



PUERTO RICO

**HIGHWAY SAFETY  
IMPROVEMENT PROGRAM**  
2020 ANNUAL REPORT



U.S. Department of Transportation  
Federal Highway Administration

**Photo Source:**  
RSA STEP PR

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## **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. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

## Executive Summary

The Highway Safety Improvement Program (HSIP) is responsible for managing the 25% of federal funds allocated for Puerto Rico under the ZP-30 Fiscal Management Information System program code for highway safety improvement projects. This program does not have any subprogram. The Strategic Highway Safety Plan (SHSP) is a key element of the HSIP in Puerto Rico, being responsible of coordinating with internal and external safety stakeholders from all sectors the highway safety initiatives, performance measures, and targets for Puerto Rico.

Puerto Rico developed the first SHSP in 2014, with the support of safety stakeholders from all sectors, Federal Highway Administration (FHWA), National Highway Traffic Safety Administration (NHTSA), and the Federal Motor Carrier Safety Administration (FMCSA). This 5-year comprehensive plan meets the requirements of the federal regulations (23 U.S. Code §148). The Puerto Rico SHSP targets for 2018 were satisfactory met, as certified by FHWA. In 2019, the latest SHSP 2019-2023 was approved and currently under implementation by PRHTA, PRTSC, and more than eighty (80) safety stakeholders. It is through this Plan 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.

During 2019, \$58.3 Million were invested in the Puerto Rico HSIP, considering obligated and carry-overs from previous year. Most of this investment was made to upgrade the Interstate and primary roads' safety infrastructure and to made spot improvements on high crash locations. The total number of projects impacted by these funds were twenty (20), distributed in twelve (12) highway safety infrastructure improvement projects and one (1) service contract. The 65% represented systemic safety improvements projects, including Manual for Assessing Safety Hardware (MASH) upgrades for metal and concrete barriers, traffic signing, pavement markings and raised pavement markers, rumble strips, and others. The other 30% were targeted as hot spot approach procedure. The last was the contract for the consultant supporting the SHSP implementation (5%).

The Puerto Rico Highway and Transportation Authority (PRHTA) performed several crash data analyses to identify potential countermeasures in corridors of the Puerto Rico Highway System. In addition, Puerto Rico is participating in the Every Day Counts (EDC) Federal Highway Administration (FHWA) Program with the Safe Transportation for Every Pedestrian (STEP) initiative.

Finally, there is no funds allocated for local or tribal roads. 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 injury crashes in Puerto Rico. In addition, the PRHTA, together with the Puerto Rico Traffic Safety Commission (PRTSC) established the safety performance targets for 2021. These targets were based on the 2019 fatalities and serious injuries, and the National Transportation Performance Targets (NTPT) for Highway Safety. PRHTA is engaged in updating the next SHSP in 2024.

## 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, the Puerto Rico SHSP 2019-2023. PRHTA uses local 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 is authorized to receive \$158,000,000 annually for fiscal years 2016 through 2020. The responsible agency for receiving these funds is the PRHTA. From these funds, the Highway Safety Improvement Program (HSIP) is responsible for managing the 25% under the ZP-30 Fiscal Management Information System program code for highway safety improvement projects. Additionally, the PRHTA applies ZP-40 Section 154 Penalty (Open Container Requirements) and ZP-50 Section 164 Penalty (Minimum Penalties for Repeated Offenders) funds to HSIP eligible activities.

The project selection is summarized in the following steps:

- Crash data collection in the Puerto Rico Department of Transportation and Public Works (PRDTPW).
- Development of the High Crash Location (HCL) Report. In this report, the PRHTA establishes the list of high crash locations by corridors, segments, and intersections.
- Evaluations of the high crash locations identified to determine the highway safety improvement projects to be included in the Statewide Transportation Improvement Program (STIP). Those projects are divided into systemic or hot spot approach. This evaluation considers the use of funds through to the five (5) PRHTA Regions.
- Selection of consultants for the development of PS&E in compliance with the latest engineering standards in Puerto Rico.
- Inclusion of the highway safety improvement projects in the STIP for the evaluation and approval of the Metropolitan Planning Organization (MPO).
- Bidding and construction processes.

#### **Where is HSIP staff located within the State DOT?**

Engineering

## **How are HSIP funds allocated in a State?**

- Other-Allocated Programs

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

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 have the opportunity to receive the most recent crash and fatalities data analysis, 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 provide 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 in the local roads, the PRHTA provide technical resources to find countermeasures and encourage a reduction in the severe crashes

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
- Governors Highway Safety Office
- Local Aid Programs Office/Division
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Driver Licensing Office (DISCO)

## **Describe coordination with internal partners.**

The PRHTA Area Directors continuously held coordination meetings to coordinate the selection and integration of their programs using a data driven oriented process. Some of the internal partners are Planning and Programming Area, Design Area, and Traffic Engineering and Operations Area, among others.

## **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 Quarterly Meetings (Emphasis Areas teams meetings), and Road Safety Audits (RSA), among other events. Through the Emphasis Areas Teams Meetings (i.e. roadway departure, vulnerable road users, intersections, young drivers, alcohol impaired driving, and aggressive driving) these partners collaborate in the progress of the Puerto Rico SHSP. In addition, some of them participate in the road safety evaluations supporting the decision-making processes of the highway safety improvement projects. The development and implementation of the Puerto Rico SHSP is funded through the HSIP.

The PRHTA (HSIP) coordinates with the Puerto Rico Traffic Safety Commission (PRTSC) and the Automobile Accident Compensation Administration (ACAA, by its Spanish Acronym) the crash data used to establish performance measures and the data-driven highway safety improvement projects. The PRTSC is responsible of managing the Puerto Rico fatalities database through the Planning Area and for the CARE software (software created to access and analyze the Puerto Rico crash data) developed by the University of Alabama and managed by the Instituto Tercera Mision (San Juan, Puerto Rico). The ACAA provides the number of injured people that were transported in an ambulance because of a traffic crash.

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).

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

The PRHTA continues the methodology for choosing the safety improvement projects combining the PRHTA's crash data, pavement condition data, and bridge data conditions. This methodology includes selecting several design consultants, develop PS&E in expedite manner, evaluate the division of projects in phases (as possible) to reduce construction time and risk, and promote an aggressive bid program.

***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?***

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### 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).***

### **Relative Weight in Scoring**

Available funding:100

Total Relative Weight:100

### **What percentage of HSIP funds address systemic improvements?**

65.0

### **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
- Safety Edge
- Traffic Control Device Rehabilitation
- 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 countermeasures proposed, 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).

## **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. PRHTA have not been able to use the HSM in the full extends because the KABCO injury classification was not implemented and the traffic data was very limited. The crash costs used for determining the CCF and for the justification of highway safety improvement projects are those included in the HSM. Currently, the process for performing the Before and After studies was based on the process contained in the HSM, except for those elements that were limited by the local available data. PRHTA participated in the Data-Driven Safety Analysis FHWA Initiative.

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

As part of the methodology of the HSIP, the PRHTA's SHSP team actively participated in several meetings and technical events to integrate the effort among the 4Es of highway safety. One of the main HSIP support to the safety stakeholders was related to the Puerto Rico Police digital crash form (PPR-621.4). During 2019, the goal of start implementing the digital form was achieved, thus during 2020, Puerto Rico is transitioning to a more accurate and modern crash data collection system. This effort will help the PRHTA to perform a faster and accurate crash data analysis. Also, the PRHTA had promoted the new SHSP 2019-2023 emphasizing in achieving an historical reduction in the percent of pedestrian fatalities of less than 30%. By providing technical support to the Puerto Rico Traffic Safety Commission (PRTSC or GHSO), a pedestrian safety task force is currently being developed.

Other activities supported by the HSIP methodology includes following up on the SHSP Action Plan with the key safety stakeholders. In addition, the HSIP supports and shares, through the SHSP efforts, the educational

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campaigns of the PRTSC. In terms of technical activities, PRHTA performed a pedestrian RSA targeted to the Spectacular 7 initiatives of STEP.

## Project Implementation

### *Funds Programmed*

#### Reporting period for HSIP funding.

Calendar Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	\$33,500,000	\$44,891,859	134.01%
HRRR Special Rule (23 U.S.C. 148(g)(1))	\$0	\$0	0%
Penalty Funds (23 U.S.C. 154)	\$1,900,000	\$6,683,930	351.79%
Penalty Funds (23 U.S.C. 164)	\$1,900,000	\$6,736,085	354.53%
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%
<b>Totals</b>	<b>\$37,300,000</b>	<b>\$58,311,874</b>	<b>156.33%</b>

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

\$0

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

\$0

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

\$0

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

\$70,490

**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, as observed in Q23.

**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, develop PS&E in expedite manner, evaluate the division of projects in phases (as possible) to reduce construction time and risk, and promoted an aggressive bid program. Also, at the end of 2018, Puerto Rico selected the Every Day Counts' Safe Transportation for Every Pedestrian (STEP) initiative to identify countermeasures in order to reduce the pedestrian fatalities due to traffic crashes. This action will encourage the PRHTA to evaluate projects aimed at pedestrian facilities as part of the HSIP investment.

**General Listing of Projects**

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
AC-200283 - PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS HIGHWAY PR-2, FROM KM. 87.869 TO KM. 92.050, MUNICIPALITIES OF HATILLO-CAMUY	Roadway delineation	Raised pavement markers	3	Miles	\$1735265.40	\$13079000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	37,225		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-200306 - PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS HIGHWAY PR-2, FROM KM. 92.05 TO KM. 95.90, MUNICIPALITY OF CAMUY	Roadway delineation	Raised pavement markers	2	Miles	\$803227.7	\$4133914.40	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	37,667		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-200307 - PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS HIGHWAY PR-2, FROM KM. 95.90 TO KM. 100.06, MUNICIPALITIES OF CAMUY-QUEBRADILLAS	Roadway delineation	Raised pavement markers	3	Miles	\$864106.1	\$4824371.20	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	32,650		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-301127 - Pedestrian Bridge and Geometrical Improvements at PR-3 from K.m. 9.0 to Km. 10.155 Carolina	Pedestrians and bicyclists	Pedestrian bridge	1	Crossovers	\$699579.25	\$699579.25	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	45,200		State Highway Agency	Spot	Pedestrians	Improve the highway infrastructure to accommodate people who are walking.

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PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
AC-001206 - Safety Improvements PR-12, Kilometers: 0.00 to 6.4, Ponce	Intersection traffic control	Systemic improvements - signal-controlled	4	Miles	\$12045687.5	\$12318802.10	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	25,900		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-002907 - GEOMETRIC IMPROVEMENTS AT HIGHWAY PR-29 AND PR-168 INTERCHANGE FROM KM. 0.90(29) TO 1.10(29), MUNICIPALITY OF BAYAMON	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	\$1099765.7	\$1142550.20	HSIP (23 U.S.C. 148)	Urban	Minor Collector	29,950		State Highway Agency	Spot	Pedestrians	Improve the highway infrastructure to accommodate people who are walking.
AC-800509- Traffic Congestion Management Project DTL Phase II, Unit 2, from Station 15+00.00 to Station 30+80.00 PR-52, Municipality of Caguas	Advanced technology and ITS	Congestion detection / traffic monitoring system	10	Miles	\$949576.26	\$4846256.38	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	207,440		State Highway Agency	Spot	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-800556 - Safety Improvements PR-52, Kilometers: 95.0 to 99.0, Ponce	Roadside	Barrier- metal	3	Miles	\$7299526.30	\$7766877.80	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	56,900		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-900133 - PRESERVATION OF BRIDGES NO. 2038 AND 2039 PR-52, KM. 49.5 OVER LA PALMA CREEK AND PR-714 MUNICIPALITY OF SALINAS	Roadside	Barrier transitions	8	Locations	\$65607.50	\$6784901.10	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	36,400		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.

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PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
AC-520134 - HIGHWAY SAFETY IMPROVEMENT HIGHWAY PR-52 PHASE II FROM KM. 52.30 TO 55.30, MUNICIPALITIES OF GUAYAMA-SALINAS	Roadside	Barrier- metal	33	Miles	\$4943893.24	\$4986529.24	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	34,900		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-800556 - PAVEMENT REHABILITATION FOR PR-52 FROM KM. 38.00 TO 49.00, MUNICIPALITIES OF CAYEY-SALINAS	Roadside	Barrier- metal	7	Miles	\$4358358.40	\$15021600.00	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	32,900		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-005383 - Pavement Rehabilitation and Reconstruction PR-53, Kilometers: 0.639 to 7.9, Fajardo and Ceiba	Roadside	Barrier- metal	5	Miles	\$2586610.40	\$12200100.00	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	19,800		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-010270 - Accelerated Highway Safety Improvements, Program, Highway PR-102, Municipality of Cabo Rojo	Roadside	Barrier- metal	10	Miles	\$59556.20	\$59556.20	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	11,227		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-990154 - HIGHWAY SAFETY IMPROVEMENT PR-115 FROM KM. 0.00 TO KM.10.84, MUNICIPALITIES OF AÑASCO - RINCON	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	7	Miles	\$4876314.10	\$6583943.30	Penalty Funds (23 U.S.C. 154)	Urban	Minor Arterial	11,664		State Highway Agency	Spot	Pedestrians	Improve the highway infrastructure to accommodate people who are walking.

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PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
AC-011534 - HIGHWAY SAFETY IMPROVEMENTS PR-115 FROM KM. 10.84 TO KM. 20.4, MUNICIPALITIES OF RINCON - AGUADA	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	6	Miles	\$998073.59	\$2915000.00	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	11,664		State Highway Agency	Spot	Pedestrians	Improve the highway infrastructure to accommodate people who are walking.
AC-011534 - HIGHWAY SAFETY IMPROVEMENTS PR-115 FROM KM. 10.84 TO KM. 20.4, MUNICIPALITIES OF RINCON - AGUADA	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	6	Miles	\$1249107.45	\$2915000.00	Penalty Funds (23 U.S.C. 154)	Urban	Minor Arterial	11,664		State Highway Agency	Spot	Pedestrians	Improve the highway infrastructure to accommodate people who are walking.
AC-011630- HIGHWAY SAFETY IMPROVEMENTS PR-116 FROM KM. 3.00 TO 14.00, MUNICIPALITY OF LAJAS	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	7	Miles	\$3744000.00	\$6744000.00	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	7,267		State Highway Agency	Spot	Pedestrians	Improve the highway infrastructure to accommodate people who are walking.
AC-014984 - HIGHWAY SAFETY IMPROVEMENTS PR-149 FROM KM. 0.00 TO KM. 12.8 MUNICIPALITIES OF MANATI - CIALES	Roadside	Roadside - other	7.95525170913611	Miles	\$550810.40	\$11165013.20	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	19,710		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-014984 - HIGHWAY SAFETY IMPROVEMENTS PR-149 FROM KM. 0.00 TO KM. 12.8 MUNICIPALITIES OF MANATI - CIALES	Roadside	Roadside - other	7.95525170913611	Miles	\$340086.00	\$11165013.20	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	19,710		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.



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PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
AC-014984 - HIGHWAY SAFETY IMPROVEMENTS PR-149 FROM KM. 0.00 TO KM. 12.8 MUNICIPALITIES OF MANATI - CIALES	Roadside	Roadside - other	7.95525170913611	Miles	\$3670432.70	\$11165013.20	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	19,710		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-014984 - HIGHWAY SAFETY IMPROVEMENTS PR-149 FROM KM. 0.00 TO KM. 12.8 MUNICIPALITIES OF MANATI - CIALES	Roadside	Roadside - other	8	Miles	\$2441274.60	\$11165013.20	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	19,710		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-016789 - HIGHWAY SAFETY IMPROVEMENTS PR-167 FROM KM. 0.0 TO KM. 9.0, MUNICIPALITIES OF COMERIO-NARANJITO-BAYAMON	Roadway delineation	Raised pavement markers	6	Miles	\$96545.50	\$4400000.00	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	6,800		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-016789 - HIGHWAY SAFETY IMPROVEMENTS PR-167 FROM KM. 0.0 TO KM. 9.0, MUNICIPALITIES OF COMERIO-NARANJITO-BAYAMON	Roadway delineation	Raised pavement markers	6	Miles	\$29562.01	\$4400000.00	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	6,800		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-016789 - HIGHWAY SAFETY IMPROVEMENTS PR-167 FROM	Roadway delineation	Raised pavement markers	6	Miles	\$558508.38	\$4400000.00	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	6,800		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation

2020 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	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
KM. 0.0 TO KM. 9.0, MUNICIPALITIES OF COMERIO-NARANJITO-BAYAMON															and pavement condition.
AC-016789 - HIGHWAY SAFETY IMPROVEMENTS PR-167 FROM KM. 0.0 TO KM. 9.0, MUNICIPALITIES OF COMERIO-NARANJITO-BAYAMON	Roadway delineation	Raised pavement markers	6	Miles	\$875549.25	\$4400000.00	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	6,800		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-016789 - HIGHWAY SAFETY IMPROVEMENTS PR-167 FROM KM. 0.0 TO KM. 9.0, MUNICIPALITIES OF COMERIO-NARANJITO-BAYAMON	Roadway delineation	Raised pavement markers	6	Miles	\$1110965.45	\$4400000.00	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	6,800		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
Highway Safety Improvements PR-173, Km. 0.0 to Km. 9.0 Municipalities of Cidra - Aibonito	Roadside		6	Miles	\$189394.15	\$257745.95	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,975		State Highway Agency	Systemic	Roadway Departure	Implement engineering countermeasures to improve lane delineation and pavement condition.
AC-800568 - RFP for Consultant Services for Puerto Rico Strategic Highway Safety Plan (SHSP)	Non-infrastructure	Transportation safety planning	1	Service Contract	\$70490.46	\$70490.46	HSIP (23 U.S.C. 148)	N/A	N/A	0		State Highway Agency	RFP	Pedestrians	N/A

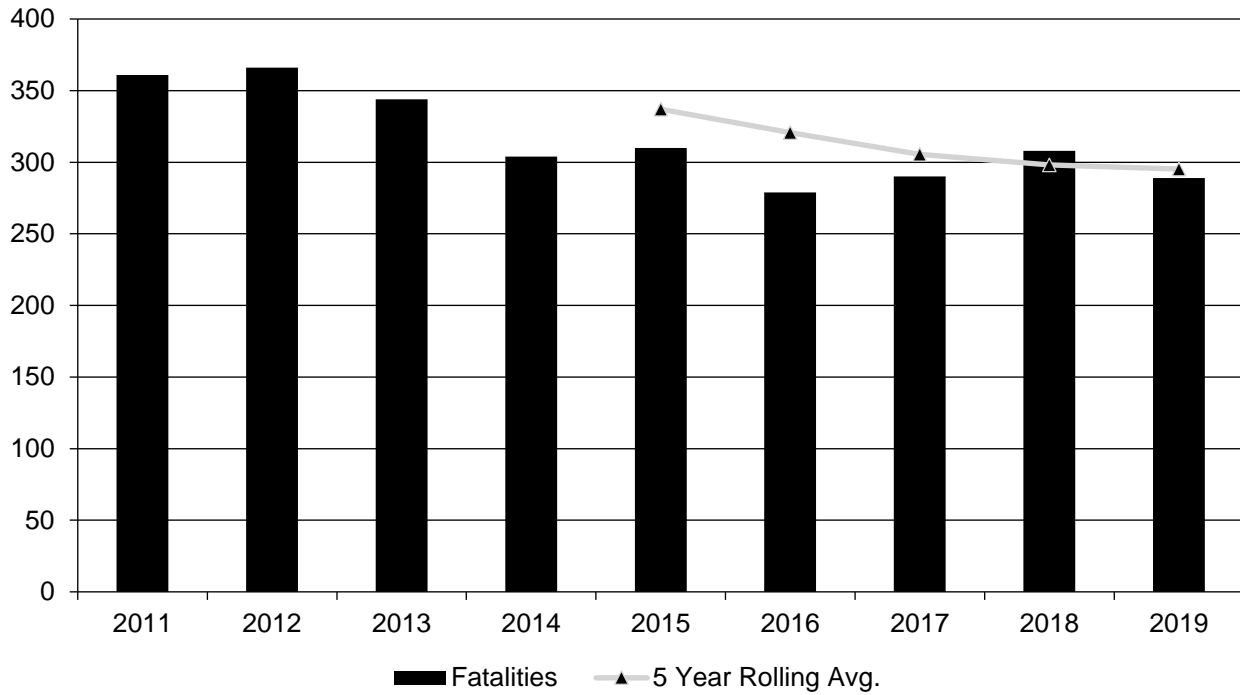
## Safety Performance

### *General Highway Safety Trends*

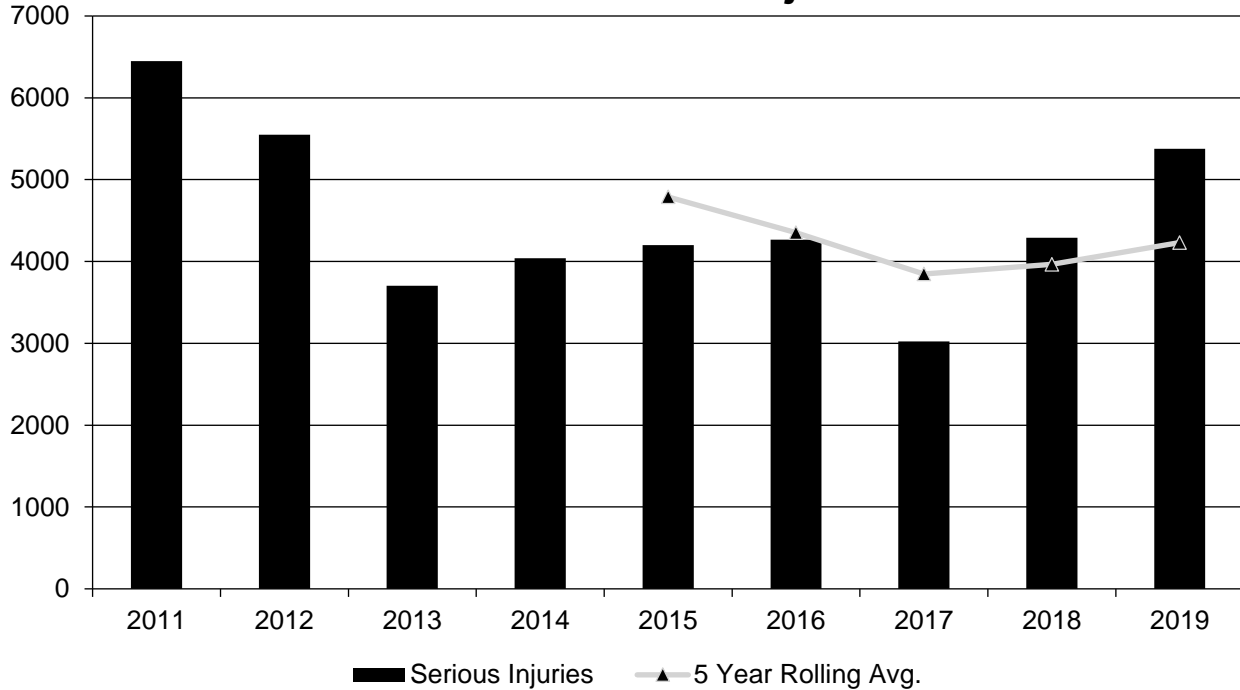
Present data showing the general highway safety trends in the State for the past five years.

<b>PERFORMANCE MEASURES</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Fatalities	361	366	344	304	310	279	290	308	289
Serious Injuries	6,449	5,551	3,705	4,040	4,199	4,267	3,024	4,290	5,377
Fatality rate (per HMVMT)	1.940	1.970	1.850	2.090	2.130	1.920	1.930	1.950	1.968
Serious injury rate (per HMVMT)	34.657	29.878	19.925	27.775	28.851	29.298	20.147	28.562	36.610
Number non-motorized fatalities	118	128	98	107	112	98	108	125	109
Number of non-motorized serious injuries	864	631	431	478	400	369	248	418	662

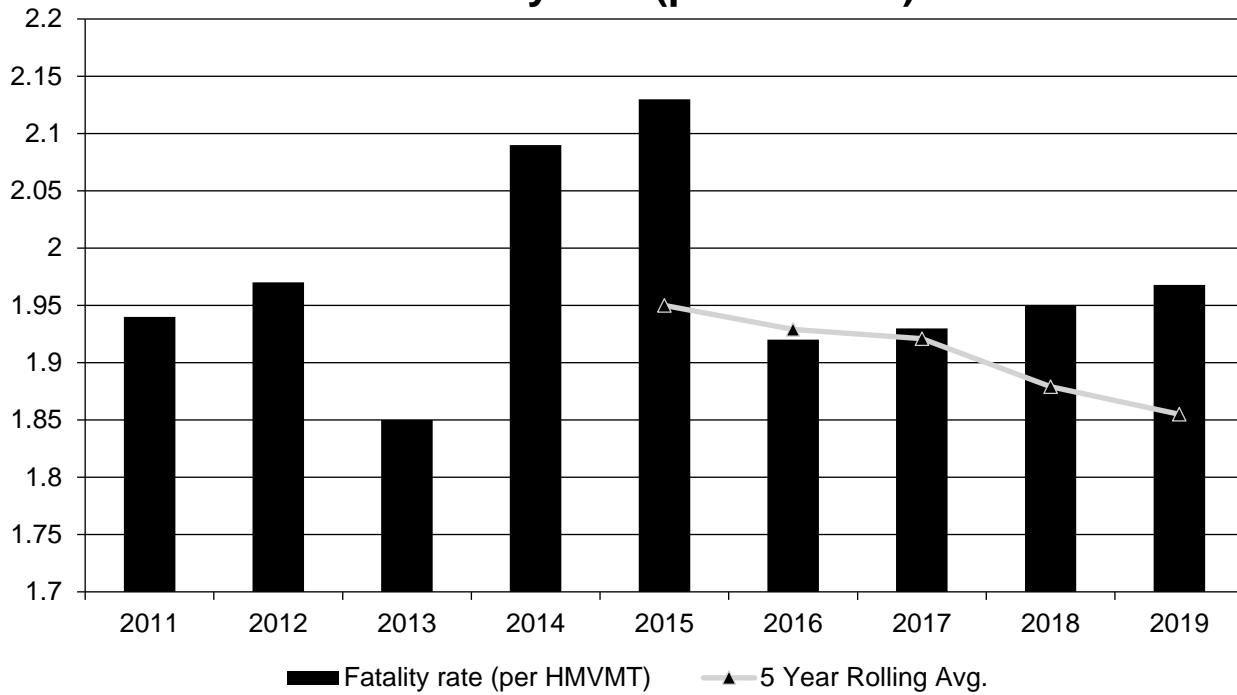
### Annual Fatalities



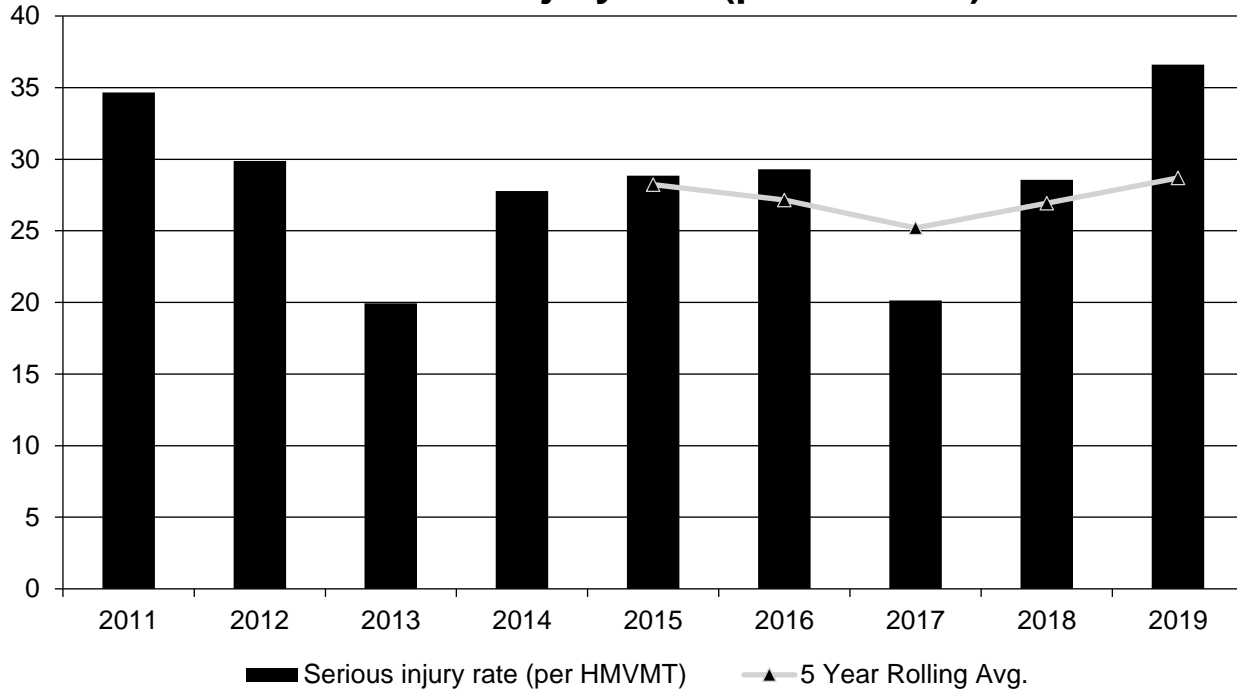
### Annual Serious Injuries



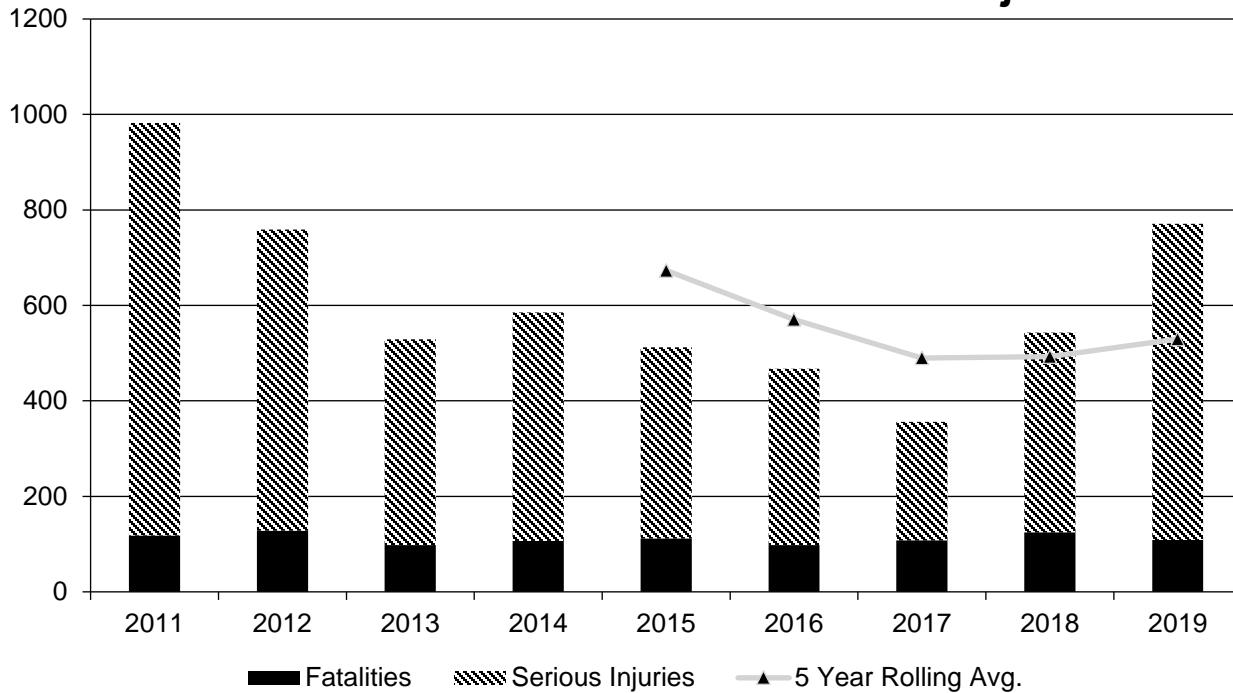
### Fatality rate (per HMVMT)



### Serious injury rate (per HMVMT)



### Non Motorized Fatalities and Serious Injuries



Describe fatality data source.

FARS

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

#### Year 2019

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	0	0	0	0
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other				
Rural Minor Arterial				
Rural Minor Collector				
Rural Major Collector				

2020 Puerto Rico Highway Safety Improvement Program

<b>Functional Classification</b>	<b>Number of Fatalities (5-yr avg)</b>	<b>Number of Serious Injuries (5-yr avg)</b>	<b>Fatality Rate (per HMVMT) (5-yr avg)</b>	<b>Serious Injury Rate (per HMVMT) (5-yr avg)</b>
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				

2020 Puerto Rico Highway Safety Improvement Program

**Year 2019**

<b>Roadways</b>	<b>Number of Fatalities (5-yr avg)</b>	<b>Number of Serious Injuries (5-yr avg)</b>	<b>Fatality Rate (per HMVMT) (5-yr avg)</b>	<b>Serious Injury Rate (per HMVMT) (5-yr avg)</b>
State Highway Agency	295.2	4,231.4	1.86	26.71
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.**

PRHTA revised the roadway length units for the HPMS data sets from 2015 to 2017 and submit the vehicles miles traveled for those years in 2020

***Safety Performance Targets***

**Safety Performance Targets**

**Calendar Year 2021 Targets \***

***Number of Fatalities:288.2***



***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. The years considered during the analysis were from 2012 to 2019. To obtain the safety performance target of the number of fatalities for 2021, several trendline options were evaluated (i.e. exponential, linear, logarithmic, polynomial, and power). After having selected a logarithmic trendline of  $y = -37.41 \ln(x) + 360.84$ , with an  $R^2 = 79.19\%$ , the forecast of the number of fatalities for 2021 is 275. This represents a reduction of 10.71% from 2018 to 2021. Thus, the 5-year moving average safety performance target is 288.2 for 2021.

***Number of Serious Injuries:4688.6***

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

The database used to forecast the number of serious injuries was the Automobile Accident Compensation Administration (ACAA, by its Spanish acronym). The years considered during the analysis were from 2007 to 2019. To obtain the safety performance target of the number of serious injuries, it was analyzed several trendline options (i.e. exponential, linear, logarithmic, polynomial, and power) to forecast the 2021 serious injuries. After having selected a polynomial (2 degree) trendline of  $y = 59.37x^2 - 1165.2x + 9773.9$ , with an  $R^2 = 86.47\%$ , the forecast of the number of serious injuries for 2021 is 5,655. Thus, the 5-year moving average safety performance target is 4,688.55 for 2021.

***Fatality Rate:1.915***

***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 Hundred Million Vehicle Miles Traveled (HVMVT) reported by the Puerto Rico Highways and Transportation Authority. The years considered during the analysis were from 2012 to 2019, for the Puerto Rico FARS Database, and from 2008 to 2019, for the HVMVT. The fatality rate forecast was based on the forecasted number of fatalities and HVMVT for 2021. Also, it was analyzed several trendline options (i.e. exponential, linear, logarithmic, polynomial, and power) to forecast the 2021 fatality rate. After having selected a logarithmic trendline of  $y = -37.41 \ln(x) + 360.84$ , with a  $R^2 = 79.19\%$  for the number of fatalities, a logarithmic trendline of  $y = -22.87 \ln(x) + 203.79$ , with a  $R^2 = 75.5\%$  for the HVMVT, the 2021 fatality rate was forecasted to 1.808. This represents a reduction of 11.84% from 2018 to 2021. Thus, the 5-year moving average safety performance target is 1.915 for 2021.

***Serious Injury Rate:28.368***

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

The databases used to forecast the serious injuries rate were from the Automobile Accident Compensation Administration (ACAA, by its Spanish acronym) and the values of the Hundred Million Vehicle Miles Traveled (HVMVT) reported by the Puerto Rico Highways and Transportation Authority. The years considered during the analysis were from 2007 to 2019, for the ACAA Database, and from 2008 to 2019, for the HVMVT. The Serious Injury rate forecast was based on the forecasted number of people transported in ambulance from the crash scene, using the 5-year moving average, and HVMVT for 2021. Also, it was analyzed several trendline options (i.e. exponential, linear, logarithmic, polynomial, and power) to forecast the 2021 Serious Injury rate. After having selected a polynomial (2 degree) trendline of  $y = 59.692x^2 - 984.49x + 8091.3$  with an  $R^2 = 0.9848$  for the 5-yr moving average of serious injuries, a logarithmic trendline of  $y = -22.87 \ln(x) + 203.79$ , with a  $R^2 = 75.5\%$  for the HVMVT, the 2021 Serious Injury rate was forecasted to 28.298. Thus, the 5-year moving average safety performance target is 28.368 for 2021.

***Total Number of Non-Motorized Fatalities and Serious Injuries:518.2***

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

## 2020 Puerto Rico Highway Safety Improvement Program

The 5-year moving average of non-motorized fatalities and serious injuries was determined combining the forecasting numbers of annual pedestrian fatalities (86), bicyclist fatalities (8), and non-motorized serious injuries (428). Having forecasting 2020 and 2021 annual numbers for each of these categories (as described herein), PRHTA estimated a 5-year moving average of non-motorized fatalities and serious injuries of 518.2. This, since the best statistical regressions were found individually and not analyzing the combined data. The database used to forecast the number of pedestrian fatalities was the Puerto Rico FARS Database. After having selected a logarithmic trendline of  $y = -6.389 \ln(x) + 109.72$ , with an  $R^2 = 69.94\%$ , the 2021 forecast for the 5-year moving average of pedestrian fatalities is 95.0. This represents a reduction of 4.8% from 2018 to 2021. The database used to forecast the number of bicyclists' fatalities was the Puerto Rico FARS Database. After selecting a logarithmic trendline of  $y = -1.828 \ln(x) + 13.973$ , with an  $R^2 = 87.83\%$ , the 2021 forecast for the 5-year moving average of cyclist fatalities is 9.8. This represents a reduction of 4.3% from 2018 to 2021. In the other hand, the number of pedestrian and bicyclist serious injuries (SI) was analyzed using the 2012-2019 ACAA transported by ambulance data, where a polynomial (2nd grade) regression was selected ( $y = 5.4221x^2 - 91.736x + 777.68$ ,  $R^2 = 96.41\%$ ). The 2021 forecast for the 5-year moving average of pedestrian and bicyclists' serious injuries is 401.1.

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

During this reporting period, the PRHTA Safety Division Manager, together with the PRTSC Federal Program Manager defined the safety performance targets for 2021. This, according to 2023 SHSP targets. This coordination consisted in several meetings during 2020 first two quarters (January-May 2020), where technical personnel of the PRHTA, the Puerto Rico SHSP and the PRTSC analyzed the trends and forecasts for each one of the safety performances targets. The 2020 targets were discussed and approved by the Metropolitan Planning Organizations (MPO), as required by FHWA Rule (23 CFR 490). PRHTA will coordinate the approval of the 2021 safety performance targets with the MPO before February 2021.

### **Does the State want to report additional optional targets?**

No

Not Applicable.

### **Describe progress toward meeting the State's 2019 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	285.8	295.2
Number of Serious Injuries	3822.0	4231.4
Fatality Rate	1.786	1.855
Serious Injury Rate	22.269	28.694
Non-Motorized Fatalities and Serious Injuries	453.0	530.0

During 2019, none of the safety targets were met. In average, there was a difference of 19.9% between the targets and the actual numbers. Year 2019 was an historical year for Puerto Rico representing instability due to protests, changes of governor, and the effects of bankruptcy. In addition, 2019 represented the beginning of

## 2020 Puerto Rico Highway Safety Improvement Program

the construction of several projects postponed due to hurricanes Irma and María in 2017. In general, the failure meeting the established targets could be related to the population instability during 2019. In addition, establishing safety targets become more difficult since 2017 because of the significant changes in the road users' behavior, infrastructure condition, and key stakeholders' changes during this period. It seems that new trends for highway safety are arising since 2017, after these historical events.

In terms of the number of fatalities, even when the 2019 SHSP's Action Plan was satisfactory implemented, a remaining 3.3% reduction was not achieved. An increased number of aggressive drivers, the lack of traffic signs, damaged traffic signals, some ineffective work zone safety implementation could influence the actual numbers.

The number of serious injuries was reduced slightly, missing the target by 10.7%. Since lots of vehicles were lost during hurricane María, it is possible that more drivers bought new or updated cars in the past three years. Thus, increased the change of surviving a serious crash due to safer cars designs. In addition, the number of police officers have reduced significantly during the last years in Puerto Rico, reducing the enforcement mobilization impacts.

The fatality rate and the serious injury rates were estimated based on HMVMTs reported until 2018. However, the PRHTA corrected the units of the HMVMT data from 2015 to 2017. The combined influence of the number of fatalities and serious injuries that actually were registered and the changes in the HMVMT affected the results.

Finally, even when the PRTSC made a significant and successful educational campaign for pedestrians and bicyclists, there was an unexpected increase in the number of fatalities and serious injuries of non-motorized road users: pedestrians and cyclists. The database of people transported in ambulance from the crash scene or serious injuries database received was not consistent with previous years data. Thus, PRHTA and PRTSC contacted ACAA data administrators to confirm and validate it. At the date of submitting this report, the serious injuries data provided by ACAA was not validated nor confirmed.

### ***Applicability of Special Rules***

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

No

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

<b>PERFORMANCE MEASURES</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Number of Older Driver and Pedestrian Fatalities	59	49	42	55	76	50	96
Number of Older Driver and Pedestrian Serious Injuries	449	337	402	457	495	514	624

## 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.

Even when the safety targets for 2019 were not met, the PRHTA worked hard to implement the safety improvement projects delayed in the previous years or de-obligated, as well as new projects programmed. The number of fatalities targeted was not met by 3.3%, the number of serious injuries by 10.7%, the number of non-motorized fatalities and serious injuries by 17.0%, and the rates of fatalities and rate of serious injuries by 3.9% and 27.6%, respectively. In the other hand, thirty-one (31) projects were implemented to improve highway safety elements along the entire roadway system in Puerto Rico. It is our best understanding that, after hurricanes Irma and María in 2017, the Puerto Rico historical crash, fatalities, and serious injuries data paths changed. Thus, there is a before and after September 20, 2017 in terms of highway safety, as well as other impacted areas of the society. That is why PRHTA will perform a special HCLR in 2021 to identify specific changes in the pattern of high crash locations in Puerto Rico.

#### 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

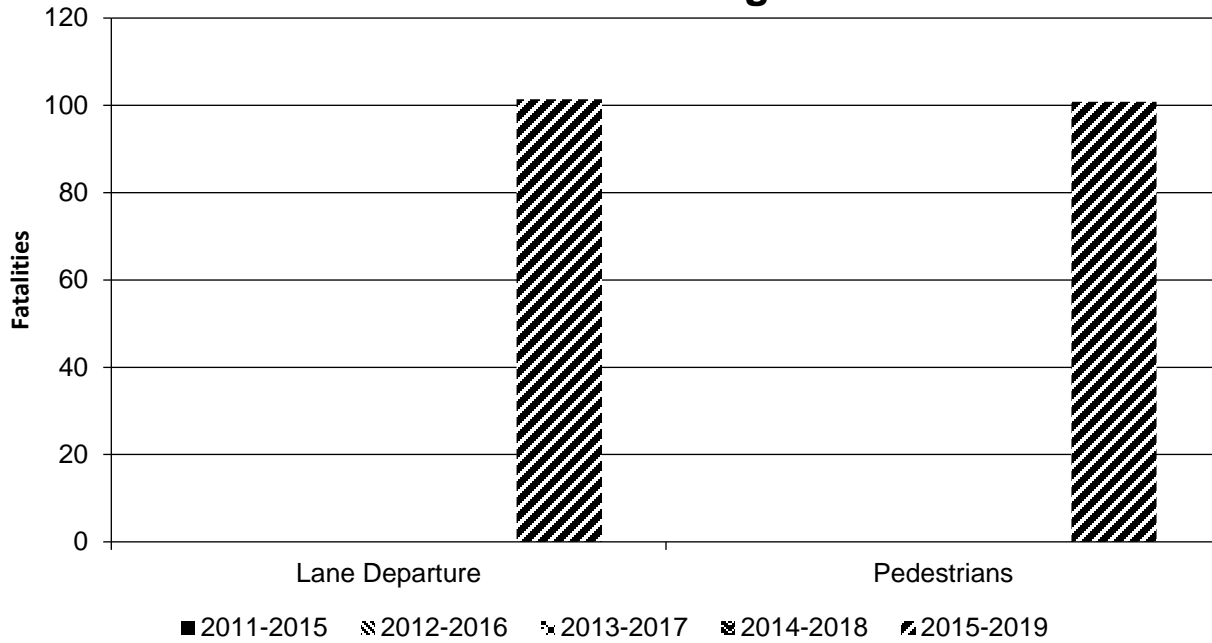
### *Effectiveness of Groupings or Similar Types of Improvements*

#### Present and describe trends in SHSP emphasis area performance measures.

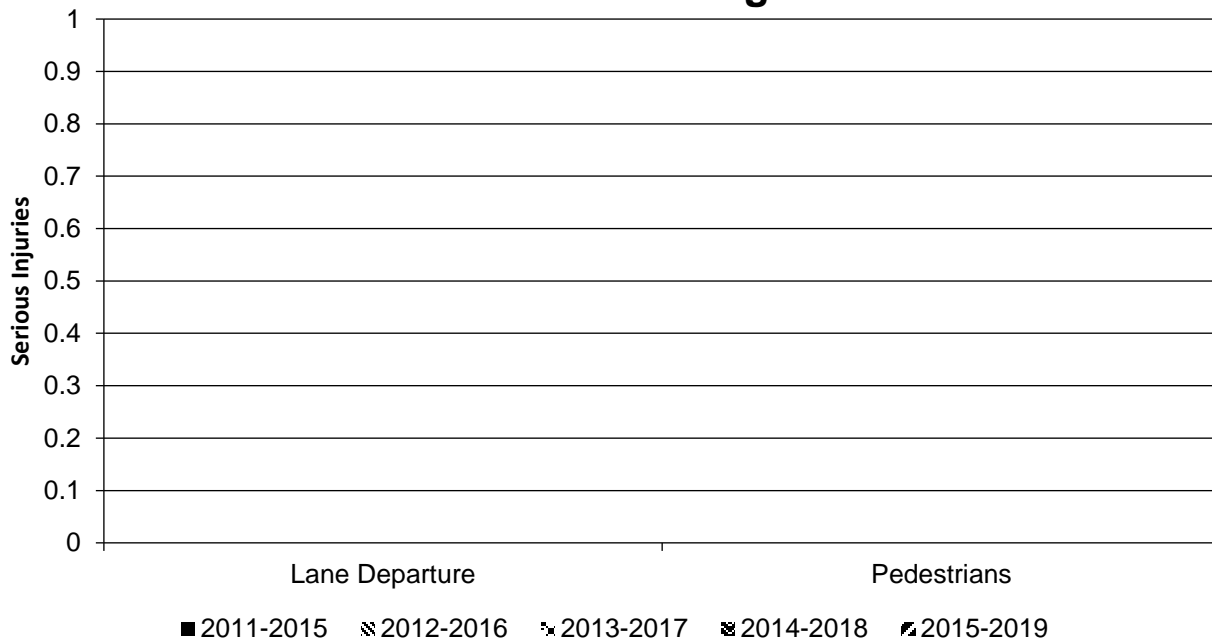
##### Year 2019

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	All	101.4			
Pedestrians	All	100.8			

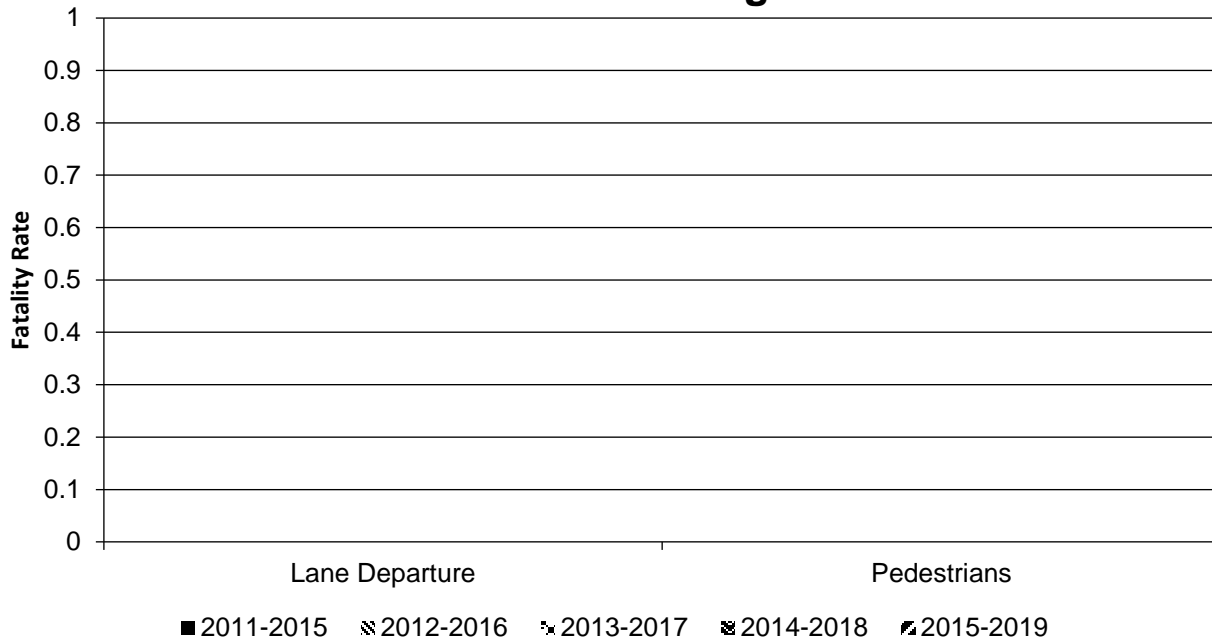
### Number of Fatalities 5 Year Average



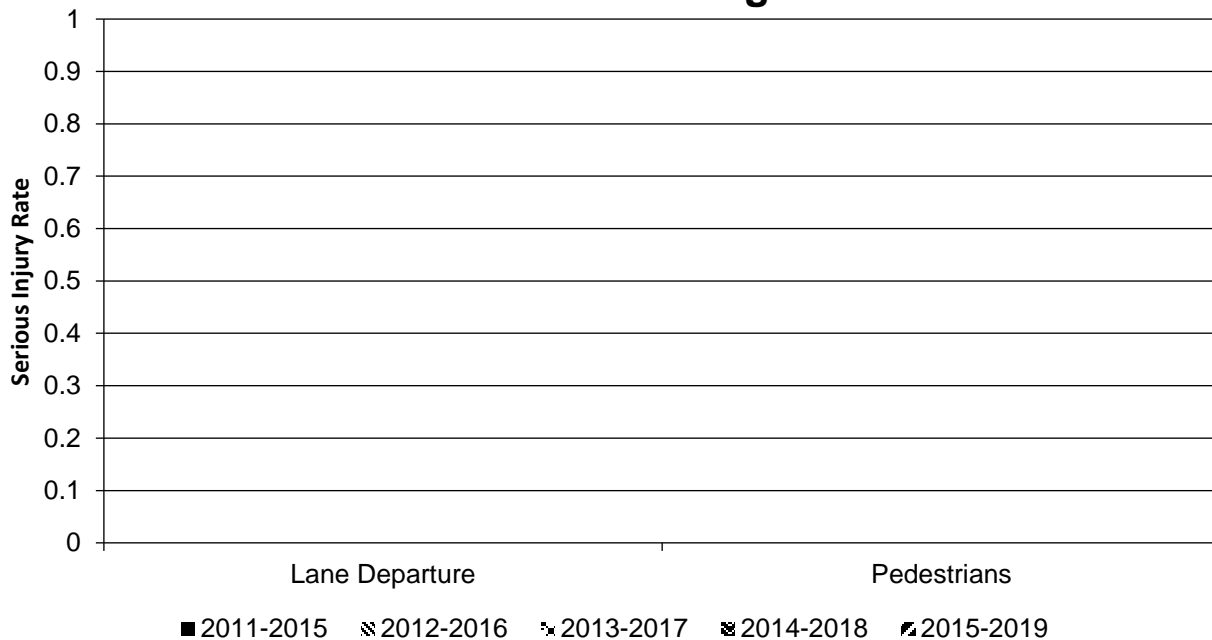
### Number of Serious Injuries 5 Year Average



### Fatality Rate (per HMVMT) 5 Year Average



### Serious Injury Rate (per HMVMT) 5 Year Average



Intersections and Bicyclists are not Emphasis Areas under the new SHSP 2019-2023. However, they are focus groups that are being discussed as part of the Emphasis Area meetings.

***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?**

07/22/2019

**What are the years being covered by the current SHSP?**

From: 2019 To: 2023

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

2024

PRHTA anticipates, and already programmed, to upgrade and complete the next SHSP on or before July 31, 2024.

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

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

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100						1.7			
	Route Number (8) [8]	100									
	Route/Street Name (9) [9]	100									
	Federal Aid/Route Type (21) [21]	100									
	Rural/Urban Designation (20) [20]	100						1.7			
	Surface Type (23) [24]	100						1.7			
	Begin Point Segment Descriptor (10) [10]	100						1.7			
	End Point Segment Descriptor (11) [11]	100						1.7			
	Segment Length (13) [13]	100									
	Direction of Inventory (18) [18]	100									
Functional Class (19) [19]	100							1.7			



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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									
	Access Control (22) [23]	100									
	One/Two Way Operations (91) [93]	100									
	Number of Through Lanes (31) [32]	100						1.7			
	Average Annual Daily Traffic (79) [81]	100						1.7			
	AADT Year (80) [82]	100									
	Type of Governmental Ownership (4) [4]	100						1.7			
	<b>INTERSECTION</b>	Unique Junction Identifier (120) [110]									
	Location Identifier for Road 1 Crossing Point (122) [112]										
	Location Identifier for Road 2 Crossing Point (123) [113]										
	Intersection/Junction Geometry (126) [116]										
	Intersection/Junction Traffic Control (131) [131]										
	AADT for Each Intersecting Road (79) [81]										
	AADT Year (80) [82]										
	Unique Approach Identifier (139) [129]										
<b>INTERCHANGE/RAMP</b>	Unique Interchange Identifier (178) [168]										
	Location Identifier for Roadway at										

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]										
	Ramp Length (187) [177]										
	Roadway Type at Beginning of Ramp Terminal (195) [185]										
	Roadway Type at End Ramp Terminal (199) [189]										
	Interchange Type (182) [172]										
	Ramp AADT (191) [181]										
	Year of Ramp AADT (192) [182]										
	Functional Class (19) [19]										
	Type of Governmental Ownership (4) [4]										
<b>Totals (Average Percent Complete):</b>		<b>100.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

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

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

The PRHTA had perform a series of internal meetings, supported by the FHWA Puerto Rico Division, to implement the MIRE Action Plan 2016 (summarized below) and to structure the Roadway Data System (RDS) Steering Committee. This committee was already defined and working hard to meet MIRE and the RDS goals as required.

- 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)
- Review the MIRE Action Plan according to the information obtained in this meeting and subsequent agreements.

## **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.