PENNSYLVANIA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2024 ANNUAL REPORT

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

23 U.S.C. 407 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The Pennsylvania Department of Transportation is pleased to present this 2024 Annual Report of our progress with the Highway Safety Improvement Program. In 2023, 1,209 people lost their lives on Pennsylvania's roadways. This was an increase of 30 fatalities from the 1,179 fatalities in 2022. Fatal crash types like Pedestrian, Motorcycles, Bicyclists, aggressive driving, lane departures, head-on/opposite direction sideswipe, work zone related, vehicle failure, 65+ year old drivers, and other crashes showed increases. While overall fatalities went up there were some areas where fatal crashes decreased from the previous year. Those crash types included winter conditions, signalized intersections, stop controlled intersections, running red-light, 16 year-old driver, and heavy truck related, impaired driver, and drowsy/asleep driver. To reach our ultimate goal of zero deaths on our roads, our journey includes ongoing work on both the behavioral side of crash causations as well as continuing to improve our highway infrastructure.

Since the last Annual Report, we have maintained our progress on several key initiatives. Pennsylvania updated its HSM based highway safety network screening to identify locations for safety improvement projects in all 67 counties. For the first time PennDOT was able to complete analysis for all conventional state owned highway segments. More intersections were added. For the second time PennDOT complete a network screening for all freeway segments, speed change lanes, ramp segments, and ramp terminal intersections. We also completed screening on most roundabouts in the state. A specialized screening of the Roosevelt Boulevard in Philadelphia was also completed. This new screening will be made available by September 2024.

Second PennDOT updated its Publication 638, The Highway Safety Program Guide. The updates included adding the new IIJA rules, inclusion of the 2022 SHSP goals and objectives, HSIP guideline updates, updates for NHTSA programs, updates to data sharing, standardized collision diagrams, and other necessary updates.

In addition to the 2022 SHSP goals, PennDOT is actively looking for ways to get below 1,000 yearly fatalities. This “push for under 1,000 fatalities” is identifying strategies and countermeasures with the greatest opportunity to reduce fatalities from traffic crashes and break long-term trends. One of the efforts involved development of a detailed analysis of all the district lane departure systemic lists. This included a full predictive analysis, analysis of roadway and operational conditions, analysis of existing countermeasures and what countermeasures could be added, and a full cost analysis to implement additional safety countermeasures, along with a part D predictive analysis to determine possible crash reduction benefits.

Next PennDOT updated our safety analysis tools. PennDOT’s Tool A & B HSM Analysis tools were updated with new crash costs and to fix some errors from the major tool updates in the previous year. PennDOT continues to use the FHWA’s Countermeasure Service Life Guide that was published in March 2021 to make sure benefit cost analysis is uniform across the state.

PennDOT once again did not show significant progress in four of the five target metrics established in the FAST Act and thus had to complete a HSIP Implementation Plan update for 2024. The updated data was submitted to the FHWA Division office for review. PennDOT hired a consultant team to help review the HSIP program’s 2020 competed safety projects. This update reviewed the similar statistics from the previous four Implementation Plan and updated the charts, graphs and tables with the new data. The finding of the updated Implementation plan did have some updates in the fifth edition. We did act on some of the action points from the previous versions of the HSIP implementation plans. One of those areas was creating a force account policy for municipalities to perform low cost safety improvements on their own roads with their own road crews back in 2021. This should enable systemic based safety improvements to thousands of locations across the Commonwealth. This policy is now located in PennDOT Publication 638 chapter 6.

PennDOT completed its Vulnerable Road Users Assessment Report that was mandated by the IIJA. PennDOT hired a consultant to help develop the VRU Assessment plan. PennDOT published the completed VRU Safety

Assessment on November 15, 2023, which was the deadline for the report. We have updated some data in the report since the VRU safety assessment report was originally published. The most impactful aspect of VRUs will be enhancing pedestrian safety at the multiple high risk VRU areas across the state. We also developed several options for systemic VRU safety improvements.

While a lot of work remains to reach our goal of reducing highway fatalities to zero by 2050, we remain encouraged by the progress that has been made in certain areas and the opportunities for the future.

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.

HSIP projects are identified by using data driven safety analysis which includes crash data, predictive analysis methods, considering roadway and operational risk factors, or by implementing known systemic safety improvements identified by the Highway Safety & Traffic Operations Division. Project locations and systemic project scopes are developed by the Engineering Districts and /or the regional planning partners. These project proposals are then sent to PennDOT's Highway Safety & Traffic Operations Division (HSTOD) for a technical review and then to the Center for Program Development and Management for funding and fiscal review. Then the FHWA Division office finance team reviews the financial documents for completeness. Projects are selected for implementation based on the projected safety benefit of the safety countermeasures, the allowable funding, or by federal obligation penalties like the VRU and HRRR rules. Projects are then developed and designed by the Engineering Districts. The Engineering Districts advertise and let the construction projects (letting is the day construction project bids are received for the project and the lowest bidder is shown), and provide construction inspection and oversight. As part of the annual HSIP report, HSTOD evaluates projects before and after the project was constructed to determine a perceived net benefit based the reduction of fatal, injury, and property damage only crashes. PennDOT also tracks the implementation of systemic improvements like rumble strips, High Friction Surface treatments, and High Tension Cable Median Barrier. PennDOT also reviews the effect of common location specific projects like adaptive traffic signal controllers. A network analysis of these systemic improvements is completed when there is enough data in a given time span. PennDOT has also implemented a minimum BCR of 1.0 for spot location safety projects and also requires spot locations to have excess crash frequency or excess crash cost frequency above 0.0. Districts and MPOs are supposed to select locations that have a safety need either by using excess crash values or excess crash cost values.

PennDOT also has a biennial set aside program. Every odd numbered year PennDOT allows the eleven engineering Districts and regional planning partners apply for HSIP funds to complete safety projects. The projects must use a systemic safety approach and/or include a HSM analysis and benefit cost analysis. Starting in FFY 2025 $50 million is set aside and every competitive set aside period covers $100 million HSIP funds. Pennsylvania's local municipalities may apply for a project through their MPO/RPO. This set aside program is now a policy in PennDOT Publication 638. With the VRU penalty in the Infrastructure Investment and Jobs Act PennDOT will now use $20 million from the $50 million set aside funds to fund VRU specific projects to meet the federal requirements.

PennDOT created a process in the fall of 2021 for force account HSIP projects on local roads using local municipalities' work forces to complete low cost safety improvements. The Local Force Account Guidelines in PennDOT's Publication 638 chapter 6. We are hopeful this will increase the options for completing safety improvement son local roads.

Where is HSIP staff located within the State DOT?

Other-Operations - Engineering and Planning

Refer to the General structure section for specific duties in the HSIP process.

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process
- Formula via MPOs
- Other-15% to VRU safety

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

Local highways (those not owned and maintained by the Commonwealth) make up two-thirds of the approximately 120,000 miles of highways in Pennsylvania. These roads are owned by the 2,561 municipalities across the state. In 2023 16.8% of highway fatalities occurred on the local road network. Local highway fatalities increased from 196 in 2022 to 203 in 2023. Local road fatalities have hovered above or below 200/year over the last twenty-four years with the highest total of 290 in the year 2001 and the lowest count of 163 in the year 2002.

To more accurately determine local roads safety needs, PennDOT was able to create local road cluster lists for each municipality. Each list has the street name and how many fatal and injury crashes occurred on that local road within that municipality. Specific locations on local roads could not be provided on the list since segmenting local roads has not been completed yet. PennDOT does have plans to collect more traffic data on local roads using HSIP funds. Soon local roads will be segmented to help pinpoint crash locations through ARNOLD. PennDOT has already collected more local road traffic volumes to help expand HSM based network screening efforts. Also, the PennDOT PCIT tool allows the public to see where crashes occurred on a local road through a map feature. These new local cluster lists were provided to the PA LTAP and the PennDOT Engineering districts to determine better locations for local safety improvements.
PennDOT along with LTAP and the Pennsylvania State Association of Township Supervisors (PSATS) conducted technical reviews on local roads which suggested low-cost safety projects. PennDOT provided direction for the studies which are conducted by LTAP consultant staff. The studies resulted in dozens of safety analysis reports that have an itemized list of safety countermeasures ready for a construction contract or force account work. LTAP also provides training to municipalities for a variety of subjects including highway safety.
PennDOT made changes to Publication 638 chapter 6 to implement force account safety work on local roads using HSIP funds. The update was completed in the fall of 2021. MPOs/RPOS and Engineering Districts may now apply for force account local road projects.
Local municipalities remain engaged in the enforcement, education, and emergency response side of highway safety through NHTSA grants. These behavioral safety efforts are detailed in the Pennsylvania HSP report submitted to NHTSA every year.

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

- Design
- Districts/Regions
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety

- Other-Engineering Districts, Planning Organizations, Program Center

Describe coordination with internal partners.

Design – Designers manage safety projects through the design contract process out to construction

Districts – Districts implement highway safety projects selected for design and construction

Governors Highway Safety Office- In Pennsylvania this falls under PennDOT and combines its behavioral efforts with Safety Engineering efforts (Doesn't use HSIP funds)

Maintenance – Maintenance helps to select projects and then has the task to maintain the projects.

Operations – Highway Safety is part of the Bureau of Operations.

Planning – Programs funding for safety projects and manages the commitment and obligation of safety funds.

Highway Safety & Traffic Operations – Lead Division that manages the HSIP program across the state (HSTOD). All highway safety activities and policies are managed by the Highway Safety Section within the HSTOD. Updates PennDOT Publication 638 to reflect the regulations and policies of the HSIP and SHSP.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Governors Highway Safety Office
- Law Enforcement Agency
- Local Government Agency
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

Describe coordination with external partners.

PennDOT works with Universities (Academia) to produce research into safety programs. PennDOT routinely uses university support to develop and update SPFS, CMFs, and evaluate countermeasure effectiveness.

FHWA is involved in the HSIP program in all aspects. They provide final approval on HSIP funded projects, national guidance for the HSIP funding program, and participate in monthly coordination for all safety related topics.

Gov. Highway Safety Office deals with driver behavior and research aspects of highway safety. This office supports the NHTSA grant funded programs. (No HSIP funds.)

Law enforcement & public education partners are involved in many Behavioral safety programs such as reducing Impaired driving, increasing seatbelt use, speed enforcement, aggressive driving enforcement, reducing districted driving, mature driver safety, motorcycle safety training, young & inexperienced driver training, enhancing safety on local roads, and several other topics.

Local Government Agencies like PSATS and PSABS help provide safety training to municipalities. This is done through the Pennsylvania LTAP which uses consultant staff. The LTAP program is administered through a contract with PSATS and oversight is provided by PennDOT's Bureau of Planning and Research.

Regional Planning Organizations help select and implement HSIP funded projects.

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

PennDOT has updated Publication 638 chapter 6 which is PennDOT's guidelines for the HSIP. The updates were made to reflect the 2022 SHSP and the IIJA. The latest version of Publication 638 is available on PennDOT's website through the Forms and Publications link.

Program Methodology

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

Yes

PennDOT Publication 638 chapter 6 covers the HSIP for Pennsylvania. You can view the publication from PennDOT's website. PennDOT added a local road force account process in October 2021. PennDOT updated Chapter 6 in August 2024 to include the new Infrastructure Investment and Jobs Act along with our new SHSP goals and emphasis areas. PennDOT has a HSIP Governance committee consisting of several executive level PennDOT staff. This committee is currently deliberating ideas on how to change the HSIP in Pennsylvania. There is not an established end date for the HSIP governance committee to determine the new HSIP policies. PUB 638.pdf (state.pa.us)

Select the programs that are administered under the HSIP.

- Bicycle Safety
- Horizontal Curve
- HRRR
- HSIP (no subprograms)
- Intersection
- Local Safety
- Low-Cost Spot Improvements
- Median Barrier
- Pedestrian Safety
- Roadway Departure
- Rural State Highways
- Safe Corridor
- Segments
- Skid Hazard
- Vulnerable Road Users
- Wrong Way Driving

Vulnerable road users and Bicycle safety falls under several areas of PennDOT which include the Behavioral Traffic Safety Unit, the multi-model Deputate, Bureau of Design and Delivery, and the Bureau of Driver Licensing. Some other program areas are also shared in other areas of PennDOT.

Program: Bicycle Safety

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Other-VRU 15% rule

What is the funding approach for this program?

Other-15% VRU HSIP rule

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume • Population	• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Horizontal Curve

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Excess expected crash frequency using SPFs

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

Yes

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

Yes

How are projects under this program advanced for implementation?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: HRRR

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Other-HRRR rules

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Volume • Population	• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: HSIP (no subprograms)

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Intersection

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume • Population	• Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Local Safety

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume • Population	• Functional classification

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Low-Cost Spot Improvements

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Other-HSIP and LCSIP 715 program

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume • Population	• Median width • Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Median Barrier

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Pedestrian Safety

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Other-15% VRU HSIP rule

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume • Population	• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Roadway Departure

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Volume • Population	• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Rural State Highways

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Safe Corridor

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Other-Act 299

What is the funding approach for this program?

Other-Act 229 process

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		• Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Crash rate

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

No

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

How are projects under this program advanced for implementation?

- Other-Act 229

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

Rank of Priority Consideration

Other-Act 229:1

Program: Segments

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		• Functional classification

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Skid Hazard

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		

What project identification methodology was used for this program?

- Crash frequency
- 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?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Vulnerable Road Users

Date of Program Methodology:8/19/2024

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Other-15% VRU HSIP rule

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		

What project identification methodology was used for this program?

- Crash frequency
- 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?

How are projects under this program advanced for implementation?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

Program: Wrong Way Driving

Date of Program Methodology:8/19/2024

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes		• Median width • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Excess expected crash frequency using SPFs

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

No

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

How are projects under this program advanced for implementation?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

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

What percentage of HSIP funds address systemic improvements?

40

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

- Add/Upgrade/Modify/Remove Traffic Signal
- Cable Median Barriers
- High friction surface treatment
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Pavement/Shoulder Widening
- Rumble Strips
- Upgrade Guard Rails
- Wrong way driving treatments

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
- Other-Speed Management Action Plan (SMAP)
- Other- Lane Departure analysis from District Safety Plans and Push for under 1,00 fatalities list, stop co
- Other-VRU Safety Assessment High Risk Area locations and systemic locations

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

Automated Vehicles

As a state that has always been at the forefront of innovation and industry, it should come as no surprise that Pennsylvania is at the very epicenter of the rise in Automated Vehicles (AVs). Pennsylvania's world-class research universities have continually served as a breeding ground for technological advances, with Carnegie Mellon University known as the "birthplace of self driving vehicles." Since 2011, Pennsylvania has emerged as a leading location for on-road testing of AVs as they steadily advance toward practical use. As of August 2024, there are five authorized AV certificate holders in Pennsylvania – Aurora, Carnegie Mellon University, Motional, Stack AV, Perrone Robotics – as well as several previously authorized testers – Mapless AI, Locomation, Nvidia, Plus AI, and Qualcomm. Based on the information the testers provided PennDOT, testing is expected to occur in 56 of our 67 counties, with 42% of counties expected to have two or more active operators.

In 2016, PennDOT formed both the Pennsylvania AV Policy Task Force and the Smart Belt Coalition, to ensure Pennsylvania aligns with industry and national best practices. The Task Force is made up of a diverse and comprehensive set of stakeholders, including representatives from federal, state, and local government, law enforcement, technology companies, higher education, manufacturers, motorists and trucking groups, and academic research institutions. The Smart Belt Coalition is a first-of-its-kind collaboration between PennDOT, PTC, Ohio DOT, the Ohio Turnpike, and Michigan DOT and universities in Pennsylvania, Ohio, and Michigan with a focus on automated and connected vehicle initiatives across jurisdictional boarders. Smart Belt is expanding to now include New Jersey as well.

Act 130, passed in November 2022, amends Title 75 of the Pennsylvania Consolidated Statutes, introducing definitions and regulations regarding automated vehicles. The law provides guidelines for titling automated vehicles, outlines accident protocols, and exempts certain automated vehicles from specific motor vehicle equipment regulations. It also prevents discrimination against automated vehicles and details the powers and responsibilities of the Highly Automated Vehicle Advisory Committee. The act includes the process for certification of compliance and highlights the operational requirements for automated vehicles. It also details the confidentiality of automated vehicle records, appeal processes, and guidelines for interstate agreements and platooning.

In preparation for Act 130 to go into effect, PennDOT has developed an AV Guidebook for Municipalities. The guidebook aims to aid Pennsylvania municipalities in understanding and preparing for the implications of Act 130. Written for municipal officials, staff, law enforcement, and emergency responders, the guide provides an introduction to HAVs, discusses federal, state, and municipal roles in HAV regulation, and offers summaries on various topics like infrastructure, safety, fiscal impacts, and more. Additionally, it provides resources for further learning and a template for municipalities to create their own action plans. The guidebook, due to the rapidly evolving nature of HAVs, will be regularly updated.

In 2021, PennDOT completed the development of the AV Incident Response Plan (AVIRP) Field Guide, an app designed to help emergency responders get information about how to respond to an AV that was involved in an incident. PennDOT is currently working to train first responders on the app. This effort was completed as part of the AVIRP effort that created a response plan for any AVs involved in incidents.

In 2022, PennDOT completed the CAV Hotspots Analysis. The study looked at five CAV use cases and developed a methodology for evaluating where the use cases may first become viable around the state. As part of the study, rubrics were developed using data sources available to the state, which can be filled out to see which areas are viable for the use cases.

In 2020, the Smart Belt Coalition conducted a demonstration of interstate platooning operations to test the administrative and procedural requirements necessary for a truck platooning system to operate continuously

through a multi-jurisdictional environment. The lessons learned from the demonstration will allow for Coalition members to align processes with best practices to the extent allowable by existing state regulations.

PennDOT has also been active in national efforts to develop uniform standards and practices for automated vehicles. PennDOT is currently working to update Pennsylvania's Highly Automated Vehicle Testing Guidance based on the new Act 130 and write new guidelines and regulations for AVs operating in PA. This nationally recognized guidance focuses on the human safety driver, training, and safety culture of a tester rather than the technical aspects of the vehicle. To date, PennDOT has updated the guidelines to reflect the requirements of Act 130 for AVs with safety drivers. PennDOT is currently developing guidelines and regulations for AVs using driverless and remote driver operations.

PennDOT, the Pennsylvania Turnpike Commission, and the Regional Industrial Development Corporation have partnered to develop PennSTART, a state-of-the-art training and testing facility to address the transportation safety and operational needs of Pennsylvania and the Mid-Atlantic Region. PennSTART will address safety training and research needs in six key areas: traffic incident management (TIM); connected and automated vehicles; tolling and intelligent transportation systems (ITS) technology; work zones; commercial vehicles; and transit vehicles. The PennSTART team completed the systems engineering, including Concept of Operations, Facility Requirements, Business Plan, and Market Analysis Study, in summer 2020 and is working towards opening Phase 1 of the facility in 2025.

In Fall 2019, PennDOT was awarded a $8.4 million Automated Driving System (ADS) Demonstration Grant to explore the safe integration of automated vehicles in work zones. Through the department's oversight, it has become clear that AVs do not perform well in the work zones and routinely require human intervention. In many cases, testers try to avoid work zones altogether. Unlike other AV challenges, such as variable weather conditions, work zones offer a unique opportunity for industry and the public sector to collaborate to resolve this issue and safely advance ADS technology. Through the ADS grant, PennDOT plans to develop a consistent approach to allow for AVs to safely operate in work zones. Knowing that there is unlikely single solution, the PennDOT is looking as variety of methods including (i) Connectivity between AVs and work zone objects using connectivity equipment, (ii) a variety of channelizer types, (iii) high definition work zone mapping using Radio Detection and Ranging (RADAR), Light Detection and Ranging (LIDAR) and cameras, and (iv) integration of simulation-based analysis of traffic impacts with data obtained from closed-track and live-traffic studies.

Since Winter 2020, Personal Delivery Devices have been allowed to operate on sidewalks and roadways in the Commonwealth. PennDOT developed a policy with outlines the operational guidelines for PDDs and the information which must be submitted to ensure safe operations on public infrastructure. As of August 2024, there is one PDD operator authorized in Pennsylvania – Kiwibot.

Connected and automated vehicle technologies will change the transportation decision-making process throughout Pennsylvania. To ensure Pennsylvania stays at the forefront, PennDOT is actively working to educate key stakeholders and the public about the impact and benefits of this emerging technology. PennDOT has arrange for connected and automated vehicle demonstrations to key transportation and Legislative officials. Over 200 riders had an opportunity to experience first-hand the capabilities of connected and automated vehicles, including former governor Tom Wolf, members of the Pennsylvania House and Senate Transportation Committees, several cabinet-level secretaries, and various local officials. The demonstration allowed participants to develop an understanding of how technological advances are being adapted and implemented in this rapidly advancing field here in Pennsylvania. PennDOT hosted the Pennsylvania Automated Vehicle Summit between 2017 and 2022. The Summits had 400+ attendees and discussions focusing on a variety of themes including safety, infrastructure planning, workforce & economic development, equity, system validation, and data. The two overarching goals were to encourage interchange and collaboration between stakeholders and provide a foundational understanding of automated vehicles.

Connected Vehicles

PennDOT supports deployment of Cellular Vehicle-to-Everything (C-V2X) Roadside Units (RSUs) at select signalized intersections to enable communications between the vehicles and the infrastructure. PennDOT previously installed 54 DSRC devices, including 8 in Harrisburg and 24 in Pittsburgh. PennDOT is starting an effort in Fall of 2024 to develop a V2X Roadmap, which will create a comprehensive vision for our V2X ecosystem, identify roadblocks for deploying RSUs, and create a path forward for our V2X efforts.

In addition to deploying RSUs, PennDOT is deploying a V2X Data Exchange as part of its ATMS upgrade. PennDOT is collaborating with FDOT to deploy the V2X Data Exchange that is being developed by SwRI. PennDOT anticipate on using the V2X Data Exchange to disseminate messages to vehicles through cellular networks over 4G/5G or over C-V2X. PennDOT was awarded a SMART Grant to deploy a Curve Speed Warning application over Networked V2X (4G/5G) and work with OEMs and third-party app providers to get the application into consumer products. The SMART Grant is anticipated to start in Fall of 2024.

PennDOT is currently working on a “CV Data Analysis” to see which OEMs offer telematics data for traffic operations and where certain use cases can be enabled by using data. The study will look at which data is available for various use cases, and which locations have a high enough penetration rate of vehicles for the data to be valid for traffic operations usage.

PennDOT is one of the founding members of the “Public-Private Transportation Data Exchange Center” Pooled Fund Study, which will develop a data repository that will collect vehicle telematics data as well as other types of data (including environment data, weather data, among other sources) and share the data with DOTs for data analyses without any identifying information attached to improve transportation decision-making.

Much of this information as well as our timeline for autonomous vehicle planning impact projections can also be found in Pennsylvania's current Strategic Highway Safety Plan (SHSP) on page 47. Autonomous Vehicle Technology is not one of our official safety focus areas but we feel it is important to have a section in our SHSP explaining how PA is considering and implementing autonomous and connected vehicles.

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

Yes

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

The Department is tackling the need to update our regional SPFs. PennDOT is using HSIP funds to update our Pennsylvania regionalized SPFs. We also have an effort underway to develop new SPFs for the City of Philadelphia based on the Northeastern Megalopolis consisting of the metropolitan areas of Boston, New York City, Philadelphia, Baltimore, and Washington DC. Other factors that need included into our SPFs include roundabouts, jug handle intersections, one-way streets, trail crossings, bump outs at intersections, RRFBs, updated collision type and severity tables, and others. This process will take several years to complete. The northeast megalopolis effort will start in September 2023. The other SPF development started in April 2024 after PennDOT is finished collecting horizontal and vertical curve data, cross slope data, and rumble strip inventories in February 2024.

PennDOT created its third highway safety network screening in 2024. The freeways and interchange screenings used 2018 to 2022 crashes and the conventional roadways used 2019 to 2023 crash data. For the first time all state segments were screened and PennDOT did include more intersections across the state. All freeway segments were screened as the y were in version two of the Pennsylvania network screening. The Department did screen Pennsylvania’s roundabouts for the first time and developed a specialized screening for the Roosevelt Blvd. in Philadelphia. The Department also developed a top 100 safety locations list based on the highest excess crash cost values from the screenings. A majority of the locations are in PennDOT’s Engineering District 6-0 region. To provide more insight to the locations screened PennDOT produced 1 page locations summary reports for the top two intersections and segments in each of the 67 counties. PennDOT is

also working with consultants to develop a sliding window analysis for roadway segments. The Department is also investigating options to use Power BI with the network screening data. PennDOT has a video on the Safety website to explain what the network screening is and how to use it. This video has been available for several years. The Department also provides links to the FHWA's website that has several tutorial videos about the Highway Safety Manual methods.

The Pennsylvania Department of Transportation continues to use Publication 638A, Pennsylvania Safety Predictive Analysis Methods Manual, (SPAMM) as the main source of guidance for predictive analysis using the state's regionalized SPFs and calibrated national freeways and ramps SPFs. The guide also covers the newest methods for part D alternatives analysis by incorporating the four methods that are multiplicative, additive, dominate effect, and dominate common residuals.

PennDOT is working with other states and the FHWA through the HSM Implementation PFS group to develop a guide on how to communicate with non-safety professionals using the HSM. The guide is in development and will likely be ready for use in in the year 2025.

PennDOT created two tutorial videos for highway safety analysis when considering road diets and options for offset T intersections. The videos are available on PennDOT's highway safety website. The videos are about 10 to 15 minutes long and covers a lot of questions commonly asked about predictive safety analysis for these situations. The Department has received numerous good comments about the tutorial videos. PennDOT intends to create more short length tutorial videos about HSM analysis for different scenarios.

PennDOT has a Pennsylvania specific in-person HSM class. The class is 1 ½ days long. The class was taught by national experts from Kittelson Associates in the past. The class teaches both the national and state SPF models and provides an entire afternoon of hands on use of PennDOT's HSM analysis tool. The last class was held in 2023. The goal is to hold more classes in 2025 or 2026.

PennDOT developed CMFs for two regularly used safety countermeasures. These countermeasures are high tension cable median barrier (HTCMB) and high friction surface treatments (HFST). Simple before after studies have been done for these countermeasures in the past, but not a detailed study using empirical bayes methods. The two studies were completed by Penn State University in June 2023. The HFST study showed massive crash reductions after HFST was installed. The HTCMB study showed that total crashes will increase, however the fatal and serious injury crashes related to cross median crashes basically went away at locations where the HTCMB was deployed. Both studies were sent to the CMF clearinghouse for review and inclusion into the CMF inventory.

PennDOT continues to maintain our state specific HSM analysis tools and provides them to all practitioners through our safety infrastructure website. The website also includes links to help training and information from the FHWA and AASHTO. The website is located at: at:
https://www.penndot.pa.gov/TravelInPA/Safety/Pages/Safety-Infrastructure-Improvement-Programs.aspx

We also require all spot specific locations to use a Benefit Cost analysis to justify a project's need for HSIP funds. We currently have a requirement of a 1:1 BCR.

Finally, PennDOT will continue to incorporate more HSM based decisions into our design manuals. Work is underway to include these safety performance-based criteria and engineering methods.

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

PennDOT updated its Publication 638, The Highway Safety Program Guide. The updates included including the new IIJA rules, inclusion of the 2022 SHSP goals and objectives, HSIP guideline updates, updates for NHTSA programs, updates to data sharing, standardized collision diagrams, and other necessary updates.

This was discussed earlier in the summary of this report.

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

The following noteworthy practices have been identified in Pennsylvania's recently updated HSIP Implementation Plan:

Highway Safety Manual (HSM) Implementation - A decade ago, PennDOT recognized that there were significant shortfalls in only using site-specific historical crash data as the basis for evaluating highway safety issues. At the same time, AASHTO published the Highway Safety Manual (HSM) and provided new tools, techniques, and methodologies for predicting safety performance and determining appropriate responses that would reduce the frequency and severity of crashes. Pennsylvania was one of the early leaders in implementing the HSM and integrating it into PennDOT's project development processes. Some specific examples include:

- PennDOT now requires HSM analysis of alternatives and in requests for design exceptions if the design exceptions involve safety features adequately addressed in the HSM. HSM based analysis must be used to justify any HSIP project application.

- To support these changes, PennDOT has provided multiple rounds of HSM training to their Headquarters (Central office), Engineering District offices, regional planning partners, and consultant forces. The training offers hands-on exercises that provide realistic examples of how to apply the HSM in Pennsylvania. PennDOT completed its first HSM tutorial video about highway safety network screening and plans to create more short length HSM analysis How-To videos.

- PennDOT has made extensive efforts to fully "localize" the HSM tools. Models for rural two-lane roads, rural multilane highways, urban and suburban arterials, and collectors were developed specifically for Pennsylvania. Recognizing the wide variety of conditions in the state, SPFs in some Pennsylvania-specific models have been taken down to the County level. *HSM* models for freeways and ramps were calibrated for Pennsylvania conditions. PennDOT will update these SPFs as explained earlier in this report.

Data Analysis – Using a combination of HSM tools and Pennsylvania's own extensive crash data system, PennDOT has done network screening of potential safety issues in all 67 counties and has made those results available to the districts. In addition, Pennsylvania established a very basic tracking system for any project receiving HSIP funds, including systemic projects, which includes before-and-after crash data for those locations. This allows PennDOT to continually evaluate the effectiveness of particular safety countermeasures and determine where they have the greatest impact. There are several flaws in the existing project tracking method and options to improve HSIP project tracking are moving forward this year.

Innovative Safety Countermeasures – PennDOT has been one of the early adopters of proven safety countermeasures, including a broad application of high friction paving surfaces that have been deployed where risk factors indicate high value. These include implementing Safety-Edge as a default standard in paving projects, establishing a statewide roundabout coordinator to facilitate broader use of roundabouts, and

coordinating the use of Central Office open-end contracts to help the districts implement these innovative intersection and interchange projects. PennDOT has also implemented systemic improvements to rapidly deploy proven countermeasures, like centerline and edge-of-road rumble strips, high friction surface treatments, advance curve warnings, and high-tension cable median barrier.

Institutionalizing Safety Processes - PennDOT updated its Publication 638,*The Highway Safety Guide*, to incorporate changes in the HSIP program, include new safety concepts from the 2022 SHSP, and requirements from the new federal Infrastructure Investment and Jobs Act, and updates to Pennsylvania's crash data reporting tools. PennDOT continues to integrate the concepts of the HSM into the state's policies and practices and have *Publication 638A Pennsylvania Safety Predictive Analysis Methods Manual* for people to use when completing safety analysis.

Intersection Safety –Addressing intersection crashes is a safety focus area in Pennsylvania's SHSP, accounting for 21% of the annual fatalities and 30% of serious injuries. To improve safety and mobility at these crossings, PennDOT has developed an Intersection Control Evaluation (ICE) policy that enables users to consistently consider multiple proven geometry and traffic control strategies for either new intersections or modifications to existing intersections. We are currently in the process of updating our SPICE/ICE tool to a web-based tool and will incorporate Pennsylvania's regionalize SPFs into the analysis tool. The tool updates should be completed in 2024.

Supporting Local Road Safety - Although HSIP funds are not widely used on local roads in Pennsylvania, PennDOT has developed multiple tools and resources for local governments to improve roadway safety. PennDOT's PCIT tool allows the public and municipalities to see where fatal and injury crashes occurred on their local roads through a map feature. PennDOT has also worked with the state's Local Technical Assistance Program (LTAP) staff to conduct technical safety reviews on local roads, which resulted in an itemized list of safety countermeasures ready for a construction contract or force account work.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

State Fiscal years start July 1st and end June 30th.

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$96,583,723	$110,343,839	114.25%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$9,380	$9,380	100%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$19,678,352	$32,010,897	162.67%
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	$10,000,000	$9,514,658	95.15%
Totals	$126,271,455	$151,878,774	120.28%

HSIP/HRRR/VRU Programmed/Obligated amounts are reported by state fiscal year ending June 30th to match our Project Listing (question #29).

The NTSHA penalty funds and the RHCP funds are reported in different reports. Those programmed and obligated fund numbers can be found in those respective reports.

We are unable to provide an answer for "other federal funds" for safety projects due to limitations of query tools.

Pennsylvania sets aside $10 million dollars of State transportation maintenance funds every year for low-cost safety improvements on state highways.

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

$12,332,336

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

$12,332,336

Funding for Local Safety Projects includes:

New traffic signals, pedestrian accommodations and equipment, new signing and pavement markings on Liberty Avenue from Grant Street to Herron Avenue in the City of Pittsburgh (MPMS 106773).

Also to meet the new VRU Special Rule, PennDOT identified countdown pedestrian indications as proven safety countermeasures that improve pedestrian accessibility and safety. Countdown pedestrian indications were selected to expedite project delivery and minimize potential delays due to utility conflicts, right-of-way acquisition, environmental permits, and legal agreements. This ensures the timely obligation of federal HSIP funds. Each District has at least one installment at an signalized intersection including a local road. Most traffic signals across the state are owned by the local municipalities. These projects include: MPMS 119551, 119198, 119579, 119300, 119414, 118873, 119282, 119413, 119419, 119190, 119482, 119301, and 119233.

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

$4,273,986

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

$4,273,986

Funding for Non-Infrastructure Safety Projects includes:

Roosevelt Blvd IHSDM Study in Philadelphia (MPMS 114942)

Network Screening Intersections Study in Fayette County (MPMS 118001)

Upgrades to the ICE/SPICE Tool (MPMS 118666)

PennDOT Highway Safety Network Screening Update (MPMS 117915)

Updating the Pennsylvania Regionalized SPFs (MPMS 117954)

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

We did not transfer any funds into or out of HSIP during the 2023-24 SFY.

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

The latest impediment to obligations is the new IIJA VRU penalties. These penalties went into effect in November 2021 when the federal law was passed. The law forced states to obligate 15% of their HSIP allocation toward VRU projects in FFY 2023 if VRUs made up 15% or more of total highway fatalities. Pennsylvania was only officially notified of this rule in April 2022 which only allowed a few months to develop almost $20 million in VRU projects the first year. This forced the Commonwealth to find the quickest project option to meet this penalty. PennDOT chose to upgrade traffic signals across the state to include pedestrian countdown timers. Other options like trails would require extensive legal agreements, street scape projects take years to develop, other options would require ROW. Even the PCTs require a lot of traffic signal permits with each municipality that the traffic signals are located in. In the future the FHWA needs staff that understands how much effort it takes to develop a safety project. The FHWA was also very slow to provide guidance about what is eligible for VRU HSIP funds. This also caused the Department to divert funds from other projects that may have helped reduce other key safety emphasis areas like lane departure fatalities that make up over 50% of all highway fatalities in Pennsylvania. Developing VRU projects takes time and it has been difficult to get VRU projects obligated as there were not a lot of VRU related projects queued.

Second, there are a few Engineering Districts that have encountered project delivery challenges in the development of HSIP funded safety projects. This results in several projects missing let dates and HSIP funds not being used for those projects in the planned years. To overcome these project delivery issues, the Highway Safety Section is working with PennDOT's Bureau of Design & Delivery to track the milestones of HSIP projects to ensure design project managers stay on schedule to deliver good safety improvement projects on time. A District's past project delivery track record has become part of a weighted criteria for HSIP set aside project selection. PennDOT may also pursue a different HSIP funding allocation based less on regional boundaries and more based on competitive safety needs. There have been issues with projects underestimating the impacts of utilities and ROW. These too have contributed to delaying projects. Another option is to build up an inventory of locations for systemic safety projects. This would queue years of potential projects for systemic safety.

PennDOT has recognized the challenges of expanding the HSIP program to include safety projects on local roads. PennDOT has tried multiple approaches to implement such a program; however, sometimes institutional and jurisdictional challenges have kept those from moving forward. These challenges frequently arise in the programmatic aspects of the program, including the processes that are used to identify problem areas, develop applications for viable projects to address those problems, and administer the contracts to complete that work. Local projects using HSIP funds are difficult to deliver in Pennsylvania due to limited project delivery abilities in each municipality and legal agreements that need to be created to allow contracted construction work on local roads, designate maintenance responsibility, indemnification, and cover right to know laws. Many municipal governments also lack the ability to develop a project or construct safety projects. PennDOT created the option of using HSIP funds for force account projects to have safety improvements completed on locally owned roads by municipal road crews. This option will allow municipalities that have road crews capable of installing signs and pavement markings to receive some HSIP funds to buy signs and pavement markings and install them at intersections or curves to mitigate crashes. PennDOT’s Publication 638 was updated in October 2021 to include new HSIP force account guidelines for local roads. However, this option has been delayed due to the ongoing development of a standard legal agreement. The FHWA PA Division Office has held up the legal agreement several times and not provided clear answers to PennDOT. Hence, the force account option is now delayed from being used to implement low cost safety countermeasures on local roads.

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

PennDOT is rating location specific projects based on the perceived benefit to cost ratio using a net present value calculation and benefit to cost ratio. This has led to more partially funded HSIP projects than was done several years ago. Any project applications submitted for a spot location must now have a BCA completed that show a 1:1 or better B/C ratio. This has allowed the use of HSIP funds on other projects where partial funding can be used to implement safety improvements.

A PennDOT HSIP governance committee consisting of executive staff and day-to-day safety staff was formed over the past few years and aims to improve the HSIP in Pennsylvania. The group updated the HSIP funding and project selection policy which has been included in the latest Publication 638 (Chapter 6) update in July 2024. This Pub 638 update has also incorporated local road projects through force accounts with individual municipalities. The municipalities can work with the MPO or Engineering District to apply for HSIP funds to implement low-cost safety countermeasures that the municipal road crews can install themselves. This will help cut back on the legal agreements between the Commonwealth and the municipalities and will hopefully result in more locally owned roads implementing proven safety countermeasures.

PennDOT has used HSIP funding to collect roadway geometry (grade, cross slope, horizontal and vertical curvature) and rumble strip (centerline, shoulder, edge line and transverse) data through our Video Log contract. HSIP funding was also set aside to potentially collect sight distance data using point cloud data from Lidar technology. This will most likely begin as a test project to determine if sight distance can be collected and provided from point cloud data that would meet our needs.

PennDOT has completed our third edition of network screening for all 67 counties in August 2024. This edition includes conventional roads and freeways/interchanges and for the first time also includes the additions of a roundabout screening and specific screening for the Roosevelt Boulevard (a twelve-lane divided highway in Philadelphia). We were also able to integrate the horizontal curve and rumble strip data from the Video Log contract mentioned above. When using the network screening.. yearly excess crash costs and yearly excess crash frequencies above zero are locations that show the highest need for safety improvements. Any location screened with a value less than zero or hovering right around zero is a location that shows it should not be prioritized for spot location safety improvements. The costs help identify the magnitude of the safety issue by providing higher value to fatal and injury crashes than the value assigned to PDO crashes. This edition also includes a statewide top 100 list based on the highest excess crash costs which incorporates both segments and intersections. This detailed network screening is used to help select the best locations for HSIP funded safety projects.

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 OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
PA 28/US 322 Brookville Intersection	Intersection geometry	Intersection geometry - other	0.53	Miles	$8871390	$8871390	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	7,319	35	State Highway Agency	Spot	Intersections	26064
Henry Ave Congested Corr1 (C)	Pedestrians and bicyclists	On road bicycle lane	6.69	Miles	$9713000	$9713000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,296	35	State Highway Agency	Systemic	Pedestrians	80104
Blackman St SB Ramp	Interchange design	Extend existing lane on ramp	0.48	Miles	$2752109	$2752109	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	28,064	55	State Highway Agency	Spot	Intersections	85008
Howard Intersection	Advanced technology and ITS	Advanced technology and ITS - other	0.56	Miles	$959380	$950000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	2,413	45	State Highway Agency	Spot	Transportation Systems Management and Operations	93262
PA 287 to West Fourth Street	Access management	Access management - other	12.14	Miles	$56127000	$56127000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	11,243	55	State Highway Agency	Corridor Wide Access Study	Lane Departure & Intersections	93732
SR 739 Should / Widening	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1.86	Miles	$7956500	$7956500	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,174	35	State Highway Agency	Systemic	Lane Departure	94686
SR 11 Shoulder / ELRS	Roadway	Rumble strips – edge or shoulder	2.59	Miles	$5024885	$5024885	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,907	55	State Highway Agency	Systemic	Lane Departure	94740
US 30 Improvements	Roadway	Pavement surface - other	9.45	Miles	$11199155	$11199155	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,755	40	State Highway Agency	Spot	Intersections	97250
Hamot Rd/Oliver Rd Intersection	Intersection traffic control	Modify control – Modern Roundabout	0.11	Miles	$6710842	$6710842	HSIP (23 U.S.C. 148)	Urban	Major Collector	5,369	40	State Highway Agency	Spot	Intersections	102069
SR 115 Corridor Impr - Effort	Intersection geometry	Modify lane assignment	0.31	Miles	$8183779	$8183779	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	9,402	40	State Highway Agency	Spot	Intersections	102167
Tivoli to Glen Mawr Curves	Roadway	Rumble strips – edge or shoulder	0.72	Miles	$2118500	$2118500	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,842	55	State Highway Agency	Systemic	Lane Departure	102641
209 -Schafer School House	Intersection traffic control	Modify traffic signal –other	4.8	Miles	$11352462	$11352462	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	11,410	55	State Highway Agency	Spot	Intersections	104432
Route 662 and Oley Turnpike Intersection	Intersection traffic control	Modify control – Modern Roundabout	0.61	Miles	$5775965	$5775965	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,098	55	State Highway Agency	Spot	Intersections	105963

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PA997 & SR2015 Intersection	Intersection geometry	Intersection geometry - other	1.68	Miles	$10515654	$10515654	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,617	40	State Highway Agency	Spot	Intersections	106709
Liberty Ave	Roadway	Roadway widening - travel lanes	1.7	Miles	$11905556	$11905556	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	32,559	50	City or Municipal Highway Agency	Systemic	Lane Departure & Intersections	106773
SR 1009 - SR 1021 to PA 36	Roadway	Pavement surface – high friction surface	1.8	Miles	$6544506	$6544506	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	7,149	40	State Highway Agency	Systemic	Lane Departure & Intersections	108201
Central Bayfront Parkway Multimodal	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0.65	Miles	$160628619	$157628619	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,948	45	State Highway Agency	Spot	Pedestrians and Bicyclists	108952
SR 2005 Two-Way Left Turn Lane	Roadway	Roadway widening - add lane(s) along segment	0.55	Miles	$6918000	$6918000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	9,963	45	State Highway Agency	Spot	Lane Departure & Intersections	108985
Zuck Rd: Zimmerly to 26th St	Intersection traffic control	Modify traffic signal – modernization/replacement	1.96	Miles	$10707264	$10707264	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,292	45	State Highway Agency	Systemic	Lane Departure & Intersections	109147
Route 145 Safety Improvements	Intersection geometry	Add/modify auxiliary lanes	1.34	Miles	$11313390	$11313390	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	18,512	40	State Highway Agency	Spot	Intersections	109971
SR 29 - Shimersville Hill Safety Imprv	Roadway	Rumble strips – edge or shoulder	1.78	Miles	$11850975	$11850975	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	7,974	35	State Highway Agency	Systemic	Lane Departure	110183
Bayfront Parkway at 6th Street Intersection Impr.	Pedestrians and bicyclists	Medians and pedestrian refuge areas	1.8	Miles	$8660000	$6468000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	6,490	45	State Highway Agency	Systemic	Pedestrians	110836
Easton Rd. Roundabout (C)	Intersection traffic control	Modify control – Modern Roundabout	0.34	Miles	$6204585	$6204585	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	4,968	45	State Highway Agency	Spot	Intersections	111024
Jefferson County Resurfacing Project	Roadside	Barrier- metal	4.83	Miles	$4192424	$4192424	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,038	55	State Highway Agency	Systemic	Lane Departure	114087
E Prospect Rd Improvement	Intersection traffic control	Modify traffic signal – modernization/replacement	2.26	Miles	$5626000	$5626000	HSIP (23 U.S.C. 148)	Urban	Major Collector	5,324	40	State Highway Agency	Spot	Intersections	114208
Hill Church Rd Safety Imp	Intersection traffic control	Intersection traffic control - other	0.28	Miles	$5423099	$5423099	HSIP (23 U.S.C. 148)	Rural	Minor Collector	1,614	40	State Highway Agency	Spot	Intersections	114554
Systemic Low-Cost Improvements for Stop Controlled	Intersection traffic control	Pavement markings	0.55	Miles	$357400	$357400	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,232	55	State Highway Agency	Systemic	Intersections	114559
Systemic Roadway Departure Low Cost Safety Improve	Roadway delineation	Roadway delineation - other	15.21	Miles	$809811	$809811	HSIP (23 U.S.C. 148)	Rural	Minor Collector	4,245	45	State Highway Agency	Systemic	Lane Departure	114562

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Roosevelt Blvd IHSDM Study	Miscellaneous	Data collection	4.86	Miles	$2896017	$2896017	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	17,755	45	State Highway Agency	Data collection	Data	114942
Bethlehem Pike Safety Improvements	Intersection traffic control	Modify traffic signal timing – left-turn phasing	3.69	Miles	$3755000	$3755000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	7,655	40	State Highway Agency	Systemic	Intersections and Pedestrians	114944
West Chester Pike Safety Improvements	Roadway signs and traffic control	Roadway signs and traffic control - other	3.15	Miles	$5667247	$3850000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,932	35	State Highway Agency	Systemic	Lane Departure & Intersections/Pedestrians	115422
SR 23 Corridor Safety Improvments Chester Co.	Roadway signs and traffic control	Roadway signs and traffic control - other	3	Miles	$2657393	$1075782	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	16,600	45	State Highway Agency	Systemic	Lane Departure & Intersections/Pedestrians	115423
High Street Pedestrian Safety Improvements	Pedestrians and bicyclists	Modify existing crosswalk	0.63	Miles	$4296000	$4296000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	9,401	25	State Highway Agency	Systemic	Pedestrians	115425
Broad Street Safety Improvements	Roadway signs and traffic control	Roadway signs and traffic control - other	1.26	Miles	$3070000	$3070000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,545	30	State Highway Agency	Systemic	Lane Departure & Intersections/Pedestrians	115430
Verree Rd Corridor Safety Improvements(Parent)	Intersection traffic control	Intersection traffic control - other	0.34	Miles	$4460000	$4460000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	13,079	35	State Highway Agency	Systemic	Intersections and Pedestrians	115431
Welsh Rd Corridor Safety Improvements	Intersection traffic control	Intersection traffic control - other	2.23	Miles	$1860000	$1860000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	7,896	30	State Highway Agency	Systemic	Intersections and Pedestrians	115433
Wyoming Ave Corridor Safety Improvements	Intersection traffic control	Intersection flashers –sign-mounted or overhead	0	Miles	$4600000	$4600000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0	0	State Highway Agency	Systemic	Intersections	115444
SR 6 and Maple Street Safety Improvement	Intersection geometry	Intersection geometry - other	0.16	Miles	$2600000	$2600000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	763	25	State Highway Agency	Spot	Intersections	115572
Bannister St and Adams St Safety Imp	Intersection traffic control	Intersection flashers –sign-mounted or overhead	0.41	Miles	$2385000	$2385000	HSIP (23 U.S.C. 148)	Urban	Major Collector	6,265	35	State Highway Agency	Spot	Intersections	115621
SR 3028 Shoulder Widening/ELRS	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1.96	Miles	$5060033	$5060033	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	2,657	40	State Highway Agency	Systemic	Lane Departure	115946
SR 0590/3028 Intersection Safety Improvement	Intersection traffic control	Intersection traffic control - other	0.17	Miles	$4480688	$4480688	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,390	45	State Highway Agency	Spot	Intersections	116098
PA 343 Seventh Street Improvements	Intersection traffic control	Modify control – Modern Roundabout	2.27	Miles	$513500	$513500	HSIP (23 U.S.C. 148)	Rural	Major Collector	7,730	55	State Highway Agency	Spot	Intersections	116163
US 422 Cumberland St and Prescott Rd Int	Intersection traffic control	Modify control – Modern Roundabout	0.08	Miles	$1684001	$1684001	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,336	45	State Highway Agency	Spot	Intersections	116164

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Cambria Co Rumbles and HFST	Roadway	Rumble strips – edge or shoulder	20.17	Miles	$848050	$848050	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,163	55	State Highway Agency	Systemic	Lane Departure	116630
S Alleghenies HFST and Signal Enhancements	Roadway	Pavement surface – high friction surface	2.32	Miles	$120433	$120433	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,312	40	State Highway Agency	Spot	Lane Departure	116671
S Alleghenies Rumbles and HFST	Roadway	Pavement surface – high friction surface	1.08	Miles	$130735	$130735	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,124	55	State Highway Agency	Systemic	Lane Departure	116673
SR 322/SR 1830 Intersection ITS	Intersection traffic control	Pavement markings	0.32	Miles	$6344243	$6344243	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,824	55	State Highway Agency	Spot	Intersections	117197
US 322 Bus Mong Intersection ITS	Advanced technology and ITS	Advanced technology and ITS - other	0.38	Miles	$1226801	$1226801	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,139	55	State Highway Agency	Systemic	Intersections	117211
Freemansburg Ave (SR 2018) Safety Improvements	Intersection traffic control	Modify control – Modern Roundabout	0.24	Miles	$12042403	$12042403	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	17,111	45	State Highway Agency	Spot	Intersections	117509
Lancaster County Systemic Safety Improvements	Roadway	Pavement surface – high friction surface	1.71	Miles	$1321039	$1321039	HSIP (23 U.S.C. 148)	Urban	Major Collector	7,536	35	State Highway Agency	Systemic	Lane Departure	117529
State Hill Road - SR 222 SB to Norfolk Southern RR	Intersection traffic control	Modify control – Modern Roundabout	1.03	Miles	$1995888	$1995888	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	10,051	40	State Highway Agency	Spot	Intersections	117603
US 62 and Neshannock Intersection	Intersection traffic control	Intersection traffic control - other	2.23	Miles	$4000000	$4000000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	985	45	State Highway Agency	Spot	Intersections	117671
I-84 Cable Median Barrier	Roadside	Barrier – cable	10.49	Miles	$7000000	$4000000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	9,133	65	State Highway Agency	Systemic	Lane Departure	117733
Systemic Improvements-Lane Departure	Intersection traffic control	Systemic improvements – signal-controlled	0	Miles	$1620000	$1620000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	15,639	35	State Highway Agency	Spot	Intersections	117793
Systemic Improvements-Vulnerable Users	Speed management	Traffic calming feature	0	Miles	$129433	$129433	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Multiple/Varies	15,450	35	State Highway Agency	Spot	Lane Departure	117796
SEDA-COG HFST	Roadway	Pavement surface – high friction surface	4.29	Miles	$130743	$130743	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	1,065	25	State Highway Agency	Systemic	Lane Departure	117840
SR 8/SR 4010 Intersection ITS	Advanced technology and ITS	Advanced technology and ITS - other	0.4	Miles	$181778	$181778	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,882	55	State Highway Agency	Spot	Intersections	117903
SR 4010/Harmony Intersection ITS	Advanced technology and ITS	Advanced technology and ITS - other	1.18	Miles	$130189	$130189	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,884	45	State Highway Agency	Spot	Intersections	117905

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SR 85/SR 2001 Intersection ITS	Advanced technology and ITS	Advanced technology and ITS - other	0.6	Miles	$5758000	$5758000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,345	55	State Highway Agency	Spot	Intersections	117907
SR 422/SR 403 Intersection ITS	Advanced technology and ITS	Advanced technology and ITS - other	0.93	Miles	$300000	$300000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,975	45	State Highway Agency	Systemic	Intersections	117909
Wrong Way Detection System	Advanced technology and ITS	Wrong-way Driving Detection System	25.51	Miles	$800000	$800000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	24,013	55	State Highway Agency	Systemic	Lane Departure	117911
D12 Intersection Warning Signs	Miscellaneous	Data collection	0	Miles	$125000	$125000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,418	45	State Highway Agency	Data collection	Data	118001
US 40/PA 281 Turn Lane Upgrades	Intersection geometry	Add/modify auxiliary lanes	0.27	Miles	$5934878	$5934878	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,906	55	State Highway Agency	Spot	Intersections	118002
I-99 NB Solar Powered Chevrons	Roadway signs and traffic control	Curve-related warning signs and flashers	0.35	Miles	$300000	$300000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	10,261	65	State Highway Agency	Systemic	Lane Departure	118207
HIGH TENSION CABLE MEDIAN BARRIER	Roadside	Barrier – cable	31.54	Miles	$670676	$373663	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	31,302	55	State Highway Agency	Systemic	Lane Departure	118308
ICE/SPICE Tool Upgrade	Advanced technology and ITS	Advanced technology and ITS - other	0	Miles	$1813000	$1175000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	2,327	35	State Highway Agency	Advanced technology and ITS	Intersections	118666
Vulnerable Rd Users: Tier1 & Tier2 Signal Upgrades	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$115000	$65000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Multiple/Varies	3,258	40	State Highway Agency	Systemic	Pedestrians	118873
District PCS Project for VRUs	Pedestrians and bicyclists	Pedestrian signal	4.85	Miles	$10269045	$5915333	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Major Collector	2,971	25	State Highway Agency	Systemic	Pedestrians	119190
District 10 HSIP/VRU Pedestrian Countdown Signals	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$664077	$356947	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Multiple/Varies	459	35	State Highway Agency	Systemic	Pedestrians	119198
D-8 Ped Countdown Signals Safe Project for VRU	Pedestrians and bicyclists	Pedestrian signal	3.83	Miles	$517100	$355100	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Major Collector	5,725	35	State Highway Agency	Systemic	Pedestrians	119233
LLTS VRU Ped Countdown Timers	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$9797909	$7216503	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	12,816	35	State Highway Agency	Systemic	Pedestrians	119282

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SEDA-COG Pedestrian Countdown Signals	Pedestrians and bicyclists	Pedestrian signal	0.66	Miles	$1264977	$748591	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	12,726	35	State Highway Agency	Systemic	Pedestrians	119300
6-0 Systemwide Ped Countdown Signals(PCS)	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$477327	$245823	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Multiple/Varies	16,291	45	State Highway Agency	Systemic	Pedestrians	119301
LVTS Vulnerable Road User Project - Tier 1	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$1436597	$838971	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	6,101	35	State Highway Agency	Systemic	Pedestrians	119413
NEPA Vulnerable Road User Project - Tier 1	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$5062766	$2659207	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	10,586	35	State Highway Agency	Systemic	Pedestrians	119414
RATS Vulnerable Road User Project - Tier 1	Pedestrians and bicyclists	Pedestrian signal	1.25	Miles	$62000	$34000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	12,458	55	State Highway Agency	Systemic	Pedestrians	119419
District 1 HSIP/VRU Ped Countdown Timers	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$246000	$170000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Multiple/Varies	11,128	50	State Highway Agency	Systemic	Pedestrians	119482
NTIER Pedestrian Countdown Signals	Pedestrians and bicyclists	Pedestrian signal	0	Miles	$950000	$950000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Minor Arterial	4,510	25	State Highway Agency	Systemic	Pedestrians	119551
WATS Pedestrian Countdown Signals	Pedestrians and bicyclists	Pedestrian signal	1.76	Miles	$3798179	$3798179	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	6,951	55	State Highway Agency	Systemic	Pedestrians	119579
2040/Ceco Dr to Brownsville Rd	Roadside	Barrier – cable	4.85	Miles	$8278291	$34668187	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,382	40	State Highway Agency	Systemic	Lane Departure & Intersections	28025
SR 12 Elizabeth Avenue	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1.15	Miles	$891650	$16698900	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	18,425	40	State Highway Agency	Spot	Lane Departure	79467
AlleghnyAv:Ridge-Aramingo (F)	Pedestrians and bicyclists	Pedestrians and bicyclists – other	7.33	Miles	$32269	$9400000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	3,500	25	State Highway Agency	Spot	Pedestrians	85417
US 6: Spring St - Baldwin St Ext	Pedestrians and bicyclists	Pedestrians and bicyclists – other	5.01	Miles	$910080	$20251287	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	1,740	55	State Highway Agency	Spot	Pedestrians and Bicyclists	85776

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US 15 Safety Improvements - York	Intersection geometry	Intersection geometry - other	10.39	Miles	$54206	$7282807	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	14,231	55	State Highway Agency	Systemic	Intersections	92920
SR 11 Shoulders / ELRS	Roadway	Rumble strips – edge or shoulder	3.1	Miles	$41147	$5405738	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,661	55	State Highway Agency	Spot	Lane Departure	94737
Penfield North Resurface	Roadway	Pavement surface – high friction surface	5.12	Miles	$283000	$7030000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,729	40	State Highway Agency	Spot	Lane Departure	96271
309 & Tilghman I/C Recon	Interchange design	Interchange improvements	4.24	Miles	$3186700	$125139950	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	22,240	55	State Highway Agency	Spot	Lane Departure & Intersections	96432
St.Clair to Frackville Reconstruction	Roadway	Pavement surface - other	8.93	Miles	$1009451	$156501800	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,356	45	State Highway Agency	Systemic	Lane Departure & Intersections	96470
Colebrook Road Improvemt	Roadway delineation	Improve retroreflectivity	3.55	Miles	$137882	$5696124	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,984	45	State Highway Agency	Spot	Lane Departure & Intersections	96783
SR 3006: SR 90 to SR 18	Roadway	Pavement surface - other	5.68	Miles	$267000	$4142713	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	1,009	55	State Highway Agency	Spot	Lane Departure	99753
New Falls Rd Ped SFTY Improvmnts (C)	Pedestrians and bicyclists	Install sidewalk	1.77	Miles	$1000	$1778625	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,746	35	State Highway Agency	Spot	Intersections and Pedestrians	104365
State Hill Rd from Colony Dr. to SR 222 SB Ramps	Access management	Access management - other	1.29	Miles	$257620	$16305280	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,878	40	State Highway Agency	Systemic	Lane Departure & Intersections	105954
NTIER Cable Guide Rail Upgrade	Roadside	Barrier – cable	0.3	Miles	$97000	$540000	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	134	35	State Highway Agency	Spot	Lane Departure	106267
State St. Pedestrian Improvements	Pedestrians and bicyclists	Pedestrians and bicyclists – other	3.16	Miles	$2117694	$3282248	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	5,639	35	State Highway Agency	Spot	Intersections and Pedestrians	109077
Turnpike to Sproul/Claysburg	Roadway	Pavement surface - other	37.2	Miles	$120408	$9500000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	7,487	70	State Highway Agency	Systemic	Lane Departure	109816
US 6N & PA 99 Intersection Improvements	Intersection geometry	Intersection realignment	0.69	Miles	$37891	$4046115	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	5,501	25	State Highway Agency	Spot	Intersections	109901
PA 18/SR 4006 Intersection	Intersection geometry	Intersection realignment	0.3	Miles	$500781	$1640700	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	2,802	40	State Highway Agency	Spot	Intersections	110234

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SR 18/SR 4005 Intersection	Intersection traffic control	Modify traffic signal timing – signal coordination	0.67	Miles	$557940	$3924168	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	10,072	35	State Highway Agency	Spot	Intersections	110764
10-2 SR 3021 Corridor Improvements	Roadway	Rumble strips – edge or shoulder	1.46	Miles	$4500000	$27770703	HSIP (23 U.S.C. 148)	Urban	Major Collector	8,838	35	State Highway Agency	Spot	Lane Departure	110783
Macdade Blvd Corridor(H)	Intersection traffic control	Modify traffic signal – modernization/replacement	6.29	Miles	$105000	$3440416	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,975	35	State Highway Agency	Systemic	Intersections	110951
Castor & Wyoming Ave. Roundabout	Intersection traffic control	Modify control – Modern Roundabout	0.23	Miles	$50000	$4815700	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	16,419	35	State Highway Agency	Spot	Intersections	110958
Old Skippack Rd Roundabout (C)	Intersection traffic control	Modify control – Modern Roundabout	0.14	Miles	$250000	$3189000	HSIP (23 U.S.C. 148)	Urban	Major Collector	2,654	40	State Highway Agency	Spot	Intersections	110961
Marshall Rd. Safety Improv (C)	Intersection geometry	Add/modify auxiliary lanes	1.71	Miles	$875000	$5431776	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,509	25	State Highway Agency	Systemic	Intersections	110965
Castor Ave: Oxford Circle to Cottman Ave	Intersection traffic control	Modify traffic signal timing – left-turn phasing	3.39	Miles	$450000	$1953403	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	4,868	25	State Highway Agency	Spot	Intersections	111194
Derry Street Improvements	Intersection traffic control	Modify traffic signal –other	2.92	Miles	$214390	$3836630	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	10,154	25	State Highway Agency	Systemic	Intersections	113390
Strasburg Pk Improvements	Intersection geometry	Intersection geometry - other	0.17	Miles	$185472	$4344282	HSIP (23 U.S.C. 148)	Rural	Minor Collector	9,741	40	State Highway Agency	Spot	Intersections	114205
Wynnewood Rd HSIP (C)	Intersection traffic control	Modify traffic signal timing – left-turn phasing	0.96	Miles	$200000	$1518134	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	11,576	35	State Highway Agency	Spot	Intersections	114270
US 202 & York Rd Roundabout	Intersection traffic control	Modify control – Modern Roundabout	0.64	Miles	$50000	$3410500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,527	50	State Highway Agency	Spot	Intersections	115419
Lansdowne Ave. Corridor Safety Improvements	Pedestrians and bicyclists	Install raised crosswalk	0.17	Miles	$2404902	$4568000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	11,627	25	State Highway Agency	Systemic	Intersections and Pedestrians	115427
Belmont Ave & St. Asaphs Rd Roundabout	Intersection traffic control	Modify control – Modern Roundabout	0.24	Miles	$50000	$3317200	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,870	35	State Highway Agency	Spot	Intersections	115429
Frankford Ave Corridor Safety Improvements	Roadway signs and traffic control	Roadway signs and traffic control - other	0.1	Miles	$684023	$8306669	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,281	30	State Highway Agency	Spot	Lane Departure & Intersections	115434

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
5th St Safety: Spring Garden St to Erie Ave	Intersection traffic control	Modify traffic signal – add additional signal heads	0.03	Miles	$400000	$8292935	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,054	30	State Highway Agency	Systemic	Intersections and Pedestrians	115445
Capital Gateway	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.24	Miles	$1720695	$2688072	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	9,009	35	State Highway Agency	Spot	Pedestrians	115784
PA 188 Jefferson Rd Preservation	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	6.89	Miles	$125000	$5000000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	4,463	40	State Highway Agency	Spot	Lane Departure	116175
2024 Cambria County Safety Improvements	Roadway	Pavement surface – high friction surface	3.4	Miles	$1566905	$3317800	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	12,975	55	State Highway Agency	Systemic	Lane Departure & Intersections	117232
Forest & Warren High Friction Surface Treat 2024	Roadway	Pavement surface – high friction surface	1.44	Miles	$899212	$667599	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	1,725	35	State Highway Agency	Systemic	Lane Departure	117439
PA 21 East of Waynesburg	Roadway	Roadway - other	5.28	Miles	$100000	$5200000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	7,214	45	State Highway Agency	Systemic	Lane Departure	117441
York County Systemic Safety Improvements	Roadway	Pavement surface – high friction surface	3.23	Miles	$160275	$2078417	HSIP (23 U.S.C. 148)	Urban	Major Collector	5,010	45	State Highway Agency	Systemic	Lane Departure	117526
SR 641 and Locust Point Rd Intersection HSM	Intersection geometry	Intersection realignment	0.09	Miles	$341600	$4342068	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	7,573	45	State Highway Agency	Spot	Intersections	117594
SR 641 and Middlesex Rd Intersection HSM	Intersection traffic control	Modify control – new traffic signal	0.09	Miles	$427850	$3861091	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	7,909	45	State Highway Agency	Systemic	Intersections	117596
PA 743 and PA 341 Intersection HSM	Intersection traffic control	Modify control – Modern Roundabout	0	Miles	$250000	$3071141	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	16,932	55	State Highway Agency	Spot	Intersections	117612
PA 24 and Druck Valley Rd Intersection HSM	Intersection traffic control	Systemic improvements – stop-controlled	0.09	Miles	$144100	$1390000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	14,055	35	State Highway Agency	Systemic	Intersections	117617
Windsor Road Improvements HSM	Intersection traffic control	Pavement markings	1.56	Miles	$581566	$4998000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	5,144	35	State Highway Agency	Systemic	Lane Departure & Intersections	117618
Lycoming High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	1.54	Miles	$601590	$540000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	8,196	65	State Highway Agency	Spot	Lane Departure	117826
PennDOT Highway Safety Network Screening update	Miscellaneous	Data analysis	0	Miles	$2000000	$2000000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Data analysis	Data	117915
Update Pennsylvania SPFs	Miscellaneous	Data analysis	0	Miles	$1300000	$1300000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Data analysis	Data	117954

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Erie Co. HFST	Roadway	Pavement surface – high friction surface	0.79	Miles	$461294	$441195	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,636	45	State Highway Agency	Systemic	Lane Departure	117991
PA 201/PA 217 Flashing Beacon 2021	Roadway signs and traffic control	Roadway signs and traffic control - other	0	Miles	$158250	$213191	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	4,589	45	State Highway Agency	Systemic	Intersections	118000
Ramp Rollover Warning System	Interchange design	Interchange improvements	0.53	Miles	$125000	$1236860	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	16,309	55	State Highway Agency	Spot	Intersections	118500
D11 Systemwide Pedestrian Countdown Signals (PCS)	Pedestrians and bicyclists	Pedestrian signal	1.65	Miles	$560392	$670392	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	10,290	35	State Highway Agency	Systemic	Pedestrians	119197
2024 SA RPO ICWS Improvements	Advanced technology and ITS	Intersection Conflict Warning System (ICWS)	0.09	Miles	$1454880	$1597000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,158	55	State Highway Agency	Systemic	Intersections	119248
SR 322 HFST Seven Mountain EB	Roadway	Pavement surface – high friction surface	0.45	Miles	$340500	$375000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,287	55	State Highway Agency	Systemic	Lane Departure	119416
SR 322 HFST Seven Mountain WB	Roadway	Pavement surface – high friction surface	0.3	Miles	$95850	$225000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,498	55	State Highway Agency	Systemic	Lane Departure	119417
SR 333 HFST	Roadway	Pavement surface – high friction surface	0.2	Miles	$54605	$175000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,145	55	State Highway Agency	Systemic	Lane Departure	119418
SR 6 High Friction Surface Treatment/Signing	Roadway	Pavement surface – high friction surface	6.6	Miles	$535000	$1145726	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	7,721	45	State Highway Agency	Systemic	Lane Departure	119792
District 10 High Friction Surface Treatment 2024	Roadway	Pavement surface – high friction surface	2.76	Miles	$1306193	$1171135	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,668	55	State Highway Agency	Systemic	Lane Departure	119902
SR 144 High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.52	Miles	$148000	$266000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,934	35	State Highway Agency	Spot	Lane Departure	119990
District 10/NC High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.38	Miles	$198877	$198877	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,503	55	State Highway Agency	Spot	Lane Departure	120042
District 10/NW High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	1.84	Miles	$752852	$752852	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,765	55	State Highway Agency	Systemic	Lane Departure	120043
SR 322 High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.47	Miles	$171500	$250000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	4,976	55	State Highway Agency	Spot	Lane Departure	120082
SR 346 HFST in Foster Township	Roadway	Pavement surface – high friction surface	0.67	Miles	$195974	$180000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,010	55	State Highway Agency	Spot	Lane Departure	120089

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SR 879 HFST	Roadway	Pavement surface – high friction surface	0.23	Miles	$134055	$283000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,341	45	State Highway Agency	Spot	Lane Departure	120099
SR 219 HFST Clearfield County	Roadway	Pavement surface – high friction surface	0.18	Miles	$124943	$125000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,497	40	State Highway Agency	Spot	Lane Departure	120100
SR 219 HFST	Roadway	Pavement surface – high friction surface	0.22	Miles	$68082	$125000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,132	55	State Highway Agency	Spot	Lane Departure	120101
SR 770 HFST	Roadway	Pavement surface – high friction surface	0.67	Miles	$140008	$173000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,404	55	State Highway Agency	Spot	Lane Departure	120102
SR 246 HFST	Roadway	Pavement surface – high friction surface	0.96	Miles	$167583	$259000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,106	55	State Highway Agency	Spot	Lane Departure	120105
SR 46 HFST	Roadway	Pavement surface – high friction surface	0.34	Miles	$103018	$125000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,747	55	State Highway Agency	Spot	Lane Departure	120107
SR 880 HFST Project	Roadway	Pavement surface – high friction surface	0.34	Miles	$92410	$100000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	1,679	45	State Highway Agency	Spot	Lane Departure	120111
SR 235 High Friction Surface Treatment	Roadway	Pavement surface – high friction surface	0.31	Miles	$93200	$145000	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,176	55	State Highway Agency	Spot	Lane Departure	120113
State Route 144 HFST	Roadway	Pavement surface – high friction surface	1.01	Miles	$147400	$200000	HSIP (23 U.S.C. 148)	Rural	Major Collector	996	55	State Highway Agency	Spot	Lane Departure	120120
SR 35 HFST	Roadway	Pavement surface – high friction surface	0.12	Miles	$90000	$200000	HSIP (23 U.S.C. 148)	Rural	Major Collector	358	55	State Highway Agency	Spot	Lane Departure	120137
I-80 West Bound HFST	Roadway	Pavement surface – high friction surface	0.26	Miles	$139040	$225000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	12,800	70	State Highway Agency	Spot	Lane Departure	120287
SR 6 HFST Hamlin Twp	Roadway	Pavement surface – high friction surface	0.48	Miles	$186720	$200000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	1,717	55	State Highway Agency	Spot	Lane Departure	120289
State Route 46 HFST Foster Twp	Roadway	Pavement surface – high friction surface	0.26	Miles	$115948	$150000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,747	55	State Highway Agency	Spot	Lane Departure	120290
SR 1011 Rapid Rectangular Flashing Beacon	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	0.02	Miles	$50000	$200000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Major Collector	408	40	State Highway Agency	Spot	Pedestrians	120575
HSIP Lane Departures	Roadway	Pavement surface – high friction surface	3.76	Miles	$4498889	$4955000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,115	35	State Highway Agency	Spot	Lane Departure	120836

2024 Pennsylvania Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SR 1011: Warren Co Center Line Rumble Strips	Roadway	Rumble strips – center	5.04	Miles	$19752	$13769	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	7,834	35	State Highway Agency	Spot	Lane Departure	121331
SR 309 High Friction Surface	Roadway	Pavement surface – high friction surface	2.3	Miles	$306665	$180001	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,305	45	State Highway Agency	Systemic	Lane Departure	121375
I-81 Guiderail/Cable Median Barrier	Roadside	Barrier – cable	27.37	Miles	$375000	$1875000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	11,642	65	State Highway Agency	Systemic	Lane Departure	114911
Interstate 84 Cable Median Barrier	Roadside	Barrier – cable	19.99	Miles	$1650715	$1928867	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	20,224	55	State Highway Agency	Systemic	Lane Departure	114917
Lancaster Ave & Remington Rd Int. Improvements	Intersection traffic control	Modify traffic signal –other	0.08	Miles	$350000	$3475000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	11,069	40	State Highway Agency	Spot	Intersections and Pedestrians	114948

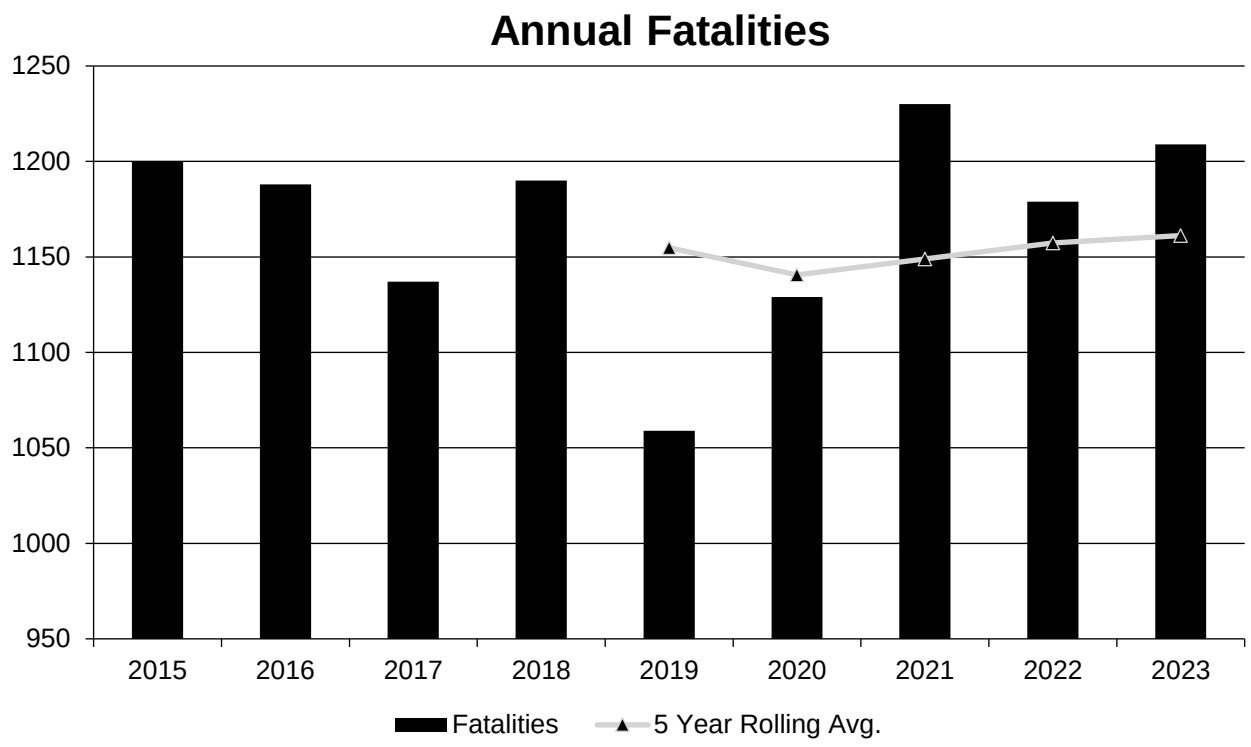
The number listed under Relationship to SHSP Strategy is the PennDOT specific MPMS number which is a unique identifier for each project used to be able to easily sort the spreadsheet before uploading.

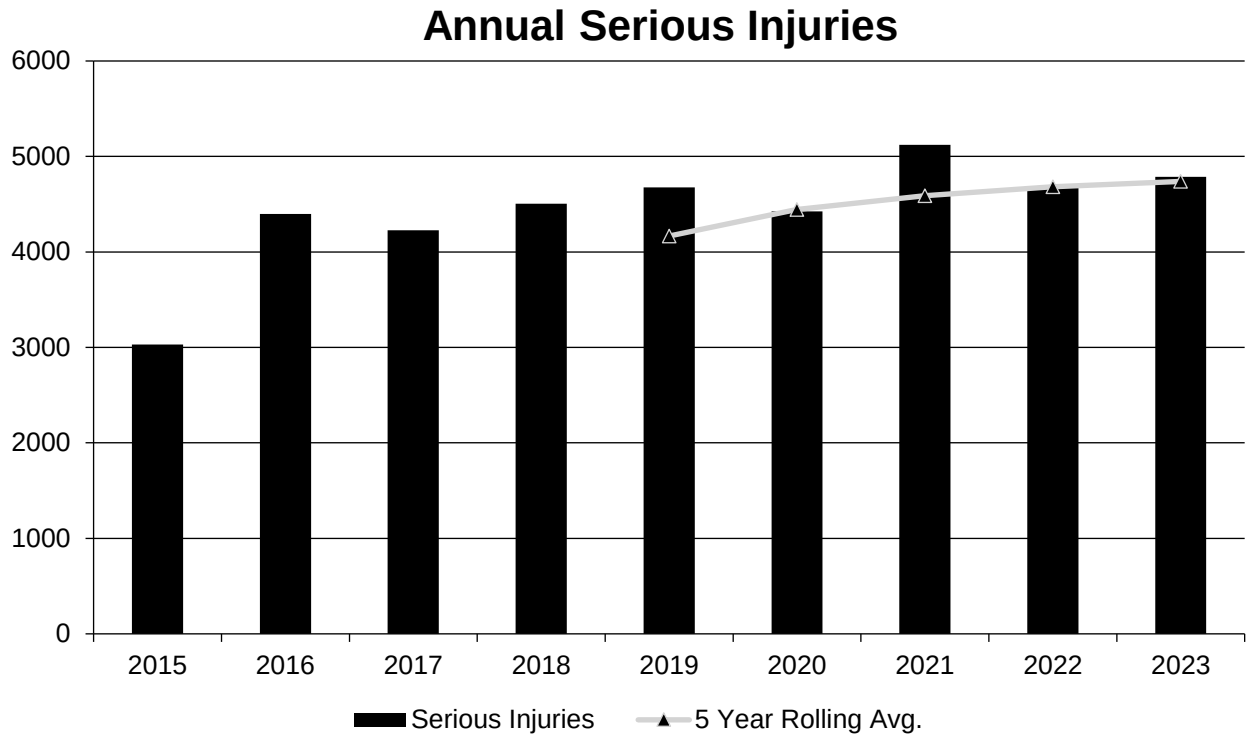
Safety Performance

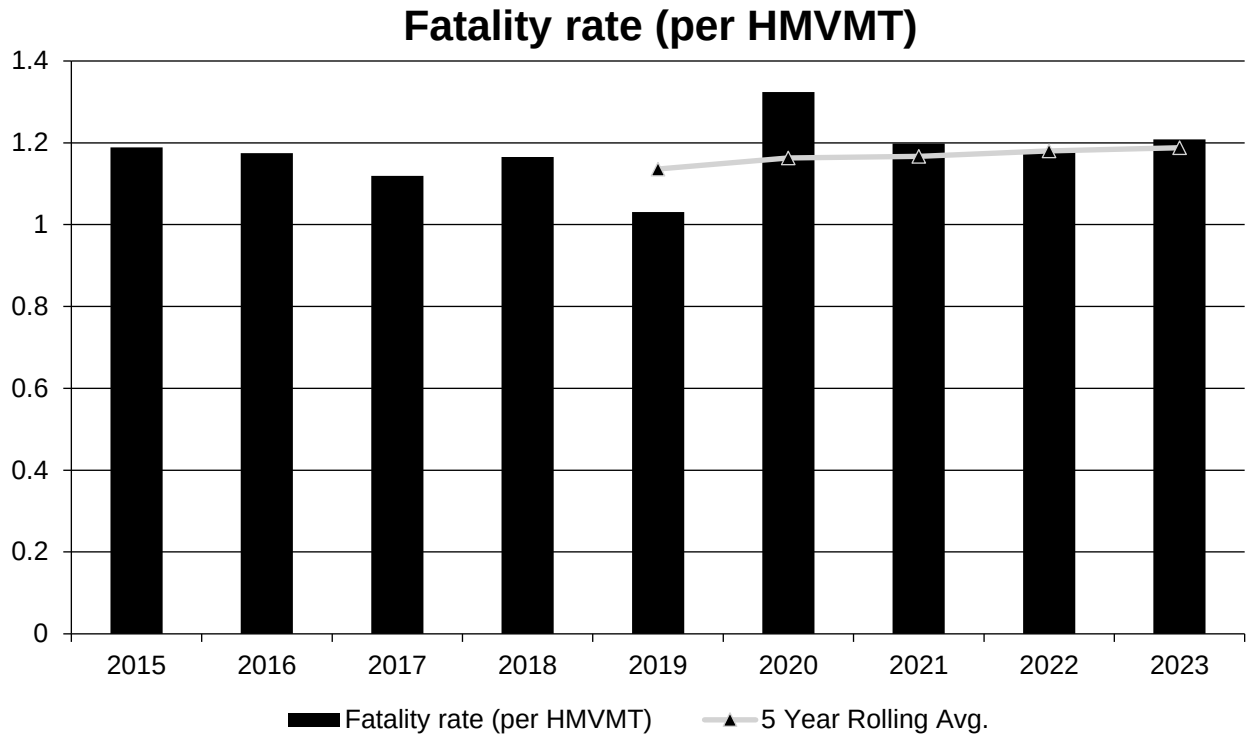
General Highway Safety Trends

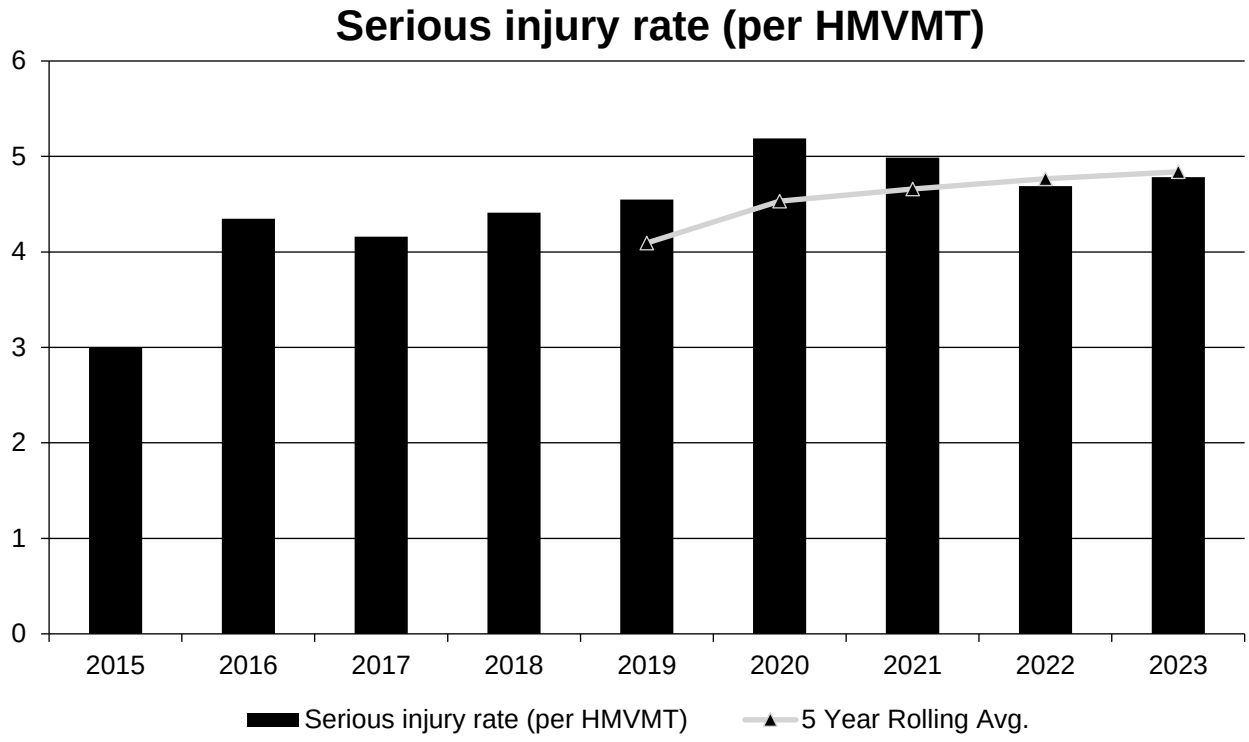
Present data showing the general highway safety trends in the State for the past five years.

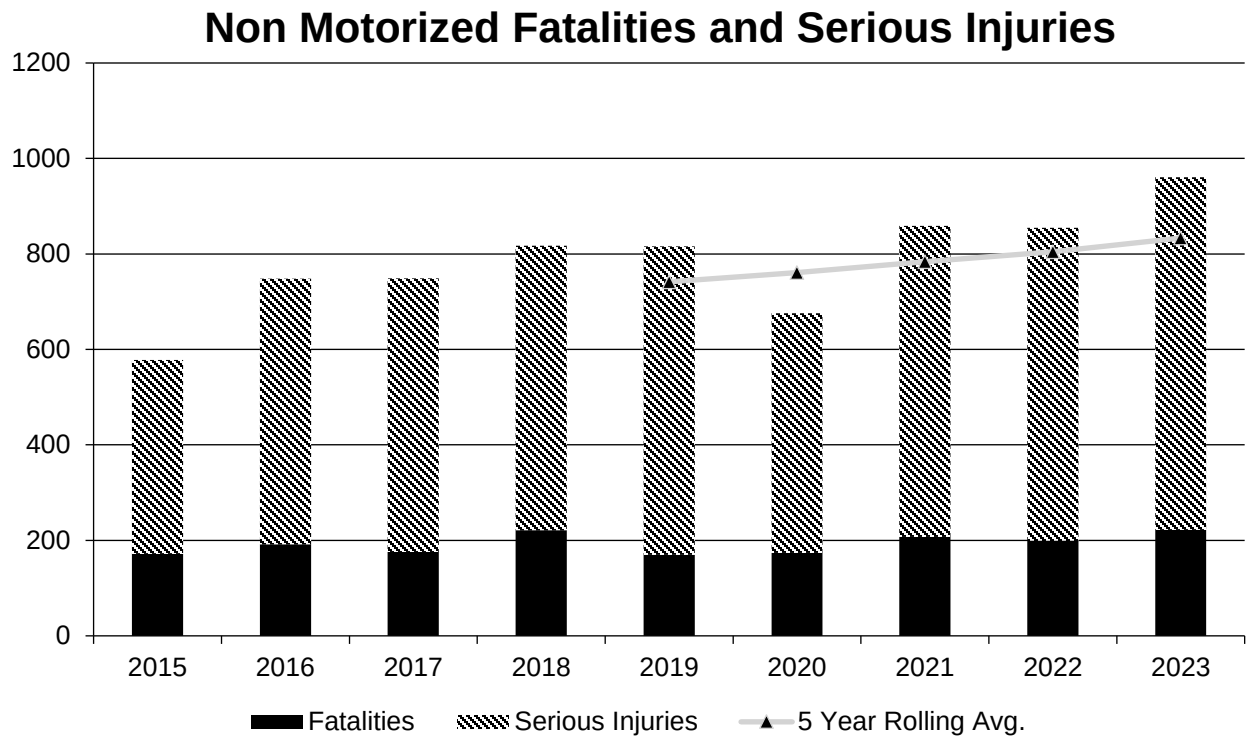
PERFORMANCE MEASURES	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fatalities	1,200	1,188	1,137	1,190	1,059	1,129	1,230	1,179	1,209
Serious Injuries	3,030	4,397	4,227	4,504	4,675	4,425	5,122	4,686	4,785
Fatality rate (per HMVMT)	1.189	1.175	1.119	1.165	1.031	1.324	1.198	1.180	1.208
Serious injury rate (per HMVMT)	3.002	4.349	4.160	4.411	4.549	5.188	4.988	4.690	4.782
Number non-motorized fatalities	172	192	176	221	170	174	207	199	222
Number of non-motorized serious injuries	406	556	573	596	646	502	652	656	739


Annual Fatalities
1250
1200
1150
1100
1050
1000
950
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
6000
5000
4000
3000
2000
1000
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
6
5
4
3
2
1
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



96,639,035,421 was used as the 2022 VMT to calculate these rates in the 2023 Annual Report however that number was revised to 99,913,888,565 after the report was submitted. This year's report now reflects the correct VMT for 2022, therefore the rates will differ slightly for 2022 and the 5-year averages which include the year 2022.

Describe fatality data source.

State Motor Vehicle Crash Database

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

Year 2023

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	47	114.4	0.48	1.17
Rural Principal Arterial (RPA) - Other Freeways and Expressways	0	0	0	0
Rural Principal Arterial (RPA) - Other	72.8	204	1.67	4.69
Rural Minor Arterial	117.4	363.8	1.96	6.1
Rural Minor Collector	43.2	145	2.36	7.87
Rural Major Collector	93.6	292.6	2.38	7.43
Rural Local Road or Street	143.8	905.4	3.2	20.06
Urban Principal Arterial (UPA) - Interstate	259.8	1,079	1.74	7.18
Urban Principal Arterial (UPA) - Other Freeways and Expressways	57.8	177.2	0.76	2.34
Urban Principal Arterial (UPA) - Other	132.2	659.4	0.82	4.08
Urban Minor Arterial	79.8	343.2	0.7	3.01
Urban Minor Collector	0	0	0	0
Urban Major Collector	7.2	33	0.09	0.44
Urban Local Road or Street	58.2	286.8	0.82	4.03

Year 2023

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	944.4	3,565.4	1.24	4.66
County Highway Agency	7	17.6	0.05	0.12
Town or Township Highway Agency	0	0	0	0
City or Municipal Highway Agency	189	1,119	1.26	7.39
State Park, Forest, or Reservation Agency	0	0	0	0
Local Park, Forest or Reservation Agency	0	0	0	0
Other State Agency	0	0	0	0
Other Local Agency	0	0	0	0
Private (Other than Railroad)	2.4	17.8	0.02	0.12
Railroad	0	0	0	0
State Toll Authority	18.4	44	0.32	0.75
Local Toll Authority	0	0	0	0
Other Public Instrumentality (e.g. Airport, School, University)	0	0	0	0
Indian Tribe Nation	0	0	0	0

Pennsylvania does not classify crash data by "Rural Principal Arterial - Other Freeways and Expressways".

Urban Collector is not broken down by Major and Minor. Data for all Urban Collectors is reflected in the "Urban Major Collector" field.

Roadway Ownership data includes High Occupancy Vehicle (HOV) routes excluded from the HPMS annual submittal, per FHWA.

Provide additional discussion related to general highway safety trends.

The number of Pennsylvania licensed drivers ages 65 and over has increased 27% since 2013. This increase has a significant impact on the number of Older Driver and Pedestrian Fatalities/Serious Injuries (Question #39). 2023 saw the 2nd highest number on record of licensed drivers for this age group. Additionally, fatalities in crashes involving a 65+ year old driver increased by 45 in 2023. People age 65 and older account for approximately 20% of Pennsylvania’s population based on US census data.

The number of serious injuries significantly increased after 2015 due to both the change in definition and the new title of this injury type. 2016 crash data included the change from "Major Injury" to the MMUCC compliant "Suspected Serious Injury". Some crashes that had injury severities less than serious (or major) based on the previous crash severity definitions are now considered suspected serious injuries.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2025 Targets *

Number of Fatalities:1192.8

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

Pennsylvania's current target is to reduce 2023 fatalities by two percent per year through 2025. The target shown above (1192.8) is the five-year rolling average for 2021-2025. This goal was established in conjunction with our Federal partners based on a combination of reviewing Pennsylvania's historical data and observations of national trends and reduction in fatalities over the next 25 years will not be linear. This is based on actual fatal crash data from 2021 to 2023 and estimated data in 2024 and 2025 assuming a 2% reduction each year.

Number of Serious Injuries:4832.6

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

Pennsylvania's current target is to hold 2023 serious injuries level through 2025. The target shown above (4832.6) is the five-year rolling average for 2021-2025. This goal was established in conjunction with our Federal partners based on a combination of reviewing Pennsylvania's historical data and observations of national trends and reduction in serious injuries over the next 25 years will not be linear. This is based on actual serious injury crash data from 2021 to 2023 and estimated data in 2024 and 2025 assuming serious injuries hold level each year.

Fatality Rate:1.186

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

The target shown above (1.186) is calculated using the 2021-2025 five-year rolling average for fatalities shown in the first metric and vehicle miles traveled holding level in 2024 and 2025.

Serious Injury Rate:4.806

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

The target shown above (4.806) is calculated using the 2021-2025 five-year rolling average for serious injuries shown in the second metric and vehicle miles traveled holding level in 2024 and 2025.

Total Number of Non-Motorized Fatalities and Serious Injuries:916.8

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

Pennsylvania's current target is to reduce 2023 non-motorized fatalities and serious injuries by reducing fatalities by two percent and holding serious injuries level each year through 2025. The target shown above (916.8) is the five-year rolling average for 2021-2025. This goal was established in conjunction with our Federal partners based on a combination of reviewing Pennsylvania's historical data and observations of national trends.

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

PennDOT coordinates with regional planning partners through our Center for Program Development and Management, Engineering District meeting, and other conferences like bi-monthly planning partners calls, the Planning Partners fall workshop, the Traffic Engineering & Safety Conference each December and in other ways. The MPOs and RPOs are part of the HSP development process, they were all involved in the development of the VRU Safety Assessment Report and are part of the HSIP selection process as all MPOS and RPOS have regionally allocated HSIP funds. Bellow are some other means of stakeholder coordination.
HSIP governance committee - A group of executives and associated staff from the Bureau of Operations and the Center for Performance and Development and also from the Bureau of Design and Delivery that meets every other month to discuss HSIP policy.
VRU meetings - These meetings include MPOS, RPOS, Engineering Districts, PennDOT Central office, and various other organizations in each region.
District safety plan development - A District version of the SHSP for Pennsylvania. Included MPO/RPO involvement. SHSP development

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2023 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	1160.9	1161.2
Number of Serious Injuries	4893.2	4738.6
Fatality Rate	1.170	1.188
Serious Injury Rate	4.931	4.839
Non-Motorized Fatalities and Serious Injuries	811.3	833.4

The actual number for Fatality Rate is not populating correctly.. this value should be 1.183. The actual number for Serious Injury Rate is also not populating correctly.. this value should be 4.828. The values shown above are being calculated based on the average of the last 5 individual years for fatality/serious injury rate, NOT by taking the 5 year average (2019-2023) for fatality/serious injury rate multiplied by 100,000,000 divided by the 5 year VMT average (2019-2023) which is how we perform the calculation.. this leads to slightly different results.

Based on the 2019-2023 data, we achieved two of the five targets (number of serious injuries and serious injury rate).

Applicability of Special Rules

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

No

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

Yes

PennDOT has completed a Vulnerable Road User Safety Assessment Report to evaluate the state's safety performance for pedestrians and cyclists and develop a plan to improve safety for these travelers, focusing on "high-risk areas". The assessment is based on the Safe System approach, which aims to eliminate fatal and serious injuries for all road users by accommodating human mistakes and keeping impacts on the human body at tolerable levels. This VRU Safety Assessment was completed in November 2023 and added to our current Strategic Highway Safety Plan as an appendix. It contains maps of high risk areas and includes systemic safety project improvements.

To meet the new VRU Special Rule this fiscal year, PennDOT identified countdown pedestrian indications as proven safety countermeasures that improve pedestrian accessibility and safety. Countdown pedestrian indications were selected to expedite project delivery and minimize potential delays due to utility conflicts, right-of-way acquisition, environmental permits, and legal agreements. This ensures the timely obligation of federal HSIP funds.

Pedestrian countdown timer signals were installed in all 11 Engineering Districts and several Districts have Districtwide VRU systemic safety projects. Numerous spot location improvements were also implemented including: – District 1, Erie Co. Central Bayfront Parkway Multimodal – District 6, Chester Co. High Street – District 8, Dauphin Co. Eisenhower Blvd. VRU improvements – District 8, Dauphin Co. Capital Gateway – District 8, Dauphin Co. Sycamore/Paxton Intersection – District 11, Alleghany Co. Forbes Ave/Fern Hallow

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	2017	2018	2019	2020	2021	2022	2023
Number of Older Driver and Pedestrian Fatalities	214	236	208	190	224	220	258
Number of Older Driver and Pedestrian Serious Injuries	413	464	489	360	512	502	537

The number of Pennsylvania licensed drivers ages 65 and over has increased 27% since 2013. This increase has a significant impact on the number of Older Driver and Pedestrian Fatalities/Serious Injuries. 2023 saw the 2nd highest number on record of licensed drivers for this age group. Additionally, fatalities in crashes involving a 65+ year old driver increased by 45 in 2023. People age 65 and older account for approximately 20% of Pennsylvania's population based on US census data.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Change in fatalities and serious injuries
- Economic Effectiveness (cost per crash reduced)
- Lives saved
- Other-Implementing proven systemic safety countermeasures
- Other-CMF Evaluation/Development for Countermeasures

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

BCR: Benefit Cost ratio analysis is completed in May and June for the HSIP Implementation Plan report which is due every June 30th. For the results of the BCR analysis please refer to the HSIP Implementation plan that was submitted June 30, 2024. The BCRs cover effectiveness of spot location vs. systemic projects, engineering Districts, regional Planning Partners, yearly effectiveness, and countermeasure type or project type effectiveness. The overall program has an effectiveness BCR of 4.02:1.

Change in Fatal and serious injuries: 244 less fatalities and an increase in 33 serious injuries

Economic Effectiveness (cost per crash reduced): Net cost benefit of the PA HSIP program is $3,235,355,837.

Lives Saved: 244 lives saved through the HSIP built projects

Other – Implementing proven systemic safety countermeasures: PennDOT's HSIP Implementation Plan covers this

Other – CMF Evaluations/Development for Countermeasures: PennDOT's HSIP Implementation Plan covers this

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

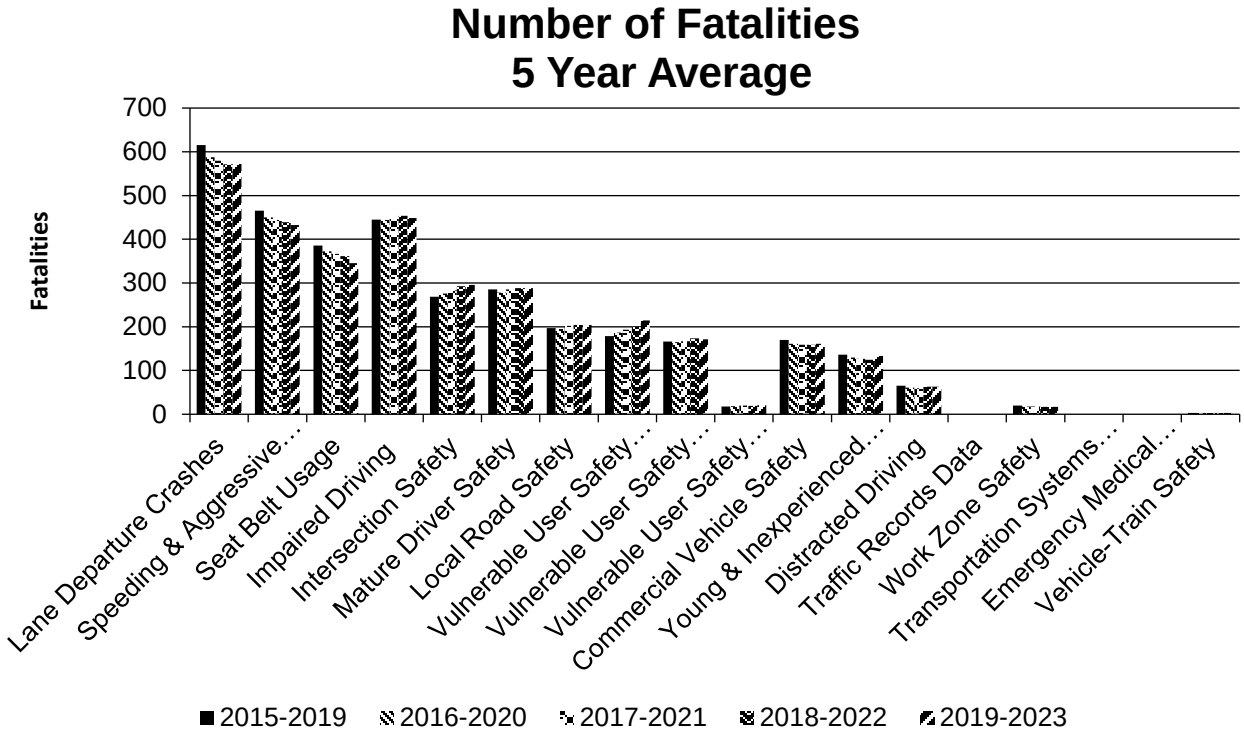
- # RSAs completed
- HSIP Obligations
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- More systemic programs
- Policy change
- Other-Reduced Fatal and serious injuries
- Other-Projects that result in a BCR over 1.0

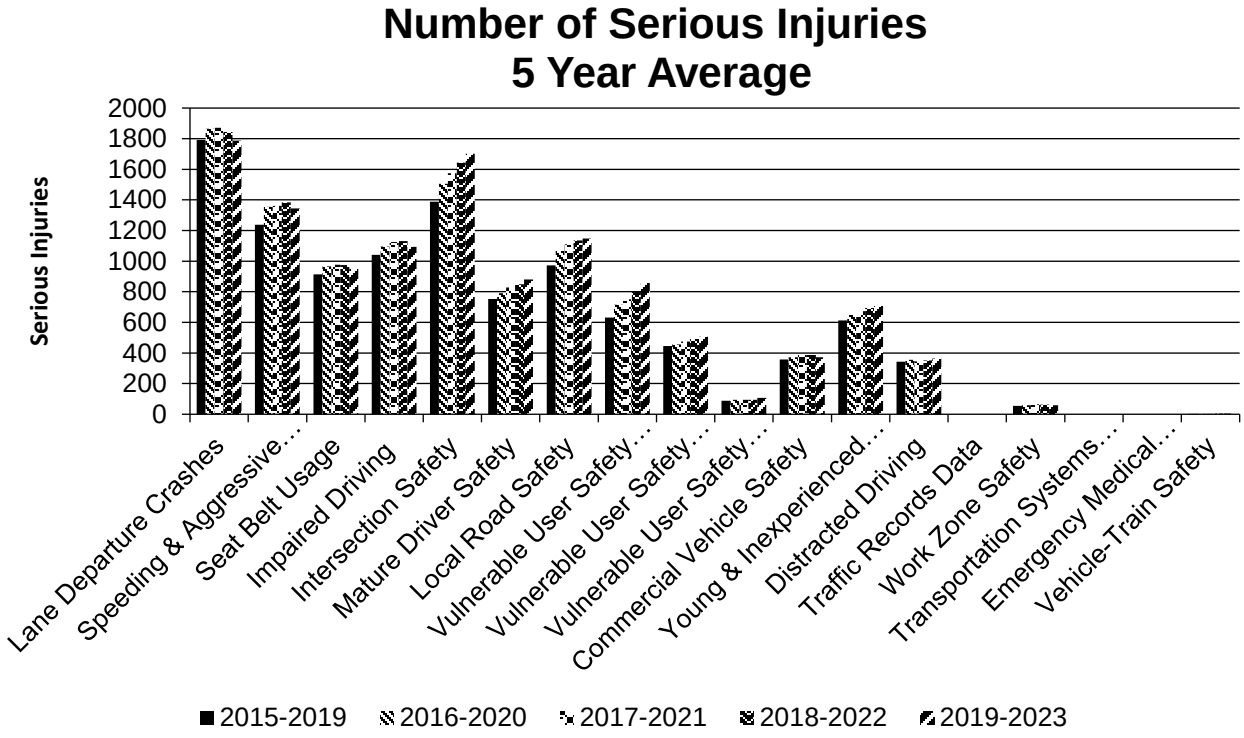
Effectiveness of Groupings or Similar Types of Improvements

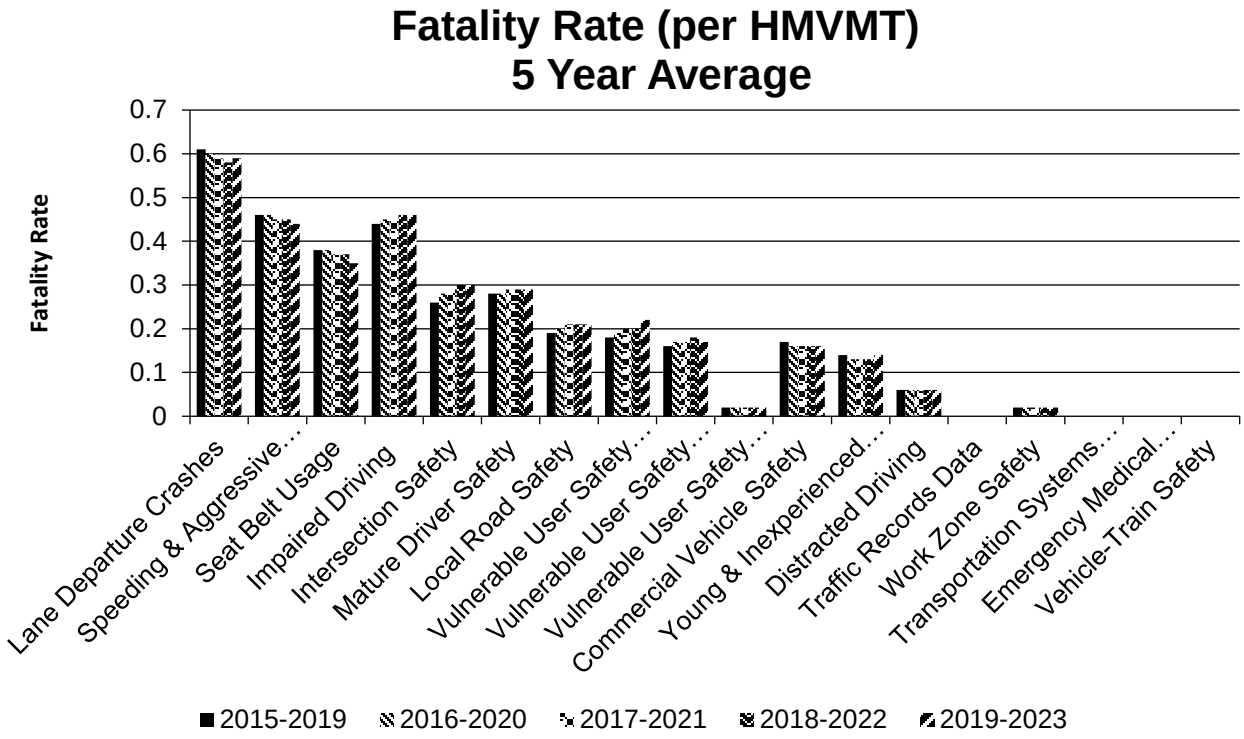
Present and describe trends in SHSP emphasis area performance measures.

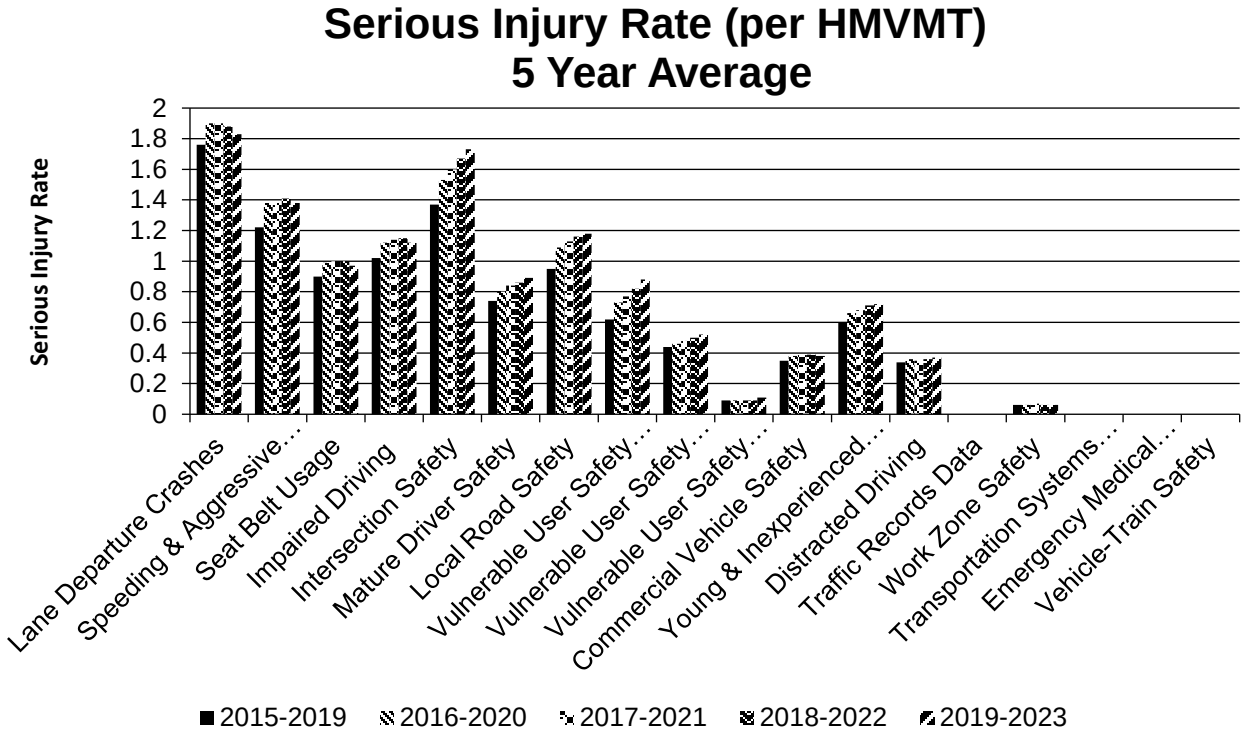
Year 2023

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 Crashes		572.4	1,788.2	0.59	1.83
Speeding & Aggressive Driving		432.2	1,343.8	0.44	1.38
Seat Belt Usage		345.2	948.8	0.35	0.97
Impaired Driving		448.8	1,094.4	0.46	1.12
Intersection Safety		295.6	1,701.2	0.3	1.73
Mature Driver Safety		288.2	880.4	0.29	0.89
Local Road Safety		204.6	1,148.2	0.21	1.18
Vulnerable User Safety (Motorcycle Safety)		214.4	857.6	0.22	0.88
Vulnerable User Safety (Pedestrian Safety)		171.2	507	0.17	0.52
Vulnerable User Safety (Bicyclist Safety)		20.8	107.4	0.02	0.11
Commercial Vehicle Safety		161.4	372.4	0.16	0.38
Young & Inexperienced Drivers		133.2	706.4	0.14	0.72
Distracted Driving		62.8	364.6	0.06	0.37
Traffic Records Data		0	0	0	0
Work Zone Safety		16.6	59.2	0.02	0.06
Transportation Systems Management & Operations (TSMO		0	0	0	0
Emergency Medical Services (EMS)		0	0	0	0
Vehicle-Train Safety		3.2	4	0	0


Number of Fatalities
5 Year Average
Fatalities
700
600
500
400
300
200
100
0
Lane Departure Crashes
Speeding & Aggressive…
Seat Belt Usage
Impaired Driving
Intersection Safety
Mature Driver Safety
Local Road Safety
Vulnerable User Safety…
Vulnerable User Safety…
Vulnerable User Safety…
Commercial Vehicle Safety
Young & Inexperienced…
Distracted Driving
Traffic Records Data
Work Zone Safety
Transportation Systems…
Emergency Medical…
Vehicle-Train Safety
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023


Number of Serious Injuries
5 Year Average
Serious Injuries
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Lane Departure Crashes
Speeding & Aggressive…
Seat Belt Usage
Impaired Driving
Intersection Safety
Mature Driver Safety
Local Road Safety
Vulnerable User Safety…
Vulnerable User Safety…
Vulnerable User Safety…
Commercial Vehicle Safety
Young & Inexperienced…
Distracted Driving
Traffic Records Data
Work Zone Safety
Transportation Systems…
Emergency Medical…
Vehicle-Train Safety
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023





These numbers include all persons in the crash.

Targeted crash types for the "Other" categories above are as follows: Lane Departure Crashes (Lane Departure); Seat Belt Usage (Unrestrained); Impaired Driving (Impaired Driver); Mature Driver Safety (65+ Year Old Driver); Local Road Safety (Local Road only); Vulnerable User Safety - Motorcycle Safety

(Motorcyclist); Commercial Vehicle Safety (Commercial Vehicles); Young & Inexperienced Drivers (Drivers 20 years old or younger); Distracted Driving (Distracted Driver); Traffic Records Data (N/A); Work Zone Safety (Work Zone all People); Transportation Systems Management & Operations (N/A); Emergency Medical Services (N/A); Vehicle-Train Safety (Train/Trolley)

Three Priority Emphasis Areas (Lane Departure, Impaired Driver, and Pedestrians) have been selected which provide the greatest potential for significantly reducing traffic fatalities and serious injuries. Prioritizing these emphasis areas and supporting strategies will guide allocation of funding and resources and help meet our safety performance targets. In addition to our three priority emphasis areas, Pennsylvania has identified 15 other Safety Focus Areas (SFA) to drive down fatalities and serious injuries. This is essential considering the complexity of our roadway system and diverse nature of motor vehicle crashes. These SFAs were established based on the most current 5-year average fatality data, proven countermeasures, and benefit-cost analysis.

Starting in 2016 the terminology "Suspected Serious Injury" was adopted as per the Federal FAST Act. Noticeable differences from previous years appear for this injury severity although the definition did not drastically change.

Starting in 2017, the Impaired Driver Crash flag began using drug test results in combination with alcohol and drug use suspicion to provide additional accuracy.

The numbers for "Older Drivers" reflect the count of all persons involved in a crash with a driver aged 65 or older. These numbers will differ from question #39. Young & Inexperienced Drivers includes drivers 20 years old and younger. Speeding and Aggressive Driving includes numbers from Speeding Related (speeding, driving too fast for conditions, or police chase) crashes.

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

Yes

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

CounterMeasures:	HSIP Implementation Report
Description:	The HSIP Implementation Report analyzes countermeasure effectiveness every year. Details about the analysis can be found in the HSIP Implementation Plan Report for 2024.
Target Crash Type:	All
Number of Installations:	
Number of Installations:	
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Other (define)
Results:	Since the last report PennDOT has not competed any additional CMF research for safety countermeasures. However, we have updated the effectiveness of several

different countermeasures and project types in the HSIP Implementation Plan which was submitted to the FHWA on June 30, 2024. The FHWA Pennsylvania Division Office approved the HSIP Implementation Plan report earlier this month. In that report are several graphics that show the effectiveness of many different safety countermeasures that were funded using HSIP funds.

File Name: Hyperlink

Project Effectiveness

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

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
106776	Rural Principal Arterial (RPA) - Other	Roadway signs and traffic control	Roadway signs (including post) - new or updated			1.00	2.00	1.00		3.00		5.00	2.00	-23.56
96215	Urban Principal Arterial (UPA) - Other	Advanced technology and ITS	Adaptive Signal Control System	116.00	145.00	3.00	2.00	5.00	17.00	322.00	290.00	446.00	454.00	0.32
104443	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	17.00	14.00			1.00	2.00	25.00	20.00	43.00	36.00	-0.70
104444	Urban Principal Arterial (UPA) - Other	Pedestrians and bicyclists	Pedestrian signal	159.00	188.00	3.00		5.00	11.00	273.00	200.00	440.00	399.00	74.71
102808	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	15.00	13.00			3.00	2.00	24.00	20.00	42.00	35.00	2.64
102001	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier- metal	42.00	45.00			3.00	1.00	41.00	26.00	86.00	72.00	11.27
29592	Urban Principal Arterial (UPA) - Other	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	2.00	7.00				1.00	4.00	5.00	6.00	13.00	-4.96
93587	Rural Minor Arterial	Intersection geometry	Intersection realignment	2.00	7.00			1.00		2.00	1.00	5.00	8.00	0.41
104433	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier- metal	167.00	184.00	4.00		5.00	5.00	97.00	104.00	273.00	293.00	18.10
104436	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	48.00	42.00	2.00	1.00		1.00	19.00	33.00	69.00	77.00	42.20
106779	Rural Major Collector	Roadway	Rumble strips – edge or shoulder	196.00	169.00	9.00	5.00	14.00	18.00	162.00	121.00	381.00	313.00	245.45
94937	Urban Principal	Intersection geometry	Intersection geometry - other	6.00	10.00		1.00	3.00	1.00	6.00	5.00	15.00	17.00	-4.21

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
	Arterial (UPA) - Other													
106595	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	6.00	3.00					4.00		10.00	3.00	3.42
106882	Rural Minor Collector	Roadside	Barrier end treatments (crash cushions, terminals)	5.00	6.00		1.00		2.00	2.00	3.00	7.00	12.00	-18.84
61284	Urban Minor Arterial	Roadway	Roadway widening - add lane(s) along segment	51.00	66.00			1.00	3.00	49.00	41.00	101.00	110.00	-1.03
105773	Rural Principal Arterial (RPA) - Other	Alignment	Horizontal and vertical alignment	7.00	7.00	1.00	2.00		1.00	11.00	4.00	19.00	14.00	-19.06
106210	Urban Minor Arterial	Roadway	Pavement surface – high friction surface	34.00	32.00		1.00	2.00	3.00	35.00	15.00	71.00	51.00	-21.63
106848	Urban Principal Arterial (UPA) - Other	Pedestrians and bicyclists	Pedestrian signal	51.00	54.00	2.00	1.00	1.00	10.00	50.00	68.00	104.00	133.00	0.55
105776	Rural Major Collector	Intersection traffic control	Pavement markings	10.00	5.00	1.00			1.00	7.00	5.00	18.00	11.00	28.00
105946	Rural Minor Arterial	Roadway	Pavement surface - other	9.00	1.00			3.00	1.00	12.00	9.00	24.00	11.00	18.52
106186	Urban Principal Arterial (UPA) - Other	Roadside	Barrier – cable	28.00	42.00			2.00	1.00	7.00	16.00	37.00	59.00	-1.76
106514	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	40.00	32.00			3.00	3.00	47.00	38.00	90.00	73.00	3.03
110432	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Roadway	Pavement surface – high friction surface	115.00	79.00	2.00	2.00	1.00	3.00	81.00	42.00	199.00	126.00	4.83
107484	Rural Minor Arterial	Roadway	Rumble strips – edge or shoulder	14.00	17.00		2.00	1.00	2.00	16.00	13.00	31.00	34.00	-39.59
108942	Rural Principal Arterial (RPA) - Interstate	Roadway signs and traffic control	Roadway signs (including post) - new or updated		1.00			1.00			1.00	1.00	2.00	2.35

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
110094	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	124.00	155.00		3.00	6.00	2.00	74.00	67.00	204.00	227.00	-27.61
110465	Urban Major Collector	Roadway	Pavement surface – high friction surface	48.00	16.00	1.00		1.00		35.00	17.00	85.00	33.00	67.74
98238	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Roadside	Barrier – cable	53.00	117.00	3.00		3.00	2.00	40.00	62.00	99.00	181.00	48.81
104383	Urban Principal Arterial (UPA) - Other	Roadway	Pavement surface – high friction surface	87.00	26.00	6.00	5.00	7.00	12.00	168.00	86.00	268.00	139.00	10.48
101978	Urban Principal Arterial (UPA) - Interstate	Roadside	Barrier – cable	139.00	142.00	7.00	1.00	7.00	4.00	79.00	79.00	232.00	226.00	81.04
483	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify control – Modern Roundabout	4.00	2.00					5.00	3.00	9.00	5.00	-0.01
85417	Urban Minor Arterial	Intersection traffic control	Modify traffic signal – modernization/replacement	79.00	106.00	5.00	18.00	23.00	50.00	498.00	451.00	605.00	625.00	-22.96
104385	Urban Major Collector	Intersection traffic control	Modify traffic signal – modernization/replacement	11.00	10.00	1.00			5.00	90.00	50.00	102.00	65.00	7.46
57706	Urban Minor Arterial	Intersection geometry	Intersection geometry - other	4.00	1.00							4.00	1.00	0.01
85415	Urban Principal Arterial (UPA) - Other	Pedestrians and bicyclists	ADA curb ramps	16.00	28.00	1.00	1.00	5.00	9.00	191.00	110.00	213.00	148.00	0.61
8394	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	69.00	46.00				2.00	78.00	47.00	147.00	95.00	0.27
73602	Rural Minor Arterial	Intersection geometry	Intersection geometry - other	5.00	4.00		1.00	2.00		7.00	8.00	14.00	13.00	-8.57
80042	Urban Principal	Intersection geometry	Add/modify auxiliary lanes	89.00	78.00	1.00	2.00	4.00	3.00	63.00	47.00	157.00	130.00	-2.06

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
	Arterial (UPA) - Other													
87923	Rural Principal Arterial (RPA) - Other	Roadway	Roadway widening - add lane(s) along segment	5.00						7.00	7.00	12.00	7.00	-0.10
88229	Rural Minor Arterial	Intersection traffic control	Intersection flashers –sign-mounted or overhead	2.00	1.00					2.00	4.00	4.00	5.00	-0.30
88523	Rural Principal Arterial (RPA) - Other	Intersection geometry	Add/modify auxiliary lanes	8.00	4.00			1.00		17.00	8.00	26.00	12.00	0.47
89244	Urban Principal Arterial (UPA) - Other	Roadside	Barrier – cable	25.00	26.00	3.00		1.00		21.00	25.00	50.00	51.00	52.53
92537	Urban Principal Arterial (UPA) - Other	Intersection geometry	Intersection realignment	11.00	7.00					7.00	5.00	18.00	12.00	0.06
92900	Rural Major Collector	Roadway	Rumble strips – edge or shoulder	6.00	8.00				1.00	5.00	9.00	11.00	18.00	-0.61
93343	Urban Minor Arterial	Intersection traffic control	Modify traffic signal – modernization/replacement	4.00	3.00					1.00	3.00	5.00	6.00	-0.95
93675	Rural Principal Arterial (RPA) - Other	Roadway	Roadway widening - travel lanes	11.00	6.00					6.00	5.00	17.00	11.00	0.03
94857	Urban Principal Arterial (UPA) - Other	Roadway	Pavement surface - other	94.00	76.00	1.00			7.00	67.00	45.00	162.00	128.00	0.61
94936	Urban Principal Arterial (UPA) - Other	Roadway delineation	Improve retroreflectivity	17.00	20.00			1.00	1.00	24.00	19.00	42.00	40.00	-0.09
95558	Urban Minor Arterial	Roadway	Roadway widening - travel lanes	54.00	23.00			2.00	1.00	58.00	33.00	114.00	57.00	0.15
98411	Rural Minor Arterial	Roadway	Pavement surface - other	21.00	37.00	2.00	3.00	2.00	2.00	49.00	23.00	74.00	65.00	-2.75
99506	Urban Principal Arterial (UPA) - Other	Advanced technology and ITS	Adaptive Signal Control System	100.00	136.00	1.00	3.00	2.00	8.00	109.00	133.00	212.00	280.00	-35.93

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
104366	Urban Minor Arterial	Roadway	Pavement surface – high friction surface	263.00	157.00	3.00	1.00	7.00	8.00	288.00	150.00	561.00	316.00	7.95
104367	Urban Principal Arterial (UPA) - Other	Pedestrians and bicyclists	Pedestrian signal	53.00	78.00	4.00	8.00	10.00	13.00	342.00	244.00	409.00	343.00	-21.54
104371	Urban Principal Arterial (UPA) - Other	Advanced technology and ITS	Adaptive Signal Control System	123.00	117.00		3.00	1.00	4.00	149.00	116.00	273.00	240.00	-15.53
104430	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Intersection traffic control - other	799.00	630.00	19.00	7.00	41.00	54.00	730.00	554.00	1589.00	1245.00	50.61
104435	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	108.00	125.00	2.00	4.00	1.00	7.00	53.00	41.00	164.00	177.00	-11.78
104437	Rural Principal Arterial (RPA) - Other	Roadside	Barrier – cable	181.00	236.00	10.00	5.00	8.00	7.00	131.00	110.00	330.00	358.00	31.93
106372	Urban Minor Arterial	Intersection traffic control	Modify traffic signal – modernization/replacement	4.00	7.00					10.00	3.00	14.00	10.00	2.75
106765	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	15.00	18.00			1.00	2.00	12.00	9.00	28.00	29.00	-1.69
106885	Rural Minor Collector	Intersection traffic control	Modify traffic signal timing – left-turn phasing								1.00		1.00	-0.84
106989	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Roadway	Pavement surface – high friction surface	126.00	66.00	1.00	1.00	4.00	4.00	47.00	35.00	178.00	106.00	0.73
107265	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	230.00	251.00	5.00	6.00	4.00	5.00	123.00	96.00	362.00	358.00	-8.47
109652	Rural Local Road or Street	Roadway delineation	Roadway delineation - other	9.00	13.00	3.00		4.00	1.00	4.00	3.00	20.00	17.00	251.79
109857	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	3.00	1.00					5.00	4.00	8.00	5.00	0.86

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
109866	Urban Principal Arterial (UPA) - Other	Roadway	Pavement surface – high friction surface	74.00	50.00	2.00	1.00	3.00	4.00	70.00	60.00	149.00	115.00	12.79
109871	Rural Principal Arterial (RPA) - Other	Roadway	Pavement surface – high friction surface	96.00	25.00	1.00		9.00	1.00	43.00	6.00	149.00	32.00	27.40
109992	Rural Major Collector	Roadway	Pavement surface – high friction surface	176.00	80.00	5.00		8.00	9.00	146.00	81.00	335.00	170.00	98.60
110769	Rural Principal Arterial (RPA) - Other	Roadway delineation	Delineators post-mounted or on barrier	784.00	680.00	11.00	14.00	22.00	20.00	383.00	289.00	1200.00	1003.00	-41.45
110863	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	52.00	37.00	2.00	1.00	2.00	1.00	29.00	20.00	85.00	59.00	6.53
111043	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	23.00	54.00	2.00		1.00	4.00	23.00	16.00	49.00	74.00	27.91
112162	Rural Minor Arterial	Roadway	Pavement surface – high friction surface	61.00	39.00	2.00		3.00	2.00	55.00	25.00	122.00	66.00	27.19
48168	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	38.00	69.00		1.00	2.00	5.00	94.00	131.00	134.00	206.00	-5.47
57840	Rural Minor Arterial	Alignment	Horizontal and vertical alignment	5.00	5.00			1.00		9.00	8.00	15.00	13.00	0.22
86970	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal – modernization/replacement	12.00	5.00				1.00	8.00	3.00	20.00	9.00	-16.21
87882	Urban Minor Arterial	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	4.00	5.00				1.00	5.00	3.00	10.00	9.00	0.07
88436	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Roadside	Barrier- metal	102.00	114.00		3.00	8.00	10.00	87.00	71.00	197.00	198.00	-16.21

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
90318	Urban Major Collector	Roadside	Barrier- metal	73.00	63.00	1.00	3.00	9.00	7.00	57.00	45.00	140.00	118.00	-14.12
90490	Urban Principal Arterial (UPA) - Other	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	31.00	19.00		2.00	6.00		21.00	9.00	58.00	30.00	-4.18
91394	Rural Minor Arterial	Intersection traffic control	Modify control – new traffic signal	7.00	1.00					12.00	1.00	19.00	2.00	2.47
92921	Urban Minor Arterial	Intersection traffic control	Modify control – Modern Roundabout	18.00	12.00			2.00		18.00	6.00	38.00	18.00	0.57
93016	Urban Minor Arterial	Intersection traffic control	Modify control – new traffic signal	5.00	1.00					5.00	1.00	10.00	2.00	0.33
94894	Rural Minor Collector	Intersection traffic control	Modify control – Modern Roundabout	6.00	1.00					3.00	3.00	9.00	4.00	-0.02
98126	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	49.00	50.00	2.00	1.00	1.00	2.00	37.00	36.00	89.00	89.00	3.56
101991	Urban Minor Arterial	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	7.00	5.00				1.00	3.00	9.00	10.00	15.00	-5.27
102155	Urban Minor Arterial	Intersection traffic control	Modify traffic signal – modernization/replacement	61.00	73.00			4.00	7.00	100.00	86.00	165.00	166.00	-1.22
102555	Urban Principal Arterial (UPA) - Interstate	Roadway	Pavement surface - other	24.00	12.00			1.00		24.00	20.00	49.00	32.00	4.95
105775	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Intersection traffic control	Modify control – Modern Roundabout	12.00	9.00					14.00	2.00	26.00	11.00	0.40
106282	Rural Principal Arterial (RPA) - Interstate	Interchange design	Interchange improvements	23.00	12.00		1.00	4.00		15.00	7.00	39.00	22.00	-7.96
106367	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Modify control – Modern Roundabout	15.00	16.00				3.00	10.00	9.00	25.00	28.00	-2.79

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
106508	Urban Principal Arterial (UPA) - Interstate	Roadside	Barrier – cable	55.00	61.00	1.00		1.00	3.00	26.00	20.00	83.00	84.00	3.76
106559	Urban Principal Arterial (UPA) - Other	Roadway	Roadway widening - add lane(s) along segment	5.00	4.00			1.00	1.00	6.00	2.00	12.00	7.00	0.25
106769	Urban Principal Arterial (UPA) - Interstate	Roadside	Barrier – cable	258.00	440.00	5.00	8.00	7.00	17.00	143.00	221.00	413.00	686.00	-25.81
109870	Rural Minor Arterial	Roadway signs and traffic control	Roadway signs (including post) - new or updated	113.00	100.00	3.00	1.00	7.00	5.00	74.00	55.00	197.00	161.00	28.40
110771	Rural Minor Collector	Roadside	Barrier- metal	9.00	1.00	1.00	1.00			2.00	2.00	12.00	4.00	0.13
110827	Rural Minor Arterial	Advanced technology and ITS	Dynamic message signs	4.00	5.00					4.00	6.00	8.00	11.00	-3.99
110865	Rural Principal Arterial (RPA) - Other	Roadway	Pavement surface – high friction surface	56.00	14.00	2.00	1.00	5.00		41.00	10.00	104.00	25.00	14.63
111188	Urban Principal Arterial (UPA) - Interstate	Roadway	Pavement surface - other	248.00	193.00	3.00	4.00	6.00	4.00	172.00	115.00	429.00	316.00	-1.14
113429	Rural Principal Arterial (RPA) - Other Freeways and Expressways	Roadway	Pavement surface – high friction surface	21.00	6.00			2.00	1.00	13.00	3.00	36.00	10.00	6.26
114780	Rural Major Collector	Roadway	Rumble strips – center	43.00	39.00		1.00	3.00	3.00	32.00	20.00	78.00	66.00	-64.44
114781	Rural Major Collector	Roadway	Pavement surface – high friction surface	30.00	10.00	1.00	1.00	3.00	4.00	19.00	6.00	53.00	21.00	2.22
91533	Rural Principal Arterial (RPA) - Interstate	Roadside	Barrier – cable	57.00	93.00	3.00		1.00	1.00	39.00	26.00	100.00	120.00	55.45

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
110594	Urban Principal Arterial (UPA) - Interstate				1.00				3.00				4.00	-4.57

Compliance Assessment

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

02/25/2022

What are the years being covered by the current SHSP?

From: 2022 To: 2027

When does the State anticipate completing its next SHSP update?

2027

Under the IIJA requirements, Pennsylvania's SHSP was updated in November 2023 with the new VRU Assessment Report as Appendix A

District Highway Safety Plans were developed in 2023 as a resource that provides key information to facilitate enhanced decision-making based on safety and risk management strategies and principles. The plans include the District's safety and risk management emphasis areas, safety planning and summarize actions taken by road safety audits (RSAs). The plans also discuss how the District is utilizing Highway Safety Manual (HSM) methodologies, cover safety related press activities, and review the District's safety improvement projects.

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	99		
	Surface Type (23) [24]	100	100					100	100		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	99
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	99
	Segment Length (13) [13]	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
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	100	100
	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			
	Average Annual Daily Traffic (79) [81]	100	100					100	8		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	95	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			100							
	Location Identifier for Road 1 Crossing Point (122) [112]			100	75						
	Location Identifier for Road 2 Crossing Point (123) [113]			100	75						
	Intersection/Junction Geometry (126) [116]			100							
	Intersection/Junction Traffic Control (131) [131]			100	85						
	AADT for Each Intersecting Road (79) [81]			100	65						
	AADT Year (80) [82]			100	65						
	Unique Approach Identifier (139) [129]										

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
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	85				
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]					100	75				
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	75				
	Ramp Length (187) [177]					100	85				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100	50				
	Roadway Type at End Ramp Terminal (199) [189]					100	50				
	Interchange Type (182) [172]					100	85				
	Ramp AADT (191) [181]					100					
	Year of Ramp AADT (192) [182]					100					
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	75				
Totals (Average Percent Complete):		**100.00**	**100.00**	**87.50**	**45.63**	**100.00**	**61.82**	**100.00**	**78.00**	**100.00**	**99.60**

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

These percentages are reflected by Function Class and not Jurisdiction.

There are locally owned roads in Pennsylvania that are classified as arterials or collectors. Several are in the Philadelphia area. The table will be updated with non-state owned data by the next reporting period.

Through lanes not collected for Other State Agencies and Municipal Owned Roads (both are Non-State Owned with a functional classification of local). Default value of “2” can be used until a determination is made on how to collect.

Have been working with Counties to provide county owned local roads, but have only reached 22 of the counties. Currently, those records are listed as municipally owned roads.

The percentages under Local Paved Roads are Federal-Aid roads with route #'s for "State Owned" and non-Federal-Aid municipal owned roads for "Non State Owned"

Number of through lanes applies to Liquid Fuels/Local Federal Aid only. Many Non-Liquid Fuels miles are not paved.

Segment Identifier - We have defined segments for 100% of Liquid Fuels local roads. We are working on QA/QC for all 67 counties; as the QA/QC process is completed for a county, we are segmenting the non-liquid fuels roads. As of August 2024, 51 counties are complete through segmentation. There are currently 7 counties in the QA/QC process.

Urban Rural designation - This is collected for every state road segment. Local roads determine urban/rural based on the municipality code.

Intersection/Junction Traffic Control - LRS locations are known but accuracy is not 100% and QA efforts will take place once the inventory is established. PennDOT's Traffic Signal Asset Management System (TSAMS) currently stores all signalized intersections in PA including the city of Philadelphia.

Linear Referencing System (LRS) locations are known but accuracy is not 100% and QA efforts will take
place once the inventory is established. Non-state intersections are not inventoried.

Average Annual Daily Traffic (79) [81] for local paved roads (Jurisdiction 3 and 4) is at 14%. There are 185,369 sites assigned statewide for non-state, non-fed aid routes. Districts 1, 4, 5, 6, 8, 10, 11, and 12 have 152,164 sites. We have scheduled 8,076 sites for collection in 2024 in Districts 1, 4, 5, 6, 8, 10, 11, and 12. We have received 3,816 counts so far and accepted 3,661 or 96% of the counts.

AADT is not collected on non-state owned ramps

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.

PennDOT plans on completing this by September 2026. The Bureau of Operations handles collection and the Bureau of Infrastructure and Economic Development is responsible for data management of state-maintained roadways. Traffic data are collected by the Bureau of Planning and Research (BPR) for all public roadways. Non-local roadway data are collected and maintained through the current legacy systems. Data are collected by the District as changes are made, or as discovered during the LRS QA process. Some data are collected using Video Log. BPR is responsible for data collection and data management for local roads. BPR also collects traffic data for all roadways. Collection of traffic data is handled through use of pneumatic tubes and portable traffic counters. For non-traffic, data collectors utilized tablets in the field and aerial photography or LIDAR when they were cost reasonable. This work has been completed. No update cycle is planned now that the data have been collected.

PennDOT is also progressing towards a linear referencing system for local roads. PennDOT’s local road network is complete for all 77,718 miles of liquid fuel payment eligible roads and has been linked to our oracle database. We are continuing to work on integrating the local roads that are ineligible for liquid fuel payments. We have all 67 counties integrated within the database and are in process of QA/QC for the entire state.

The cost for liquid-fuels roadways is estimated at $6 million. Traffic data for non-liquid fuels data collection has not been estimated. Collection of remaining non-traffic data for both local and non-local roads is estimated to be at least $2 million. These costs do not include ongoing maintenance of data after initial collection. The source of all the funding needed to meet goals has not been established. HSIP funds will bear the burden of many of these costs. Research, LTAP and TRCC funding will be considered. Additional funding will likely be needed to accelerate the schedule to meet the September 2026 deadline.

PennDOT has used HSIP set-aside funds and consultant support to help meet the requirement including the collection of traffic volumes at approximately 5,100 local-state road intersections.

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

5 year rolling average: means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area: means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project: means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT: means hundred million vehicle miles traveled.

Non-infrastructure projects: are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule: applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure: means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds: mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification: means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP): means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systematic: refers to an approach where an agency deploys countermeasures at all locations across a system.

Systemic safety improvement: means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer: means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.