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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Kentucky’s HSIP funds are administered from the Division of Traffic Operations in KYTC’s Central Office. Each Highway District has an HSIP Coordinator that works closely with Central Office and District Personnel to conduct a Road Safety Audit (RSA) on potential improvement locations. The RSA teams are multi-disciplinary and represent the following highway functions; planning, highway design, traffic operations, maintenance, and construction. The Cabinet also requests that members from local Area Development Districts (ADDs) participate in the process. Highway Districts are encouraged to submit candidate projects after completing all established guidelines for funding consideration. Funding levels to date have been sufficient to implement projects submitted that meet the eligibility guidelines for the program.

The program methodology used by the Transportation Cabinet during the time period of this report was generally the same as in the previous years. With completion of the document titled “Kentucky Roadway Departure Safety Implementation Plan” in July 2010, there has been significant reliance on the recommended approach to supplement the traditional process directed to high-crash locations with systematic application of low-cost, cost-effective countermeasures. More specifically, the systematic approach could be characterized as the reverse of the traditional approach in that low-cost, effective countermeasures are first identified and then the crash database is queried to identify highway sections that have targeted crashes at or above a crash threshold that would insure cost-effective deployment of these countermeasures.

The HSIP supports Kentucky’s Strategic Highway Safety Plan (SHSP). The mission of the SHSP is “to reduce Kentucky’s highway fatalities and injuries.” In conformance with program guidelines, the HSIP seeks to adhere to the SHSP through a data-driven approach for funding safety improvements.

Implementation of HSIP projects have been evaluated and results have been documented in the form of benefits and costs. Included were projects involving the following countermeasures, with their respective B/C ratios:

- Rumble Stripes: 11:1
- Cable Median Barrier: 7:1
- High-Friction Surfaces: 44:1
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.

A Safety Circuit Rider program continues to function as the primary means of identifying and implementing projects on local roads through the HSIP. The focus of this program is to provide technical assistance to improve safety on local roads and streets.

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

- Design
Briefly describe coordination with internal partners.

Kentucky's HSIP funds are administered from the Division of Traffic Operations in KYTC's Central Office. Each Highway District has a HSIP Coordinator who works closely with the Central Office and other Highway District personnel to conduct Road Safety Audits (RSAs) of potential improvement locations. The RSA teams are multidisciplinary and represent the following highway functions; planning, design, traffic operations, maintenance, and construction. Highway districts are encouraged to submit candidate projects after completing all established guidelines for funding considerations.

HSIP projects are selected and prioritized based on their correlation with Kentucky's Strategic Highway Safety Plan. There are presently 10 emphasis areas within the SHSP and efforts are made to implement projects consistent with the goals and objectives of the SHSP.

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

- Metropolitan Planning Organizations
- Governors Highway Safety Office
- Local Government Association
- Other:
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-No changes since last year

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

HSIP staff also request that representatives from local Area Development Districts (ADDs) participate in the process of identifying potential projects through a RSA on local roads.

The Governor’s Office of Highway Safety is responsible for development of the Strategic Highway Safety Plan and therefore directly associated with the required correlation between HSIP and SHSP. Efforts have been made to use data-driven analysis to identify emphasis areas of high potential to affect safety. Some of these emphasis areas, primarily "Roadway Departure" and "Intersections" are consistent with the HSIP project selection process.

**Program Methodology**

Select the programs that are administered under the HSIP.

☒ Median Barrier
☐ Horizontal Curve
☒ Skid Hazard
☒ Roadway Departure
☐ Local Safety
☐ Left Turn Crash
☐ Other:

☒ Intersection
☐ Bicycle Safety
☐ Crash Data
☒ Low-Cost Spot Improvements
☐ Pedestrian Safety
☐ Shoulder Improvement
☐ Right Angle Crash
☐ Segments
### Program:

**Median Barrier**

### Date of Program Methodology:

7/1/2011

---

**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></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

How are highway safety improvement projects advanced for implementation?

- Competitive application process
- Selection committee
- Other

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

- Relative Weight in Scoring
- Rank of Priority Consideration

- Ranking based on B/C

- Available funding

- Incremental B/C
Ranking based on net benefit  1

Other

Program: Intersection
Date of Program Methodology: 9/1/2012

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
- Other

Roadway
- Median width
- Horizontal curvature
- Functional classification
- Lane miles
- Other

What project identification methodology was used for this program?

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

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

- Yes
- No

How are highway safety improvement projects advanced for implementation?

- Competitive application process
- Selection committee
- Other-Prioritized list

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 2
Program: Skid Hazard

Date of Program Methodology: 7/1/2011

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

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
Prioritized list based on EB

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 2

Incremental B/C

Ranking based on net benefit 1

Other

Program: Roadway Departure

Date of Program Methodology: 7/1/2011

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
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-Prioritized list

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 2

Incremental B/C

Ranking based on net benefit 1

Other

Program: Low-Cost Spot Improvements

Date of Program Methodology: 7/1/2013

What data types were used in the program methodology?

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

**Exposure**
- Traffic
- Volume
- Population

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

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

☑ Yes
☐ No

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

☑ Yes
☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process
☑ Selection committee
☐ Other

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

Rank of Priority Consideration

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

Program: Sign Replacement And Improvement

Date of Program Methodology: 7/1/2011

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
  - 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

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-Prioritized list
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

- [ ] Ranking based on B/C
- [x] Available funding 2
- [ ] Incremental B/C
- [x] Ranking based on net benefit 1
- [ ] Other

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?

- [x] Cable Median Barriers
- [x] Rumble Strips
- [ ] Traffic Control Device Rehabilitation
- [ ] Pavement/Shoulder Widening
- [x] Install/Improve Signing
- [x] Install/Improve Pavement Marking and/or Delineation
- [x] Upgrade Guard Rails
- [x] Clear Zone Improvements
- [ ] Safety Edge
- [x] Install/Improve Lighting
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 changes

Describe any other aspects of the Highway Safety Improvement Program methodology on which you would like to elaborate.
Local Risk Mitigation Projects have minimum eligibility criteria to be considered for funding. Districts complete a Road Safety Audit on potential projects while Central Office HISP staff may gather some basic roadway inventory data. Then all potential projects are analyzed to determine present risk factors and a score is assigned to each project location by the District and an independent Central Office review team. The prioritized statewide list of projects is then submitted to the Secretary of Transportation through the State Highway Engineer’s Office for approval based on available funding. The selected projects are developed by the appropriate Highway District and delivered by the Central Office HSIP staff through the Cabinet’s standard Construction Procurement process.
## 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>37628089</td>
<td>26501468</td>
</tr>
<tr>
<td>HRRRP (SAFETEA-LU)</td>
<td>0</td>
<td>856000</td>
</tr>
</tbody>
</table>

**HRRR Special Rule**

**Penalty Transfer - Section 154**

**Penalty Transfer – Section 164**

**Incentive Grants - Section 163**

**Incentive Grants (Section 406)**

**Other Federal-aid Funds (i.e. STP, NHPP)**

**State and Local Funds**
How much funding is programmed to local (non-state owned and maintained) safety projects?
$427,000.00

How much funding is obligated to local safety projects?
$427,000.00

How much funding is programmed to non-infrastructure safety projects?
$427,000.00

How much funding is obligated to non-infrastructure safety projects?
$427,000.00

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?

$38,000,000.00

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

MAP-21 was enacted in 2012 and with that came new guidance and requirements, as well as additional funding. The Kentucky Transportation Cabinet utilized Kentucky’s Strategic Highway Safety Plan to draft a Highway Safety Improvement Program Investment Plan to guide Transportation Safety obligations and spending. Once the Investment Plan was completed and shared with the FHWA Kentucky Division, Kentucky moved forward with the implementation of the plan which includes emphasis areas for the obligation of HSIP funding for upcoming fiscal years and also to program and invest unobligated funds from previous fiscal years. For the past several years Kentucky has strived to put a program in place to fully implement programmed HSIP improvements through the federal procurement process instead of relying upon force account work to complete improvements. This came with several challenges including the amount of time required to develop a project for safety improvements that includes all of the federal requirements for advertised bid letting as well as the planning and coordination required to include projects in KYTC’s Highway Plan for both internal communication and communication with the FHWA Kentucky Division.

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

No additional comments.
## 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>028  US 60 MP 21.7 - 21.9</td>
<td>Roadway Pavement surface - high friction surface</td>
<td>0.2 Miles</td>
<td>70000</td>
<td>70000</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Arterial</td>
<td>3997</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Roadway Departure Install high-friction surface treatments</td>
</tr>
<tr>
<td>042  US 45 MP 25.361 - 25.361</td>
<td>Intersection traffic control Intersection traffic control - other</td>
<td>1 Numbers</td>
<td>133403 .51</td>
<td>133403 .51</td>
<td>HSIP (Section 148)</td>
<td>Urban Principal Arterial - Other</td>
<td>2042</td>
<td>45</td>
<td>State Highway Agency</td>
<td>Intersections Ensure appropriate signal clearance intervals</td>
</tr>
<tr>
<td>073  I-24 MP 1.5 - 18</td>
<td>Roadside Barrier - cable</td>
<td>16.5 Miles</td>
<td>250000 0</td>
<td>250000 0</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Interstate</td>
<td>2762 0</td>
<td>70</td>
<td>State Highway Agency</td>
<td>Roadway Departure Incorporate proven countermeasures</td>
</tr>
<tr>
<td>079  I-24 MP 52 - 52</td>
<td>Roadway Pavement surface - high friction surface</td>
<td>1 Numbers</td>
<td>140000</td>
<td>140000</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Interstate</td>
<td>2599 9</td>
<td>70</td>
<td>State Highway Agency</td>
<td>Roadway Departure Install high-friction surface treatments</td>
</tr>
<tr>
<td>District</td>
<td>Description</td>
<td>Miles</td>
<td>Cost</td>
<td>Description</td>
<td>Cost</td>
<td>District</td>
<td>Description</td>
<td>Cost</td>
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<td>Description</td>
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<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>District 1</td>
<td>Striping Roadway delineation - other</td>
<td>55.61 Miles</td>
<td>107684</td>
<td>HSIP (Section 148)</td>
<td>Various routes throughout District</td>
<td>00</td>
<td>00</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
<td>Improve roadway delineation</td>
</tr>
<tr>
<td>024 1-24 MP 85.5 - 93.373</td>
<td>Roadside Barrier - cable</td>
<td>7.873 Miles</td>
<td>112500</td>
<td>HSIP (Section 148)</td>
<td>Rural Principal Arterial - Interstate</td>
<td>3002 8</td>
<td>70</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
<td>Incorporate proven countermeasures</td>
</tr>
<tr>
<td>030 KY 2127 MP 0 - 5.762</td>
<td>Roadway Roadway - other</td>
<td>5.762 Miles</td>
<td>250000</td>
<td>HSIP (Section 148)</td>
<td>Urban Local Road or Street</td>
<td>744</td>
<td>55</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
<td>Fund roadway departure initiatives</td>
</tr>
<tr>
<td>District 2</td>
<td>Striping Roadway delineation - other</td>
<td>44.54 Miles</td>
<td>194901</td>
<td>HSIP (Section 148)</td>
<td>Various routes throughout District</td>
<td>00</td>
<td>00</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
<td>Improve roadway delineation</td>
</tr>
<tr>
<td>Ramp signing upgrades - Various routes</td>
<td>Intersection traffic control Intersection signing - miscellaneous/other/un specified</td>
<td>23 Miles</td>
<td>725000</td>
<td>HSIP (Section 148)</td>
<td>Various routes</td>
<td>00</td>
<td>00</td>
<td>State Highway Agency</td>
<td>Intersections</td>
<td>Enhance signs and markings in curves</td>
</tr>
<tr>
<td>031 KY 2326 MP 2.04 - 2.361</td>
<td>Roadside Barrier - metal</td>
<td>0.321 Miles</td>
<td>47573</td>
<td>47573</td>
<td>725000</td>
<td>HSIP (Section 148)</td>
<td>Rural Local Road or Street</td>
<td>797</td>
<td>55</td>
<td>State Highway Agency</td>
</tr>
<tr>
<td>District 3 Striping</td>
<td>Roadway delineation Roadway delineation - other</td>
<td>358.1 9 Miles</td>
<td>410804</td>
<td>410804</td>
<td>HSIP (Section 148)</td>
<td>Various routes throughout District</td>
<td>3765</td>
<td>55</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------</td>
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<td>---------------------</td>
</tr>
<tr>
<td>Bridge end treatments - Barren/Monroe Counties</td>
<td>Roadside Barrier end treatments (crash cushions, terminals)</td>
<td>6 Miles</td>
<td>290000</td>
<td>290000</td>
<td>HSIP (Section 148)</td>
<td>Various</td>
<td>00</td>
<td>00</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
</tr>
<tr>
<td>082 KY 1638 MP 0 - 4.264</td>
<td>Shoulder treatments Widen shoulder - paved or other</td>
<td>4.264 Miles</td>
<td>698832</td>
<td>698832</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Arterial</td>
<td>7230</td>
<td>55</td>
<td>State Highway Agency</td>
<td>Roadway Departure</td>
</tr>
<tr>
<td>090 KY 162 MP 0 - 8.157</td>
<td>Roadside Removal of roadside objects (trees, poles, etc.)</td>
<td>8.157 Miles</td>
<td>125000</td>
<td>125000</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Collector</td>
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**Roadway Pavement surface - high friction surface**

- **District 6**
- **Horizontal Alignment Signage**
- **Roadside Barrier - metal**
- **Roadside Barrier - cable**
- **Roadway Departure**
- **Install high-friction surface treatments**
- **Fund roadway departure initiatives**
- **Incorporate proven countermeasures**
- **Enhance signs and markings in**
<table>
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<th>District 6 Striping</th>
<th>Roadway delineation Roadway delineation - other</th>
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<td>025 KY 1927 MP 3.766-6.826</td>
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<td>025 US 60 MP 14.563-15.613</td>
<td>Roadway Superelevation / cross slope</td>
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<td>District</td>
<td>Project</td>
<td>Description</td>
<td>Length</td>
<td>Cost</td>
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<td>Fund</td>
<td>Agency</td>
<td>Item</td>
<td>Notes</td>
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<tr>
<td>084 US 68 MP 14.27 - 17.542</td>
<td>Roadway signs and traffic control Roadway signs and traffic control - other</td>
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<td>Rural Minor Arterial</td>
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<td>Roadway Departure</td>
<td>Enhance signs and markings in curves</td>
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<td>Fund roadway departure initiatives</td>
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<td>120 KY 169 MP 2.121 - 3.44</td>
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<td>500000</td>
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<td>100 KY 196 MP 5.3 - 8.2</td>
<td>Roadway signs and traffic control Roadway signs and traffic control - other</td>
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<td>Enhance signs and markings in curves</td>
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<td>350000</td>
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<td>Rural Major Collector</td>
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<td>Roadway Departure</td>
<td>Fund roadway departure</td>
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<td>District 8 Stripping</td>
<td>Roadway delineation</td>
<td>Roadway delineation - other</td>
<td>18.8 Miles</td>
<td>28664</td>
<td>28664</td>
<td>HSIP (Section 148)</td>
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<td>010 KY 3294 MP 1.416 - 6.811</td>
<td>Roadside Barrier - metal</td>
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<td>110000</td>
<td>0</td>
<td>HSIP (Section 148)</td>
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**Table:**

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<tr>
<th>Project Number</th>
<th>Route</th>
<th>Location</th>
<th>Description</th>
<th>Length</th>
<th>Cost</th>
<th>Section</th>
<th>Agency</th>
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<th>Initiatives</th>
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<td>Shoulder treatments</td>
<td>4.136 Miles</td>
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<td>Rural Minor Arterial</td>
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<td>Roadway Departure</td>
<td>Improve recovery areas</td>
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<td>102 KY 1505 MP 8.1 - 8.5</td>
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<td>Rural Minor Collector</td>
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<td>116 KY 90 MP 8.71 - 9.1</td>
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<td>Rural Minor Arterial</td>
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<td>28664</td>
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<td>010 KY 3294 MP 1.416 - 6.811</td>
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<td>Roadside Barrier - metal</td>
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<td>90000</td>
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<td>103 US 60 MP 11.668 - 12.02</td>
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<td>35000</td>
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<td>Rural Major Collector</td>
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<td>45</td>
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<td>Roadway delineation Roadway delineation - other</td>
<td>401.61 Miles</td>
<td>458953</td>
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<td>Various</td>
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<td>013 KY 30 MP 11.288 - 11.699</td>
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<td>0.411 Miles</td>
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<td>42000</td>
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<td>Rural Major Collector</td>
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<tr>
<td>033 KY 52 MP 5.415 - 5.84</td>
<td>Intersection geometry Auxiliary lanes - add left-turn lane</td>
<td>0.425 Miles</td>
<td>498225</td>
<td>498225</td>
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<td>Rural Minor Arterial</td>
<td>1943</td>
<td>55</td>
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<td>District 10 Striping</td>
<td>Roadway delineation Roadway delineation - other</td>
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<td>13.73 Miles</td>
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<td>176000</td>
<td>HSIP (Section 148)</td>
<td>Various</td>
<td>00</td>
<td>00</td>
<td>State Highway Agency</td>
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<tr>
<td>007 KY 2402 MP 0.6 - 0.7</td>
<td>Roadway Pavement surface - high friction surface</td>
<td>0.1 Miles</td>
<td>38518</td>
<td>38518</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Arterial</td>
<td>5340</td>
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<tr>
<td>026 KY 3472 MP 0.1 - 0.5</td>
<td>Roadway Pavement surface - high friction surface</td>
<td>0.4 Miles</td>
<td>67436</td>
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<td>Rural Local Road or Street</td>
<td>4277</td>
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<td>061 KY 11 MP 21.577 - 21.941</td>
<td>Roadside Barrier- metal</td>
<td>0.364 Miles</td>
<td>45000</td>
<td>45000</td>
<td>HSIP (Section 148)</td>
<td>Rural Major Collector</td>
<td>1787</td>
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<tr>
<td>063 KY 638 MP 3.252 - 8.062</td>
<td>Roadside Barrier- metal</td>
<td>4.81 Miles</td>
<td>221100</td>
<td>221100</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor Collector</td>
<td>465</td>
<td>55</td>
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</tr>
<tr>
<td>063 KY 80 MP 0 - 4.2</td>
<td>Roadside Barrier end treatments (crash)</td>
<td>4.2 Miles</td>
<td>450000</td>
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<td>HSIP (Section 148)</td>
<td>Rural Principal</td>
<td>7592</td>
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### 2014 Kentucky Highway Safety Improvement Program

<table>
<thead>
<tr>
<th>District 11</th>
<th>118 KY 204 MP 1.672 - 11.248</th>
<th>Roadside Barrier - metal</th>
<th>9.576 Miles</th>
<th>140000</th>
<th>140000</th>
<th>HSIP (Section 148)</th>
<th>Rural Minor Collector</th>
<th>1066</th>
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<th>Roadway Departure Fund roadway departure initiatives</th>
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<tbody>
<tr>
<td>118 KY 26 MP 9.48 - 9.916</td>
<td>Roadside Barrier - metal</td>
<td>0.436 Miles</td>
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<td>45000</td>
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<td>Roadway Departure Fund roadway departure initiatives</td>
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<td>District 11</td>
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<td>81.13 Miles</td>
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<td>Various</td>
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<td>Roadway Departure Improve roadway delineation</td>
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<tr>
<td><strong>Barrier end treatments - Various locations</strong></td>
<td>Roadside Barrier end treatments (crash cushions, terminals)</td>
<td>22 Miles</td>
<td>550000</td>
<td>550000</td>
<td>HSIP (Section 148)</td>
<td>Various</td>
<td>00</td>
<td>00</td>
<td>State Highway Agency</td>
<td>Roadway Departure Incorporate proven countermeasures</td>
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<tr>
<td>036 KY 404 MP 2.048 - 2.195</td>
<td>Roadside Barrier - metal</td>
<td>0.147 Miles</td>
<td>16400</td>
<td>16400</td>
<td>HSIP (Section 148)</td>
<td>Rural Major Collector</td>
<td>1836</td>
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<td>Roadway Departure Fund roadway departure initiatives</td>
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<td>036 KY 777 MP 3 - 3.246</td>
<td>Roadside Barrier - metal</td>
<td>0.246 Miles</td>
<td>32000</td>
<td>32000</td>
<td>HSIP (Section 148)</td>
<td>Rural Minor</td>
<td>226</td>
<td>45</td>
<td>State Highway Roadway Departure Fund roadway departure</td>
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**Columns:***
- **District**
- **Mileage**
- **Roadside barrier type and length**
- **Highway Safety Improvement Program (HSIP) funding**
- **Roadway departure initiatives**
- **State Highway Agency**
- **Countermeasures**
<table>
<thead>
<tr>
<th>Project Design</th>
<th>Roadway Pavement surface - high friction surface</th>
<th>0.6 Miles</th>
<th>200000</th>
<th>200000</th>
<th>HSIP (Section 148)</th>
<th>Rural Minor Arterial</th>
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<th>Roadway Departure</th>
<th>Install high-friction surface treatments</th>
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<td>District 12 Striping</td>
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<td>277.34 Miles</td>
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<td>321168</td>
<td>HSIP (Section 148)</td>
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<td>00</td>
<td>00</td>
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<td>Roadway Departure</td>
<td>Improve roadway delineation</td>
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<td>KTC Technical Assistance</td>
<td>Non-infrastructure Data/traffic records</td>
<td>1 Numbers</td>
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<td>200000</td>
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<td>00</td>
<td>State Highway Agency</td>
<td>Data</td>
<td>Technical assistance</td>
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<td>Safety Circuit Rider Program</td>
<td>Non-infrastructure Outreach</td>
<td>1 Numbers</td>
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<td>177000</td>
<td>HSIP (Section 148)</td>
<td>N/A</td>
<td>0</td>
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<td>State Highway Agency</td>
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<td>Safety Circuit Rider program</td>
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<td>Project Design Funding</td>
<td>Non-infrastructure Transportation safety planning</td>
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<td>State Highway Agency</td>
<td>N/A</td>
<td>Incorporate proven countermeasures</td>
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Overview of General Safety Trends

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

<table>
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<tr>
<th>Performance Measures*</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Number of fatalities</td>
<td>876</td>
<td>831</td>
<td>792</td>
<td>769</td>
<td>731</td>
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<tr>
<td>Number of serious injuries</td>
<td>5115</td>
<td>4758</td>
<td>4425</td>
<td>4173</td>
<td>3884</td>
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<tr>
<td>Fatality rate (per HMVMT)</td>
<td>1.85</td>
<td>1.75</td>
<td>1.66</td>
<td>1.62</td>
<td>1.54</td>
</tr>
<tr>
<td>Serious injury rate (per HMVMT)</td>
<td>10.78</td>
<td>10</td>
<td>9.28</td>
<td>8.78</td>
<td>8.17</td>
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</table>

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

- **2009**: # Fatalities = 876, # Serious Injuries = 5000
- **2010**: # Fatalities = 831, # Serious Injuries = 4500
- **2011**: # Fatalities = 792, # Serious Injuries = 4000
- **2012**: # Fatalities = 769, # Serious Injuries = 3500
- **2013**: # Fatalities = 731, # Serious Injuries = 3000

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

![Graph showing the rate of fatalities and serious injuries per HMVMT from 2009 to 2013.](image)

- **Fatality Rate (per HMVMT)**
- **Serious Injuries Rate (per HMVMT)**

Years:
- 2009: 1.85
- 2010: 1.75
- 2011: 1.66
- 2012: 1.62
- 2013: 1.54

Fatalities and serious injuries have been decreasing over the last five years.
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>48</td>
<td>749</td>
<td>0.7</td>
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<td>RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS</td>
<td>96</td>
<td>1648</td>
<td>1.4</td>
<td>24</td>
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<tr>
<td>RURAL PRINCIPAL ARTERIAL - OTHER</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>RURAL MINOR ARTERIAL</td>
<td>75</td>
<td>1408</td>
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<td>RURAL MINOR COLLECTOR</td>
<td>92</td>
<td>1820</td>
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<td>75</td>
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<td>RURAL MAJOR COLLECTOR</td>
<td>135</td>
<td>2938</td>
<td>2.9</td>
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<tr>
<td>RURAL LOCAL ROAD OR STREET</td>
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<td>885</td>
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<td>11</td>
<td>672</td>
<td>0.7</td>
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<td>URBAN LOCAL ROAD OR STREET</td>
<td>1</td>
<td>64</td>
<td>0.2</td>
<td>65</td>
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</table>
# Fatalities by Roadway Functional Classification

![Bar Chart](chart.png)

Roadway Functional Classification

2009 2010 2011 2012 2013

# of Fatalities

0 50 100 150 200
# Serious Injuries by Roadway Functional Classification

![Bar chart showing the number of serious injuries by roadway functional classification for the years 2009 to 2013. The chart compares the injuries on various types of roadways, including principal arterial, minor arterial, principal collector, minor collector, local road, and expressways and freeways. Each year is represented by a different color, allowing for easy comparison over time.]
Serious Injury Rate by Roadway Functional Classification
### 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>
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<tbody>
<tr>
<td>STATE HIGHWAY AGENCY</td>
<td>630</td>
<td>2956</td>
<td>0</td>
<td>0</td>
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<td>COUNTY HIGHWAY AGENCY</td>
<td>59</td>
<td>273</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOWN OR TOWNSHIP HIGHWAY AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>CITY OF MUNICIPAL HIGHWAY AGENCY</td>
<td>37</td>
<td>455</td>
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<tr>
<td>STATE PARK, FOREST, OR RESERVATION AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LOCAL PARK, FOREST OR RESERVATION AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER STATE AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER LOCAL AGENCY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PRIVATE (OTHER THAN RAILROAD)</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>RAILROAD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>STATE TOLL AUTHORITY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LOCAL TOLL AUTHORITY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER</td>
<td>5</td>
<td>21</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Number of Fatalities by Roadway Ownership

Roadway Functional Classification

# of Fatalities

2009 2010 2011 2012 2013
Number of Serious Injuries by Roadway Ownership

Roadway Functional Classification

# of Serious Injuries

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

Fatalities decreased by 14.5 percent from 746 in 2012 to 638 in 2013, representing 108 fewer fatalities. These numbers of fatalities vary from those shown in Question 24 which presents the fatalities as 5-year moving averages. The fatality rate of 1.36 per 100 MVM was the lowest in Kentucky in more than 30 years.

**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>1.22</td>
<td>1.16</td>
<td>1.07</td>
<td>1.04</td>
<td>1.06</td>
</tr>
<tr>
<td>Serious injury rate (per capita)</td>
<td>5.202</td>
<td>4.97</td>
<td>4.602</td>
<td>4.41</td>
<td>4.272</td>
</tr>
<tr>
<td>Fatality and serious injury rate (per capita)</td>
<td>6.422</td>
<td>6.134</td>
<td>5.672</td>
<td>5.448</td>
<td>5.328</td>
</tr>
</tbody>
</table>

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

Methodology used as recommended in detailed explanation of "Older Drivers and Pedestrians Special Rule Interim Guidance" dated February 13, 2013. For the reporting date of August 31, 2014, the comparison 5-year periods were expected to be 2006-2010 and 2008-2012. Updated data on population 65 years and older were obtained from FHWA website. Our calculations show the 5-year moving average values of Fatal + Serious Injuries for 2006-2010 was 6.13 as compared to 5.45 for the period 2008-2012.
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:

Briefly describe significant program changes that have occurred since the last reporting period.
An effort has been made to focus on fatalities and serious injuries (Incapacitating - Type A) and present trends with 5-year moving averages for those parameters. No major changes have been made in overall program management or direction.
### 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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roadway Departure</strong></td>
<td>Lane Departure</td>
<td>521.4</td>
<td>2042.2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Intersections</strong></td>
<td>Crashes within limits of intersection</td>
<td>89</td>
<td>962.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Motorcyclists</strong></td>
<td>Motorcycle-related</td>
<td>88</td>
<td>346.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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</tbody>
</table>
Number of Fatalities by SHSP Emphasis Area

Year 2009 to Year 2013

SHSP Emphasis Area
Number of Serious Injuries by SHSP Emphasis Area

Year 2009 to Year 2013

SHSP Emphasis Area
Fatality Rate by SHSP Emphasis Area

Year 2009 to Year 2013

SHSP Emphasis Area
Serious Injury Rate by SHSP Emphasis Area

Year 2009 to Year 2013

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>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Departure</td>
<td>Lane Departure</td>
<td>521</td>
<td>2042</td>
<td>0</td>
<td>0</td>
<td>39539</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Skid Hazard</td>
<td>Wet road</td>
<td>135</td>
<td>751</td>
<td>0</td>
<td>0</td>
<td>64078</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Median Barrier</td>
<td>Cross median</td>
<td>4</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>87</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Intersection</td>
<td>Crashes within intersection</td>
<td>89</td>
<td>963</td>
<td>0</td>
<td>0</td>
<td>32350</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
# Fatalities by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

Target Crash Type

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

Number of Fatalities

2009 2010 2011 2012 2013
#Serious Injuries by Target Crash Type for Groups of Similar Projects

Year 2009 to Year 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
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<tbody>
<tr>
<td>2009</td>
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<td>2012</td>
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<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Target Crash Type

- All
- Angle
- Cross median
- Pedestrian 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
- 200
- 400
- 600
- 800
- 1000
- 1200
Fatality Rate by Target Crash Type for Groups of Similar Projects
Year 2009 to Year 2013

Target Crash Type

Rate of Fatalities

-0.6 -0.4 -0.2 0 0.2 0.4 0.6

-0.6 -0.4 -0.2 0 0.2 0.4 0.6

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

Year 2009 to Year 2013

- 2009
- 2010
- 2011
- 2012
- 2013

Rate of Serious Injuries

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/wet road

| 2009 | 2010 | 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>Rumble Strips</td>
<td>Run-off-road</td>
<td>432</td>
<td>13259</td>
<td>0</td>
<td>0</td>
<td>32153</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cable Median Barriers</td>
<td>Cross median</td>
<td>4</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>87</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
# Fatalities by Target Crash Type for Systemic Safety Improvements

**Year 2009 to Year 2013**

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

![Graph showing fatalities by target crash type from 2009 to 2013.](image)
Fatality Rate by Target Crash Type for Systemic Safety Improvements

Year 2009 to Year 2013

Rate of Fatalities

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

B/C Analysis for Countermeasure Treatments

Rumble Stripes: Edgelines 157 miles; Centerlines 88 miles; Both Edgelines & Centerlines 48 miles

B/C Economic: 11:1

High-Friction Installations: 31 sites

B/C Economic: 44:1

Cable Barrier Installations: 65.7 miles

B/C Economic: 7:1
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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>
## Optional Attachments

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