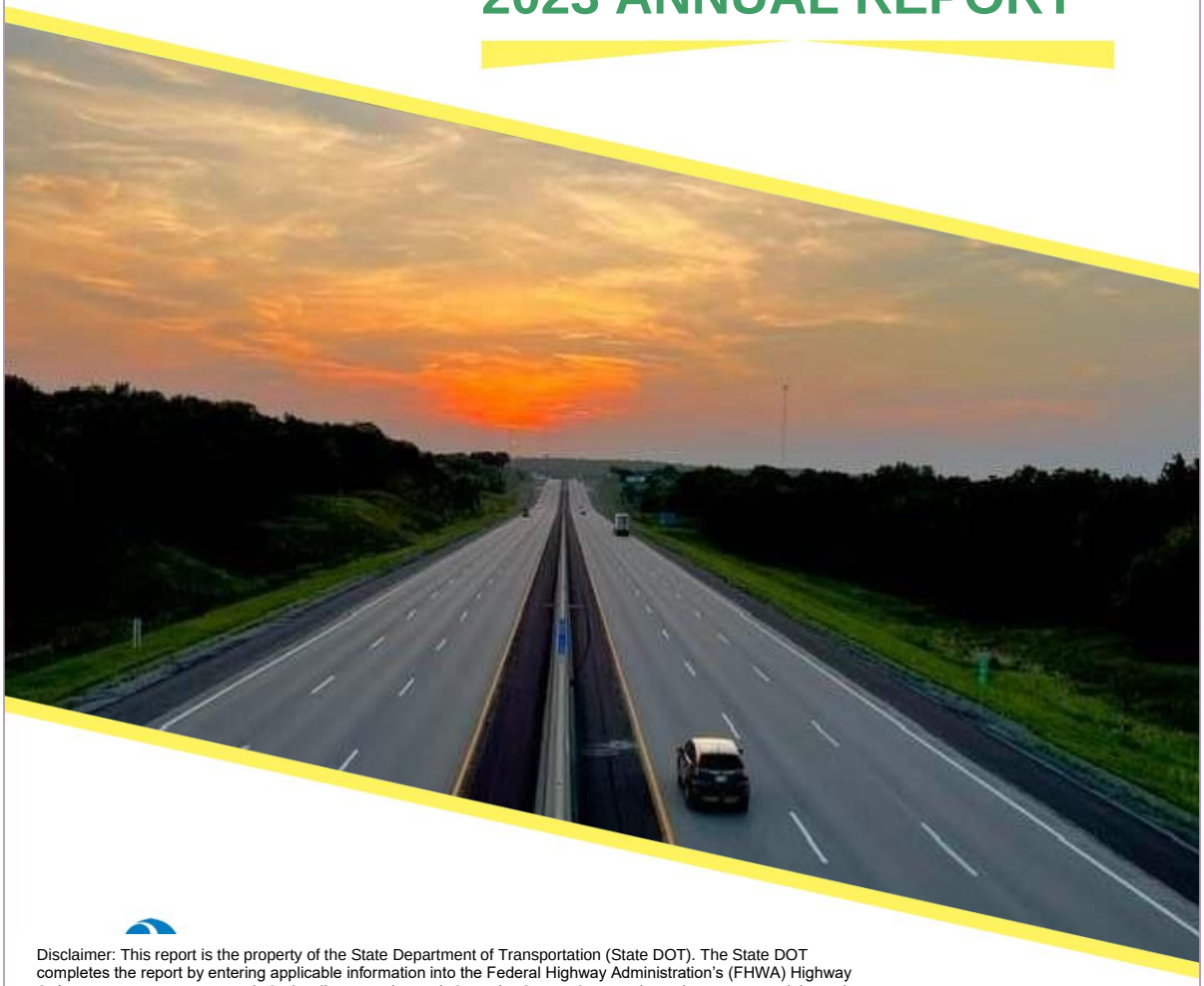
KANSAS

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2023 ANNUAL REPORT



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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. 407 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 Kansas, we use the Highway Safety Improvement Program (HSIP) to fund multiple independently managed programs. Collectively, these programs cover more than 140,000 centerline miles of public roads in Kansas and apply a multitude of proven safety countermeasures to reduce fatal and serious injury crashes statewide. Recent data has shown that Kansas is experiencing a downward trend in annual fatalities but an increase in serious injuries.

Since completing the 2022 Annual Report, the Kansas Department of Transportation (KDOT) has continued to implement the Strategic Highway Safety Plan's (SHSP) prioritized strategies and plan for its next iteration. The Drive to Zero (DTZ) Coalition, formerly the Kansas Executive Safety Council, has provided leadership and direction to the SHSP strategies. KDOT continues to implement a strategy prioritization process as outlined by our 2021 SHSP diagnostic. This will continue to require engagement from the Drive to Zero Coalition and Emphasis Area Teams for future years.

KDOT has implemented the Safety Performance Function (SPF) Tool, allowing us to conduct network screening and address the locations with the highest potential for improving safety. Additionally, we have completed two program-level and six project-level evaluations this reporting period.

We continue to develop a Safety Engineering Programs Manual. This ongoing effort allows us to revise our state and federal fund structure and improve program alignment with 2024 SHSP emphasis areas and goals.

Furthermore, we continue to develop a crash modification factor (CMF) list. Recommended CMF values were identified to best represent scenarios experienced in Kansas. This project is ongoing and expected to be used throughout the agency and in coordination with our external partners by CY24.

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.

KDOT's HSIP is currently comprised of 8 programs, which are all individually managed within the agency. These programs include Intersections, High-Performance Signing, Pavement Marking, Lighting, Rail-Highway Grade Crossings (RHCP), Guardrail, High Risk Rural Roads (HRRR), and General Safety Improvements. Each program is further described within this report except the RHCP, which is covered separately in its own report.

Where is HSIP staff located within the State DOT?

Planning

The State Highway Safety Engineer administers the HSIP in the Bureau of Transportation Safety within the Division of Planning and Development. Seven of the eight sub-programs are managed within the Division of Engineering and Design: The Bureau of Traffic Engineering manages Intersections, Signing, Pavement Markings, and Lighting, the Bureau of Local Projects manages HRRR, and the Bureau of Road Design manages the Rail-Highway Grade Crossing and Guardrail programs. The Bureau of Transportation Safety manages General Safety Improvements.

How are HSIP funds allocated in a State?

- Other-Headquarters

The HSIP Program Manager (State Highway Safety Engineer), FHWA Division Safety Engineer, program managers, and other management meet quarterly to discuss program progress based on planned obligations and to plan fund allocation for future years. To set program spending goals, we consider historical precedent, anticipated needs and capabilities, and the share of crashes per program. KDOT's HSIP is a data-driven program that utilizes historical crash data to inform our spending decisions.

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

Lighting, Pavement Markings, Signing, and Guardrail are exclusive to the State Highway System, although projects may impact intersecting non-state roads. Intersections and General Safety Improvement projects may include off-system local roads. HRRR is exclusive to local major collectors.

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

- Design
- Districts/Regions
- Local Aid Programs Office/Division
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Program Management Consultant (PMC)

Describe coordination with internal partners.

All HSIP program areas communicate with District and Area staff for project input, consultation, and completion regarding proposed projects and other areas of concern. District staff often communicate with local stakeholders including city and county personnel and law enforcement, which informs program managers on patterns that may not otherwise be addressed. In addition to communicating with field personnel, some programs coordinate with other KDOT Bureaus. For example, the Pavement Marking Program is managed by the Bureau of Traffic Engineering (BTE), but often works with the Bureau of Research (BR) to verify marking material quality and performance and to update the Pre-Qualified Materials list for high quality and durable products. Additionally, the Intersection Program works with the Coordinating Section within the Bureau of Road Design (BRD) to incorporate pre-empted signals in locations if needed. Throughout HSIP, traffic studies, and the Traffic Engineering Assistance Program (TEAP), many internal partners contribute to making decisions and implementing programmed projects, including Bureau of Local Projects (BLP), BTE and BRD. Any program that utilizes traffic counts, roadway miles, or other relative information gathers it from the Bureau of Transportation Planning.

The Signing program specifically works within District Maintenance subareas for sign age replacements.

The Program Management Consultant (PMC) has worked closely with KDOT staff to help develop the Safety Engineering Programs manual, which includes consistent and clear directions on program selection, management, and funding. The Manual will also inform the restructuring of the HSIP programs to align with the SHSP.

Identify which external partners are involved with HSIP planning.

- FHWA
- Local Government Agency
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

Describe coordination with external partners.

Intersections program: KDOT solicits all municipalities and utilizes KDOT traffic studies for project recommendations. The Bureau of Traffic Engineering will enter into agreements with cities and/or counties depending on project requirements.

HRRR program: KDOT solicits counties for project recommendations. The Bureau of Local projects then enters into an agreement with the project owner. Additionally, projects may be identified through studies such as Traffic Engineering Assistance Program reports (TEAP) and Local Road Safety Plans (LRSP).

All programs: The FHWA oversees planning and provides program guidance as needed. The MPOs are involved in the Transportation Improvement Program (TIP) approval process. District staff often communicate with local stakeholders including city and county personnel and law enforcement to inform program managers on patterns that may not otherwise be noticed or addressed.

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

KDOT has recently changed two administration practices, as described below:

1) Due to recent direction from the FHWA division office, HSIP funds will no longer support new signing projects under the High-Performance Signing program. Historically, this program was used for 10-year cyclical replacement as supported by the MUTCD. Because the State signing inventory is so large, these signing projects were using much of the HSIP funds without much correlation to crashes. Moving forward, HSIP will fund the already programmed signing projects and new projects will be funded by state set-aside.

2) KDOT has successfully programmed all HSIP funds for fiscal year 2023 and continues to have a pipeline of eligible safety projects ready for programming. In the event that we do not have HSIP funds remaining, KDOT uses Advanced Construction (AC) to keep projects on schedule and ready for future HSIP funds.

Program Methodology

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

No

KDOT anticipates that the Safety Engineering Program Manual will be available and reported on in the next HSIP Annual Report. This manual will detail HSIP planning, implementation and evaluation processes.

Select the programs that are administered under the HSIP.

- HRRR
- Intersection
- Sign Replacement And Improvement
- Other-Pavement Marking
- Other-Lighting
- Other-General Safety Improvements
- Other-Guardrail

Program: HRRR

Date of Program Methodology:11/24/2020

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• Fatal and serious injury crashes only	• Lane miles	• Horizontal curvature • Functional classification • Roadside features • Other-LRSP

What project identification methodology was used for this program?

- Crash frequency
- Other-Counties submit application(s) that are reviewed and scored
- Other-LRSP

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?

No

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

This program applies only to local roads (non-state owned and operated).

How are projects under this program advanced for implementation?

- Competitive application process
- Other-Scoring Rubric
- selection committee

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

Rank of Priority Consideration

Available funding:2
Other-Scoring Rubric:1

Program: Intersection

Date of Program Methodology:8/25/2016

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Other-Must satisfy a need based on the HSM, address crashes, and have a B/C>1.

What data types were used in the program methodology?

Crashes

- All crashes

Exposure

- Traffic
- Volume
- Population

Roadway

- Functional classification
- Other-Turn lanes

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Critical rate
- Excess expected crash frequency with the EB adjustment
- Level of service of safety (LOSS)
- Other-B/C ratio
- Other-Observed crashes and patterns

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?

No

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

Process is same except local road projects include a periodic solicitation letter to all cities requesting project proposals.

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:2
Available funding:3
Other-Crash patterns:1

Program: Sign Replacement And Improvement

Date of Program Methodology:7/1/2006

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- Other-10 year sign replacement for retro-reflectivity per the MUTCD

What is the funding approach for this program?

Other-HSIP % based on project development pipeline for SFY

What data types were used in the program methodology?

Crashes	Exposure	Roadway
	• Other-Sign Age	• Other-District Request

What project identification methodology was used for this program?

- Other-Projects are programmed based on sign age and replacement need per District Sub-Area

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?

How are projects under this program advanced for implementation?

- Other-Projects selected based on sign age per District Sub-Area

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-Per established cyclical program:1

Program: Other-Pavement Marking

Date of Program Methodology:10/1/2022

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Volume • Population	• Functional classification • Other-Multi-lane • Other-State Highway System retroreflectivity analysis

What project identification methodology was used for this program?

- Crash frequency
- Other-State Highway System retroreflectivity analysis

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?

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

Available funding:2
Other-Retro-reflectivity scoring:1
Other-Pavement marking condition review:1

In pavement marking, our primary data consideration is the retro reflectivity data that is collected. However, we also look at the volume and population in locations where we could benefit from new pavement markings. If only traffic volumes were considered, Districts 1 and 5 would receive most of the funding, therefore population is taken into account. At the District level, we consider higher volume routes then retro reflectivity readings.

Program: Other-Lighting

Date of Program Methodology:6/2/2023

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes • Other-Nighttime crashes	• Volume	• Horizontal curvature • Other-Interchanges

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Other-Traffic studies and District Input
- Probability of specific crash types

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?

How are projects under this program advanced for implementation?

- selection committee

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

Rank of Priority Consideration

Ranking based on B/C:1
Available funding:2

Program: Other-General Safety Improvements

Date of Program Methodology:6/24/2022

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes

- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Roadside features

What project identification methodology was used for this program?

- Crash rate

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

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

Available funding:3
Other-Share of fatal crashes:1
Other-District Priority :1

Program: Other-Guardrail

Date of Program Methodology:8/19/2019

What is the justification for this program?

- Other-FHWA agreement for blunt end terminal replacements

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
	• Traffic • Volume • Other-Speed	• Roadside features

What project identification methodology was used for this program?

- Probability of specific crash types

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?

How are projects under this program advanced for implementation?

- Other-Tiered prioritization of blunt end terminal on the NHS

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-Priority List:1

Funding set aside selected based on required spending amount set by FHWA via MOU 2019.
• Projects will focus on the removal and replacement of blunt ends on mainline lanes along the NHS routes.
• Where existing guardrail installations are entirely replaced, the replacement will be consistent with KDOT's Roadside Safety Hardware Eligibility Process.
• KDOT will evaluate each blunt end guardrail location for the appropriate treatment but will focus on the blunt end terminal.
• Some set-aside projects may require right-of-way (ROW) acquisition. Where ROW is required, the project schedule will allow adequate time for environmental reviews and ROW acquisition to occur.
• The set-aside projects are expected to be categorical exclusion environmental classification.

What percentage of HSIP funds address systemic improvements?

84

HSIP funds are used to address which of the following systemic improvements?

- Clear Zone Improvements

- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Rumble Strips
- Upgrade Guard Rails

Systemic improvements are included in the HRRR, Pavement Marking, Signing and Guardrail programs.

What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- SHSP/Local road safety plan
- Stakeholder input
- Other-10-year replacement cycle
- Other-Risk Factors for systemic programs

"Engineering Study" includes Traffic Studies and utilizing existing Road Safety Audits.

"Data Collection" includes roadway pavement health, retro-reflectivity of pavement markings, LiDAR data and extracted asset information, and other.

Does the State HSIP consider connected vehicles and ITS technologies?

No

While we do not currently incorporate connected vehicle or ITS technologies into HSIP, the Pavement Marking program recently tested new marking configurations that may communicate better with connected vehicles. Longer skip lengths, wider gore markings, and enhanced retroreflectivity were tested on a single project. Skip lengths were increased to 15 feet with 15-foot trailing black markings, and 10 wide gore markings were used in this pilot. While no studies were planned or conducted, this pilot was a good section to determine constructability and the future possibility to continue these changes.

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.

The Intersection program uses the Highway Safety Manual Part B and some of Part C for the expected, predicted and observed crash frequency. We also use the Level of Service of Safety, crash patterns, and cost-benefit analysis to determine if a project qualifies for funding.

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

In the past, the Intersection Program solicited cities of 5,000 population or more. This year, the population threshold has been removed and solicitations are open to all municipalities. Additionally, the Lighting program has made changes to the interchange nighttime crash requirement. Before, locations were considered if there were more than three nighttime crashes. Now, locations are funded if there are any nighttime crashes, there is a high crash rate and there is no current lighting. Lastly, in solicitations for the FFY 2023 funding cycle, HRRR

added the following verbiage: "Counties must have completed a Local Road Safety Plan or have signed up with KDOT to complete one." (November 2020)

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

Methodology practices that have been implemented into the KDOT HSIP:
• Crash Modification Factors (CMFs) Standardized List - This project will support standardized benefit-cost evaluation.
• Network Screening - The Safety Performance Function (SPF) Tool is the primary source of data while the former AASHTOWare Safety Analyst is used to back up data for segment analysis only. KDOT uses the SPF Tool to perform initial network screening on the state system. The tool supports staff in identifying and ranking segments and intersections with the potential for the highest safety improvements. The tool also screens intersections using crash frequency. All screening results populate a pipeline of projects eligible for HSIP funding. The safety project pipeline also utilizes study recommendations, among other data sources, to build a robust list of safety projects. KDOT established a draft scoring process of ranking potential projects for improvement, effectiveness, feasibility, and other considerations such as SHSP prioritization and disadvantaged communities.
• Vulnerable Road User Safety Assessment (VRUA) – Per 23 U.S.C. 148(l), KDOT is developing a VRUA to plan for improved safety for all people walking, cycling, and rolling on public roads in Kansas, which will be completed by November 15, 2023. KDOT conducted ten workshops to improve understanding of VRU safety and distribute information related to the VRUA with Districts, MPOs, local agencies, and KDOT staff. In August and September, KDOT will conduct five workshops with high and low-risk areas as well as KDOT staff. The VRUA results will allow KDOT to invest in infrastructural, behavioral, and operational programs to improve the safety of multimodal road users across Kansas.
• The Big Push: The Kansas Safety Corridor Pilot Program - The Drive to Zero Coalition identified the Roadway Departure emphasis area strategy to "implement a safety corridor pilot program" as the "Big Push". The DTZ approved the selection of four corridors with a disproportionate history of severe crashes. KDOT staff conducted in-person site assessments in October 2022 and held focus group meetings with local transportation safety stakeholders representing the 4Es of safety (education, enforcement, engineering, and emergency response). KDOT also published a StoryMap and Crash Data Dashboard to inform the public about the Program and to use as a decision-making tool. The pilot program was formally launched in July 2023 and will run until 2028. This program will fund safety projects both with state and federal dollars.

Methodology practices that are in development phases and will be implemented into the KDOT HSIP:
• Kansas Safe Streets and Roads for All (SS4A) Match Pilot Program - In 2022, KDOT created the Kansas SS4A Match Pilot Program to assist local entities applying for the SS4A discretionary grant from U.S. DOT. In 2022, U.S. DOT funded 12 Kansas Safety Action Plans, and KDOT contributed $1 million in cost match reimbursements using State funds. In 2023, KDOT expanded the Program to include matches for both Supplemental Planning and Demonstration Grants and Implementation Grants. With the completion of Safety Action Plans throughout Kansas, local entities will be better equipped to apply for and receive HSIP dollars for safety improvement projects.
• Safety Engineering Programs Manual - KDOT is investigating ways to restructure the HSIP programs to further develop the correlation between program spending and severe injury crashes as related to crash types and roadway characteristics and evaluate all implemented countermeasures. KDOT drafted a manual to describe all State and Federally funded safety programs. The purpose of the manual is to provide consistent and clear directions on program selection, management, and funding. This project also informs the restructuring of the HSIP programs to align with the SHSP. KDOT intends to restructure the HSIP programming structure and spending goals and will begin this transition in FY26.
• Statewide LiDAR collection – In March 2021, KDOT collected its first round of LiDAR data and images on all state routes. Asset information was extracted for shoulders, intersections, approaches, guardrail, gores, vertical clearance, sign faces, and rumble strips. The data is available for public use as a GIS layer. A second, more enhanced round of data collection was completed this summer. This round will extract more asset

information including approaches, intersections, billboards, bridge rails, guardrails, lane counts, lanes, medians, noise walls, paved shoulders, pavement messages, pavement striping, pavement striping quantities, pavement width, pedestrian ramps, railroad crossings, retaining walls, sidewalks, sign faces, and vertical clearance. The data will be used agency wide. KDOT intends to use the LiDAR data for safety decision-making, including understanding of intersection approaches, intersection features, sign faces, pavement and shoulder width, pavement markings, and messages, among other items, to create inventories and assist in project identification and systemic project selection.

• Strategic Highway Safety Plan Update - KDOT will begin the SHSP Update in FY24, as the current plan horizons in 2024. The SHSP Update will incorporate many of the recommended changes outlined in the HSIP Implementation Plan, the Vulnerable Road User Safety Assessment, and recommendations and objectives from the National Roadway Safety Strategy, including the Safe System Approach.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$22,087,581	$23,781,713	107.67%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$3,150,110	$3,150,110	100%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
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)	$0	$567,729	0%
State and Local Funds	$5,000,000	$3,197,030	63.94%
Totals	$30,237,691	$30,696,582	101.52%

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

21%

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

$7,689,428

HRRR is the only program to have programmed and obligated funds on the local system for this reporting period.

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

16%

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

$2,050,889

Non-infrastructure projects included TEAP studies, LRSP development, the VRU assessment, and statewide collection of pavement marking retroreflectivity.

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

$5,000,000

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

$5,000,000 was transferred into HSIP from PROTECT.

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

Guardrail: Even though KDOT has an MOU to address blunt end terminals, it is difficult to show a safety benefit of this program or projects since many guardrail sites have not been hit or involved in a crash. Evaluation can be difficult to perform.

Pavement Marking: Most districts do not have to manpower to collect striping quantities and build a 402 project, nor are they able to manage and inspect projects. FHWA allowed KDOT to hire a consultant to collect quantities of roadways that were requested by KDOT Area for restripe.

Lighting: We struggle to justify projects based on safety improvement instead of maintenance actions. We have referred to a Florida case study on corridor continuous lighting to help support pole/light replacements that also impact safety.

General Listing of Projects

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
KA-5520-01	Intersection geometry	Add/modify auxiliary lanes		Intersections	$13043964	$2014274	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,730	55	State Highway Agency	Spot	Intersections	
C-4790-06	Miscellaneous	Local road safety plans	20	Locations	$985905	$1095450	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Rural road safety	
C-4855-23	Miscellaneous	Miscellaneous - other		Traffic engineering assistance	$250000	$250000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		City or Municipal Highway Agency	Spot	Traffic engineering assistance	
C-4935-01	Roadside	Roadside - other	2.15	Miles	$800000	$2297837	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Roadway Departure	
C-5060-01	Roadside	Roadside - other	0.75	Miles	$965681	$1073060	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Roadway Departure	
C-5062-01	Roadside	Roadside - other	16	Miles	$1795862	$1995583	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Roadway Departure	
C-5063-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	72	Miles	$382705	$382771	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Upgrade signing	
C-5064-01	Roadway	Roadway - other	0.32	Miles	$802950	$892347	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Rural road safety	
C-5066-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	300	Miles	$510261	$510261	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Multiple/Varies	0		County Highway Agency	Systemic	Upgrade signing	
C-5067-01	Roadside	Roadside - other	4	Miles	$233062	$259121	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Roadway Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
C-5068-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	127	Miles	$314237	$314362	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Upgrade signing	
C-5069-01	Intersection geometry	Intersection geometry - other	1	Miles	$379736	$421972	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Intersections	
C-5121-01	Roadway delineation	Longitudinal pavement markings – new	4	Miles	$79351	$79351	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	
C-5124-01	Intersection traffic control	Intersection traffic control - other	1	Miles	$93786	$93786	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Intersections	
C-5125-01	Intersection traffic control	Intersection traffic control - other	0.7	Miles	$118523	$118523	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Intersections	
C-5127-01	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1	Miles	$142893	$158770	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Spot	Roadway Departure	
C-5134-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	122	Miles	$370118	$370118	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Upgrade signing	
C-5135-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	98	Miles	$307350	$307350	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Upgrade signing	
C-5136-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	2	Miles	$93680	$93680	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		County Highway Agency	Systemic	Upgrade signing	
KA-6282-01	Lighting	Interchange lighting	1	Interchanges	$233120	$233120	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
KA-6542-01	Lighting	Interchange lighting	1	Interchanges	$58819	$58819	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
KA-6543-01	Lighting	Interchange lighting	1	Interchanges	$272185	$272185	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
KA-6254-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1527	Signs	$1540092	$1540238	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6255-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	2756	Signs	$1713121	$1713310	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6258-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1053	Signs	$1336630	$1336762	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6259-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1734	Signs	$942619	$943732	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6263-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	857	Signs	$1213116	$1213218	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6265-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	587	Signs	$255336	$255991	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6266-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	547	Signs	$229267	$229309	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6267-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1556	Signs	$741611	$741740	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6268-01	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1288	Signs	$743793	$743700	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency		Intersections	Sign visibility / legibility
KA-6077-01	Miscellaneous	Data collection			$697659	$697659	HSIP (23 U.S.C. 148)	N/A	Multiple/Varies	0		State Highway Agency		Data	Pavement Markings
KA-6845-01	Roadway delineation	Improve retroreflectivity	5.345	Miles	$337712	$337712	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,320	65	State Highway Agency		Roadway Departure	Pavement Markings
KA-6846-01	Roadway delineation	Improve retroreflectivity	3.94	Miles	$524782	$524782	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	23,500	55	State Highway Agency		Roadway Departure	Pavement Markings
KA-6917-01	Roadway delineation	Improve retroreflectivity	28.441	Miles	$431500	$431500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,490	65	State Highway Agency		Roadway Departure	Pavement Markings

2023 Kansas Highway Safety Improvement Program

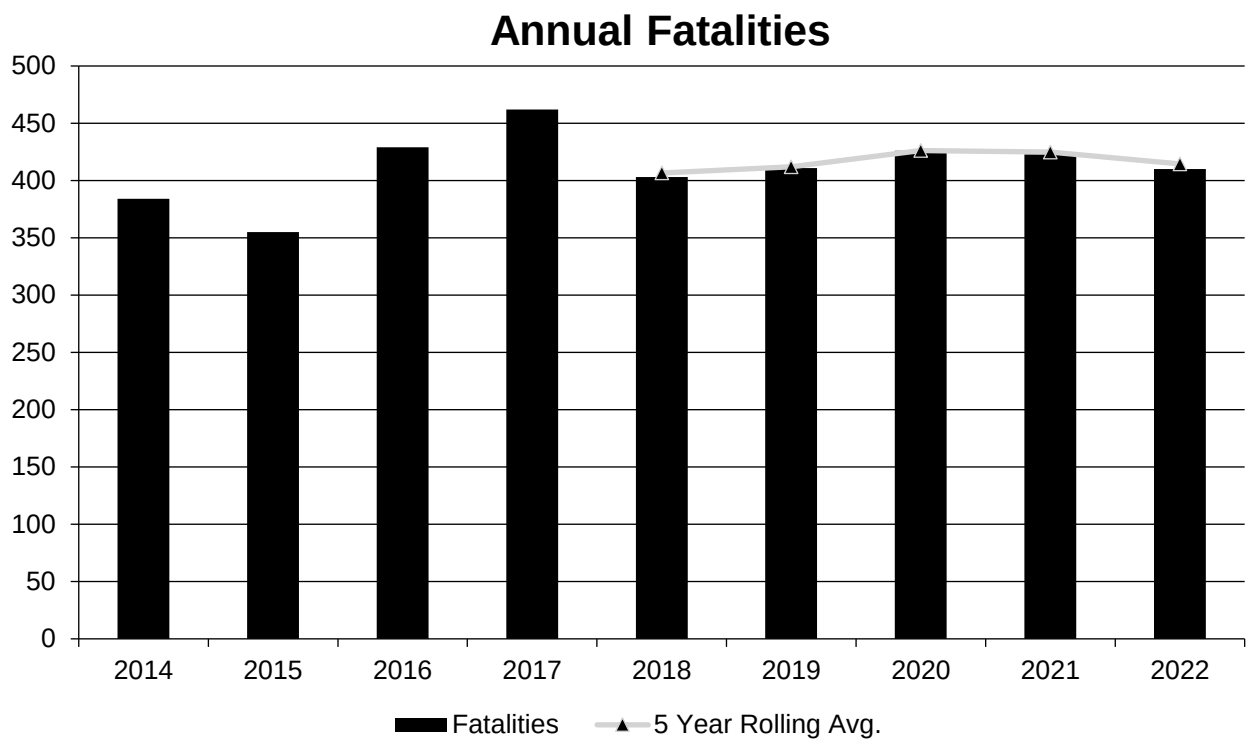
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
KA-6981-01	Roadway delineation	Improve retroreflectivity	14	Miles	$574265	$574265	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	14,700	70	State Highway Agency		Roadway Departure	Pavement Markings
KA-6918-01	Roadway delineation	Improve retroreflectivity	15.576	Miles	$1435125	$1435125	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	65,200	65	State Highway Agency		Roadway Departure	Pavement Markings
KA-7142-01	Roadway delineation	Improve retroreflectivity	5.77	Miles	$403125	$403125	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	10,900	75	State Highway Agency		Roadway Departure	Pavement Markings

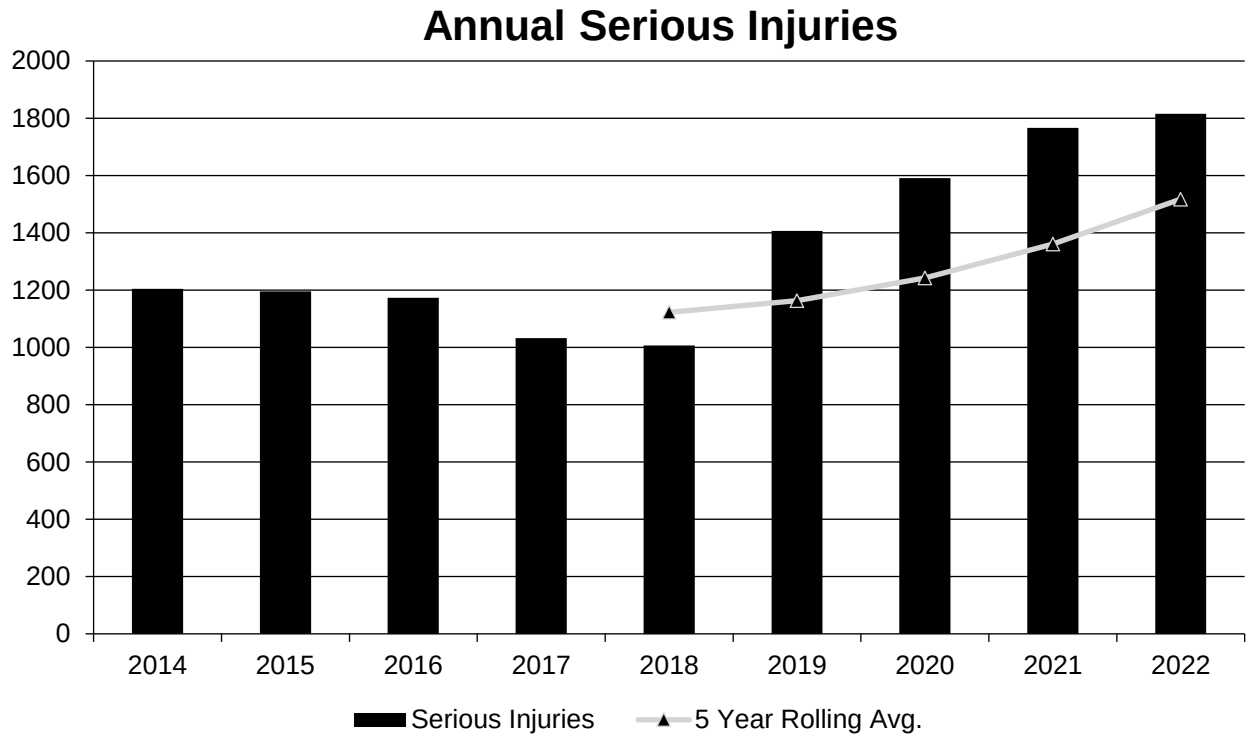
Safety Performance

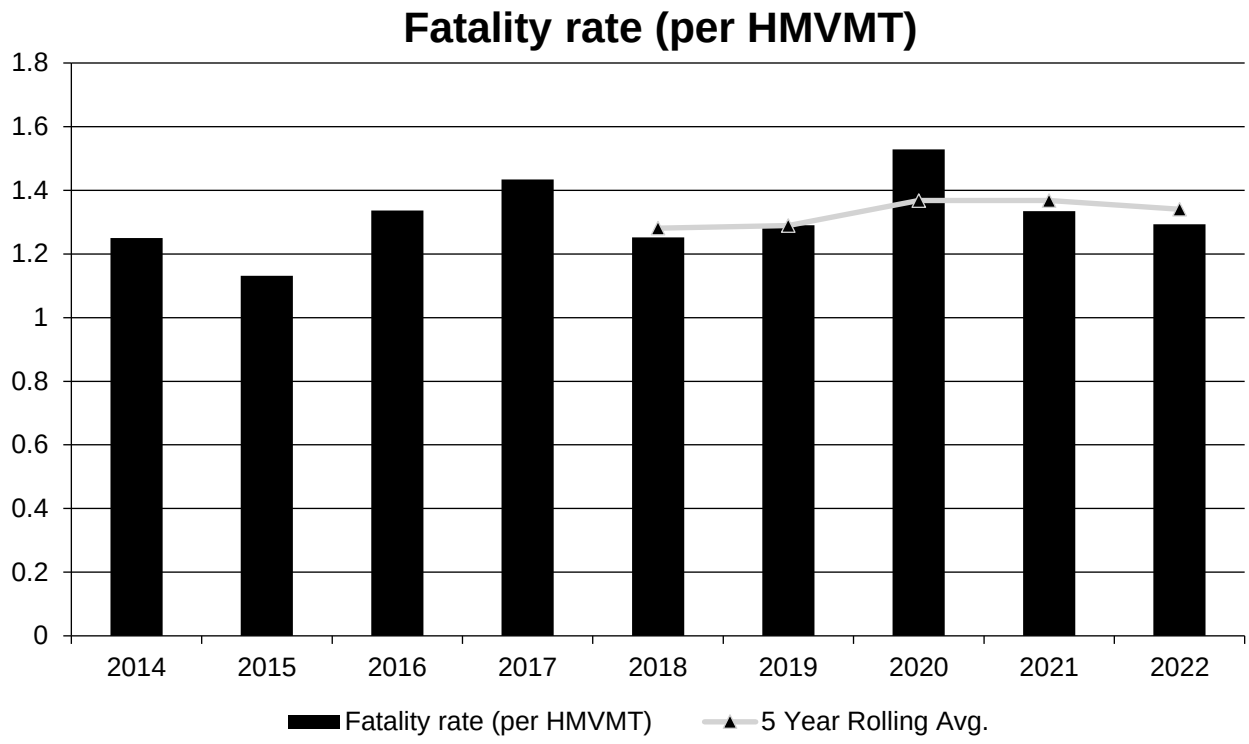
General Highway Safety Trends

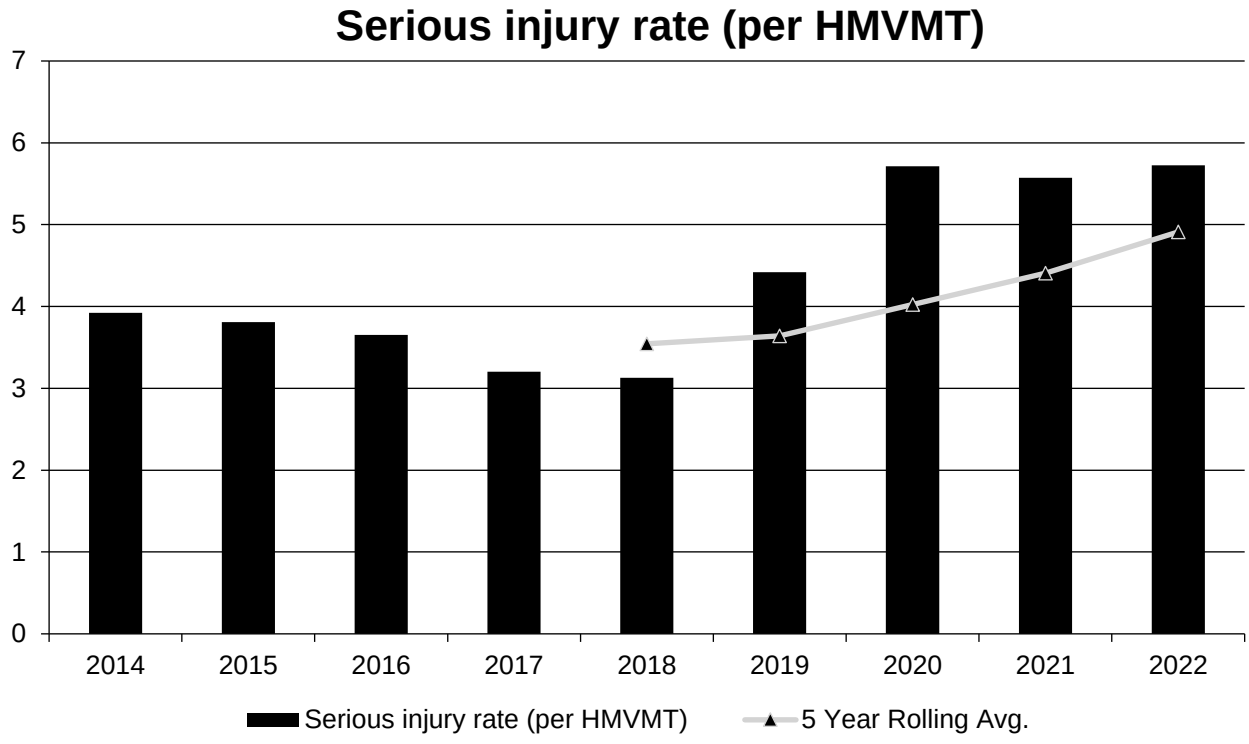
Present data showing the general highway safety trends in the State for the past five years.

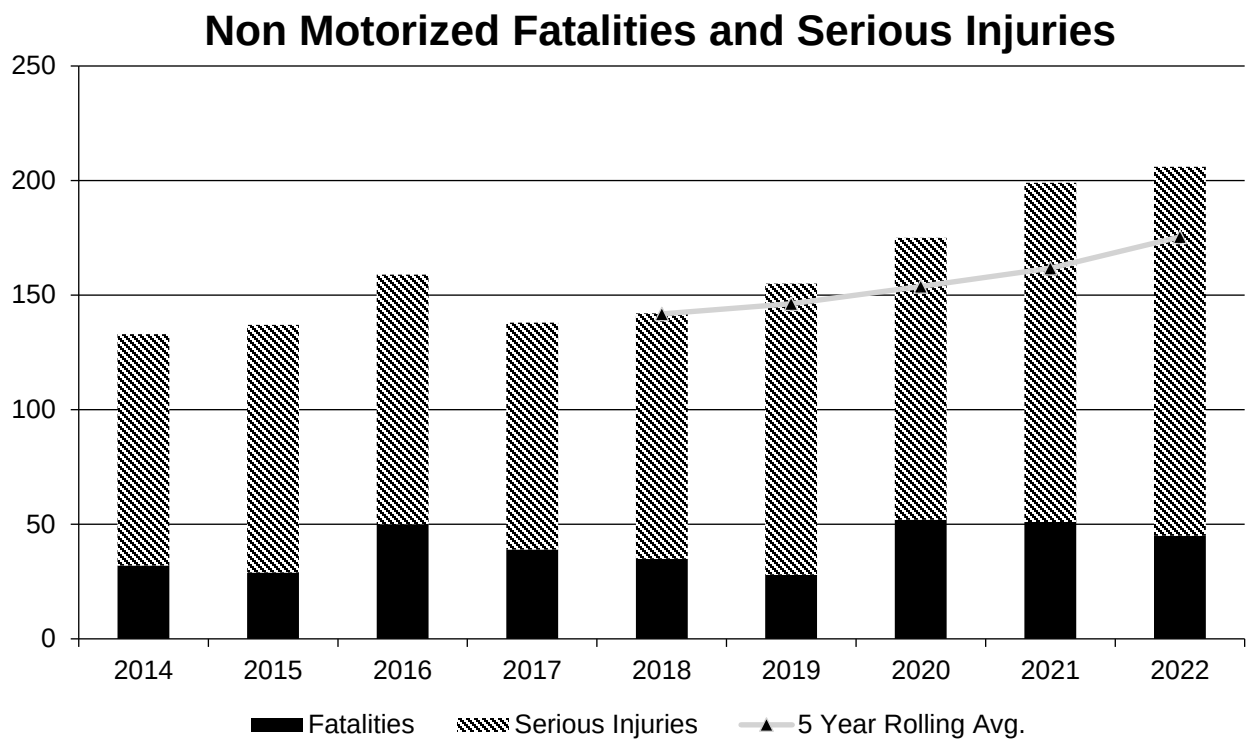
PERFORMANCE MEASURES	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fatalities	384	355	429	462	403	411	426	423	410
Serious Injuries	1,205	1,196	1,173	1,032	1,007	1,407	1,591	1,767	1,816
Fatality rate (per HMVMT)	1.250	1.131	1.336	1.434	1.252	1.290	1.529	1.334	1.293
Serious injury rate (per HMVMT)	3.924	3.811	3.654	3.204	3.128	4.418	5.712	5.571	5.725
Number non-motorized fatalities	32	29	50	39	35	28	52	51	45
Number of non-motorized serious injuries	101	108	109	99	107	127	123	148	161


Annual Fatalities
500
450
400
350
300
250
200
150
100
50
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
2000
1800
1600
1400
1200
1000
800
600
400
200
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
7
6
5
4
3
2
1
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

State Motor Vehicle Crash Database

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

Year 2022

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	25.6	60	0.69	1.62
Rural Principal Arterial (RPA) - Other Freeways and Expressways	12.6	31.6	0.94	2.37
Rural Principal Arterial (RPA) - Other	53.4	124	1.69	3.92
Rural Minor Arterial	48.6	125	2.1	5.41
Rural Minor Collector	11.2	26	3.43	7.57
Rural Major Collector	47	155.2	1.74	5.72

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 Local Road or Street	25.6	118.4	1.84	8.56
Urban Principal Arterial (UPA) - Interstate	26	79.6	0.67	2.04
Urban Principal Arterial (UPA) - Other Freeways and Expressways	13	47.4	0.66	2.4
Urban Principal Arterial (UPA) - Other	16.2	52.2	1.41	4.52
Urban Minor Arterial	27.6	202.6	0.64	4.74
Urban Minor Collector	2.8	19.2	1.18	7.5
Urban Major Collector	22.2	125	1.07	6
Urban Local Road or Street	23.2	124.8	1	5.45

Year 2022

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	190.6	513.6	0.62	1.66
County Highway Agency				
Town or Township Highway Agency				
City or Municipal Highway Agency				
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency	212.2	969.6	1.34	4.91
Private (Other than Railroad)				
Railroad				
State Toll Authority	11.8	33.2	0.04	0.11
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				

Safety Performance Targets

Safety Performance Targets

Calendar Year 2024 Targets *

Number of Fatalities:400.0

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

Based on the trendline, the 2024 five-year moving average projection is 428 fatalities. A 6.6% percent reduction goal would yield 400 fatalities in 2024. Based upon recent history, the target trendline, the six percent reduction goal is realistic and attainable. The 2024 HSP and 2024 HSIP five-year moving average targets are equal.

Number of Serious Injuries:1400.0

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

Based on the trendline, the 2024 five-year moving average projection indicates 1640 serious injuries. The goal of a 14.6% percent reduction would derive 1400 serious injuries in 2024. Based upon recent history, the trendline of the target, the fourteen percent reduction goal is realistic and attainable. The 2024 HSP and 2024 HSIP five-year moving average targets are equal.

Fatality Rate:1.280

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

The 2024 five-year moving average projection based upon the trendline indicates a fatality rate of 1.41. The goal of a 9.4% percent reduction would derive 1.27 in 2024. Based upon recent history, the trendline of the target, the nine percent reduction goal, is realistic and attainable. The 2024 HSP and 2024 HSIP five-year moving average targets are equal.

Serious Injury Rate:4.470

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

The 2024 five-year moving average projection based upon the curvilinear trendline indicates 5.39 serious injury rate per 100 million VMT. A six percent reduction in this projection would lead to our goal of 5.097 serious injury rate per 100 million VMT in 2024. Based upon recent history, the trendline of the target, the six percent reduction goal is realistic and attainable.

Total Number of Non-Motorized Fatalities and Serious Injuries:170.0

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

The five-year moving average projection using 2016-2022 data as the baseline develops a target of 172 in 2024. Based on this projection, we are establishing a target of 170 for 2024, which is a 1 percent reduction of the projection.

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

The State of Kansas is fortunate in that both the SHSP and HSP administrators are in the KDOT Bureau of Transportation Safety, creating an environment for multidisciplinary collaboration. Both plans rely heavily on the same data sources to establish strategies and goals. These data sources include but are not limited to FARS, the statewide crash database, and observational surveys. The three identified performance measures – fatalities, fatality rate, and serious injuries – have the same definition and goals. We have been and will continue to provide each MPO with the data necessary to calculate their 2023 targets. At present, we are not certain whether individual MPOs will adopt the state targets or their own.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2022 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	407.0	414.6
Number of Serious Injuries	1164.0	1517.6
Fatality Rate	1.280	1.340
Serious Injury Rate	3.576	4.911
Non-Motorized Fatalities and Serious Injuries	157.0	175.4

The 2022 fatality target was set at 407 which would have resulted in a 4% decrease from 2021, or a target like the 2018 five-year average. While this goal was not met, Kansas did see a continued decrease in fatalities from 2020 and 2021. KDOT's Bureau of Transportation Safety (BTS) is attributing this decrease to continued efforts towards new strategies. For example, Drive Safe Sedgwick has brought heightened awareness to one of Kansas' most urban and problematic locations. The fatality rate remained the same when comparing 2020 to 2021 even though vehicle miles travelled continues to increase post pandemic. KDOT set their goal of reducing Serious Injuries in Traffic Crashes to 1,164; this goal was also not met. In fact, serious injuries had steadily increased over the last several years. It should be noted that in 2019, the definition of serious injuries changed which increased the overall number of serious injuries. The increase in suspected serious injury rate from 2020 to 2021 can also be attributed to the 2019 change in definition of a serious injury even though vehicle miles traveled increased post pandemic. BTS continues to review new information and data as it is made available to remain vigilant on new strategies, ideas, and locales.
There are several factors that could possibly be responsible for the increase in non-motorized fatalities and serious injuries. Since the stay-at-home orders of the pandemic, more Kansans are using active transportation for recreation and for work and shopping trips, increasing exposure. Economic pressures may provide a reason for road users to rely more heavily on active transportation. Kansas also experiences non-traditional pedestrian deaths on highways and interstate facilities. Sadly, the mental health care crisis may lead to intentional and unintentional risky exposure of vulnerable road users. Finally, sales of larger vehicles continue to increase, and electric vehicles weigh much more than their combustion-powered equivalents. The higher mass of these vehicles results in more serious collision outcomes with bicyclists and pedestrians.
In the 2024 SHSP update, KDOT is working to align the structure of the Plan to match the Safe System approach. We are hopeful that this approach will help mitigate severe crashes throughout the state.

Applicability of Special Rules

Does the VRU Safety Special Rule apply to the State for this reporting period?

No

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

Yes

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	2016	2017	2018	2019	2020	2021	2022
Number of Older Driver and Pedestrian Fatalities	78	74	64	75	79	77	63
Number of Older Driver and Pedestrian Serious Injuries	105	106	95	137	151	160	181

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Change in fatalities and serious injuries
- Lives saved

The effectiveness of the HSIP is evaluated by the reduction of fatal and serious injury crashes with the goal of increasing lives saved. This evaluation is included in either program or project level evaluations that covers sufficient before and after evaluation years.

For this reporting period, we have completed program level evaluations for HRRR and Intersections. We have also provided project level evaluations for the Intersection, Lighting, and Pavement Marking programs.

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

Evaluation of the High Risk Rural Road (HRRR) Program using systemic safety is focused on the improvement category of shoulder treatments. This program provided a 5% reduction in all crashes using a before and after analysis for six projects listed on the 2018 HSIP Annual Report. This program demonstrated a 75% reduction in overall crash severity.

Evaluation of the Intersection Program is reflecting a 27% reduction in all crash types. In addition, this program has demonstrated a 43% reduction in Class B injury crashes and a 50% reduction in Class C injury crashes. Unfortunately, one of the seven intersections analyzed had a fatal crash in the third year after the project was completed. Crash data used for evaluation was pulled from the 2017 and 2018 HSIP Annual Reports, providing seven intersections for analysis. The four projects reported from the 2017 HSIP Annual Report were updated adding an additional year to the before and after crash data. One of these projects improved four separate intersections.

Evaluation of the Lighting Program was challenging. Two projects listed in the 2018 Annual report were ITS Truck Parking projects. KDOT has not yet determined a way to measure the effectiveness of these projects. This evaluation was inconclusive.

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

- HSIP Obligations
- Increased awareness of safety and data-driven process
- Increased focus on local road safety

KDOT continues to obligate nearly 90% of funds by the third FFY quarter. KDOT has worked hard to increase awareness of safety and data-driven processes and has recently implemented the SPF Tool and network screening for both intersections and segments on the state system. This information is shared throughout the Agency. Local Road safety continues to be a priority for Kansas. In this reporting period, we obligated over $8

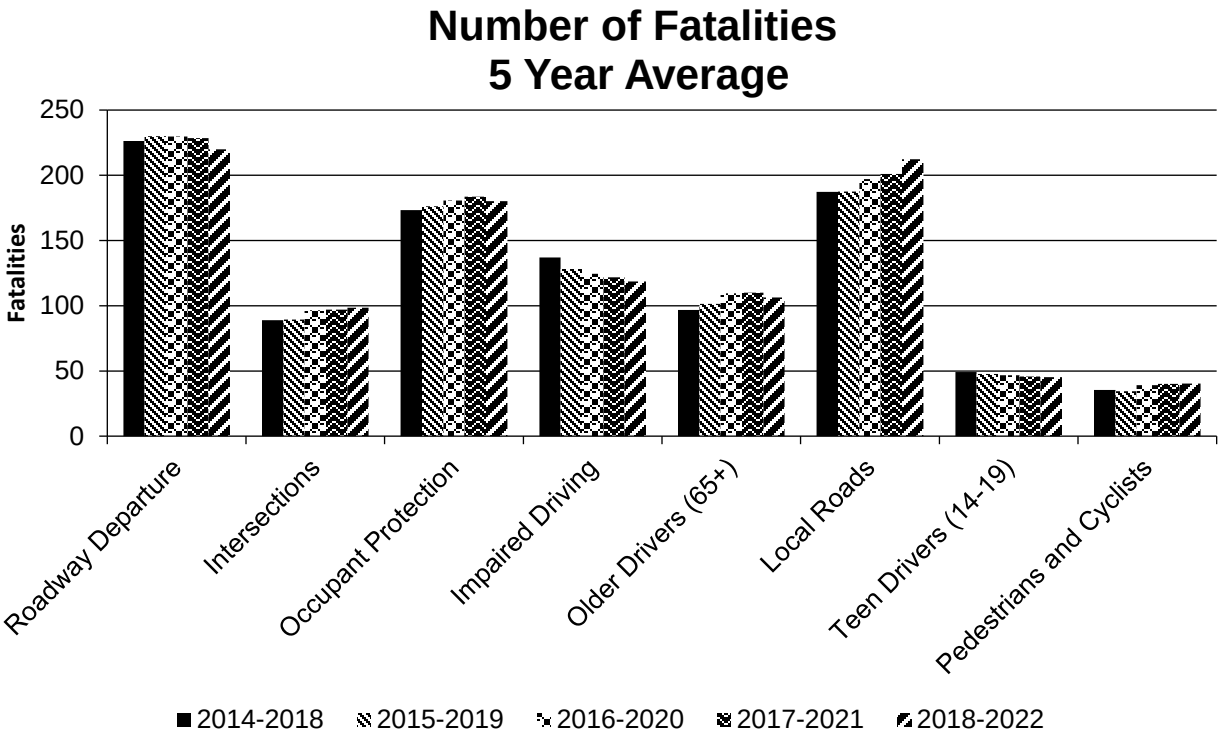
million through HRRR. The Agency has other efforts outside of HSIP that will lead to the success of local road safety including safety action plans and project implementation.

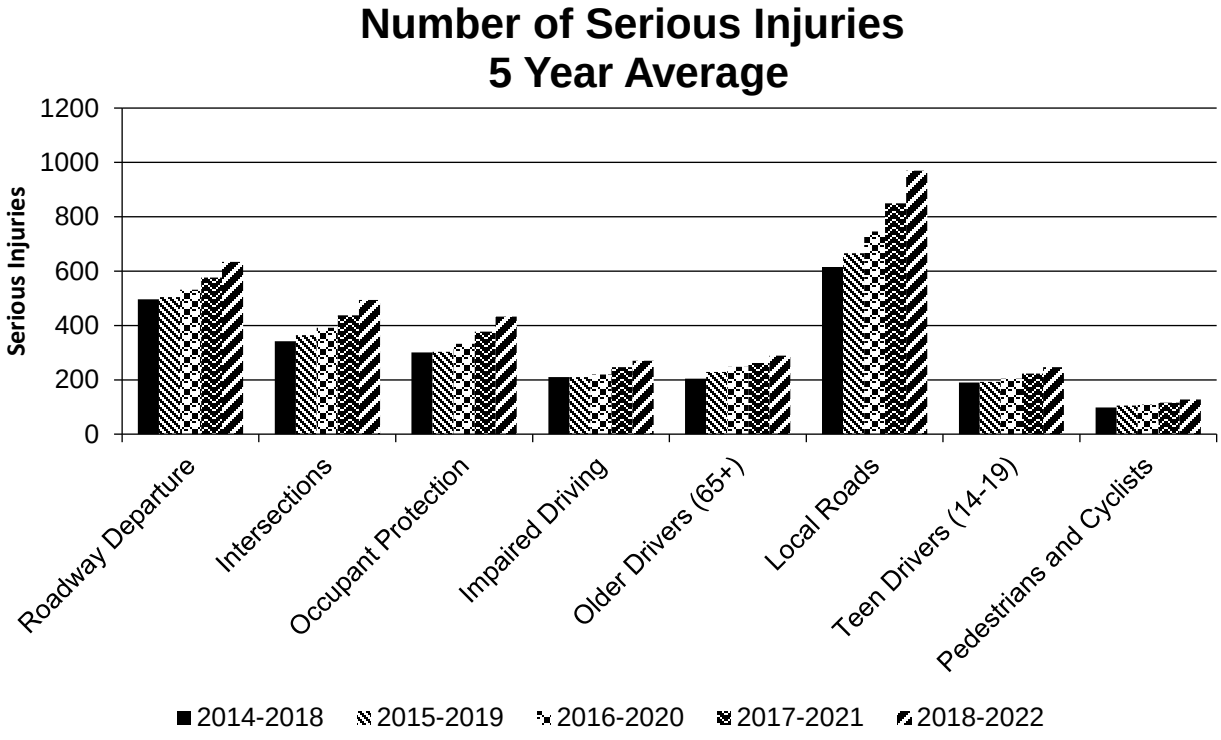
Effectiveness of Groupings or Similar Types of Improvements

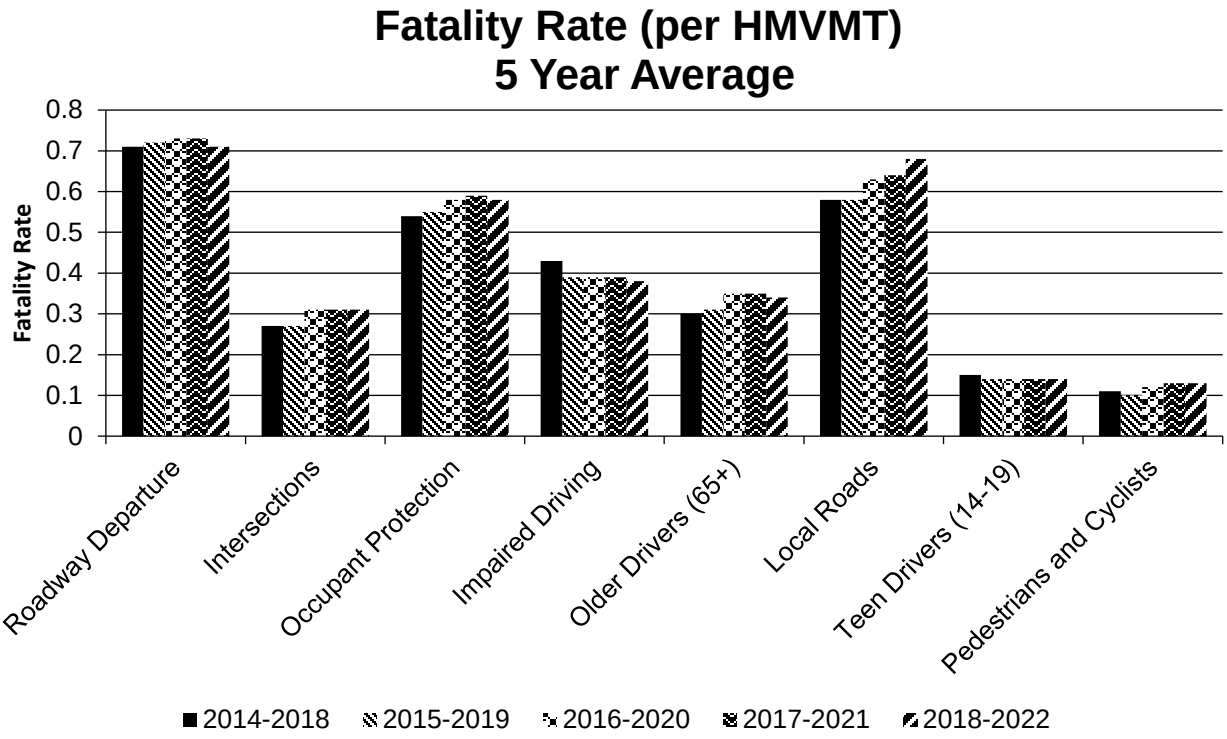
Present and describe trends in SHSP emphasis area performance measures.

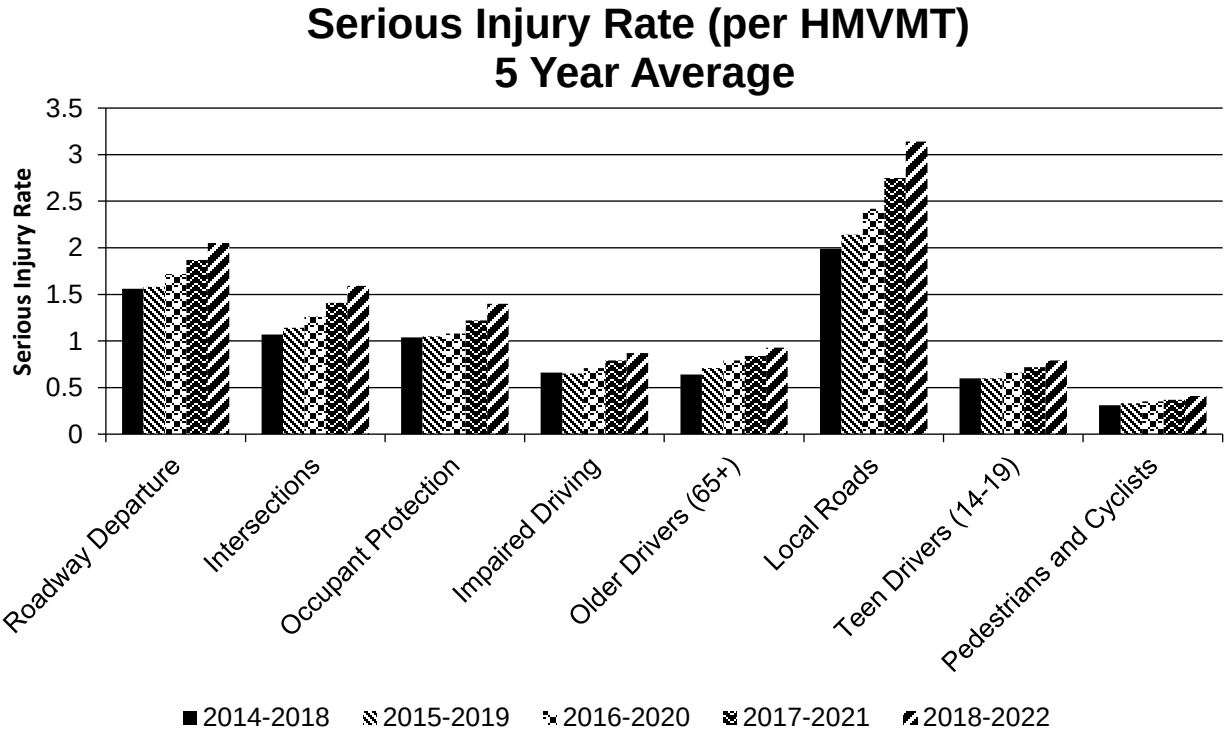
Year 2022

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)
Roadway Departure	Run-off-road	220	633.6	0.71	2.05
Intersections	Intersections	98.4	494.4	0.31	1.59
Occupant Protection	All	180.2	433	0.58	1.4
Impaired Driving	All	118.6	269.8	0.38	0.87
Older Drivers (65+)	All	106.4	288.8	0.34	0.93
Local Roads	All	212.2	969.6	0.68	3.14
Teen Drivers (14-19)	All	45.2	246.4	0.14	0.79
Pedestrians and Cyclists	Vehicle/pedestrian	40.4	127.6	0.13	0.41


Number of Fatalities
5 Year Average
Fatalities
250
200
150
100
50
0
Roadway Departure
Intersections
Occupant Protection
Impaired Driving
Older Drivers (65+)
Local Roads
Teen Drivers (14-19)
Pedestrians and Cyclists
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Number of Serious Injuries
5 Year Average
Serious Injuries
1200
1000
800
600
400
200
0
Roadway Departure
Intersections
Occupant Protection
Impaired Driving
Older Drivers (65+)
Local Roads
Teen Drivers (14-19)
Pedestrians and Cyclists
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Roadway Departure
Intersections
Occupant Protection
Impaired Driving
Older Drivers (65+)
Local Roads
Teen Drivers (14-19)
Pedestrians and Cyclists
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
3.5
3
2.5
2
1.5
1
0.5
0
Roadway Departure
Intersections
Occupant Protection
Impaired Driving
Older Drivers (65+)
Local Roads
Teen Drivers (14-19)
Pedestrians and Cyclists
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022

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)
11th and Poyntz	Urban Major Collector	Intersection traffic control	Modify traffic signal –other	1.00	4.00			2.00		1.00		4.00	4.00	
US-169 at 190th	Rural Principal Arterial (RPA) - Interstate	Lighting	Interchange lighting		1.00				1.00				2.00	
US-54 Sedgwick Co.	Rural Principal Arterial (RPA) - Other Freeways and Expressways	Roadway delineation	Improve retroreflectivity	108.00	48.00	2.00	2.00			43.00	19.00	153.00	69.00	
US-400 Labette Co.	Rural Principal Arterial (RPA) - Other	Roadway delineation	Improve retroreflectivity	63.00	56.00	1.00	1.00		1.00	11.00	7.00	75.00	65.00	
US-166 Chautauqua Co	Rural Principal Arterial (RPA) - Other	Roadway delineation	Improve retroreflectivity	19.00	13.00	1.00	1.00		1.00	5.00	4.00	25.00	19.00	
US-160 Montgomery Co.	Rural Minor Arterial	Roadway delineation	Improve retroreflectivity	11.00	18.00	2.00			1.00	1.00	2.00	14.00	21.00	

Using the 2018 Annual HSIP Report for the two intersection projects reported, only one project was completed to have at least three years of crash data after construction. The project reported at 11th and Poyntz showed a reduction in severity. This project replaced pole mounted traffic signals with overhead (mast arm) traffic signals. B/C was not performed on any projects. However, evaluation of crash reduction is described below:

11th and Poyntz: 300% in PDO crashes, but a 100% reduction in SSI crashes. No reduction observed.

US-169 and 190th: An increase of one PDO crash and one SSI crash. No reduction observed.

US-54 in Sedgwick Co.: 56% reduction in PDO crashes, no change in fatal crashes, and a 56% reduction in BC injury crashes. Overall, a 550% decrease in all crashes.

US-400 in Labette Co.: 11% reduction in PDO crashes, no change in fatal crashes, an increase of one SSI crash, and a 36% decrease in BC injury crashes. Overall, a 13% decrease in all crashes.

US-166 in Chautauqua Co.: 32% decrease in PDO crashes, no change in fata crashes, an increase of one SSI crash, and a 20% decrease in BC injury crashes. Overall, a 24% decrease in all crashes.

US-160 in Montgomery Co.: 64% increase in PDO crashes, 100% decrease in fatal crashes, an increase of one SSI crash, and a 100% increase in BC crashes. Overall, a 50% increase in all crashes.

Compliance Assessment

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

11/19/2021

What are the years being covered by the current SHSP?

From: 2019 To: 2024

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

2025

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

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

ROAD TYPE	*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 SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	95								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	80					100	65		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	98								
	Functional Class (19) [19]	100	100					100	100	100	100
	Median Type (54) [55]	90	50								

ROAD TYPE	*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) [23]	100	95								
	One/Two Way Operations (91) [93]	100	99								
	Number of Through Lanes (31) [32]	100	99					100	98		
	Average Annual Daily Traffic (79) [81]	100	100					100	100		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	98					100	98	100	98
INTERSECTION	Unique Junction Identifier (120) [110]			100	100						
	Location Identifier for Road 1 Crossing Point (122) [112]			100	100						
	Location Identifier for Road 2 Crossing Point (123) [113]			100	100						
	Intersection/Junction Geometry (126) [116]			70	60						
	Intersection/Junction Traffic Control (131) [131]			50	20						
	AADT for Each Intersecting Road (79) [81]			100	100						
	AADT Year (80) [82]			100	100						
	Unique Approach Identifier (139) [129]			100	100						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					99	99				
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]					99	99				

ROAD TYPE	*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
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					99	99				
	Ramp Length (187) [177]					99	99				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					99	99				
	Roadway Type at End Ramp Terminal (199) [189]					99	99				
	Interchange Type (182) [172]					20	20				
	Ramp AADT (191) [181]					100	100				
	Year of Ramp AADT (192) [182]					100	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	85				
Totals (Average Percent Complete):		**99.44**	**95.22**	**90.00**	**85.00**	**92.18**	**90.82**	**100.00**	**95.67**	**100.00**	**99.60**

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

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.

KDOT continues to work toward the goal of updating all MIRE Fundamental Data Elements of all public roads by September 30, 2026. There are two ongoing efforts focused on addressing gaps: (1) the AEGIST Pooled Fund Study, which includes assistance to help KDOT arrive at the best methods of modeling its intersections to serve agency needs and meet the 2026 requirements; and (2) the project with the Data and Analysis Technical Assistance (DATA) team to determine and document the best process for KDOT to use in identifying the surface type of roads off the State Highway System using recent aerial imagery. A third effort is being planned to verify which roads off the State Highway System should be considered public vs. private; this will likely entail the creation of digital and hardcopy maps for local review. KDOT is also currently collecting and making plans to extract roughly 16 GIS feature types from mobile LiDAR data for the State Highway System. While these collected data do not expressly fill any gaps in our MIRE 2026 compliance, they will be used to verify existing data in K-Hub, KDOT's Linear Referencing System, which is the source of the data used for federal reporting.

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

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.