North Dakota
Highway Safety Improvement Program
2014 Annual Report

Prepared by: ND
**Disclaimer**

**Protection of Data from Discovery & Admission into Evidence**

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

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

The NDDOT addresses safety on local roads through the Local Road Safety Program (LRSP).

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

- Design
- Planning
- Maintenance
Briefly describe coordination with internal partners.

Internal partners are included in the review of the HSIP project listings.

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

- Metropolitan Planning Organizations
- Other: Cities, Counties, and Tribal Governments

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

- Multi-disciplinary HSIP steering committee
- Other: HSIP application form has been revised.
Describe any other aspects of Highway Safety Improvement Program Administration on which you would like to elaborate.

Schedule for HSIP requests:

- October – send out HSIP solicitation letter
- Mid December – HSIP application forms (SFN 59959) are due to NDDOT
- January through March – NDDOT analysis of HSIP requests
- April – Draft HSIP project listing
- August 31st – Final HSIP project list due to FHWA

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:

Program:  Intersection
Date of Program Methodology: 6/17/2014
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-Intersection skew,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>intersections of curves,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>intersection traffic control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>device, presence of adjacent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>development</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-Systemic project identification, local agency or NDDOT district requests

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 1
☐ Incremental B/C
☒ Ranking based on net benefit 2
☐ Other
Program: Roadway Departure

Date of Program Methodology: 6/17/2014

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></td>
</tr>
<tr>
<td>□ Other</td>
<td>□ Lane miles</td>
<td>✗ Roadside features</td>
</tr>
<tr>
<td></td>
<td>□ Other</td>
<td>✗ Other-shoulder width, access</td>
</tr>
<tr>
<td></td>
<td></td>
<td>density</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
What proportion of highway safety improvement program funds address systemic improvements?

14

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
- Install/Improve Pavement Marking and/or Delineation
- 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
- Add/Upgrade/Modify/Remove Traffic Signal
- Other

What process is used to identify potential countermeasures?
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.

ROAD SAFETY REVIEWS
A road safety review (RSR) is a site visit of a roadway or intersection by a multi-disciplinary team in order to identify changes that may improve safety. RSRs are typically requested by a local agency or the NDDOT District and are most commonly performed at high crash locations and/or locations with negative public perception. However, they may be performed at other locations as well; such as locations where there is a perceived potential for safety improvement but it is not exactly clear what should be done. RSRs are typically not performed multiple times at one location, unless traffic patterns or nearby developments have changed since the previous RSR was performed.
The road safety review is coordinated by the NDDOT traffic operations section. Typically, the RSR team consists of one or more representatives from the following organizations:

- NDDOT Traffic operations
- NDDOT District Maintenance
- NDDOT District Construction
- NDDOT Traffic Safety Design Section
- NDDOT Roadway Design Section
- NDDOT Safety Division
- NDDOT Local Government
- FHWA Safety Engineer
- City and/or County Engineer
- Local law enforcement (HP, City Police, BIA, etc)

**SYSTEMIC SITE IDENTIFICATION**

In the past, safety funds were focused mostly on infrastructure projects on state highways and were identified through the “black spot” method. However, because the severe crash data shows that 56% (from ND SHSP, page 4-2) are occurring on the county/local system, a majority of safety funds will now be directed to local roadways. Based on a commitment in the 2013 North Dakota Strategic Highway Safety Plan (SHSP), the NDDOT is working with CH2M Hill to develop “Local Road Safety Programs” (LRSP’s) for North Dakota. The LRSP’s have developed a systemic process to provide application of high-priority/low-cost safety strategies at “at-risk” locations.

The LRSP’s have identified certain characteristics that help identify and prioritize locations that have the most risk. For consistency in application of safety improvements, the problem identification and countermeasure selection for potential safety projects on state highways will generally follow the same process that has been developed for the local roadways in the LRSP’s. Because of the higher design standards of state highways versus local roadways, some variations of this process are necessary and are discussed in detail in the following sections. Also, some countermeasures have already been applied system-wide on all state highways (such as shoulder rumble strips).

Potential projects are identified using a star rating system. A star is assigned for each risk factor that is present at any given location. Separate inventories of the state highway system have been developed using the following facility types:
• Highway segments (State Highways, US Highways)
• Highway intersections (State Highway/State Highway, US Highway/State Highway, etc)
• Horizontal curves on state highways
### 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>11284000</td>
<td>10560226.83</td>
</tr>
<tr>
<td>HRRRP (SAFETEA-LU)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HRRR Special Rule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penalty Transfer - Section 154</td>
<td>5289006</td>
<td>5289006</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>0</td>
<td>0</td>
</tr>
<tr>
<td>State and Local Funds</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
How much funding is programmed to local (non-state owned and maintained) safety projects?
3 %

How much funding is obligated to local safety projects?
3 %

How much funding is programmed to non-infrastructure safety projects?
0 %

How much funding is obligated to non-infrastructure safety projects?
0 %

How much funding was transferred in to the HSIP from other core program areas during the reporting period?
0 %
How much funding was transferred out of the HSIP to other core program areas during the reporting period?

0 %

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

None

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

None
### 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>Funding Category</th>
<th>Functional Classification</th>
<th>AADT</th>
<th>Speed</th>
<th>Roadway Ownership</th>
<th>Relationship to SHSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery Approaches- Various Locations Devils Lake Dist</td>
<td>Intersection geometry Intersection geometrics - miscellaneous/other/unspecified</td>
<td>0</td>
<td>13500</td>
<td>15000</td>
<td>HSIP (Section 148)</td>
<td>Rural Arterial - Other</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td></td>
<td>US 2 Turn Lanes - Dist Bndry to W of Surrey</td>
<td>0</td>
<td>1395000</td>
<td>1550000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td></td>
<td>ND 16 &amp; McKenzie Cnty 38</td>
<td>0</td>
<td>22500</td>
<td>25000</td>
<td>HSIP (Section 148)</td>
<td>Rural Major Collector</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td></td>
<td>ND 200 and Hensler Road</td>
<td>0</td>
<td>26100</td>
<td>29000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0</td>
<td>0</td>
<td>County Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td></td>
<td>Project Description</td>
<td>0</td>
<td>79740</td>
<td>88600</td>
<td>HSIP (Section 148)</td>
<td>Rural Major Collector</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------</td>
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<td>----------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>ND 66,</strong> <strong>Structure #066.029.076</strong></td>
<td>Roadside Drainage improvements</td>
<td>0</td>
<td>24498</td>
<td>24498</td>
<td>HSIP (Section 148)</td>
<td>Rural Local Road or Street</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
</tr>
<tr>
<td><strong>Rumble strips on BIA roads</strong></td>
<td>Roadway Rumble strips - edge or shoulder</td>
<td>0</td>
<td>47070</td>
<td>52300</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0</td>
<td>0</td>
<td>Indian Tribe Nation</td>
<td>Roadway Departure</td>
</tr>
<tr>
<td><strong>US 52 and ND 3 near Harvey</strong></td>
<td>Intersection geometry Auxiliary lanes - add left-turn lane</td>
<td>0</td>
<td>17590</td>
<td>19550</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td><strong>One-way signs on Divided Highways (eastern districts)</strong></td>
<td>Roadway signs and traffic control Roadway signs (including post) - new or updated</td>
<td>0</td>
<td>11439</td>
<td>12710</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td><strong>ND 21 from US 85 to ND 22</strong></td>
<td>Roadway Roadway widening - curve</td>
<td>0</td>
<td>11439</td>
<td>12710</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
</tr>
<tr>
<td><strong>ND 22 from W Jct ND 21</strong></td>
<td>Intersection geometry Auxiliary lanes - add left-</td>
<td>0</td>
<td>11439</td>
<td>12710</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
</tr>
<tr>
<td>Location</td>
<td>Description</td>
<td>Start</td>
<td>End</td>
<td>Section</td>
<td>Location Agency</td>
<td>Location Agency</td>
<td>Action</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>-------</td>
<td>-----</td>
<td>---------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thru New England</td>
<td>turn lane</td>
<td>00</td>
<td>00</td>
<td>n 148)</td>
<td>Arterial Agency</td>
<td>Arterial Agency</td>
<td>Add left-turn lanes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US 83 Turn Lanes</td>
<td>Intersection geometry</td>
<td>0</td>
<td>43798 0</td>
<td>48177 8</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0 0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Provide turn lanes</td>
</tr>
<tr>
<td>US 83 Turn Lanes</td>
<td>Auxiliary lanes - add left-turn lane</td>
<td>0</td>
<td>17490 4</td>
<td>19239 4</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0 0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Provide turn lanes</td>
</tr>
<tr>
<td>Districtwide Retroreflectivity</td>
<td>Roadway signs and traffic control Sign sheeting - upgrade or replacement</td>
<td>0</td>
<td>14400 00</td>
<td>16000 00</td>
<td>HSIP (Section 148)</td>
<td>n/a</td>
<td>0 0</td>
<td>State Highway Agency</td>
<td>Older Drivers</td>
<td>Enhanced signing</td>
</tr>
<tr>
<td>US 81 (19th Ave N) at NDSU Barns</td>
<td>Advanced technology and ITS Congestion detection / traffic monitoring system</td>
<td>0</td>
<td>67500 00</td>
<td>75000 00</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>0 0</td>
<td>City of Municipal Highway Agency</td>
<td>Intersections</td>
<td>Dynamic warning signs</td>
</tr>
<tr>
<td>Districtwide Retroreflectivity</td>
<td>Roadway signs and traffic control Sign sheeting - upgrade or replacement</td>
<td>0</td>
<td>15300 00</td>
<td>17000 00</td>
<td>HSIP (Section 148)</td>
<td>n/a</td>
<td>0 0</td>
<td>State Highway Agency</td>
<td>Older Drivers</td>
<td>Enhanced signing</td>
</tr>
<tr>
<td>Intersection of US 2 &amp; RP 23.9</td>
<td>Intersection geometry</td>
<td>0</td>
<td>27216 00</td>
<td>30240 00</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Other</td>
<td>0 0</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Provide turn lanes</td>
</tr>
</tbody>
</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>118</td>
<td>114</td>
<td>122</td>
<td>133</td>
<td>142</td>
</tr>
<tr>
<td>Number of serious injuries</td>
<td>370</td>
<td>369</td>
<td>376</td>
<td>409</td>
<td>453</td>
</tr>
<tr>
<td>Fatality rate (per HMVMT)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Serious injury rate (per HMVMT)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</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

<table>
<thead>
<tr>
<th>Years</th>
<th># Serious Injuries</th>
<th># Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>132</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>142</td>
<td></td>
</tr>
</tbody>
</table>
Rate of Fatalities and Serious Injuries for the Last Five Years

![Graph showing the rate of fatalities and serious injuries per HMVMT for the years 2009 to 2013. The graph indicates a significant increase in fatalities in 2012, from 1 to 2.](image-url)
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>
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<td>2015</td>
<td>2016</td>
<td>2017</td>
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<td>0</td>
<td>0.85</td>
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</tbody>
</table>
# Fatalities by Roadway Functional Classification

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

Roadway Functional Classification
Fatality Rate by Roadway Functional Classification

0 2 4 6 8 10
Fatality Rate (per HMVNT)

Roadway Functional Classification

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

Roadway Functional Classification

- Major Collector (U)
- Minor Collector (R)
- Major Collector or Street (R)
- Principal Arterial (R)
- Principal Arterial - Other Freeways and Expressways (R)
- Principal Arterial - Interstate (R)
- Principal Arterial - Other (R)
- Minor Arterial - Other (U)
- Minor Collector - Other (U)
- Minor Collector - Interstate (U)
- Local Road or Street (U)
- Interstate Freeway and Expressway (U)

Years:
- 2009
- 2010
- 2011
- 2012
- 2013

Serious Injury Rate (per HHVMT)
## Year - 2013

<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>114</td>
<td>135</td>
<td>1.25</td>
<td>1.47</td>
</tr>
<tr>
<td>COUNTY HIGHWAY AGENCY</td>
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<td>53</td>
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<td>0.57</td>
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<td>TOWN OR TOWNSHIP HIGHWAY AGENCY</td>
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<td>0</td>
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<td>CITY OF MUNICIPAL HIGHWAY AGENCY</td>
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<td>STATE PARK, FOREST, OR RESERVATION AGENCY</td>
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<td>LOCAL PARK, FOREST OR RESERVATION AGENCY</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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<td>OTHER STATE AGENCY</td>
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<td>0</td>
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</tr>
<tr>
<td>OTHER LOCAL AGENCY</td>
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<td>0</td>
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<td>PRIVATE (OTHER THAN RAILROAD)</td>
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<td>0</td>
<td>0</td>
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<td>STATE TOLL AUTHORITY</td>
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</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>
</tbody>
</table>
Number of Fatalities by Roadway Ownership

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

Roadway Functional Classification:
- **State**
- **County**
- **Town**
- **City**
- **State Park**
- **Other State**
- **Private**
- **Railroad**
- **State Toll**
- **Local Toll**
- **Other**

# of Fatalities:
- **0**
- **10**
- **20**
- **30**
- **40**
- **50**
- **60**
- **70**
- **80**
- **90**
- **100**
- **110**
- **120**
- **130**
- **140**
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
Describe any other aspects of the general highway safety trends on which you would like to elaborate.

None

**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>0.132</td>
<td>0.116</td>
<td>0.124</td>
<td>0.14</td>
<td>0.118</td>
</tr>
<tr>
<td>Serious injury rate (per capita)</td>
<td>1.092</td>
<td>0.902</td>
<td>0.756</td>
<td>0.646</td>
<td>0.45</td>
</tr>
<tr>
<td>Fatality and serious injury rate (per capita)</td>
<td>1.228</td>
<td>1.022</td>
<td>0.882</td>
<td>0.79</td>
<td>0.572</td>
</tr>
</tbody>
</table>

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

Number of fatalities age 65 and older + Number of Injuries age 65 and older / 1000 population = Rate

Example year 2012:
22 Fatalities age 65 and older
77 Injuries age 65 and older
2012 population is 144,000

22+77/144=0.69

(0.69+0.64+0.46+1.07+1.09)/5 = 0.79

<table>
<thead>
<tr>
<th>Fatalities (Age 65+)</th>
<th>Injuries (Age 65+)</th>
<th>Population (Age 65+, in 1000s)</th>
<th>Rate (fat + inj)</th>
<th>5-yr Average (fat + inj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>23</td>
<td>188</td>
<td>142</td>
<td>1.49</td>
</tr>
<tr>
<td>2006</td>
<td>18</td>
<td>177</td>
<td>146</td>
<td>1.34</td>
</tr>
<tr>
<td>2007</td>
<td>10</td>
<td>156</td>
<td>144</td>
<td>1.15</td>
</tr>
<tr>
<td>Year</td>
<td>North Dakota</td>
<td>Highway Safety Improvement Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>-----------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>16</td>
<td>143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>29</td>
<td>128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
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<td>2011</td>
<td>23</td>
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<tr>
<td>2012</td>
<td>22</td>
<td>77</td>
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<tr>
<td>2013</td>
<td>10</td>
<td>50</td>
<td></td>
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</tr>
</tbody>
</table>
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-Using systemic approach to apply low-cost countermeasures for at-risk locations

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

None
**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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</thead>
<tbody>
<tr>
<td>Lane Departure</td>
<td></td>
<td>62</td>
<td>219</td>
<td>0.68</td>
<td>2.38</td>
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<td>0</td>
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<tr>
<td>Intersections</td>
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<td>24</td>
<td>64</td>
<td>0.26</td>
<td>0.69</td>
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</table>
Number of Fatalities by SHSP Emphasis Area

Year 2009 to Year 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Lane Departure</th>
<th>Roadway Departure</th>
<th>Intersections</th>
<th>Data</th>
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<tbody>
<tr>
<td>2009</td>
<td></td>
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<td>2010</td>
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<td>2011</td>
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</tr>
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<td>2012</td>
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<tr>
<td>2013</td>
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</table>

SHSP Emphasis Area

# of Fatalities

0 20 40 60 80
Number of Serious Injuries by SHSP Emphasis Area

Year 2009 to Year 2013

2009 2010 2011 2012 2013

# of Serious Injuries

Lane Departure  Roadway Departure  Intersections  Dia

SHSP Emphasis Area
Fatality Rate by SHSP Emphasis Area

Year 2009 to Year 2013

Lane Departure
Roadway Departure
Intersections
DATA

SHSP Emphasis Area

Rate of Fatalities

2009 2010 2011 2012 2013
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>64</td>
<td>0.26</td>
<td>0.69</td>
<td>0</td>
<td>0</td>
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</table>
# Fatalities by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

Target Crash Type

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

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

Year 2009 to Year 2013

Target Crash Type
Serious Injury Rate by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

[Graph showing serious injury rate by target crash type for different years from 2009 to 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>
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</thead>
<tbody>
<tr>
<td>Rumble Strips</td>
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<td>0.68</td>
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</table>
# Fatalities by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013

Target Crash Type

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

# of Fatalities

-0.6
-0.4
-0.2
0
0.2
0.4
0.6

2009 2010 2011 2012 2013

2014 North Dakota Highway Safety Improvement Program
# Serious Injuries by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013
Fatality Rate by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013

Target Crash Type

Rate of Fatalities

-0.6 -0.4 -0.2 0 0.2 0.4 0.6

Air Angle Cross 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/bicycle Wet road

2009 2010 2011 2012 2013
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.

None
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>Bef-Fatal</th>
<th>Bef-Serious Injury</th>
<th>Bef-Other Injury</th>
<th>Bef-PDO</th>
<th>Bef-Total</th>
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</table>

Evaluation Results (Benefit/Cost Ratio)
## Optional Attachments

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

**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.