New Hampshire
Highway Safety Improvement Program
2015 Annual Report

Prepared by:  NH
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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The overall purpose of this program is to achieve a significant reduction in fatalities and serious injuries on all public roads through the implementation of highway safety improvement projects. This includes both infrastructure-related projects and non-infrastructure projects, selected and justified by proven data-driven approaches. All highway safety improvement projects should be chosen and implemented with the goal of reducing fatalities and serious injuries on public roads and the achievement of State safety targets. Some projects will directly impact these performance measures through the implementation of engineering or behavioral countermeasures, while others may advance the data systems and analysis capabilities of the State to more accurately identify locations with the highest potential for safety improvement, evaluate the performance of highway safety improvement projects, or identify high risk roadway characteristics and driver behaviors.

In 2006 FHWA established a new approach to advancing safety by focusing on performance. In order to effectively meet performance targets, States must apply limited resources to the areas that are most likely to achieve results. The requirement to develop and regularly update a SHSP ensures that this approach is maintained. NH annually tracks and reports performance measures including the number of fatalities and severe injuries and fatalities and severe injury rates per vehicle mile traveled. Several other performance measures of specific interest to the State are listed in the NH SHSP.

NH has embraced the goals and vision of the Toward Zero Deaths (TZD) initiative. The State named its SHSP New Hampshire Driving Toward Zero in recognition of the National plan, and created a public outreach program with the same name to promote change in New Hampshire’s safety culture (nhdtz.com). The initiative recognizes that even one traffic death is unacceptable and sets the aggressive goal to reduce all deaths on the Nation’s highways, a goal virtually achieved in the aviation industry in the past several decades. Dozens of public and private stakeholders from across the State have come together in a collaborative effort to update and carry out the strategies in the SHSP. The vision of Driving Toward Zero is embodied in NH’s goal of reducing the number of fatalities and serious injuries by 50% by 2030, equaling an annual reduction of 3.4%. This is measured as a five-year rolling average with the most recent data. Maine and Vermont share this target, and to that end MaineDOT and VTrans have formed a tri-state collaborative partnership with NHDOT to more effectively reach the collective regional goal. NHDOT has also incorporated the reduction of fatalities into their Balanced Scorecard, representing one of the twelve Strategic Objectives of the agency.

The concept of a focused approach has been further reinforced with requirements for data-driven decision making and resource allocation. 23 USC 148(c)(2), as amended by section 1401(a)(1) of SAFETEA-LU, Identification and Analysis of Highway Safety Problems and Opportunities, delineates specific requirements for determining safety problem identification and countermeasure analyses. The legislation also provides flexibility in the use of HSIP funds to address a State’s non-infrastructure safety issues. It is clear from legislation that safety funds are to be used on the most effective treatments and
activities at the locations with the greatest needs, or potential thereof, and that the best available data is to be used to determine the proposed treatments. NH has been moving forward with implementation of the Highway Safety Manual (HSM) as a participant in the NCHRP 17-50 Lead State Initiative to facilitate this process and allow for more robust analysis of the roadway network. Use of Part A, Part B, and Part D of the HSM is growing, while implementation of Part C is in the beginning stages in NH.

MAP-21 continued building on the concept of a safety data system that has the capability to identify key safety problems, establish their relative severity, and then adopt strategic and performance-based goals to maximize safety. Recent improvements to the NH data system include a phased initiative to implement electronic crash reporting through the State’s Crash Report Management System (CRMS), the compilation of the Model Inventory of Roadway Elements (MIRE) fundamental data elements (FDE), and the completion of the National Highway Traffic Safety Administration (NHTSA) Traffic Records Assessment. One of the key outcomes of the Traffic Records Assessment was that performance measures for data quality are needed, including measures of timeliness, accuracy, completeness, uniformity, integration, and accessibility in order to guide improvements to the data and data systems.

The States are required to define a clear linkage between the behavioral NHTSA-funded Highway Safety Program and the HSIP through the State SHSP. The 2012 version (2nd edition) of the NH SHSP identifies 9 critical emphasis areas (CEA) to be addressed by safety stakeholders in NH, listed below.

- Adolescent Drivers
- Comprehensive Safety Data Improvement
- Crash Locations
- Distracted Driving
- Impaired Driving
- Motorcycles and Vulnerable Roadway Users
- Older Drivers
- Speeding
- Vehicle Occupant Protection

The “4-E’s” of safety (education, enforcement, engineering, and emergency medical services) should be considered in selection and development of HSIP projects, however the intent of the HSIP is to primarily target engineering-related countermeasure improvements. The crash types of special interest have been identified in the Crash Locations CEA. The next major update to the SHSP is scheduled for 2016, while more minor updates to the plan and strategies outlined in each section should be reviewed at least annually.

With respect to eligibility for funding, 23 USC 148(a)(4) provides a sample listing of eligible highway safety improvement project types. However, it is important to note that only data-driven projects that
target strategies identified in the State SHSP are eligible for funding in NH. Furthermore, given the limited funding available, funds should be prioritized to help ensure that projects with the greatest safety return will be the top priority. For example addressing crashes involving animals is a possible eligible activity per MAP-21, but since it is not addressed in the current version of the SHSP as a CEA or related strategy, and higher safety needs have been identified, HSIP funds should not be used for that purpose in NH.

23 USC 148(e)(2) makes clear that other Federal-aid funds are eligible to support and leverage the safety program. Improvements to safety features, such as guardrail, that are routinely provided as part a broader Federal-aid project should be funded from the same source funds as the broader project when that safety feature is included in the broader project, not HSIP funds. This allows the HSIP funds to be reserved for stand-alone safety projects thereby allowing for true targeting of safety needs. This is consistent with the provision of separate funding for safety projects and with FHWA’s long-standing position on the use of safety funds.

Data in this report reflect 2013 crash data in order to align numbers with the report that Highway Safety Agency has to submit to NHTSA.
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.

Municipally-maintained local roads and intersections are included in the screening with State-maintained sites and are evaluated using the same methodology. The majority of rural collector as well as rural and urban local road (functional class 8, 9, and 19) traffic data are not available, and therefore the volumes are estimated based on similar roads that have measured data. Urban and rural local roads are categorized separately from the other functional classes in network screening to account for the estimation of volume data. The State is working to improve volume data on all public roads.
Identify which internal partners are involved with Highway Safety Improvement Program planning.

- Design
- Planning
- Maintenance
- Operations
- Governors Highway Safety Office
- Other: Other-Regional Planning Commission staff

Briefly describe coordination with internal partners.

The State’s HSIP is centrally administered. Annually, the Bureau of Highway Design performs a statewide network screening of crashes on all roadway types and distributes results to NHDOT Districts, Bureau of Planning and Community Assistance, and Bureau of Traffic, as well as Metropolitan Planning Organizations (MPO) and Regional Planning Commissions (RPC). These stakeholders are encouraged to review the results of the analysis and provide comments on known aspects of specific locations. Comments may include, but is not limited to: recent work in the area, significant changes to traffic patterns or volumes, upcoming capital projects in the area, local experience/insight on crashes, etc.

The HSIP committee consists of Assistant Director Project Development, design, traffic, maintenance, Bike Pedestrian coordinator and planning personnel from the NHDOT, RPCs, MPOs and FHWA. Committee meetings are held quarterly, or as necessary, to review project selection and progress reports from project managers. Regional Planning Commissions are encouraged to incorporate the HSIP process in their Transportation Improvement Plan development.

The State identifies lane departure crashes and intersections crashes as critical crash types in the Crash Locations Critical Emphasis Area in the SHSP, which addresses engineering and infrastructure-related improvements. Projects are identified that target these types of crashes using the methods listed below. The three approaches will identify sites for Traditional, Systemic, and Road Safety Audit projects that have potential for safety improvements.
HSIP Committee and other stakeholders will receive a list of sites identified through network screening for review. Some sites may go beyond the scope of an HSIP project, which typically means their cost is greater than the anticipated benefits, or the overall cost of right-of-way, environmental, and scope of improvements is of a magnitude that it is of an improvement is deemed too costly or prohibitive in relation to other potential HSIP projects. These sites are recommended for consideration in the long-range capital improvement plans.

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

- Metropolitan Planning Organizations
- Governors Highway Safety Office
- Local Government Association
- Other: Other-Regional Planning Commission Staff

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

- Multi-disciplinary HSIP steering committee
- Other: Other-HSIP crash data reporting aligns with Highway Safety Agency crash data reporting. Both using 2013 crash data for the report.

**Describe any other aspects of Highway Safety Improvement Program Administration on which you would like to elaborate.**
The NHDOT Highway Safety Engineer (HSE) updates the Safety Analyst data import to the ten most recent years of data and then the HSE performs the Network Screening and produces the *Transparency Report* of potential projects, by October 1. The HSE distributes the *Transparency Report* to stakeholders in October, for consideration of HSIP funding proposed projects locations and completion of submittal packages are due on January 1. The committee selects and prioritizes the projects from January – March. March – September completes the cycle and ends the Federal fiscal year; all annual funding is obligated by September 30.

Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law, which eliminated specific HRRR funding and created a special rule for High Risk Rural Roads. MAP-21 also revised the definition of what is considered a “High Risk” Rural Road. The new definition is “any roadway functionally classified as a rural major or minor collector or a rural local road with significant safety risks, as defined by a State in accordance with an updated State Strategic Highway Safety Plan”.

The term “High Risk Rural Road” means any roadway functionally classified as a rural major or minor collector or rural local road (functional class 7, 8 and 9)- a) on which the crash rate for fatalities and incapacitating injuries exceeds the statewide average for roadways of the same functional classifications or roadway; or b) that will likely have increases in traffic volumes that are estimated to create an crash rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classifications of roadway.

Though there is no longer a specific pot of money for an HRRR program, NHDOT chooses to continue to fund improvement on these roadways though the HSIP program. A statewide analysis of lane departure crashes is used to identify towns with the greatest number of the targeted crash types. The prioritized list is filtered by each of the nine RPCs. Towns are selected from each RPC. Sixteen towns chose to participate in the first phase of the program.

**Program Methodology**

*Select the programs that are administered under the HSIP.*

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

Program: Median Barrier
Date of Program Methodology: 10/1/2013

What data types were used in the program methodology?

- **Crashes**
  - All crashes
  - Fatal crashes only
  - Fatal and serious injury crashes only
  - Other-Run Off the Road

- **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

If no, describe the methodology used to identify local road projects as part of this program.

No medians on local roads

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**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 50
☒ Available funding 50
☐ Incremental B/C
☐ Ranking based on net benefit
☐ Other

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

What data types were used in the program methodology?

Crashes

☒ All crashes
☐ Fatal crashes only
☐ Fatal and serious injury crashes only
☒ Other-EPDO

Exposure

☒ Traffic
☒ Volume
☐ Population

Roadway

☐ Median width
☐ Horizontal curvature
☐ Functional classification
☐ Roadside 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

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

If no, describe the methodology used to identify local road projects as part of this program.
EPDO

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  50
- Available funding 50
- Incremental B/C
- Ranking based on net benefit
- Other

Program: Horizontal Curve

Date of Program Methodology: 10/1/2013

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-Run Off the Road</td>
<td>☐ Lane miles</td>
<td>☒ Roadside features</td>
</tr>
<tr>
<td>☒ Other</td>
<td>☐ Other</td>
<td>☒ Other-site subtype</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 50
- Available funding 50
- Incremental B/C
- Ranking based on net benefit
- Other
Program: Bicycle Safety

Date of Program Methodology: 10/1/2013

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>☐ Other</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 SPF
- ☐ 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

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

If no, describe the methodology used to identify local road projects as part of this program.

EPDO

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 50
☐ Available funding 50
Incremental B/C
Ranking based on net benefit
Other

Program: Crash Data
Date of Program Methodology: 10/1/2013

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-need requirement MIRE and HSM

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 100
- Incremental B/C
- Ranking based on net benefit
- Other

Program: Highway Safety Improvement Program

Date of Program Methodology: 10/1/2013

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-Run Off the Road</td>
<td>Lane miles</td>
<td>Roadside features</td>
</tr>
<tr>
<td>Other</td>
<td>Other</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 50
- Available funding 50
- Incremental B/C
- Ranking based on net benefit
- Other

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Program: Low-Cost Spot Improvements

Date of Program Methodology: 10/1/2013

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
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-RSA request from local agencies

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
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).

- Ranking based on B/C 100
- Available funding
- Incremental B/C
- Ranking based on net benefit
- Other

Program: Sign Replacement And Improvement
Date of Program Methodology: 10/1/2013

What data types were used in the program methodology?

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

**Exposure**
- Traffic
- Volume

**Roadway**
- Median width
- Horizontal curvature
- Functional classification
crashes only

☐ Other
☐ Lane miles
☐ Roadside features

☐ Other
☐ Other

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Run off the Road

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 100
  - Incremental B/C
  - Ranking based on net benefit
  - Other

Program: Local Safety

Date of Program Methodology: 10/1/2013

What data types were used in the program methodology?
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
- Other-RSA local agency

Are local roads (non-state owned and operated) included or addressed in this program?
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 50
- Available funding 50
- Incremental B/C
- Ranking based on net benefit
- Other
Program: Pedestrian Safety

Date of Program Methodology: 10/1/2013

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>Lane miles</td>
<td>Roadside features</td>
</tr>
<tr>
<td>Other</td>
<td>Other</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 SPF
- 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 50

Available funding 50

Incremental B/C

Ranking based on net benefit
Program: Right Angle Crash

Date of Program Methodology: 10/1/2013

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></td>
<td>☐ Other</td>
<td>☑ Other-RSA request by local agency</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
Program: Left Turn Crash

Date of Program Methodology: 10/1/2013

What data types were used in the program methodology?

**Crashes**
- [x] All crashes
- [ ] Fatal crashes only
- [ ] Fatal and serious injury crashes only
- [ ] Other

**Exposure**
- [x] Traffic
- [x] Volume
- [ ] Population

**Roadway**
- [ ] Median width
- [ ] Horizontal curvature
- [ ] Functional classification
- [ ] Roadside features
- [x] Other-RSA requested by local agency
- [ ] Other

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

☐ 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 50
- Available funding 50
- Incremental B/C
- Ranking based on net benefit
- Other

Program: Segments

Date of Program Methodology: 10/1/2013

What data types were used in the program methodology?

**Crashes**
- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only
- Other-Run off the Road

**Exposure**
- Traffic
- Volume
- Population

**Roadway**
- Median width
- Horizontal curvature
- Functional classification
- Roadside features
- Other-Site subtype

What project identification methodology was used for this program?
2015 New Hampshire Highway Safety Improvement 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
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
- [x] Rank of Priority Consideration

<table>
<thead>
<tr>
<th>Process</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking based on B/C</td>
<td>50</td>
</tr>
<tr>
<td>Available funding</td>
<td>50</td>
</tr>
<tr>
<td>Incremental B/C</td>
<td></td>
</tr>
<tr>
<td>Ranking based on net benefit</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

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

50

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

- [ ] Cable Median Barriers
- [ ] Traffic Control Device Rehabilitation
- [x] Install/Improve Signing
- [ ] Upgrade Guard Rails
- [ ] Rumble Strips
- [ ] Pavement/Shoulder Widening
- [ ] Install/Improve Pavement Marking and/or Delineation
- [ ] Clear Zone Improvements
What process is used to identify potential countermeasures?

- Engineering Study
- Road Safety Assessment
- Other:

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

- Highway Safety Manual
- Road Safety audits
- Systemic Approach
- Other: Other-no change
Describe any other aspects of the Highway Safety Improvement Program methodology on which you would like to elaborate.

The systemic approach to safety involves improvements to roadways that are widely implemented based on high-risk roadway features correlated with particular severe crash types. This method is very different from the traditional approach used in network screening in that locations receiving improvements are not necessarily required to have a demonstrated crash history. Systemic improvements serve as a strong complement to improvements identified through network screening, together treating the most hazardous sites and reducing the risk of severe crashes across the entire network.

Systemic countermeasure programs have also been shown to be more effective at reducing the overall number of crashes in the state than spot improvements, meaning that successful management of these programs will be essential in reaching State performance targets for reduction of fatalities and severe injuries. Whereas spot improvement projects only influence the safety at a single site or small area, systemic countermeasures are installed in entire towns, districts, or statewide with the potential to treat a large number of safety concerns and change driver behaviors. This is typically accomplished by implementing a large number of low-cost countermeasures that generally have a proportionally large safety benefit. Thus, it is the intent of the NH HSIP to use systemic countermeasure treatments as a significant means to improve highway safety in the State.

The systemic approach is iterative, flexible, and applicable to a variety of systems, locations, and crash types. Similar to the network screening approach, systemic planning involves problem identification, countermeasure selection, and project prioritization. The first step in the systemic process is to analyze system-wide crash and roadway data to target crash types (e.g., lane departure) and associated roadway risk factors (e.g., curves or roadside hazards) that make a significant contribution to the number of fatal and severe injury crashes in the State. Sites with these risk factors are identified and prioritized by potential for future severe crashes based on AADT, crash predictions for that roadway type, roadway characteristics, etc. Appropriate low-cost countermeasures (e.g., rumble strips) are then proposed to effectively address the specific crash types on roads with the identified risk factors. Finally, the chosen countermeasures are installed systemically at the selected sites.

In 2009, the State identified its first systemic project focusing on rural signing improvements. Since that time, the following additional systemic programs have been implemented: shoulder and centerline rumble strips and stripes, median barrier improvements, guardrail and end terminal improvements, rural curve signing and delineation, and an Intersection Safety Improvement Plan (ISIP). These programs are expected to continue in the next few years, with the ISIP growing in levels of effort as the phased implementation process begins.

Within the next year the State plans to develop a system that is capable of regularly evaluating the effectiveness of its implemented countermeasures. Evaluation of systemic projects should be
considered when developing this data. This is vital in determining which programs should be allocated more or less funding, and whether the sites receiving treatments were correctly identified as those with potential to reduce fatal and severe crashes. A new feature for Safety Analyst is planned within the next couple of years with the capability to easily identify and evaluate systemic projects. Information showing the overall effectiveness of the current programs will also guide the Committee’s review of funding allocations for projects selected in each project identification method; e.g. if systemic countermeasure projects are more cost-effective than other types of HSIP projects then a greater amount of funding should be spent on them in the program.

The Road Safety Audit program is changing the application criteria and when the applications can be accepted. The program will move to having a application deadline submitted once a year.
### Progress in Implementing Projects

**Funds Programmed**  
Reporting period for Highway Safety Improvement Program funding.

- ☐ Calendar Year
- ☐ State Fiscal Year
- ☑ Federal Fiscal Year

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

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>Programmed*</th>
<th>Obligated</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSIP (Section 148)</td>
<td>15000000</td>
<td>15000000</td>
</tr>
<tr>
<td>HRRRP (SAFETEA-LU)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRRR Special Rule</td>
<td>900000</td>
<td>900000</td>
</tr>
<tr>
<td>Penalty Transfer - Section 154</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penalty Transfer – Section 164</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incentive Grants - Section 163</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incentive Grants (Section 406)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Federal-aid Funds (i.e. STP, NHPP)</td>
<td></td>
<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?

$18,000.00

How much funding is obligated to local safety projects?

$18,000.00

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

$374,000.00

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

$374,000.00

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

$0.00
How much funding was transferred out of the HSIP to other core program areas during the reporting period?

$0.00

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

The Federal Highway Administration (FHWA) has advised that the funding levels for the Federal Highway Trust Fund (HTF) will likely limit money for transportation disbursements to states. FHWA may need to institute cash management measures which would involve delayed or partial reimbursements to the states. The impact to The State of New Hampshire and the Transportation Improvement program will result in general uncertainty and will have a significant impact to funding the State Ten Year Transportation Improvement Plan. Due to limited State Highway Trust Fund revenues, the State of New Hampshire uses Turnpike Toll Credits to meet the match of the federal program. As a result, there are limited State dollars to support the federal program and as a consequence, the STIP becomes dependent on the availability of federal funds. Any loss of federal funds could very well lead to suspension of work and delay of future State and local transportation projects. As a result of the Congressional discussion on the HTF and MAP-21 reauthorization, the Department of Transportation has employed a moderate risk management strategy in utilizing federal funds with a strong commitment to funding current construction projects under contract. Revenue in the HTF is approximately 70 percent of federally reimbursable construction program outlays. Due to the uncertainty of federal funds in the HTF, the New Hampshire Department of Transportation sought the full authorization of federal funds for current year construction cash needs on existing multi-year construction projects to ensure funds are available to maintain the current federally funded construction program. Taking proactive steps in anticipation of possible end of fiscal year redistribution of federal funds, the Department has maintained several projects in the September advertising schedule for any anticipated redistribution of federal funds. The NH DOT recognizes that every change in schedule regardless of project size can lead to considerable inconvenience for communities impacted and real economic consequences for our construction industry partners who plan on bidding on this work. We have worked diligently to avoid taking these steps that impact project schedules for as long as practical. We look forward to resolution of this issue through authorization of a long-term surface transportation bill and through sustainable revenue sources to fund our critical transportation infrastructure projects.

On July 31, 2014 the U.S. Senate and House of Representatives agreed to fund a short term fix of the Federal Highway Trust Fund. This short term plan provided funding through May 2015. Recent action by Congress extended authorization for two months through July 2015, but did not included additional
funding for the program. This funding uncertainty is placing the NHDOT in the position of deferring planned advertising of construction projects beyond July. If Congress fails to act, the State will also not be reimbursed fully for construction expenses on federally eligible infrastructure projects paid out to private contractors. Just through the end of the calendar year, this may create a substantial cash flow problem for the State.

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

The Road Safety Audit application criteria has been revised and the program has shifted from a rolling application submittal to a December 1st deadline annually.
**General Listing of Projects**

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

<table>
<thead>
<tr>
<th>Project</th>
<th>Improvement Category</th>
<th>Output</th>
<th>HSIP Cost</th>
<th>Total Cost</th>
<th>Fundin g Catego ry</th>
<th>Functional Classificati on</th>
<th>AAD T</th>
<th>Spee d</th>
<th>Roadwa y Ownersh ip</th>
<th>Relationship to SHSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnstead #14121E</td>
<td>Intersection traffic control</td>
<td>1 Miles</td>
<td>150000</td>
<td>3500000</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Arterial</td>
<td>7370</td>
<td>40</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td>(PE charges)</td>
<td>Modify traffic signal -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reduce intersection</td>
</tr>
<tr>
<td></td>
<td>modernization/replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>crashes</td>
</tr>
<tr>
<td>Belmont #16202</td>
<td>Intersection geometry</td>
<td>1 Miles</td>
<td>5000</td>
<td>2325000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial</td>
<td>7900</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td>(PE charges)</td>
<td>Auxiliary lanes - add left-turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>reduce intersection</td>
</tr>
<tr>
<td></td>
<td>lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>crashes</td>
</tr>
<tr>
<td>Belmont #16203</td>
<td>Intersection geometry</td>
<td>1 Miles</td>
<td>150000</td>
<td>1360000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial</td>
<td>1319</td>
<td>50</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td>(PE charges)</td>
<td>Auxiliary lanes - add left-turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Reduce intersection</td>
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<td></td>
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<td></td>
<td>crashes</td>
</tr>
<tr>
<td>Brooklin e #40092</td>
<td>Intersection geometry</td>
<td>1 Miles</td>
<td>30000</td>
<td>205000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial</td>
<td>2000</td>
<td>50</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td>(PE charges)</td>
<td>Auxiliary lanes - add left-turn</td>
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<td>crashes</td>
</tr>
<tr>
<td>Project #</td>
<td>Description</td>
<td>Miles</td>
<td>10000</td>
<td>1650000</td>
<td>HSIP (Section 148)</td>
<td>Roadway Departure</td>
<td>Lane Departure</td>
<td>Project Details</td>
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</tr>
<tr>
<td>------------</td>
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<td>--------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Concord</td>
<td>Roadway Roadway narrowing (road diet, roadway reconfiguration)</td>
<td>3</td>
<td>10000</td>
<td>1650000</td>
<td>Urban Minor Collector</td>
<td>19719</td>
<td>35</td>
<td>City of Municipal Highway Agency</td>
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</tr>
<tr>
<td>#28053</td>
<td>(ROW charges)</td>
<td></td>
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<td>Reduce roadway segment crashes</td>
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</tr>
<tr>
<td>District 3</td>
<td>Roadside Barrier- metal</td>
<td>Miles</td>
<td>1102750</td>
<td>1104000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
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<td>State Highway Agency</td>
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</tr>
<tr>
<td>#24863</td>
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<td>Roadway Departure</td>
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<tr>
<td>Exeter-</td>
<td>Roadside Barrier - concrete</td>
<td>10</td>
<td>3003484.7</td>
<td>3003484.7</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Interstate</td>
<td>42000</td>
<td>State Highway Agency</td>
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<td></td>
<td>Miles</td>
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<td>65</td>
<td>Roadway Departure</td>
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<tr>
<td>#28535</td>
<td>Interchange geometry</td>
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<td>180000</td>
<td>1753924</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>15500</td>
<td>State Highway Agency</td>
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<td></td>
</tr>
<tr>
<td>Farmington</td>
<td>Auxiliary lanes - add left-turn lane</td>
<td>Miles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>Intersection</td>
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<tr>
<td>#16212</td>
<td>(PE &amp; ROW charges)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reduce intersection crashes</td>
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<td>charges)</td>
<td></td>
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<td></td>
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<td>Description</td>
<td>Length</td>
<td>NHI</td>
<td>HSIP Section</td>
<td>Treatment</td>
<td>Funding</td>
<td>Responsible Agency</td>
<td>Action</td>
<td>Result</td>
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<tr>
<td>Swanzey #15697 (PE &amp; Con charges)</td>
<td>Intersection traffic control Modify control - all-way stop to roundabout</td>
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<td>1242804</td>
<td>1871895</td>
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<td>Rural Principal Arterial - Other</td>
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<td>Reduce intersection crashes</td>
</tr>
<tr>
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<td>200000</td>
<td>HRRR Special Rule</td>
<td>Rural Minor Collector</td>
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<td>700000</td>
<td>HRRR Special Rule</td>
<td>Rural Principal Arterial - Other</td>
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<td>Roadway Departure</td>
<td>Reduce Roadway Departure crashes</td>
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<td>statewide 28513</td>
<td>Roadway Rumble strips - edge or shoulder</td>
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<td>500000</td>
<td>500000</td>
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<td>Roadway Departure</td>
<td>Reduce Roadway Departure Crashes</td>
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<tr>
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<td>358518.75</td>
<td>483519</td>
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<td>Rural Principal Arterial - Other</td>
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<td>Reduce Roadway Departure Crashes</td>
</tr>
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<td>Statewide 28655 (PE charges)</td>
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<td>Rural Principal Arterial - Other</td>
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<td>Roadway Departure</td>
<td>Reduce Roadway Departure Crashes</td>
</tr>
<tr>
<td>Statewide 29342</td>
<td>Intersection traffic control Modify traffic signal - add backplates</td>
<td>137500</td>
<td>175000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Reduce intersection crashes</td>
<td></td>
</tr>
<tr>
<td>Lancaster #16208</td>
<td>Intersection traffic control Modify control - modifications to roundabout</td>
<td>127601</td>
<td>1313572</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
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<td>Intersections</td>
<td>Reduce intersection crashes</td>
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<td>Lebanon #29362 (Pe ROW &amp; con charges)</td>
<td>Pedestrians and bicyclists Pedestrian signal - Pedestrian Hybrid Beacon</td>
<td>268915</td>
<td>268915</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
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<td>State Highway Agency</td>
<td>Pedestrians</td>
<td>Reduce Pedestrian crashes</td>
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<td>Intersection traffic control Modify traffic signal - add backplates</td>
<td>1289580</td>
<td>1419589</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>15500</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Reduce intersection crashes</td>
</tr>
<tr>
<td>Manchester #2004 (con charges)</td>
<td>Intersection geometry Intersection geometrics - modify skew angle</td>
<td>1558</td>
<td>118614</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Arterial</td>
<td>4100</td>
<td>45</td>
<td>City of Municipal Highway Agency</td>
<td>Intersections</td>
<td>Reduce intersection crashes</td>
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<tr>
<td>Meredith #16470 (PE &amp; ROW)</td>
<td>Intersection geometry Auxiliary lanes - add auxiliary through lane</td>
<td>97500</td>
<td>612500</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial -</td>
<td>11595</td>
<td>55</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Reduce intersection</td>
</tr>
<tr>
<td>Location</td>
<td>Description</td>
<td>Miles</td>
<td>1Miles</td>
<td>15Miles</td>
<td>HSIP (Section 148)</td>
<td>Other</td>
<td>Agency</td>
<td>Intersections</td>
<td>Crashes</td>
<td></td>
</tr>
<tr>
<td>----------</td>
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<tr>
<td>Pelham #29338 (PE &amp; ROW charges)</td>
<td>Intersection geometry - other</td>
<td>1 Miles</td>
<td>30000</td>
<td>155000</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>11500</td>
<td>40</td>
<td>State Highway Agency</td>
<td>Reduce intersection crashes</td>
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<tr>
<td>Rochester #27873</td>
<td>Intersection geometry - modify intersection corner radius</td>
<td>1 Miles</td>
<td>77000</td>
<td>120000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>7400</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Reduce Intersection crashes</td>
</tr>
<tr>
<td>Seabrook #16444 (PE &amp; Row charges)</td>
<td>Intersection geometry - add auxiliary through lane</td>
<td>1 Miles</td>
<td>2200</td>
<td>2448000</td>
<td>HSIP (Section 148)</td>
<td>Urban Minor Arterial</td>
<td>1690</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Reduce intersection crashes</td>
</tr>
<tr>
<td>Statewide 16259</td>
<td>Roadside Barrier - cable</td>
<td>Miles</td>
<td>63.17</td>
<td>1046738</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
<td>Reduce Roadway Departure Crashes</td>
</tr>
<tr>
<td>Statewide 24881</td>
<td>Roadside Barrier end treatments (crash cushions, terminals)</td>
<td>Miles</td>
<td>652</td>
<td>1084419</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>45</td>
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<td>Roadway Departure</td>
<td>Reduce Roadway Departure Crashes</td>
</tr>
<tr>
<td>Statewide</td>
<td>Roadway signs and traffic control</td>
<td>Miles</td>
<td>902971</td>
<td>902971</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal</td>
<td>40</td>
<td>State Highway</td>
<td>Roadway</td>
<td>Reduce Roadway</td>
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48
<table>
<thead>
<tr>
<th>e 28135</th>
<th>related warning signs and flashers</th>
<th>45</th>
<th>45</th>
<th>n 148</th>
<th>Arterial - Other</th>
<th>Agency</th>
<th>Departure</th>
<th>Departure Crashes</th>
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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>
<thead>
<tr>
<th>Performance Measures*</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fatalities</td>
<td>134</td>
<td>126.4</td>
<td>119</td>
<td>114.8</td>
<td>114.2</td>
</tr>
<tr>
<td>Number of serious injuries</td>
<td>676</td>
<td>626.6</td>
<td>597.2</td>
<td>585.2</td>
<td>560.2</td>
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<tr>
<td>Fatality rate (per HMVMT)</td>
<td>1.01</td>
<td>0.96</td>
<td>0.91</td>
<td>0.88</td>
<td>0.88</td>
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<tr>
<td>Serious injury rate (per HMVMT)</td>
<td>5.08</td>
<td>4.73</td>
<td>4.55</td>
<td>4.5</td>
<td>4.32</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


- # Serious Injuries
  - 2009: 134
  - 2010: 1264
  - 2011: 119
  - 2012: 1143
  - 2013: 1142

- # Fatalities
Rate of Fatalities and Serious Injuries for the Last Five Years

![Graph showing the trend of fatality and serious injury rates per HMVMT for the years 2009 to 2013.](image-url)

- Fatality Rate (per HMVMT)
- Serious Injuries Rate (per HMVMT)
To the maximum extent possible, present performance measure* data by functional classification and ownership.

### Year - 2013

<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>
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</thead>
<tbody>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - INTERSTATE</td>
<td>5.84</td>
<td>17.33</td>
<td>0.46</td>
<td>1.37</td>
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<td>RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>RURAL PRINCIPAL ARTERIAL - OTHER</td>
<td>13.13</td>
<td>41.76</td>
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<td>3.83</td>
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<td>RURAL MINOR ARTERIAL</td>
<td>13.5</td>
<td>49.31</td>
<td>1.29</td>
<td>4.7</td>
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<td>12.04</td>
<td>59.97</td>
<td>1.07</td>
<td>5.32</td>
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<td>RURAL MAJOR COLLECTOR</td>
<td>5.84</td>
<td>23.55</td>
<td>1.02</td>
<td>4.13</td>
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<td>RURAL LOCAL ROAD OR STREET</td>
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<td>53.75</td>
<td>2.69</td>
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<td>URBAN PRINCIPAL</td>
<td>8.39</td>
<td>37.76</td>
<td>0.52</td>
<td>2.34</td>
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<tr>
<td>ARTERIAL - INTERSTATE</td>
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<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
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</tr>
<tr>
<td>URBAN PRINCIPAL ARTERIAL - OTHER FREeways AND EXPRESSWAYS</td>
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<td>6.08</td>
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<td>0</td>
</tr>
<tr>
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<td>9.49</td>
<td>52.87</td>
<td>1.34</td>
<td>7.49</td>
</tr>
</tbody>
</table>
# Fatalities by Roadway Functional Classification

![Bar chart showing fatalities by roadway functional classification for years 2009 to 2013.](chart.png)

- **Roadway Functional Classification**:
  - Major Collector (U)
  - Minor Collector (R)
  - Principal Arterial (R)
  - Local Road or Street (R)
  - Principal Arterial - Other (R)
  - Minor Arterial - Other (R)
  - Principal Arterial - Interstate (U)
  - Minor Arterial - Interstate (U)
  - Major Collector - Interstate (U)
  - Minor Collector - Interstate (U)
  - Principal Arterial - Other Freeways and Expressways (R)
  - Principal Arterial - Other Freeways and Expressways (U)
# Serious Injuries by Roadway Functional Classification
Fatality Rate by Roadway Functional Classification

Roadway Functional Classification

2009 2010 2011 2012 2013
Serious Injury Rate by Roadway Functional Classification

Roadway Functional Classification
### Year - 2011

<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>
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<td>362</td>
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<td>0</td>
<td>0</td>
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<td>108</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LOCAL PARK, FOREST OR RESERVATION AGENCY</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>OTHER LOCAL AGENCY</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>LOCAL TOLL AUTHORITY</td>
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<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>
</tbody>
</table>
Number of Fatalities by Roadway Ownership

- **2009**
- **2010**
- **2011**
- **2012**
- **2013**

# of Fatalities

Roadway Functional Classification

- STATE
- COUNTY
- TOWN
- CITY
- STATE PARK
- OTHER STATE
- PRIVATE
- RAILROAD
- STATE TOLL
- LOCAL TOLL
- OTHER
Number of Serious Injuries by Roadway Ownership

- 2009
- 2010
- 2011
- 2012
- 2013

# of Serious Injuries

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

Roadway Functional Classification

- STATE
- COUNTY
- TOWN
- CITY
- LOCAL PARK
- STATE TOLL
- LOCAL TOLL
- OTHER
- PRIVATE
- RAILROAD
- OTHER STATE

Fatality Rate (per HMVT)

- 2009
- 2010
- 2011
- 2012
- 2013
Describe any other aspects of the general highway safety trends on which you would like to elaborate.

Similar to infrastructure-related projects, non-infrastructure projects should be consistent with the NH SHSP and based on crash experience, crash potential, crash rate, or other data-supported means. HSIP funds should be used to implement proven, effective strategies in order to support the State’s safety performance targets. Strategies should either add to existing successful non-infrastructure programs (but not replace existing funding sources), or be used to implement new activities proven through research. In addition, the safety benefit and economic effectiveness of both infrastructure and non-infrastructure projects should be considered during the Project Selection Process described later in this manual. Non-infrastructure projects must be approved by the NHDOT HSIP Committee in competition with all other projects. Examples of eligible non-infrastructure projects include behavioral countermeasures; safety culture programs; transportation safety planning; collection, analysis, and improvement of safety data; and road safety audits. The HSIP Committee has previously funded data improvements, road safety audits, and safety culture and public outreach efforts of the New Hampshire Driving Toward Zero (NHDTZ) program. HSIP contributes about $250,000 annually to NHDTZ, or about 3% of total HSIP funding. There are many opportunities to build on these efforts and to coordinate with other agencies in non-infrastructure programs.

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 Performance Measures</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatality rate (per capita)</td>
<td>0.194</td>
<td>0.168</td>
<td>0.16</td>
<td>0.156</td>
<td>0.118</td>
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<tr>
<td>Serious injury rate (per capita)</td>
<td>0.44</td>
<td>0.4</td>
<td>0.402</td>
<td>0.394</td>
<td>0.328</td>
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<tr>
<td>Fatality and serious injury rate (per capita)</td>
<td>0.634</td>
<td>0.566</td>
<td>0.56</td>
<td>0.55</td>
<td>0.444</td>
</tr>
</tbody>
</table>

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

divide total older driver injuries by the older driver population data as shown on your website.

VMT rate for $K = \frac{K}{HMVMT}$ for 2012 where $k=22, HMVMT=128.61$

VMT rate for $K = 0.17$

For the special rule VMT rate for $K=K/#$ of people 65 yrs or older for 2012, where $k=22$, # people =147
Special rule for $K = \frac{22}{147} = 0.15$

For special rule of injuries for $A = A/\#$ people 65 or older for 2012, where $A = 65$, $\#$ people = 147
Special rule for $A = \frac{65}{147} = 0.44$

**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
- [x] 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
- [x] None
- [ ] Other:

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

Road Safety Audit application criteria has been developed and the Road safety audit program has moved from a rolling application to an annual application submittal deadline.
### SHSP Emphasis Areas
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

#### Year - 2013

<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>
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<tbody>
<tr>
<td>Lane Departure</td>
<td>Run-off-road</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Intersections</td>
<td>Intersections</td>
<td>13.4</td>
<td>136</td>
<td>0.1</td>
<td>1.05</td>
<td>13.4</td>
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<tr>
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<td>7.8</td>
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<td>0.8</td>
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<td>0.05</td>
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<td>Older Drivers</td>
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<tr>
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<td>560.2</td>
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<td>114.2</td>
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</tbody>
</table>
Number of Fatalities by SHSP Emphasis Area

Year 2009 to Year 2013

SHSP Emphasis Area

- Lane Departure
- Roadway Departure
- Intersections
- Pedestrians
- Bicyclists
- Older Drivers
- Motorcyclists
- Work Zones
- Data
Number of Serious Injuries by SHSP Emphasis Area

Year 2009 to Year 2013

- 2009
- 2010
- 2011
- 2012
- 2013

# of Serious Injuries

SHSP Emphasis Area
**Groups of similar project types**

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

**Year - 2013**

<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>
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<td>Sign Replacement And Improvement</td>
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<td>168.2</td>
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<td>43.2</td>
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<td>9.68</td>
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<td>114.2</td>
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<td>0</td>
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<tr>
<td>Intersection</td>
<td>Intersections</td>
<td>13.4</td>
<td>136</td>
<td>0.1</td>
<td>1.05</td>
<td>13.4</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Roadway Departure</td>
<td>Run-off-road</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
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</tbody>
</table>
# Fatalities by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

Target Crash Type

<table>
<thead>
<tr>
<th>Crash Type</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>All</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle</td>
<td></td>
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</tr>
<tr>
<td>Cross median</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed object</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sideswipe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night-time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-intersection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear-end</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Right-turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Run-off road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed-related</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck-related</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle/animal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle/bicycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet road</td>
<td></td>
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</tr>
</tbody>
</table>
# Serious Injuries by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

Target Crash Type

- All
- Angle
- Cross median
- Fixed object
- Sideswipe
- Head on
- Left-turn
- Night-time
- Intersections
- Non-intersection
- Rear-end
- Right-turn
- Run-off-road
- Speed-related
- Truck-related
- Vehicle/animal
- Vehicle/bicycle
- Vehicle/wet road

# of Serious Injuries
Fatality Rate by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

Target Crash Type

Rate of Fatalities

- All
- Angle
- Cross median
- Fixed object
- Sideswipe
- Head on
- Left-turn
- Night-time
- Intersections
- Non-intersection
- Rear end
- Right-turn
- Run-off-road
- Speed-related
- Truck-related
- Vehicle/animal
- Vehicle/bicycle
- Vehicle/peDESTrian

Colors:
- 2009
- 2011
- 2012
- 2013
### Systemic Treatments

Present the overall effectiveness of systemic treatments.

#### Year - 2013

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Install/Improve Signing</td>
<td>Night-time</td>
<td>43.2</td>
<td>168.2</td>
<td>0.33</td>
<td>1.3</td>
<td>43.2</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Rumble Strips</td>
<td>Run-off-road</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Upgrade Guard Rails</td>
<td>Run-off-road</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
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<td>0</td>
</tr>
<tr>
<td>Other-F--terminal Replacements</td>
<td>Run-off-road</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Add/Upgrade/Modify/Remove Traffic Signal</td>
<td>Angle</td>
<td>13.4</td>
<td>136</td>
<td>0.1</td>
<td>1.05</td>
<td>13.4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Install/Improve Pavement Marking and/or Delineation</td>
<td>Night-time</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other-intersections</td>
<td>Non-intersection</td>
<td>13.4</td>
<td>136</td>
<td>0.1</td>
<td>1.05</td>
<td>13.4</td>
<td>0</td>
<td>0</td>
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<tr>
<td>local safety</td>
<td>All</td>
<td>31.8</td>
<td>198.4</td>
<td>1.55</td>
<td>9.68</td>
<td>31.8</td>
<td>0</td>
<td>0</td>
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<tr>
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<td>Run-off-road</td>
<td>47.2</td>
<td>194.2</td>
<td>0.37</td>
<td>1.51</td>
<td>47.2</td>
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</tbody>
</table>
# Serious Injuries by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013

[Bar chart showing the number of serious injuries by target crash type for each year from 2009 to 2013. The chart is color-coded by year, with bars for each crash type (All, Angle, Fixed object, Head-on, Left-turn, Right-turn, Night-time, Intersections, Rear-end, Run-off-road, Speed-related, Truck-related, Vehicle, Vehicle/bicycle, Vehicle/pedestrian).]
Fatality Rate by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013

Rate of Fatalities

Target Crash Type
Serious Injury Rate by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013

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

The systemic approach to safety involves improvements to roadways that are widely implemented based on high-risk roadway features correlated with particular severe crash types. This method is very different from the traditional approach used in network screening in that locations receiving improvements are not necessarily required to have a demonstrated crash history. Systemic improvements serve as a strong complement to improvements identified through network screening, together treating the most hazardous sites and reducing the risk of severe crashes across the entire network.

Systemic countermeasure programs have also been shown to be more effective at reducing the overall number of crashes in the state than spot improvements, meaning that successful management of these programs will be essential in reaching State performance targets for reduction of fatalities and severe injuries. Whereas spot improvement projects only influence the safety at a single site or small area, systemic countermeasures are installed in entire towns, districts, or statewide with the potential to treat a large number of safety concerns and change driver behaviors. This is typically accomplished by implementing a large number of low-cost countermeasures that generally have a proportionally large safety benefit. Thus, it is the intent of the NH HSIP to use systemic countermeasure treatments as a significant means to improve highway safety in the State.

The systemic approach is iterative, flexible, and applicable to a variety of systems, locations, and crash types. Similar to the network screening approach, systemic planning involves problem identification, countermeasure selection, and project prioritization. The first step in the systemic process is to analyze system-wide crash and roadway data to target crash types (e.g., lane departure) and associated roadway risk factors (e.g., curves or roadside hazards) that make a significant contribution to the number of fatal and severe injury crashes in the State. Sites with these risk factors are identified and prioritized by potential for future severe crashes based on AADT, crash predictions for that roadway type, roadway characteristics, etc. Appropriate low-cost countermeasures (e.g., rumble strips) are then proposed to effectively address the specific crash types on roads with the identified risk factors. Finally, the chosen countermeasures are installed systemically at the selected sites.
**Project Evaluation**

Provide project evaluation data for completed projects (optional).

<table>
<thead>
<tr>
<th>Location</th>
<th>Functional Class</th>
<th>Improvement Category</th>
<th>Improvement Type</th>
<th>Evaluaton Results (Benefit/Cost Ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitefield</td>
<td>Rural Principal Arterial - Other</td>
<td>Shoulder treatments</td>
<td>Widen shoulder - paved or other</td>
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<tr>
<td>Whitefield</td>
<td>Rural Principal Arterial - Other</td>
<td>Roadway</td>
<td>Roadway - other</td>
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<td>Derry</td>
<td>Urban Principal Arterial - Other</td>
<td>Intersection traffic control</td>
<td>Modify traffic signal - modernization/replacement</td>
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<td>Rural Principal Arterial - Other</td>
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<td>Roadway narrowing (road diet, roadway reconfiguration)</td>
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<tr>
<td>Location</td>
<td>Type</td>
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<td>---------------------------</td>
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</tr>
<tr>
<td>Boscawen</td>
<td>Rural Principal Arterial - Other</td>
<td>Intersection geometry - other</td>
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<td>Brentwood</td>
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<td>Greenland</td>
<td>Rural Principal</td>
<td>Intersection geometry</td>
<td>Auxiliary lanes - add right-turn lane</td>
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<tr>
<td>Boscowan</td>
<td>Rural Principal</td>
<td>Intersection traffic control</td>
<td>Modify control - modifications to roundabout</td>
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<td>Hampstead-Atkinson</td>
<td>Urban Minor Collector</td>
<td>Intersection geometry</td>
<td>Auxiliary lanes - add right-turn lane</td>
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<td>Lyme</td>
<td>Rural Minor Collector</td>
<td>Speed management</td>
<td>Traffic calming feature</td>
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<td>Effingham</td>
<td>Rural Principal</td>
<td>Intersection traffic control</td>
<td>Intersection signing - add enhanced advance warning (double-up and/or oversize)</td>
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<td>Epping</td>
<td>Rural Principal</td>
<td>Intersection geometry</td>
<td>Auxiliary lanes - add auxiliary through lane</td>
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### Optional Attachments

<table>
<thead>
<tr>
<th>Sections</th>
<th>Files Attached</th>
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</thead>
<tbody>
<tr>
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</table>
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.