PUERTO RICO

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2024 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

Photo Source:
Internet

Table of Contents

Disclaimer

Protection of Data from Discovery Admission into Evidence

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

23 U.S.C. 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

Background

The Puerto Rico Highway Safety Improvement Program (HSIP) is responsible for managing the 25% of federal funds allocated under the Territorial and Puerto Rico Highway Program eligible for highway safety improvement projects. This program does not have any subprogram. The HSIP is guided by the Puerto Rico Strategic Highway Safety Plan (SHSP), being responsible for coordinating the highway safety initiatives, performance measures, and performance targets with internal and external safety stakeholders. It is through the SHSP that the main highway safety problems, and opportunities to achieve the purpose of the HSIP, have been identified and analyzed, as well as other transportation plans.

Puerto Rico HSIP Funding

During FY 2023, the PRHTA invested a total of $31,701,675.00 of HSIP-eligible federal funds on a total of 23 projects. Among these projects, there was two (2) of intersection geometric improvements, one (1) project focused on traffic monitoring system, three (3) projects focused on services and planning (highway safety patrol program, known as SEGURO for its Spanish acronym, the Consulting Services of the Strategic Highway Safety Plan, and the State Planning and Research Program), and 17 projects focused on roadway improvements. The roadways selected were PR-1, PR-101, PR-111, PR-116, PR-137, PR-149, PR-152, PR-165, PR-2, PR-3, PR-30, PR-4413, PR-60, PR-66, PR-640, PR-829, and PR-853.

All these projects were mainly focused on roadside improvements following the Manual of Assessing Safety Hardware (MASH) upgrades, such as metal safety barriers, signs and traffic control, rumble strips, among other roadside safety applications. Also, several FHWA proven safety countermeasures have been evaluated and implemented through working sessions between the SHSP and the consultants. In these meetings it is explained the importance and specific contribution of countermeasures such as Rectangular Rapid Flashing Beacon, new and enhanced sidewalks, nighttime visibility (i.e., pavement markings, crosswalks), among others. The incorporation of these proven safety countermeasures is also discussed as part of the EDC 7 Nighttime Visibility. In addition, the development of Road Safety Audits is one of the methods that had helped in some projects design where the safety proven countermeasures have been already evaluated using data-driven analysis. In general, the method used to select the projects was a combination of spot and systemic location.

A small amount of funding was allocated for local roads. HSIP funding supported the development of pedestrian and cycling facilities in a municipality in the west of the island. Allocating federal funds to improve highway safety through the State highway system had been essential to stop the increase in the number of fatal and serious injury crashes in Puerto Rico.

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.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

The Puerto Rico Highways and Transportation Authority (PRHTA) manages a Highway Safety Improvement Program (HSIP) focused on the development of highway safety improvement projects along the entire roadway network. As part of this program, PRHTA is implementing a Strategic Highway Safety Plan (SHSP) since 2014 and, currently, is beginning the new SHSP 2024-2028. PRHTA uses state and federal funds to implement the SHSP and perform highway safety improvement projects.

Under the title 23 U.S.C. Section 165, Territorial and Puerto Rico Highway Program, Puerto Rico was authorized to receive $158,000,000 annually for fiscal years 2016 through 2021. And now, with the Bipartisan Infrastructure Law (BIL), Puerto Rico will receive:

- $173,000,000 for FY 2022 (9.5% increase)

- $177,000,000 for FY 2023 (12.0% increase)

- $180,000,000 for FY 2024 (13.9% increase)

- $184,000,000 for FY 2025 (16.5% increase)

- $187,000,000 for FY 2026 (18.4% increase)

The agency responsible for receiving these funds is the PRHTA. Puerto Rico's HSIP is overseen by the PRHTA's Pre-Construction Office. From these funds, the HSIP is responsible for managing the 25% allocated under the Territorial and Puerto Rico Highway Program eligible for highway safety improvement projects. Also, the PRHTA applies for Section 154 Penalty (Open Container Requirements) and to the Section 164 Penalty (Minimum Penalties for Repeated Offenders) funds to HSIP eligible activities.

To strategically invest the HSIP funds, PRHTA implements a project selection process with the following steps:

· Crash data collection in the Puerto Rico Department of Transportation and Public Works (PRDTPW).

· Application of the High Crash Location (HCL) methodology. This data-driven methodology helps PRHTA to identify the high crash locations by corridors, segments, and intersections.

· Evaluation of the high crash locations to determine the highway safety improvement projects to be included in the Statewide Transportation Improvement Program (STIP). (Those projects are divided using a systematic or hot-spot approach, and PRHTA is working to further implement the systemic safety approach in the next years. This evaluation considers the use of funds through to the five (5) PRHTA Construction Districts.

· Selection of consultants for the development of PS&E in compliance with the latest engineering standards in Puerto Rico. Consultants develop Preliminary Engineering Reports (PERs) considering safety improvements, such as FHWA-proven safety countermeasures, and Cost-Benefit calculations for justification of HSIP-funded projects.

· Inclusion of the highway safety improvement projects in the STIP for the evaluation and approval of the Metropolitan Planning Organization (MPO).

· Procurement and construction processes.

Where is HSIP staff located within the State DOT?

Other-PRHTA's Pre-Construction Office

How are HSIP funds allocated in a State?

- Other-Allocated Programs

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

For local roads: In Puerto Rico, local roads are addressed by municipalities. As part of the Strategic Highway Safety Plan (SHSP), all crashes are evaluated, and high crash locations are identified along the entire roadway network. If local streets resulted as prone to a high number of crashes, the PRHTA is engaged to provide technical support, perform Road Safety Audits (RSA), and develop highway safety improvement projects. In addition, the municipalities are invited to participate in the Emphasis Areas teams' meetings.

This is very important because the meeting participants can receive the most recent crash and fatalities data analysis and discuss the main SHSP's strategies and action plan for the specific period of the year or according to increasing safety issues. Municipalities with the most roadway length of high crash locations are informed and PRHTA provides them with a municipal deep crash analysis to help them plan their local police mobilizations, educational programs, community outreach, emergency medical services, and engineering improvements. If there is a safety problem on the local roads, the PRHTA provides technical resources to identify potential countermeasures and encourage a reduction in the severe crashes. Also, as part of the new BIL Discretionary Programs (SAFE STREET FOR ALL), PRHTA is in communication and coordination with the municipalities to provide support in data analysis, training and safety improvements. Currently, three municipalities have been awarded discretionary grants from the SAFE STREETS FOR ALL program: San Juan, Toa Baja, and Yauco.

For tribal roads: Puerto Rico does not have tribal roads, thus is not applicable.

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

- Design
- Operations
- Planning
- Traffic Engineering/Safety

Describe coordination with internal partners.

The PRHTA Area Directors continuously held coordination meetings for the selection and integration of their programs and projects using the State Transportation Improvement Program (STIP) as a data-driven oriented process to converge their necessities and ideas. Some of the internal partners are part of the Infrastructure Directorate, such as Program Development, Program and Project Management, and Asset Management.

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)
- Other-Non-profit organizations

Describe coordination with external partners.

As part of the Puerto Rico SHSP, the external partners are continuously informed about the SHSP progress, and they actively participate in Emphasis Areas Quarterly Meetings (i.e., Pedestrians, Traffic Record Systems, Emergency Medical Services, Lane Departure, Negligent Driving, Personal Safety Gear, and Under the Influence of Alcohol and Other Substances), Road Safety Audits (RSA), Safety Assessments, Newsletter, among other events. In addition, some of them participate in the road safety evaluations supporting the decision-making processes of the highway safety improvement projects.

As of 2023, the PRHTA-HSIP Team coordinates with the Puerto Rico Traffic Safety Commission (PRTSC) the use of local crash data to establish the safety performance measures and the data-driven highway safety improvement projects. The PRTSC is responsible of managing the Puerto Rico traffic fatalities database through the Planning Area and for the software created to access and analyze the Puerto Rico crash data, called “Observatorio de Seguridad Vial”, that is developed and managed by the local consultants.

The HSIP promotes the alliance among safety stakeholders by encouraging them, throughout the SHSP, to bring together efforts and providing technical references for their studies and activities (i.e., statistical crash analysis and profile of pedestrian crashes). In addition, the Team has coordinated strategic meetings with top management decision makers to present the road safety strategies that should be working in the year.

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

During 2023 and 2024, the Puerto Rico HSIP has been focusing on the development of the new SHSP 2024-2028, including the analysis of the new emphasis areas, meeting with the safety stakeholders, and coordinating with the Steering Committee members their necessities and priorities. Also, there have been meetings to analyze the content of the Request for Proposals for HSIP Projects in order to make sure that the vulnerable road users are taken into account in the engineering analysis and the final designs.

The Puerto Rico HSIP team continues to enhance different methodologies by combining the hot-spot, systematic, and systemic approach to ensure the best selection of projects and investments federal funds, as part of the HSIP Implementation Plan and adjustments to the HSIP Administration.

The PRHTA team have been a several meetings with the Puerto Rico Transportation Technology Transfer Center (PRLTAP) to collaborate related of the initiative of the EDC - Nighttime Visibility.

As part of the initiative, several presentations have been made aimed at designers and highway safety stakeholders, such as the activity “EDC-7 Summit: Night Visibility and the Safety of Vulnerable Users, and Pedestrian and Cyclist Accessibility” and at the 12th IRF Caribbean Regional Congress in Puerto Rico 2024, in which Puerto Rico hosted the activity.

Also, had been meeting with the project managers of the PRHTA Pre-Construction Office to development of the highway safety checklist document in the design phase to include the elements related with the topic.

Program Methodology

Select the programs that are administered under the HSIP.

- HSIP (no subprograms)

Program: HSIP (no subprograms)

Date of Program Methodology:7/1/2017

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?

Funding set-aside

What data types were used in the program methodology?

Crashes

- All crashes

Exposure

- Traffic
- Lane miles

Roadway

- Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Other-High Crash Location Report
- Relative severity index

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?

- selection committee

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

Rank of Priority Consideration

Available funding:1
Other-High Crash Location Report:1

What percentage of HSIP funds address systemic improvements?

95

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

- Add/Upgrade/Modify/Remove Traffic Signal
- Clear Zone Improvements
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Rumble Strips
- Upgrade Guard Rails

What process is used to identify potential countermeasures?

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

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

The Puerto Rico HSIP considers connected vehicles and Intelligent Transportation Systems (ITS) as innovative technologies that will promote a reduction of crashes with its capabilities and performance. If a safety project recommends ITS technology as part of the proposed countermeasures, PRHTA will propose the use of HSIP funds for the development and implementation of the technology that will promote a reduction of crashes with its capabilities and performance (i.e., traffic signal, dynamic message sign, TMC).

The implementation of connected vehicles is not as advanced as ITS technologies in Puerto Rico, but as these technologies are included in the Puerto Rico's Regional ITS Architecture the Puerto Rico HSIP will support their implementation. Many of these advanced technology applications can be found on the CMF Clearinghouse, or through other research papers, which provides additional tools for analysis. PRHTA's focus is to actively manage the transportation system to maximize safety, security, mobility, and return on investment for the benefit of customers.

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 PRHTA used the HSM as a reference to develop current procedures to determine the high crash locations, perform the Before and After studies, and develop the Puerto Rico Crash Modification Factors database. The PRHTA methodology for determining the high crash locations (HCL Report) includes a Crash Cost Factor (CCF) and a Frequency Index (FI), corresponding to the Crash Rate and Severity Index presented in the HSM.

As part of the new SHSP 2024-2028, the emphasis area of Traffic Records Systems has the main objective of develop a technical guide for road safety processes and procedures on Puerto Rico's highways, to be adopted by the PRHTA for projects funded through the HSIP. The main strategy is to produce a technical guide on how to use local traffic data to integrate and execute applicable methodologies from the Highway Safety Manual. This objective and strategy will be in conjunction with the PRTSC and the Puerto Rico Police Bureau, ensuring the compliance with the latest version of the MMUCC and the Road Safety Observatory personnel.

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

During 2023 and 2024, the HSIP continued to use the results of the 2021 High Crash Location Report to select those road segments that had been identified with 3 or more emphasis areas. In addition, the new format of the report provided results for the five (5) PRHTA Construction Districts, thus, every district has a list of possible projects that maximize the safety investments. This updated version of the HCL report also features a web-based tool that is accessible to all our safety partners and provides a better visualization capability.

The online High Crash Location report can be assessed at:
https://metricpr.maps.arcgis.com/apps/dashboards/861cba22645b4dc993393bda0028b9d5

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Federal Fiscal Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$27,106,667	$23,911,064	88.21%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$4,219,599	$4,219,599	100%
Penalty Funds (23 U.S.C. 154)	$1,900,000	$1,785,506	93.97%
Penalty Funds (23 U.S.C. 164)	$1,900,000	$1,785,506	93.97%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$35,126,266	$31,701,675	90.25%

During the fiscal year period, the PRHTA in coordination and with the approval of FHWA, released the amount of $5,845,435.79, for projects that were completed.

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

$5,986

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

$5,986

The funds obligated for the local road are part of a Scenic Walkway for Bicycles and Pedestrians on Route PR-4413, Municipality of Rincón. The project is developed and supervised by the Puerto Rico Highway and Transportation Authority with the participation and support of the local agency.

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

$6,741,347

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

$6,741,347

These funds were allocated and obligated to support the PRHTA through consulting services for the development, implementation, and evaluation of the Puerto Rico Strategic Highway Safety Plan, the Highway Safety Patrol Operations and Traffic Incident Data Collection and Reporting Services (SEGURO) on highways PR-1, PR-2, PR-18, PR-20, PR-26, PR-30, PR-52, PR-66, and for the State Planning and Research Program 2022-2023.

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

$0

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

$0

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

There were no major impediments to obligate the HSIP funds in this period. There is a decrease of 9.7% between the programmed ($35,126,266.00) and obligated funds ($31,701,675.00). Additionally, as a proactive approach the PRHTA's safety team is in continued communication with the design project managers, by participating in the weekly progress meetings for the STIP projects.

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

PRHTA is developing a highway safety culture by including highway safety improvement in all projects independently of the project scope and the corresponding allocated program. This methodology includes selecting several design consultants, developing PS&E in an expeditious manner, evaluating the division of projects in phases (as possible) to reduce construction time and risk, and promoting an aggressive bid program.

The highway safety patrol program, known as SEGURO, for its Spanish acronym, provides to the Traffic Management Center reliable data in terms of traffic incidents and roadway conditions. Through this program it is collected incident timeline data, including incident response time, roadway clearance time, incident clearance time, among other data such as incident type, number of lanes blocked, incident location and responders on scene. All this data is analyzed to monitor the performance of the roadway safety and to promptly identify if there is a safety concern along the roadway system. The SEGURO program started in 2017 and in 2023 the highways covered by these services are the PR-1, PR-2, PR-18, PR-20, PR-26, PR-30, PR-52 ,and PR-66. This service is part of the PRHTA’s Traffic Incident Management Program, which is regulated by FHWA. The SEGURO program will help PRHTA reduce the number of secondary crashes on these major roadways through safe closures and information to travelers during incident management. PRHTA is participating in the EDC-7 Next Generation TIM to provide SEGURO drivers with new tools and protocols that will foster a safe road environment for SEGURO drivers and operators.

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
0001050 - Highway Safety Improvement Program PR-1 From Km. 25.94 to Km. 32.00, San Juan - Caguas	Pedestrians and bicyclists	Pedestrians and bicyclists – other	3.77	Miles	$319755	$15582845	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	42,000	45	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
101005 - Highway Pavement and Safety Improvements PR-101 From Km. 0.00 to Km. 10.00, Municipalities of San German and Lajas	Roadway	Roadway - other	6.21	Miles	$740844	$5952744	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	6,200	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
101005 - Highway Pavement and Safety Improvements PR-101 From Km. 0.00 to Km. 10.00, Municipalities of San German and Lajas	Pedestrians and bicyclists	Pedestrians and bicyclists – other	6.21	Miles	$460569	$5952744	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Multiple/Varies	6,200	50	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0101006 - Highway Pavement and Safety Improvements PR-101 From Km. 10.00 to Km. 20.00, Municipalities of Lajas and Cabo Rojo	Roadway	Roadway - other	6.21	Miles	$657625	$5057004	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	6,500	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.

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
0111035 - Improvements To Highway PR-111 Kilometers: 10.00 To 20.00, Municipalities of Moca-San Sebastian	Roadside	Roadside - other	6.21	Miles	$187996	$9426721	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	15,200	40	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0111035 - Improvements To Highway PR-111 Kilometers: 10.00 To 20.00, Municipalities of Moca-San Sebastian	Roadside	Roadside - other	6.21	Miles	$41078	$9426721	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	15,200	40	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0116008 - Highway Safety Improvements PR-116 From Km. 3.00 To 14.00, Municipality of Lajas	Roadside	Roadside - other	6.84	Miles	$92758	$6399769	Penalty Funds (23 U.S.C. 164)	Multiple/Varies	Principal Arterial-Other	7,400	40	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0137008 - Highway Safety Improvements and Pavement Rehabilitation And Reconstruction PR-137 Km 9.0 To 18.0, Municipality Of Morovis	Intersection traffic control	Intersection traffic control - other	6.21	Miles	$243642	$20433106	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	19,400	30	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.

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
0137008 - Highway Safety Improvements and Pavement Rehabilitation And Reconstruction PR-137 Km 9.0 To 18.0, Municipality Of Morovis	Roadway	Pavement surface - other	6.21	Miles	$9644247	$20433106	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	19,400	30	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0137008 - Highway Safety Improvements and Pavement Rehabilitation And Reconstruction PR-137 Km 9.0 To 18.0, Municipality Of Morovis	Intersection traffic control	Intersection traffic control - other	6.21	Miles	$493927	$20433106	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	19,400	30	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0137008 - Highway Safety Improvements and Pavement Rehabilitation And Reconstruction PR-137 Km 9.0 To 18.0, Municipality Of Morovis	Pedestrians and bicyclists	Pedestrians and bicyclists – other	6.21	Miles	$35168	$20433106	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Principal Arterial-Other	19,400	30	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0137008 - Highway Safety Improvements and Pavement Rehabilitation And Reconstruction PR-137 Km 9.0 To 18.0, Municipality Of Morovis	Roadway	Pavement surface - other	6.21	Miles	$344806	$20433106	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	19,400	30	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.

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
0149020 - Highway Safety Improvements PR-149 From Km. 0.00 To Km. 12.8 Municipalities of Manati - Ciales	Roadway	Roadway - other	7.95	Miles	$18000	$10416391	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	16,800	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0152010 - Safety Improvements Highway PR-152, Kilometers: 13.65 to 20.50, Barranquitas and Naranjito	Roadway	Roadway - other	4.26	Miles	$8462	$3301796	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	17,250	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0165020 - Pavement Rehabilitation and Safety Improvements PR-165 From Km. 13.60 to Km. 30.00, Municipalities of Toa Baja and Dorado	Pedestrians and bicyclists	Pedestrians and bicyclists – other	10.19	Miles	$344806	$15401950	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	19,600	50	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0165021 - Pavement Rehabilitation and Safety Improvements PR-165 From Km. 30.00 to Km. 38.00, Municipalities of Toa Baja, Cataño and Guaynabo	Roadway	Pavement surface - other	4.97	Miles	$673892	$10079612	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	36,212	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.

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
0165021 - Pavement Rehabilitation and Safety Improvements PR-165 From Km. 30.00 to Km. 38.00, Municipalities of Toa Baja, Cataño and Guaynabo	Pedestrians and bicyclists	Pedestrians and bicyclists – other	4.97	Miles	$752540	$10079612	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other Freeways & Expressways	36,212	50	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0002083 - Pavement Rehabilitation And Reconstruction PR-2 Km 145 To 152, Municipalities of Añasco - Mayagüez	Pedestrians and bicyclists	Pedestrians and bicyclists – other	4.35	Miles	$534290	$19531936	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Principal Arterial-Interstate	42,000	55	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0003056 - Highway Safety Improvements PR-3 From Km. 14.40 to Km. 18.80, Municipalities of Carolina – Canovanas	Roadside	Roadside - other	2.73	Miles	$653962	$11392022	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	43,200	40	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
9999545 - Pavement Rehabilitation and Reconstruction of Highway PR-3 From Km. 42.50 to Km. 47.60, Municipalities Luquillo and Fajardo	Pedestrians and bicyclists	Pedestrians and bicyclists – other	3.17	Miles	$875628	$21852117	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Interstate	31,000	40	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).

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
0030030 - Replacement of Bridge No. 982, Highway PR-30, Kilometer: 4.1, Gurabo	Roadway	Roadway - other	1	Locations	$156338	$18067194	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	75,000	55	State Highway Agency	Spot	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0030030 - Replacement of Bridge No. 982, Highway PR-30, Kilometer: 4.1, Gurabo	Roadway	Roadway - other	1	Locations	$417921	$18067194	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	75,000	65	State Highway Agency	Spot	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
9999240 - Scenic Walk for Bicycle and Pedestrian Route PR-4413, Municipality of Rincón	Pedestrians and bicyclists	Pedestrians and bicyclists – other	1	Locations	$5986	$9094020	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	0	25	City or Municipal Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0060003 - Highway Safety Improvements and Pavement Rehabilitation at PR-60 From Km 0.0 to Km 4.0, Municipality of Humacao	Roadside	Roadside - other	2.49	Miles	$35710	$9379625	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	25,600	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0060003 - Highway Safety Improvements and Pavement Rehabilitation at PR-60 From Km 0.0 To Km 4.0, Municipality Of Humacao	Roadside	Roadside - other	2.49	Miles	$5110627	$9379625	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	25,600	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.

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
0060003 - Highway Safety Improvements and Pavement Rehabilitation at PR-60 From Km 0.0 To Km 4.0, Municipality Of Humacao	Pedestrians and bicyclists	Pedestrians and bicyclists – other	2.49	Miles	$23395	$9379625	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Principal Arterial-Other Freeways & Expressways	25,625	50	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0060003 - Highway Safety Improvements and Pavement Rehabilitation at PR-60 From Km 0.0 To Km 4.0, Municipality Of Humacao	Roadside	Roadside - other	2.49	Miles	$1785506	$9379625	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other Freeways & Expressways	25,625	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0060003 - Highway Safety Improvements and Pavement Rehabilitation at PR-60 From Km 0.0 To Km 4.0, Municipality Of Humacao	Roadside	Roadside - other	2.49	Miles	$68156	$9379625	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other Freeways & Expressways	25,625	50	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0640001 - New Traffic Signal at The Intersection of PR-640 With E Street, Km. 0.66 To 1.05, Municipality of Arecibo	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$1056728	$1264778	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	2,900	30	State Highway Agency	Spot	Intersections	Implement engineering countermeasures to improve safety on intersections

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
0066001 - Safety Improvements Highway PR-66, Kilometers: 0.00 to 20.00, Carolina, Canovanas and Rio Grande	Roadside	Roadside - other	12.43	Miles	$4978	$13628512	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	35,100	60	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0829001 - Highway Safety Improvements in PR-829, Km. 0.0 And 11.1, Municipality of Bayamón	Roadside	Roadside - other	6.9	Miles	$2339774	$6297463	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,800	35	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
0829001 - Highway Safety Improvements in PR-829, Km. 0.0 And 11.1, Municipality of Bayamón	Pedestrians and bicyclists	Pedestrians and bicyclists – other	6.9	Miles	$873448	$6297463	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	8,800	35	State Highway Agency	Systemic	Pedestrians	Improve the highway infrastructure for pedestrians (i.e., add sidewalks, install lighting).
0829001 - Highway Safety Improvements in PR-829, Km. 0.0 And 11.1, Municipality of Bayamón	Roadside	Roadside - other	6.9	Miles	$1785506	$6297463	Penalty Funds (23 U.S.C. 154)	Urban	Minor Arterial	8,800	35	State Highway Agency	Systemic	Lane Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
9999224 - Geometric Improvements to PR-853 Intersection with PR-858, Carolina	Intersection geometry	Intersection geometry - other	1	Intersections	$17696	$287528	HSIP (23 U.S.C. 148)	Urban	Major Collector	10,600	35	State Highway Agency	Spot	Intersections	Implement engineering countermeasures to improve safety on intersections

2024 Puerto Rico Highway Safety Improvement Program

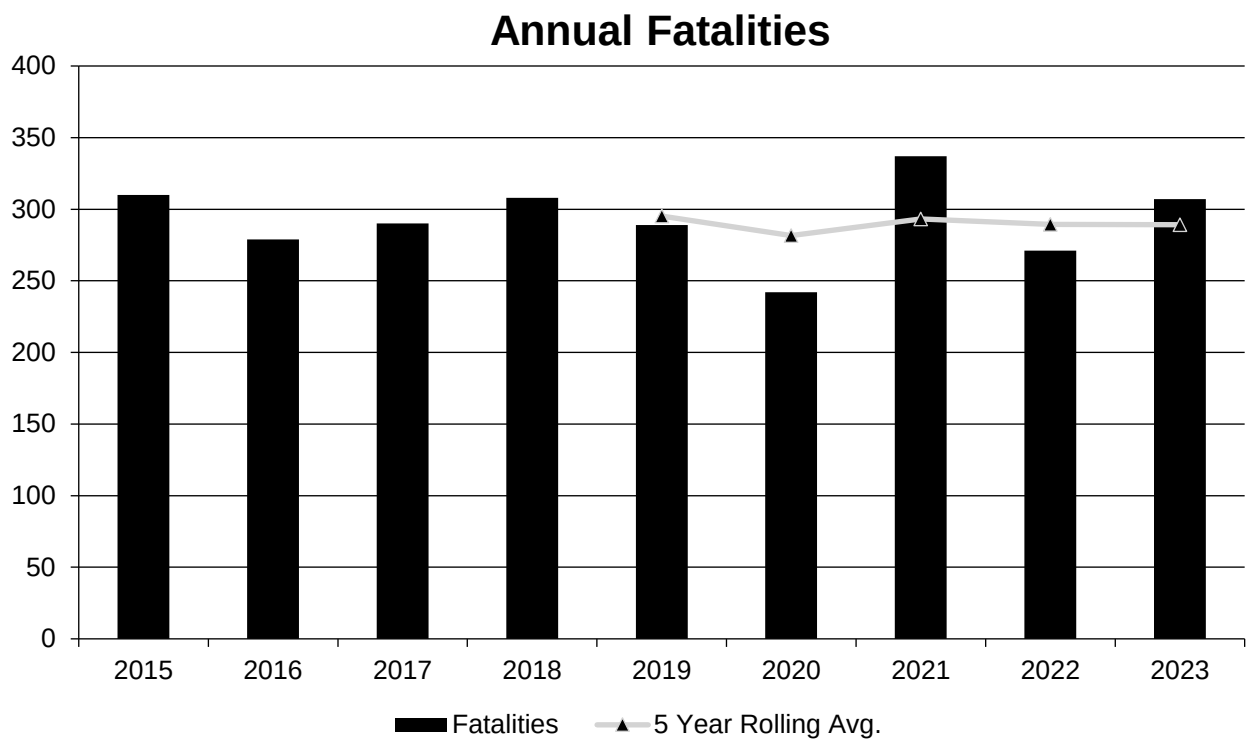
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED OR SPEED RANGE	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
9999539 - Highway Safety Patrol Operation and Traffic Incident Management (SEGURO) For Highway PR-1, PR-2, PR-18, PR-20, PR-26, PR-3	Miscellaneous	Miscellaneous - other	6	Locations	$5160000	$10965000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	Emergency Medical Services	Continue the educational programs and trainings to enforcement and emergency response personnel for crashes and incident management.
9999539 - Highway Safety Patrol Operation and Traffic Incident Management (SEGURO) For Highway PR-1, PR-2, PR-18, PR-20, PR-26, PR-4	Miscellaneous	Miscellaneous - other	6	Locations	$645000	$10965000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	Emergency Medical Services	Continue the educational programs and trainings to enforcement and emergency response personnel for crashes and incident management.
9999375 - Development, Implementation and Evaluation of the Puerto Rico Strategic Highway Safety Plan (SHSP)	Miscellaneous	SHSP Development	1	Numbers	$886347	$2740342	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	SHSP Development	Implementation of SHSP emphasis areas.
SPR1060 - State Planning and Research Program 2022-2023	Miscellaneous	Miscellaneous - other	1	Numbers	$50000	$9618579	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	Planning Document	Continue the educational programs and trainings to enforcement and emergency response personnel for crashes and incident management.

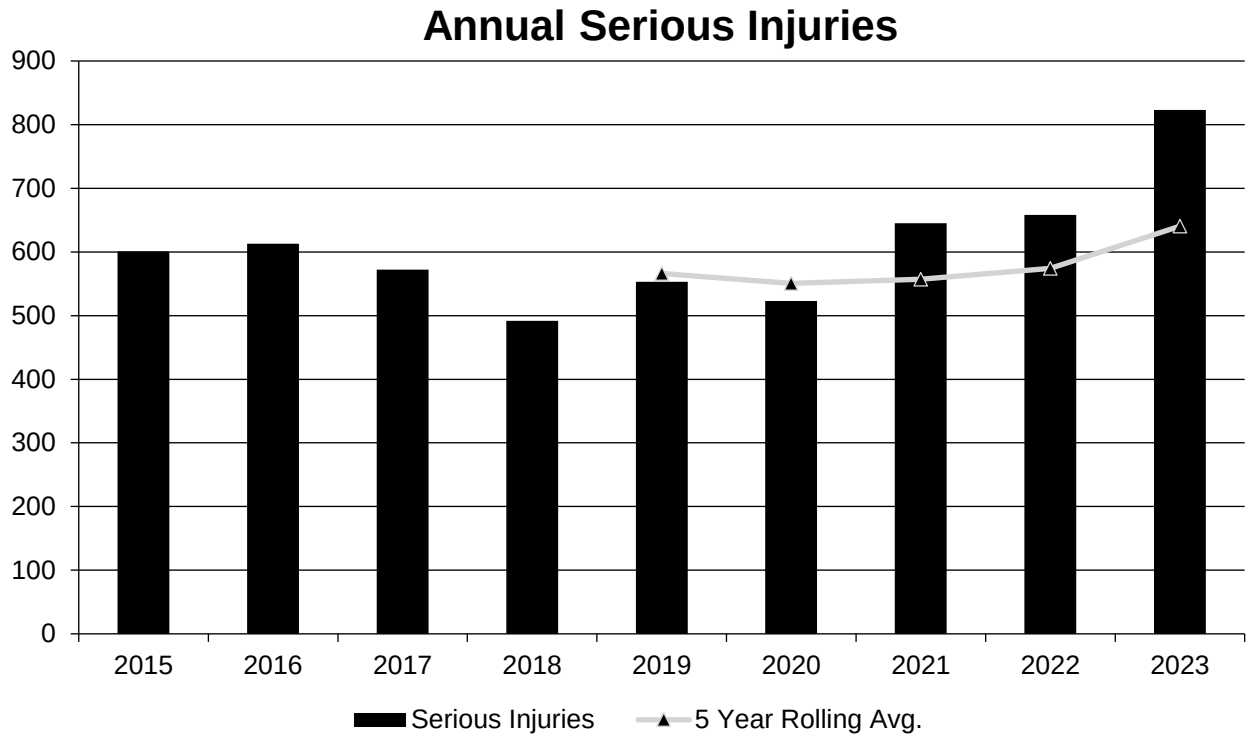
Safety Performance

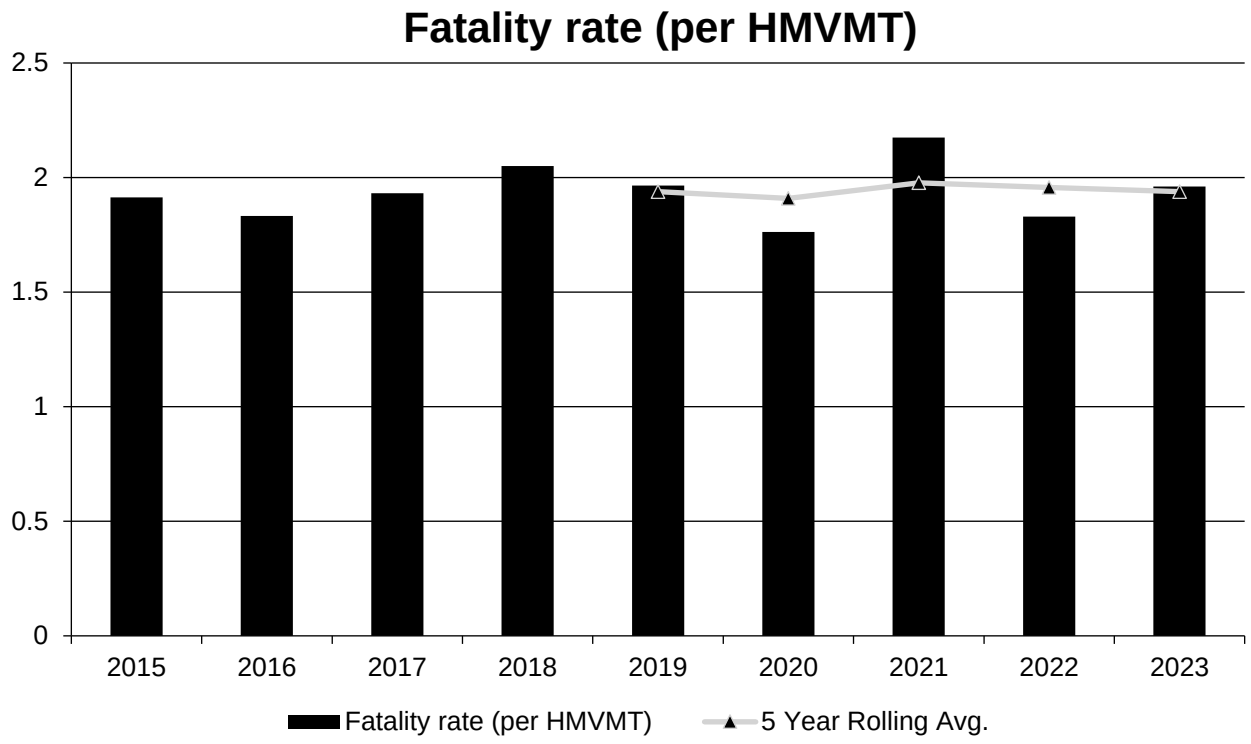
General Highway Safety Trends

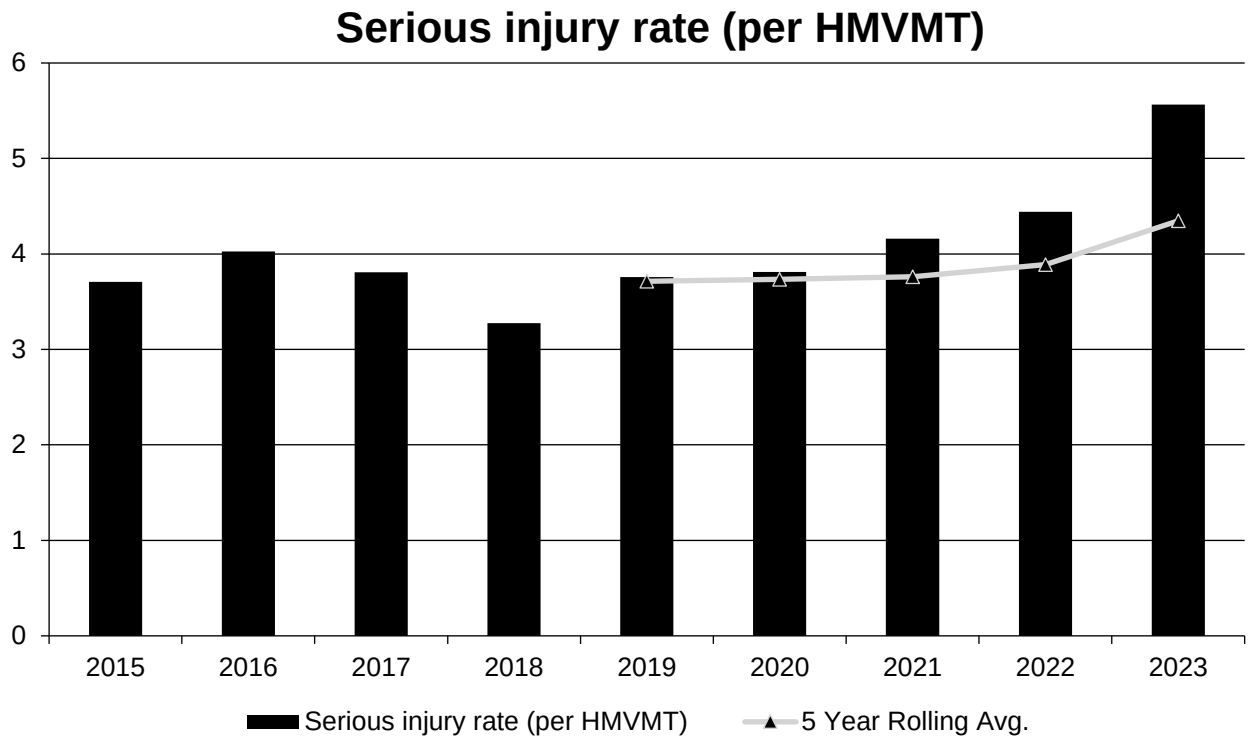
Present data showing the general highway safety trends in the State for the past five years.

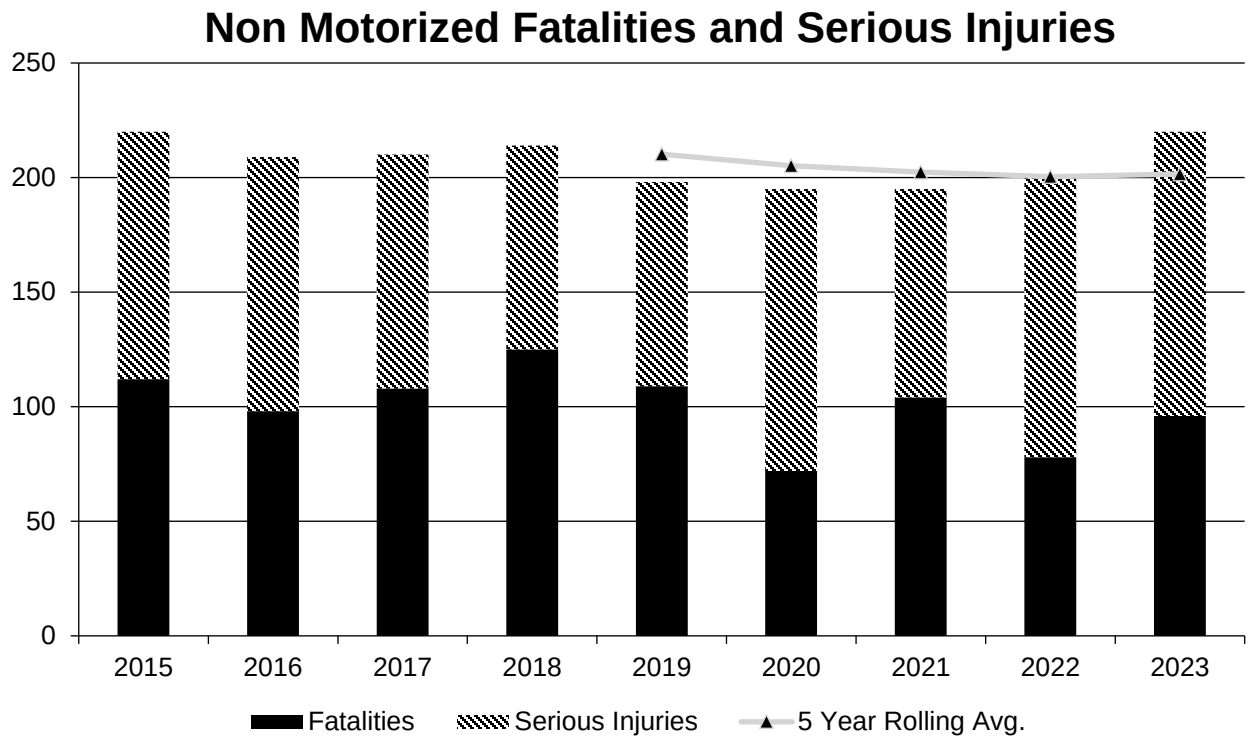
PERFORMANCE MEASURES	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fatalities	310	279	290	308	289	242	337	271	307
Serious Injuries	601	613	572	492	553	523	645	658	823
Fatality rate (per HMVMT)	1.913	1.832	1.932	2.051	1.965	1.763	2.174	1.830	1.961
Serious injury rate (per HMVMT)	3.706	4.027	3.807	3.274	3.757	3.811	4.161	4.442	5.565
Number non-motorized fatalities	112	98	108	125	109	72	104	78	96
Number of non-motorized serious injuries	108	111	102	89	89	123	91	122	124


Annual Fatalities
400
350
300
250
200
150
100
50
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
900
800
700
600
500
400
300
200
100
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
2.5
2
1.5
1
0.5
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.



Describe fatality data source.

FARS

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				
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other				
Rural Minor Arterial				
Rural Minor Collector				
Rural Major Collector				
Rural Local Road or Street				
Urban Principal Arterial (UPA) - Interstate				
Urban Principal Arterial (UPA) - Other Freeways and Expressways				
Urban Principal Arterial (UPA) - Other				
Urban Minor Arterial				
Urban Minor Collector				
Urban Major Collector				
Urban Local Road or Street				
State Highway Agency	289.2	640.4	1.94	4.35

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	289.2	640.4	1.94	4.35
County Highway Agency				
Town or Township Highway Agency				
City or Municipal Highway Agency				
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				

Provide additional discussion related to general highway safety trends.

General highway safety trends in Puerto Rico have shown a decrease in traffic fatalities during the past 30 years. This decrease has been achieved thanks to constant and consistent road safety education among all safety stakeholders. However, in the past years Puerto Rico has faced many challenges in keeping up the momentum of the actions and the number of fatalities has been increasing, especially the vulnerable road users.

The number of serious injuries is one of the safety trends that has been increasing throughout the past years. Police officers have been trained on how to complete the PPR-621.4 crash form and to better understand the importance of the accuracy of the data they collect. This may have an effect in that the serious injury data has increased by more than 30% compared to the data acquired in 2019. This suggests that the serious injury data

collected is still in the process of constant adjustment. Consequently, it has become difficult to establish precise patterns and/or trends.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2025 Targets *

Number of Fatalities:284.8

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

The database used to forecast the number of fatalities was the Puerto Rico FARS Database from 2008 to 2023. To analyze which outcomes best explained the behavior of the number of fatalities, a multiple regression analysis was performed using the total fatalities per year versus the total fatalities per month per year. The objective was to find which coefficients had more correlation to the total traffic fatalities based on historic data (i.e., 2008-2023) and taking into consideration the regression-to-the-mean behavior.

This analysis suggests a possible 5-yr MA increase of 1.8% from 2023 (289.2) to 2025 (294.4). But, since this value represents an increase in the safety performance target for 2025, it was decided to maintain the same value reported in the 2021, 2022, and 2023 Annual Reports, that is 284.8.

Number of Serious Injuries:601.9

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

The database used to forecast the number of serious injuries was the Puerto Rico Road Safety Observatory from 2020 to 2023. To analyze the 5-year rolling average, the years from 2014 to 2019 were estimated comparing and averaging the actual serious injuries for 2020, 2021, and 2023 versus the total crashes for each year. It was found that, on average, the serious injuries crashes account for 0.407% of the total crashes per year.

For the past three (3) years there has been, on average, an increase of 36% in the number of serious injuries versus the 2020 data. This suggests the following: 1) an increase in the total number of severe crashes every year, 2) better accuracy in the data collection process from the police report, and 3) better vehicle protection systems. Nevertheless, the increase of the 5-yr MA number of serious injury crashes suggests that the real number could be in a range from 650 to 700. Therefore, the Puerto Rico HSIP decided to maintain the same 5-yr MA value reported in the 2023 Annual Report, that is 601.9.

Fatality Rate:1.938

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

The databases used to forecast the fatality rate were from the Puerto Rico FARS Database and the values of the Vehicle Miles Traveled (VMT) were reported by the PRHTA. The years considered during the analysis were from 2013 to 2023 for the Puerto Rico FARS Database and 2013 to 2021 for the VMT.

The fatality rate forecast was based on the forecasted number of HMVMT for 2024 and 2025, using several trendline options (i.e., exponential, linear, logarithmic, polynomial, and power). And, after having selected a logarithmic trendline for the VMT values of y = -646,210.29 ln(x) + 42,070,066.16, with a R2 = 6.0%, the 2025

annual VMT was set to 147.51 and the 2025 annual fatality rate was forecasted to 1.882. Therefore, the 5-yr MA fatality rate forecast for 2025 is 1.971. Nevertheless, this value represents an increase in the safety performance target for 2025, and it was decided to maintain the same value reported in the 2023 Annual Report, that is 1.938.

Serious Injury Rate:4.084

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

The databases used to forecast the serious injury rate were from the Road Safety Observatory provided by the PRTSC and the values of the Vehicle Miles Traveled (VMT) were reported by the PRHTA. The years considered during the analysis were from 2013 to 2023 for serious injuries crashes and from 2013 to 2021 for VMT.

The serious injury rate forecast was based on the forecasted number of HMVMT for 2024 and 2025, using several trendline options (i.e., exponential, linear, logarithmic, polynomial, and power). And, after having selected a logarithmic trendline for the VMT values of y = -646,210.29ln(x) + 42,070,066.16, with a R2 = 6.0%, the 2025 annual VMT was set to 147.51 and the 2025 annual serious injury rate was forecasted to 4.011. Therefore, the 5-yr MA serious injury rate forecast for 2025 is 4.437. Nevertheless, this value represents an increase in the safety performance target for 2025, and it was decided to maintain the same value reported in the 2023 Annual Report, that is 4.084.

Total Number of Non-Motorized Fatalities and Serious Injuries:194.5

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

The databases used to forecast the non-motorized fatalities, and serious injuries were from the Puerto Rico FARS Database and the Road Safety Observatory, respectively. The years considered during the analysis were from 2008 to 2023, for fatalities; and from 2014 to 2023, for serious injuries.

For the number of non-motorized fatalities, a linear trendline was selected for both pedestrians (y = -2.447x + 117.93; R2 = 0.4711) and cyclists (y = -0.2574x + 13.5; R2 = 0.2021). For the number of non-motorized serious injuries also a linear trendline was selected for both pedestrians (y = 1.0364x + 81.8; R2 = 0.0651) and cyclists (y = 0.3152x + 17.267; R2 = 0.128). After having forecasted the non-motorized fatalities and serious injuries, the 2025 annual value is 198 and the 5-yr MA is 202.5. Nevertheless, the 5-yr MA value represents an increase in the safety performance target for 2025, and it was decided to maintain the same value reported in the 2023 Annual Report, that is 194.5.

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

The PRHTA coordinated with the Puerto Rico MPO the approval of the 2024 safety performance targets in December 2023. The approval process consisted of two meetings where the safety performance targets were reported and explained. In addition, the results of the VRU Safety Assessment were presented in this meeting. This year the PRHTA and the PRTSC received a waiver on matching Safety Performance Targets on FY 2024 and 2025. And the safety performance targets will be discussed with the MPO on or before February 27, 2025.

Does the State want to report additional optional targets?

No

Not Applicable.

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	284.8	289.2
Number of Serious Injuries	554.6	640.4
Fatality Rate	1.968	1.939
Serious Injury Rate	3.787	4.347
Non-Motorized Fatalities and Serious Injuries	191.4	201.6

During 2023, three (3) out of five (5) safety targets were met or were better than the baseline. Here is a summary:

- The number of fatalities was better than the baseline 2017-2021 (293.2).
- The number of serious injuries did not meet the 2023 target (554.6) nor the baseline 2017-2021 (557.0).
- The fatality rate met the 2023 target (1.968).
- The serious injuries rate did not meet the 2023 target (3.787) nor the baseline 2017-2021 (3.762).
- The non-motorized fatalities and serious injuries were better than the baseline 2017-2021 (202.4).

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

PRHTA allocated $4,219,599.00 across nine projects, which collectively includes several proven safety countermeasures such as the conversion of stop-controlled intersections to traffic signal intersections, pedestrian crosswalk markings, traffic signs, new bike lanes and new sidewalks.

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	63	50	50	43	47	40	54
Number of Older Driver and Pedestrian Serious Injuries	103	89	73	118	115	100	141

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Other-Comparison in the number of fatalities and serious injuries

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

The statewide program is increasingly focusing proven safety countermeasures in all the projects in the HSIP to achieve fewer fatalities and serious injuries and thus maximize the impact of these funds. Another measure used in the program is the progress of the SHSP's strategies implementation for each Emphasis Areas.

Each year the PRHTA performs technical studies of projects that were completed more than three years ago. The purpose is to gather all available traffic crash data, sociodemographic data, and data from the new infrastructure to analyze whether the measures implemented in the project had good results. The frequency of these studies could vary depending on the information available for the project.

PRHTA continues having a greater participation of the HSIP/SHSP team in the decision of which projects will be chosen and to provide a technical reason for these projects that will benefit from HSIP funds.

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

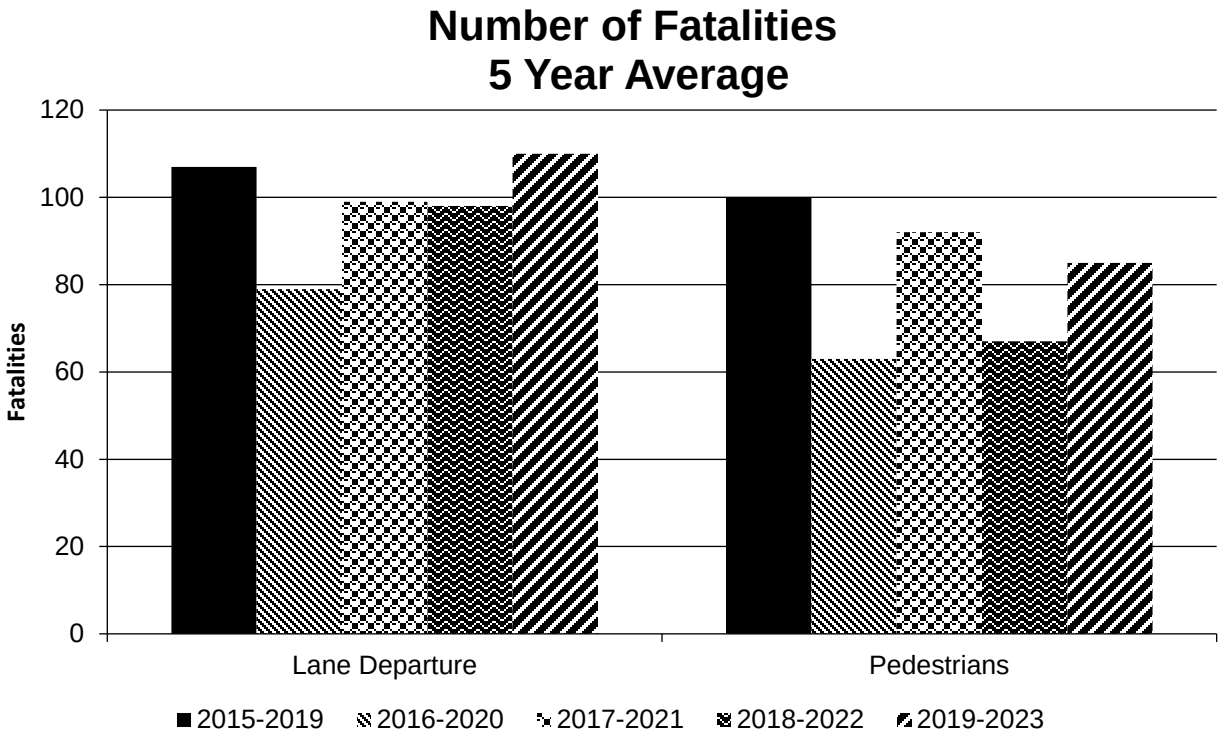
- # miles improved by HSIP
- # RSAs completed
- HSIP Obligations
- Increased awareness of safety and data-driven process

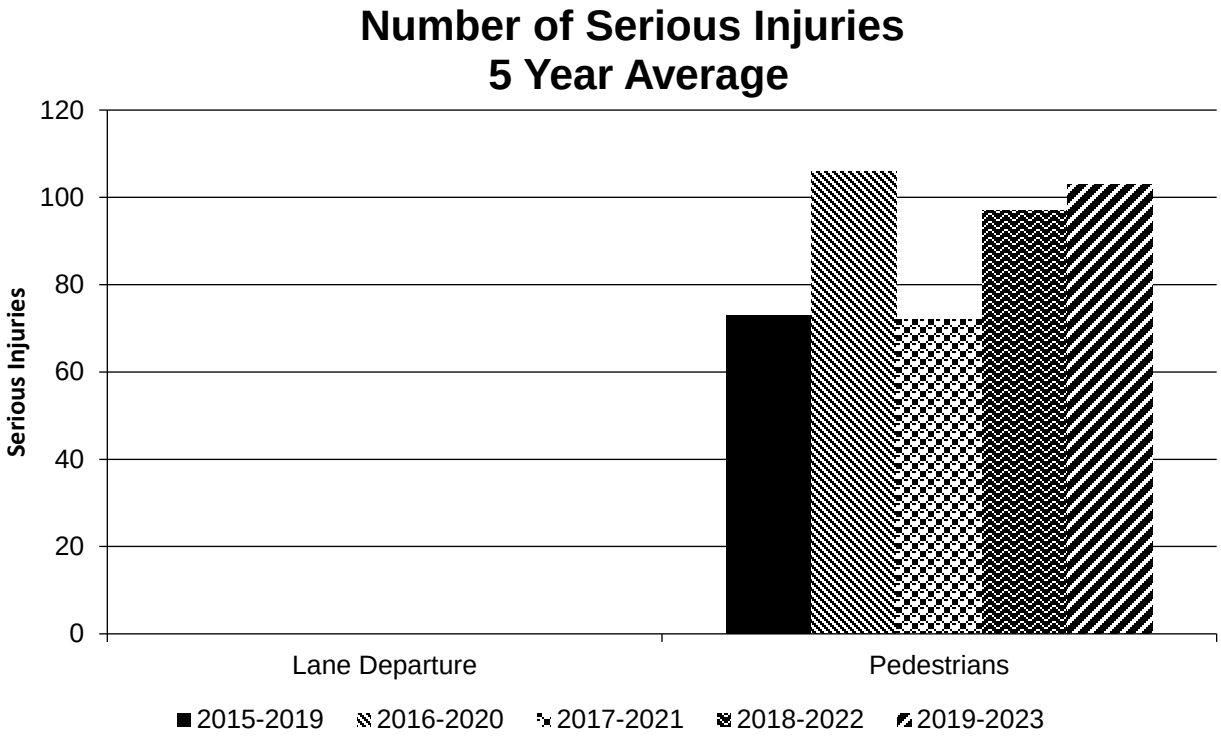
Effectiveness of Groupings or Similar Types of Improvements

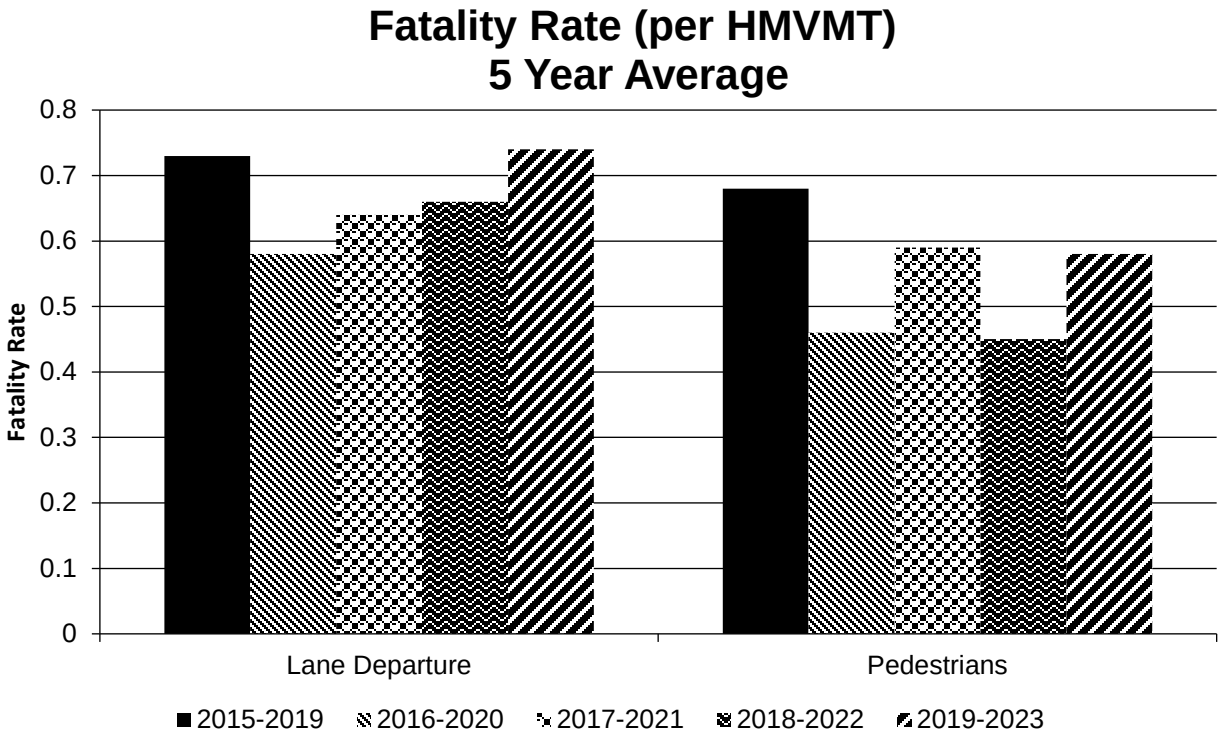
Present and describe trends in SHSP emphasis area performance measures.

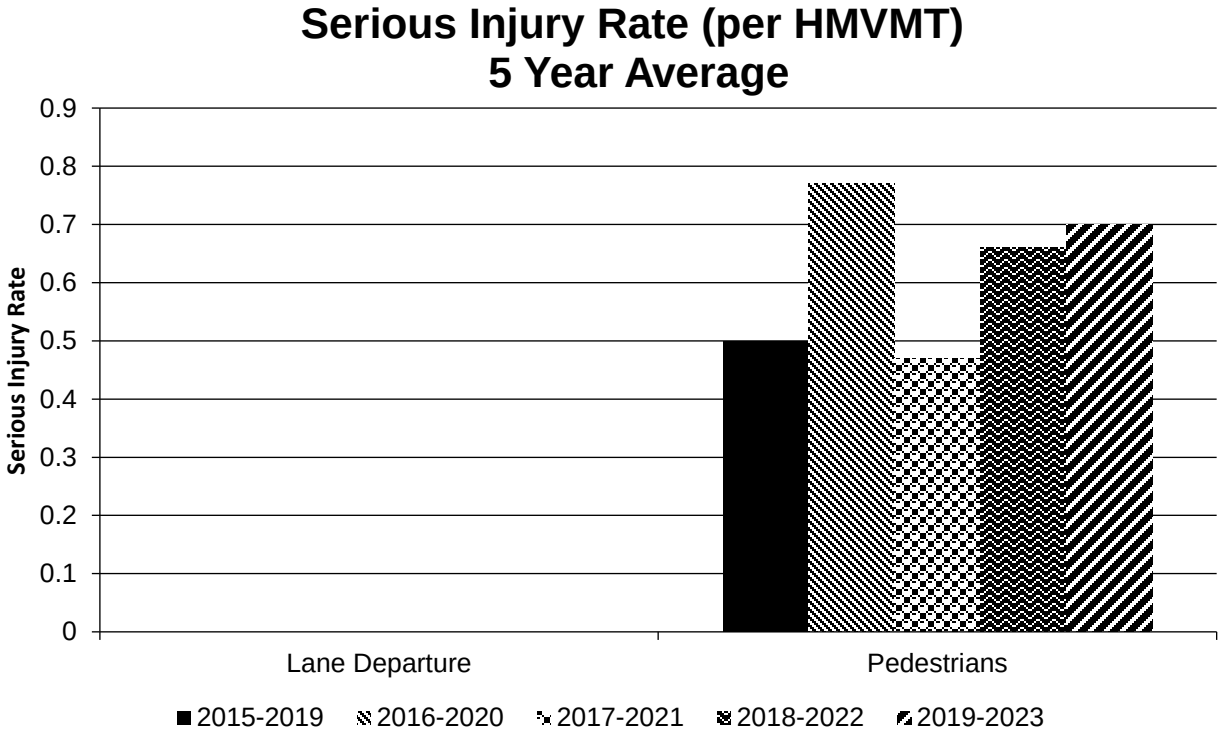
Year 2023

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		110		0.74	
Pedestrians		85	103	0.58	0.7


Number of Fatalities
5 Year Average
Fatalities
120
100
80
60
40
20
0
Lane Departure
Pedestrians
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023


Number of Serious Injuries
5 Year Average
Serious Injuries
120
100
80
60
40
20
0
Lane Departure
Pedestrians
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Lane Departure
Pedestrians
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Lane Departure
Pedestrians
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023

Project Effectiveness

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

Compliance Assessment

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

07/22/2024

What are the years being covered by the current SHSP?

From: 2024 To: 2028

When does the State anticipate completing its next SHSP update?

2029

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	99	99	99
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					50	50		
	Begin Point Segment Descriptor (10) [10]	100	100					99	99	99	99
	End Point Segment Descriptor (11) [11]	100	100					99	99	99	99
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	50	100	50

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	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	50		
	Average Annual Daily Traffic (79) [81]	100	100					20	1		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	100	99	99
INTERSECTION	Unique Junction Identifier (120) [110]			99	99						
	Location Identifier for Road 1 Crossing Point (122) [112]			99	99						
	Location Identifier for Road 2 Crossing Point (123) [113]			99	99						
	Intersection/Junction Geometry (126) [116]			75	75						
	Intersection/Junction Traffic Control (131) [131]			75	1						
	AADT for Each Intersecting Road (79) [81]			100	1						
	AADT Year (80) [82]			100	1						
	Unique Approach Identifier (139) [129]			99	99						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					99	99				
	Location Identifier for Roadway at					99	99				

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					99	99				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					65	65				
	Roadway Type at End Ramp Terminal (199) [189]					65	65				
	Interchange Type (182) [172]					99	99				
	Ramp AADT (191) [181]					65	1				
	Year of Ramp AADT (192) [182]					65	1				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	100				
Totals (Average Percent Complete):		**100.00**	**100.00**	**93.25**	**59.25**	**86.91**	**75.27**	**85.33**	**72.00**	**99.20**	**89.20**

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

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

Over the past years, PRHTA has been able to substantially increase its traffic data collection capacity by hiring consultants with expertise in traffic data collection. The hiring of these consultants was the first of multiple efforts that PRHTA is making to meet the September 2026 deadline. Currently, with the work of these consultants, some MIRE FDE data has been collected on state highways (i.e., non-local paved roads) as part of data collection support for HPMS compliance. This means that more than 90% for the MIRE FDE had already been worked and processed through HPMS.

Another of PRHTA's efforts has been the development of the Roads Information Management System (RIMS) to comply with the data of the HPMS and with those of MIRE FDE. The RIMS project has been working with the integration of GIS data of the Puerto Rico highway system. One of the current results of this project is the collection of traffic data for most of the MIRE FDEs and ramps. This effort is expected to be completed and available through the RIMS interface by the end of 2024.

The RIMS effort during 2024 so far has concentrated on the systematic development of the ten (10) Identifier/Descriptor elements in MIRE. PRHTA funded a specialized attempt at populating the “hard to determine” connectivity attributes which are not already in HPMS. The eight (8) identifier elements are: ***1) Roadway Segment: Segment, 2) Intersection: Unique Junction, 3) Intersection: Location for Road 1 Crossing Point, 4) Intersection: Location for Road 2 Crossing Point, 5) Intersection: Unique Approach, 6) Interchange/Ramp: Unique Interchange, 7) Interchange/Ramp: Location for Roadway at Beginning of Ramp Terminal, 8) Interchange/Ramp: Location for Roadway at Ending Ramp Terminal***. The two (2) descriptor elements are the begin/end points for each segment. The effort also filled in the Interchange Types across Puerto Rico as well as it counted the valency (number of legs) at each of the

intersections towards fulfillment of the Intersection/Junction Geometry element. The results of the PRHTA effort were demonstrated to FHWA DATA Team during the writing of the specifications for the new data intake mechanism that FHWA will create for intaking MIRE data from State as soon as June 2027. The PRHTA products were then demonstrated to States in attendance at the AASHTO GIS-T Symposium workshop on April 2, 2024, in Atlanta. PRHTA is perhaps the lead agency among all states and a June 2027 submittal of MIRE elements is in focus. Elements above are marked at 99% because the models will still be at least run 3 more times before the data is (optionally) submitted to FHWA in June 2027.

Currently, FHWA authorized traffic data collection for MIRE FDEs, specifically on local streets. This effort from PRHTA is part of an island wide AADT estimation project for all local streets not currently under HPMS. Last year, PRHTA established a Data Governance team (known as the Integrated Technical Committee (ITC)). Recently, the ITC completed a Discovery Phase assessment. This assessment has information on the different programs that are implemented in PRHTA and their correlation with each other, including MIRE. In 2022, the PRHTA's ITC supported by the SHSP team created a MIRE Steering Committee to update the action plan, coordinate and discuss the progress towards achieving the 2026 deadline. On August 2022, this Steering Committee coordinated a meeting with FHWA P.R. Division to discuss the status of the MIRE FDE and some action plans that the PRHTA is evaluating. The outcome of this effort was the development of an AADT Estimation Model for all local streets not currently on HPMS. 60 main key locations were established throughout the island to calibrate the model based on actual AADT traffic data collection on local streets.

PRHTA is currently working on a plan to populate the uncounted traffic segments with AADT estimates from the StreetLight Data company using their cell phone probe data model. PRHTA has supplied StreetLight Data with the GIS framework for populating AADT values. As of this writing on 8/22/2024, a plan of action is still being finalized. The idea would be to keep the field counting efforts in continuance to gather field counts on federal aid roads – but supplement those real counts with count estimates that might cover all of the minor roads. Although the provider scoped to provide cy2022 data an cy2023 data, PRHTA emphasized that we are only interested in cy2024 data available at in the spring 2025. The program may start by using cy2023 data until the cy2024 data is available in Spring 2024. The anticipated methods would also offer improvements in the vehicle-miles travelled estimates that are reported in the HPMS submittal.

The actions defined in the MIRE FDE Puerto Rico Action Plan are presented below. Some of them have been partially fulfilled, while others are still being worked on.

• Perform roadway data gaps assessment.

• Collect vehicle traffic flow data (AADT), and other MIRE FDE, on state (non-local) and local highways, including ramps and intersections. (Consultants).

• Classify road segments, ramps, and intersections according to their AADT.

• Develop a roadway data warehouse or database within the PRHTA, including HPMS and MIRE, among others (i.e., MIRE datasets, data sharing protocols, GIS layers for different highway programs, etc.).

• Integration of the MIRE FDE data sets with other databases (i.e., crash database).

• Include all updated GIS databases into PRHTA programs and projects, like the State Highway Safety Plan.

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.