Protection of Data from Discovery & Admission into Evidence

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

23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”
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Executive Summary

SAFETEA-LU first instituted the Highway Safety Improvement Program (HSIP) in 2005 and MAP-21 continued the program in 2012. Although Massachusetts was in fact designing and constructing safety projects, it was using other funding categories. In 2009 Massachusetts began obligating funds from the HSIP funding category, only after an HSIP Task Force was developed and HSIP guidelines were implemented. Massachusetts is now in the fifth year of an active HSIP program. This report summarizes the HSIP management and structure in Massachusetts as well as describing the selected HSIP programs and projects. New this year, we are submitting the HSIP report on line. This has been particularly challenging for us because obtaining access for online submitting is in conflict with our policies on security. We have not yet resolved the issues of gaining access and our presently using the access of MassDOT personnel with existing access.
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: The STIP provided for $15 million in 2013 HSIP funds. In an effort to distribute the HSIP funds in an equitable manner throughout the Commonwealth on all public roadways (both local and State-owned) without an overemphasis on the metro-Boston area.

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

The HSIP project selection criteria was based on locations being identified as top crash locations (based on the number of equivalent property damage only crashes – which weights a fatal crash 10 times that of a property damage only crash, and injury crashes as five times that of property damage only crashes) in several key focus areas based on our Strategic Highway Safety Plan, regardless of roadway jurisdiction. Massachusetts was designated as a Lead State in Lane Departure crashes so top lane departure locations were eligible. Similarly, the SHSP included focus areas on intersections, bicycle and...
pedestrian crashes so top crash locations in these focus areas were also eligible, regardless of the jurisdiction. Finally, other eligible projects / programs were selected based on HSIP-eligible criteria such as statewide improvements to data or assistance with SHSP. These programs impact safety on all roadways regardless of roadway jurisdiction.

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

- Design
- Planning
- Maintenance
- Operations
- Governors Highway Safety Office
- Other:

Briefly describe coordination with internal partners.

The HSIP Task Force consists of seven members: 2 FHWA representatives (one from Massachusetts Division Office in Planning and one from the Massachusetts Division Office in Safety), 2 representatives from MassDOT Highway Division (Chief Engineer and Safety Engineer), one from MassDOT Office of Transportation Planning and two representatives from the Regional Planning Agencies (RPAs), the technical arm of the Metropolitan Planning Organizations (MPOs). The initial role of the Task Force was to establish HSIP guidelines based on input and feedback from others. Once the guidelines were finalized, the role of the Task Force is to meet annually or more frequently, ("meetings" could be via email or in person) and to confirm the selection of HSIP projects and update the guidelines as needed. The HSIP Guidelines were last updated in June 2012 prior to the MAP-21 ruling on HSIP.

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

- Metropolitan Planning Organizations
- Governors Highway Safety Office
- Local Government Association
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-nothing changed

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

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: 10/1/2012

What data types were used in the program methodology?

**Crashes**
- □ All crashes
- □ Fatal crashes only
- □ Fatal and serious injury crashes only
- ☑ Other-CRASH SEVERITY WEIGHTING

**Exposure**
- □ Traffic
- □ Volume
- □ Population

**Roadway**
- □ Median width
- □ Horizontal curvature
- □ Functional classification
- □ Lane miles
- □ Roadside features
- □ Other

What project identification methodology was used for this program?

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

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☐ Other

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

☒ Yes

☐ No

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

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-MPO

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
2013 Massachusetts Highway Safety Improvement Program

- Ranking based on B/C
- Available funding
- Incremental B/C
- Ranking based on net benefit
- Cost Effectiveness
- PROJECT READINESS

Program: Crash Data

Date of Program Methodology: 10/1/2012

What data types were used in the program methodology?

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

**Exposure**
- Traffic
- Volume
- Population
- 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 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-STATEWIDE CRASH PROGRAM

**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-STATEWIDE NEEDS

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

- Relative Weight in Scoring
- Rank of Priority Consideration

- Ranking based on B/C
- Available funding
- Incremental B/C
- Ranking based on net benefit
- Cost Effectiveness
- STATEWIDE NEED

---

**Program:** Low-Cost Spot Improvements

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

**What data types were used in the program methodology?**

<table>
<thead>
<tr>
<th>Crashes</th>
<th>Exposure</th>
<th>Roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>All crashes</td>
<td>Traffic</td>
<td>Median width</td>
</tr>
<tr>
<td>Fatal crashes only</td>
<td>Volume</td>
<td>Horizontal curvature</td>
</tr>
<tr>
<td>Fatal and serious injury</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>Other</td>
<td>Other</td>
<td>Other</td>
</tr>
</tbody>
</table>
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?

- [x] Yes
- [ ] No

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

- [x] 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).

☐ Relative Weight in Scoring
☐ Rank of Priority Consideration

☐ Ranking based on B/C
☒ Available funding 100
☐ Incremental B/C
☐ Ranking based on net benefit
☐ Cost Effectiveness

Program: Sign Replacement And Improvement
Date of Program Methodology: 10/1/2012

What data types were used in the program methodology?

Crashes
☐ All crashes
☐ Fatal crashes only
☐ Fatal and serious injury

Exposure
☐ Traffic
☐ Volume
☐ Population

Roadway
☐ Median width
☐ Horizontal curvature
☒ Functional classification
2013 Massachusetts Highway Safety Improvement Program

Crashes only

☒ Other-SYSTEMATIC APPROACH NOT BASED ON CRASHES

☐ 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 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-ALL SECONDARY STATE HIGHWAYS

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

☐ Yes
☐ No
How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other - ALL SECONDARY ROADS

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

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☐ Ranking based on B/C

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Cost Effectiveness

☒ ALL SECONDARY ROADS

---

Program: Left Turn Crash

Date of Program Methodology: 10/1/2012

What data types were used in the program methodology?

Crashes Exposure Roadway
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-ALL STATE SIGNALIZED INTERSECTIONS

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

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

☐ Competitive application process
☐ selection committee
☒ Other-ALL STATE SIGNALIZAED INTERSECTIONS

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
☐ Cost Effectiveness

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

0

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

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

What process is used to identify potential countermeasures?

☐ Engineering Study
☐ Road Safety Assessment
☒ Other: Other-statewide crash statistics

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

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>15046224</td>
<td>13680000</td>
</tr>
<tr>
<td>HRRRP (SAFETEA-LU)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRRR Special Rule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penalty Transfer - Section 154</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding Source</td>
<td>Programmed</td>
<td>Obligated</td>
</tr>
<tr>
<td>----------------------------------------------------</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>1671803</td>
<td>10 %</td>
</tr>
<tr>
<td>Totals</td>
<td>16718027</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

19 %

How much funding is obligated to local safety projects?

19 %

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

$2,100,000.00

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

$2,100,000.00
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.

Not enough shovel-ready projects in the pipeline because local communities must fund the design on locally owned roadways and funding is tight. Previously, in 2009 and 2010, in order to get the HSIP projects moving, MassDOT and FHWA allowed the use of HSIP funding for design as long as the project was HSIP eligible and was programmed on the STIP in an outlying year. This enabled a full HSIP program for the next few years. We may work with FHWA and revisit the idea of using HSIP funding for design. Local communities may also work through their MPOs to push projects that are more systematic with minimal design efforts like a retroreflective sign upgrade program. Right now several things are being considered. Finally, we tied our HSIP funds programs / strategies identified in the updated 2013 SHSP. However, the strategies developed from the emphasis areas teams are in the process of being worked out through the public process and have not yet been finalized. This will be completed in FFY2014 so specific strategies will be identified and funded.

Describe any other aspects of the general Highway Safety Improvement Program implementation progress on which you would like to elaborate.
## 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 Category</th>
<th>Functional Classification</th>
<th>AADT Speed</th>
<th>Roadwa y Owners hip</th>
<th>Relationship to SHSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>602182-Great Barrington-Reconstruction of Main Street (Route 7)</td>
<td>Roadway Roadway - other</td>
<td>0.51 Miles</td>
<td>32036 8</td>
<td>5155000</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>1960 0</td>
<td>City of Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
</tr>
<tr>
<td>602984-Concord/Lincoln-Limited Access Highway Improvement at Route 2 and 2A around Crosby's Corner</td>
<td>Intersection geometry Intersection geometrics - miscellaneous/other/unspecified</td>
<td>1 Numbers</td>
<td>47670 39</td>
<td>637750 00</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other Freeways and Expressways</td>
<td>4880 0</td>
<td>State Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
</tr>
<tr>
<td>Project ID</td>
<td>Location</td>
<td>Improvement</td>
<td>Traffic Control</td>
<td>Numbers</td>
<td>Title</td>
<td>Section</td>
<td>Agency</td>
<td>Summary</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>
</tr>
<tr>
<td>602213-Orleans-Roundabout Improvement at Routes 28 and 6A</td>
<td>Intersection traffic control Modify control - all-way stop to roundabout</td>
<td>1 Numbers</td>
<td>41266 3</td>
<td>187000 0</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>2540 0</td>
<td>State Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
</tr>
<tr>
<td>602037-Worcester-Intersection Improvement at Lincoln St, Highland St, Pleasant St Corridor</td>
<td>Intersection traffic control Systemic improvements - signal-controlled</td>
<td>3 Numbers</td>
<td>18000 00</td>
<td>326034 4</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>2570 0</td>
<td>City of Municipal Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
</tr>
<tr>
<td>606048-Greenfield-Roundabout construction at Colrain Road, College Street, and Colrain Street</td>
<td>Intersection traffic control Modify control - all-way stop to roundabout</td>
<td>1 Numbers</td>
<td>22857 8</td>
<td>168100 0</td>
<td>HSIP (Section 148)</td>
<td>Urban Collector</td>
<td>7300 0</td>
<td>Town or Township Highway Agency</td>
<td>Improving the design and operation of highway intersections</td>
</tr>
<tr>
<td>604813-Oak Bluffs-Intersection</td>
<td>Intersection traffic control Modify control - all-way stop to roundabout</td>
<td>1 Numbers</td>
<td>22035 6</td>
<td>114550 0</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>9400 0</td>
<td>Town or Township</td>
<td>Improving the design and</td>
</tr>
<tr>
<td>Improvement at Edgartown, Vineyard Road and Barnes Road</td>
<td>Interchange design</td>
<td>1</td>
<td>398</td>
<td>776</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Interstate</td>
<td>1614</td>
<td>65</td>
<td>State Highway Agency</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>--------------------</td>
<td>---</td>
<td>-----</td>
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<td>--------------------------------------</td>
<td>-------</td>
<td>----</td>
<td>----------------------</td>
</tr>
<tr>
<td>605181- Methuen-Interchange reconstructon on I-93 at route 110/113 rotary</td>
<td>Interchange design - other</td>
<td>Numbers</td>
<td>3986</td>
<td>77632</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>607219- Winchendon-Resurfacing and Improvement on Route 140, from Gardner Town Line to Teel Road</td>
<td>Roadway Pavement surface - miscellaneous</td>
<td>2.148</td>
<td>36134</td>
<td>4</td>
<td>125280</td>
<td>00</td>
<td>HSIP (Section 148)</td>
<td></td>
<td>Rural Principal Arterial - Other</td>
</tr>
<tr>
<td>603457-West Bridgewater-Intersection</td>
<td>Intersection geometry - other</td>
<td>2</td>
<td>41035</td>
<td>9</td>
<td>359300</td>
<td>0</td>
<td>HSIP (Section 148)</td>
<td></td>
<td>Urban Principal Arterial - Interstate</td>
</tr>
<tr>
<td>Improvement s at Route 106 and 128 (Central Square)</td>
<td>Interchange design Acceleration / deceleration / merge lane</td>
<td>1 Numbers</td>
<td>10049 46</td>
<td>147718 5</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Interstate</td>
<td>0</td>
<td>45</td>
<td>State Highway Agency</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>---------</td>
<td>-----------------</td>
<td>--------------------------------------</td>
<td>----</td>
<td>----</td>
<td>-------------------</td>
</tr>
<tr>
<td>606643-West Springfield-Improvement s and Related Work on I-91/Route 5/I-90 Connector Road</td>
<td>Intersection traffic control Modify traffic signal - miscellaneous/other/unspecified</td>
<td>1 Numbers</td>
<td>80641 9</td>
<td>363400 0</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>2680 0</td>
<td>45</td>
<td>State Highway Agency</td>
</tr>
<tr>
<td>605365-New Bedford-Intersection Improvement s at Route 140/Route 6 (Kempton St) and Brownell Ave</td>
<td>Intersection traffic control Modify traffic signal - add flashing yellow arrow</td>
<td>400 Numbers</td>
<td>18000 00</td>
<td>200000 0</td>
<td>HSIP (Section 148)</td>
<td>Varies</td>
<td>0</td>
<td>0</td>
<td>State Highway Agency</td>
</tr>
</tbody>
</table>

23
| Flashing Yellow Arrow at Signalized Intersections | Roadway signs and traffic control Roadway signs and traffic control - other | 348 Numbers 1507500 1675000 | HSIP (Section 148) | Varies | 0 | 0 | State Highway Agency |
| 607402-Statewide-Signs and Marketing upgrades at interchanges to reduce wrong way crashes | Miscellaneous | 0 1102500 1125500 | HSIP (Section 148) | Varies | 0 | 0 | |
## 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>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fatalities</td>
<td>424</td>
<td>396</td>
<td>377</td>
<td>367</td>
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<tr>
<td>Number of serious injuries</td>
<td>4566</td>
<td>4238</td>
<td>3915</td>
<td>3700</td>
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</tr>
<tr>
<td>Fatality rate (per HMVMT)</td>
<td>0.77</td>
<td>0.72</td>
<td>0.69</td>
<td>0.67</td>
<td>0</td>
</tr>
<tr>
<td>Serious injury rate (per HMVMT)</td>
<td>8.3</td>
<td>7.7</td>
<td>7.2</td>
<td>6.8</td>
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</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

![Graph showing the number of fatalities and serious injuries from 2008 to 2012. The graph indicates a decrease in both categories.]

- **# Serious Injuries**:
  - 2008: 424
  - 2009: 396
  - 2010: 377
  - 2011: 367
  - 2012: 0

- **# Fatalities**:
  - 2008: 0
  - 2009: 0
  - 2010: 0
  - 2011: 0
  - 2012: 0
Rate of Fatalities and Serious Injuries for the Last Five Years

Years


Serious Injuries Rate (per HMVMT)

Fatality Rate (per HMVMT)

0.77, 0.72, 0.69, 0.67, 0.00

0, 0.2, 0.4, 0.6, 0.8, 1.0

0, 2, 4, 6, 8, 10
To the maximum extent possible, present performance measure* data by functional classification and ownership.

**Year - 2012**

<table>
<thead>
<tr>
<th>Function Classification</th>
<th>Number of fatalities</th>
<th>Number of serious injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - INTERSTATE</td>
<td>0</td>
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<td>0</td>
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</tr>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS</td>
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</tr>
<tr>
<td>RURAL PRINCIPAL ARTERIAL - OTHER</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>RURAL LOCAL ROAD OR STREET</td>
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<td>0</td>
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<tr>
<td>ARTERIAL - OTHER</td>
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<tr>
<td>FREEWAYS AND</td>
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<td>EXPRESSWAYS</td>
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<td>URBAN MINOR</td>
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<tr>
<td>COLLECTOR</td>
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<tr>
<td>URBAN MAJOR</td>
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<tr>
<td>COLLECTOR</td>
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<tr>
<td>URBAN LOCAL ROAD</td>
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<tr>
<td>OR STREET</td>
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</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
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<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Fatalities by Roadway Functional Classification

- **2008**
- **2009**
- **2010**
- **2011**
- **2012**

**Roadway Functional Classification**
# Serious Injuries by Roadway Functional Classification

![Graph showing the number of serious injuries by roadway functional classification for years 2008 to 2012.](image)

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

*2013 Massachusetts Highway Safety Improvement Program*
Serious Injury Rate by Roadway Functional Classification

Roadway Functional Classification

2008  2009  2010  2011  2012
### Year - 2012

<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>0</td>
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</tr>
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<td>COUNTY HIGHWAY AGENCY</td>
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<td>TOWN OR TOWNSHIP HIGHWAY AGENCY</td>
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<td>STATE PARK, FOREST, OR RESERVATION AGENCY</td>
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<td>0</td>
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<td>LOCAL PARK, FOREST OR RESERVATION AGENCY</td>
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<td>0</td>
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<td>OTHER STATE AGENCY</td>
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<td>OTHER LOCAL AGENCY</td>
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<td></td>
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<td>2015</td>
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<td>RAILROAD</td>
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<td>0</td>
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<tr>
<td>STATE TOLL AUTHORITY</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>LOCAL TOLL AUTHORITY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
| OTHER PUBLIC
  INSTRUMENTALITY
  (E.G. AIRPORT,
  SCHOOL, UNIVERSITY) | 0    | 0    | 0    | 0    | 0    |
| INDIAN TRIBE NATION  | 0    | 0    | 0    | 0    | 0    |
| OTHER                | 0    | 0    | 0    | 0    | 0    |
| OTHER                | 0    | 0    | 0    | 0    | 0    |
Number of Fatalities by Roadway Ownership

![Graph showing number of fatalities by roadway ownership for 2008, 2009, 2010, 2011, and 2012. The x-axis represents different roadway functional classifications, and the y-axis represents the number of fatalities.](image-url)
Number of Serious Injuries by Roadway Ownership

Roadway Functional Classification

2008 2009 2010 2011 2012

# of Serious Injuries
Fatality Rate by Roadway Ownership

Roadway Functional Classification

2008  2009  2010  2011  2012
Describe any other aspects of the general highway safety trends on which you would like to elaborate.

**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>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatality rate (per capita)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Serious injury rate (per capita)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fatality and serious injury rate (per capita)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

To obtain number of fatalities of 65+ drivers and pedestrian, FARS was queried for injury severity = fatal injury, age > 65 and person type was driver or pedestrian. The serious injury information was based on hospital data, supplied by DPH for drivers and pedestrians over 65. This data was pulled for 2004-2011 and 5 year averages were calculated. The results were divided by the annual census estimates for persons n MA 65+. We simply divided the crashes by the population in MA over 65. Population data were obtain by National Center for Health Statistics Intercensal estimates of the resident population of the United States (2000-2009 Data) and National Center for Health Statistics. Postcensal estimates of the resident population of the United States (2010-2011 Data)
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
- [x] Other: Other-reduction in fatalities and injuries
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-more systemic programs included in HSIP
Briefly describe significant program changes that have occurred since the last reporting period.

Our SHSP is being updated and we are setting up Emphasis Area teams to actively address and track (in a multi-disciplined way) several key factors. We have also implemented two new systemic approach projects to address left turning crashes at signalized intersections (FYA) and wrong way crashes.
SHSP Emphasis Areas
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

### Year - 2012

<table>
<thead>
<tr>
<th>HSIP-related SHSP Emphasis Areas</th>
<th>Target Crash Type</th>
<th>Number of Fatalities</th>
<th>Number of Serious Injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
<th>Other-1</th>
<th>Other-2</th>
<th>Other-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instituting graduated licensing for younger drivers</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Ensuring drivers are licensed and fully competent</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Sustaining proficiency in older drivers</td>
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<td>Curbing aggressive driving</td>
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<tr>
<td>Reducing impaired driving</td>
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<tr>
<td>Keeping drivers alert</td>
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<tr>
<td>Increasing driver safety awareness</td>
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<tr>
<td>Increasing seat belt use and improving</td>
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<td>Making walking and street crossing easier</td>
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<tr>
<td>Ensuring safer bicycle travel</td>
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<tr>
<td>Improving motorcycle safety and increasing</td>
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<tr>
<td>Improving motorcycle safety and increasing</td>
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<td>Making truck travel safer</td>
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</tr>
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<td>Increasing safety enhancements in vehicles</td>
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<tr>
<td>Reducing vehicle-train crashes</td>
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<tr>
<td>Designing safer work zones</td>
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<tr>
<td>Enhancing emergency medical capabilities to increase survivability</td>
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</table>
Number of Fatalities by SHSP Emphasis Area

Year 2008 to Year 2012

SHSP Emphasis Area
Fatality Rate by SHSP Emphasis Area

Year 2008 to Year 2012
Serious Injury Rate by SHSP Emphasis Area

Year 2008 to Year 2012

SHSP Emphasis Area
Groups of similar project types
Present the overall effectiveness of groups of similar types of projects.

### Year - 2012

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

Year 2008 to Year 2012

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

Year 2008 to Year 2012

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 Serious Injuries

-0.6
-0.4
-0.2
0
0.2
0.4
0.6

2008 2009 2010 2011 2012
Fatality Rate by Target Crash Type for Groups of Similar Projects

Year 2008 to Year 2012

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

Year 2008 to Year 2012

Target Crash Type
Systemic Treatments
Present the overall effectiveness of systemic treatments.

**Year - 2012**

<table>
<thead>
<tr>
<th>Systemic improvement</th>
<th>Target Crash Type</th>
<th>Number of fatalities</th>
<th>Number of serious injuries</th>
<th>Fatality rate (per HMVMT)</th>
<th>Serious injury rate (per HMVMT)</th>
<th>Other-1</th>
<th>Other-2</th>
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# Fatalities by Target Crash Type for Systemic Safety Improvements

Year 2008 to Year 2012

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

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

Year 2008 to Year 2012

Target Crash Type

Number of Serious Injuries from 2008 to 2012 by crash type.
Fatality Rate by Target Crash Type for Systemic Safety Improvements

Year 2008 to Year 2012

Target Crash Type

Rate of Fatalities

-0.6 -0.4 -0.2 0 0.2 0.4 0.6

Air Angle Cross median Sideswipe Head on Left-turn Night-time Non-intersection Rear end Right-turn Run-off-road Speed-related Truck-related Vehicle/animal Vehicle/bicycle Wet-road
Serious Injury Rate by Target Crash Type for Systemic Safety Improvements

Year 2008 to Year 2012
Describe any other aspects of the overall Highway Safety Improvement Program effectiveness on which you would like to elaborate.
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>
<th>Aft-Fatal</th>
<th>Aft-Serious Injury</th>
<th>Aft-Other Injury</th>
<th>Aft-PDO</th>
<th>Aft-Total</th>
<th>Evaluation Results (Benefit/Cost Ratio)</th>
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## Optional Attachments

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<th>Sections</th>
<th>Files Attached</th>
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<tr>
<td>Assessment of the Effectiveness of the Improvements: Overview of General Highway Safety Trends</td>
<td>JUNK.xlsx</td>
</tr>
<tr>
<td>Assessment of the Effectiveness of the Improvements: Description of Overall Effectiveness</td>
<td>HSIP report FuncClass-Juris-Older.xlsx</td>
</tr>
</tbody>
</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.