FLORIDA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2017 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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. 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

Florida shares the national traffic safety vision, "Toward Zero Deaths," and formally adopted our own version of the national vision, "Driving Down Fatalities," in 2012. Between 2011 and 2015, 12,665 people died on Florida's roadways and an additional 102,759 were seriously injured. The Florida Department of Transportation (FDOT) and its traffic safety partners are committed to eliminating fatalities and reducing serious injuries with the understanding that the death of any person is unacceptable. Understanding that zero fatalities cannot be reached within the Highway Safety Plan (HSP) 2018 year, Florida has developed data models to forecast the fatalities that are statistically expected to occur as we diligently strive to drive down fatalities and serious injuries with an ultimate vision of zero. [Source: SHSP, HSP]

The Strategic Highway Safety Plan (SHSP) is the statewide plan focusing on how to accomplish the vision of eliminating fatalities and reducing serious injuries on all public roads. The SHSP is updated at least every five years by FDOT in coordination with statewide, regional, and local traffic safety partners and was last updated in 2016. [Source: HSP]

Our data-driven SHSP focuses on 13 Emphasis Areas, which reflect ongoing and emerging highway safety issues in Florida. Key strategies related to each Emphasis Area are identified, as well as overarching strategies that apply across Emphasis Areas. These strategies align with the "4 Es" - engineering, education, enforcement, and emergency response. The SHSP also defines a framework for implementation activities to be carried out through strategic safety coalitions and specific activities by FDOT, other State agencies, metropolitan planning organizations, local governments, and other traffic safety partners. [Source: HSP]

FDOT received an allocation of about $120 million in Highway Safety Improvement Program (HSIP) funds during the 2016 state fiscal year from July 1, 2016 through June 30, 2017 (see Question 23) and used it to complete 201 projects (see Question 29). The Intersection program completed 87 projects with about $46 million (see Question 29). The Lane Departure program completed 56 projects with about $36 million (see Question 29). The Pedestrian and Bicyclist Safety program completed 14 projects with about $4 million (see Question 29). Multiple programs and SHSP emphasis areas were addressed by 42 projects with about $31 million (see Question 29).

Regarding roadway ownership, state-maintained roadways were addressed by 139 projects using about $106 million in HSIP funds. Local roadways were addressed by 49 projects using about $10 million in HSIP funds (see Question 29). Non-infrastructure was supported with 22 projects using about $11 million in HSIP funds (see Question 29).

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 general structure of the HSIP in Florida is that the program is managed in Central Office with district staff performing project activities such as conducting safety studies, project scoping, public involvement, and coordinating with production staff on programming safety projects.

To be eligible for HSIP funds, all safety improvement projects must address a Strategic Highway Safety Plan (SHSP) emphasis area, be identified through a data-driven process, and contribute to a reduction in fatalities and serious injuries.

HSIP projects are conducted on state maintained and local maintained roads. For HSIP projects on locally maintained roads an application must be coordinated and concurred with local maintaining agencies. Projects should not require additional Right of Way, because of added time to project schedules. The scope of work must be well defined prior to programming.

All projects must be able to be constructed, feasible, and cost effective. Field reviews and documentation are necessary. Coordination with Local Agency Program (LAP) Administrator and the Florida Department of Transportation (FDOT) State Safety Office is essential throughout the project schedule for projects on locally maintained roads. Deviations from the identified scope of work when programmed will need to be approved by the FDOT State Safety Office.

Each application for local projects shall include the cover letter signed by the highest elected official of the local public agency (county, city or town) that owns or maintains the public road(s) where the proposed infrastructure project will be constructed. The application cover letter shall document through representative’s signature that the project has been reviewed (concurrence not required) by the following the Metropolitan Planning Organization (MPO) and the Community Traffic Safety Team (CTST).

The application itself should have several elements - (1) project location and description, (2) problem description, (3) previous safety improvements, (4) SHSP emphasis area and proposed improvements, (5) roadway characteristics, (6) traffic data, (7) crash information, (8) infrastructure impacts, and (9) a summary. The summary should include cost, schedule, benefit-cost analysis, and net present value (NPV).

2017 Florida Highway Safety Improvement Program
[Source: 2017 HSIP Call for Candidate Safety Projects]

Where is HSIP staff located within the State DOT?

Other-Engineering and Operations, State Safety Office

Enter additional comments here to clarify your response for this question or add supporting information.

The FDOT HSIP staff primarily includes 2 people in Central Office that directly report to the Chief Safety Officer for the State Safety Office. District staff that support the HSIP include the District Safety Engineer who directly report to the District Traffic Operations Engineer.

How are HSIP funds allocated in a State?

Other-Central Office

Enter additional comments here to clarify your response for this question or add supporting information.

Administration of HSIP Funds are handled out of the Central Office, State Safety Office and are allocated based on data based needs.

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

Due to changes in the Florida Traffic Crash Report, Long Form, the State Safety Office (SSO) was unable to develop a high crash location list for local roads during the reporting period. However, the SSO supported the districts with identifying high crash locations on local roads through Geographic Information Systems (GIS) analysis. The SSO developed several analyses of pedestrian and bicyclist involved crashes and intersection crashes. The department is working towards developing a replacement system that will once again provide high crash listings on local roads.

Additionally, other local projects are identified through a coordinated effort with the District Safety Engineer and the Community Traffic Safety Teams.

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

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

Enter additional comments here to clarify your response for this question or add supporting information.

The Florida Highway Safety Plan (HSP) and the HSIP are both managed and maintained through the FDOT State Safety Office (SSO) which assists with coordination efforts such as planning with the Governors Highway Safety Office.

Describe coordination with internal partners.

District staff coordinate with planning, design, and operations for planning HSIP projects. Central Office staff then coordinates with District staff on programming and funding projects. District staff look at opportunities to program HSIP project components concurrently with other projects in the Department's work program.

Other HSIP planning activites include efforts with the Strategic Highway Safety Plan (SHSP). Special emphasis areas teams have been formed based on the SHSP structure. Each team is made up of key personnel within the department and from other agencies or groups which have an interest or responsibility in the emphasis area. The teams meet to develop goals, objectives and action items using the SHSP as the guiding principle. Quarterly meetings are held to discuss progress on action items, plan new work and share best practices.

Additionally, the following groups are included in the internal coordination of the HSIP program: Bike and Pedestrian Safety Manager, State Safety Office, Safe Routes to School Program, Local Agency Program and Work Program Office.

Identify which external partners are involved with HSIP planning.

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

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with external partners.

FDOT has the benefit of the expertise and experience of several additional partners throughout the HSP planning process. Input on safety priorities and activities comes from traffic safety coalitions, advocates, FDOT District Traffic Safety Engineers, law enforcement officers and their leadership, emergency responders, judges, Mothers Against Drunk Driving (MADD), Students Against Destructive Decisions (SADD), and many other state and local agencies. Florida’s Community Traffic Safety Teams (CTSTs) also provide consistent input into the highway safety planning process. CTSTs are locally based groups of highway safety advocates that are

committed to solving traffic safety problems through a comprehensive, multi-jurisdictional, multi-disciplinary approach. Members include city, county, state, and occasionally Federal agencies, as well as private industry representatives and local citizens. Community boundaries are determined by the organizations comprising a CTST: a city, an entire county, a portion of a county, multiple counties, or some other jurisdictional arrangement may be the basis for a CTST.

Through the combination of these efforts there are literally thousands of partners that work in concert with FDOT toward the goal of a fatality-free roadway system.

[Source: FDOT Highway Safety Plan]

Have any program administration practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

Yes

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

The HSIP program is centrally managed for both funding and administration of the program. Each district is responsible for submitting projects for funding consideration annually. The State Safety Office reviews district submitted projects annually and determines funding based on a need addressed in the Florida Strategic Highway Safety Plan, project priorities and the Net Present Value (NPV) of an individual project.

Program Methodology

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

Yes

To upload a copy of the State processes, attach files below.

File Name:
FL HSIP Guideline 1991.pdf

Select the programs that are administered under the HSIP.

Intersection
Bicycle Safety
Skid Hazard
Pedestrian Safety
Other-Lane Departure

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Bicycle Safety

Date of Program Methodology: 4/20/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
FHWA focused approach to safety

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Population	

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Projects are identified using GIS analysis of crash locations and frequency.

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

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

How are projects under this program advanced for implementation?

Competitive application process
Other-Locations are identified through GIS analysis by Central Office or vetted through the districts. District submitted projects are evaluated using a Benefit Cost Ratio greater than 1.
Other-Contributing factors such as time of day (75% of fatal pedestrian and bicycle crashes occur during dusk or dark hours)

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

Cost Effectiveness : 1

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Intersection

Date of Program Methodology: 9/1/2007

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
FHWA focused approach to safety

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Traffic	Other-Mile Point

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate

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

Yes

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

No

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

2017 Florida Highway Safety Improvement Program
The same overall process is used, excluding traffic volume data and crash rates.

How are projects under this program advanced for implementation?

Other-Districts coordinate with staff for projects and submit to Central Office for approval.

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

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Pedestrian Safety

Date of Program Methodology: 4/20/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
FHWA focused approach to safety

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Population	

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Projects are identified using GIS analysis of crash locations and frequency.
Other-Contributing factors such as time of day (75% of fatal pedestrian and bicycle crashes occur during dusk or dark hours)

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

2017 Florida Highway Safety Improvement Program
Yes

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

Yes

Describe the methodology used to identify local road projects as part of this program.
The same overall process is used, excluding traffic volume data and crash rates.

How are projects under this program advanced for implementation?

Competitive application process

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

Rank of Priority Consideration

Cost Effectiveness : 1

Enter additional comments here to clarify your response for this question or add supporting information.
State and local roads are included in this program. Funding is provided for the top 20 priority counties. The allocation is based on the percentage of the problem.

Program: Skid Hazard

Date of Program Methodology: 9/1/2007

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
FHWA focused approach to safety

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
Fatal and serious injury crashes only	Traffic	Other-Friction Number

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Other-Locations with a high proportion of wet weather crashes are included in the screening process for skid hazard project locations.

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

No

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

Yes

Describe the methodology used to identify local road projects as part of this program.
The same overall process is used, excluding traffic volume data and crash rates.

How are projects under this program advanced for implementation?

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).

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Other-Lane Departure

Date of Program Methodology: 9/1/2007

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
FHWA focused approach to safety

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes **Exposure** **Roadway**

Fatal and serious injury crashes only Traffic Other-Mile Point

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate

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

Yes

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

No

Describe the methodology used to identify local road projects as part of this program.
The same overall process is used, excluding traffic volume data and crash rates.

How are projects under this program advanced for implementation?

Other-Districts coordinate with staff for projects and submit to Central Office for approval.

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

Enter additional comments here to clarify your response for this question or add supporting information.

What percentage of HSIP funds address systemic improvements?

3

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

Add/Upgrade/Modify/Remove Traffic Signal

Enter additional comments here to clarify your response for this question or add supporting information.

What process is used to identify potential countermeasures? [Check all that apply]

2017 Florida Highway Safety Improvement Program
Engineering Study
Road Safety Assessment
Stakeholder input

Enter additional comments here to clarify your response for this question or add supporting information.

Does the State HSIP consider connected vehicles and ITS technologies?

No

Enter additional comments here to clarify your response for this question or add supporting information.

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 Highway Safety Manual is in the early implementation efforts within the HSIP.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

No

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter additional comments here to clarify your response for this question or add supporting information.

No additional comments regarding the HSIP funding reporting period.

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$120,647,231	$120,114,010	99.56%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$120,647,231	$120,114,010	99.56%

Enter additional comments here to clarify your response for this question or add supporting information.

[Source: FDOT MADDOG]

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

$10,396,655

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

$10,395,638

Enter additional comments here to clarify your response for this question or add supporting information.

Reported figures are based on programmed and obligated HSIP funds for "off state highway" and "off federal" systems.

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

$17,096,283

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

$16,961,536

Enter additional comments here to clarify your response for this question or add supporting information.

Reported figures are based on programmed and obligated HSIP funds for work mix descriptions of "preliminary engineering", "public information/education", "traffic engineering study", "transportation planning", and "transportation statistics".

[Source: FDOT MADDOG]

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?

$139,529

Enter additional comments here to clarify your response for this question or add supporting information.

FDOT transferred HSIP funds during the state fiscal year 2016/2017 to enhance safety for school crossing zones through the Safe Routes to School program and to enhance pedestrian and bicycle safety through Florida's Pedestrian and Bicycle Safety Coalition.

[Source: FDOT MADDOG]

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

None to report at this time.

[Source: FDOT State Safety Engineer]

Does the State want to elaborate on any other aspects of it's progress in implementing HSIP projects?

No

General Listing of Projects

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

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
190258-1	Advanced technology and ITS				$597883		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
192203-1	Non-infrastructure				$171675		HSIP (23 U.S.C. 148)		0				Data	
211079-2	Non-infrastructure				$339514		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
211079-3	Non-infrastructure				$395544		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
211079-4	Non-infrastructure				$294203		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
211079-5	Non-infrastructure				$405389		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
211079-6	Non-infrastructure				$120098		HSIP (23 U.S.C. 148)		0		Other Local Agency		Multiple	
211079-8	Non-infrastructure				$512932		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
220838-2					$5211		HSIP (23 U.S.C. 148)		0				Multiple	
222518-1	Lighting				$894313		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
222524-1	Lighting				$1247357		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
222668-1	Lighting				$1040315		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
222713-1	Lighting				$966714		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
222818-1	Lighting				$954187		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
230094-6	Non-infrastructure				$800000		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
230094-7	Non-infrastructure				$798000		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
237995-1	Non-infrastructure				$429645		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
254553-1	Non-infrastructure				$2876463		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
254646-1					$224868		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
254647-1	Pedestrians and bicyclists				$463976		HSIP (23 U.S.C. 148)		0		State Highway Agency		Pedestrian and Bicyclist Safety	
254677-2					$4922576		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
409224-1	Non-infrastructure				$179410		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
412479-3	Intersection geometry				$3248849		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
418439-1	Non-infrastructure				$700340		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
418860-5	Intersection geometry				$45301		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
422814-1					$1803092		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
423071-1	Intersection geometry				$223199		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
423608-2	Intersection geometry				$2442708		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
425646-2	Speed management				$249578		HSIP (23 U.S.C. 148)		0				Intersections	
425646-3	Non-infrastructure				$23791		HSIP (23 U.S.C. 148)		0				Multiple	
427004-2	Intersection geometry				$9113		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
427280-1	Intersection geometry				$2678907		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
427315-2	Advanced technology and ITS				$3382824		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
427452-1	Lighting				$25854		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
428214-1	Pedestrians and bicyclists				$131		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrians	
428724-1	Roadway				$278501		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
428732-1	Roadway				$55954		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
429014-1	Intersection geometry				$12145		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429020-1					$345		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
429060-1	Roadway				$357590		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
429060-2	Intersection geometry				$710077		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429135-2	Intersection traffic control				$30099		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429246-2	Shoulder treatments				$13012		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
429343-2	Intersection traffic control				$13216		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429346-2	Lighting				$693241		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429496-1	Pedestrians and bicyclists				$24432		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429506-1	Lighting				$457164		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
429650-2	Lighting				$300000		HSIP (23 U.S.C. 148)		0				Multiple	
429660-1	Pedestrians and bicyclists				$1620		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
429664-1	Pedestrians and bicyclists				$78240		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
429670-1	Shoulder treatments				$466		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
429670-2	Shoulder treatments				$511		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
429670-4	Shoulder treatments				$7779		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
429675-2	Roadway delineation				$358		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
429678-2	Shoulder treatments				$332		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
429741-1	Intersection traffic control				$13309		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
429742-1	Lighting				$6412		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
430687-3	Shoulder treatments				$1		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
430765-1	Intersection traffic control				$31509		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430768-1	Intersection geometry				$150188		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430777-1	Roadway				$211090		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
430785-1	Roadway				$718182		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
430803-1	Roadway				$162254		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
430808-1	Intersection geometry				$598393		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430808-2	Intersection traffic control				$82428		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430852-1	Non-infrastructure				$352351		HSIP (23 U.S.C. 148)		0				Multiple	
430855-1	Pedestrians and bicyclists				$728615		HSIP (23 U.S.C. 148)		0		State Highway Agency		Pedestrians	
430910-1	Intersection geometry				$7955030		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430911-1	Intersection geometry				$618933		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430914-1	Intersection geometry				$5982164		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
430931-1	Lighting				$11077		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
431142-1	Shoulder treatments				$203		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
431170-4	Pedestrians and bicyclists				$414343		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
431172-1	Roadway				$67576		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
431243-1	Roadway				$20408		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
431496-1	Roadway				$497064		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
431635-1					$988206		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
431820-2					$2394435		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
431820-3					$37152		HSIP (23 U.S.C. 148)		0		Other Local Agency		Multiple	
432193-1	Roadway				$11000001		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
432412-1	Intersection traffic control				$365550		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
432421-1	Intersection geometry				$587201		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
432586-1	Roadway				$1890731		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
432647-1	Shoulder treatments				$36021		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
432647-2	Shoulder treatments				$3281039		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
432648-1	Intersection geometry				$139838		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
432654-1	Roadway delineation				$504754		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
432655-1	Roadway delineation				$758501		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
432656-1	Intersection geometry				$2621913		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
432657-1					$984489		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
432659-1	Lighting				$879471		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
432743-5	Intersection geometry				$579113		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
432755-1	Lighting				$4199562		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
432952-1	Pedestrians and bicyclists				$240584		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
433040-1	Intersection traffic control				$8930		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433059-2	Access management				$38858		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433074-1	Pedestrians and bicyclists				$7		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
433107-1					$7		HSIP (23 U.S.C. 148)		0		Other Local Agency		Multiple	
433111-1					$29493		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
433144-1					$4500000		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
433206-1	Intersection geometry				$289054		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
433264-1	Intersection traffic control				$1194103		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433266-1	Intersection traffic control				$559630		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
433283-1	Intersection traffic control				$1245142		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433375-1	Lighting				$11942		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
433390-1	Non-infrastructure				$357547		HSIP (23 U.S.C. 148)		0				Multiple	
433391-2	Non-infrastructure				$742404		HSIP (23 U.S.C. 148)		0				Multiple	
433396-1	Lighting				$9709		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433408-1	Intersection traffic control				$1315		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433409-1	Intersection traffic control				$38265		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433412-1					$2922882		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
433416-1					$787534		HSIP (23 U.S.C. 148)		0		Other Local Agency		Multiple	
433436-1	Intersection traffic control				$484		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
433438-1	Shoulder treatments				$3474		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
433451-1	Access management				$553987		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433454-1	Pedestrians and bicyclists				$74964		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
433485-1	Intersection traffic control				$70688		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433489-1	Intersection traffic control				$12344		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433490-1	Access management				$620651		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433491-1	Intersection traffic control				$216158		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433492-1	Access management				$1183685		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433493-1	Pedestrians and bicyclists				$672483		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433508-1	Lighting				$505661		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
433519-2	Intersection traffic control				$352338		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
433519-3	Intersection traffic control				$12834		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433522-1	Non-infrastructure				$162910		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
433522-3	Non-infrastructure				$1000000		HSIP (23 U.S.C. 148)		0		State Highway Agency		Data	
433786-1	Roadway				$1465		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
433787-1	Intersection geometry				$1942		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
433875-1	Non-infrastructure				$133992		HSIP (23 U.S.C. 148)		0				Intersections	
434307-1					$629		HSIP (23 U.S.C. 148)		0		Other Local Agency		Multiple	
434308-1					$2816		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
434314-1	Roadway delineation				$304171		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
434315-1	Shoulder treatments				$410301		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
434327-1	Lighting				$159819		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
434328-1	Lighting				$121972		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
434337-1	Intersection traffic control				$148132		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434340-1	Lighting				$22576		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
434342-1	Shoulder treatments				$54755		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
434425-1	Access management				$5772		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
434488-1	Speed management				$351963		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434489-1	Pedestrians and bicyclists				$88100		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
434502-1	Intersection traffic control				$362897		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
434505-1	Intersection traffic control				$135180		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434506-1	Lighting				$106659		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
434507-1	Intersection traffic control				$20954		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434509-1	Intersection traffic control				$39996		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434510-1	Roadway delineation				$129749		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
434534-2	Lighting				$36739		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434694-1	Intersection geometry				$7651		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434701-1	Roadway delineation				$308159		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
434728-1	Intersection traffic control				$218425		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434778-1	Pedestrians and bicyclists				$9808		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434779-1	Non-infrastructure				$349326		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
434809-1	Lighting				$6881		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
434810-1	Intersection traffic control				$164588		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
434844-1	Intersection geometry				$300		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
435091-1	Intersection traffic control				$463618		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
435093-1	Intersection traffic control				$278824		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
435095-1	Intersection traffic control				$38044		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
435096-1	Lighting				$369975		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
435122-1	Intersection geometry				$1520517		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
435255-1	Intersection geometry				$812		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
435837-1	Intersection geometry				$29363		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
436009-1	Shoulder treatments				$498893		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436012-1	Intersection geometry				$4896		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
436013-1	Pedestrians and bicyclists				$395522		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
436013-2	Pedestrians and bicyclists				$278311		HSIP (23 U.S.C. 148)		0		Other Local Agency		Pedestrian and Bicyclist Safety	
436023-1	Lighting				$916642		HSIP (23 U.S.C. 148)		0		State Highway Agency		Pedestrian and Bicyclist Safety	
436033-1	Roadway delineation				$94904		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436114-1	Pedestrians and bicyclists				$356833		HSIP (23 U.S.C. 148)		0		State Highway Agency		Pedestrian and Bicyclist Safety	
436118-1	Access management				$625666		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436119-1	Shoulder treatments				$234690		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436124-1	Lighting				$138003		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436134-1	Roadway delineation				$99973		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436135-1	Pedestrians and bicyclists				$433939		HSIP (23 U.S.C. 148)		0		State Highway Agency		Pedestrian and Bicyclist Safety	
436149-1	Shoulder treatments				$164000		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436151-1	Shoulder treatments				$102674		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436185-1	Shoulder treatments				$98874		HSIP (23 U.S.C. 148)		0		Other Local Agency		Lane Departure	
436235-1	Roadway delineation				$98856		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
436236-1	Roadway				$60693		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
436237-1	Intersection geometry				$589857		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436300-1					$24940		HSIP (23 U.S.C. 148)		0				Multiple	
436310-1	Intersection traffic control				$198359		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436311-1	Intersection traffic control				$194221		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436313-1	Speed management				$226875		HSIP (23 U.S.C. 148)		0		State Highway Agency		Multiple	
436356-1	Roadway delineation				$99999		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
436364-1	Roadway delineation				$100249		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
436371-1	Roadway delineation				$90533		HSIP (23 U.S.C. 148)		0		State Highway Agency		Lane Departure	
436385-1	Lighting				$214840		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436404-1	Intersection traffic control				$383578		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436546-1	Intersection traffic control				$45318		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
436548-1	Roadway delineation				$81770		HSIP (23 U.S.C. 148)		0				Lane Departure	
436553-1	Pedestrians and bicyclists				$282217		HSIP (23 U.S.C. 148)		0				Intersections	
436613-1	Non-infrastructure				$298357		HSIP (23 U.S.C. 148)		0				Multiple	
436965-1	Intersection geometry				$33184		HSIP (23 U.S.C. 148)		0		Other Local Agency		Intersections	
437263-1	Pedestrians and bicyclists				$738913		HSIP (23 U.S.C. 148)		0		State Highway Agency		Pedestrian and Bicyclist Safety	
437451-1	Intersection geometry				$6464		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
437630-1	Lighting				$487432		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
437634-1	Intersection geometry				$15416		HSIP (23 U.S.C. 148)		0		State Highway Agency		Intersections	
437647-1					$198120		HSIP (23 U.S.C. 148)		0		Other Local Agency		Multiple	

Enter additional comments here to clarify your response for this question or add supporting information.

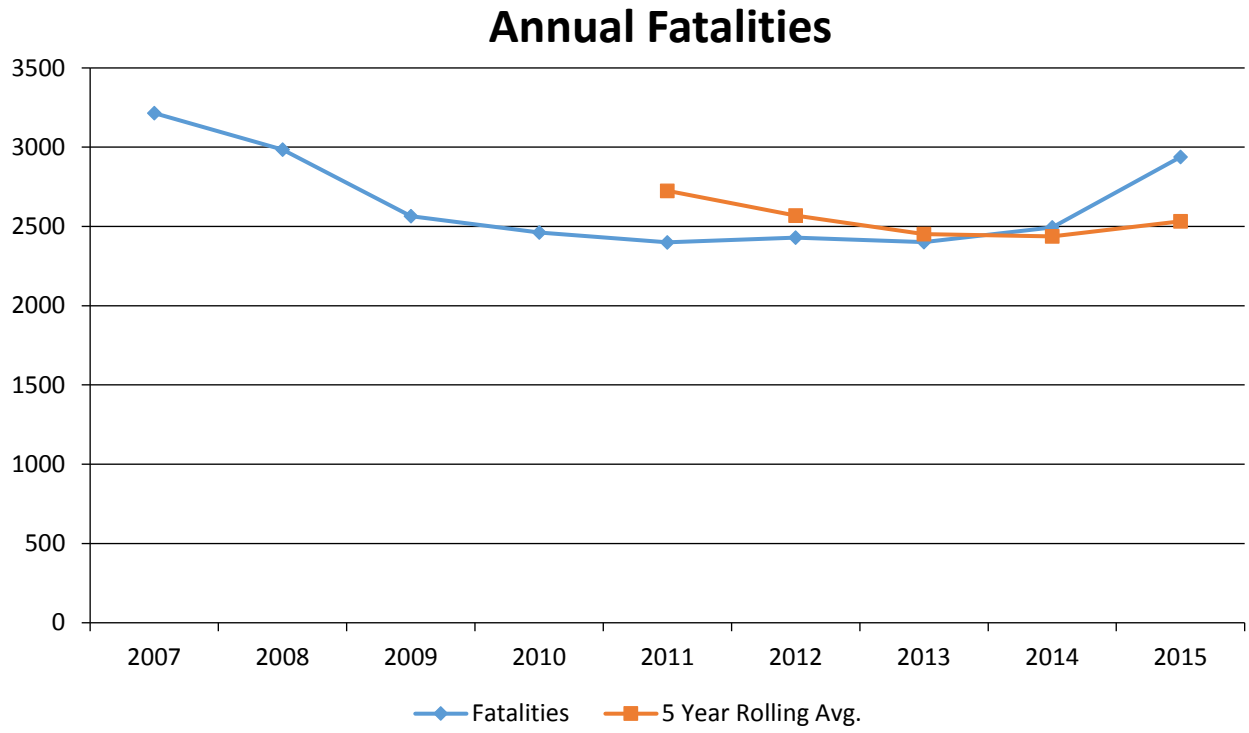
[Source: FDOT MADDOG and FDOT State Safety Office]

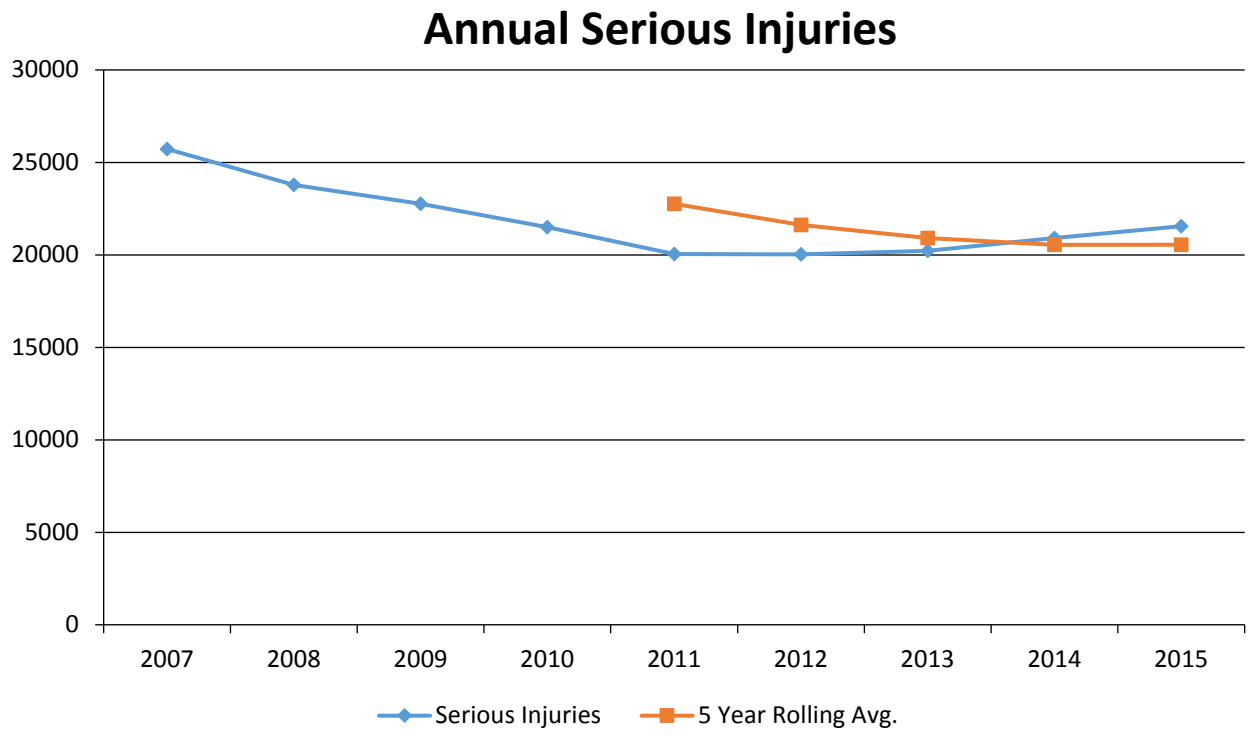
Safety Performance

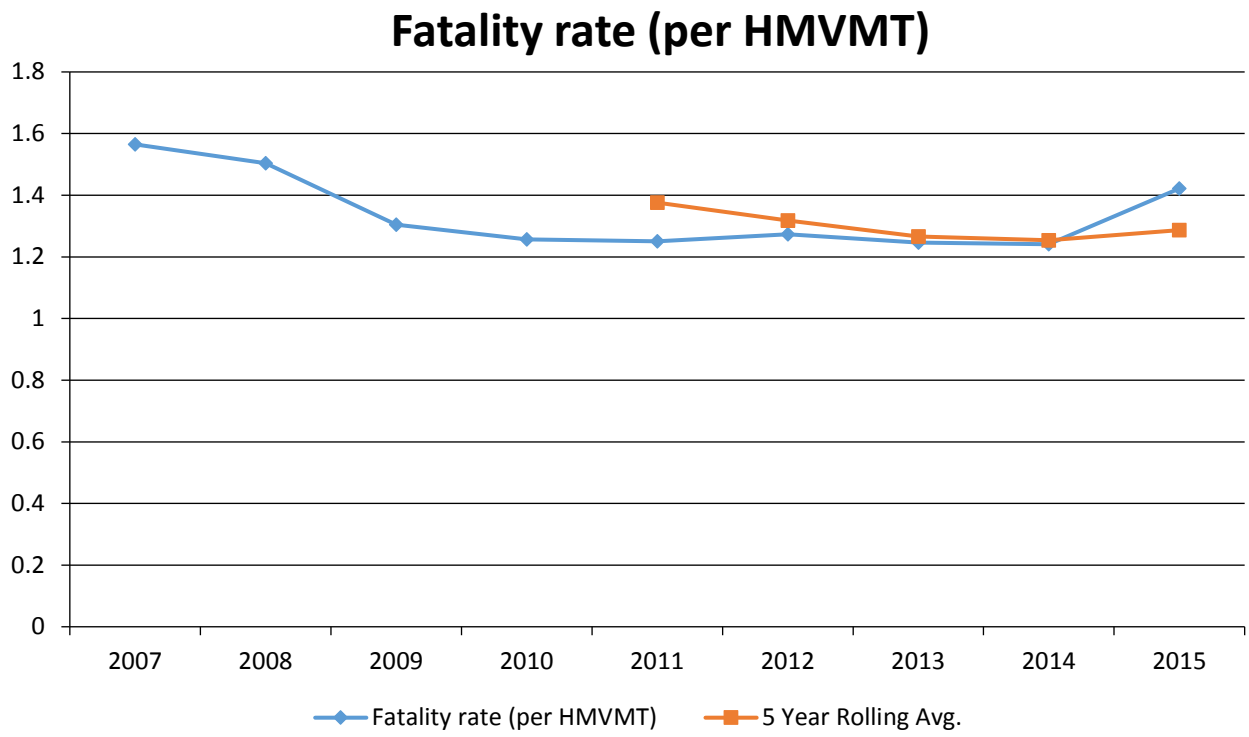
General Highway Safety Trends

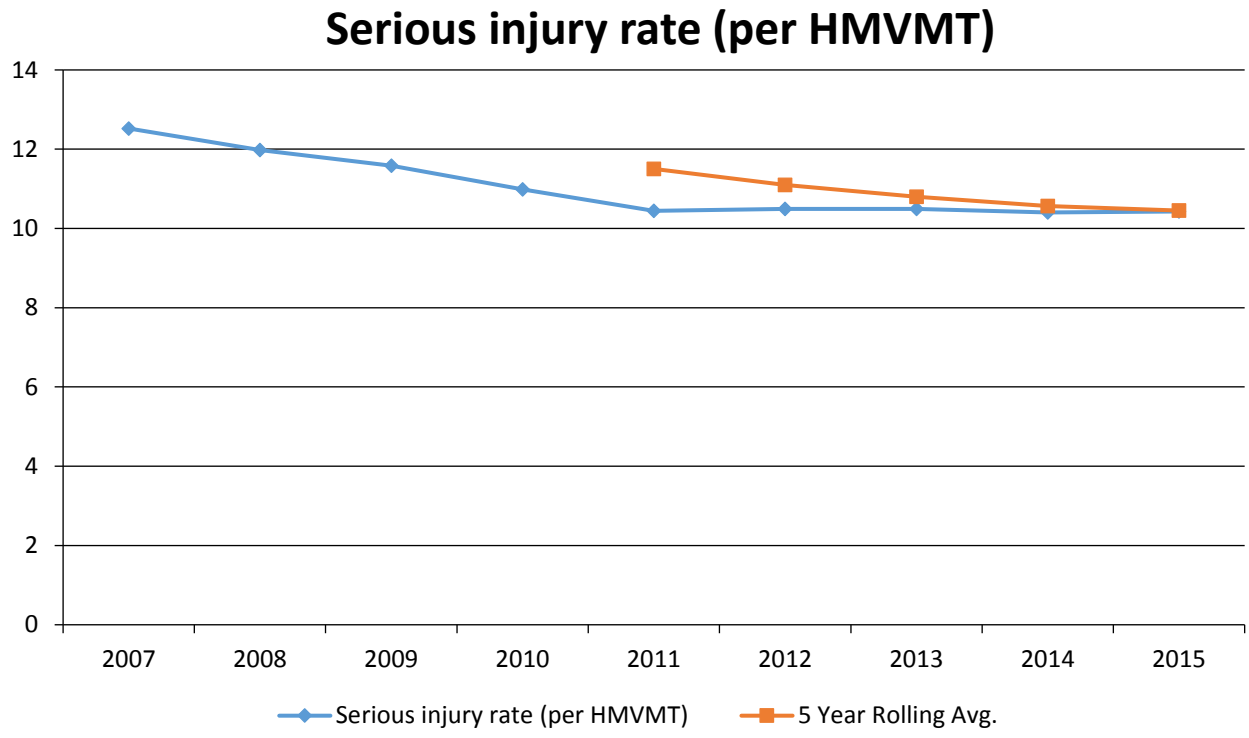
Present data showing the general highway safety trends in the State for the past five years.

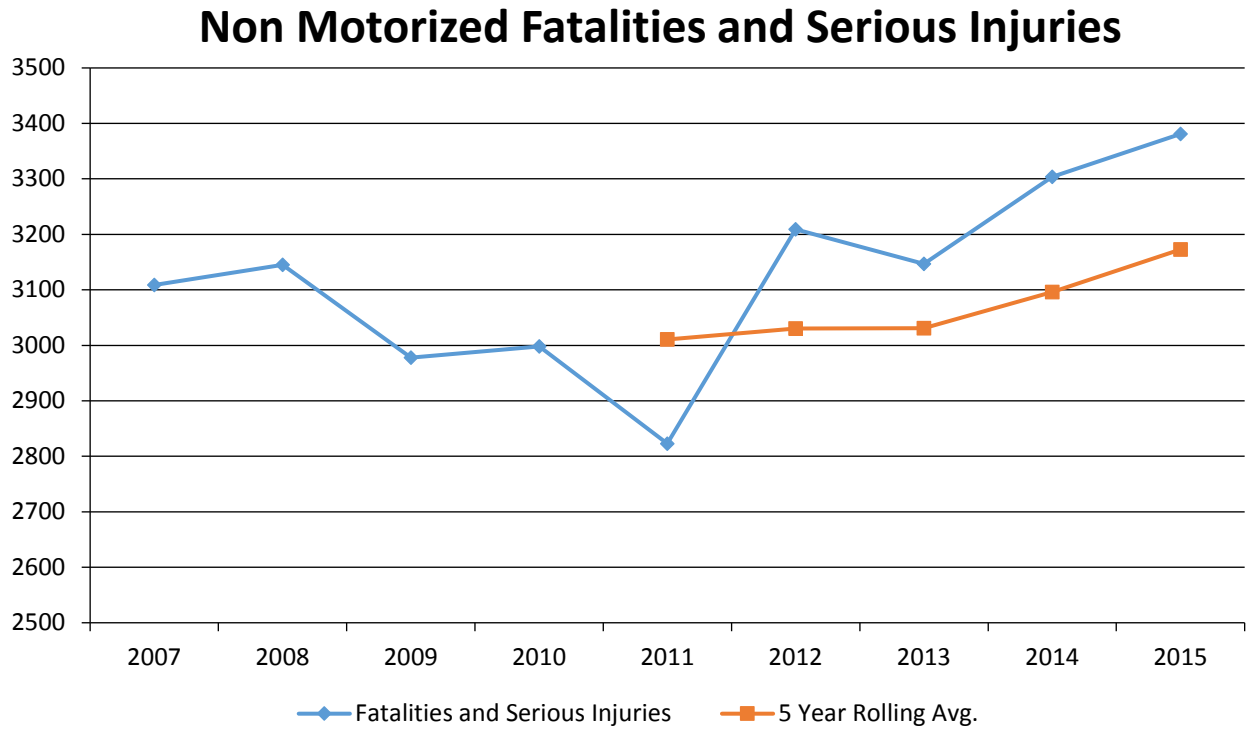
PERFORMANCE MEASURES	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatalities	3,215	2,985	2,564	2,461	2,400	2,430	2,402	2,494	2,939
Serious Injuries	25,725	23,776	22,755	21,503	20,042	20,028	20,226	20,912	21,551
Fatality rate (per HMVMT)	1.565	1.504	1.305	1.257	1.251	1.273	1.246	1.241	1.422
Serious injury rate (per HMVMT)	12.523	11.978	11.586	10.985	10.444	10.491	10.496	10.404	10.426
Number non-motorized fatalities	650	624	587	583	617	589	633	741	785
Number of non-motorized serious injuries	2,459	2,521	2,391	2,415	2,206	2,620	2,514	2,563	2,596


Annual Fatalities
3500
3000
2500
2000
1500
1000
500
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
30000
25000
20000
15000
10000
5000
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
14
12
10
8
6
4
2
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Enter additional comments here to clarify your response for this question or add supporting information.

The number of fatal and serious injuries come from the Florida Strategic Highway Safety Plan (SHSP) published October 2016. The SHSP injury counts are based on the Florida Department of Highway Safety and Motor Vehicles (DHSMV) database for traffic crash reports using Florida's Integrated Report Exchange System (FIRES). DHSMV is the official custodian of traffic crash records for the State of Florida. The numbers for Vehicle Miles Travelled (VMT) come from the FDOT Transportation Data and Analytics Office.

[Source: FDOT SHSP; DHSMV FIRES; FDOT Transportation Data and Analytics Office]

Describe fatality data source.

State Motor Vehicle Crash Database

Enter additional comments here to clarify your response for this question or add supporting information.

The Florida Department of Highway Safety and Motor Vehicles (DHSMV) is the official custodian of traffic crash reports. Therefore the DHSMV database is the official crash records database for the State of Florida. Additionally traffic crash statistics reported by DHSMV are official for the State of Florida.

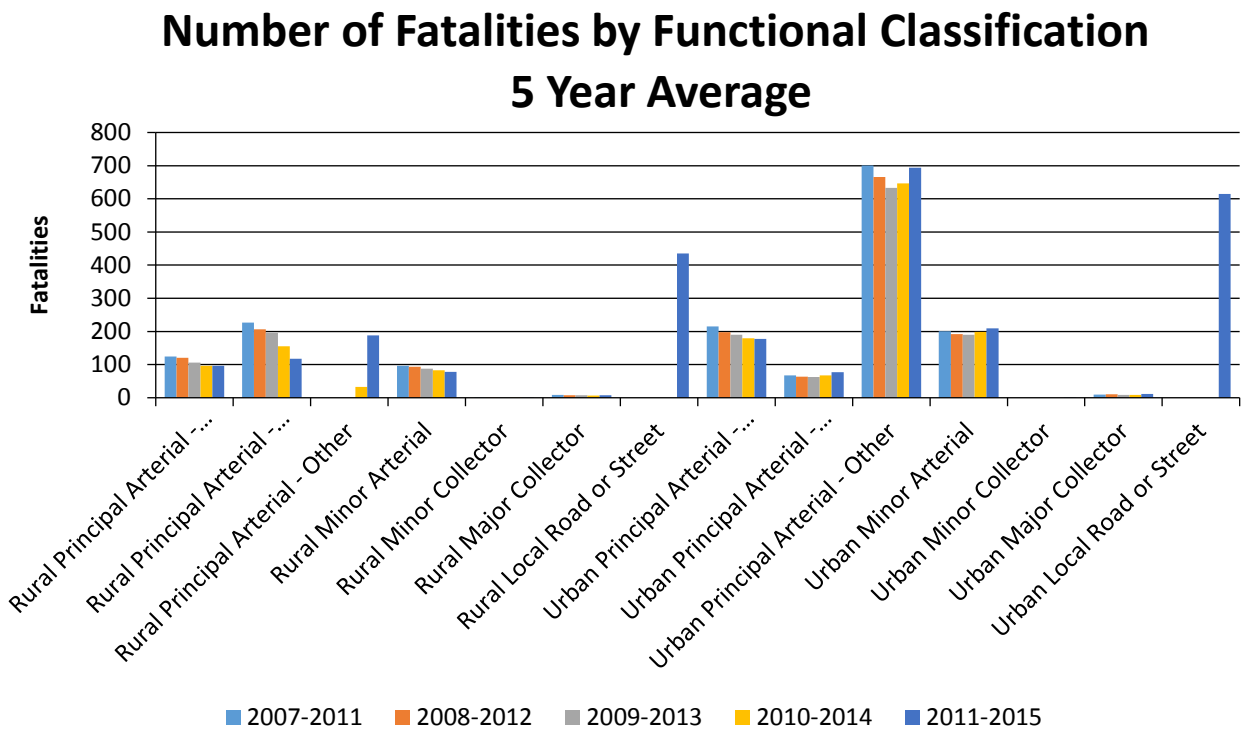
To the maximum extent possible, present this data by functional classification and ownership.

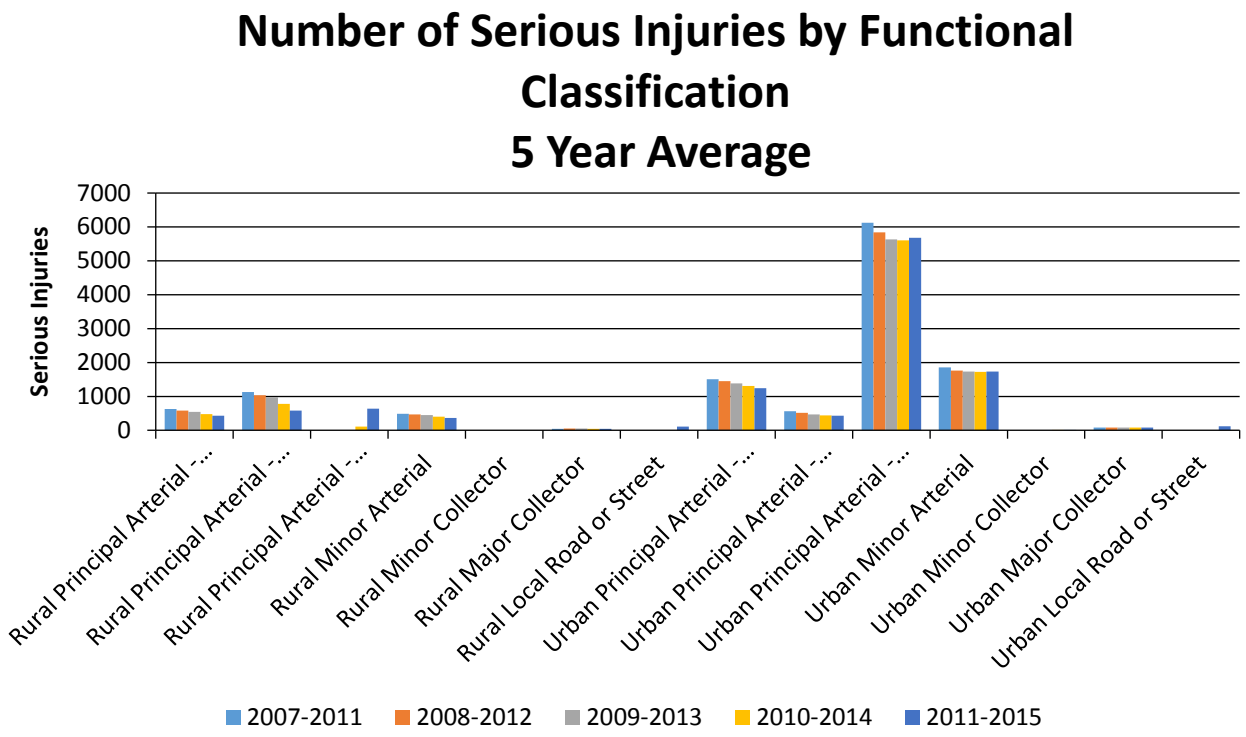
Year 2015

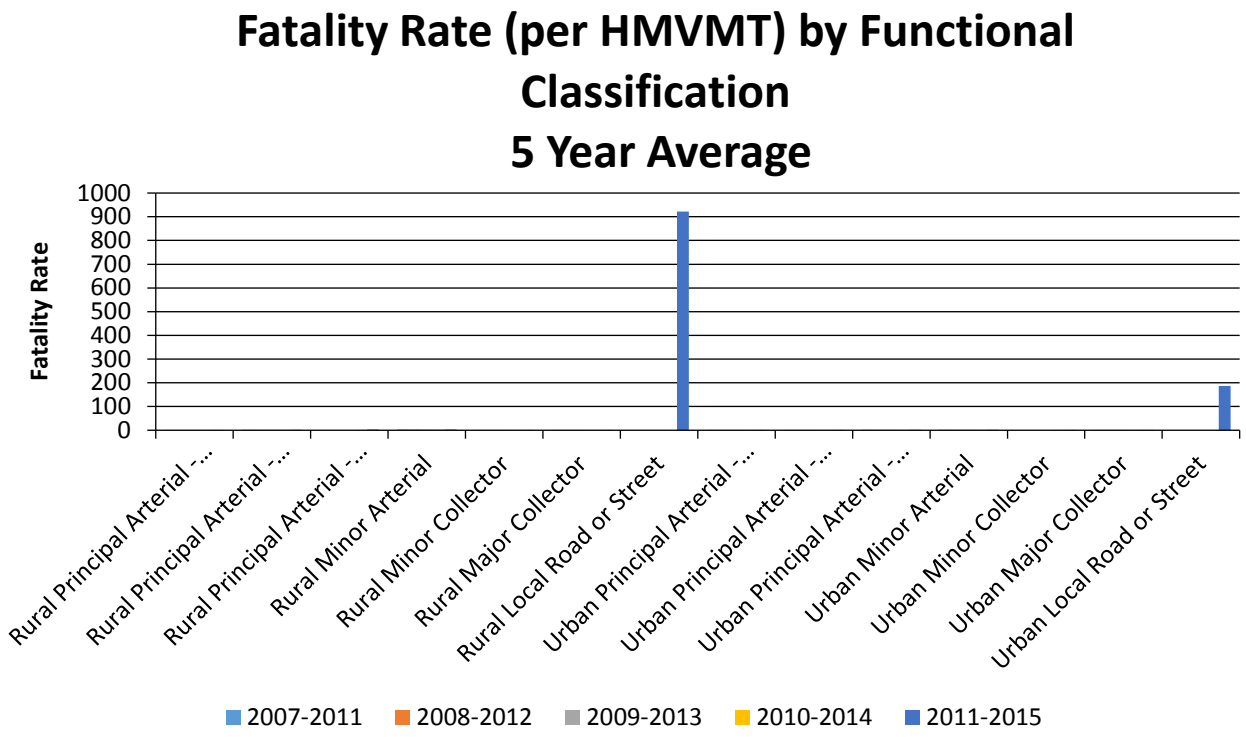
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial - Interstate	96.2	425.8	1.03	5.01
Rural Principal Arterial - Other Freeways and Expressways	117.8	579.6	1.83	8.98
Rural Principal Arterial - Other	188	634.5	2.59	8.73
Rural Minor Arterial	78.4	359	2.67	12.23
Rural Minor Collector	1	0	0.36	0
Rural Major Collector	8	43.8	1.05	5.76
Rural Local Road or Street	435.5	110.5	921.64	233.85
Urban Principal Arterial - Interstate	177.2	1,237.2	0.68	4.72
Urban Principal Arterial - Other Freeways and Expressways	76.8	426.4	0.64	3.56
Urban Principal Arterial - Other	693.8	5,676	1.92	15.74
Urban Minor Arterial	209	1,736	1.67	13.84
Urban Minor Collector	0.5	1.5	0.24	0.71
Urban Major Collector	11	82.6	0.49	3.75
Urban Local Road or Street	614.5	116	186.24	35.16

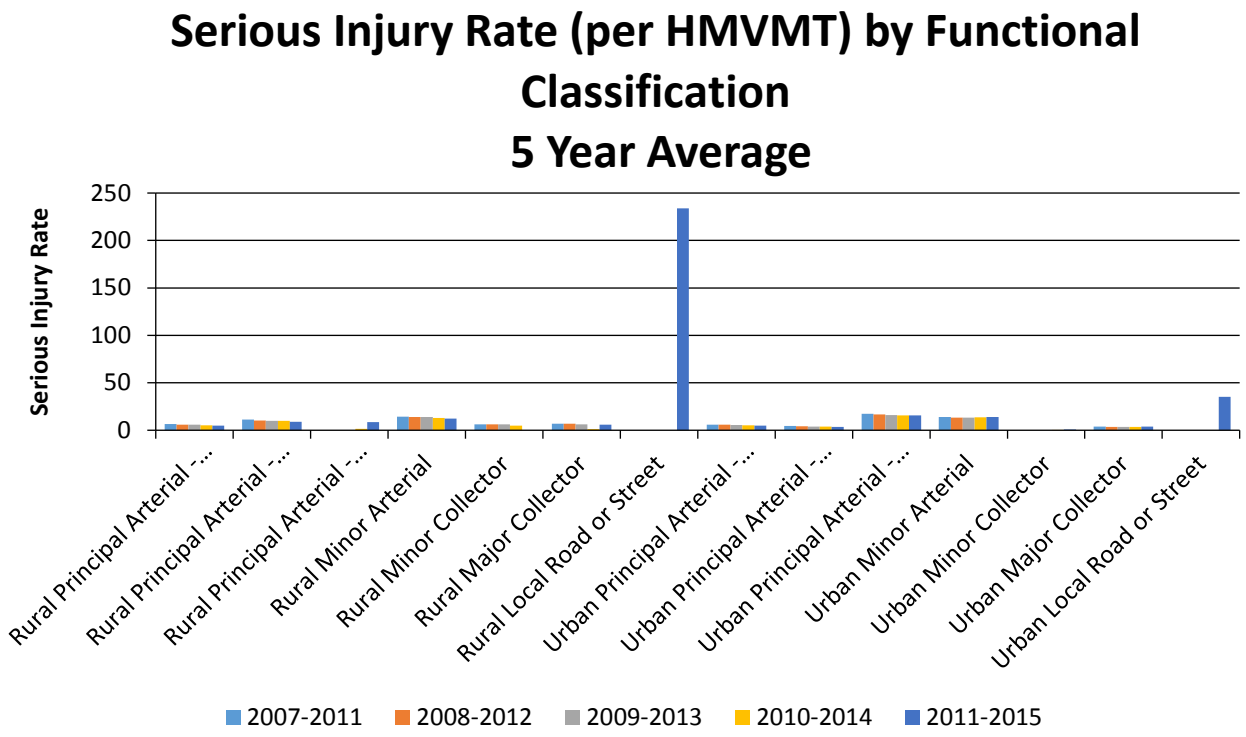
Year 2015

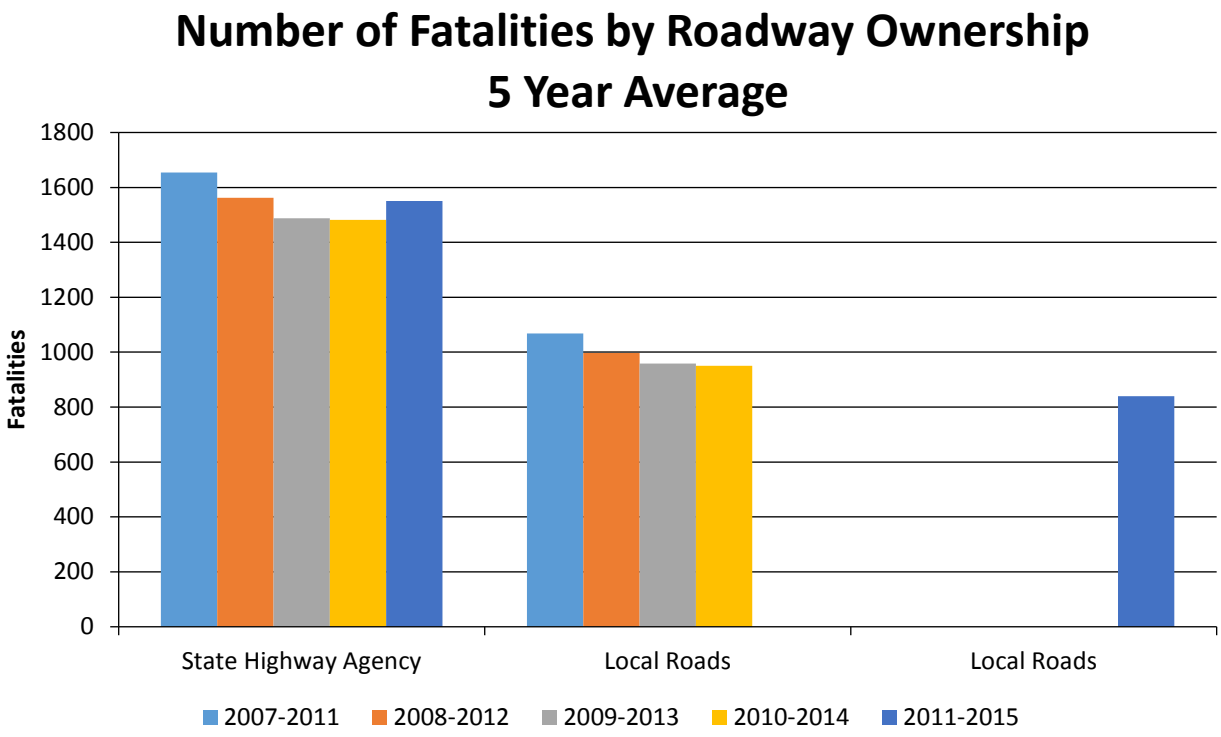
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	1,550.2	13,665.6	1.01	8.92
County Highway Agency				
Town or Township Highway Agency				
City of Municipal Highway Agency				
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				
Local Roads	839.4	9,791.2	1.93	22.46

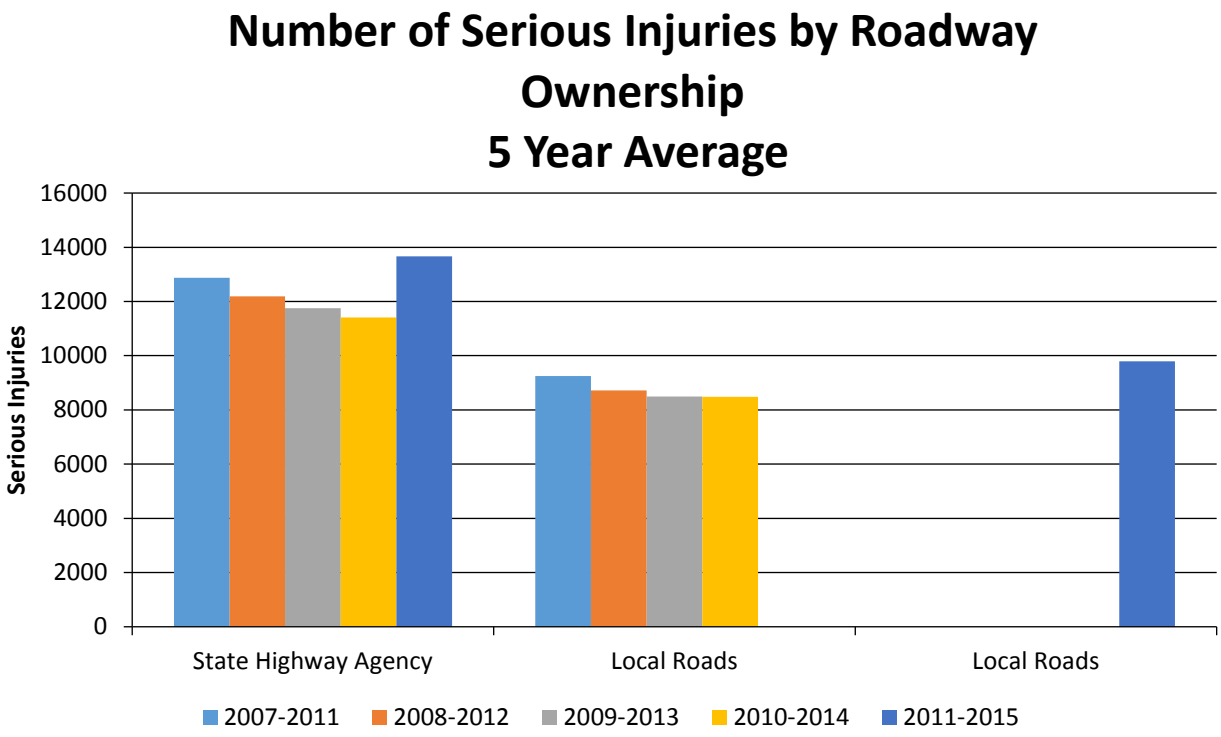

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
800
700
600
500
400
300
200
100
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015

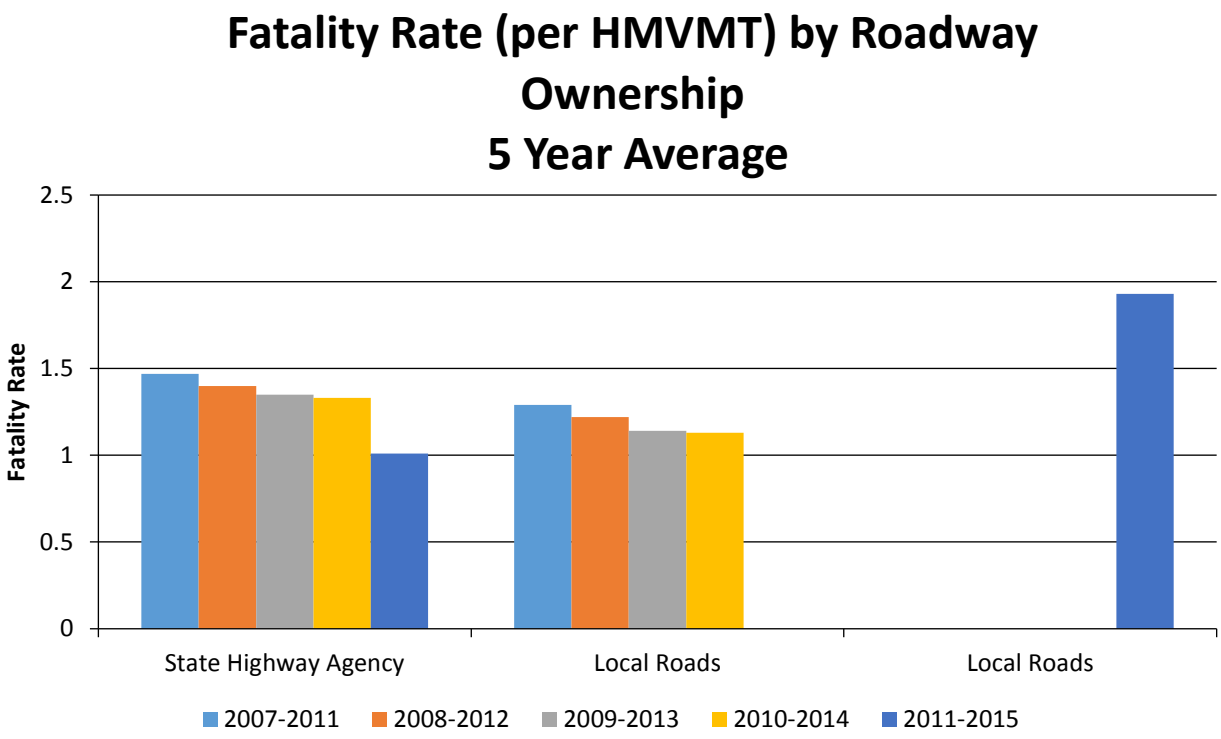

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
7000
6000
5000
4000
3000
2000
1000
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015

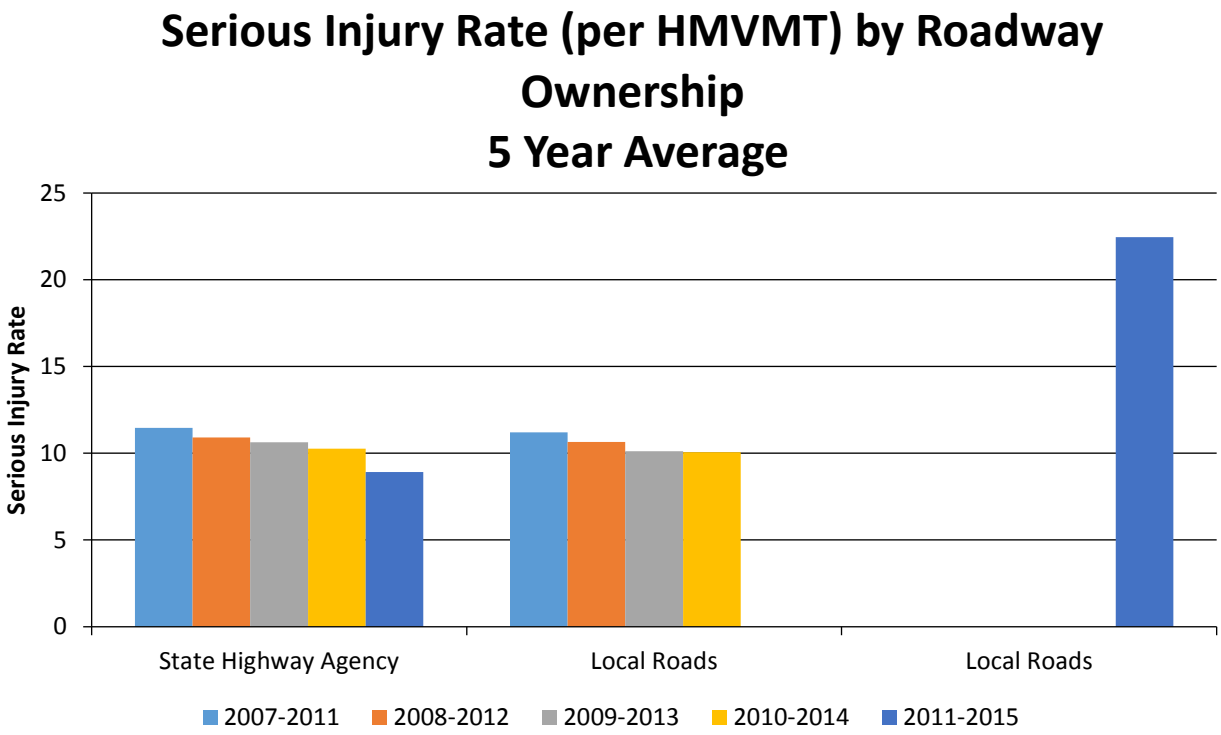

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
1000
900
800
700
600
500
400
300
200
100
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
250
200
150
100
50
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
1800
1600
1400
1200
1000
800
600
400
200
0
State Highway Agency
Local Roads
Local Roads
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
16000
14000
12000
10000
8000
6000
4000
2000
0
State Highway Agency
Local Roads
Local Roads
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
2.5
2
1.5
1
0.5
0
State Highway Agency
Local Roads
Local Roads
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015



Enter additional comments here to clarify your response for this question or add supporting information.

[Source: FDOT Crash Analysis Reporting (CAR) System]

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

No

Safety Performance Targets

Safety Performance Targets

Calendar Year 2018 Targets *

Number of Fatalities	0.1

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

Based on statistical forecasting, the five year rolling average for total fatalities on Florida's roads is forecast to be between 2,716 and 3,052 in 2018. This forecast was made by combining FARS data with current state data from 2009 to 2016 to predict probable outcomes for 2017 and 2018. Florida's target for fatalities is zero in 2018. While the data forecast indicates Florida's five year rolling average for fatalities could

continue to trend upward in 2017 and 2018, the FDOT State Safety Office expects the projects chosen for funding will mitigate the data forecast and ultimately reduce the number of traffic fatalities. An interim performance measure is required by our federal funding agencies in order to receive federal funding. We firmly believe that every life counts and although our target for fatalities is zero in 2018, Florida has forecast an interim performance measure of 3,052 in order to satisfy the federal requirement.

Number of Serious Injuries 0.1

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

Based on statistical forecasting, the five year rolling average for total serious injuries on Florida's roads is forecast to be between 18,831 and 20,861 in 2018. This forecast was made by combining FARS data with current state data from 2009 to 2016 to predict probable outcomes for 2017 and 2018. Florida's target for serious injuries is zero in 2018. The data forecast indicates Florida's five year rolling average for serious injuries could continue to trend downward in 2017 and 2018. The FDOT State Safety Office expects the projects chosen for funding will enhance this downward trend in the number of serious injuries on Florida's roads. An interim performance measure is required by our federal funding agencies in order to receive federal funding. We firmly believe that every life counts and although our target for serious injuries is zero in 2018, Florida has forecast an interim performance measure of 20,861 in order to satisfy the federal requirement.

Fatality Rate 0.100

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

Based on statistical forecasting, the five year rolling average for fatality rate per 100 million VMT on Florida's roads is forecast to be between 1.06 and 1.65 in 2018. This forecast was made by combining FARS data with current state data from 2009 to 2016 to predict probable outcomes for 2017 and 2018. Florida's target for fatality rate per 100 million VMT is zero in 2018. While the data forecast indicates Florida's five year rolling average for fatality rate per 100 million VMT could continue to trend upward in 2017 and 2018, the FDOT State Safety Office expects the projects chosen for funding will mitigate the data forecast and ultimately reduce the number of traffic fatalities. An interim performance measure is required by our federal funding agencies in order to receive federal funding. We firmly believe that every life counts and although our target for fatality rate per 100 million VMT is zero in 2018, Florida has forecast an interim performance measure of 1.65 in order to satisfy the federal requirement.

Serious Injury Rate 0.100

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

Based on statistical forecasting, the five year rolling average for serious injury rate per 100 million VMT on Florida's roads is forecast to be between 7.57 and 11.06 in 2018. This forecast was made by combining FARS data with current state data from 2009 to

2016 to predict probable outcomes for 2017 and 2018. Florida's target for serious injury rate per 100 million VMT is zero in 2018. The data forecast indicates Florida's five year rolling average for serious injury rate per 100 million VMT could continue to trend downward in 2017 and 2018. The FDOT State Safety Office expects the projects chosen for funding will enhance this downward trend in the serious injury rate per 100 million VMT. An interim performance measure is required by our federal funding agencies in order to receive federal funding. We firmly believe that every life counts and although our target for serious injury rate per 100 million VMT is zero in 2018, Florida has forecast an interim performance measure of 11.06 in order to satisfy the federal requirement.

Total Number of Non-Motorized Fatalities and Serious Injuries	0.1

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

Based on statistical forecasting, the five year rolling average for non-motorized fatalities and serious injuries on Florida's roads is forecast to be between 3,066 and 3,447 in 2018. This forecast was made by combining FARS data with current state data from 2009 to 2016 to predict probable outcomes for 2017 and 2018. Florida's target for non-motorized fatalities and serious injuries is zero in 2018. The data forecast indicates Florida's five year rolling average for non-motorized fatalities and serious injuries could continue to trend downward in 2017 and 2018. The FDOT State Safety Office expects the projects chosen for funding will enhance this downward trend in non-motorized fatalities and serious injuries. An interim performance measure is required by our federal funding agencies in order to receive federal funding. We firmly believe that every life counts and although our target for non-motorized fatalities and serious injuries is zero in 2018, Florida has forecast an interim performance measure of 3,447 in order to satisfy the federal requirement.

Enter additional comments here to clarify your response for this question or add supporting information.

Florida shares the national traffic safety vision, "Toward Zero Deaths," and formally adopted our own version of the national vision, "Driving Down Fatalities," in 2012. FDOT and its traffic safety partners are committed to eliminating fatalities and reducing serious injuries with the understanding that the death of any person is unacceptable and based on that, zero deaths is our safety performance target. This target is consistent throughout our Strategic Highway Safety Plan, Highway Safety Improvement Program and Highway Safety Plan.

Florida's data forecasts have been established using an ARIMA Hybrid Regression Model (0, 1,1)(2,0,0)(12) with VMT. Nine independent variables were tested to assess correlations; only Vehicle Miles of Travel (VMT) and gas consumption have relatively high correlations with fatalities and serious injuries and of these two variables only VMT was useful in predicting future fatalities and serious injuries. The first three performance measures (number of fatalities, number of serious injuries, and fatality rate per 100M VMT) have been forecasted based on a five year rolling average and the remaining performance measures will be forecasted

annually. The forecasts for 2017 and 2018 are based on monthly data from 2005 through 2016 using statistical forecasting methodologies.

[Source: FDOT Highway Safety Plan]

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

The 2016 Strategic Highway Safety Plan (SHSP) was updated through collaboration with Florida's traffic safety partners. It is aligned with and builds on the recently adopted Florida Transportation Plan (FTP), the State's long-range transportation plan. Both the FTP and the SHSP share the vision of a fatality-free roadway system to protect Florida's 20 million residents and more than 105 million annual visitors.

On August 22, 2016, the SHSP's signatory partners met in Tallahassee to pledge their support for the implementation of the five-year plan. Partners that reviewed and approved the plan include:

- Florida Department of Transportation
- Florida Department of Highway Safety and Motor Vehicles
- Florida Highway Patrol
- Florida Sheriffs Association
- Florida Police Chiefs Association
- Metropolitan Planning Organization Advisory Council
- Florida Rail Enterprise
- Florida Association of County Engineers and Road Superintendents
- Federal Highway Administration
- National Highway Traffic Safety Administration
- Federal Motor Carrier Safety Administration

Florida shares the national traffic safety vision, "Toward Zero Deaths," and formally adopted our own version of the national vision, "Driving Down Fatalities," in 2012. FDOT and its traffic safety partners are committed to eliminating fatalities and reducing serious injuries with the understanding that the death of any person is unacceptable and based on that, zero deaths is our safety performance target. This target is consistent throughout our Strategic Highway Safety Plan, Highway Safety Improvement Program and Highway Safety Plan.

[Source: FDOT Highway Safety Plan]

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Applicability of Special Rules

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

No

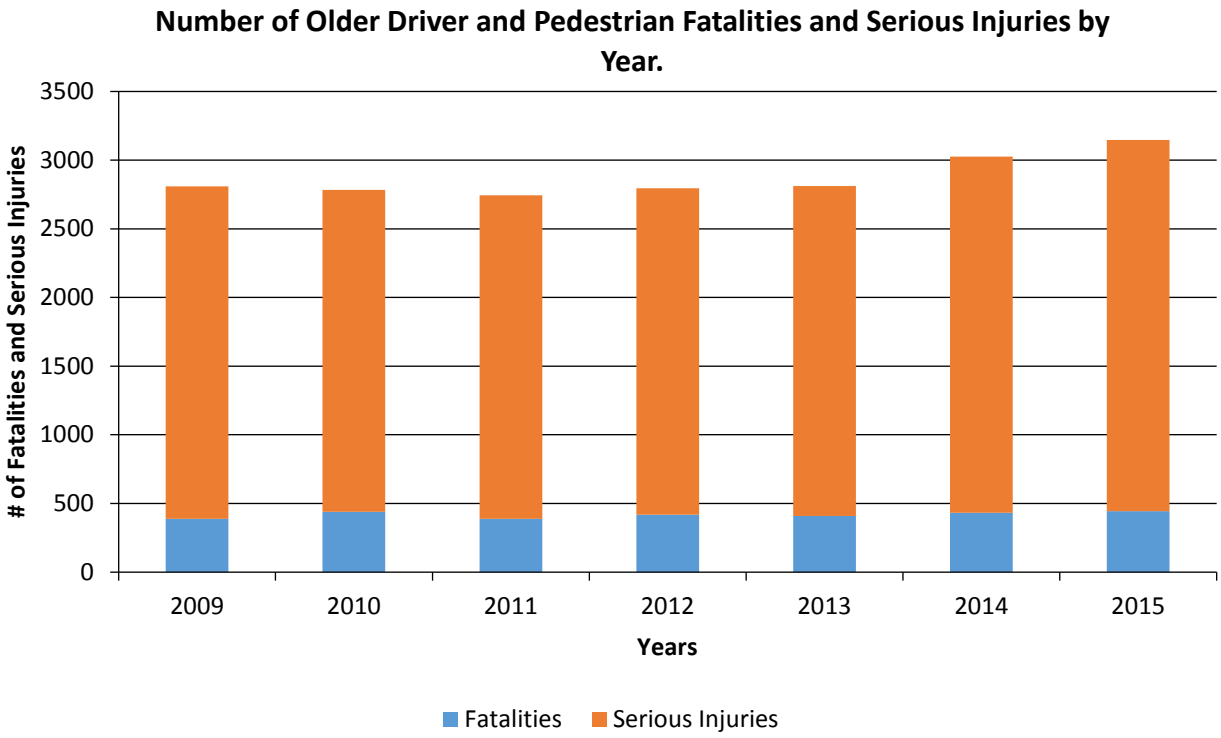
Enter additional comments here to clarify your response for this question or add supporting information.

No reported HRRR funding.

[Source: FDOT MADDOG]

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

PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015
Number of Older Driver and Pedestrian Fatalities	388	439	389	419	409	433	444
Number of Older Driver and Pedestrian Serious Injuries	2,421	2,345	2,355	2,377	2,402	2,592	2,702



Enter additional comments here to clarify your response for this question or add supporting information.

[Source: FIRES (Florida's Integrated Report Exchange System) as of 8/21/2017]

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries

Enter additional comments here to clarify your response for this question or add supporting information.

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

OVERALL

FDOT administers programs for lane departure, intersections, and non-motorists (i.e. bicyclists and pedestrians) under the Highway Safety Improvement Program (HSIP). Based on statistical forecasting total fatalities on Florida's roads could trend upward for 2017 and 2018 (see Question 34), total serious injuries could trend downward for 2017 and 2018 (see Question 34), the fatalities rate per 100 million vehicle miles could trend upward for 2017 and 2018 (see Question 34), and serious injuries rate per 100 million vehicle miles could trend downward for 2017 and 2018 (see Question 34).

LANE DEPARTURE

The five year rolling average of traffic fatalities attributed to lane departure continues to trend upward (see Question 43). The five year rolling average of serious injuries attributed to lane departure continues to trend downward (see Question 43). The five year rolling average for fatalities rate per 100 million vehicle miles attributed to lane departure continues to trend upward (see Question 43). The five year rolling average for serious injuries rate per 100 million vehicle miles attributed to lane departure continues to trend downward (see Question 43). The FDOT State Safety Office expects the projects chosen for funding will mitigate the upward trends related to fatalities and enhance the downward trends related to serious injuries attributed to lane departure on Florida's roads.

INTERSECTIONS

The five year rolling average of traffic fatalities attributed to intersections continues to trend upward (see Question 43). The five year rolling average of serious injuries attributed to intersections continues to trend downward (see Question 43). The five year rolling average for fatalities rate per 100 million vehicle miles attributed to intersections continues to trend upward (see Question 43). The five year rolling average for serious injuries rate per 100 million vehicle miles attributed to intersections continues to trend downward (see Question 43). The FDOT State Safety Office expects the projects chosen for funding will mitigate the upward trends related to fatalities and enhance the downward trends related to serious injuries attributed to intersections on Florida's roads.

NON-MOTORISTS (I.E. BICYCLISTS AND PEDESTRIANS)
The five year rolling average of traffic fatalities attributed to non-motorists (i.e. bicyclists and pedestrians) continues to trend upward (see Question 43). The five year rolling average of serious injuries attributed to non-motorists is down from last year and the overall trend is relatively flat (see Question 43). The five year rolling average for fatalities rate per 100 million vehicle miles attributed to non-motorists continues to gradually trend upward (see Question 43). The five year rolling average for serious injuries rate per 100 million vehicle miles attributed to non-motorists continues to gradually trend upward (see Question 43). The FDOT State Safety Office expects the projects chosen for funding will mitigate the gradual upward trends related to fatalities and serious injuries attributed to non-motorists on Florida's roads.

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

Other-Reduction in fatalities and serious injuries

Enter additional comments here to clarify your response for this question or add supporting information.

Are there any significant programmatic changes that have occurred since the last reporting period?

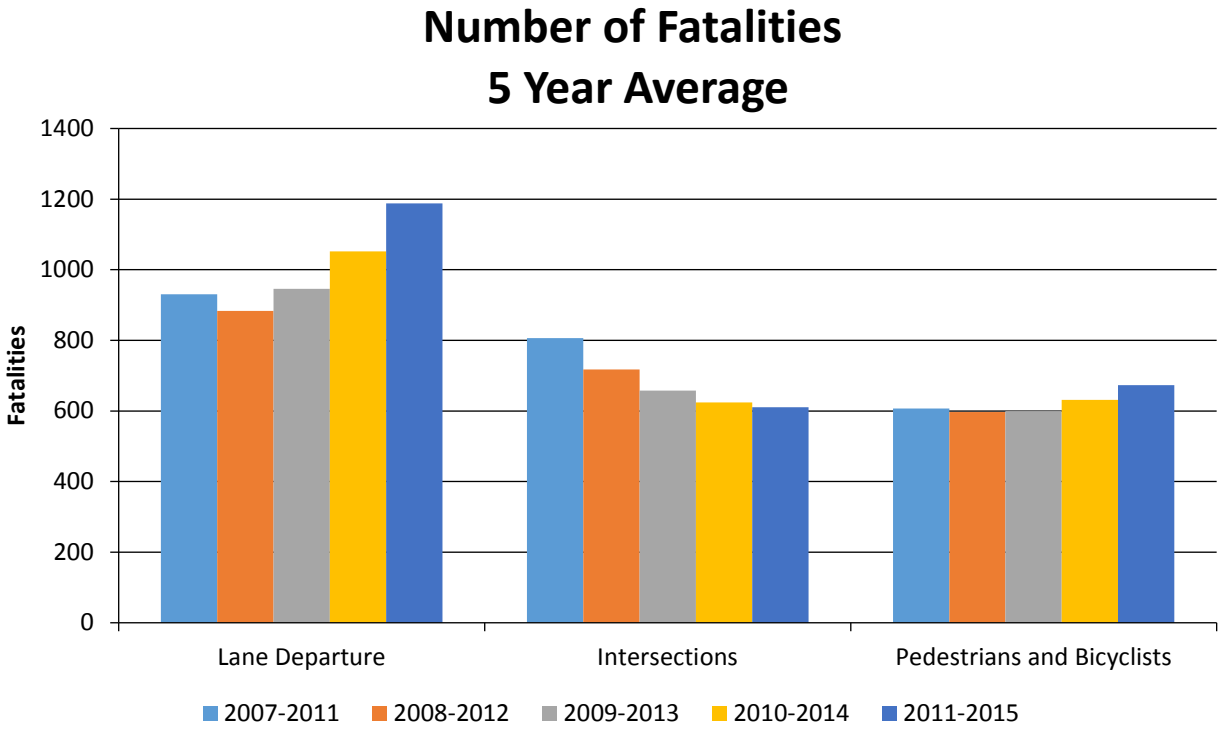
No

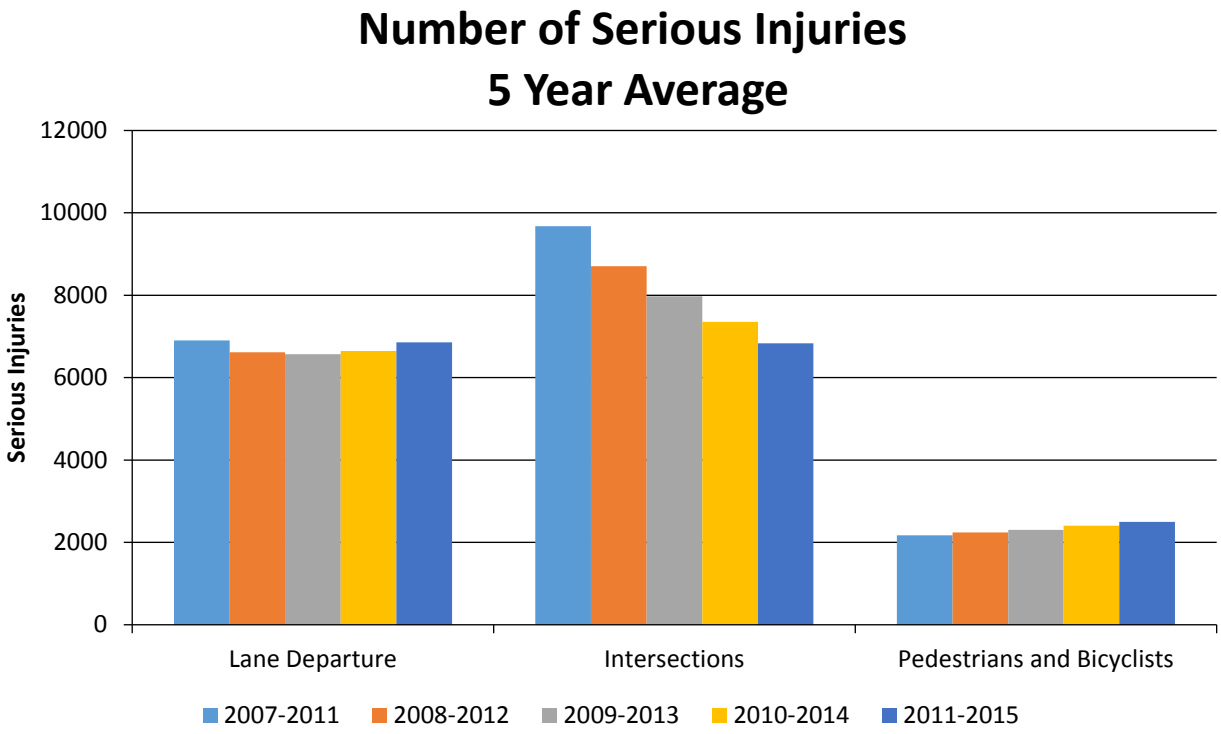
Effectiveness of Groupings or Similar Types of Improvements

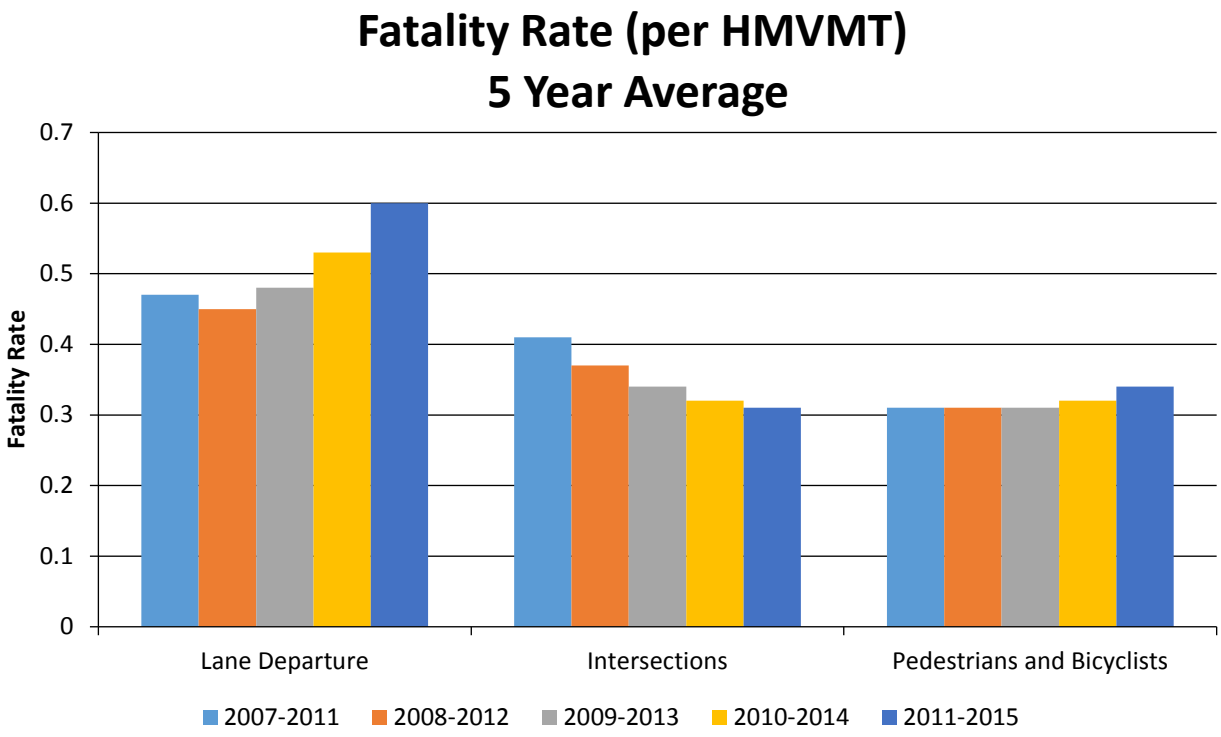
Present and describe trends in SHSP emphasis area performance measures.

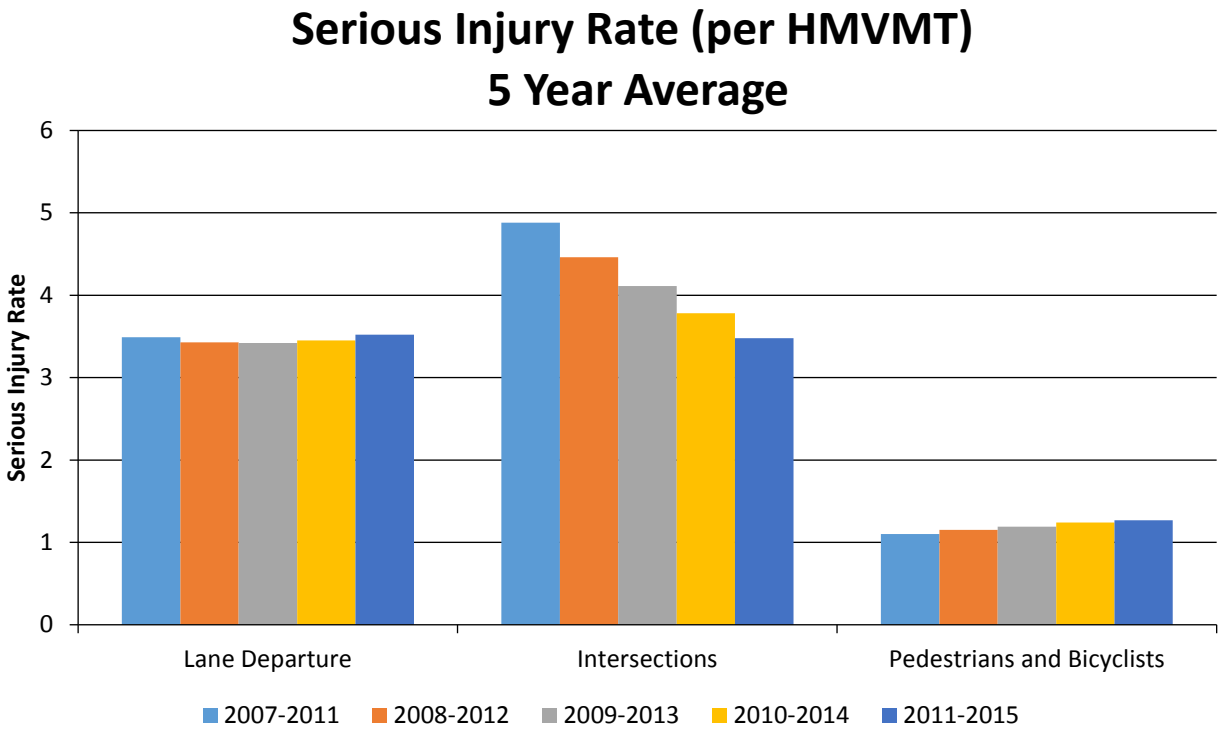
Year 2015

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)	Other 1	Other 2	Other 3
Lane Departure		1,188	6,855.2	0.6	3.52			
Intersections		610.6	6,836.6	0.31	3.48			
Pedestrians and Bicyclists		673	2,499.8	0.34	1.27			


Number of Fatalities
5 Year Average
Fatalities
1400
1200
1000
800
600
400
200
0
Lane Departure
Intersections
Pedestrians and Bicyclists
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Number of Serious Injuries
5 Year Average
Serious Injuries
12000
10000
8000
6000
4000
2000
0
Lane Departure
Intersections
Pedestrians and Bicyclists
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015





Enter additional comments here to clarify your response for this question or add supporting information.

The number of fatal and serious injuries for years 2011 through 2015 are from the Florida Strategic Highway

Safety Plan (SHSP). The SHSP injury counts are based on the Florida Department of Highway Safety (DHSMV) database called the Florida Integrated Report Exchange System (FIRES).

[Source: FDOT SHSP; DHSMV FIRES]

The number of fatal and serious injuries for 2010 and prior are from the FDOT Crash Analysis Reporting (CAR) system.

[Source: FDOT Crash Analysis Reporting (CAR) system]

The definition of intersection-related crashes and lane departure crashes changed around 2012.

[Source: FDOT State Safety Office staff]

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

Yes

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

CounterMeasures:	New signal at channelized intersection
Description:	
Target Crash Type:	
Number of Installations:	43
Number of Installations:	43
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	16 32 26 -4 19 7 14 17 -63 54 23 39 11 -10 23 -96 -21 17 Yes No Yes No Yes No Yes Yes Yes Yes Yes Yes No No No Yes No Yes
File Name:	Hyperlink
CounterMeasures:	New signal at non-channelized intersection
Description:	
Target Crash Type:	

Number of Installations:	14
Number of Installations:	14
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	6 59 7 3 7 0 14 3 -24 5 30 -13 5 72 -62 35 7 1 No Yes No No No No Yes No Yes No Yes No No Yes Yes No No No
File Name:	Hyperlink
CounterMeasures:	Add signal and channelization
Description:	
Target Crash Type:	
Number of Installations:	23
Number of Installations:	23
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	16 14 22 11 18 13 -38 28 -16 41 40 22 -28 4 18 33 48 33 Yes No Yes Yes Yes Yes Yes Yes Yes Yes Yes No Yes No No No Yes Yes
File Name:	Hyperlink
CounterMeasures:	Modify signal at channelized intersection
Description:	
Target Crash Type:	
Number of Installations:	21
Number of Installations:	21
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Modify signal at 21 -14 -165 5 -27 -14 -25 -10 -14 -14 -46 -7 -62 -116 -33 24 -32 -8

	channelized intersection																		
	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No		

File Name: Hyperlink

CounterMeasures:	Modify signal at non-channelized intersection
Description:	
Target Crash Type:	
Number of Installations:	5
Number of Installations:	5
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Modify signal at non-channelized intersection	5	-40	63	-51	-35	-25	-66	-15	-43	-71	-59	-150	-165	-82	-18	17	-65	-10	-127
	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes		

File Name: Hyperlink

CounterMeasures:	Modify both signal and channelization
Description:	
Target Crash Type:	
Number of Installations:	21
Number of Installations:	21
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Modify both signal and channelization	21	10	59	22	-7	11	-37	-6	14	-13	22	54	-44	-17	-4	-48	14	-162	16
	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes		

File Name: Hyperlink

CounterMeasures:	Modify both signal and channelization
Description:	

Target Crash Type:

Number of Installations: 21

Number of Installations: 21

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Modify both signal and channelization 21 10 59 22 -7 11 -37 -6 14 -13 22 54 -44 -17 -4 -48 14 -162 16

Yes Yes Yes No Yes No No Yes Yes Yes Yes Yes No No Yes No Yes Yes

File Name: Hyperlink

CounterMeasures: Modify signal and add channelization

Description:

Target Crash Type:

Number of Installations: 10

Number of Installations: 10

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Modify signal and add channelization 10 28 -87 27 29 28 30 -1 35 11 37 48 21 -46 -20 -87 38 -17

Yes No Yes Yes Yes No No Yes No Yes Yes No Yes No No No No

File Name: Hyperlink

CounterMeasures: Remove signal

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:		Remove signal	0

File Name: Hyperlink
CounterMeasures: Add flashing warning signal (signalization)
Description:
Target Crash Type:
Number of Installations: 4
Number of Installations: 4
Miles Treated:
Years Before: 3
Years After: 3
Methodology: Before/after using comparison group

Results:	Add flashing warning signal (signalization)	4	-2	100	-37	28	-2	59	-22	80	-30	-117	100	-63	100	100	46			
	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	No	No	No	No					

File Name: Hyperlink
CounterMeasures: Interconnect traffic signals
Description:
Target Crash Type:
Number of Installations: 0
Number of Installations: 0
Miles Treated:
Years Before: 3
Years After: 3
Methodology: Before/after using comparison group

Results:		Interconnect traffic signals	0

File Name: Hyperlink
CounterMeasures: New LT channelization w/ LT phase (signalized)
Description:
Target Crash Type:
Number of Installations: 15
Number of Installations: 15
Miles Treated:

Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	New LT channelization w/ LT phase (signalized)	15	15	58	27	1	13	48	14	19	13	10	23	-111	-22	-24	2	30	22	12		
	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No				
File Name:	Hyperlink																					
CounterMeasures:	New LT channelization w/o LT phase (signalized)																					
Description:																						
Target Crash Type:																						
Number of Installations:	11																					
Number of Installations:	11																					
Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	New LT channelization w/o LT phase (signalized)	11	28	75	35	18	33	-27	33	26	19	48	62	45	31	-9	34	37	-36	29		
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes			
File Name:	Hyperlink																					
CounterMeasures:	New LT channelization (nonsignalized intersection)																					
Description:																						
Target Crash Type:																						
Number of Installations:	66																					
Number of Installations:	66																					
Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	New LT channelization	66	3	32	7	-2	-4	19	-17	8	-5	2	8	38	-4	-11	5	6	-16	11		

(nonsignalized intersection)

No Yes Yes No No Yes Yes Yes No No No Yes No No No No No Yes

File Name: Hyperlink

CounterMeasures: Modify intersection at signalized intersection

Description:

Target Crash Type:

Number of Installations: 45

Number of Installations: 45

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Modify intersection at signalized intersection 45 5 1 12 -1 3 77 0 7 -5 7 18 -59 -23 13 11 20 2 14

Yes No Yes No Yes Yes No Yes Yes Yes Yes Yes Yes Yes No Yes No Yes

File Name: Hyperlink

CounterMeasures: Modify intersection at non-signalized intersection

Description:

Target Crash Type:

Number of Installations: 12

Number of Installations: 12

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Modify intersection at non-signalized intersection 12 8 34 15 1 7 30 3 5 -6 11 29 -41 9 21 -53 -229 12 16

Yes No Yes No Yes No No No No No Yes No No No No Yes No No

File Name: Hyperlink

CounterMeasures: Modify channelization and add signal

Description:

Target Crash Type:

Number of Installations: 2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Modify channelization and add signal	2	22	21	22	22	-131	18	11	16	39	33	-6	53	-68	16	-26	5

Yes Yes Yes Yes Yes Yes No No Yes No No Yes No No No No

File Name: Hyperlink

CounterMeasures: Increase storage lane

Description:

Target Crash Type:

Number of Installations: 14

Number of Installations: 14

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Increase storage lane	14	8	-41	10	8	13	-10	-6	13	-4	3	1	-57	-11	-7	-55	27	-15	7

Yes No Yes Yes Yes Yes No Yes No No No Yes No No Yes No No No

File Name: Hyperlink

CounterMeasures: Add turn bay

Description:

Target Crash Type:

Number of Installations: 15

Number of Installations: 15

Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Add turn bay 15 41 49 44 39 43 5 39 44 28 48 27 -25 18 -15 76 -170 49 41 Yes No Yes Yes Yes No Yes Yes Yes Yes Yes No Yes No Yes Yes No Yes
File Name:	Hyperlink
CounterMeasures:	Add right turn
Description:	
Target Crash Type:	
Number of Installations:	12
Number of Installations:	12
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Add right turn 12 -5 -1 -3 -7 -14 25 0 -13 -5 -35 -75 -163 -33 -18 -42 24 -1 3 No No No No Yes Yes No Yes No Yes Yes Yes Yes No No No No No
File Name:	Hyperlink
CounterMeasures:	Add LT (T-intersection)
Description:	
Target Crash Type:	
Number of Installations:	6
Number of Installations:	6
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Add LT (T-intersection) 6 43 3 62 24 36 48 -60 64 50 60 70 -191 27 -83 100 100 57 -19 Yes No Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes No Yes No No Yes No
File Name:	Hyperlink

CounterMeasures:	Add LT (Y-intersection)
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Add LT (Y-intersection)	1	42	-118	53	31	42		24	56	52	48	84	46	17	32	69	-118	27	64			
	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes					

File Name:	Hyperlink
CounterMeasures:	Add 2nd LT lane in same direction as existing
Description:	
Target Crash Type:	
Number of Installations:	17
Number of Installations:	17
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Add 2nd LT lane in same direction as existing	17	-5	-16	13	-19	-8	92	-4	-9	-9	2	19	12	-58	15	-95	-83	0	11			
	Yes		No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	No	Yes				

File Name:	Hyperlink
CounterMeasures:	Guardrail at bridges end
Description:	
Target Crash Type:	
Number of Installations:	2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Guardrail at bridges end	2	-5	-16	-16	2	-5		1	1	-21	42		-16	-8	23	-160	15
No		No	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No			

File Name: Hyperlink

CounterMeasures: Guardrail at steep embankments

Description:

Target Crash Type:

Number of Installations: 3

Number of Installations: 3

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Guardrail at steep embankments	3	-7	-3	3	-19	-3	-19	-68	2	3	-210	-55	40	-125	100	5	-9
No	No	No	No	No	No	Yes	No	No	Yes	No	No	Yes	No	No	No		

File Name: Hyperlink

CounterMeasures: Guardrail at steep embankments with curve

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Guardrail at steep embankments with curve	1	-256	-78	-256	-167	100	11
	Yes		No Yes	Yes No No				

File Name: Hyperlink

CounterMeasures: Guardrail at roadside obstacles (piers, sign posts, poles, etc.)

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Guardrail at roadside obstacles (piers, sign posts, poles, etc.)	1	52	60	37	52	27	62	44	100	68	37	100	100	54
	Yes	Yes	No	Yes	No	Yes	No	Yes	No	No	No	No	Yes		

File Name: Hyperlink

CounterMeasures: Guardrail end treatments

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Guardrail end treatments	0

File Name: Hyperlink

CounterMeasures:	Guardrail relocation
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Guardrail relocation 0
File Name:	Hyperlink
CounterMeasures:	Guardrail removal
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Guardrail removal 0
File Name:	Hyperlink
CounterMeasures:	Add painted median
Description:	
Target Crash Type:	
Number of Installations:	2
Number of Installations:	2
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Add painted median 2 43 78 43 40 43 -273 25 33 14 68 66 62 -44 57 83 -15 39
	Yes Yes Yes Yes Yes Yes No No No Yes Yes Yes No No Yes No Yes
File Name:	Hyperlink

CounterMeasures: Add raised median

Description:

Target Crash Type:

Number of Installations: 25

Number of Installations: 25

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Add raised median	25	16	25	18	15	16	79	19	15	0	23	32	-19	17	-11	39	11	-75	24
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes		

File Name: Hyperlink

CounterMeasures: Increase median width

Description:

Target Crash Type:

Number of Installations: 4

Number of Installations: 4

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Increase median width	4	-2	-12	0	-3	-10	100	-19	3	3	-43	5	3	-28	30	-699	-224	60	45
No	No	No	No	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes		

File Name: Hyperlink

CounterMeasures: Add two-way LT lanes

Description:

Target Crash Type:

Number of Installations: 14

Number of Installations: 14

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Add two-way LT lanes	14	40	34	43	37	38	43	32	42	54	30	35	32	35	39	25	-57	27	28
Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	

File Name: Hyperlink

CounterMeasures: Install concrete median barrier

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Install concrete median barrier	1	-37	56	-27	-46	-37		-71	-36	-46	-407	56	94	29	-112	9	-58	-73	-48
Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes		

File Name: Hyperlink

CounterMeasures: Install double sided guardrail on wider median

Description:

Target Crash Type:

Number of Installations: 15

Number of Installations: 15

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Install double sided guardrail on wider median	15	-15	8	-2	-30	-25	8	-9	-17	-26	24	0	-8	-54	38	-80	22	-54
	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes		

File Name: Hyperlink

CounterMeasures: Install attenuator type (IBC) barrier

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Install attenuator type (IBC) barrier	0

File Name: Hyperlink

CounterMeasures: Upgrade to concrete median barrier

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Upgrade to concrete median barrier	0

File Name: Hyperlink

CounterMeasures: Upgrade to attenuator barrier

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Upgrade to attenuator barrier	0	

File Name:	Hyperlink
CounterMeasures:	Pavement deslicking
Description:	
Target Crash Type:	
Number of Installations:	4
Number of Installations:	4
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Pavement deslicking	4	-3	-30	-13	2	-2	-20	-34	3	17	-24	-7	8	-43	8	-399	35	-127	30	
	No	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes			

File Name:	Hyperlink
CounterMeasures:	Skid Hazard overlay
Description:	
Target Crash Type:	
Number of Installations:	115
Number of Installations:	115
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Skid Hazard overlay	115	-8	-41	-7	-8	-7	-18	-12	-6	-1	-35	-6	-6	-13	-13	-14	-16	1	15	
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes			

File Name:	Hyperlink
CounterMeasures:	Pavement grooving

Description:																				
Target Crash Type:																				
Number of Installations:	0																			
Number of Installations:	0																			
Miles Treated:																				
Years Before:	3																			
Years After:	3																			
Methodology:	Before/after using comparison group																			
Results:	Pavement grooving	0																		
File Name:	Hyperlink																			
CounterMeasures:	Eliminate parking																			
Description:																				
Target Crash Type:																				
Number of Installations:	4																			
Number of Installations:	4																			
Miles Treated:																				
Years Before:	3																			
Years After:	3																			
Methodology:	Before/after using comparison group																			
Results:	Eliminate parking	4	12	100	11	12	12	8	13	2	29	32	46	25	9	13	63	26		
	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes				
File Name:	Hyperlink																			
CounterMeasures:	Change two-way operation to one-way																			
Description:																				
Target Crash Type:																				
Number of Installations:	0																			
Number of Installations:	0																			
Miles Treated:																				
Years Before:	3																			
Years After:	3																			
Methodology:	Before/after using comparison group																			
Results:	Change two-way operation to one-way	0																		

File Name:	Hyperlink
CounterMeasures:	Prohibit turns
Description:	
Target Crash Type:	
Number of Installations:	2
Number of Installations:	2
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Prohibit turns	2	-190	100	-99	-309	-190		-43	-360	-218	-138		-19	-19	-19	-99			
	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	Yes							

File Name:	Hyperlink
CounterMeasures:	Modify speed limit (increase or decrease)
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Modify speed limit (increase or decrease)	1	52	56	50	53	52		54	-18	75	85	71	56	100	78				
	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes							

File Name:	Hyperlink
CounterMeasures:	Delineation of right edge lines
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0

Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Delineation of right edge lines 0

File Name:	Hyperlink
CounterMeasures:	Delineation of painted median edge lines
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Delineation of painted median edge lines 1 -76 -18 -155 -76 --65 --85 -85 7 --85 31 --410
	Yes No Yes Yes Yes Yes Yes No No No Yes

File Name:	Hyperlink
CounterMeasures:	Centerline striping
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Centerline striping 0

File Name:	Hyperlink
CounterMeasures:	Delineation of no passing stripes
Description:	
Target Crash Type:	

Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Delineation of no passing stripes 0
File Name:	Hyperlink
CounterMeasures:	Delineation of reflectorized guide markers
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Delineation of reflectorized guide markers 0
File Name:	Hyperlink
CounterMeasures:	Delineation of reflectorized raised pavement markers (center line)
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Delineation of reflectorized raised 1 10 23 11 5 21 16 3 7 7 -62 100 81 -32 38 100 25 7

	pavement markers (center line)																		
	No	No	No	No	Yes	No	No	No	No	No	No	Yes	No	No	Yes	No	No		

File Name: Hyperlink

CounterMeasures: Delineation of general pavement markings (stop bar, ped. crossing, code 46-51)

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Delineation of general pavement markings (stop bar, ped. crossing, code 46-51)	0

File Name: Hyperlink

CounterMeasures: Delineation of guide posts on curves

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Delineation of guide posts on curves	0

File Name: Hyperlink

CounterMeasures: Intersection delineation

Description:

Target Crash Type:

Number of Installations:	0		
Number of Installations:	0		
Miles Treated:			
Years Before:	3		
Years After:	3		
Methodology:	Before/after using comparison group		
Results:	Intersection delineation	0	

File Name:	Hyperlink
CounterMeasures:	Curve warning Signing
Description:	
Target Crash Type:	
Number of Installations:	2
Number of Installations:	2
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Curve warning Signing	2	35		6	49	44	-306	56	21	72	-2	32		49	49	-2		19
	Yes		No	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No				

File Name:	Hyperlink
CounterMeasures:	Chevrons Signing
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Chevrons Signing	1	30		12	63		30	-120	78	-120		100		100	-65	100	100	45	-120
	No		No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No				Yes	

File Name:	Hyperlink
CounterMeasures:	All-way stops Signing
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	All-way stops Signing 0

File Name:	Hyperlink
CounterMeasures:	Overhead directional (where to turn) Signing
Description:	
Target Crash Type:	
Number of Installations:	3
Number of Installations:	3
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Overhead directional (where to turn) Signing 3 -7 100 -9 -5 -7 -17 -4 -15 16 9 41 14 -21 -383 -45 -11 No No No No No Yes No Yes No No No No No Yes No No

File Name:	Hyperlink
CounterMeasures:	Roadside directional (where to turn) Signing
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Roadside directional (where to turn) Signing	0

File Name: Hyperlink

CounterMeasures: Overhead lane designation Signing

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Overhead lane designation Signing	1	35	7	44	35	7	69	100	53	30	-87	7	
	No	No	No	No	No	Yes	Yes	No	No	No	No			

File Name: Hyperlink

CounterMeasures: Minor leg stop control Signing

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Minor leg stop control Signing	0

File Name: Hyperlink

CounterMeasures: Yield sign

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Yield sign	0					

File Name: Hyperlink

CounterMeasures: Advanced warning signs

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Advanced warning signs	1	60	60	60	60	100
No	No	No	No	No		

File Name: Hyperlink

CounterMeasures: Intersection directional or warning signs

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Intersection directional or warning signs	0

File Name: Hyperlink

CounterMeasures: New roadway segment lighting

Description:

Target Crash Type:

Number of Installations:	67
Number of Installations:	67
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	New roadway segment lighting	67	1	24	8	-9	0	24	14	-6	-4	-5	20	-10	-4	-10	-2	32	18	4
	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes		

File Name:	Hyperlink
CounterMeasures:	Upgrade roadway segment lighting
Description:	
Target Crash Type:	
Number of Installations:	10
Number of Installations:	10
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Upgrade roadway segment lighting	10	-14	13	-12	-17	-14	100	-3	-20	-25	-31	15	39	-4	-2	-48	0	10	-1
	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No		

File Name:	Hyperlink
CounterMeasures:	New lighting at intersection
Description:	
Target Crash Type:	
Number of Installations:	10
Number of Installations:	10
Miles Treated:	
Years Before:	3

Years After:	3																			
Methodology:	Before/after using comparison group																			
Results:	New lighting at intersection	10	1	37	-4	7	2	-1	23	-9	-25	-17	11	31	10	30	-13	-13	39	-20
	No	No	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes	No	No	Yes	Yes		

File Name: Hyperlink

CounterMeasures: Upgrade lighting at intersection

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Upgrade lighting at intersection	0	

File Name: Hyperlink

CounterMeasures: Bridge approach lighting

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Bridge approach lighting	1	9		-5	21		9		32	-42		62	37		-26	24			
	No		No	No	No	No	No	No	No	No	No									

File Name: Hyperlink

CounterMeasures: Underpass lighting

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Underpass lighting	0

File Name:	Hyperlink
CounterMeasures:	Intersection flashers four leg red-yellow
Description:	
Target Crash Type:	
Number of Installations:	2
Number of Installations:	2
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Intersection flashers four leg red-yellow	2	-59	100	-59	36	-91	52
	No	Yes	No	No	No	No		

File Name:	Hyperlink
CounterMeasures:	Intersection flashers three leg red-yellow
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Intersection flashers three leg red-yellow	0

File Name:	Hyperlink

CounterMeasures:	Intersection flashers four way red
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Intersection flashers four way red 0

File Name:	Hyperlink
CounterMeasures:	Unknown
Description:	
Target Crash Type:	
Number of Installations:	2
Number of Installations:	2
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group
Results:	Unknown 2 -157 36 -71 100 -29 -179 36 -61 Yes No No Yes No Yes No No

File Name:	Hyperlink
CounterMeasures:	Advanced warning flashers (curve and intersection)
Description:	
Target Crash Type:	
Number of Installations:	3
Number of Installations:	3
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results: Advanced warning flashers (curve & intersection) 3 -239 100 -6 -691 -264 100 -286 -220 -166 -118 -1059 -582 100 -309

Yes No No Yes Yes Yes Yes Yes Yes Yes Yes Yes No Yes

File Name: Hyperlink

CounterMeasures: Install flashing warning signal (flashing beacon)

Description:

Target Crash Type:

Number of Installations: 6

Number of Installations: 6

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Install flashing warning signal (flashing beacon) 6 -22 -256 -41 -11 -52 22 -86 -4 -70 -45 15 41 17 -34 70 29 -31

Yes Yes Yes No Yes Yes Yes No Yes Yes No No No No No No No

File Name: Hyperlink

CounterMeasures: Obstacle Removal/Hazard Mitigation

Description:

Target Crash Type:

Number of Installations: 5

Number of Installations: 5

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Obstacle Removal/Hazard Mitigation	5	25	28	37	5	26	19	33	19	22	37	44	14	4	26	6	-38	61	28
	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes		

File Name: Hyperlink

CounterMeasures: Relocate obstacle 30 feet from road

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Relocate obstacle 30 feet from road	0

File Name: Hyperlink

CounterMeasures: Convert to breakaway

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Convert to breakaway	0

File Name: Hyperlink

CounterMeasures: Cushion attenuators

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Cushion attenuators 0

File Name: Hyperlink

CounterMeasures: Install guardrail

Description:

Target Crash Type:

Number of Installations: 11

Number of Installations: 11

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Install guardrail 11 -36 40 -15 -61 -47 4 -38 -34 -27 -18 -104 100 -38 -97 -53 44 5 -51

Yes Yes Yes Yes Yes No Yes Yes Yes Yes Yes No Yes Yes Yes No No Yes

File Name: Hyperlink

CounterMeasures: Upgrade substandard bridgerail

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Upgrade substandard bridgerail 1 25 100 -125 25 100 -12 -12

No Yes Yes No No No No

File Name: Hyperlink

CounterMeasures: Realignment

Description:

Target Crash Type:

Number of Installations: 4

Number of Installations:	4
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Realignment	4	50	46	41	61	41	100	27	54	42	70	-50	8	-43	-437	100	100	8	
	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No			

File Name:	Hyperlink
CounterMeasures:	Superelevation
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Superelevation 1

File Name:	Hyperlink
CounterMeasures:	Modify/Close median openings
Description:	
Target Crash Type:	
Number of Installations:	44
Number of Installations:	44
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Modify/Close median openings	44	7	34	16	-2	7	53	1	10	-6	17	25	-71	-27	-11	-56	-21	12	12
	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes		

File Name:	Hyperlink
CounterMeasures:	Relocate drives
Description:	

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Relocate drives 0

File Name: Hyperlink

CounterMeasures: Curtail turning movements

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Curtail turning movements 0

File Name: Hyperlink

CounterMeasures: Increase radii at intersection

Description:

Target Crash Type:

Number of Installations: 2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Increase radii at intersection	2	38	100	16	58		57	21	44	-5	48	-5	100	-109
Yes		Yes	No	No	Yes	No	Yes	No	Yes	No	No	No		

File Name: Hyperlink

CounterMeasures: Widen travel way

Description:

Target Crash Type:

Number of Installations: 2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Widen travel way	2	-52	27	-31	-66		-2	-149	-40	7	-56	-136	-164	-27	-10	45	-10	-147	-65
Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	Yes	Yes			

File Name: Hyperlink

CounterMeasures: Widen shoulder

Description:

Target Crash Type:

Number of Installations: 2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Widen shoulder	2	-9	26	-11	-11		16	-845	-18	5	-178	-48	-233	72	-39	-48	-78	1
No	No	No	No	No	Yes	No	No	Yes	No	Yes	Yes	No	No	Yes	No			

File Name: Hyperlink

CounterMeasures: Add 4 foot shoulders (bike lane)

Description:

Target Crash Type:

Number of Installations: 1

Number of Installations: 1

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Add 4 foot shoulders (bike lane)	1	6	15	3	6	-95	17	-15	-37	57	59	51	-173	67	-18
No		No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	

File Name: Hyperlink

CounterMeasures: Construct grade separation

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Construct grade separation	0

File Name: Hyperlink

CounterMeasures: Widen bridge (min. of 6 feet)

Description:

Target Crash Type:

Number of Installations: 6

Number of Installations: 6

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Widen bridge (min. of 6 feet)	6	-20	-112	-17	-20	-52	47	-21	-27	-61	-6	-6	100	-29	-6	-6	-6	47	-43
Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	Yes	

File Name: Hyperlink

CounterMeasures: Reconstruct road and shoulders

Description:																					
Target Crash Type:																					
Number of Installations:	10																				
Number of Installations:	10																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Reconstruct road & shoulders	10	-11	-99	-13	-8	-23	66	-41	-2	-1	-51	-9	9	-10	-35	-43	-29	-73	12	
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	Yes	No	Yes	Yes	Yes			
File Name:	Hyperlink																				
CounterMeasures:	Reconstruct curve																				
Description:																					
Target Crash Type:																					
Number of Installations:	3																				
Number of Installations:	3																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Reconstruct curve	3	42	100	53	43	40	54	28	53	23	27	58	100	78	48	100	17	64	27	
	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No			
File Name:	Hyperlink																				
CounterMeasures:	Construct interchange																				
Description:																					
Target Crash Type:																					
Number of Installations:	2																				
Number of Installations:	2																				
Miles Treated:																					
Years Before:	3																				

Years After:	3																
Methodology:	Before/after using comparison group																
Results:	Construct interchange	2	31	72	24	35	22	100	24	44	39	22		44	25	16	53 41
	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes		

File Name: Hyperlink

CounterMeasures:	Lengthen accel/decel lanes
Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Lengthen accel/decel lanes	1

File Name: Hyperlink

CounterMeasures:	Extend drop lane
Description:	
Target Crash Type:	
Number of Installations:	0
Number of Installations:	0
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Extend drop lane	0

File Name: Hyperlink

CounterMeasures:	Install rumble strips
Description:	
Target Crash Type:	
Number of Installations:	11
Number of Installations:	11
Miles Treated:	
Years Before:	3

Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Install rumble strips	11	15	46	14	10	39	12	31	-2	-4	7	-25	-124	33	14	19	-86	38	5	
	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes	No			

File Name: Hyperlink

CounterMeasures: Flatten side slopes

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Flatten side slopes	0

File Name: Hyperlink

CounterMeasures: Install Accel/Decel lane

Description:

Target Crash Type:

Number of Installations: 3

Number of Installations: 3

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Install Accel/Decel lane	3	6	100	-9	-2	6	31	-4	32	22	-118	46	100	100	64	-118				
	No	Yes	No	No	No	No	No	No	No	Yes	No	No	No	Yes	Yes						

File Name: Hyperlink

CounterMeasures: Upgrade signal and add pedestrian feature

Description:

Target Crash Type:

Number of Installations:	18																				
Number of Installations:	18																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Upgrade signal and add pedestrian feature	18	-6	10	15	-21	-6		-7	-8	-22	-21	11	-22	-19	18	-75	-2	-16	-3	
	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No				
File Name:	Hyperlink																				
CounterMeasures:	Sight distance improvements																				
Description:																					
Target Crash Type:																					
Number of Installations:	3																				
Number of Installations:	3																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Sight distance improvements	3	25	-93	38	10	24	25	61	4	13	49	81	52	4	4					
	No	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No	No							
File Name:	Hyperlink																				
CounterMeasures:	Minor structures replaced or improved for safety																				
Description:																					
Target Crash Type:																					
Number of Installations:	4																				
Number of Installations:	4																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				

Methodology: Before/after using comparison group

Results: Minor structures replaced or improved for safety 4 -7 -23 -4 -10 -7 7 -14 -23 -47 -47 -49 1 -2 51 -9 30 -59

No No No No No No Yes Yes Yes Yes Yes No No Yes No No Yes

File Name: Hyperlink

CounterMeasures: Lanes added to travel way

Description:

Target Crash Type:

Number of Installations: 5

Number of Installations: 5

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Lanes added to travel way 5 -6 53 2 -18 -6 6 -10 -39 32 66 -17 -57 14 -289 -250 17 -28

No No No Yes No No Yes Yes Yes Yes No Yes No Yes Yes No Yes

File Name: Hyperlink

CounterMeasures: Upgraded guardrail

Description:

Target Crash Type:

Number of Installations: 3

Number of Installations: 3

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Upgraded guardrail 3 -43 -75 -28 -75 -31 -61 -25 -57 -64 -29 -194 -134 15 -28 -647 81 -13 -17

Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes No No

File Name: Hyperlink

CounterMeasures: Sidewalk construction

Description:

Target Crash Type:

Number of Installations: 19

Number of Installations: 19

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Sidewalk construction 19 -14 -22 -1 -32 -14 -1 -22 -20 -20 -21 -93 -51 -5 15 4 -27 -3

Yes No No Yes Yes No Yes Yes Yes Yes Yes Yes No No No No No

File Name: Hyperlink

CounterMeasures: Over/Under passes for pedestrians and/or bicycles

Description:

Target Crash Type:

Number of Installations: 3

Number of Installations: 3

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Over/Under passes for pedestrians and/or bicycles 3 -59 -39 -94 -59 -146 -29 -26 -65 -605 -34 -404 -202 -15

Yes Yes Yes Yes Yes Yes No Yes Yes No Yes Yes No

File Name: Hyperlink

CounterMeasures: Fencing or other pedestrian barriers

Description:

Target Crash Type:

Number of Installations: 2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Fencing or other pedestrian barriers	2	-4	100	11	-43	-4		-61	4	3	10	27	100	-107	-12	3	-45	1
No	Yes	No	Yes	No	Yes	No	No	No	No	No	Yes	No	No	No	No			

File Name: Hyperlink

CounterMeasures: Ramps on existing curbs

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Ramps on existing curbs	0

File Name: Hyperlink

CounterMeasures: New bikeway/multi-use path construction

Description:

Target Crash Type:

Number of Installations: 4

Number of Installations: 4

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

New bikeway/multi-use path construction	4	-28	-42	-23	-34	-28	-34	-31	-23	-35	-44	-240	-211	-82	-13	-45	-16	-17	-64
Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes		

File Name: Hyperlink

CounterMeasures: Bicycle non-construction improvements

Description:

Target Crash Type:

Number of Installations: 4

Number of Installations: 4

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Bicycle non-construction improvements	4	21	-11	17	25	21		24	21	19	-5	-80	-128	-3	10	-9	-36	-14	30
Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes	No	Yes			

File Name: Hyperlink

CounterMeasures: Impact Attenuators

Description:

Target Crash Type:

Number of Installations: 3

Number of Installations: 3

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Impact Attenuators	3	2		16	-27	2		-14	4	-3	-14	45	-36	26	-36	-2	-2	74	2
No	Yes	Yes	No	No	No	No	No	Yes	No	Yes	No	No	No	Yes	No				

File Name: Hyperlink

CounterMeasures: Signing and Pavement Markings

Description:

Target Crash Type:	
Number of Installations:	85
Number of Installations:	85
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Signing and Pavement Markings	85	2	11	0	3	2	13	2	3	-3	-23	-53	-95	-27	-4	-4	-4	-8	-9
	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes		

File Name:	Hyperlink
CounterMeasures:	Install Traffic Calming Features
Description:	
Target Crash Type:	
Number of Installations:	2
Number of Installations:	2
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Install Traffic Calming Features	2	8	100	3	-16	8		13	20	42	36			42	23	100		71	42	
	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No							

File Name:	Hyperlink
CounterMeasures:	Add paved shoulders
Description:	
Target Crash Type:	
Number of Installations:	24
Number of Installations:	24

Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	Add paved shoulders	24	4	0	11	-11	7	2	9	2	-4	-5	16	39	13	-2	-7	23	7	15		
	No	No	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Yes	No	No	No	No	No	Yes				
File Name:	Hyperlink																					
CounterMeasures:	Add turn lane/s and pavement resurfacing																					
Description:																						
Target Crash Type:																						
Number of Installations:	9																					
Number of Installations:	9																					
Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	Add turn lane/s & pavement resurfacing	9	35	41	43	25	35		42	31	43	15	38	15	-8	14	70	27	2	44		
	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	No	No	Yes					
File Name:	Hyperlink																					
CounterMeasures:	Reconstruct bicycle/multi-use path																					
Description:																						
Target Crash Type:																						
Number of Installations:	1																					
Number of Installations:	1																					
Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	Reconstruct bicycle/multi-use path	1	37	100	40	33	37		64	24	17	38	52	4	61	36	52	71				

Yes No Yes Yes Yes Yes Yes No No Yes No No No No Yes

File Name: Hyperlink

CounterMeasures: Construct median, add signal, and pavmnt.resurfacing

Description:

Target Crash Type:

Number of Installations: 4

Number of Installations: 4

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Construct median, add signal, and pavmnt.resurfacing 4 9 -104 34 -30 9 -6 13 31 4 22 -53 -55 -9 32 100 33

Yes No Yes Yes Yes No Yes Yes No No No Yes No No No Yes

File Name: Hyperlink

CounterMeasures: Reconstruct median/median improvments

Description:

Target Crash Type:

Number of Installations: 19

Number of Installations: 19

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results: Reconstruct median/median improvments 19 -6 57 1 -16 -13 38 10 -12 -16 -26 11 1 -39 -8 2 -25 24 -16

Yes Yes No Yes Yes Yes Yes Yes Yes Yes Yes No Yes No No Yes No Yes

File Name: Hyperlink

CounterMeasures: Construct LT and RT lanes

Description:

Target Crash Type:

Number of Installations: 5

Number of Installations:	5																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Construct LT and RT lanes	5	-8	-7	-4	-12	-12	39	5	-8	-1	-76	11	-22	-107	15	-114	20	47	19	
	No	No	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No	No			
File Name:	Hyperlink																				
CounterMeasures:	Paved shoulders and rumble strips																				
Description:																					
Target Crash Type:																					
Number of Installations:	6																				
Number of Installations:	6																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				
Results:	Paved shoulders and rumble strips	6	7	33	-1	13	4	12	-9	18	11	-19	3	-11	32	-38	6	0	-3	15	
	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No			
File Name:	Hyperlink																				
CounterMeasures:	Upgrade traffic signal																				
Description:																					
Target Crash Type:																					
Number of Installations:	4																				
Number of Installations:	4																				
Miles Treated:																					
Years Before:	3																				
Years After:	3																				
Methodology:	Before/after using comparison group																				

Results:	Upgrade traffic signal	4	16	22	13	17	9	5	17	25	8	-44	-57	-37	26	-19	50	-19	28	
	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes			

File Name: Hyperlink

CounterMeasures: Traffic signals, guardrail, signing and lighting

Description:

Target Crash Type:

Number of Installations: 0

Number of Installations: 0

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Traffic signals, guardrail, signing and lighting	0	

File Name: Hyperlink

CounterMeasures: Traffic signals, resurfacing, turn lanes, lighting

Description:

Target Crash Type:

Number of Installations: 5

Number of Installations: 5

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Traffic signals, resurfacing, turn lanes, lighting	5	-30	100	-6	-74	-17	-152	-78	-27	-28	-11	-30	-68	-107	-107	-3	-3	31	-13
	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No		

File Name: Hyperlink

CounterMeasures: Resurface, guardrail, signing and pavt. markings

Description:

Target Crash Type:

Number of Installations: 2

Number of Installations: 2

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Resurface, guardrail, signing and pavt. markings	2	-25	12	-63	-25	-110	-3	-159	1	18	-110	-57	100	-110 -372
Yes	No	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No	Yes	

File Name: Hyperlink

CounterMeasures: Add Ped crossing mid-block with signals

Description:

Target Crash Type:

Number of Installations: 3

Number of Installations: 3

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:

Add Ped crossing mid-block with signals	3	-24	-93	-21	-27	-24	-25	-18	-60	-19	-479	-9	4	4 -148
Yes	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No	No	Yes	

File Name: Hyperlink

CounterMeasures: Add Ped crossing mid-block without signals

Description:

Target Crash Type:

Number of Installations:	4																					
Number of Installations:	4																					
Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	Add Ped crossing mid-block without signals	4	-53	-2	-35	-75	-53		-38	-65	-67	-59	-35	-61	-151	-10	-171	18	42	-99		
	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes					
File Name:	Hyperlink																					
CounterMeasures:	Add roundabout to intersection																					
Description:																						
Target Crash Type:																						
Number of Installations:	2																					
Number of Installations:	2																					
Miles Treated:																						
Years Before:	3																					
Years After:	3																					
Methodology:	Before/after using comparison group																					
Results:	Add roundabout to intersection	2	46	100	58	32	46		41	47	65	17	76	-90	44	5	-1607	-8	100	66		
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	No	Yes					
File Name:	Hyperlink																					
CounterMeasures:	Convert shldr inverted rumble to audible edgeline																					
Description:																						
Target Crash Type:																						
Number of Installations:	0																					
Number of Installations:	0																					
Miles Treated:																						

Years Before:	3	
Years After:	3	
Methodology:	Before/after using comparison group	
Results:	Convert shldr inverted rumble to audible edgeline	0

File Name: Hyperlink

CounterMeasures: New inverted AUDIBLE marking on CL or edgeline

Description:	
Target Crash Type:	
Number of Installations:	58
Number of Installations:	58
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	New inverted AUDIBLE marking on CL or edgeline	58	4	21	9	-3	-1	10	3	7	-9	-10	-75	-186	4	19	-23	-4	30	1
	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No		

File Name: Hyperlink

CounterMeasures: Use of ITS safety system device(s)

Description:	
Target Crash Type:	
Number of Installations:	1
Number of Installations:	1
Miles Treated:	
Years Before:	3
Years After:	3
Methodology:	Before/after using comparison group

Results:	Use of ITS safety system device(s)	1	-18	52	-45	-18	-3	-11	-267	23	-38	-210	-210	-3	83	100	-107		
	No	Yes	Yes	No	No	No	Yes	No	No	Yes	Yes	No	Yes	No	Yes				

File Name: Hyperlink

CounterMeasures: High friction surface treatment (tyregrip, etc.)

Description:

Target Crash Type:

Number of Installations: 5

Number of Installations: 5

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	High friction surface treatment (tyregrip, etc.)	5	15	-119	-3	30	-20	20	-14	26	21	-137		-31	54	18	63		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes					

File Name: Hyperlink

CounterMeasures: Modify signal timing and phasing

Description:

Target Crash Type:

Number of Installations: 4

Number of Installations: 4

Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using comparison group

Results:	Modify signal timing	4	-18	48	-11	-26	-18	-18	-16	-35	-42	-27	-213	-37	-56	-91	-42	-36	

	and phasing															
	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

File Name: Hyperlink

Project Effectiveness

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

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL INJURY BEFORE	ALL INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
See attachment	See attachment													

Enter additional comments here to clarify your response for this question or add supporting information.

Reference the attached table for previously implemented projects.

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

No

Compliance Assessment

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

07/28/2016

What are the years being covered by the current SHSP?

From: 2016 To: 2021

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

2021

Enter additional comments here to clarify your response for this question or add supporting information.

Strategic Highway Safety Plan (SHSP) is the statewide plan focusing on how to accomplish the vision of eliminating fatalities and reducing serious injuries on all public roads. The SHSP is updated at least every five years by FDOT in coordination with statewide, regional, and local traffic safety partners and was last updated in 2016. The SHSP is focused on the roadway component of transportation safety. Safety on other modes of transportation is covered by other plans. The SHSP and safety plans for other modes align not only with the Florida Transportation Plan (FTP), but also with national programs funded by the Federal Highway Administration (FHWA), the Federal Motor Carrier Safety Administration (FMCSA), and the National Highway Traffic Safety Administration (NHTSA).

Our data-driven SHSP focuses on 13 Emphasis Areas, which reflect ongoing and emerging highway safety issues in Florida. Key strategies related to each Emphasis Area are identified, as well as overarching strategies that apply across Emphasis Areas. These strategies align with the "4 Es" - engineering, education, enforcement, and emergency response. The SHSP also defines a framework for implementation activities to be carried out through strategic safety coalitions and specific activities by FDOT, other State agencies, metropolitan planning organizations, local governments, and other traffic safety partners.

The SHSP update process included:

- Analysis of safety data collected by FDOT, the Florida Department of Highway Safety and Motor Vehicles (DHSMV), and other sources to identify trends in the number of traffic fatalities and serious injuries and factors often associated with these events. All data presented in the SHSP are from DHSMV for 2011 to 2015 unless otherwise noted. This plan was developed using the most recent data available at the time of plan approval.
- Consideration of extensive partner and public input gathered through the FTP update process in 2015. This process engaged more than 15,000 participants through a 35-member Steering Committee, four advisory groups, three statewide events, 13 regional forums and workshops, and more than 350 partner briefings. This input reaffirmed the State's commitment to maintaining a safe and secure transportation system for residents, visitors, and businesses. The process also highlighted several safety issues of concern to the public, including bicycle and pedestrian safety, commercial vehicles, the impacts of changing technologies, and the role of design and operational decisions in creating a safe environment.
- Coordination with at least eight strategic safety coalitions representing statewide, regional, and local partners from both the public and private sectors. These coalitions provided targeted input on the emphasis areas specifically related to their current strategic plans, and defined key strategies for the next five years.
- Coordination with Florida's 27 metropolitan planning organizations (MPOs), including review of safety-related goals, objectives, and strategies in MPO plans and targeted outreach sessions through Florida's Metropolitan Planning Organization Advisory Council.
- Review and approval by the signing partners.

[Source: FDOT Highway Safety Plan]

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

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)	0	0					0	0	0	0
Route Number (8)	0	0								
Route/Street Name (9)	0	0								
Federal Aid/Route Type (21)	0	0								
Rural/Urban Designation (20)	0	0					0	0		
Surface Type (23)	0	0					0	0		
Begin Point Segment Descriptor (10)	0	0					0	0	0	0
End Point Segment Descriptor (11)	0	0					0	0	0	0
Segment Length (13)	0	0								
Direction of Inventory (18)	0	0								
Functional Class (19)	0	0					0	0	0	0
Median Type (54)	0	0								
Access Control (22)	0	0								
One/Two Way Operations (91)	0	0								
Number of Through Lanes (31)	0	0					0	0		
Average Annual Daily Traffic (79)	0	0					0	0		
AADT Year (80)	0	0								
Type of Governmental Ownership (4)	0	0					0	0	0	0
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			0	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						

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
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			0	0						
AADT Year (80)			0	0						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					0	0				
Location Identifier for Roadway at Ending Ramp Terminal (201)					0	0				
Ramp Length (187)					0	0				
Roadway Type at Beginning of Ramp Terminal (195)					0	0				
Roadway Type at End Ramp Terminal (199)					0	0				
Interchange Type (182)					0	0				
Ramp AADT (191)					0	0				
Year of Ramp AADT (192)					0	0				
Functional Class (19)					0	0				
Type of Governmental Ownership (4)					0	0				
Totals (Average Percent Complete):	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Enter additional comments here to clarify your response for this question or add supporting information.

There are 91,943.360 miles of local roads in the State of Florida for 2016 reporting. Of those 2.604 miles of local roads are State owned. Of those 75,954.079 are paved and 15,989.281 are unpaved.

There are 5,143.956 miles of local roads in the Roadway Characteristic Inventory (RCI) database.

For roads in the RCI database segment identifier, rural/urban, and functional classification are coded.

Begin and End Sector descriptions it is not a Highway Performance Monitoring System (HPMS) requirement, but may be coded in the RCI database.

Surface type is not reported for HPMS on local roads, but may be coded in the RCI database.

For roads not in the RCI database, FDOT submitted line work to the Federal Highway Administration (FHWA) for 2016 regarding the All Road Network of Linear Referenced Data (ARNOLD) HPMS reporting requirement. The ARNOLD linear reference system (LRS) also includes private local roads because ownership is difficult to determine.

FDOT assigned Segment Identifiers to ARNOLD. Segment identifiers are currently 11 digits for local roads in ARNOLD but they may be as long as 15 characters for non-mainline, dual alignments and connectors.

2014 smoothed urban boundaries are not applied to ARNOLD as yet. Therefor rural or urban designation is not currently included.

Surface type and miles of public roads are reported to FDOT however this information is a summary of roads owned local entities. Therefore surface type and miles of public roads are not assigned to specific lines in ARNOLD.

Begin and End Sector descriptions for ARNOLD are not an requirement of HPMS and FDOT has not assigned this information to ARNOLD.

FDOT will be able to assign Functional Class to the roads, however it is not included for HPMS in 2016.

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 Florida Traffic Safety Information System (TSIS) Strategic Plan serves as a guiding document for Florida's Traffic Records Coordinating Committee (TRCC). The plan covers a five year period from 2017 through 2021. The purpose of the TSIS Strategic Plan is to provide a blueprint for measuring progress towards advancing the accessibility, accuracy, completeness, timeliness, and uniformity of Florida's traffic records systems and strengthening the TRCC program. It also provides Florida state agencies with a common basis for moving ahead with traffic records systems upgrades, integration, and data analysis required to conduct highway safety analyses in the State. The plan sets forth the specific actions and projects that will be undertaken over the next five years to accomplish these goals.

The following goals were identified for Florida's traffic safety information system based on assessment recommendations and stakeholder input during the strategic planning process:

- Goal 1 - Coordination. Provided ongoing coordination in support of multi-agency initiatives and projects which improve traffic records information systems.
- Goal 2 - Data Quality. Develop and maintain complete, accurate, uniform, and timely traffic records data.
- Goal 3 - Integration. Provide the ability to link traffic records data.
- Goal 4 - Accessibility. Facilitate access to traffic records data.
- Goal 5 - Utilization. Promote the use of traffic records data.

Regarding data quality (goal 2), objective 2.1 is to improve completeness of traffic records systems by December 2021. This objective includes improving the completeness of the Roadway Data System with includes MIRE fundamental data elements. The table below highlights details regarding strategies, actions, and other details.

Objectives	Strategies/Action Steps	Performance Measure and Method	Timeline	Leader	FY2017 Update
2.1 Improve completeness of traffic records systems by December 2021.	Improve completeness of the Roadway Data System by reaching out to local governments and community safety organization for cooperation on roadway data-gathering for roads under local jurisdiction not covered by the Department's Roadway Characteristics Inventory. - Establish a plan to create a system to collect additional local roadway characteristics. » Collect volume usage data for non-motorized users » Collect local roadway volume data beyond federally eligible and High Performance Monitoring System (HPMS) » Increase the collection of additional roadway characteristics (i.e. number of lanes, etc.) - Publicize the Department's local roads map and encourage use of the map by local governments in their own applications and data interfaces » Develop software tools for internal use to create links between local roadway/map data and the FDOT's NavTeq dataset - Work with local governments to establish relationships for sharing of roadway data » Gather an inventory of existing data from local governments, MPOs or transportation planning » Meet with at least 5 new local governments, MPOs or other transportation planning agencies each quarter for the purpose of identifying and including authoritative sources of local roadway information in local roads map - Create data dictionary for the Roadway Data System	Percent of total local roadway segments that include location coordinates Number of characteristics collected Established inventory Number of local relationships established	December 2021 Quarterly December 2021	FDOT	Existing systems that could incorporate data: ARNOLD Data Set consists of a layer of all public roads (excluding those in FDOT network) Submitted to FHWA to meet federal requirements. Additional work still needed to fully merge local roads data with current FDOT linear referencing system. Safety Office continues to update the All Roads Basemap based on NavTeq dataset FDOT has met with MPOAC to coordinate SHSP safety goals.

[Source: FDOT TRCC Florida Traffic Safety Information System Strategic Plan 2017-2021]

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	Incapacitating Injury	Yes	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Incapacitating Injury	Yes	Injury Severity (INJ) = 4. Incapacitating	Yes	Injury Severity (INJ) = 4. Incapacitating	Yes

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
			Incapacitating injuries are disabling injuries, such as broken bones, severed limbs, etc. These injuries usually require hospitalization and transport to medical facility.		Incapacitating injuries are disabling injuries, such as broken bones, severed limbs, etc. These injuries usually require hospitalization and transport to medical facility.	
Crash Database	Incapacitating Injury	Yes	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Incapacitating Injury	Yes	Injury Severity (INJ) = 4. Incapacitating Incapacitating injuries are disabling injuries, such as broken bones, severed limbs, etc. These injuries usually require hospitalization and transport to medical facility.	Yes	Injury Severity (INJ) = 4. Incapacitating Incapacitating injuries are disabling injuries, such as broken bones, severed limbs, etc. These injuries usually require hospitalization and transport to medical facility.	Yes

Enter additional comments here to clarify your response for this question or add supporting information.

Information regarding the definition of serious injury comes from Florida's crash manual titled INSTRUCTIONS FOR COMPLETING THE FLORIDA UNIFORM TRAFFIC CRASH REPORT FORMS HSMV 90010S. The Florida Department of Highway Safety and Motor Vehicles maintains the manual which was revised March 2015.

Did the State conduct an HSIP program assessment during the reporting period?
No

When does the State plan to complete it’s next HSIP program assessment.

2019

Enter additional comments here to clarify your response for this question or add supporting information.

Optional Attachments

Program Structure:

FL HSIP Guideline 1991.pdf

Project Implementation:

Safety Performance:

Evaluation:

hsip - crf (2017-08-23).xlsx
hsip2016_fdot_q45.xlsx

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.