92 + 248}{124} \right) + \left( \frac{98 + 273}{112} \right) / 5 \]
\[ = 2.7292171 = 2.7 \]

2011 Rate Equals the 2009 Rate
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:
What significant programmatic changes have occurred since the last reporting period?

☐ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☒ Organizational Changes

☐ None

☒ Other: Other - Encouragement for LPAs to increase programming of systemic improvements
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.

The HSIP program began with a strong emphasis on addressing hot spots, discovered during SAFETEA-LU through the Five Percent Transparency Report. Under MAP-21, the numbers of systemic safety improvements that have been programmed have increased to become a significant part of the planned safety capital asset project class on roads under the jurisdiction of INDOT. To further encourage the LPA community to improve safety on the local road systems, INDOT has recently released the following expanded list of low cost systemic safety improvement types:

1. Conduct inventory of traffic signs and upgrade warning & regulatory signs to meet MUTCD retroreflectivity requirements
2. Upgrade traffic signals to a minimum of one signal head per travel lane
3. Install black backing plates with reflective border on all traffic signal heads.
4. Make changes to yellow interval traffic signal timing or signal interconnect to improve safety
5. Install pedestrian push button and countdown heads on traffic signals
6. Install new pedestrian crosswalk warning signs, flashing beacons, special pavement markings
7. Upgrade guardrail end treatments to current standards
8. Install or upgrade passive or new active warning device at railroad crossings
9. Improve visibility of intersections by providing lighting
10. Install guardrails or median barrier at locations where none existed before
11. Install or upgrade pedestrian curb ramps and refuge areas at areas of high conflict between pedestrians and vehicular traffic
12. Improve visibility of unsignalized intersections by installing upgraded/new warning devices
13. Install new centerline or edgeline pavement markings on unmarked roadways
14. Add centerline and/or edgeline rumble stripes (pavement marking over rumble) to rural public roads with speed limit ≥ 50 mph
15. Add FHWA recommended High Friction Surface Treatments (HFST) to spot locations
16. Improve the visibility of curves by upgrading curve warning signs and markings
17. Install median cable barrier system on divided roads with grass median
18. Remove or shield permanent roadside safety obstructions
SHSP Emphasis Areas
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

**Year - 2012**

<table>
<thead>
<tr>
<th>HSIP-related SHSP Emphasis Areas</th>
<th>Target Crash Type</th>
<th>Number of Fatalities</th>
<th>Number of Serious Injuries</th>
<th>Fatality Rate (per HMVMT)</th>
<th>Serious Injury Rate (per HMVMT)</th>
<th>Other-1</th>
<th>Other-2</th>
<th>Other-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing driver safety awareness</td>
<td>All</td>
<td>762</td>
<td>3444</td>
<td>1.01</td>
<td>4.55</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Making walking and street crossing easier</td>
<td>Vehicle/pedestrian</td>
<td>62</td>
<td>227</td>
<td>0.09</td>
<td>0.27</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ensuring safer bicycle travel</td>
<td>Vehicle/bicycle</td>
<td>13</td>
<td>78</td>
<td>0.02</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Improving motorcycle safety and increasing motorcycle awareness</td>
<td>Motorcycle &amp; Moped</td>
<td>124</td>
<td>2850</td>
<td>0.19</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Making truck travel safer</td>
<td>Truck-related</td>
<td>130</td>
<td>1853</td>
<td>0.16</td>
<td>2.79</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reducing vehicle-train crashes</td>
<td>Vehicle/Train</td>
<td>14</td>
<td>40</td>
<td>0.02</td>
<td>0.04</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Keeping vehicles in the roadway</td>
<td>Run-off-road</td>
<td>246</td>
<td>884</td>
<td>0.32</td>
<td>1.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Initiative</td>
<td>Category</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
<td>Year 6</td>
<td>Year 7</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Minimizing the consequences of leaving the road</td>
<td>Run-off-road</td>
<td>246</td>
<td>884</td>
<td>0.32</td>
<td>1.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Improving the design and operation of highway intersections</td>
<td>Intersection</td>
<td>183</td>
<td>1150</td>
<td>0.23</td>
<td>1.62</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reducing head-on and across-median crashes</td>
<td>Run Off Road &amp; Head On</td>
<td>366</td>
<td>1252</td>
<td>0.47</td>
<td>1.59</td>
<td>0</td>
<td>0</td>
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<td>Designing safer work zones</td>
<td>Work Zone</td>
<td>13</td>
<td>60</td>
<td>0.01</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Improving information and decision support systems</td>
<td>All</td>
<td>762</td>
<td>3444</td>
<td>1.01</td>
<td>4.55</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Creating more effective processes and safety management systems</td>
<td>All</td>
<td>762</td>
<td>3444</td>
<td>1.01</td>
<td>4.55</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Number of Fatalities by SHSP Emphasis Area

Year 2008 to Year 2012

SHSP Emphasis Area

# of Fatalities

- Awareness
- Pedestrian
- Bicycle
- Motorcycle
- Truck
- Train
- Run off road
- Fixed object
- Intersections
- Median
- Work Zone
- Data

2008
2009
2010
2011
2012
Number of Serious Injuries by SHSP Emphasis Area

Year 2008 to Year 2012

![Graph showing the number of serious injuries by SHSP Emphasis Area for the years 2008 to 2012.](image-url)
Fatality Rate by SHSP Emphasis Area

Year 2008 to Year 2012

Rate of Fatalities

SHSP Emphasis Area

2008 2009 2010 2011 2012
Serious Injury Rate by SHSP Emphasis Area

Year 2008 to Year 2012

Rate of Serious Injuries

SHSP Emphasis Area

[Bar chart showing the serious injury rate by SHSP emphasis area from 2008 to 2012.]
Groups of similar project types
Present the overall effectiveness of groups of similar types of projects.

**Year - 2012**

<table>
<thead>
<tr>
<th>HSIP Sub-program Types</th>
<th>Target Crash Type</th>
<th>Number of fatalities</th>
<th>Number of serious injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
<th>Other-1</th>
<th>Other-2</th>
<th>Other-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash Data</td>
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# Fatalities by Target Crash Type for Groups of Similar Projects

Year 2008 to Year 2012

Target Crash Type

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<tr>
<td>Run-off-road</td>
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<td>Vehicle/bicycle</td>
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<tr>
<td>Wet road</td>
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</table>
#Serious Injuries by Target Crash Type for Groups of Similar Projects

Year 2008 to Year 2012

![Bar chart showing serious injuries by target crash type from 2008 to 2012.](chart.png)

Target Crash Type:
- All
- Angle
- Crash median
- Fixed object
- Side swipe
- Head-on
- Left-turn
- Night-time
- Non-intersection
- Rear-end
- Right-turn
- Run-off-road
- Speed-related
- Truck-related
- Vehicle/animal
- Vehicle/vehicle
- Wet road
Fatality Rate by Target Crash Type for Groups of Similar Projects

Year 2008 to Year 2012
Serious Injury Rate by Target Crash Type for Groups of Similar Projects

Year 2008 to Year 2012

Rate of Serious Injury

Target Crash Type

- 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/bicyclist
- Wet road

2008 - 2012
Systemic Treatments
Present the overall effectiveness of systemic treatments.

### Year - 2012

<table>
<thead>
<tr>
<th>Systemic improvement</th>
<th>Target Crash Type</th>
<th>Number of fatalities</th>
<th>Number of serious injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
<th>Other-1</th>
<th>Other-2</th>
<th>Other-3</th>
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<tr>
<td>Add/Upgrade/Modify/Remove Traffic Signal</td>
<td>Intersection Crashes</td>
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<td>1150</td>
<td>0.23</td>
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<td>Run Off Road &amp; Head On</td>
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<td>1.59</td>
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</table>
# Fatalities by Target Crash Type for Systemic Safety Improvements

Year 2008 to Year 2012

Target Crash Type

- All
- Angle
- Cross median
- Pedestrian
- Head on
- Left-turn
- Night-time
- Non-intersection
- Rear-end
- Right-turn
- Run-off-road
- Speed-related
- Truck-related
- Vehicle/animal
- Vehicle/bicycle
- Wet road

# of Fatalities

- 2008
- 2009
- 2010
- 2011
- 2012
# Serious Injuries by Target Crash Type for Systemic Safety Improvements

Year 2008 to Year 2012

Target Crash Type

[Graph showing the number of serious injuries by target crash type for each year from 2008 to 2012]
Fatality Rate by Target Crash Type for Systemic Safety Improvements

Year 2008 to Year 2012

Rate of Fatalities

Target Crash Type

- All
- Angle
- Cross median
- Sideswipe
- Head on
- Left-turn
- Night-time
- Non-intersection
- Rear end
- Right-turn
- Run-off-road
- Speed-related
- Truck-related
- Vehicle/animal
- Vehicle/bicycle
- Wet road
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 thru 2012, 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.

In 2012, the estimated vehicle miles of travel increased 2.83% above 2011, yet the number of police reported crashes in Indiana remained at a low level, of 188,765 reported events. This number of crash events is only slightly higher than the historic low of 188,179 events reported in 2011. These two years comprise the lowest recorded number of reported crashes since the inception of electronic crash reporting in 2003.
Provide project evaluation data for completed projects (optional).

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<tr>
<th>Location</th>
<th>Functional Class</th>
<th>Improvement Type</th>
<th>Bef-Fatal</th>
<th>Bef-Seriouss Injury</th>
<th>Bef-Other Injury</th>
<th>Bef-PDO</th>
<th>Bef-Tota l</th>
<th>Aft-Fatal</th>
<th>Aft-Seriouss Injury</th>
<th>Aft-Other Injury</th>
<th>Aft-PDO</th>
<th>Aft-Tota l</th>
<th>Evaluation Results (Benefit/Cost Ratio)</th>
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## Optional Attachments

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**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.