ARKANSAS

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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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.”

Executive Summary

In accordance with 23 USC 148 and pursuant to 23 CFR 924, the Arkansas Department of Transportation (ARDOT) has prepared a Highway Safety Improvement Program (HSIP) Annual Report for State Fiscal Year 2018 (July 1, 2017 through June 30, 2018). The format of this report is consistent with the reporting guidelines issued by the Federal Highway Administration on February 13, 2013. Some notable accomplishments are as follows:

Local road safety program is being developed for the Highway Commission’s approval. It will help the local agencies to improve safety on local roads.
HFST first round completed and second round statewide project of HFST is being implemented.
Wrong-way crash low-cost countermeasures have been implemented statewide.
Statewide guardrail project is being developed to upgrade substandard guardrails to meet the MASH standards on NHS routes.
The installation of cable median barriers is continued to reduce or eliminate KA crashes on interstates and other high speed routes.
Statewide shoulder rumble strip/stripes were installed or being installed on 5,000 plus miles of the State Highway System.
Statewide 6" wide enhanced pavement were installed or being installed on 4,200 plus miles of the State Highway System.

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 Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

The ARDOT HSIP process is structured to be consistent with the following requirements specified in 23 CFR 924 and the procedures outlined in the HSIP Manual i.e. Planning (23 CFR 924.9), Implementation (23 CFR 924.11), and Evaluation & Reporting (23 CFR 924.13 and 23 CFR 924.15). It should be noted that the state SHSP influences decisions made during each step of the HSIP process. The HSIP process is developed with the consideration of the relationships and interactions between the SHSP and HSIP according to the 1st edition of HSIP Manual published in January, 2010.

COUNTERMEASURE IDENTIFICATION

Identifying high-risk corridors, roadway segments, locations, etc., is a critical part of the road safety improvement analysis process. However, the analysis task is not complete until contributing factors are identified and appropriated, and effective countermeasures are selected and prioritized.

Analyze Data

High risk locations identified through the problem identification process as well as requests from A R DOT officials, A R DOT Divisions and District Offices, public officials, and other interested parties provide a basis for conducting engineering studies and crash analyses. A network screening tool has also been developed that is used to rank corridors and intersections based on total and KA crash rates. The ranking is used to prioritize the list of facilities according to their safety conditions. These facilities are then further grouped based on functional and area classifications. This list will be updated as new crash data becomes available or on yearly basis, whichever is more relevant. This network screening tool will be enhanced after the completion of ARNOLD LRS to include intersections on all public roads.

Following the list created from network screening, the analysis of the higher risked locations will be conducted by closely examining the crash data. A crash map is created for the study location which shows the types and severities of crashes occurred in the area. The following factors are then considered for the analysis of crash data and diagnosing the safety problems

- Crash type
- Contributing crash factors
    - Roadway factors

  - Human factors
  - Vehicle factors
  - Environmental factors
- Crash pattern analysis
- Collision diagram for intersection analysis

Identify Potential Countermeasures

Once the crash data has been reviewed and assessed, some of the results will be forwarded to other safety partners who are involved in the SHSP for consideration of behavioral countermeasures. Others are considered for infrastructural improvements. Some of the countermeasures may include low-cost safety improvements such as signing, striping or rumble strips. In other cases, major improvements in a corridor or at a hotspot may be recommended for roadway realignment, or widening based on the specific needs.

Countermeasures are recommended specifically for a location based on a corridor or intersection safety study. This type of study analyzes crash statistics, types, severities, etc. and identifies appropriate safety treatments for the study area. Additionally, systemic studies are conducted which are based on specific types of crashes and/or facilities. In contrast to the spot studies which manage risk at certain locations, systemic studies take a broader view and evaluate safety condition across the entire system of highways. Examples of risk factors in a systemic study could be the skew angle of intersections, median types, and presence of signal Backplates. A systemic study can also target a specific type of crash across the roadway system; for example, system-wide improvements such as installation of rumble strips, median cable barriers, curve delineators, etc., may be recommended to address roadway departure crashes.

Assess Site Conditions

After potential countermeasures have been identified the Maintenance Division is contacted if necessary to conduct an on-site review of the identified treatments resulting from the crash analysis. After their recommendations are received a more thorough site visit is performed by a multidisciplinary team. The team consists of participants from Design, Planning, Maintenance, Research, Highway Police, and Construction. Environmental and Right-Of-Way are also invited if their input is necessary in the project development.

The on-site assessment is typically conducted during the time of day that can reflect the safety problem. Information such as the roadway geometry, lane/shoulder width, access, sight distance, operations, traffic, the existing traffic control devices, etc., is collected. The purpose of the on-site review is to:

- confirm the previous analysis and proposed countermeasures based on ;
- identify additional conditions which may have contributed to the crash; and
- identify any other countermeasures that would address the existing safety risks.

Assess Countermeasure Effectiveness (Economic Appraisal)

Once a set of countermeasures or potential solutions are identified, the list must be prioritized based on the results of an economic appraisal (benefit-cost analysis) and pared to meet existing resources. To accomplish the prioritization of improvements, effectiveness of the countermeasures should be evaluated.

Cost of the proposed countermeasures are estimated using the available Department's cost-per-mile sheet, and unit-price sheets, which are developed based on the past projects and contracts. Roadway Design division is contacted to provide a more accurate cost estimate for each countermeasure. Through coordination with Roadway Design, the costs of the recommended treatments are finalized and used in the economic appraisal process.

This process includes the estimation of a monetary value for the potential benefits of implementing the countermeasures. The benefits of each countermeasure is estimated by using the CMFs reported in various sources including but not limited to the CMF-Clearinghouse website, HSM, research studies, and in-house past projects evaluations. The change in the expected crash number associated with each countermeasure is then converted into monetary values according to the comprehensive crash costs for each severity level reported in the HSM. These costs are further adjusted based on socio-economic factors such as the consumer price index (CPI) and Employee Cost Index (ECI) to count for the inflation and changes in economic fluctuations. The "KABCO" injury scale developed by the National Safety Council (NSC) has been frequently used by law enforcement for classifying injuries. The crash costs based on the KABCO scale can also be found from NSC or FHWA.

Where is HSIP staff located within the State DOT?

Planning

Enter additional comments here to clarify your response for this question or add supporting information.

ARDOT is centralized and the central office is divided into several divisions. The HSIP staff who are mainly in the section of Traffic Safety is located in the Transportation Planning and Policy Division.

How are HSIP funds allocated in a State?

Central Office via Statewide Competitive Application Process
SHSP Emphasis Area Data

Enter additional comments here to clarify your response for this question or add supporting information.

According to the emphasis areas in the state SHSP, spot and systemic safety improvement projects are identified through network screening in the central office. These projects are ranked and programmed based on the availability of funds. Systemic projects are usually prioritized over spot projects.

An analysis may also be initiated based on the requests received from the public or local agencies.

ARDOT is in the process of developing a local road safety program which will require local agencies to compete for HSIP funds based on the type of projects submitted to the central office. These projects will be screened and ranked for prioritization.

Describe how local and tribal roads are addressed as part of HSIP.

To address safety concerns on local roads, the ARDOT continues to provide technical assistance and training programs on safety issues to local governments through its efforts by System Information and Research Division staff and the Technology Transfer Program. The ARDOT continues to coordinate with the Arkansas State Police through the Traffic Records Coordinating Committee and has implemented eCrash and the

Advance program that allows law enforcement agencies and other State and local agencies to have better access to crash data on all public roads, and run analytics and produce reports on numerous aspects of the crash data.

ARDOT has completed the All Public Roads Linear Referencing System (ARNOLD) to meet the federal requirement . ARNOLD will allow for crash locations to be recorded on all public roads within the state of Arkansas vs only locating on the federal aid system that was previously being done. A ll public roads are now reflected on the LRS. Queries are able to be performed on all public roads so that analysis can be done on any road in the LRS.

ARDOT currently utilizes ARNOLD to generate a point every 100 ft. along the road centerlines and dual carriage ways and will carry the roadway attributes as well as the log mile and lat/long for the point location. These points are used within eCrash so that law enforcement can more easily identify a crash location and have the road attribute data needed for the crash report. ARDOT will be enhancing this system by providing Roadway Inventory Data for each of these points in the future.

ARDOT is also in the process of developing a local road safety program policy that will allow the department to annually allocate a portion of HSIP funds for safety projects on local roads. The amount of allocated HSIP funds will be presented in the annual project solicitation. Half of the funds will be awarded to systemic/systematic projects while the other half will be awarded to hot spot projects. Local public agencies (LPAs) may apply to the LRSP for systemic or hot spot safety projects on the roads and streets within their jurisdiction. Additionally, universities may apply for projects on institutional routes maintained by the Department. If an LPA is awarded LRSP funds, they are required to provide a match at 10 percent of the project’s construction cost. The Department and its partners will provide training opportunities for LPAs to assist them in developing good safety projects. Currently, two classes offered by the Center for Training Transportation Professionals (CTTP) will assist LPAs in project development: Safety Countermeasures for Local Roadways and Guide for Traffic Signs, Marking, and Signals.

Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

Traffic Engineering/Safety
Design
Planning
Maintenance
Operations
Districts/Regions

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with internal partners.

Coordination with internal partners, along with the Highway Safety Office (HSO) and the eight Metropolitan Organizations (MPOs) across the State, occurs on different levels. Design, planning, maintenance, operations, MPOs, and the HSO are all on the SHSP Steering committee. Coordination has also taken place when addressing other safety improvement programs such as work zone safety, roadway departure safety, and in the identification of infrastructure and non-infrastructure projects. Traffic Safety and Maintenance work together to address the spot treatments due to fatal and serious injury crashes. Traffic Safety performs the preliminary

scope of safety improvements on segment jobs according to the HSM guidelines to help with the design process. This scope also incorporates comments from site visits that includes representatives from the other Divisions and Districts.

ARDOT is not required to have a High Risk Rural Road Program but chooses to do so anyway. This process is done in coordination with the Traffic Safety Section, Maintenance Division and with the 10 ARDOT Districts. Traffic Safety finds possible trouble areas through use of data analysis. The areas are then turned over to the Maintenance Division for a field review to determine if any low cost safety measures could be implemented. Based on the Maintenance Division's recommended improvements the Districts are then involved in implementation of the low cost safety measures.

For major safety projects, the Roadway Design Division, the Maintenance Division, the Districts, the System Information and Research Division and the Environmental Division are involved to help finalize the scope of these projects in coordination with the Traffic Safety Section.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Governors Highway Safety Office
Local Government Agency
Law Enforcement Agency
FHWA

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with external partners.

Coordination with internal partners, along with the external partners such as Highway Safety Office (HSO) and the eight Metropolitan Organizations (MPOs) across the State, occurs on different levels. Design, planning, maintenance, operations, MPOs, and the HSO are all on the SHSP Steering committee. Coordination has also taken place when addressing other safety improvement programs such as work zone safety, roadway departure safety, and in the identification of infrastructure and non-infrastructure projects.

The Maintenance Division and the Traffic Safety Section will often meet with local agencies and officials when conducting a field review in a local jurisdiction to gather their input.

Traffic Safety partners with the Highway Safety Office on numerous projects resulting from the Traffic Records Coordinating Committee. An example of this is a project that has recently begun to provide the necessary equipment and training to local law enforcement agencies for eCrash.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

Yes

Describe other aspects of HSIP Administration on which the State would like to elaborate.

The Traffic Safety Section (TSS) at ARDOT manages the HSIP. TSS continued to use the Highway Safety Manual (HSM) on case by case basis. TSS now has 4 Engineers working on different safety programs. Prior to May 2011, TSS did not have an Engineer. TSS has marketed the SHSP (approved by FHWA in July 2017) with a focus on TZD through the Arkansas Highways Magazine, idrivearkansas.com and tzdarkansas.org. The research for calibration of the HSM Safety Performance Functions for the state of Arkansas is under progress along with continued improvements to data analysis processes and tools used by the TSS. ARDOT continued to be a member State in the Evaluation of Low-Cost Safety Improvements Pooled Fund Study. A HSIP Evaluation Peer Review meeting was held during the 2018 Federal Fiscal Year. ARDOT is in the process of updating the HSIP Process document based on the Information learned from this effort and the new HSIP guidelines. In 2017 Arkansas updated the Strategic Highway Safety Plan for the State. This process was done in coordination with a steering committee which encompassed many stakeholders from the four E's with representatives from many government agencies as well as private industries. Action plans were developed by sub-committees for each emphasis area. These action plans will be tracked in an ongoing fashion throughout the life of the plan.

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

Yes

To upload a copy of the State processes, attach files below.

File Name:
AHTD HSIP-Process-2011-07.pdf

Select the programs that are administered under the HSIP.

Median Barrier
Intersection
Rural State Highways
Skid Hazard
Roadway Departure
Low-Cost Spot Improvements
Shoulder Improvement
Segments
Wrong Way Driving
Other-Pavement Marking Improvements
Other-Crash Data
Other-Roundabouts
Other-Guardrail

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Intersection

Date of Program Methodology: 7/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Volume	Functional classification

What project identification methodology was used for this program? [Check all that apply]

Crash rate

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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).

Rank of Priority Consideration

Ranking based on B/C : 1

Program: Low-Cost Spot Improvements

Date of Program Methodology: 1/25/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Systemic safety improvements

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only Other-Based on the suggested treatments (roadway departure crashes, wet pavement crashes, severe crashes, wrong-way crashes)	Traffic	Horizontal curvature Functional classification

What project identification methodology was used for this program? [Check all that apply]

Crash frequency

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Based on the study and analysis memo from TS in Planning Division

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).

Rank of Priority Consideration

Available funding : 2
Cost Effectiveness : 1

Program: Median Barrier

Date of Program Methodology: 7/7/2011

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic	Median width Functional classification

What project identification methodology was used for this program? [Check all that apply]

Other-Systemic approach

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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).

Rank of Priority Consideration

Ranking based on B/C : 2
Available funding : 4
Cost Effectiveness : 2

Other-Systemic approach based on median width, ADT, etc. : 1

Program: Roadway Departure

Date of Program Methodology: 1/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic	Horizontal curvature Other-Minimum of 1 foot shoulder

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Systemic approach

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-The process is consistent with the ARDOT HSIP process adopted in 2011

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).

Rank of Priority Consideration

Cost Effectiveness : 2

Other-The process is mainly systemic based approach but due to available funding the spot treatment approach is also considered : 1

Program: Rural State Highways

Date of Program Methodology: 6/6/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Based on HRRR safety program.
Other-Roadway departure crashes.

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic Volume	Functional classification

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate

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

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No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Includes only signing improvements on high risk rural highways using state maintenance funds

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).

Rank of Priority Consideration

Available funding : 1
Cost Effectiveness : 2

Program: Segments

Date of Program Methodology: 1/1/2013

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Addressing roadway departure crashes

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Lane miles	Horizontal curvature Roadside features Other-Clearzone and shoulder widths

What project identification methodology was used for this program? [Check all that apply]

Crash rate

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Each segment is analyzed for low cost countermeasures and improvements as well as realignment or turn lanes at select locations

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).

Rank of Priority Consideration

Ranking based on B/C : 1
Cost Effectiveness : 2

Enter additional comments here to clarify your response for this question or add supporting information.

HSIP fund on segments is mainly used to address the systemic improvements of cable median barriers, rumble strip/stripe, and install/improve pavement marking/delineations. Systemic approaches to addressing roadway departure crashes are a continuous process. ARDOT continues implementing cable median barrier projects, rumble strip/stripe projects, and enhanced pavement marking projects through a systemic process. With guidance from the Roadway Departure Safety Implementation Plan, a systemic approach to install high friction surface treatment and shoulder widening/improvement is also underway. For segmental projects, ARDOT continues to use B/C analysis to target low and medium cost improvements to hot spots while also applying the other low cost improvements for the entire length of the project. Segments are sometimes originally identified using Roadway Departure Crashes.

Program: Shoulder Improvement

Date of Program Methodology: 1/1/2016

What is the justification for this program? [Check all that apply]

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Addresses SHSP priority or emphasis area
Other-to be able to apply rumble strip/stripe on wider shoulders for addressing roadway departure crashes
Other-Roadway departure crashes.

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only Other-Roadway departure crashes.	Traffic Volume Lane miles Other-Preventative maintenance	Horizontal curvature Functional classification

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Systemic approach

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011

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).

Rank of Priority Consideration

Available funding : 1
Cost Effectiveness : 3

Other-Sites were selected in conjunction with the pavement preservation Program : 1

Program: Skid Hazard

Date of Program Methodology: 1/1/2013

What is the justification for this program? [Check all that apply]

Other-treating spots for wet pavement crashes

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Other-Wet pavement crashes	Other-Skid resistance consideration

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Systemic approach

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Safety analysis by TS in Planning
Other-The process is consistent with the AHTD HSIP process adopted in 2011

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).

Rank of Priority Consideration

Available funding : 4
Incremental B/C : 2
Cost Effectiveness : 2

Other-Wet pavement crashes were considered statewide and further analyzed to select the locations based on a certain threshold : 1

Program: Wrong Way Driving

Date of Program Methodology: 12/9/2015

What is the justification for this program? [Check all that apply]

Other-Treating wrong-way crashes and the Act 641 of the 87th Arkansas General Assembly

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Other-All wrong-way crashes	Traffic	Functional classification

What project identification methodology was used for this program? [Check all that apply]

Crash frequency

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

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Other-Based on the study and analysis memo from TS in Planning Division

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).

Rank of Priority Consideration

Available funding : 1
Cost Effectiveness : 2

Program:	Other-Pavement Marking Improvements
Date of Program Methodology:	1/1/2016

What is the justification for this program? [Check all that apply]

Other-systemic approach toward enhancement of pavement markings

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Traffic Volume Population	Functional classification Other-APHN Routes excluding Interstates, Freeways, and Expressways

What project identification methodology was used for this program? [Check all that apply]

Crash rate

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

No

Are local road projects identified using the same methodology as state roads?

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011

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).

Rank of Priority Consideration

Available funding : 2

Other-Systematic approach was used to select rural APHN routes other than Interstates, Freeways and Expressways : 1

Enter additional comments here to clarify your response for this question or add supporting information.

A Systematic approach on the State Highway System was adopted to upgrade all center and edgeline striping to 6".

Program: Other-Crash Data

Date of Program Methodology: 1/1/2012

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Meeting federal regulations and better data quality

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes	Other-All types of data exposure considered for improvements	Other-MIRE roadway data elements are the priority for improvements

What project identification methodology was used for this program? [Check all that apply]

Other-Provided funding for local agencies to purchase computer equipment to implement eCrash.

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

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-The MIRE is connected with the eCrash which will improve the data quality for analysis
Other-The ARDOT continues to coordinate with the Arkansas State Police through the TRCC to implement eCrash and the Advance program that will allow law enforcement agencies and other State and local agencies to have timely access to the crash data.

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).

Rank of Priority Consideration

Other-Various state agencies are prioritizing and funding needed improvements through the TRCC : 1

Program: Other-Roundabouts

Date of Program Methodology: 1/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Traffic Volume Population	Functional classification

2018 Arkansas Highway Safety Improvement Program

What project identification methodology was used for this program? [Check all that apply]

Crash frequency

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

No

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Cost effectiveness and availability of funds.

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).

Rank of Priority Consideration

Ranking based on B/C : 1
Available funding : 3
Cost Effectiveness : 2

Enter additional comments here to clarify your response for this question or add supporting information.

This is a rural road program.

Program: Other-Guardrail

Date of Program Methodology: 1/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Other-Roadway deprture crashes	Traffic	Functional classification Other-NHS Routes

What project identification methodology was used for this program? [Check all that apply]

Other-Systemic Approach

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

No

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Certain funds will be set aside for guardrail upgrades.

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).

Enter additional comments here to clarify your response for this question or add supporting information.

ARDOT is in the process of changing standard details/specs. of guardrails to meet the MASH standards. Jobs will be programmed immediately upon completion of standards modification.

What percentage of HSIP funds address systemic improvements?

26

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

Cable Median Barriers

Rumble Strips
Pavement/Shoulder Widening
Install/Improve Pavement Marking and/or Delineation
High friction surface treatment

Enter additional comments here to clarify your response for this question or add supporting information.

What process is used to identify potential countermeasures? [Check all that apply]

Engineering Study
Road Safety Assessment
Crash data analysis
SHSP/Local road safety plan
Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
Stakeholder input

Enter additional comments here to clarify your response for this question or add supporting information.

The common theme is to conduct engineering studies according to the HSM's safety management process. In these studies tools such as spreadsheets, HSM, Clearinghouse, and sometimes, software such as IHSDM are used to analyze the crash and road inventory data to diagnose the problems, recommend countermeasures, conduct economic appraisal and develop project scopes.

These projects are always aligned with the strategies defined in the SHSP. Developing the State SHSP is through a process of screening crash data and coordination with the safety stakeholders that provide input on the various aspects of safety problems throughout the state.

Multidiscipline Roadway Safety Audits are being performed as part of the project development process.

Does the State HSIP consider connected vehicles and ITS technologies?

No

Enter additional comments here to clarify your response for this question or add supporting information.

ARDOT is looking into the modern ITS techs as AV/CV technology is advancing forward. Our State HSIP does not include any CV technologies as of now; although, the more well-known ITS techs such as variable message signs, speed display monitors, etc. are still being utilized. Automated Work Zone Information (AWIS) is being used for queue detection but not using HSIP funds.

Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

Please describe how the State uses the HSM to support HSIP efforts.

As part of the HSIP process in Arkansas, the steps in safety management process described in HSM is followed. These steps including the details from the initial network screening to the evaluation of safety treatments are considered in our HSIP process. Also, the CMFs presented in the HSM are used in our analysis for the economic appraisal. When a project gets completed, it is evaluated for its safety effectiveness.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

Yes

Describe program methodology practices that have changed since the last reporting period.

Projects are evaluated for low cost countermeasures first, therefore high cost countermeasures have been postponed for those projects.

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

Yes

Describe other aspects of the HSIP methodology on which the State would like to elaborate.

A revised draft HSIP process document has been submitted and is under FHWA review for comment.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter additional comments here to clarify your response for this question or add supporting information.

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$32,425,000	$46,139,816	142.3%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$11,455,000	$12,351,749	107.83%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$57,360,000	$55,106,796	96.07%
State and Local Funds	$19,388,000	$8,266,019	42.63%
Totals	$120,628,000	$121,864,380	101.02%

Enter additional comments here to clarify your response for this question or add supporting information.

Some of the values presented in this table are programmed in ARDOT STIP for SFY 2019. The reason obligated funds are more than the programmed funds is that some older safety jobs were programmed in the past an obligated in this year's fiscal year. Also, several jobs have been awarded for more than they were programmed.

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

0%

How much funding is obligated to local or tribal safety projects?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

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

2%

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

2%

Enter additional comments here to clarify your response for this question or add supporting information.

How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

0%

How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

- Developing policies to systemically and systematically deploy the use of HSIP funds for the implementation of horizontal curves, signs, pavement markers, etc.;
- Better streamlining of the HSIP project development process (into the normal project development process) for corridor safety projects;
- Implementing numerous low cost countermeasures.
- Streamlining the process of "Change Order" approval.

Does the State want to elaborate on any other aspects of it's progress in implementing HSIP projects?

Yes

Describe any other aspects of the State's progress in implementing HSIP projects on which the State would like to elaborate.

- Local road safety program is being developed for the Highway https://eauth1.fhwa.dot.gov/UPACSjct/hsipp/Content/Images/save%20icon.gifCommission's approval. It will help the local agencies to improve safety on local roads.
- HFST second round of statewide project is under construction based on the wet-pavement study.
- UTBWC is also under construction at several locations based on the wet-pavement study.
- Wrong-way crash low-cost countermeasures are being implemented statewide.
- Statewide guardrail project is being developed to upgrade them to meet the MASH standards on NHS routes.
- The installation of cable median barriers is continued to reduce or eliminate KA crashes on interstates and other high speed routes.

- Statewide shoulder rumble strip/stripes were installed on 5,000 plus miles of the State Highway System by the end of calendar year 2017.
- Statewide 6" wide enhanced pavement markings were installed on over 4200 miles of the State Highway System by the end of calendar year 2017.
- ARDOT is currently in the process of developing a Safety and Mobility Data business plan with the services of a consultant.
- Funding provided to ASP HSO to allow local agencies to update/purchase equipment to implement eCrash.

List the projects obligated using HSIP funds for the reporting period.

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
012297 Districts 1,5,9 & 10 Pavement Friction Impvts. (Sel. Secs.) (S)	Roadway	Pavement surface - high friction surface	13	Locations	$ 122,530.00	$ 134,783.00	HSIP (23 U.S.C. 148)	Multiple	9,999	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
050279 Pangburn-Fourmile Hill (Widen. & Realign.) (S)	Shoulder treatments	Widen shoulder - paved or other	10.33	Miles	$ 124,200.00	$ 136,620.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	4,000	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
080494 I-40 - Solgohachia (Widen. & Realign.) (S)	Alignment	Horizontal curve realignment	6.83	Miles	$ 196,146.00	$ 215,760.60	HSIP (23 U.S.C. 148)	Rural Minor Arterial	5,000	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
BB1003 Hwy. 181-Hwy. 158 (I-55) Cable Median Barrier	Roadside	Barrier - cable	7.812	Miles	$ 3,928.00	$ 4,320.80	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	22,000	70	State Highway Agency	Systemic	Roadway Departure	Mitigating consequences of roadway departure.
012295 Districts 4 & 9 Pavement Friction Impvts. (Sel. Secs.) (S)	Roadway	Pavement surface - high friction surface	34	Locations	$5,160,171.00	$5,160,621.00	HSIP (23 U.S.C. 148)	Multiple	9,999	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
061561 Hwy.5-Perry Co. Line (Safety Impvts.) (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	17.47	Miles	$8,077,500.00	$ 8,077,950.00	HSIP (23 U.S.C. 148)	Rural Major Collector	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
061442 Garland Co. Line - Benton (Safety Impvts)	Alignment	Horizontal curve realignment	0.91	Miles	$ 9,000.00	$ 9,900.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	4,100	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
100950 Hwy. 158/Hwy. 163 Inters. Safety Impvts.	Intersection traffic control	Modify control - two-way stop to roundabout	1	Locations	$ 18,000.00	$ 19,800.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	2,000	55	State Highway Agency	Spot	Intersections	Mitigate consequences of intersection crashes.
090517 Izard Co. Line - Hwy. 62 (Safety Impvts.) (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	18.24	Miles	$ 22,500.00	$ 24,750.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,500	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
CA0907 Hwy. 112 - I-49 (Hwy. 412)	Roadside	Barrier - cable	4.59	Miles	$ 50,744.00	$ 55,818.40	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other Freeways and Expressways	0	65	State Highway Agency	Systemic	Roadway Departure	Mitigating consequences of roadway departure.
020595 Hwy. 65/Hwy. 35 Inters. Realignment (Safety Impvts.)	Intersection geometry	Intersection geometrics - modify skew angle	.80	Miles	$ 348,713.00	$ 383,584.30	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,400	55	State Highway Agency	Spot	Intersections	Mitigate consequences of intersection crashes.
061438 Bryant Rd.-Hwy. 298 West (Widen. & Realign.) (Sel. Secs.) (S)	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1.24	Miles	$ 422,449.00	$464,693.90	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	9,700	55	State Highway Agency	Spot	Intersections	Prevent angle crashes.

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
061439 Hwy. 7 - Hwy. 128 (Safety Impvts.)	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1.4	Miles	$ 20,000.00	$ 20,000.00	Penalty Funds (23 U.S.C. 154)	Rural Minor Arterial	8,600	55	State Highway Agency	Spot	Intersections	Prevent angle crashes.
080494 I-40 - Solgohachia (Widen. & Realign.) (S)	Alignment	Horizontal curve realignment	6.83	Miles	$2,438,256.00	$2,682,081.60	Penalty Funds (23 U.S.C. 154)	Rural Minor Arterial	5,000	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
012208 Traffic Safety Planning Activities (HSIP) (S)	Non-infrastructure	Transportation safety planning	0	Safety Planning Activities	$ 1,350,000.00	$1,350,000.00	HSIP (23 U.S.C. 148)	Non-Infrastructure	0	0	Non-Infrastructure	Non-Infrastructure Safety Planning Activities	Non-Infrastructure Safety Planning Activities	NA
012220 Local Agency eCrash Equipment Upgrade	Non-infrastructure	Data/traffic records	0	Local Agency eCrash Equipment Upgrade	$ 1,260,000.00	$ 1,386,000.00	HSIP (23 U.S.C. 148)	Local Agency eCrash Equipment Upgrade	0	0	State Highway Agency	NA	Data	Implement electronic crash database system for all safety partners.
012274 Hwy. 167 - Big Creek (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	28.6	Miles	$ 2,263,139.00	$ 2,263,139.00	HSIP (23 U.S.C. 148)	Rural Major Collector	1,400	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
012288 Low-Cost Safety Impvts. (Dist. 5,6,8, & 9)	Roadway	Pavement surface - high friction surface	25	Locations	$ 250,859.00	$ 275,944.90	HSIP (23 U.S.C. 148)	Multiple	9,999	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
012273 Railroad Safety Program	Non-infrastructure	Transportation safety planning	0	Railroad Safety Program	$ 180,000.00	$ 198,000.00	Penalty Funds (23 U.S.C. 154)	Railroad Safety Program	0	0	State Highway Agency	Railroad Safety Program	Railroad	Railroad Safety Program
012296 Districts 2, 6, 7 & 8 Pavement Friction Impvts. (Sel. Secs.) (S)	Roadway	Pavement surface - high friction surface	23	Locations	$ 2,964,508.00	$ 2,964,508.00	Penalty Funds (23 U.S.C. 154)	Multiple	9,999	0	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
012297 Districts 1,5,9 & 10 Pavement Friction Impvts. (Sel. Secs.) (S)	Roadway	Pavement surface - high friction surface	13	Locations	$ 2,200,000.00	$ 2,200,000.00	Penalty Funds (23 U.S.C. 154)	Multiple	9,999	0	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020595 Hwy. 65/Hwy. 35 Inters. Realignment (Safety Impvts.)	Intersection geometry	Intersection geometrics - modify skew angle	.80	Miles	$ 2,229,481.00	$ 2,229,481.00	Penalty Funds (23 U.S.C. 154)	Rural Minor Arterial	1,400	55	State Highway Agency	Spot	Intersections	Mitigate consequences of intersection crashes.
020621 Hwy. 138 - Hwy. 278 (S)	Shoulder treatments	Widen shoulder - paved or other	4.27	Miles	$ 481,258.00	$ 529,383.80	HSIP (23 U.S.C. 148)	Rural Major Collector	400	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020622 Halley - Hwy. 4 (S)	Shoulder treatments	Widen shoulder - paved or other	4.92	Miles	$ 546,362.00	$ 600,998.20	HSIP (23 U.S.C. 148)	Rural Major Collector	150	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020627 Louisiana State Line - Eudora (S)	Shoulder treatments	Widen shoulder - paved or other	8.07	Miles	$ 757,553.00	$ 833,308.30	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,600	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020643	Shoulder treatments	Widen shoulder - paved or other	2.086	Miles	$ 214,094.00	$ 214,094.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	5,300	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020645 Lonoke Co. Line - South (S)	Shoulder treatments	Widen shoulder - paved or other	4.45	Miles	$ 337,035.00	$ 370,738.50	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,400	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
020646 Leola - Sheridan (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	15.05	Miles	$ 1,493,029.00	$ 1,642,331.90	HSIP (23 U.S.C. 148)	Rural Major Collector	1,700	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020659 Hwy. 270 - Hwy. 365 (S)	Shoulder treatments	Widen shoulder - paved or other	4.66	Miles	$ 310,339.00	$ 341,372.90	HSIP (23 U.S.C. 148)	Urban Major Collector	1,500	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
020660 Pulaski Co. Line - Pine Bluff (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	19.27	Miles	$ 755,559.00	$ 831,114.90	HSIP (23 U.S.C. 148)	Rural Minor Arterial	3,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
030503 Hwys. 71 & 371 (Safety Impvts.) (Sel. Secs.) (S)	Roadway	Pavement surface - miscellaneous	4	Locations	$ 3,451,930.00	$ 3,451,930.00	HSIP (23 U.S.C. 148)	Multiple Fuc. Class	9,999	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
050280 Joy-Searcy (Safety Impvts.) (Hwy. 36)	Alignment	Horizontal curve realignment	8.75	Miles	$ 324,370.00	$ 356,807.00	Penalty Funds (23 U.S.C. 154)	Rural Major Collector	3,300	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
050316 Hwy. 25 - White Co. Line (Safety Impvts.) (Sel. Secs.)	Roadway	Pavement surface - miscellaneous	10.02	Miles	$ 851,805.00	$ 936,985.50	HSIP (23 U.S.C. 148)	Rural Minor Arterial	22,000	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
050362 Hwy. 36 - Bald Knob (S)	Shoulder treatments	Widen shoulder - paved or other	7.45	Miles	$ 356,956.00	$ 392,651.60	HSIP (23 U.S.C. 148)	Rural Major Collector	6,800	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
050369 Izard Co. Line - Hwy. 62	Shoulder treatments	Widen shoulder - paved or other	9.896	Miles	$ 15,755.00	$ 15,755.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
061438 Bryant Rd.-Hwy. 298 West (Widen. & Realign.) (Sel. Secs.) (S)	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	8.33	Miles	$ 19,000.00	$ 20,900.00	Penalty Funds (23 U.S.C. 154)	Rural Principal Arterial (RPA) - Other	9,700	55	State Highway Agency	Spot	Intersections	Prevent angle crashes.
061523 Hwy. 227 - Hwy. 7 (S)	Shoulder treatments	Widen shoulder - paved or other	5.91	Miles	$ 343,678.00	$ 378,045.80	HSIP (23 U.S.C. 148)	Rural Major Collector	2,000	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
061560 Mountain Pine - North of Hwy. 192 (Safety Impvts.) (S)	Roadway	Pavement surface - miscellaneous	3.24	Miles	$ 322,823.00	$ 355,105.30	HSIP (23 U.S.C. 148)	Rural Major Collector	2,800	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
061561 Hwy.5-Perry Co. Line (Safety Impvts.) (Sel. Secs.) (S)	Roadway	Roadway widening - travel lanes	17.47	Miles	$ 1,717,703.00	$ 1,717,703.00	Penalty Funds (23 U.S.C. 154)	Rural Major Collector	1,200	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
070271 I-30 - Nevada Co. Line (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	13.31	Miles	$ 972,436.00	$ 1,069,679.60	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,500	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
080552 Shirley - Stone Co. Line (S)	Shoulder treatments	Widen shoulder - paved or other	5.90	Miles	$ 267,586.00	$ 294,344.60	HSIP (23 U.S.C. 148)	Rural Major Collector	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
080557 Hwy. 105 - Hwy. 213 (S)	Shoulder treatments	Widen shoulder - paved or other	10.17	Miles	$ 620,275.00	$ 682,302.50	HSIP (23 U.S.C. 148)	Rural Major Collector	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
090422 Flippin - North (Widen. & Realign.) (S)	Shoulder treatments	Widen shoulder - paved or other	2.28	Miles	$ 20,000.00	$ 20,000.00	Penalty Funds (23 U.S.C. 154)	Rural Major Collector	3,700	55	State Highway Agency	Systemic	Intersections	Mitigate consequences of

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														intersection crashes.
090445 Hwy. 12/Hwy. 43 Inters. Safety Impvts.	Intersection traffic control	Modify control - all-way stop to roundabout	1	Locations	$ 22,500.00	$ 24,750.00	HSIP (23 U.S.C. 148)	Rural Major Collector	4,000	55	State Highway Agency	Spot	Intersections	Mitigate consequences of intersection crashes.
090487 Hwy. 16 - Boone Co. Line (Sel. Secs.) (S)	Roadway	Pavement surface - miscellaneous	25.33	Miles	$ 1,271,250.00	$ 1,398,375.00	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,300	55	State Highway Agency	Spot	Lane Departure	Prevent roadway departures.
090498 Pindall - Marshall (Safety Impvts.) (Sel. Secs.)	Alignment	Horizontal curve realignment	.6	Miles	$ 90,000.00	$ 99,000.00	Penalty Funds (23 U.S.C. 154)	Rural Principal Arterial (RPA) - Other	5,500	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
090508 Hwy. 72 North - Co. Rd. 34 (Add'l Lns.) (B.V. Bypass)	Roadside	Barrier - cable	8.745	Miles	$ 979,601.00	$ 1,077,561.10	HSIP (23 U.S.C. 148)	Rural Minor Arterial	2,800	65	State Highway Agency	Systemic	Roadway Departure	Mitigating consequences of roadway departure.
090509 Hwys. 12, 16, 62 & 127 Safety Impvts. (Sel. Secs.) (S)	Roadway	Pavement surface - miscellaneous	22.02	Miles	$ 2,434,410.00	$ 2,434,410.00	HSIP (23 U.S.C. 148)	Multiple	9,999	0	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100885 Hwys. 149 & 308B (Sel. Secs.) (S)	Shoulder treatments	Widen shoulder - paved or other	5.52	Miles	$ 580,038.00	$ 638,041.80	HSIP (23 U.S.C. 148)	Rural Major Collector	680	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100892 Missouri state Line - Hwy. 18B (S)	Shoulder treatments	Widen shoulder - paved or other	11.94	Miles	$ 1,560,256.00	$ 1,716,281.60	HSIP (23 U.S.C. 148)	Rural Major Collector	2,100	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100900 Hwys. 69 & 358 (Paragould) (Sel. Secs.)	Shoulder treatments	Widen shoulder - paved or other	8.47	Miles	$ 175,522.00	$ 193,074.20	HSIP (23 U.S.C. 148)	Rural Major Collector	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100902 Randolph Co. Line - South of Hwy. 63 (S)	Shoulder treatments	Widen shoulder - paved or other	1.97	Miles	$ 111,892.00	$ 123,081.20	HSIP (23 U.S.C. 148)	Rural Major Collector	1,100	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100905 North of Lawrence Co. Line - Hwy. 62 (S)	Shoulder treatments	Widen shoulder - paved or other	8.12	Miles	$ 140,999.00	$ 140,999.00	HSIP (23 U.S.C. 148)	Rural Major Collector	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100910 Hwy. 69S East & West (Trumann) (S)	Shoulder treatments	Widen shoulder - paved or other	2	Miles	$ 66,674.00	$ 73,341.40	HSIP (23 U.S.C. 148)	Urban Minor Arterial	4,400	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100911 Sharp Co. Line - Hwy. 117 (Strawberry)	Shoulder treatments	Widen shoulder - paved or other	2.07	Miles	$ 169,396.00	$ 186,335.60	HSIP (23 U.S.C. 148)	Rural Major Collector	1,200	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100912 Hwy. 18 - Hwy. 77 (Leachville) (S)	Shoulder treatments	Widen shoulder - paved or other	3.36	Miles	$ 562,967.00	$ 619,263.70	HSIP (23 U.S.C. 148)	Rural Major Collector	3,000	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100926 Toluca - Hwy. 148	Shoulder treatments	Widen shoulder - paved or other	.15	Miles	$ 74,651.00	$ 82,116.10	HSIP (23 U.S.C. 148)	Rural Minor Arterial	4,400	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
100927 Hwy. 67 - West (Pocahontas) (S)	Shoulder treatments	Widen shoulder - paved or other	3.64	Miles	$ 245,878.00	$ 270,465.80	HSIP (23 U.S.C. 148)	Rural Major Collector	1,100	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100929	Shoulder treatments	Widen shoulder - paved or other	3.5	Miles	$ 4,805.00	$ 5,285.50	HSIP (23 U.S.C. 148)	Rural Major Collector	1,600	55	State Highway Agency	Systemic	Roadway Departure	Prevent roadway departures.
100948 Hwy. 312 (Mississippi Co.) (Sel. Secs.)	Roadway	Rumble strips - edge or shoulder	5.58	Miles	$ 89,661.00	$ 98,627.10	HSIP (23 U.S.C. 148)	Rural Major Collector	4,800	55	State Highway Agency	Spot	Roadway Departure	Prevent roadway departures.
110653 Hwy 118/W Service Rd/I-40 EB Ramps Signal & Inters. Impvts. (West Memphis)	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Locations	$ 13,500.00	$ 13,500.00	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	7,800	55	State Highway Agency	Spot	Intersections	Mitigate consequences of intersection crashes.
110672 Hwy. 49/Hwy. 79 Inters. Safety Impvts.	Intersection traffic control	Modify control - all-way stop to roundabout	1	Locations	$ 57,600.00	$ 63,360.00	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	2,200	55	State Highway Agency	Spot	Intersections	Mitigate consequences of intersection crashes.
BB0612 Ark. River Bridge - I-40	Non-infrastructure	Enforcement	1	Locations	$ 29,492.00	$ 32,441.20	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Interstate	43,000	65	State Highway Agency	Spot	Work Zones	Prevent work zone crashes.
CA0605 Vandenberg Blvd. - Hwy. 5 (Widening)	Non-infrastructure	Enforcement	1	Locations	$ 142,110.00	$ 142,110.00	Penalty Funds (23 U.S.C. 154)	Urban Principal Arterial (UPA) - Other Freeways and Expressways	52,000	65	State Highway Agency	Spot	Work Zones	Prevent work zone crashes.
040749 I-40 Slide Repair (Ozark)	Non-infrastructure	Enforcement	1	Locations	$ 22,500.00	$24,750.00	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	22,000	70	State Highway Agency	Spot	Work Zones	Prevent work zone crashes.

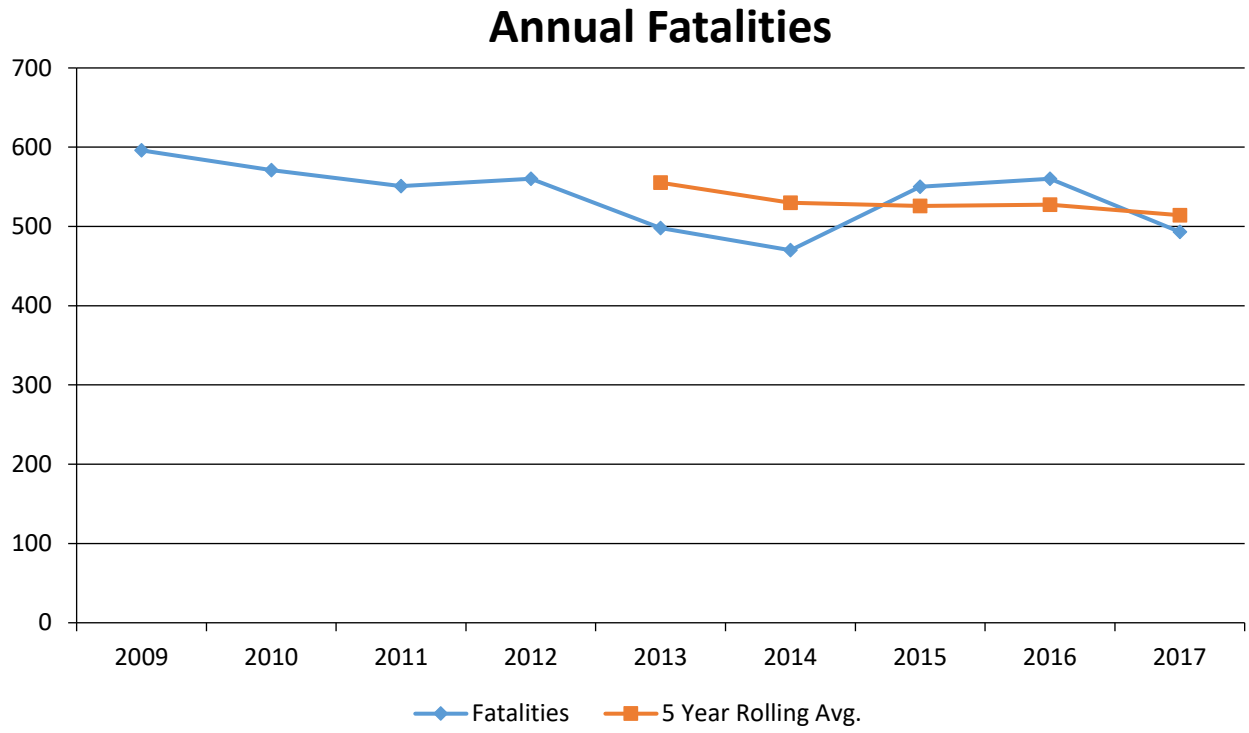
Enter additional comments here to clarify your response for this question or add supporting information.

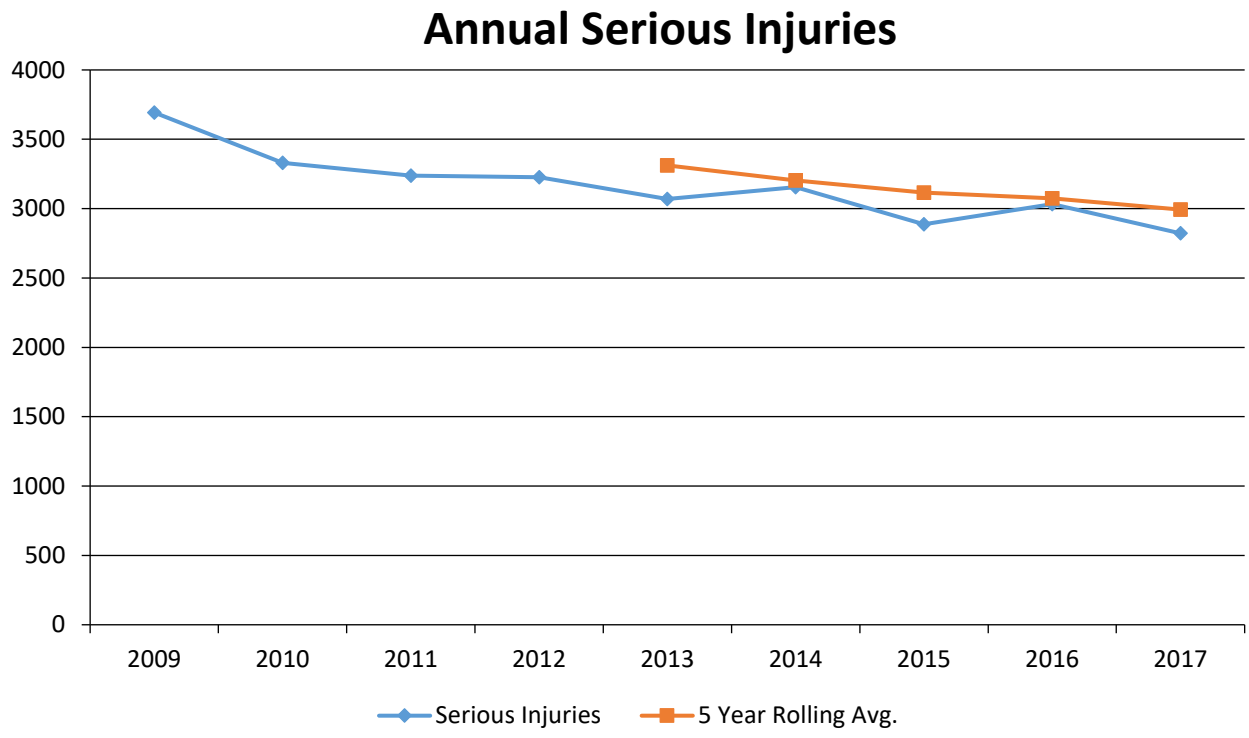
Safety Performance

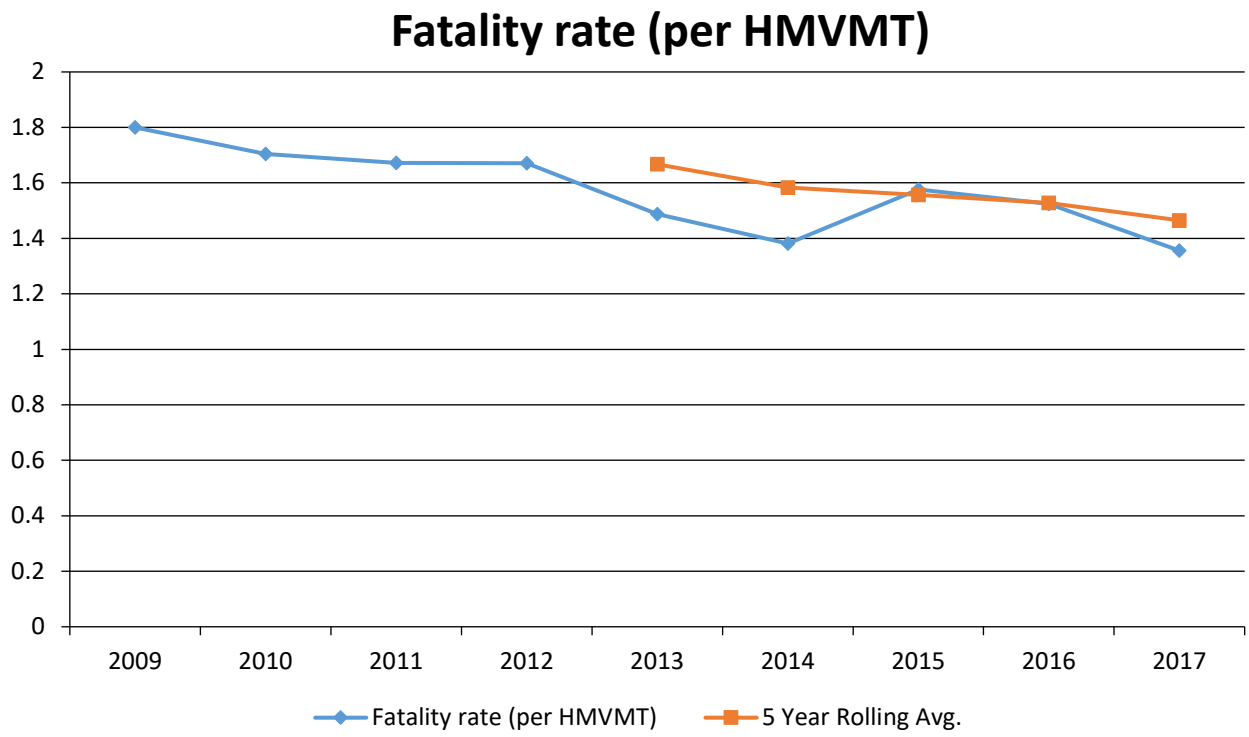
General Highway Safety Trends

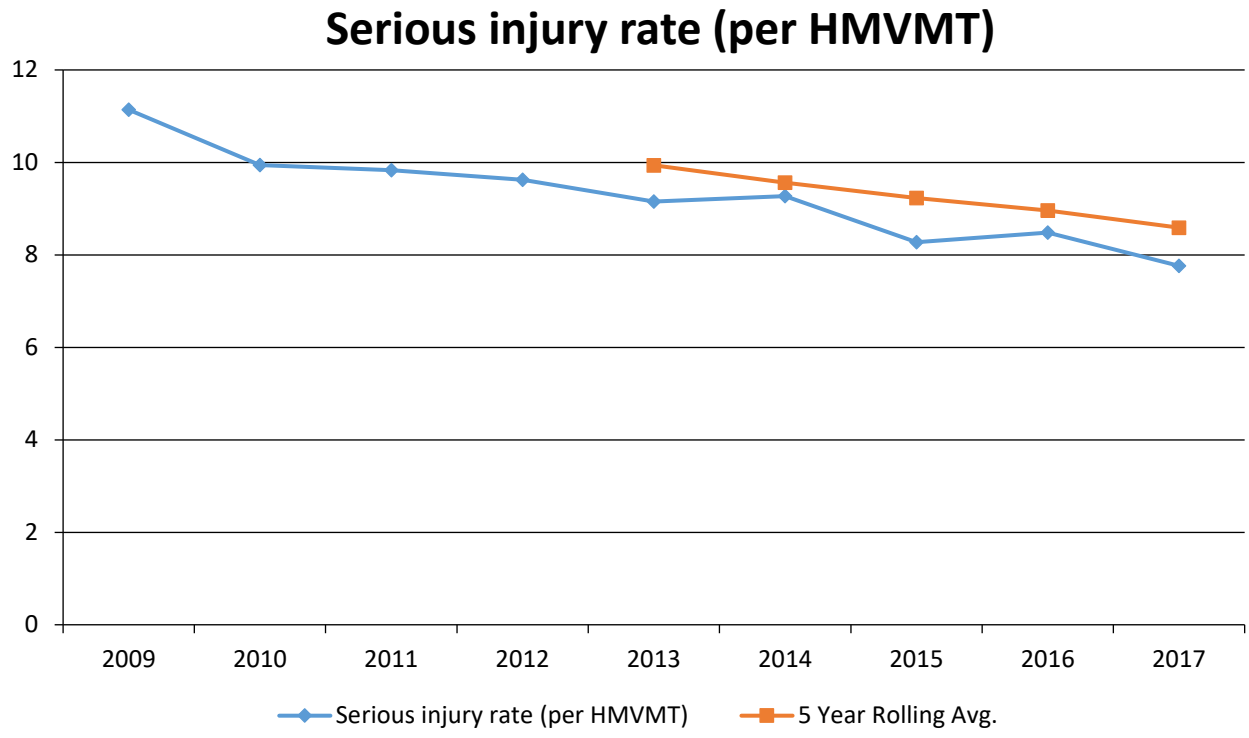
Present data showing the general highway safety trends in the State for the past five years.

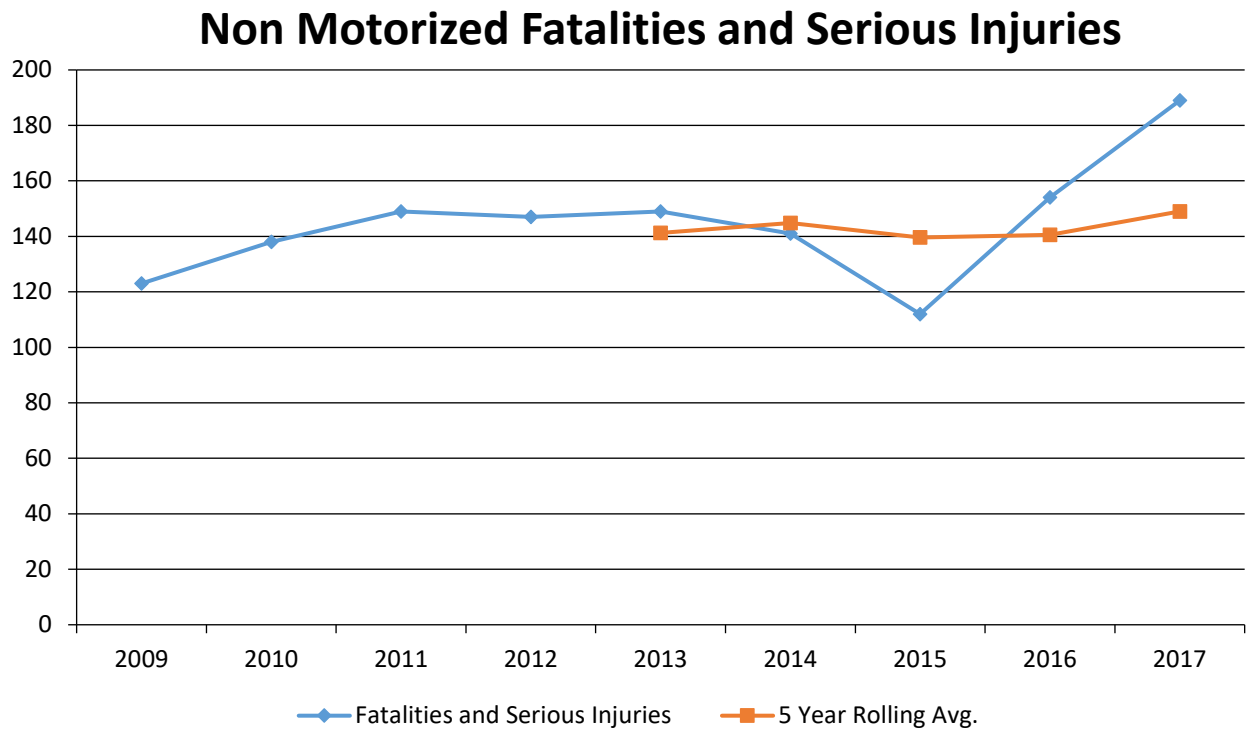
PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fatalities	596	571	551	560	498	470	550	560	493
Serious Injuries	3,693	3,331	3,239	3,226	3,070	3,154	2,888	3,032	2,822
Fatality rate (per HMVMT)	1.800	1.704	1.672	1.671	1.487	1.381	1.576	1.524	1.356
Serious injury rate (per HMVMT)	11.139	9.942	9.829	9.624	9.154	9.270	8.276	8.480	7.763
Number non-motorized fatalities	44	40	49	54	52	44	46	54	53
Number of non-motorized serious injuries	79	98	100	93	97	97	66	100	136
Number of non-motorized fatalities and serious inj	123	138	149	147	148	141	112	154	189

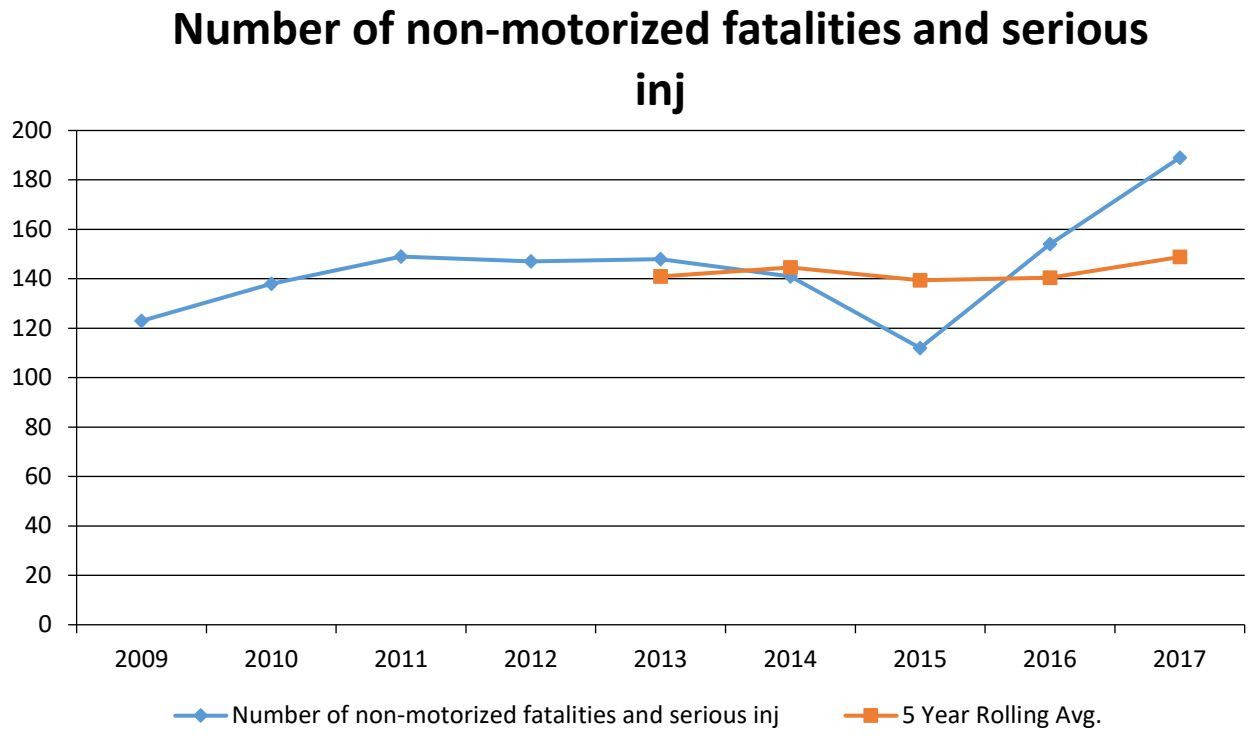

Annual Fatalities
700
600
500
400
300
200
100
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
4000
3500
3000
2500
2000
1500
1000
500
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
12
10
8
6
4
2
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Serious injury rate (per HMVMT)
5 Year Rolling Avg.





Enter additional comments here to clarify your response for this question or add supporting information.

Fatality Values are based on the actual fatality numbers for 2009-2014 and the preliminary NSC numbers for 2016 and 2017 as FARS data has been historically wrong due to numbers being reported before the entries are completed in final FARS.

2018 Arkansas Highway Safety Improvement Program
All serious injury numbers are based on State Crash Data.

AVMT for 2016 and 2017 is derived from State Data as FARS has not reported these numbers yet.

Describe fatality data source.

Other

If Other Please describe

National Safety Council

Enter additional comments here to clarify your response for this question or add supporting information.

In Arkansas Annual Report File (ARF) FARS numbers are reported before all fatalities are processed. This makes using ARF FARS numbers incorrect. FARS will usually go back and adjust prior years numbers to match what is reported to National Safety Council (NSC). We have found that NSC numbers are historically the correct numbers. Older years are set to match FARS.

To the maximum extent possible, present this data by functional classification and ownership.

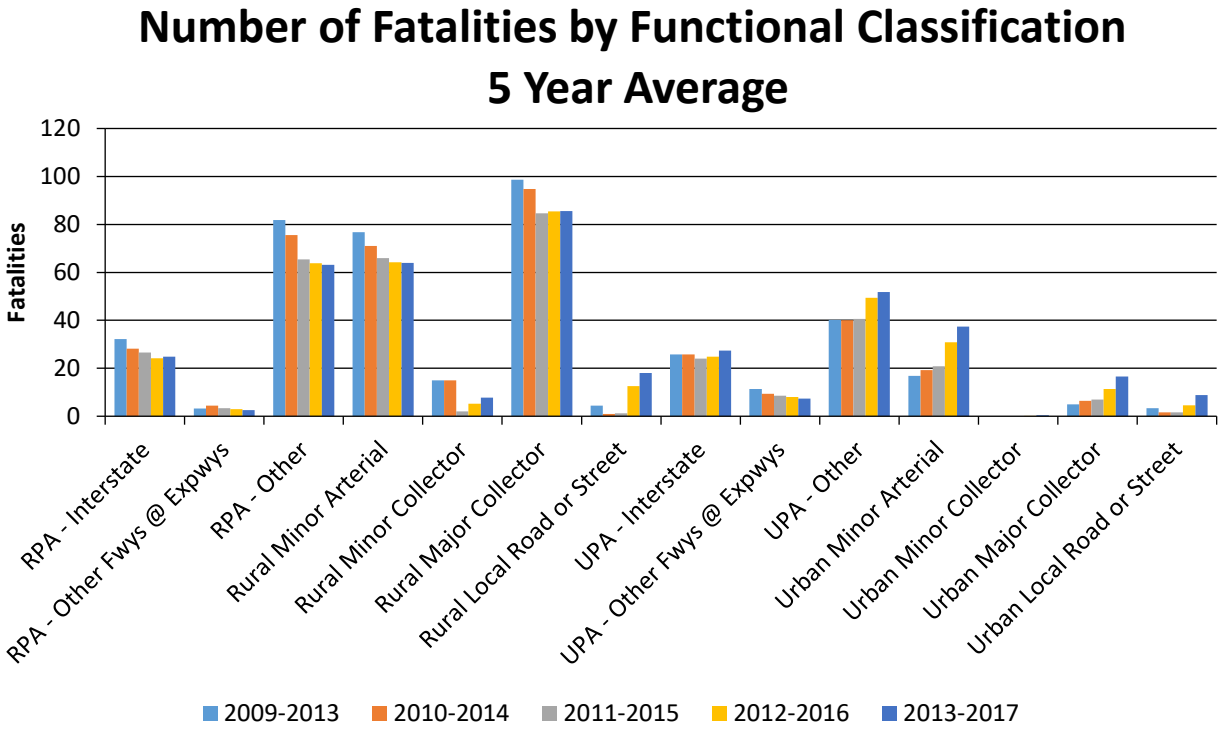
Year 2017

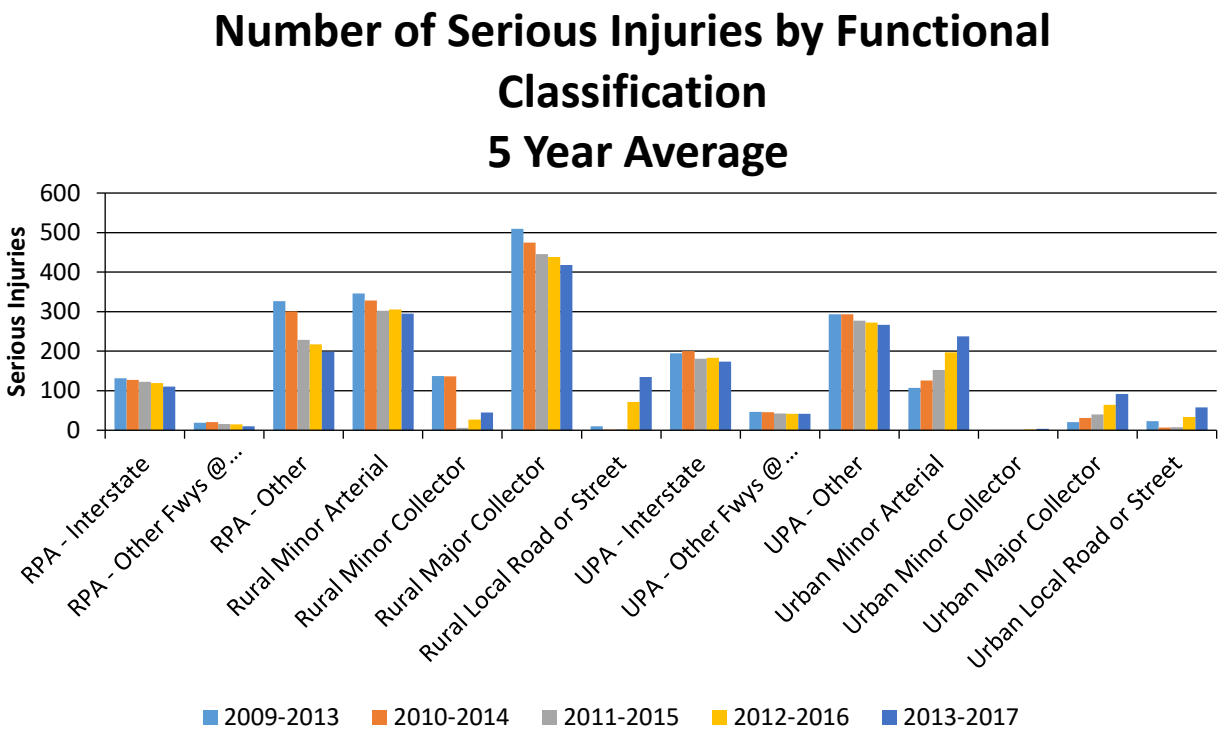
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	24.8	110.4	0.63	2.82
Rural Principal Arterial (RPA) - Other Freeways and Expressways	2.6	10	0.71	3.07
Rural Principal Arterial (RPA) - Other	63.2	198.8	1.72	7.58
Rural Minor Arterial	64	294.8	2.35	10.88
Rural Minor Collector	7.8	45.2	3.52	13.85
Rural Major Collector	85.6	417.8	2.78	13.82
Rural Local Road or Street	18	134.8	2.43	8.44
Urban Principal Arterial (UPA) - Interstate	27.4	173.2	0.53	3.4
Urban Principal Arterial (UPA) - Other Freeways and Expressways	7.4	42	16.73	3.91
Urban Principal Arterial (UPA) - Other	51.8	267	1.41	7.29
Urban Minor Arterial	37.4	237.8	1.34	8.65
Urban Minor Collector	0.4	3.6	0.77	8.08

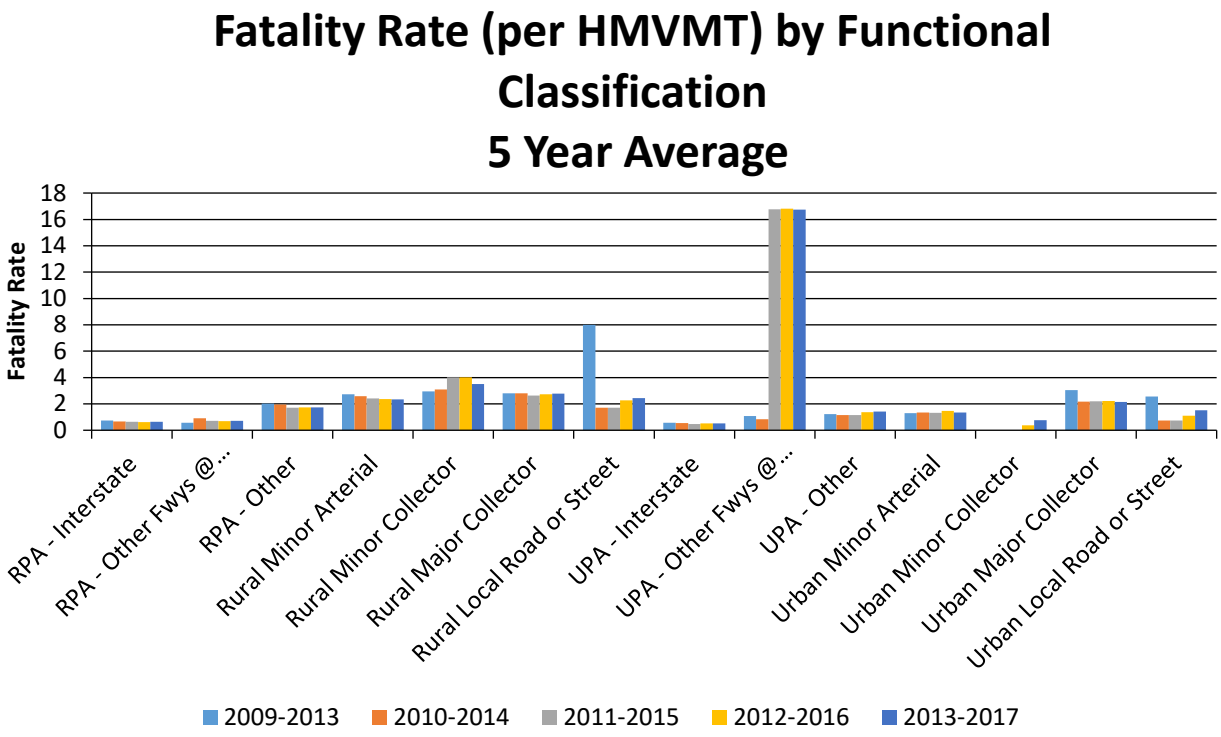
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Urban Major Collector	16.6	92.2	2.14	11.75
Urban Local Road or Street	8.8	57.4	1.51	9.12

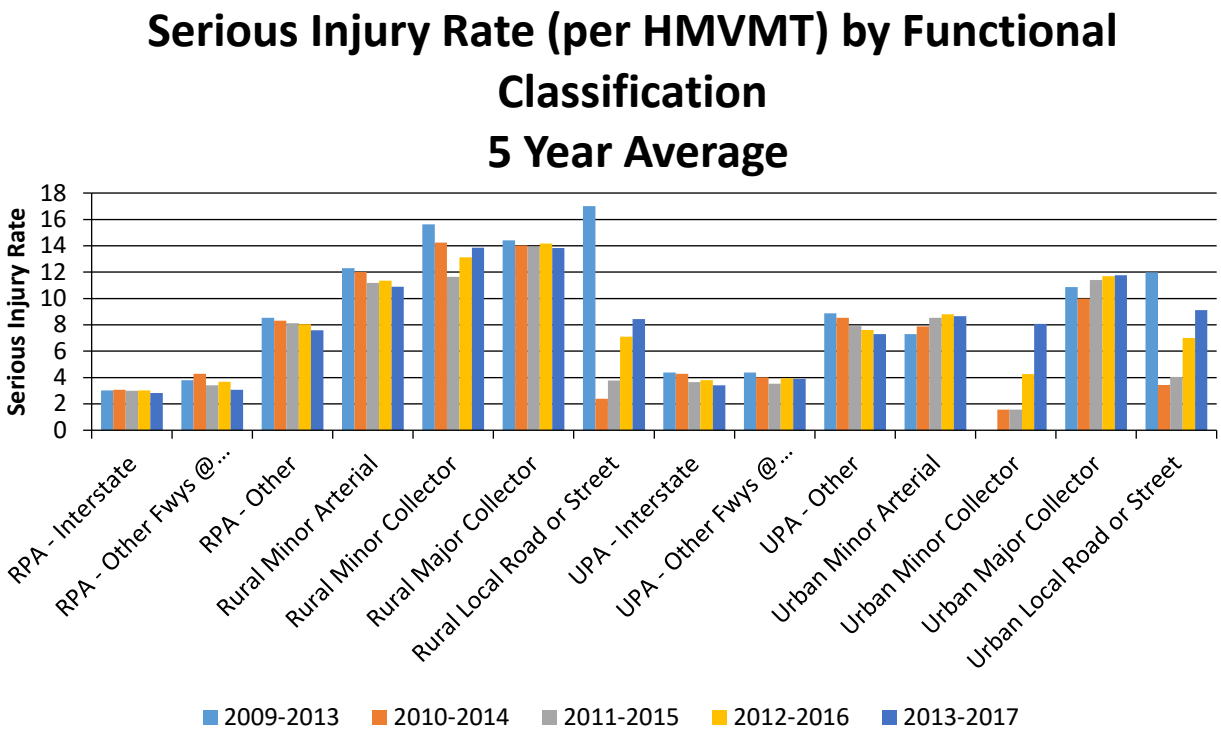
Year 2016

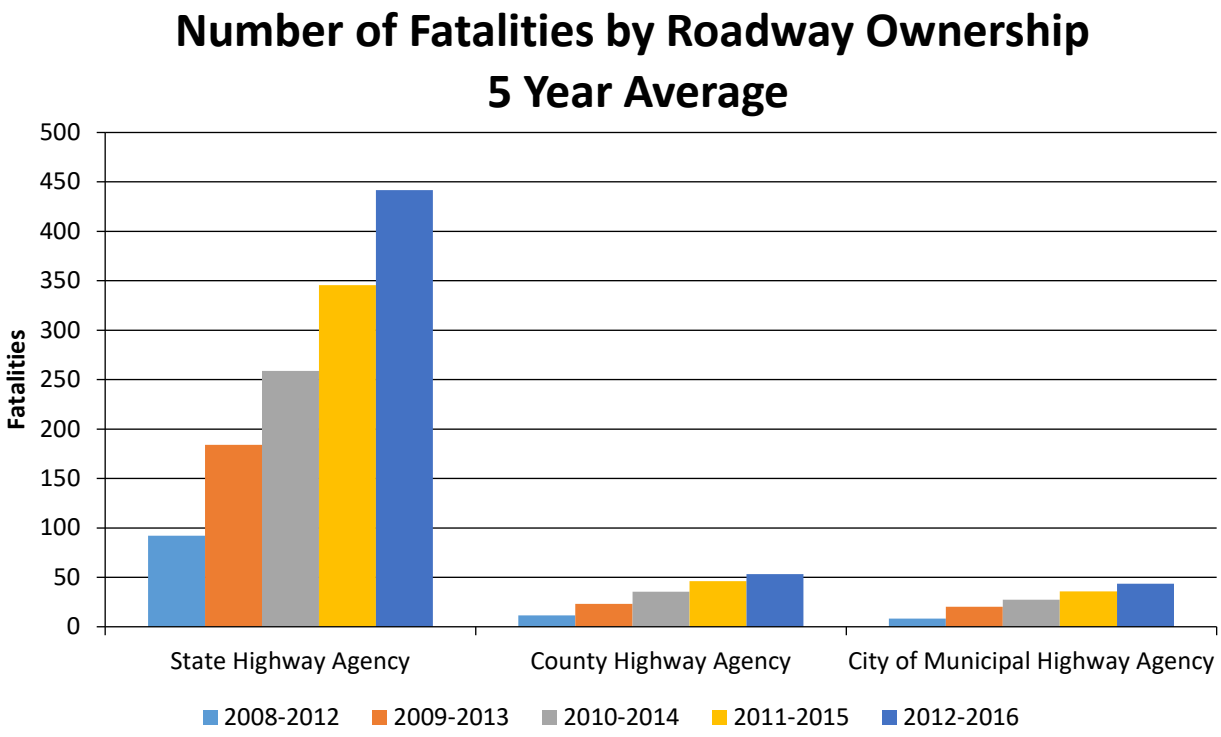
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	441.8	2,537.8	1.72	10.02
County Highway Agency	53.2	212.4	1.65	6.59
Town or Township Highway Agency				
City of Municipal Highway Agency	43.6	256.2	0.78	5.87
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				

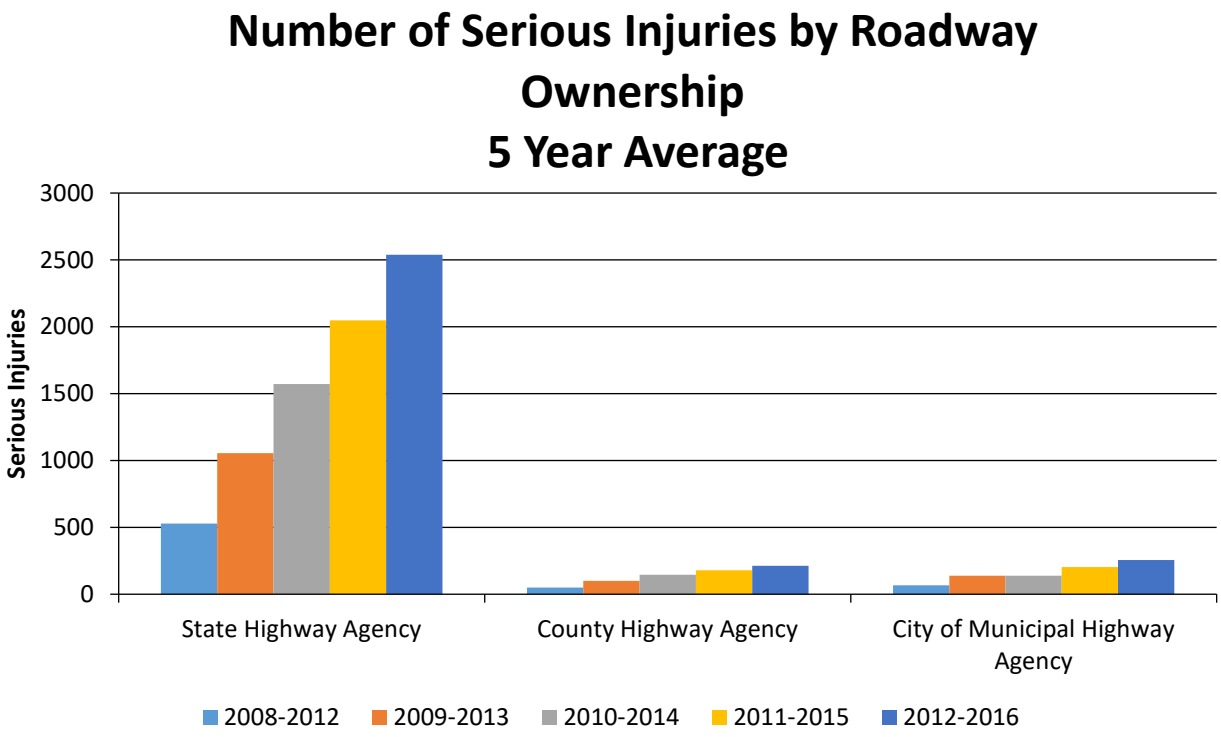

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
120
100
80
60
40
20
0
RPA - Interstate
RPA - Other Fwys @ Expwys
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @ Expwys
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

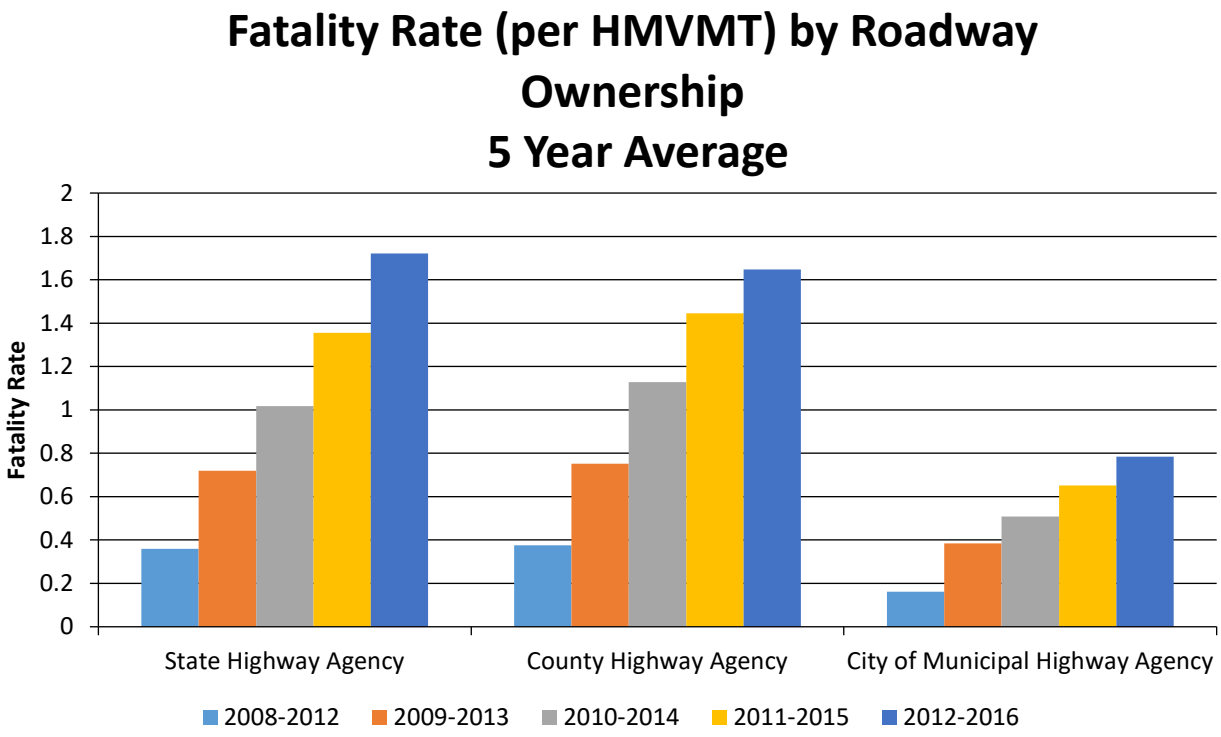

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
600
500
400
300
200
100
0
RPA - Interstate
RPA - Other Fwys @...
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

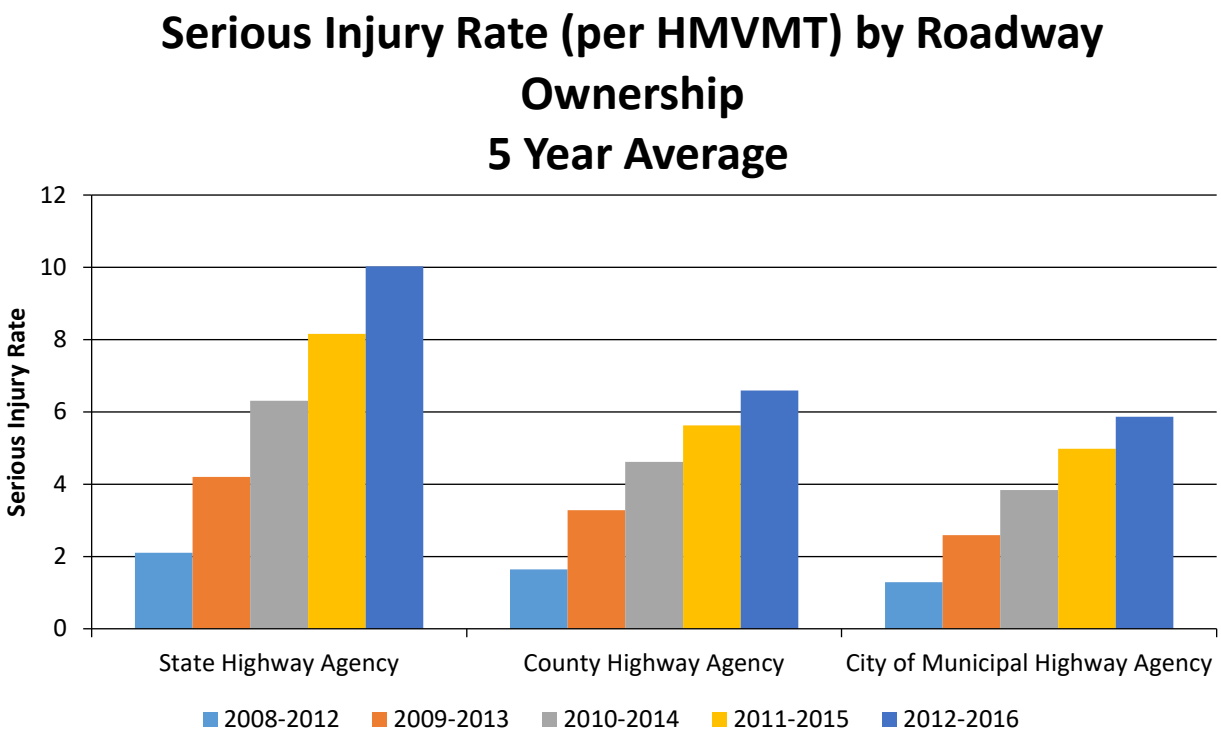

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
18
16
14
12
10
8
6
4
2
0
RPA - Interstate
RPA - Other Fwys @...
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
18
16
14
12
10
8
6
4
2
0
RPA - Interstate
RPA - Other Fwys @...
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
500
450
400
350
300
250
200
150
100
50
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
3000
2500
2000
1500
1000
500
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016



Enter additional comments here to clarify your response for this question or add supporting information.

The tool would not allow entering a new year (2017). The numbers are below.

2017	Num of Fatalities	Num of Serious Inj.	Fatality Rate	Serious Injury Rate	DVMT
State Highway Agency	452	2228	1.685194709	8.306667724	7348456
County Highway Agency	41	211	1.158742288	5.963283484	9694025
City of Municipal Highway Agency	50	375	0.8342568	6.256926	16420160

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

Yes

Provide additional discussion related to general highway safety trends.

In July of 2015 Arkansas began converting over from a paper based reporting system to eCrash. This process has greatly increased the number of crashes getting entered into the crash data base. The Arkansas crash database showed 60,947 crashes in 2014 and it has increased to 79,251 crashes in 2017. During this process we discovered that 29 out of 75 County Sheriff Offices were not submitting any crash reports. Arkansas has recently granted 1.4 million dollars to 31 local agencies to get them on the eCrash system. Due to our effort to get better and more accurate data, crash numbers are going up because they were previously not reported to the owner agency of crash database. Any sort of trend analysis at this point would be greatly skewed because of the factors previously mentioned.

Other factors include: Also, the AVMT in Arkansas has been on a steady increase of around 3% per year since 2015. Arkansas has recently legalized medical marijuana and is considering a speed limit increase on certain highways.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2019 Targets *

Number of Fatalities 543.0

Describe the basis for established target, including how it supports SHSP goals.

Through extensive coordination with the Arkansas Highway Safety Office, FHWA, NHTSA, all MPOs, and other stakeholders, a methodology to determine the targets was developed. This methodology is similar to the previous year's methodology. The first step in the methodology was to calculate the moving average for the last five years. A moving average "smooths" the variation from year to year, which accounts for variation of the data. Next, an average of each value was calculated.The preliminary fatality number in FARS shows 545 for 2016, which is used for the 2012-2016 moving average calculation. The FARS data typically get adjusted prior to being finalized. As a result, the National Safety Council (NSC) data for 2016 is reviewed to determine the level of adjustment to account for potential corrections made to the FARS data later in the year. The NSC fatality number shows 560 for 2016. Once the average of the moving averages was calculated for each performance measure, external factors were considered to determine if and how they would impact safety performance. These external factors include the following: • The recent state legalization of medical marijuana. • The possible increase in speed limit on freeways/expressways. This target supports the SHSP goals of reducing Fatalities and Serious Injuries Statewide.

Number of Serious Injuries 3637.0

Describe the basis for established target, including how it supports SHSP goals.

Through extensive coordination with the Arkansas Highway Safety Office, FHWA, NHTSA, all MPOs, and other stakeholders, a methodology to determine the targets was developed. This methodology is similar to the previous year's methodology. The first step in the methodology was to calculate the moving average for the last five years. A moving average "smooths" the variation from year to year, which accounts for variation of the data. The actual data numbers shown in Attachment A. Next, an average of each value was calculated. Once the average of the moving averages was calculated for each performance measure, external factors were considered to determine if and how they would impact safety performance. These external factors include the following: • The recent state legalization of medical marijuana. • The possible increase in speed limit on freeways/expressways. • Update to the definition of

Suspected Serious Injury in 2017. • Continued increase in vehicle miles traveled. In addition to the above external factors, crash reporting is another major consideration.The number of crashes being captured in the database has been increasing due to eCrash implementation, which impacts serious injury crash data. This target supports the SHSP goals of reducing Fatalities and Serious Injuries Statewide.

Fatality Rate 1.615

Describe the basis for established target, including how it supports SHSP goals.

Through extensive coordination with the Arkansas Highway Safety Office, FHWA, NHTSA, all MPOs, and other stakeholders, a methodology to determine the targets was developed. This methodology is similar to the previous year's methodology. The first step in the methodology was to calculate the moving average for the last five years. A moving average "smooths" the variation from year to year, which accounts for variation of the data. Next, an average of each value was calculated.The preliminary fatality number in FARS shows 545 for 2016, which is used for the 2012-2016 moving average calculation. The FARS data typically get adjusted prior to being finalized. As a result, the National Safety Council (NSC) data for 2016 is reviewed to determine the level of adjustment to account for potential corrections made to the FARS data later in the year. The NSC fatality number shows 560 for 2016. Once the average of the moving averages was calculated for each performance measure, external factors were considered to determine if and how they would impact safety performance. These external factors include the following: • The recent state legalization of medical marijuana. • The possible increase in speed limit on freeways/expressways. This target supports the SHSP goals of reducing Fatalities and Serious Injuries Statewide.

Serious Injury Rate 10.824

Describe the basis for established target, including how it supports SHSP goals.

Through extensive coordination with the Arkansas Highway Safety Office, FHWA, NHTSA, all MPOs, and other stakeholders, a methodology to determine the targets was developed. This methodology is similar to the previous year's methodology. The first step in the methodology was to calculate the moving average for the last five years. A moving average "smooths" the variation from year to year, which accounts for variation of the data. The actual data numbers shown in Attachment A. Next, an average of each value was calculated. Once the average of the moving averages was calculated for each performance measure, external factors were considered to determine if and how they would impact safety performance. These external factors include the following: • The recent state legalization of medical marijuana. • The possible increase in speed limit on freeways/expressways. • Update to the definition of Suspected Serious Injury in 2017. • Continued increase in vehicle miles traveled. In addition to the above external factors, crash reporting is another major consideration. The number of crashes being captured in the database has been increasing due to eCrash implementation, which impacts serious injury crash data. This target supports the SHSP goals of reducing Fatalities and Serious Injuries Statewide.

Total Number of Non-Motorized Fatalities and Serious Injuries	170.0

Describe the basis for established target, including how it supports SHSP goals.

Through extensive coordination with the Arkansas Highway Safety Office, FHWA, NHTSA, all MPOs, and other stakeholders, a methodology to determine the targets was developed. This methodology is similar to the previous year's methodology. The first step in the methodology was to calculate the moving average for the last five years. A moving average "smooths" the variation from year to year, which accounts for variation of the data. The actual data numbers shown in Attachment A. Next, an average of each value was calculated. Once the average of the moving averages was calculated for each performance measure, external factors were considered to determine if and how they would impact safety performance. These external factors include the following: • The recent state legalization of medical marijuana. • The possible increase in speed limit on freeways/expressways. • Update to the definition of Suspected Serious Injury in 2017. • Continued increase in vehicle miles traveled. In addition to the above external factors, crash reporting is another major consideration. The number of crashes being captured in the database has been increasing due to eCrash implementation, which impacts serious injury crash data. This target supports the SHSP goals of reducing Fatalities and Serious Injuries Statewide.

Enter additional comments here to clarify your response for this question or add supporting information.

See previous question regarding external factors which greatly affect our target setting efforts.

Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

Several meetings were held involving ARDOT, FHWA and the Arkansas Highway Safety Office to establish a methodology and preliminary targets. The method and preliminary targets were then presented to the SHSP Steering Committee which included all MPOs, other stakeholder agencies and private industry and organizations. Comments were taken from the committee and considered. Some of the topics that created the most discussion evolved around adjustments to targets for internal and external factors as shown below:
The recent state legalization of medical marijuana.
• The possible increase in speed limit on freeways/expressways.
• Update to the definition of Suspected Serious Injury.
• Continued increase in vehicle miles traveled.
In addition to the above external factors, crash reporting is another major consideration. The number of crashes being captured in the database has been increasing due to eCrash implementation, which impacts serious injury crash data.

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Arkansas does not have any additional targets other than the targets for the five HSIP performance measures.

Applicability of Special Rules

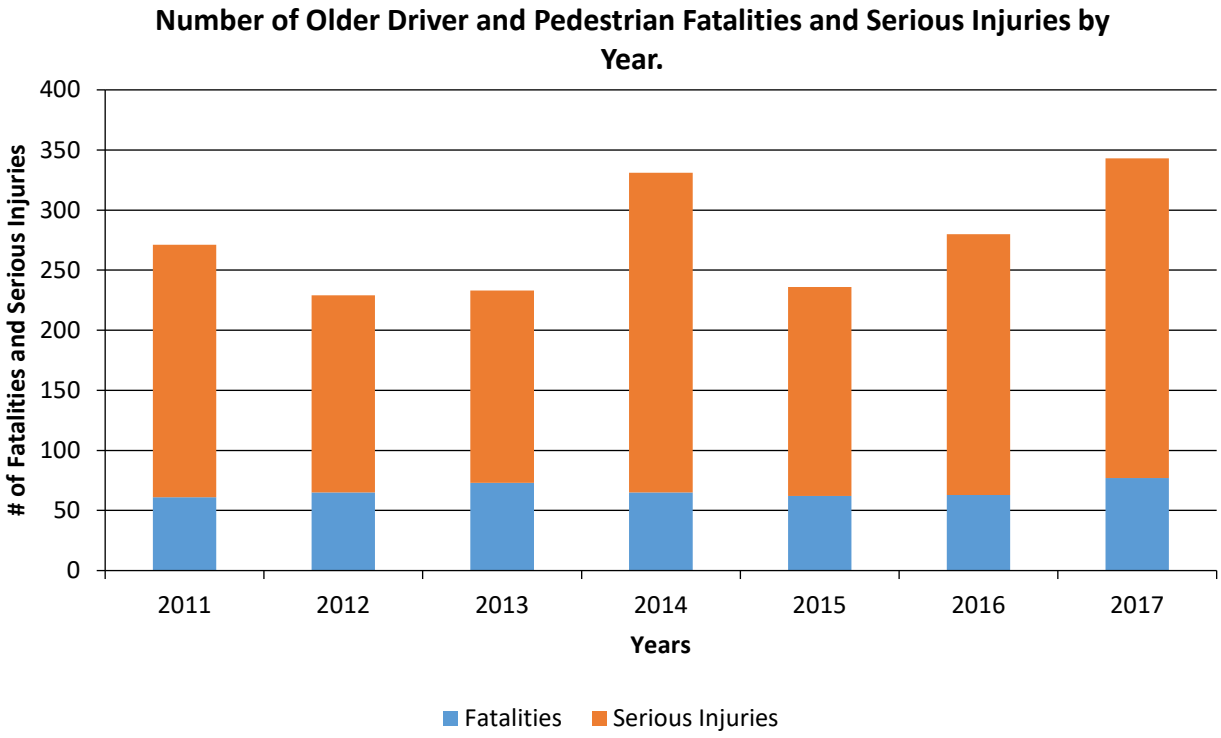
Does the HRRR special rule apply to the State for this reporting period?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Provide the number of older driver and pedestrian fatalities and serious injuries 65 years of age and older for the past seven years.

PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017
Number of Older Driver and Pedestrian Fatalities	61	65	73	65	62	63	77
Number of Older Driver and Pedestrian Serious Injuries	210	164	160	266	174	217	266



Enter additional comments here to clarify your response for this question or add supporting information.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries

Enter additional comments here to clarify your response for this question or add supporting information.

The new HSIP Process being developed will develop a method to evaluate the overall effectiveness of the HSIP. This process is under FHWA review for comments at this time.

Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

Most of our safety projects which were initiated in recent years are either under design or construction. Some of them have been constructed but the crash data is not available for the evaluation. However, we had evaluated several projects implemented in the past that helped us expand those countermeasures at the statewide level. Some of them are discussed below. One of the sub-programs of High Risk Rural Road (HRRR) Program was evaluated on an annual basis and it was found effective. However, after the implementation of this project we found out that the crashes would migrate. In order to address this issue, logical termini points are considered instead of data driven termini points. Another major statewide safety improvement program has been the installation of cable median barrier to address roadway departure crashes, which has been very effective and still it is continued. HFST has also been installed on several ramps/curves across the state which has proved to be very effective on preventing wet-pavement crashes. We have been receiving very positive feedback from the public and the second round of installation of these countermeasures is underway. Shoulder Rumble Stripe/Stripes have been installed on hundreds of miles statewide and have proved to be effective in preventing roadway departure crashes especially on curves located in rural areas. Similarly Centerline Rumble Stripes have been installed in the passing lane segments and currently ARDOT is in the process of studying their need in the center turn lanes on rural roads where head on and sideswipe opposite crashes are the prevailing type of safety problem. The new HSIP Process being developed will develop a method to evaluate the overall effectiveness of programs and sub-programs. The process is currently under FHWA review for comments.

What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

More systemic programs
Policy change
Organizational change
Increased awareness of safety and data-driven process
Increased focus on local road safety
HSIP Obligations

Enter additional comments here to clarify your response for this question or add supporting information.

The amount of HSIP funds obligated each year and the number of projects programmed waiting in a queue to be funded for the coming years indicates that we are planning well for improving the safety conditions throughout the State by following the HSIP guidelines.

Most of the projects' scopes defined and programmed are based on a data driven process where the benefit-cost calculations show cost effectiveness of the treatments recommended to problematic locations. In addition, a more proactive approach is being taken toward systemic programs which address the crash risks rather than historical crash occurrences. These are undertaken by making changes to the HSIP process organization and policies toward data-driven approaches, especially where the KA crashes are of main importance when examining for safety concerns. The HSIP process is currently being updated.

ARDOT is also in the process of developing a policy for local road safety assistance using HSIP funds in which local agencies can apply for the funds to be used on local safety improvement projects on a competitive basis.

Are there any significant programmatic changes that have occurred since the last reporting period?

Yes

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

ARDOT has inclined toward focusing on and addressing safety concerns at locations with more KA crashes. In addition to a focus on locations with higher historical KA crashes, a more proactive approach is also being taken toward systemic programs which address the crash risks rather than reactive approach. A more data-driven process is utilized to program and scope safety projects, especially where KA crash statistics are of concern. ARDOT is also in the process of developing a policy for local road safety assistance using HSIP funds, in which local agencies can apply for the funds to be used on local safety improvement projects on a competitive basis. ARDOT is moving towards B/C analysis that mostly requires individual countermeasures to stand on their own merit. We have improved efficiency by adding a software developer to create tools used by the Department to facilitate the ease of conducting safety analysis Department wide. These tools have allowed other Divisions to do their analysis for non-HSIP projects without having to wait on the Traffic Safety Section to conduct queries and analysis for them. Additionally, ARDOT is looking into different safety analyst tools such as AASHTOWARE Safety Analyst, usRAP, Numetric, and AgileAssets Safety Analyst to further enhance safety analyses.

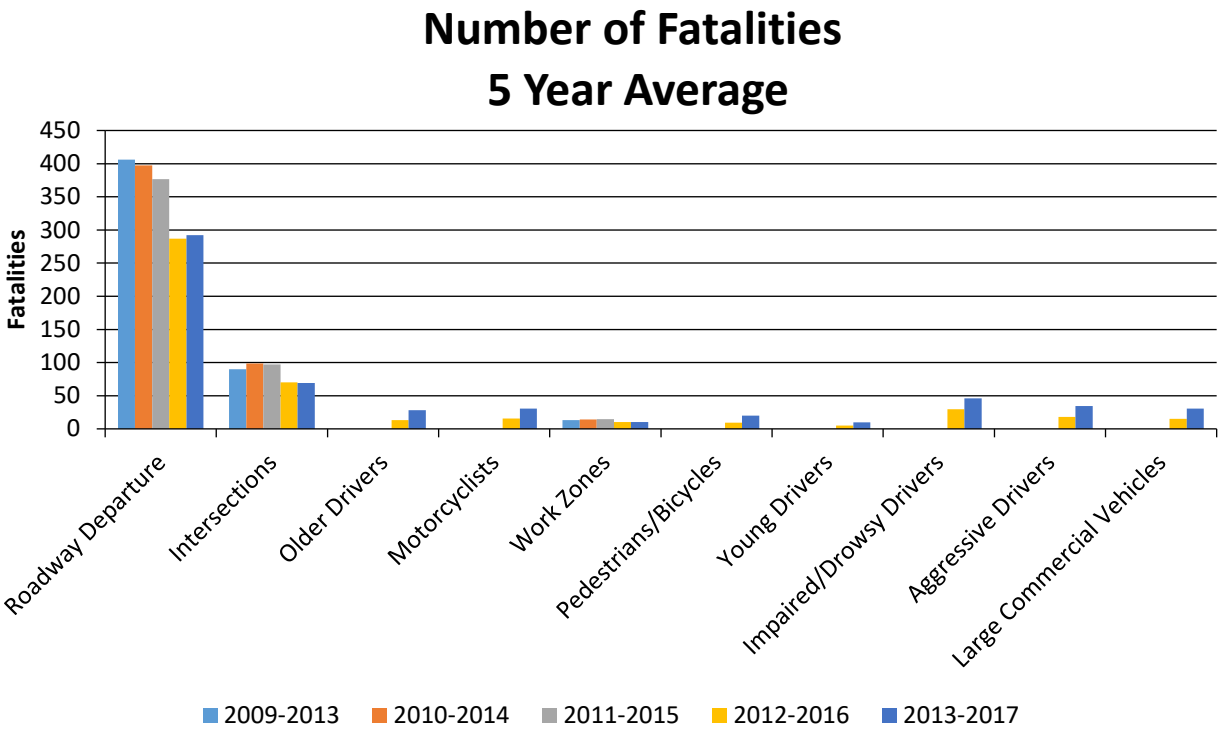
Effectiveness of Groupings or Similar Types of Improvements

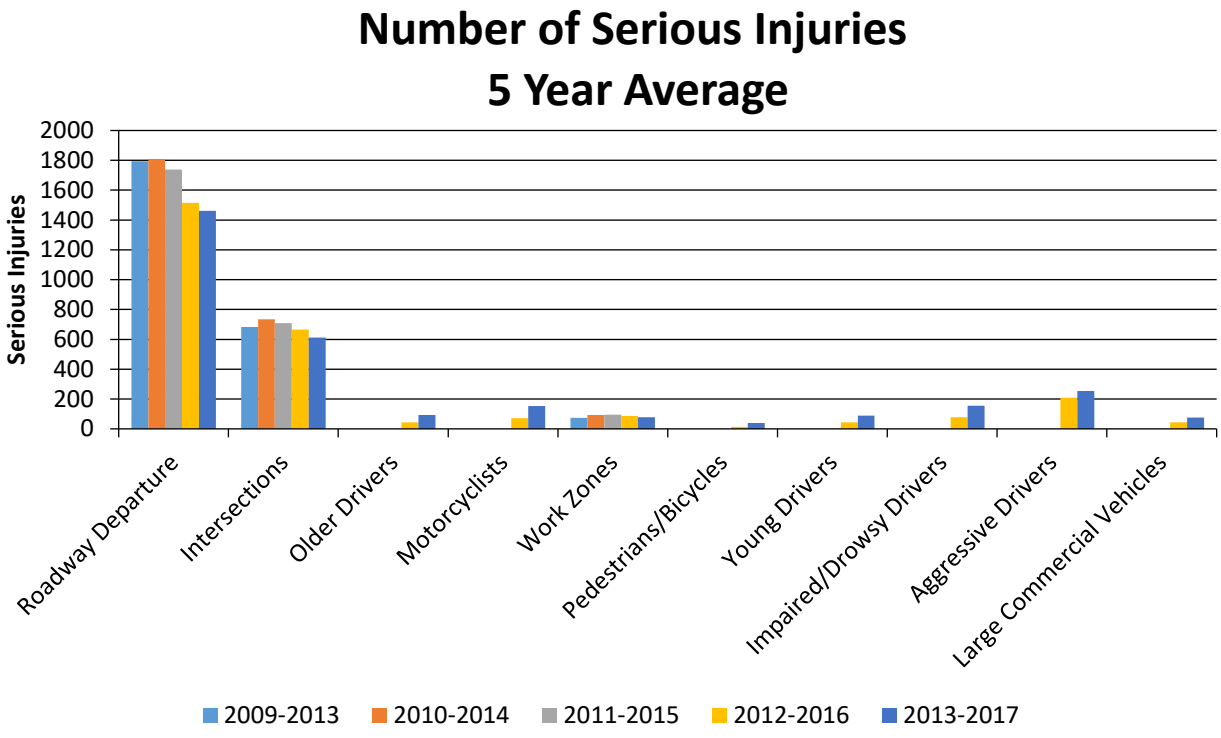
Present and describe trends in SHSP emphasis area performance measures.

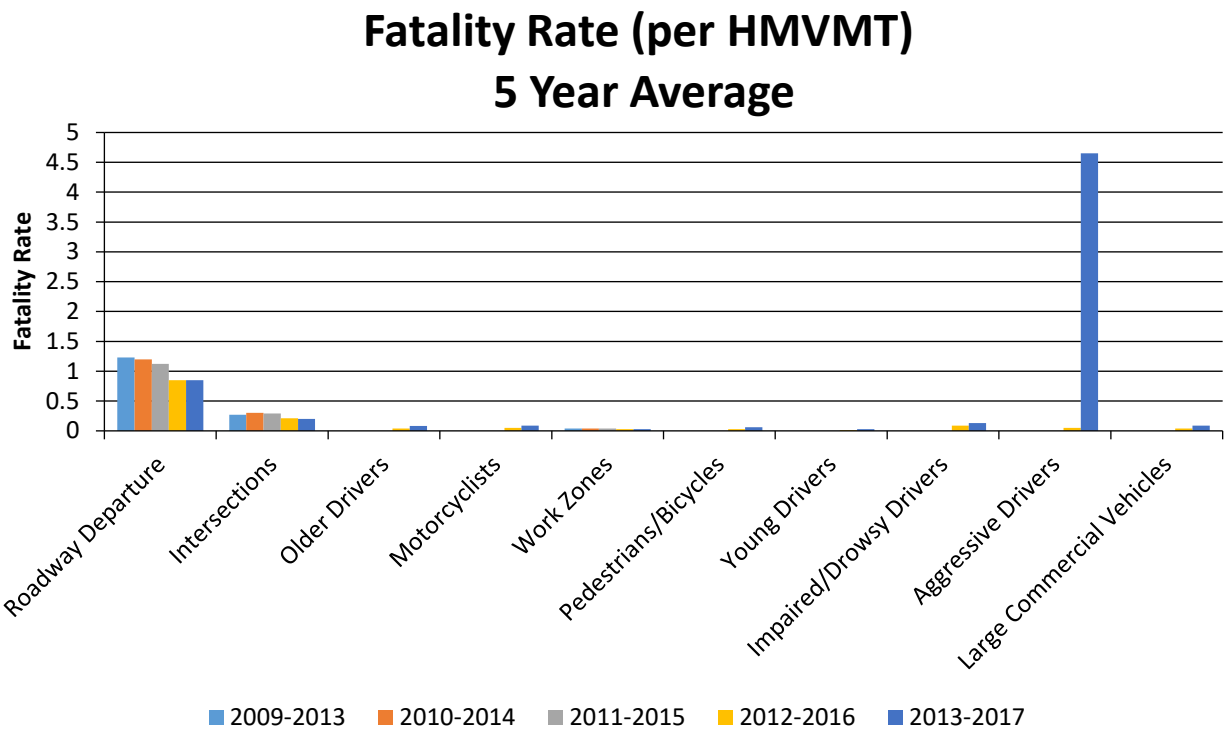
Year 2017

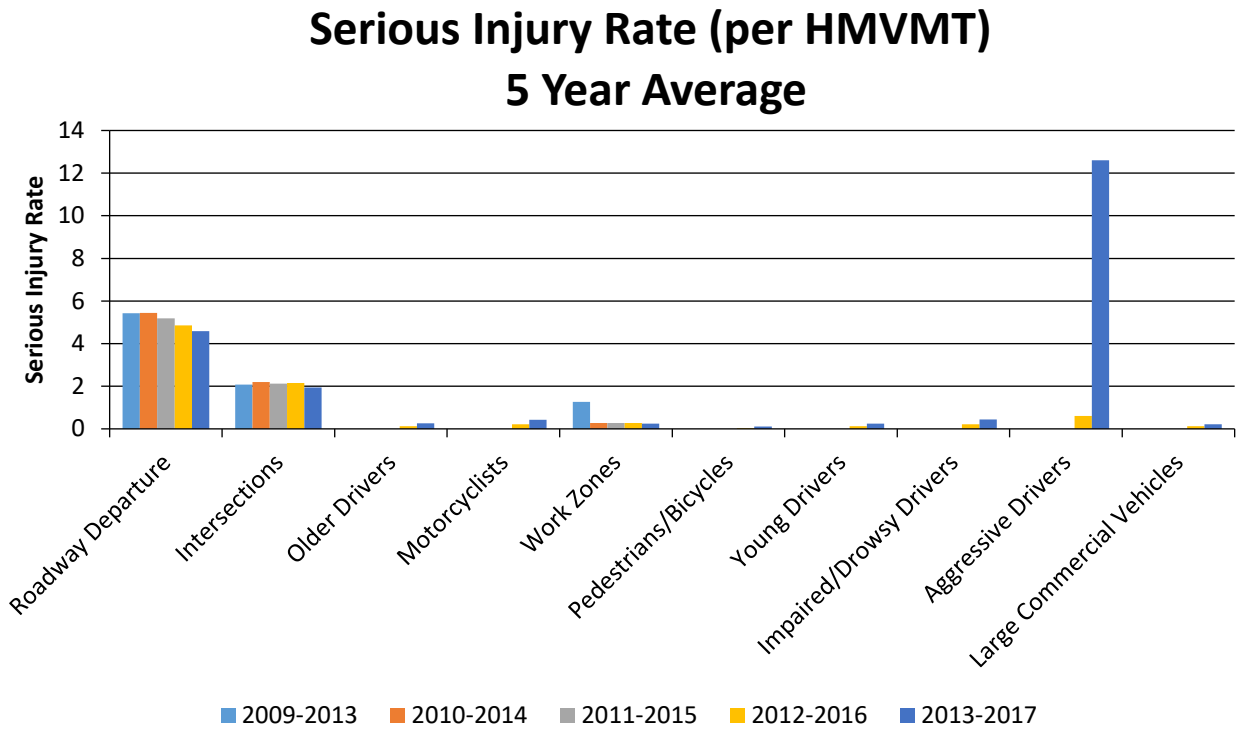
2018 Arkansas Highway Safety Improvement Program

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)	Other 1	Other 2	Other 3
Roadway Departure	Run-off-road	292.2	1,460.8	0.85	4.58	0	0	0
Intersections	Angle	69	611.4	0.2	1.94	0	0	0
Older Drivers	All	28.4	94	0.08	0.26	0	0	0
Motorcyclists	All	30.4	153.4	0.09	0.43	0	0	0
Work Zones	Crashes due to Work Zones	10.4	79	0.03	0.25	0	0	0
Pedestrians/Bicycles	Bike/Ped	19.8	39.2	0.06	0.11	0	0	0
Young Drivers	All	9.6	87.8	0.03	0.25	0	0	0
Impaired/Drowsy Drivers	All	45.8	155.2	0.13	0.44	0	0	0
Aggressive Drivers	All	34.4	253	4.65	12.6	0	0	0
Large Commercial Vehicles	All	30.8	76.8	0.09	0.22	0	0	0


Number of Fatalities
5 Year Average
Fatalities
450
400
350
300
250
200
150
100
50
0
Roadway Departure
Intersections
Older Drivers
Motorcyclists
Work Zones
Pedestrians/Bicycles
Young Drivers
Impaired/Drowsy Drivers
Aggressive Drivers
Large Commercial Vehicles
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries
5 Year Average
Serious Injuries
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Roadway Departure
Intersections
Older Drivers
Motorcyclists
Work Zones
Pedestrians/Bicycles
Young Drivers
Impaired/Drowsy Drivers
Aggressive Drivers
Large Commercial Vehicles
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017





Enter additional comments here to clarify your response for this question or add supporting information.

Has the State completed any countermeasure effectiveness evaluations during the reporting period?

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

CounterMeasures:		Roundabout Installation
Description:		We installed three roundabouts at intersections to reduce KA crashes.
Target Crash Type:		All
Number of Installations:		3
Number of Installations:		3
Miles Treated:		
Years Before:		3
Years After:		3
Methodology:		Simple before/after
Results:		All total crashes were reduced at all three locations. However, KA crashes did increase at one location due to it having none before and a non-motorist crash occurring in the roundabout. See attachments
File Name:	Hyperlink	
CounterMeasures:		Skidabrader
Description:		Applied Skidabrader to a section of urban Interstate with a high number of wet pavement crashes.
Target Crash Type:		Wet road
Number of Installations:		
Number of Installations:		
Miles Treated:		0.62
Years Before:		5
Years After:		5
Methodology:		Simple before/after
Results:		Wet pavement crashes were reduced from 61% to 33%. (see attachment)
File Name:	Hyperlink	

Project Effectiveness

Provide the following information for previously implemented projects that the State evaluated this reporting period.

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
MULTIPLE	MULTIPLE	Non-infrastructure	Transportation safety planning											0

Enter additional comments here to clarify your response for this question or add supporting information.

ARDOT is in the process of developing an automated Project Evaluation tool. Although this tool is not completed it is expected to be so in a few weeks. Attached is a copy of the report this tool will produce with a few evaluations real life that were run for testing purposes. This tool is expected to greatly enhance and streamline our project evaluation, countermeasure evaluation and program level evaluation efforts.

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

No

Compliance Assessment

What date was the State's current SHSP approved by the Governor or designated State representative?

07/26/2017

What are the years being covered by the current SHSP?

From: 2017 To: 2022

When does the State anticipate completing it's next SHSP update?

2022

Enter additional comments here to clarify your response for this question or add supporting information.

The 2017 SHSP was approved in July of 2017. We plan to start the process of updating the 2022 SHSP in the spring of 2020 and finalize it by July 2022.

Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.

	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
MIRE NAME (MIRE NO.)	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT										
Segment Identifier (12)	100	100					100	100	100	100
Route Number (8)	100	100								
Route/Street Name (9)	100	100								
Federal Aid/Route Type (21)	100	100								
Rural/Urban Designation (20)	100	100					100	100		
Surface Type (23)	100	100					100	100		
Begin Point Segment Descriptor (10)	100	100					100	100	100	100
End Point Segment Descriptor (11)	100	100					100	100	100	100
Segment Length (13)	100	100								
Direction of Inventory (18)	0	0								
Functional Class (19)	100	100					100	100	100	100
Median Type (54)	100	100								

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Access Control (22)	100	100								
One/Two Way Operations (91)	100	100								
Number of Through Lanes (31)	100	100					100	100		
Average Annual Daily Traffic (79)	100	62					62	62		
AADT Year (80)	100	62								
Type of Governmental Ownership (4)	100	100					100	100	100	100
INTERSECTION										
Unique Junction Identifier (120)			100	100						
Location Identifier for Road 1 Crossing Point (122)			100	100						
Location Identifier for Road 2 Crossing Point (123)			100	100						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			100	20						
AADT Year (80)			100	20						
Unique Approach Identifier (139)			100	100						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					50	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					100	100				

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Roadway Type at End Ramp Terminal (199)					100	100				
Interchange Type (182)					0	0				
Ramp AADT (191)					100	0				
Year of Ramp AADT (192)					100	0				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	**94.44**	**90.22**	**75.00**	**55.00**	**86.36**	**63.64**	**95.78**	**95.78**	**100.00**	**100.00**

*Based on Functional Classification

Enter additional comments here to clarify your response for this question or add supporting information.

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

MIRE Fundamental Data Elements To Be Collected:

SEGMENTS

- ARDOT is currently working on the methodology to determine compass direction to meet the direction of inventory MIRE requirement for state routes. We know that federal routes have to state the signed direction of travel. The current method would be to report compass direction by total route/section rather than each individual segment of the route.
- ARDOT will be utilizing aerial imagery and street view to determine number of through lanes and surface type on the local paved system. Additionally, some local governments have that information in their road inventory that could also be utilized.
- ARDOT has a current research project in place that is using address points/types to estimate local road traffic.
- ARDOT already has a robust road inventory database in place that already meets many of the MIRE FDE requirements

INTERSECTIONS

- ARDOT purchased Transcend Spatial Solutions Intersection Manager software Fall of 2017. This software utilizes the all public road LRS or ARNOLD to generate intersections. It provides the unique identifier, identifies the crossing routes, calculates the approach segments/angle, and allows for us to enter the junction geometry and traffic control present. We expect to make out final initial run by early 2019 and start maintaining it as the system changes. We will be able to identify retired and new intersections through the software as well.
- ARDOT geographically located all of the state system signals this past summer so that we can identify signalized intersections. TP&P and Maintenance are working together to identify if there is a ped signal on each of these or not as part of the traffic control attribute.

INTERCHANGES

- ARDOT is developing an Interchange/Complex Intersection dataset that will serve as a parent/child relationship with intersections.
- The geometry for these areas is a polygon that encompasses all intersections and approach segments.
- Identifying the policy/procedure to create complex intersections.

- Below are the tools that are being utilized to collect/report the needed MIRE FDEs currently:

- Video Log (FUGRO's Surveyor software): Can be used for collecting certain roadside elements.
- Transcend Spatial Solutions Intersection Manager
- LiDAR: In July of 2018 ARDOT approved a project for a consultant to collect and process an estimated 2,000 miles of LiDAR data on the state highway system. We'll be looking at a corridor collection to see how LiDAR can assist us with additional MIRE elements
- ESRI – ArcMap/ArcGIS Online/ArcGIS Collector

See Attachment MIRE FDE Collection From TRSP Appendix B

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	2 (A) Suspected Serious Injury is on the printed form and on the entry screen.	Yes	N/A	N/A	N/A	N/A
Crash Report Form Instruction Manual	002 A Suspected Serious Injury	Yes	See comment #1 below. Not enough characters allowed.	No	Inclusions: Severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the scene, unable to leave the scene without assistance, and others. Exclusions: Momentary unconsciousness, and others.	No
Crash Database	2 (A) Suspected serious injury	Yes	N/A	N/A	N/A	N/A
Crash Database Data Dictionary	002 A Suspected Serious Injury	Yes	See comment #2 below. Not enough characters allowed.	Yes	See comment #2 below	Yes

Please describe the actions the State is taking to become compliant by April 15, 2019.
Comments:

#1-Incapacitating Injury
Any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred.https://eauth1.fhwa.dot.gov/UPACSjct/hsipp/Content/Images/save%20icon.gif

Inclusions:
Severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the scene, unable to leave the scene without assistance, and others.

Exclusions : Momentary unconsciousness, and others.

#2-Incapacitating Injury - A suspected serious injury is any injury other than fatal which results in one or more of the following:

• Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
• Broken or distorted extremity (arm or leg)
• Crush injuries • Suspected skull, chest or abdominal injury other than bruises or minor lacerations
• Significant burns (second and third degree burns over 10% or more of the body)
• Unconsciousness when taken from the crash scene
• Paralysis

Arkansas is in a transition period from a paper based report system to eCrash. Many agencies have not yet changed to eCrash but the above compliance assessment is based solely on eCrash as the old paper based system is being phased out.

Enter additional comments here to clarify your response for this question or add supporting information.

ARDOT is working with the Arkansas State Police to ensure that the updates needed are completed by April 15th, 2019.

Did the State conduct an HSIP program assessment during the reporting period?
No

When does the State plan to complete it's next HSIP program assessment.

2021

Enter additional comments here to clarify your response for this question or add supporting information.

Optional Attachments

Program Structure:

AHTD HSIP-Process-2011-07.pdf

Project Implementation:

Safety Performance:

Evaluation:

Hwy 65, 9B, Hwy266, 1, Roundabout.xlsx
Hwy 65, 9B, Winfield St. Roundabout.xlsx
Hwy 365, 11, Hwy 100, 1, Roundabout.xlsx
Skid Abrader.xlsx
HSIP Project Evals.xlsx

Compliance Assessment:

Mire FDE Collection form the TRSP Appendix B.docx

Glossary

5 year rolling average	means the average of five individuals, 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.
Systematic	refers to an approach where an agency deploys countermeasures at all locations across a system.
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.