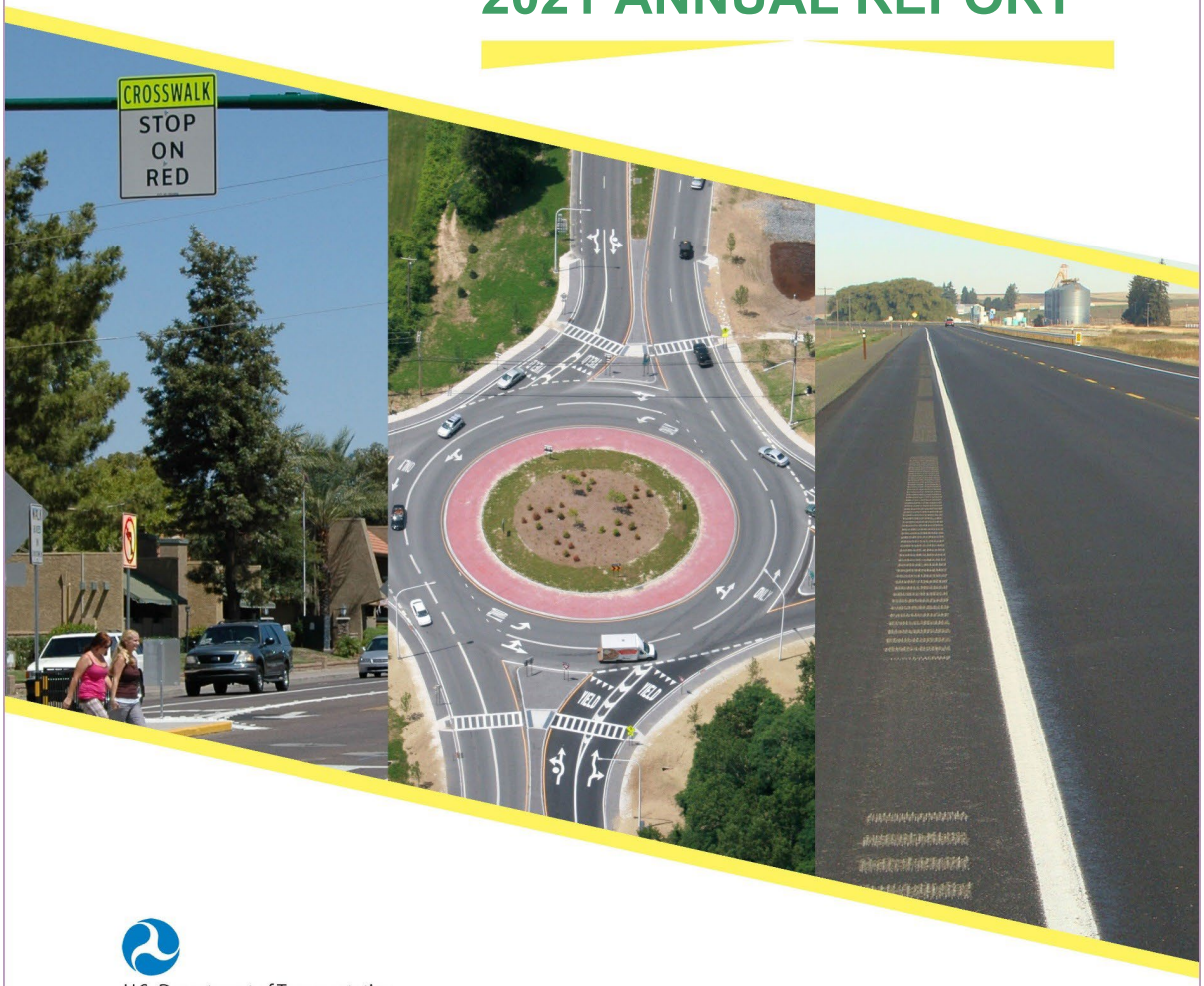
KENTUCKY

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2021 ANNUAL REPORT



U.S. Department of Transportation
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. 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

Kentucky's HSIP funds are administered by staff within the Division of Traffic Operations in KYTC's Central Office. Each Highway District has an HSIP Coordinator that acts as a liaison between, and works closely with, Central Office HSIP staff and District staff to organize project team meetings, deliver required project documentation, and conduct a field investigation and/or Road Safety Audit (RSA) on potential improvement locations. The RSA teams are multi-disciplinary and represent the following highway functions: planning, highway design, traffic operations, maintenance, and construction. The Cabinet also encourages members from local Area Development Districts (ADDs) and local law enforcement agencies to participate in the process.

The HSIP supports Kentucky's Strategic Highway Safety Plan (SHSP) and its vision of Toward Zero Deaths. The mission of Kentucky's SHSP is, "to enhance the lives of those who use Kentucky's transportation system by preventing crashes that result in deaths and serious injuries." In conformance with program guidelines, the HSIP seeks to adhere to the SHSP through a data-driven approach for funding safety improvements.

The methodology used by the Transportation Cabinet to prioritize and select projects during the time period of this report has been threefold: network screening using SPFs with EB adjustment, systemic analysis, and cost effectiveness analysis (e.g. benefit-cost).

The SPFs used for network screening by Kentucky's HSIP are state-specific SPFs, updated annually, and developed using Kentucky's roadway data, traffic volume data, and most recent 5 years of crash data. Further, for each facility type analyzed, multiple state-specific SPFs are developed; one SPF for each of the following crash severities: KA, B, C, and O. The result of this tailored network screening approach produces severity-specific Excess Expected Crash (EEC) values for KA, B, C, and O crashes, for each segment and/or each intersection in the analysis. The severity-specific EEC values for each segment and intersection are multiplied by average crash costs for KA, B, C, and O crashes and then summed to determine a value Kentucky calls the Cost of Excess Expected Crashes. This value represents the comprehensive economic impact of the excessive crashes occurring at each segment or intersection.

The systemic analysis method could be characterized as the reverse of the traditional approach in that low-cost, effective countermeasures are first identified and then the crash database is queried to prioritize highway sections that have targeted crashes at or above a crash threshold that would ensure cost-effective deployment of these countermeasures.

The cost effectiveness method is typically used to justify projects that may not have been identified via network screening or systemic analysis, but are locations that have been identified by District staff or local representatives as having safety improvement opportunities. If the projects are shown to be cost effective, then those projects are considered along with the projects identified via network screening and systemic analysis.

Further, cost effectiveness analyses are used during project development to aid in decision-making when multiple improvements appear to be viable options for the identified safety challenges.

It is also noteworthy that Kentucky occasionally combines elements of the systemic approach into Kentucky's network screening process. For example, through systemic analysis it has been found that roadway departure fatalities in Kentucky are most likely to occur on facilities classified as Rural, 2-Lane Undivided, with a speed limit of 50 mph or greater. As such, Kentucky's HSIP has developed state specific SPFs that only incorporate and analyze roadway departure crashes occurring on facilities classified as Rural, 2-Lane Undivided, with a speed limit of 50 mph or greater. This allows Kentucky to focus on the portion of the network most at risk, but also prioritize sites using state of the art SPFs with EB adjustment.

Effectiveness evaluations were performed and benefit/costs were calculated, with results presented for the following 4 types of systemic improvements:

ROAD DEPARTURE CORRIDORS

Wilcoxon Signed-Rank Test for “before and after shift in proportions of road departure crashes” – significant reduction at 90% confidence level.

Empirical Bayes analysis of “before and after road departure crashes” was not performed on road departure crashes because the necessary safety performance function was not available.

Benefit/Cost analysis results using observed crashes; 2.6:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

CABLE MEDIAN BARRIERS

Wilcoxon Signed-Rank Test for “before and after shift in proportions of cross-median or impacted object in median crashes” – no significant reduction.

Empirical Bayes analysis of “before and after cross-median crashes” was not performed on cable median barrier crashes because the necessary safety performance function was not available.

Benefit/Cost analysis results using observed crashes; <1:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

DIAGONAL SIGNAL SPAN REPLACEMENT

Benefit/Cost analysis results using expected crashes from empirical Bayes analysis; <1:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

GUARDRAIL

Wilcoxon Signed-Rank Test for “before and after shift in proportions of run-off-road crashes” – no statistically significant change.

Benefit/Cost analysis results using observed crashes; 7:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

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.

Kentucky's HSIP funds are administered by the Division of Traffic Operations in KYTC's Central Office. Projects are prioritized and selected through network screening utilizing crash analysis performed by the Kentucky Transportation Center (KTC) at the University of Kentucky and/or risk assessment utilizing Road Safety Audits (RSAs) performed by District personnel. Each of the twelve Highway District has an HSIP Coordinator that works closely with Central Office and District Personnel. The HSIP Coordinator acts as a liaison between, and works closely with, Central Office HSIP staff and District staff to organize project team meetings, deliver required project documentation, and conduct a field investigation and/or a Road Safety Audit (RSA) on potential improvement locations. Project Development is achieved either in conjunction with in-house staff at the District level or by engineering consultants who have been selected for their knowledge, skills, and abilities in developing HSIP projects. HSIP projects are let through the Division of Construction Procurement; implementation and inspection of projects occurs through the District Construction staff. Evaluation is performed through a formal partnership with KTC.

Where is HSIP staff located within the State DOT?

Operations

How are HSIP funds allocated in a State?

- SHSP Emphasis Area Data

The Kentucky Office of Highway Safety is the lead agency for the development of the SHSP. Efforts have been made to use data-driven analysis to identify appropriate emphasis areas and strategies to affect highway safety. The Roadway Departure emphasis area and strategies, as well as the Intersections strategies, are the primary focus for HSIP infrastructure-related projects.

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

The Commonwealth of Kentucky does not have tribal roads. The Safety Circuit Rider program continues to function as the primary means of identifying and implementing projects on local roads through the HSIP. The focus of this program is to provide technical assistance to improve safety on local roads and streets. While the free technical advice offered by the Safety Circuit Rider is available to every community across the Commonwealth, the program selects six counties with high crash rates on an annual cycle for focused training covering low-cost safety improvements. The 2021 selected counties are Adair, Bullitt, Campbell, Carter,

Marshall, and Simpson. Typical improvements in these counties were clearing and correcting water runoff and drainage, repairing shoulder drop off and width, removing fixed objects such as trees and stumps, and clearing vegetation around signs and intersections. Additionally, each county is provided with funds for signing. Aside from these targeted counties, the Safety Circuit Rider Program provides a one-day training course designed to provide communities with practical and effective ways to mainstream safety into their day-to-day activities and project development process. This course is offered for free at selected areas throughout Kentucky.

Please note that the Road Departure and High Friction Surface Treatment screenings include Minor Collectors and above for local roads. Furthermore, the Intersection database used for screening for the Intersection initiative includes all intersections in the state, including Local Road/Local Road intersections. If any local road screens high enough to be considered for a project the HSIP and LTAP work with local governments to implement projects.

In late 2018, the HSIP began a partnership with the Louisville Metro Government to create a Road Safety Plan. This effort evolved into a Vision Zero Plan that was published in April of 2021. Additionally, the HSIP is currently engaged in developing a Road Safety Plan for the city of Lexington.

Lastly, Kentucky is part of FHWA's Local Road Safety Plan (LRSP) Pilot 2 initiative. Three counties are currently in the pilot: Boone, Boyle, and Crittenden Counties. This effort is expected to be complete by the end of 2021. The pilot is being used to determine the framework for KYTC to move forward with development of LRSPs for additional counties in the upcoming years. The HSIP is currently working on establishing a peer exchange to help further develop a Local Road Safety Plan Initiative.

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

- Design
- Districts/Regions
- Governors Highway Safety Office
- Local Aid Programs Office/Division
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety

Describe coordination with internal partners.

Kentucky's HSIP funds are administered by the Division of Traffic Operations in KYTC's Central Office. The planning and project development processes involve collaboration with internal partners in the Divisions of Planning, Design, Traffic Operations, and Maintenance, as warranted by subject matter. The implementation process is performed in collaboration with the Divisions of Construction Procurement and Construction. Open communication is maintained with all internal partners to develop collaborative solutions on all HSIP endeavors. As an example of this open communication, HSIP staff coordinates closely with the Division of Maintenance to look for opportunities to bundle HSIP funded improvement projects with Maintenance funded resurfacing projects.

HSIP projects are selected and prioritized based on their correlation with Kentucky's SHSP. Kentucky published a new SHSP in early 2020. There are presently 6 emphasis areas within the SHSP and efforts are made to implement projects consistent with the goals and objectives of the SHSP. The Kentucky Transportation Cabinet has established taskforce teams for each emphasis area and the HSIP will be active participants on each team.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Law Enforcement Agency
- Local Government Agency
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Other-Kentucky Transportation Center

Describe coordination with external partners.

KTC is housed within the University of Kentucky and assists in the performance of data analytics and evaluation efforts for Kentucky's HSIP. The HSIP has also partnered with the University of Louisville on collecting near-miss crash data through radar and with Western Kentucky University to investigate safety improvement opportunities in relation to CMV.

FHWA-KY Division Office representatives collaborates with the administration of Kentucky's HSIP.

Metropolitan Planning Organizations (MPOs) provide feedback during project identification and modify their Transportation Improvement Plans (TIPs) when applicable.

The University of Kentucky's Local Technical Assistance Program (LTAP) assists in administering the Safety Circuit Rider Program, as well as performing the safety analysis for prioritizing the six targeted counties subject to the Safety Circuit Rider Program and performing the subsequent RSAs. In addition, KTC & LTAP both provide training resources and programs for the Cabinet through the HSIP. Lastly, the LRSP initiative being led by LTAP is expected to be complete by the end of 2021 and will produce safety plans for the three pilot counties of Boone, Boyle, and Crittenden. An important goal of the pilot is to develop the framework so additional LRSPs can be developed for many more counties in the upcoming years.

Program Methodology

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

Yes
Kentucky has developed a draft update of the HSIP Investment Plan and is currently working to finalize it.

Select the programs that are administered under the HSIP.

- Intersection
- Median Barrier
- Roadway Departure
- Sign Replacement And Improvement
- Skid Hazard

Program: Intersection

Date of Program Methodology:3/27/2017

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
• All crashes • Fatal and serious injury crashes only	• Traffic • Volume	• Functional classification

What project identification methodology was used for this program?

- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment

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?

- Other-Prioritized list

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

Rank of Priority Consideration

Available funding:2
Ranking based on net benefit:1

Program: Median Barrier

Date of Program Methodology:3/27/2017

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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Volume

Roadway

- Median width
- Functional classification
- Roadside features

What project identification methodology was used for this program?

- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment

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

Available funding:2
Ranking based on net benefit:1

Program: Roadway Departure

Date of Program Methodology:3/27/2017

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
• All crashes • Fatal and serious injury crashes only	• Volume	• Functional classification

What project identification methodology was used for this program?

- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment

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-Prioritized list

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

Rank of Priority Consideration

Available funding:2
Ranking based on net benefit:1

Program: Sign Replacement And Improvement

Date of Program Methodology:3/27/2017

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
• All crashes	• Volume	• Horizontal curvature

- Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types

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.

Sign Replacement and Improvement on locally owned roads are handled through the Safety Circuit Rider Program

How are projects under this program advanced for implementation?

- Other-Prioritized list

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

Rank of Priority Consideration

Available funding:2
Ranking based on net benefit:1

Program: Skid Hazard

Date of Program Methodology:3/27/2017

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

- All crashes
- Fatal and serious injury crashes only
- Volume
- Horizontal curvature
- Functional classification

What project identification methodology was used for this program?

- Excess expected crash frequency using SPFs
- Excess expected crash frequency with the EB adjustment

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-Prioritized list based on EB

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

Rank of Priority Consideration

Available funding:2
Ranking based on net benefit:1

What percentage of HSIP funds address systemic improvements?

50

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

- Cable Median Barriers
- Clear Zone Improvements
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Upgrade Guard Rails

What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)

- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan
- Stakeholder input

The HSIP does not utilize the SafetyAnalyst tool.

The HSIP is currently developing a Road Safety Plan for the city of Lexington and has published a Vision Zero Plan in April of 2021 for the Louisville Metro area. The Vision Zero Plan includes all roads, except for interstates, in Jefferson county and similar scope is planned for the Lexington Road Safety Plan. The process for both plans utilizes data-driven safety tools and other methods used for countermeasure identification at the State level.

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

The KYTC HSIP is exploring the potential benefits of connected vehicles and ITS technologies in regards to the goals of the SHSP. Although the HSIP has not dedicated funding directly to this area, the HSIP has representation on the internal workgroup on connected & autonomous vehicles (CAV.)

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.

KYTC HSIP has worked with the Kentucky Transportation Center to improve the data analytics process utilizing the procedures and information found in the HSM. Specifically, KTC incorporates network screening techniques from Section B of the HSM and develops state-specific Safety Performance Functions (SPFs) to identify locations most likely to see a safety benefit. In addition, HSM Part C methods are used for evaluation and benefit-cost analysis of safety improvements.

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

Kentucky's HSIP has increased efforts towards identifying and developing Innovative Intersection projects, such as Mini-Roundabouts and Restricted Crossing U-Turn (RCUT) intersections. Eight RCUTs have been constructed, seventeen are currently under construction, and four are currently in the project development process. Three Mini-Roundabouts have been constructed, one is under construction, and eleven are in the project development process. Furthermore, HSIP is working in conjunction with KTC to develop a screening process for identifying potential locations for RCUTs and Mini-Roundabouts.

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)	$41,838,924	$57,980,522	138.58%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$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	$0	0%
State and Local Funds	$0	$0	0%
Totals	$41,838,924	$57,980,522	138.58%

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

$469,088

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

$469,088

Preliminary Engineering for Mini-Roundabouts in Elizabethtown - $250,000

Low-Cost Safety Improvements at four Intersections - $129,043

HFST Project for one County Route - $90,045

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

$497,700

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

$497,700

Evaluation & Technical Assistance to support HSIP - $367,200

Intersection Database Update - $130,500

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%

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

In previous HSIP Annual Reports it was noted there was surplus of HSIP funds that had not been obligated. Through aggressive implementation of the HSIP Investment Plan the program has progressed toward full annual obligation of HSIP funds over the reporting period. Furthermore, the HSIP has developed a backlog of construction-ready projects for when additional funding becomes available.

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
Various Counties Targeted Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)			$405000	$405000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along US 62	Roadway	Roadway widening - add lane(s) along segment	7.2	Miles	$982765	$982765	HSIP (23 U.S.C. 148)	Rural	Major Collector	9,062	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along US 62 in Ballard and McCracken Counties	Roadside	Roadside - other	9.189	Miles	$1908000	$1908000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency		Roadway Departure	
Study and Preliminary Engineering of Various Intersections in District 1	Miscellaneous	Transportation safety planning			$50000	$50000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
US 45 at KY 408 RCUT	Intersection traffic control	Intersection traffic control - other	0.567999999999998	Miles	$1147201.6	$1147201.6	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,483	65	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvments along US 68 in McCracken and Marshall Counties	Roadside	Roadside - other	15.127	Miles	$550000	$550000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency		Roadway Departure	
US 45 at KY 1288 RCUT	Intersection traffic control	Intersection traffic control - other	0.8	Miles	$1126984	$1126984	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	12,186	65	State Highway Agency			Intersection Improvements
US 641 @ KY 402 RCUT	Intersection traffic control	Intersection traffic control - other	0.65	Miles	$1300000	$1300000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,220	65	State Highway Agency			Intersection Improvements
US 60 RCUTs	Intersection traffic control	Intersection traffic control - other	1.1	Miles	$598246	$598246	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,839	55	State Highway Agency			Intersection Improvements

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
Acceleration Lane for EB I-24 On Ramp at Exit 4	Interchange design	Acceleration / deceleration / merge lane	0.35	Miles	$980127.9	$980127.9	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	36,130	70	State Highway Agency			Intersection Improvements
Southbound US 41 Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)	31.574	Miles	$365500	$365500	HSIP (23 U.S.C. 148)	Rural	Major Collector	10,737	55	State Highway Agency		Roadway Departure	
US 60 Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)	26.069	Miles	$92700	$92700	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	9,681	55	State Highway Agency		Roadway Departure	
US 431 Guardrail End Treatmenets	Roadside	Barrier end treatments (crash cushions, terminals)	9.262	Miles	$45000	$45000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,309	55	State Highway Agency		Roadway Departure	
US 431 Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)	10.246	Miles	$30000	$30000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	10,628	55	State Highway Agency		Roadway Departure	
Thermoplastic Striping on Various Routes in District 2	Roadway delineation	Longitudinal pavement markings - remarking			$570000	$570000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
KY 171 Guardrail	Roadside	Barrier- metal	0.140000000000001	Miles	$114897	$114897	HSIP (23 U.S.C. 148)	Rural	Minor Collector	2,114	45	State Highway Agency		Roadway Departure	
US 60 Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)	25.111	Miles	$500720	$500720	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	22,806	55	State Highway Agency		Roadway Departure	
US 41 Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)	18.407	Miles	$70143.23	$70143.23	HSIP (23 U.S.C. 148)	Rural	Major Collector	36,023	65	State Highway Agency		Roadway Departure	
Guardrail End Treatments at Various Interchanges	Roadside	Barrier end treatments (crash cushions, terminals)			$175392.74	$175392.74	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
US 41 Guardrail End Treatments	Roadside	Barrier end treatments (crash cushions, terminals)	6.191	Miles	$412200	$412200	HSIP (23 U.S.C. 148)	Rural	Major Collector	7,507	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 130	Roadside	Roadside grading	6.073	Miles	$983245.5	$983245.5	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,118	55	State Highway Agency		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
Perform Low Cost Safety Improvements along KY 115	Roadway	Roadway widening - travel lanes	6.929	Miles	$200000	$200000	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,444	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 81	Roadside	Roadside - other	8.673	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,716	55	State Highway Agency		Roadway Departure	
Pavement Marker Installations on Various Routes in District 3	Roadway delineation	Raised pavement markers			$220000	$220000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Thermoplastic Striping on Various Routes in District 3	Roadway delineation	Longitudinal pavement markings - remarking			$1040000	$1040000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 100	Alignment	Horizontal curve realignment	8.375	Miles	$63000	$63000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,467	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 63	Alignment	Horizontal and vertical alignment	6.827	Miles	$1027913.7	$1027913.7	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,977	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along US 68	Roadway	Roadway widening - curve	6.395	Miles	$592568.5	$592568.5	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,490	55	State Highway Agency		Roadway Departure	
US 68 @ Old Barren River Road	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.0999999999999996	Miles	$21729	$21729	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,480	45	State Highway Agency			Intersection Improvements
US 31W @ KY 743	Intersection traffic control	Intersection signing – add enhanced advance warning (double-up and/or oversize)	0.25	Miles	$8800	$8800	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	920	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 100	Roadside	Roadside - other	8.83	Miles	$939749	$939749	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,400	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 234	Roadside	Roadside - other	7.218	Miles	$200000	$200000	HSIP (23 U.S.C. 148)	Rural	Major Collector	5,359	55	State Highway Agency		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
Study Intersection Improvements along US 231	Miscellaneous	Transportation safety planning	1	Miles	$250000	$250000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	21,900	45	State Highway Agency			Intersection Improvements
US 231 RCUTs	Intersection traffic control	Intersection traffic control - other	3.6	Miles	$1041400	$1041400	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	19,052	65	State Highway Agency			Intersection Improvements
US 68 @ Old Tram Rd Left Turn Lane	Intersection geometry	Add/modify auxiliary lanes	0.191	Miles	$100000	$100000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	25,237	45	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 185 in Butler and Edmonson Counties	Roadside	Drainage improvements	9.417	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		State Highway Agency		Roadway Departure	
US 231X Roadway Reconfiguration	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.72	Miles	$16200	$16200	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	20,284	45	State Highway Agency		Vunerable Road Users	
Pavement Marker Installations on Various Routes in District 4	Roadway delineation	Raised pavement markers			$215000	$215000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.2	Miles	$90045	$90045	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,235	45	State Highway Agency		Roadway Departure	
High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.299999999999999	Miles	$91665	$91665	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,741	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 470	Roadside	Roadside - other	1.62	Miles	$528.89	$528.89	HSIP (23 U.S.C. 148)	Rural	Minor Collector	1,275	55	State Highway Agency		Roadway Departure	
KY 3005 at KY 1904 RCUT	Intersection traffic control	Intersection traffic control - other	0.6	Miles	$367500	$367500	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	10,715	55	State Highway Agency			Intersection Improvements
US 31W RCUT Corridor	Intersection traffic control	Intersection traffic control - other	8.159	Miles	$10000	$10000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	30,651	55	State Highway Agency			Intersection Improvements

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
US 31W RCUT Corridor	Intersection traffic control	Intersection traffic control - other	4.152	Miles	$2595442	$2595442	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	22,475	55	State Highway Agency			Intersection Improvements
US 31W RCUT Corridor	Intersection traffic control	Intersection traffic control - other	4.067	Miles	$1475000	$1475000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	30,651	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 259	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	11.761	Miles	$25000	$25000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,260	55	State Highway Agency		Roadway Departure	
Study and Preliminary Engineering of Mini-Roundabouts within Elizabethtown	Intersection traffic control	Modify control – Compact/Mini-roundabout			$250000	$250000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 259	Roadside	Drainage improvements	1.921	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,005	55	State Highway Agency		Roadway Departure	
Roadway Reconfiguration and Mini Roundabouts along KY 251	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1.458	Miles	$288000	$288000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,522	45	State Highway Agency			Intersection Improvements
KY 1136 at US 31W Bypass Roundabout	Intersection traffic control	Modify control – Modern Roundabout	0.372	Miles	$250000	$250000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	4,539	55	State Highway Agency			Intersection Improvements
Horizontal Alignment Signing on Various Routes in District 5	Roadway signs and traffic control	Sign sheeting - upgrade or replacement			$37700	$37700	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Install guardrail along KY 1319	Roadside	Barrier- metal	0.111	Miles	$47500	$47500	HSIP (23 U.S.C. 148)	Rural	Minor Collector	1,356	55	State Highway Agency		Roadway Departure	
Pavement Marker Installations on Various Routes in District 5	Roadway delineation	Raised pavement markers			$795000	$795000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		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
Thermoplastic Striping on Various Routes in District 5	Roadway delineation	Longitudinal pavement markings - remarking			$900000	$900000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
KY 676 Thermoplastic Striping along KY 676	Roadway delineation	Longitudinal pavement markings - remarking	5.287	Miles	$63.03	$63.03	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	19,685	55	State Highway Agency		Roadway Departure	
I-264 Pavement Markings	Roadway delineation	Longitudinal pavement markings - remarking	10.826	Miles	$523000	$523000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	166,324	55	State Highway Agency		Roadway Departure	
High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.3	Miles	$59616.9	$59616.9	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,651	55	State Highway Agency		Roadway Departure	
High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.199999999999999	Miles	$42288.3	$42288.3	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	5,690	35	State Highway Agency		Roadway Departure	
Pavement Marker Installations on Various Routes in District 5	Roadway delineation	Raised pavement markers			$90000	$90000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 44	Roadside	Roadside - other	7.542	Miles	$198000	$198000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,191	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 53	Roadside	Roadside - other	2.65	Miles	$105000	$105000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,056	55	State Highway Agency		Roadway Departure	
Study and Preliminary Engineering of Various Intersections in Jefferson County	Miscellaneous	Transportation safety planning			$13000	$13000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
KY 864 @ Fenwick Dr	Intersection geometry	Add/modify auxiliary lanes	0.25	Miles	$317493	$317493	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,339	35	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 55 in	Roadside	Roadside grading	4.48	Miles	$909610	$909610	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency		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
Spencer and Shelby Counties															
Study and Preliminary Engineering of Various Intersections in District 5	Miscellaneous	Transportation safety planning			$85000	$85000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
Study and Preliminary Engineering of Various Intersections in Jefferson County	Miscellaneous	Transportation safety planning			$500000	$500000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
Enhancements to Signal Detection	Intersection traffic control	Intersection traffic control - other	1.16	Miles	$260000	$260000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	52,179	45	State Highway Agency			Intersection Improvements
Safety Improvements along KY 155	Miscellaneous	Transportation safety planning	2	Miles	$250000	$250000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	20,144	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along US 421	Roadside	Roadside - other	5.817	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,760	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 1848	Alignment	Horizontal and vertical alignment	4.173	Miles	$829880	$829880	HSIP (23 U.S.C. 148)	Rural	Minor Collector	2,392	55	State Highway Agency		Roadway Departure	
US 31E Roadway Reconfiguration	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1.5	Miles	$45000	$45000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	22,376	35	State Highway Agency		Vunerable Road Users	
Microsurface Treatment along KY 1501	Roadway	Pavement surface - other	0.7	Miles	$58066.2	$58066.2	HSIP (23 U.S.C. 148)	Urban	Major Collector	7,953	35	State Highway Agency		Roadway Departure	
High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.3	Miles	$126000	$126000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	5,198		State Highway Agency		Roadway Departure	
Thermoplastic Striping on Various Routes in District 6	Roadway delineation	Longitudinal pavement markings - remarking			$650000	$650000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	

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US 25 at KY 536	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.0999999999999996	Miles	$5000	$5000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	13,650	45	State Highway Agency			Intersection Improvements
Signing & Striping along KY 17	Access management	Change in access - close or restrict existing access	0.177999999999997	Miles	$5000	$5000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	5,230	25	State Highway Agency			Intersection Improvements
Safety Improvements along KY 17	Intersection geometry	Intersection geometry - other	3.8	Miles	$186435	$186435	HSIP (23 U.S.C. 148)	Rural	Major Collector	5,392	55	State Highway Agency			Intersection Improvements
KY 9 at Gloria Terrell Road	Intersection geometry	Add/modify auxiliary lanes	0.5	Miles	$405000	$405000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	26,897	55	State Highway Agency			Intersection Improvements
KY 1303 at Dudley Road	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.2	Miles	$30000	$30000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	25,278	45	State Highway Agency			Intersection Improvements
US 27 at KY 1998	Intersection traffic control	Modify traffic signal – modernization/replacement	0.15	Miles	$80000	$80000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	29,986	40	State Highway Agency			Intersection Improvements
KY 1303 at KY 236	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.25	Miles	$29000	$29000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	25,278	45	State Highway Agency			Intersection Improvements
KY 1829 at Safeway Drive	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.15	Miles	$81000	$81000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	16,322	45	State Highway Agency			Intersection Improvements
KY 177 at KY 536	Intersection traffic control	Intersection flashers –sign-mounted or overhead	0.25	Miles	$9000	$9000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,679	55	State Highway Agency			Intersection Improvements
KY 1560 at KY 3025 and KY 1560 at US 25	Intersection traffic control	Intersection traffic control - other	0.0999999999999999	Miles	$50000	$50000	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,842	45	State Highway Agency			Intersection Improvements
Study and Preliminary Engineering of Various Intersections in District 6	Miscellaneous	Transportation safety planning			$350000	$350000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 36	Roadside	Roadside grading	5.95	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Major Collector	10,968	55	State Highway Agency		Roadway Departure	

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Thermoplastic Striping on Various Routes in District 7	Roadway delineation	Longitudinal pavement markings - remarking			$735000	$735000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Tree Trimming and Removal along Various Routes in District 7	Roadside	Removal of fixed objects (trees, poles, etc.)			$1591380	$1591380	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Microsurface Treatment along KY 169	Roadway	Pavement surface - other	0.5	Miles	$34257.6	$34257.6	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	10,658	55	State Highway Agency		Roadway Departure	
Resurface KY 1981 to Improve Pavement Friction	Roadway	Pavement surface - other	1.53	Miles	$162000	$162000	HSIP (23 U.S.C. 148)	Rural	Minor Collector	3,142	55	State Highway Agency		Roadway Departure	
US 25 at Man O War	Intersection geometry	Splitter island – install on one or more approaches	0.199999999999999	Miles	$35866.71	$35866.71	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	31,279	45	State Highway Agency			Intersection Improvements
Pink Pigeon Pkwy at Man O War	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.15	Miles	$34000	$34000	HSIP (23 U.S.C. 148)	Urban	Major Collector	4,573	35	State Highway Agency			Intersection Improvements
Man O War @ Tates Creek	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.200000000000001	Miles	$29000	$29000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	29,798	45	State Highway Agency			Intersection Improvements
US 27 at Waller Ave	Roadway	Roadway - other	0.0699999999999994	Miles	$69000	$69000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	32,099	40	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 33	Roadside	Roadside grading	8.669	Miles	$500000	$500000	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,663	55	State Highway Agency		Roadway Departure	
US 27 at W Maxwell St Signal Rebuild	Intersection traffic control	Modify traffic signal –other	0.0499999999999998	Miles	$225000	$225000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	25,952	35	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along US 68	Roadside	Drainage improvements	4.807	Miles	$100000	$100000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	10,027	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety	Roadway	Roadway - other	5.609	Miles	$459052.2	$459052.2	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,103	55	State Highway Agency		Roadway Departure	

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Improvements along US 25															
Perform Low Cost Safety Improvements along KY 537	Roadside	Drainage improvements	3.5	Miles	$229950	$229950	HSIP (23 U.S.C. 148)	Rural	Minor Collector	905	55	State Highway Agency		Roadway Departure	
Study and Preliminary Engineering of Various Intersections in District 7	Miscellaneous	Transportation safety planning			$600000	$600000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
US 27 at US 68 Traffic Signal Upgrades	Intersection traffic control	Systemic improvements – signal-controlled	0.2	Miles	$16350	$16350	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	25,952	35	State Highway Agency			Intersection Improvements
KY 353 at New Circle Rd Signal Updates	Intersection traffic control	Systemic improvements – signal-controlled	0.1	Miles	$34135	$34135	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	14,006	45	State Highway Agency			Intersection Improvements
Alexandria Drive at US 60	Access management	Change in access - close or restrict existing access	0.15	Miles	$20183	$20183	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	14,629	35	State Highway Agency			Intersection Improvements
KY 4 at Eastland Parkway Signal Upgrades	Intersection traffic control	Systemic improvements – signal-controlled	0.199999999999999	Miles	$35953	$35953	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	34,263	45	State Highway Agency			Intersection Improvements
US 60 at S Forbes Rd Signal Updates	Intersection traffic control	Systemic improvements – signal-controlled	0.100000000000001	Miles	$16000	$16000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	21,641	40	State Highway Agency			Intersection Improvements
US 27 at Haggard Lane Signal Upgrades and Access Control	Access management	Change in access - close or restrict existing access	0.382	Miles	$23243	$23243	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	23,003	45	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 169	Roadway	Roadway - other	4.577	Miles	$430000	$430000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	10,658	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 353	Roadway	Roadway - other	8.781	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,251	55	State Highway Agency		Roadway Departure	

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Perform Low Cost Safety Improvements along KY 213	Roadway	Roadway - other	4.647	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,946	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 57	Roadway	Roadway - other	6.508	Miles	$100000	$100000	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,312	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 227	Roadway	Roadway - other	5.874	Miles	$200000	$200000	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,026	55	State Highway Agency		Roadway Departure	
Cable Median Barrier along I-64 in Clark and Montgomery Counties	Roadside	Barrier – cable	17.647	Miles	$45000	$45000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	0		State Highway Agency		Roadway Departure	
KYTC-LFUCG Joint Roadway Safety Plan	Miscellaneous	Transportation safety planning			$315000	$315000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Supports Implementation of HSIP and SHSP
Thermoplastic Striping along KY 70 in Casey, Pulaski, and Lincoln Counties	Roadway delineation	Longitudinal pavement markings - remarking			$210000	$210000	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		State Highway Agency		Roadway Departure	
US 27 at KY 70 RCUT	Intersection traffic control	Intersection traffic control - other	0.922999999999998	Miles	$1359000	$1359000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,144	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 790	Alignment	Horizontal and vertical alignment	5.551	Miles	$1515000	$1515000	HSIP (23 U.S.C. 148)	Rural	Minor Collector	2,966	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 39	Roadside	Roadside grading	9.274	Miles	$750000	$750000	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,337	55	State Highway Agency		Roadway Departure	
US 150 at Spring Valley Drive	Intersection geometry	Add/modify auxiliary lanes	0.3	Miles	$331000	$331000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,515	55	State Highway Agency			Intersection Improvements
US 27 at KY 478	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.11	Miles	$145000	$145000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,843	35	State Highway Agency			Intersection Improvements

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
US 27 at Boat Dock Road	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.0999999999999996	Miles	$50000	$50000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	14,117	45	State Highway Agency			Intersection Improvements
US 27 at KY 92	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.100000000000001	Miles	$92500	$92500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	11,865	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 70	Roadway	Superelevation / cross slope	8.425	Miles	$2958300	$2958300	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,021	55	State Highway Agency		Roadway Departure	
KY 80 at KY 379 and KY 3017	Intersection geometry	Intersection geometry - other	0.0999999999999996	Miles	$311996.7	$311996.7	HSIP (23 U.S.C. 148)	Rural	Major Collector	9,105	45	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 78	Roadway	Roadway - other	9.259	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,605	55	State Highway Agency		Roadway Departure	
Pavement Marker Installations on Various Routes in District 9	Roadway delineation	Raised pavement markers			$215000	$215000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 158	Roadside	Roadside grading	2.766	Miles	$9608.76	$9608.76	HSIP (23 U.S.C. 148)	Rural	Minor Collector	2,341	55	State Highway Agency		Roadway Departure	
US 23 at Town Center Dr	Access management	Raised island - install new	0.189999999999998	Miles	$37371.63	$37371.63	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	21,590	45	State Highway Agency			Intersection Improvements
WB US 60 Striping and Signing	Access management	Change in access - close or restrict existing access	0.175999999999998	Miles	$45809.27	$45809.27	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	11,580	35	State Highway Agency			Intersection Improvements
US 23 @ KY 693	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0.095	Miles	$57683.17	$57683.17	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	24,643	45	State Highway Agency			Intersection Improvements
KY 32 Lane Separator Curb	Access management	Access management - other	0.17	Miles	$48336.78	$48336.78	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	23,030	35	State Highway Agency			Intersection Improvements
Study and Preliminary Engineering of Various	Miscellaneous	Transportation safety planning			$50000	$50000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements

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
Intersections in District 9															
KY 9 at KY 10	Intersection geometry	Add/modify auxiliary lanes	0.299999999999999	Miles	$470000	$470000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,817	55	State Highway Agency			Intersection Improvements
US 23X at US 60	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.078	Miles	$576000	$576000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency			Intersection Improvements
Central Avenue at 13th Street	Intersection traffic control	Pavement markings	0.12	Miles	$38000	$38000	HSIP (23 U.S.C. 148)	Urban	Major Collector	9,485	25	State Highway Agency			Intersection Improvements
US 60 (MLK Blvd) between Winchester Ave and Central Ave	Intersection traffic control	Pavement markings	0.225999999999999	Miles	$21000	$21000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,237	35	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along US 60	Roadway	Roadway widening - curve	2.709	Miles	$362492	$362492	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,525	55	State Highway Agency		Roadway Departure	
US 60 at KY 801 Mini Roundabout	Intersection traffic control	Modify control – Modern Roundabout	0.1	Miles	$710117	$710117	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,557	55	State Highway Agency			Intersection Improvements
KY 693 at KY 1093	Intersection traffic control	Systemic improvements – signal-controlled	0.0999999999999996	Miles	$94000	$94000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	15,631	45	State Highway Agency			Intersection Improvements
Central Ave at 23rd Street	Intersection traffic control	Modify control – two-way stop to all-way stop	0.183	Miles	$28043	$28043	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	3,596	25	State Highway Agency			Intersection Improvements
Cable Median Barrier along I-64	Roadside	Barrier – cable	10.168	Miles	$312000	$312000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	18,111	70	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 36 in Nicholas and Bath Counties	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	9.197	Miles	$974303.4	$974303.4	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		State Highway Agency		Roadway Departure	
Traffic Signal Rebuilds at the Intersections of KY 1812 and KY 2472 in	Intersection traffic control	Intersection traffic control - other			$44100	$44100	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements

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
Breathitt County and US 460 and KY 7 in Magoffin County															
Perform Low Cost Safety Improvements along KY 1057	Alignment	Horizontal and vertical alignment	4.152	Miles	$1703000	$1703000	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,013	55	State Highway Agency		Roadway Departure	
KY 7 at KY 867	Roadway	Roadway widening - travel lanes	0.380000000000003	Miles	$483930	$483930	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,492	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 11	Roadside	Roadside - other	6.597	Miles	$199828.12	$199828.12	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,663	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 82	Alignment	Horizontal and vertical alignment	5.029	Miles	$180000	$180000	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,651	55	State Highway Agency		Roadway Departure	
Install Guardrail Along KY 229	Roadside	Barrier- metal	0.161	Miles	$44693	$44693	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,151	55	State Highway Agency		Roadway Departure	
Install guardrail along KY 26	Roadside	Barrier- metal	0.18	Miles	$26207	$26207	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,615	55	State Highway Agency		Roadway Departure	
Install guardrail along KY 3421	Roadside	Barrier- metal	0.1	Miles	$21895	$21895	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	1,316	45	State Highway Agency		Roadway Departure	
Pavement Marker Installations on Various Routes in District 11	Roadway delineation	Raised pavement markers			$255000	$255000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Thermoplastic Striping on Various Routes in District 11	Roadway delineation	Longitudinal pavement markings - remarking			$840000	$840000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Install Guardrail along KY 3438	Roadside	Barrier- metal	1.043	Miles	$85580	$85580	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	1,047	55	State Highway Agency		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
Install Guardrail along KY 1259	Roadside	Barrier- metal	0.13	Miles	$38170	$38170	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,118	35	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 11	Roadway	Roadway - other	17.73	Miles	$1558580	$1558580	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,284	55	State Highway Agency		Roadway Departure	
KY 192 at Thompson Poynter Road	Intersection geometry	Add/modify auxiliary lanes	0.300000000000001	Miles	$438385	$438385	HSIP (23 U.S.C. 148)	Urban	Major Collector	9,192	55	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along KY 490	Roadway	Superelevation / cross slope	5.252	Miles	$1226890	$1226890	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,093	55	State Highway Agency		Roadway Departure	
Study and Preliminary Engineering of Various Intersections in District 11	Miscellaneous	Transportation safety planning			$300000	$300000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
KY 38 & KY 72 Mini Roundabout	Intersection traffic control	Modify control – Modern Roundabout	0.15	Miles	$415000	$415000	HSIP (23 U.S.C. 148)	Urban	Major Collector	8,848	35	State Highway Agency			Intersection Improvements
Perform Low Cost Safety Improvements along US 421	Roadside	Roadside - other	7.447	Miles	$350000	$350000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,470	55	State Highway Agency		Roadway Departure	
Install Guardrail along KY 92	Roadside	Barrier- metal	0.151	Miles	$63800	$63800	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,523	55	State Highway Agency		Roadway Departure	
Install Guardrail along KY 441	Roadside	Barrier- metal	0.17	Miles	$31370	$31370	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,925	45	State Highway Agency		Roadway Departure	
Curve Realignment along KY 2565	Alignment	Vertical alignment or elevation change	0.15	Miles	$60000	$60000	HSIP (23 U.S.C. 148)	Rural	Minor Collector	2,012	45	State Highway Agency		Roadway Departure	
Pavement Marker Installations on Various Routes in District 12	Roadway delineation	Raised pavement markers			$55000	$55000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		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
Perform Low Cost Safety Improvements along KY 632	Roadway	Roadway - other	7	Miles	$2182000	$2182000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,383	55	State Highway Agency		Roadway Departure	
Perform Low Cost Safety Improvements along KY 194	Roadside	Drainage improvements	7.21	Miles	$75000	$75000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,710	55	State Highway Agency		Roadway Departure	
US 23 at KY 3 Acceleration Lane	Intersection geometry	Add/modify auxiliary lanes	0.299999999999997	Miles	$152436.6	$152436.6	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,159	45	State Highway Agency			Intersection Improvements
Resurface US 23 to Improve Pavement Friction	Roadway	Pavement surface - other	1.5	Miles	$466785	$466785	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,284	55	State Highway Agency		Roadway Departure	
Study and Preliminary Engineering of Various Intersections in District 12	Miscellaneous	Transportation safety planning			$25000	$25000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Intersection Improvements
Pavement Marker Installations on Various Routes in Districts 7, 8, and 10	Roadway delineation	Raised pavement markers			$710000	$710000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency		Roadway Departure	
Statewide | HSIP Project Development	Miscellaneous	Transportation safety planning			$450000	$450000	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Supports Implementation of HSIP and SHSP
Statewide | Technical support for the Highway Safety Improvement Program. Support to be provided by University of Kentucky Center.	Miscellaneous	Data analysis			$367200	$367200	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Supports Implementation of HSIP and SHSP

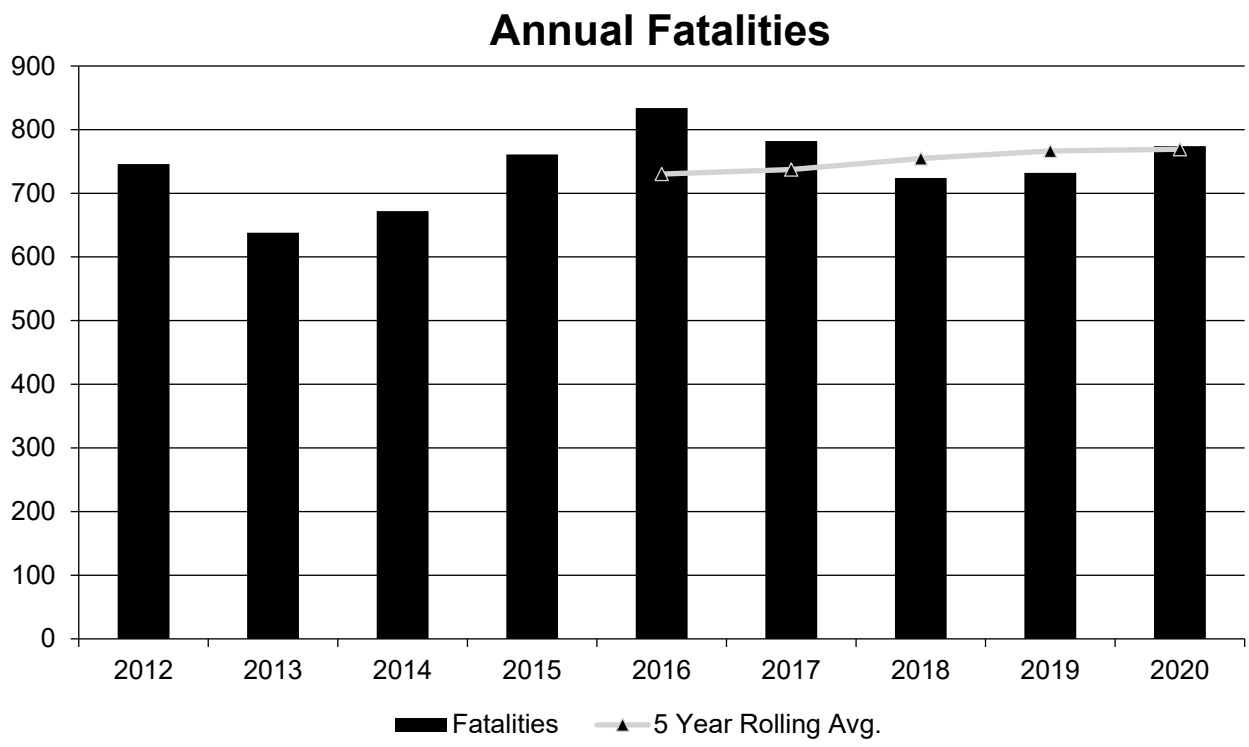
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
Statewide | Intersection Database Update	Miscellaneous	Data analysis			$103500	$103500	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency			Supports Implementation of HSIP and SHSP

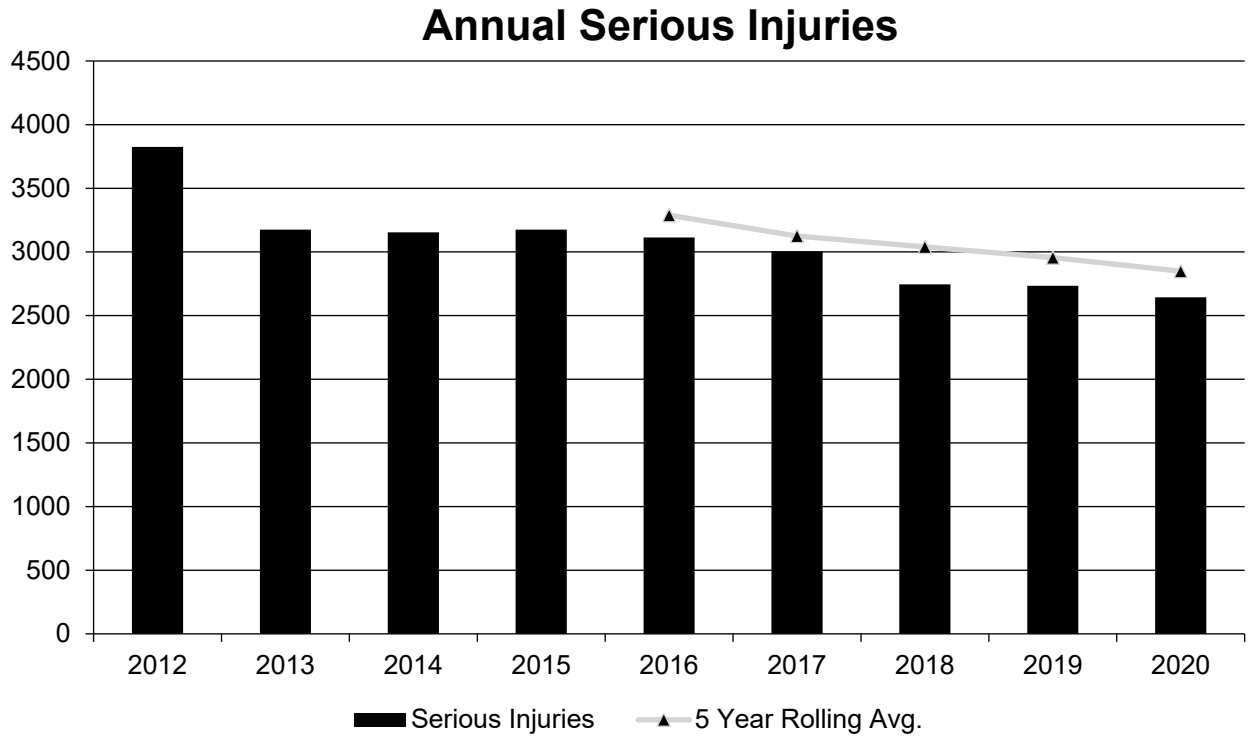
Safety Performance

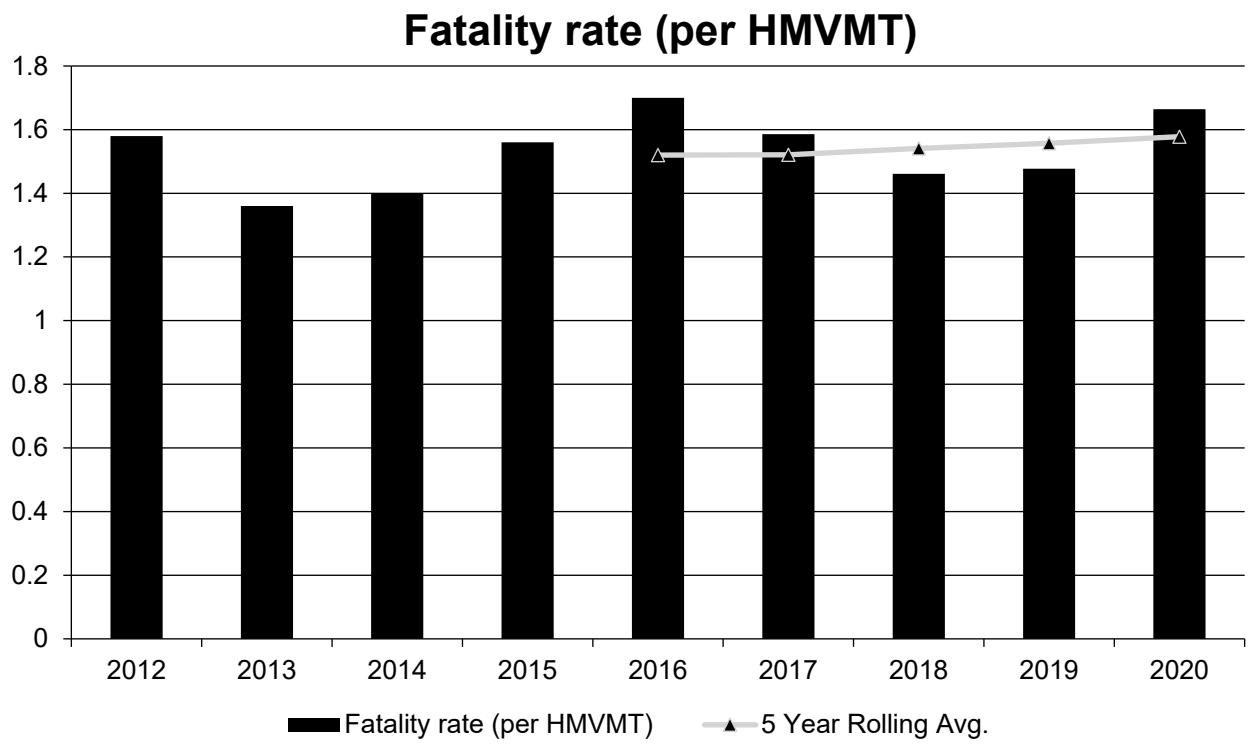
General Highway Safety Trends

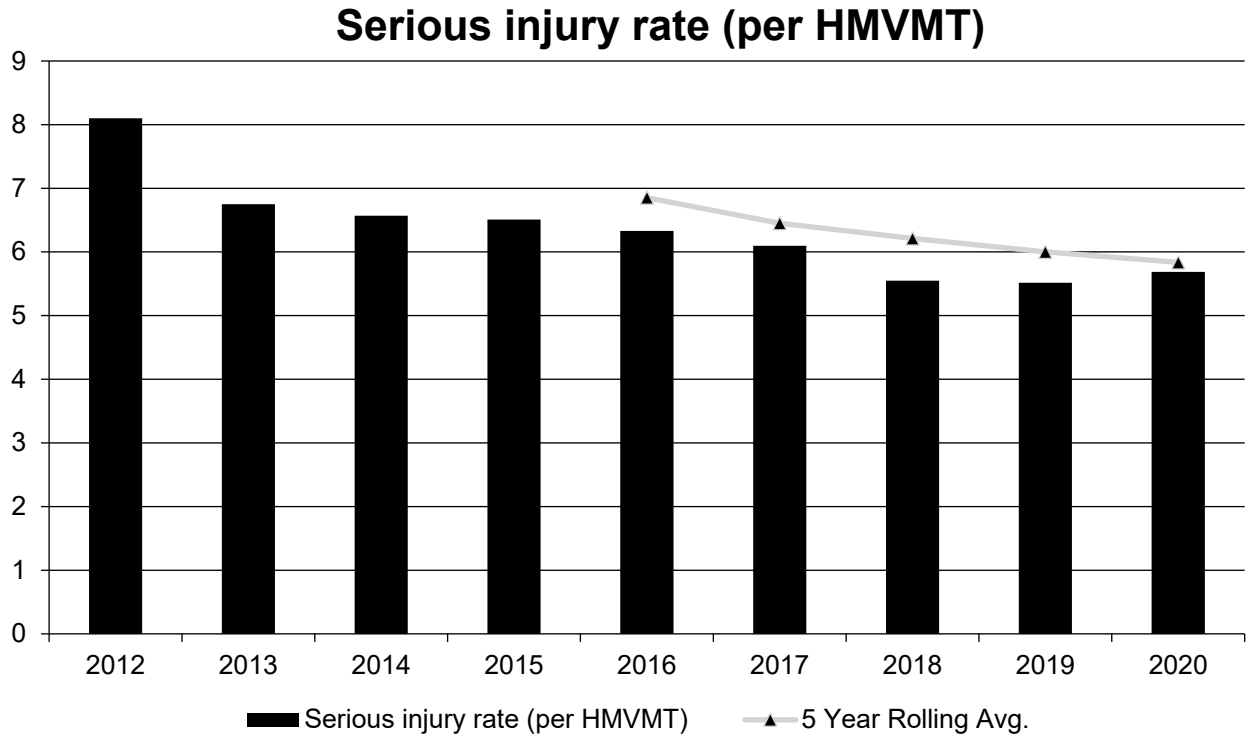
Present data showing the general highway safety trends in the State for the past five years.

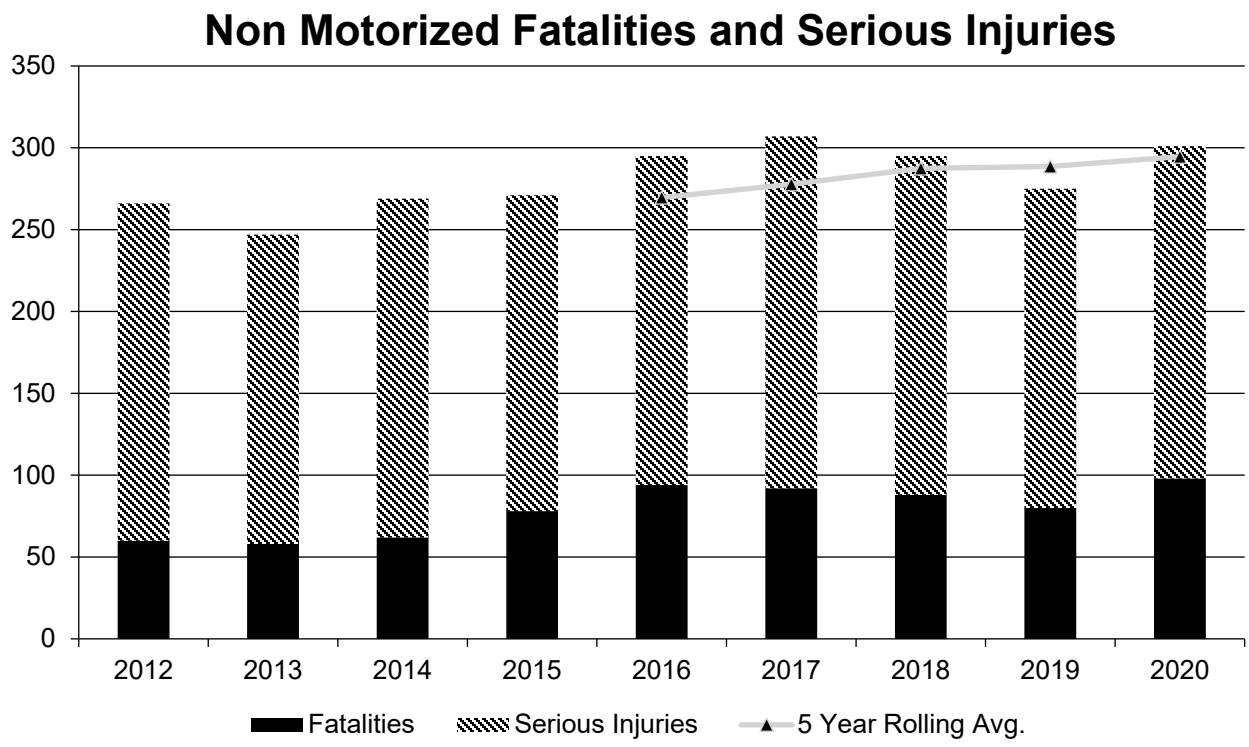
PERFORMANCE MEASURES	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities	746	638	672	761	834	782	724	732	774
Serious Injuries	3,825	3,175	3,154	3,175	3,114	3,006	2,746	2,734	2,644
Fatality rate (per HMVMT)	1.580	1.360	1.400	1.560	1.700	1.586	1.461	1.477	1.664
Serious injury rate (per HMVMT)	8.100	6.750	6.570	6.510	6.330	6.097	5.548	5.517	5.686
Number non-motorized fatalities	60	58	62	78	94	92	88	80	98
Number of non-motorized serious injuries	206	189	207	193	201	215	207	195	203
Number of non-motorized fatalities & serious injuries	266	247	269	271	295	307	295	275	301

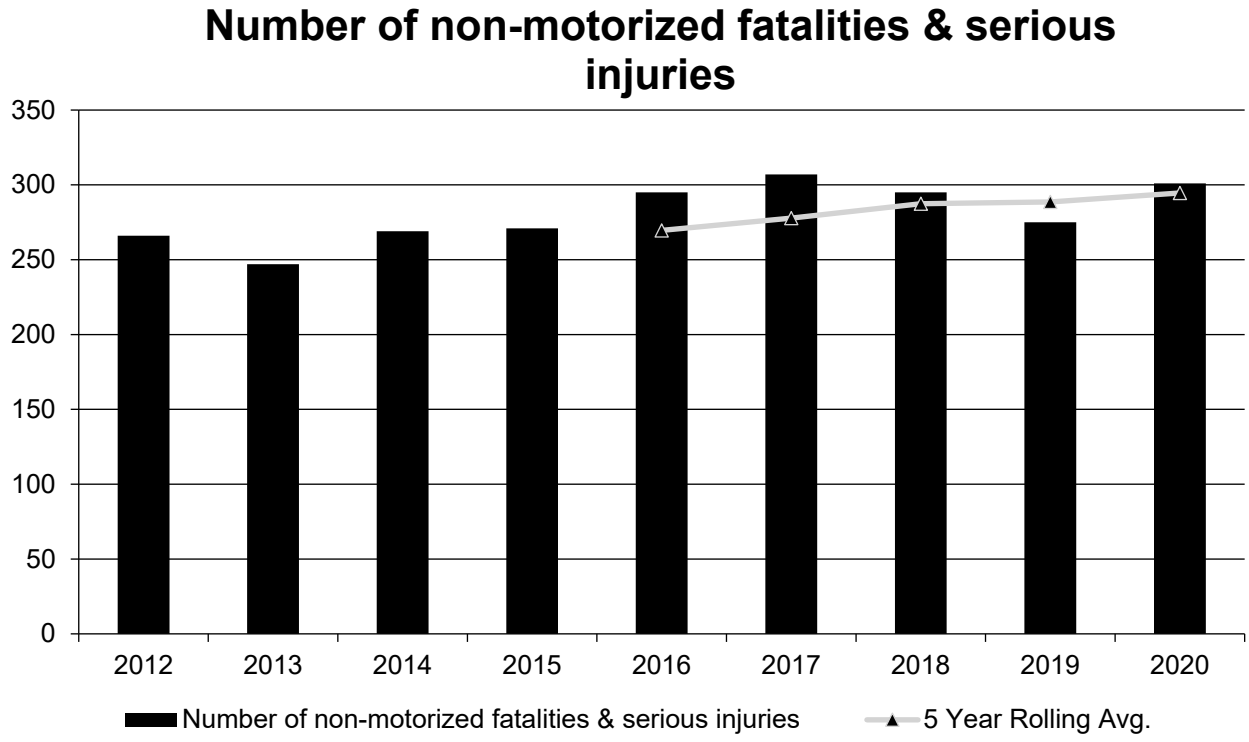

Annual Fatalities
900
800
700
600
500
400
300
200
100
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
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
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
9
8
7
6
5
4
3
2
1
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Serious injury rate (per HMVMT)
5 Year Rolling Avg.





Describe fatality data source.

FARS

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

Year 2020

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	46.6	112.8	0.58	1.24
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	81.6	172	1.63	2.66
Rural Minor Arterial	81.6	242.4	2.3	4.93
Rural Minor Collector	67.2	245.2	3.13	7.72
Rural Major Collector	129	371	3.28	6.85
Rural Local Road or Street	16.8	60.6	1.98	6.71
Urban Principal Arterial (UPA) - Interstate	36	133	0.7	2.13
Urban Principal Arterial (UPA) - Other Freeways and Expressways	7.2	16.6	0.86	1.42
Urban Principal Arterial (UPA) - Other	73	298.4	1.62	4.47
Urban Minor Arterial	81.6	361.2	1.59	4.67
Urban Minor Collector				
Urban Major Collector	23.8	126.8	1.12	3.42
Urban Local Road or Street	1.6	10.4	1.46	7.06

Year 2020

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	674.6	2,239.6	1.38	4.59
County Highway Agency	51.8	224.2		
Town or Township Highway Agency				
City or Municipal Highway Agency	36.4	267.4		
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)	4.4	18.4		
Indian Tribe Nation				

Safety Performance Targets

Safety Performance Targets

Calendar Year 2022 Targets *

Number of Fatalities:752.0

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

The Kentucky Transportation Cabinet has set the target goal of 752.6 fatalities (5-year moving average) for fiscal year 2022. KYTC remains committed to the reduction of fatalities throughout the Commonwealth. This target represents a reduction in total fatalities in calendar years 2020 and 2021 as compared to calendar years 2018 and 2019. This goal is shared with the SHSP and reiterates KYTC's commitment to the shared vision of Toward Zero Deaths.

Number of Serious Injuries:2568.0

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

The Kentucky Transportation Cabinet has set the target goal of 2568.2 serious injuries (5-year moving average) for fiscal year 2022. KYTC remains committed to the continued reduction of serious injuries throughout the Commonwealth. This target represents a reduction in total serious injuries in calendar years 2020 and 2021 as compared to calendar years 2018 and 2019. This goal is shared with the SHSP and reiterates KYTC's commitment to the shared vision of Toward Zero Deaths.

Fatality Rate:1.535

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

The Kentucky Transportation Cabinet has set the target goal of a 1.535 fatality rate (5-year moving average) for fiscal year 2022. KYTC remains committed to the reduction of the fatality rate throughout the Commonwealth. This target represents a reduction in the fatality rate in calendar years 2020 and 2021 as compared to calendar years 2018 and 2019. This goal is shared with the SHSP and reiterates KYTC's commitment to the shared vision of Toward Zero Deaths.

Serious Injury Rate:5.241

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

The Kentucky Transportation Cabinet has set the target goal of a 5.241 serious injury rate for fiscal year 2022. KYTC remains committed to the reduction of the serious injury rate throughout the Commonwealth. This target represents a reduction in the serious injury rate in calendar years 2020 and 2021 as compared to calendar years 2018 and 2019. This goal reiterates KYTC's commitment to the shared vision of Toward Zero Deaths.

Total Number of Non-Motorized Fatalities and Serious Injuries:299.0

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

The Kentucky Transportation Cabinet has set the target goal of 299.0 non-motorized fatalities and serious injuries for fiscal year 2022. KYTC remains committed to the reduction of non-motorized serious injuries and fatalities throughout the Commonwealth. This target represents a reduction in total Non-Motorized fatalities and serious injuries in calendar years 2020 and 2021 as compared to calendar years 2018 and 2019. This goal reiterates KYTC's commitment to the shared vision of Toward Zero Deaths.

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

HSIP and Kentucky Office of Highway Safety (KOHS) partner with KYTC’s Division of Planning and MPOs to coordinate annual performance targets.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2020 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	754.0	769.2
Number of Serious Injuries	2706.0	2848.8
Fatality Rate	1.500	1.578
Serious Injury Rate	5.400	5.836
Non-Motorized Fatalities and Serious Injuries	287.0	294.6

For the 2020 reporting period, Kentucky met the target for none of the safety performance measures. Kentucky showed significant progress towards two (2) safety performance measures, namely the Number of Serious Injuries and the Serious Injury Rate measures. However, Kentucky did not show significant progress towards the remaining three (3) safety performance measures, specifically the Number of Fatalities, Rate of Fatalities, and the Number of Non-Motorized Fatalities & Serious Injuries measures. Based on this information, Kentucky has met or made significant progress in two (2) of the five (5) safety performance measures. Therefore, the overall safety performance target assessment is that Kentucky has not met or made significant progress toward meeting its safety performance targets. The primary reason for the differences in the actual outcomes and the targets for these safety performance measures is that Kentucky chose to set very aggressive targets when establishing the 2020 safety performance measures. Kentucky remains committed to the reduction of fatalities and serious injuries on Kentucky's public roadways and chose to set aggressive targets for 2020 to demonstrate that commitment.

Applicability of Special Rules

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	2013	2014	2015	2016	2017	2018	2019
Number of Older Driver and Pedestrian Fatalities	152	130	140	196	198	189	218
Number of Older Driver and Pedestrian Serious Injuries	528	513	583	563	500	429	472

2020 Fatalities: 166
2020 Serious Injury: 437

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Other-Initiative Basis

Due to the extent of utilization of the HSM by KYTC's HSIP, procedures for program-wide effectiveness assessment do not currently exist. Effectiveness is determined at the initiative level, utilizing such methodology as benefit/cost ratios.

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

As previously stated, effectiveness is not currently determined at the program-wide level. Effectiveness at the initiative level is determined through benefit/cost ratios where applicable as seen in the entry entitled Countermeasure Effectiveness Evaluations and in the Executive Summary, which are reproduced below. Current and previous benefit/cost analysis has shown positive return on investment for the initiatives analyzed; however, two of the benefit/cost ratios for this reporting period, namely Cable Median Barriers and Diagonal Signal Span Replacement, fell beneath 1:1. For the Cable Median Barrier initiative, it is important to note that Kentucky has a goal of providing positive separation along all of our Interstate system, starting with the sections of Interstates that have had the highest excess expected fatal and injury median crossover crashes. Further, Kentucky has been investing in this initiative for many years, and the sections of Interstates where Cable Median Barrier has been deployed in recent years have simply not had a large frequency of median crossover crashes in the before period, making the before-after benefit appear low, and resulting in a B/C ratio less than 1:1. However, Kentucky feels strongly that implementing Cable Median Barrier is an important Safety Systems strategy for Kentucky’s Interstate system, because when median crossover crashes do occur, they tend to be severe. For the Diagonal Signal Span Replacement initiative, it is important to note that this was a pilot initiative that involved 1-2 projects in each of Kentucky’s 12 districts to determine if this was a viable intersection improvement strategy. Further, when the pilot projects were selected, Kentucky had not yet develop an Intersection Database. While the initial evaluation results do not look promising for the Diagonal Signal Span Replacement initiative, now that Kentucky has an Intersection Database that evaluates excess expected crashes at all intersections, it is possible this could lead to better site selection and yield a favorable B/C ratio for future Diagonal Signal Span Replacement projects.

ROAD DEPARTURE CORRIDORS

Wilcoxon Signed-Rank Test for “before and after shift in proportions of road departure crashes” – significant reduction at 90% confidence level.

Empirical Bayes analysis of “before and after cross-median crashes” was not performed on cable median barrier crashes because the necessary safety performance function was not available.

Benefit/Cost analysis results using observed crashes; 2.6:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

CABLE MEDIAN BARRIERS

Wilcoxon Signed-Rank Test for “before and after shift in proportions of cross-median or impacted object in median crashes” – no significant reduction.

Empirical Bayes analysis of “before and after cross-median crashes” was not performed on cable median barrier crashes because the necessary safety performance function was not available.

Benefit/Cost analysis results using observed crashes; <1:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

DIAGONAL SIGNAL SPAN REPLACEMENT

Wilcoxon Signed-Rank Test for “before and after shift in proportions of crashes” – no statistically significant change.

Benefit/Cost analysis results using expected crashes from empirical Bayes analysis; <1:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

GUARDRAIL

Wilcoxon Signed-Rank Test for “before and after shift in proportions of crashes” – no statistically significant change.

Benefit/Cost analysis results using observed crashes; 7:1 based on Comprehensive Cost of motor vehicle collisions (National Safety Council).

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

- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- Policy change

New policy changes include the installation of 6” durable striping on all State Primary Routes as well as the systemic application of 6” striping on all rural, two-lane routes with a travel lane width of 20’ or greater and ADT of 1,000 or more. Kentucky has also published a Data Driven Safety Analysis (DDSA) implementation plan, which describes the various ways to increase DDSA methods throughout the state.

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

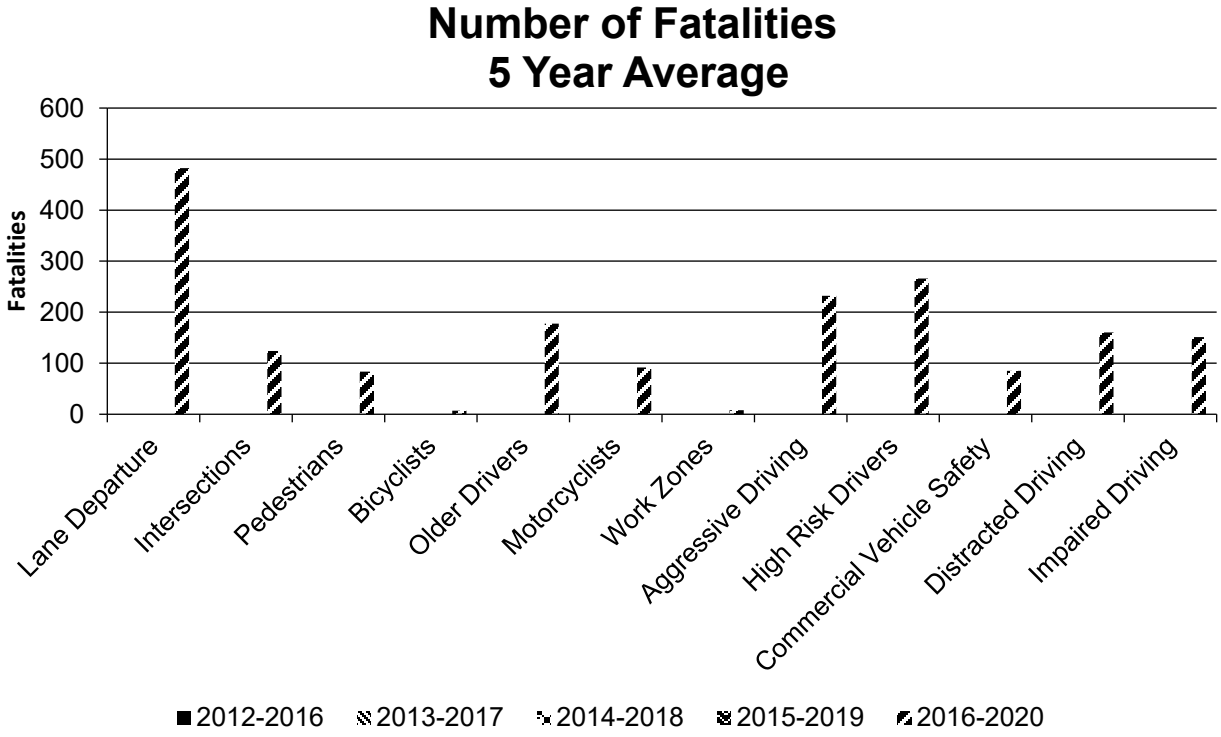
In 2020 and early 2021 the HSIP, with a vendor, obtained over 13,000 lane miles of continuous pavement friction data in round one of data collection. The second round of data collection began mid-2021 and is ongoing; this effort will collect approximately 15,000 lane miles of continuous pavement friction data. The HSIP is currently incorporating the round one friction data into state-specific SPFs to supplement the network screening process and assist in countermeasure identification.

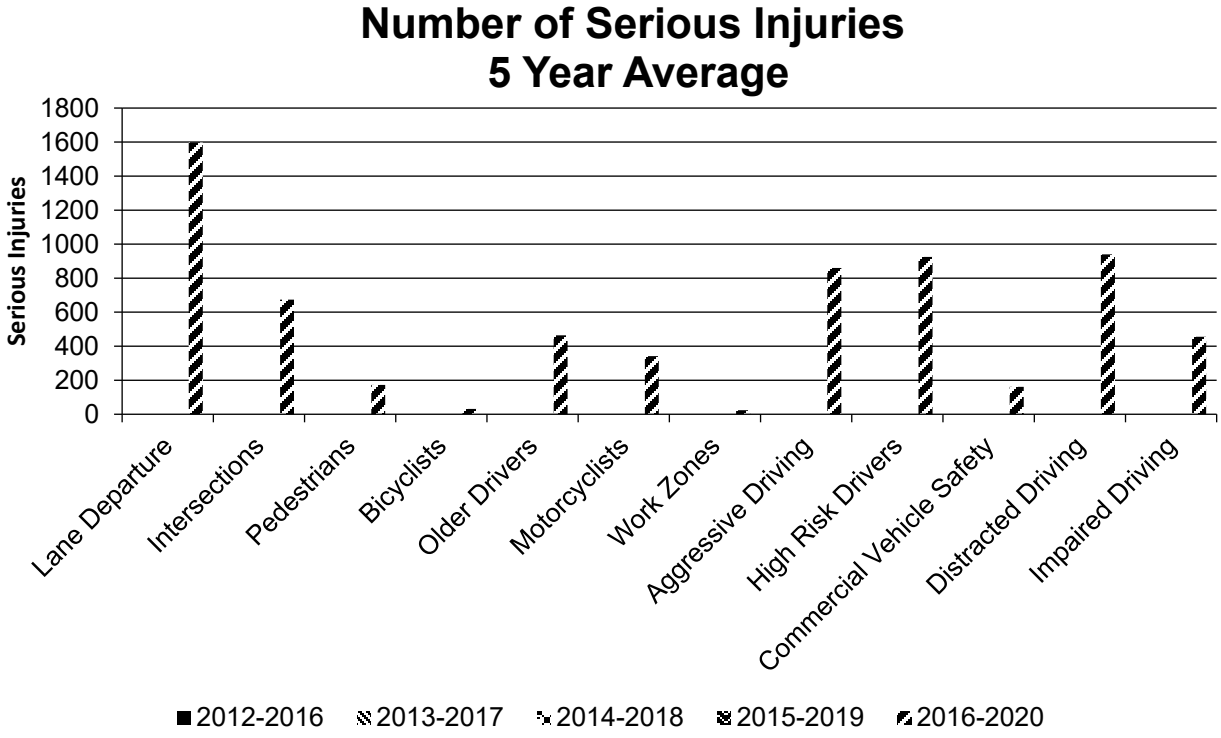
Effectiveness of Groupings or Similar Types of Improvements

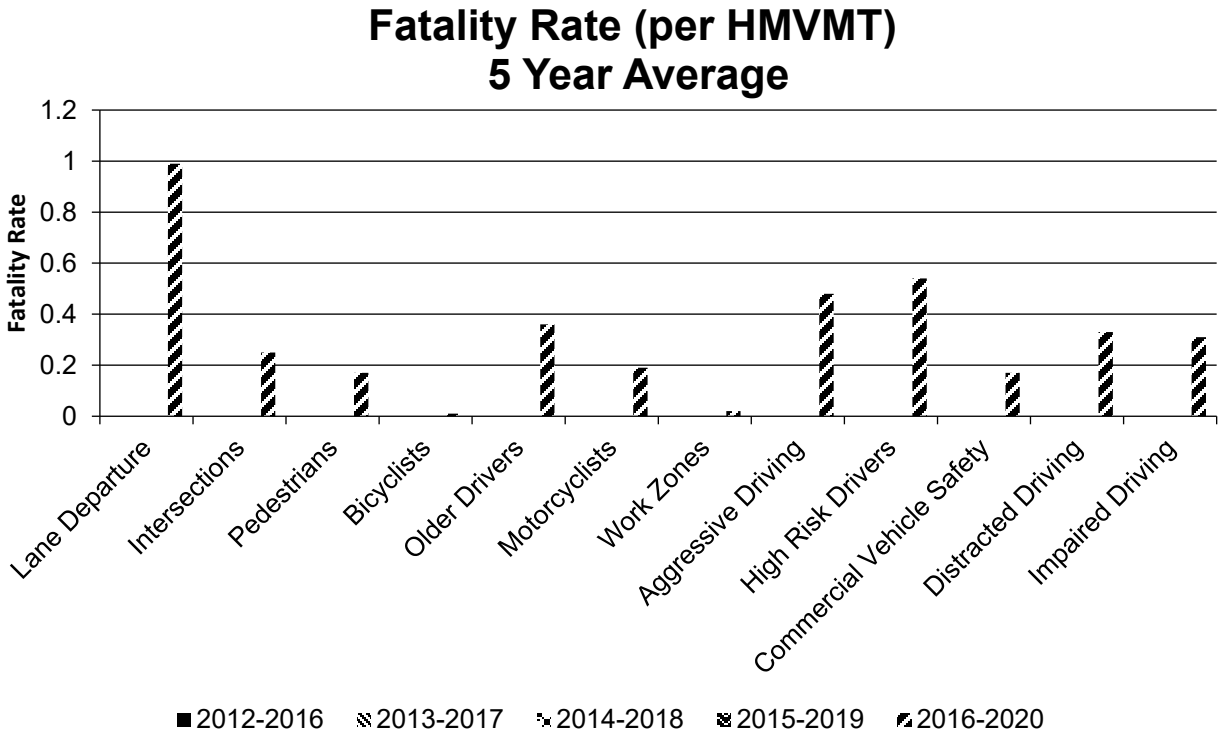
Present and describe trends in SHSP emphasis area performance measures.

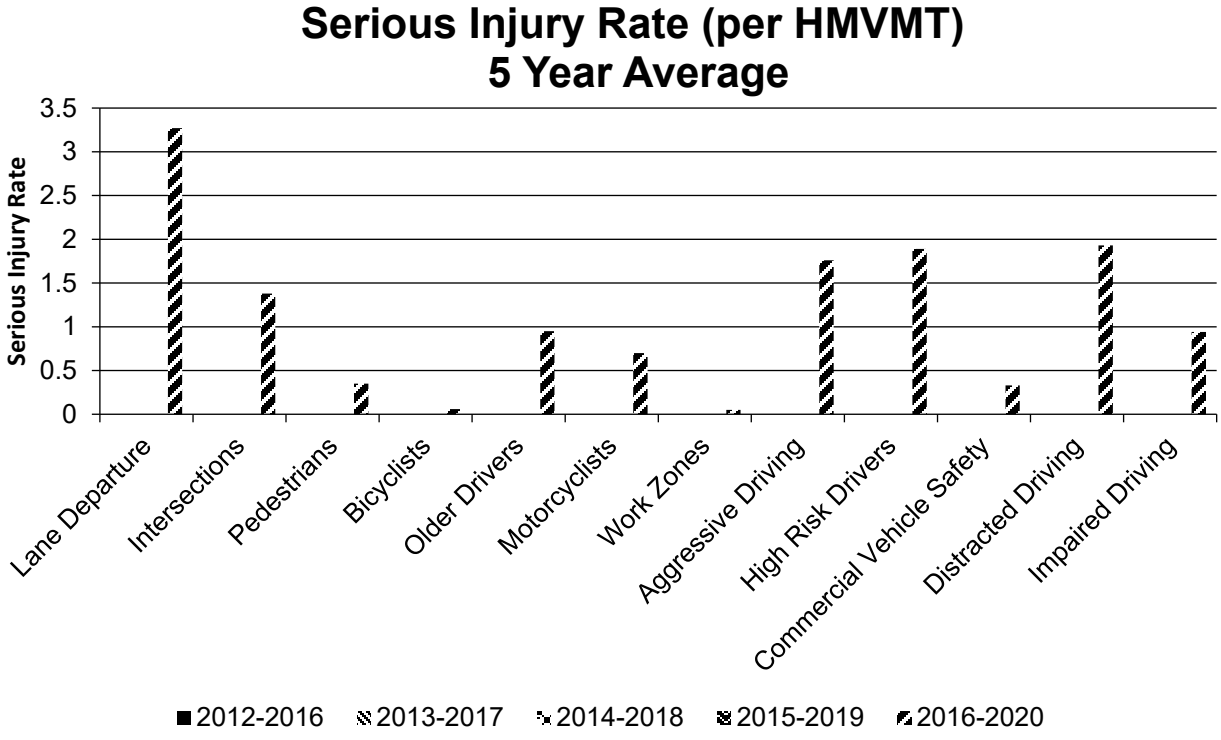
Year 2020

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)
Lane Departure	Lane Departure	482.4	1,597.6	0.99	3.27
Intersections	Intersections	123.8	674.2	0.25	1.38
Pedestrians	Vehicle/pedestrian	83.4	172.6	0.17	0.35
Bicyclists	Vehicle/bicycle	7	31.6	0.01	0.06
Older Drivers	Older Driver Involved	177.6	463.6	0.36	0.95
Motorcyclists	Motorcycle Involved	91.6	341.4	0.19	0.7
Work Zones	Work Zone Involved	7.8	23.4	0.02	0.05
Aggressive Driving	Aggressive Human Factors	232.2	859.8	0.48	1.76
High Risk Drivers	Young & Older Drivers	266	925.2	0.54	1.89
Commercial Vehicle Safety	Truck-related	85	161.2	0.17	0.33
Distracted Driving	Distraction Related	160.4	939.6	0.33	1.93
Impaired Driving	Alcohol or Drug Related	151.2	456	0.31	0.94


Number of Fatalities
5 Year Average
Fatalities
600
500
400
300
200
100
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Aggressive Driving
High Risk Drivers
Commercial Vehicle Safety
Distracted Driving
Impaired Driving
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Number of Serious Injuries
5 Year Average
Serious Injuries
1800
1600
1400
1200
1000
800
600
400
200
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Aggressive Driving
High Risk Drivers
Commercial Vehicle Safety
Distracted Driving
Impaired Driving
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
1.2
1
0.8
0.6
0.4
0.2
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Aggressive Driving
High Risk Drivers
Commercial Vehicle Safety
Distracted Driving
Impaired Driving
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
3.5
3
2.5
2
1.5
1
0.5
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Aggressive Driving
High Risk Drivers
Commercial Vehicle Safety
Distracted Driving
Impaired Driving
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020

Project Effectiveness

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

Compliance Assessment

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

03/26/2020

What are the years being covered by the current SHSP?

From: 2020 To: 2024

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

2024

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	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	100		
	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	100								
	Functional Class (19) [19]	100	100					100	100	100	100

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
	Median Type (54) [55]	100	100								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	100					100	2.25		
	Average Annual Daily Traffic (79) [81]	100	100					100	3.67		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
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]			100	100						
	Intersection/Junction Traffic Control (131) [131]			100	100						
	AADT for Each Intersecting Road (79) [81]			81	81						
	AADT Year (80) [82]			13	8						
	Unique Approach Identifier (139) [129]			100	100						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	100				
	Location Identifier for Roadway at					100	100				

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
	Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	100				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100	100				
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]					100	100				
	Ramp AADT (191) [181]					85	100				
	Year of Ramp AADT (192) [182]					85	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	100				
Totals (Average Percent Complete):		**100.00**	**100.00**	**86.75**	**86.13**	**97.27**	**100.00**	**100.00**	**78.44**	**100.00**	**100.00**

*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.

The State will continue to collect the MIRE fundamental data elements on all public roads and is on-target to meet the deadline.

Optional Attachments

Program Structure:

HSIP FAST Act Investment Plan with Memo to FHWA.pdf
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.