CALIFORNIA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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Disclaimer

Protection of Data from Discovery Admission into Evidence

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

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

Executive Summary

The Moving Ahead for Progress in the 21st Century Act or “MAP-21” (Pub. L. 112-141, 126 Stat. 405), was signed into law July 6, 2012, and continued the Highway Safety Improvement Program (HSIP) as a core program under title 23 United States Code section 148 to reduce fatalities and injuries on all public roadways. Title 23 United States Code section 148(h) requires each state to submit an annual report to the Federal Highway Administration (FHWA) regarding its HSIP implementation and effectiveness and title 23 Code of Federal Regulations sections 924.15(a)(1) and 924.15(a)(2) specify that the report be submitted no later than August 31 of each year. This annual report describes the progress being made to implement projects and the status of program evaluations for the HSIP as described in Title 23 United States Code section 148, and for High-Risk Rural Roads (HR3) (23 U.S.C. § 148(g)). The Railway-Highway Crossings (23 U.S.C. § 130(g)) report is submitted to FHWA directly by the California Public Utility Commission as a separate report. Under the “MAP-21” (Pub. L. 112-141, July 6, 2012; 126 Stat. 405), the High-Risk Rural Roads program was merged into the HSIP for safety improvements on public rural roadways that meet the functional classification requirements of title 23 United States Code section 148(a)(1). In addition to the above, in accordance with title 23 United States Code section 164 repeat intoxicated transfer funds was obligated for alcohol impaired driving countermeasures. Caltrans' Division of Traffic Operations provided information on the State Highway System (SHS) for this report, and Caltrans' Division of Local Assistance for local roads. Caltrans implements the HSIP for State highways by programming and funding projects in the Collision Reduction Category, one of eight categories that make up the State Highway Operation and Protection Program (SHOPP). The Collision Reduction Category is further divided into two programs: Safety Improvement and Collision Severity Reduction. The Safety Improvement Program is among Caltrans’ top priorities in the SHOPP. The projects evaluated in this report are funded by the Collision Reduction Category, which includes both federal HSIP and State highway funds.

The Fixing America's Surface Transportation (FAST) Act was signed into law on December 4, 2015 and continued the Highway Safety Improvement Program (HSIP) with only minor changes. The FAST Act confirmed the overall purpose of this program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads through the implementation of infrastructure-related highway safety improvements.

Caltrans uses collision data from California Highway Patrol’s SWITRS (Statewide Integrated Traffic Record System) database. Collision data on state highway system is imported into the Transportation System Network (TSN) Caltrans database, which includes volume and inventory data.

Introduction

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

Introduction

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

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

Traffic Operations addresses the state highway system and local agencies address all other public roads.

Where is HSIP staff located within the State DOT?

Other-Traffic Operations and Local Assistance

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

How are HSIP funds allocated in a State?

Central Office via Statewide Competitive Application Process

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

In the Division of Local Assistance, a competitive application process has been set up for local agencies and tribal governments to propose safety improvements on local roads. Moreover, set-aside funds are allocated to critical areas where cost-effective countermeasures as listed in Local Roadway Safety Manual can be timely implemented."

On the state highway system, Caltrans district staff propose safety projects. Caltrans HQ approves and concurs a safety project based on the collision history, selected countermeasures, and cost-benefit ratio for the proposed project.

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

Caltrans Division of Local Assistance (DLA) uses an HSIP application benefit-cost tool to provide a consistent, data-driven methodology for ranking local roadway (non-State owned and operated) project applications on a statewide basis. This tool was developed by the DLA in conjunction with the University of California, Berkeley, Safe Transportation Research and Education Center. The DLA HSIP also provides the Local Roadway Safety Manual for California local road owners and directly incorporates UC Berkeley's

Transportation Injury Mapping System website to assist applicants applying for local HSIP funds. These tools and resources encourage local agencies to proactively analyze their roadway networks for the highest crash locations and develop and submit applications with the greatest chance of reducing fatalities and serious injuries using low cost proven systemic countermeasures. The DLA HSIP application process is also open and available to the tribes that would like to submit an application for HSIP funds. However, due to lack of time, resources, experience and data at the tribes very few applications if any are submitted.

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

Traffic Engineering/Safety
Planning
Operations
Districts/Regions
Local Aid Programs Office/Division
Other-Research Innovation and System Information

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

Describe coordination with internal partners.

On the State Highway System, the Traffic Safety and Mobility Program in Headquarters within the Division of Traffic Operations works with the Division of Planning, Division of Programming, Division of Research Innovation and System Information, and 12 Caltrans district offices to develop Project Initiation Documents to program projects. For local roads, Caltrans Division of Local Assistance (DLA) staff manage the local agency share of HSIP funds in conjunction with its local agency partners. The DLA prepares the HSIP guidelines and solicits project applications from local agencies and tribes.

Traffic Operations annually provide a list of high collision concentration locations to 12 districts. Each district's traffic investigation is required to investigate and respond with possible safety improvement recommendation and countermeasures. Traffic Operations is to concur with district's response and recommendation before any major safety improvement project can be initiated.

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
Academia/University

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

Describe coordination with external partners.

Caltrans has been working with 400 stakeholders from 170 public & private agencies including tribal agency, local technical assistance program, and universities to develop CA-SHSP. Projects developed are consistent with SHSP strategies. Caltrans' DLA with local agencies are involved in planning projects on local roads. California started work on their SHSP update in July of 2018 and will be completed in December of 2019. Additional stakeholders and agencies will be asked to participate, which in turn will make for better HSIP projects and help to reduce fatal and serious injuries.

Caltrans coordinates with FHWA by asking for guidance and interpretation of HSIP funding criteria and other FHWA legislative requirements.

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

Yes

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

2017 HSIP Guidelines was updated from 2014 HSIP Guidelines.

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

No

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:
2017 STATE HSIP GUIDELINES FINAL.pdf

Select the programs that are administered under the HSIP.

Median Barrier

2018 California Highway Safety Improvement Program
Bicycle Safety
HSIP (no subprograms)
Roadway Departure
Pedestrian Safety
Wrong Way Driving
Other--2 and 3 Ln Cross Centerline Collision Monitoring Pro

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

Program: Bicycle Safety

Date of Program Methodology: 6/20/2017

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

Addresses SHSP priority or emphasis area
Other-High Collision Concentration Location

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
All crashes Fatal and serious injury crashes only	Volume Lane miles	Functional classification

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?

No

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

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-Data and Criteria

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

Rank of Priority Consideration

Other-meet minimum criteria : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. DLA does not have a bicycle safety improvement monitoring program; however, it has bicycle safety improvement projects.

Program: HSIP (no subprograms)

Date of Program Methodology: 6/20/2017

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

Addresses SHSP priority or emphasis area

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
All crashes	Volume	Median width
Fatal and serious injury crashes only	Lane miles	Functional classification

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?

No

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

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-meet minimum criteria

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

Rank of Priority Consideration

Other-meet minimum criteria : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. California Division of Local Assistance (DLA) uses an HSIP application benefit-cost tool to provide a consistent, data-driven methodology for ranking local roadway (non-State owned and operated) project applications on a statewide basis.

Program: Median Barrier

Date of Program Methodology: 11/15/1977

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

Addresses SHSP priority or emphasis area

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
All crashes Fatal crashes only	Volume	Median width Functional classification

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?

No

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

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

How are projects under this program advanced for implementation?

Other-Any project that meets the established Median Barrier criteria for project selection can be programmed

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

Rank of Priority Consideration

Other-Collision and volume warrants : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. DLA does not have Median Barrier Monitoring Program.

Program: Pedestrian Safety

Date of Program Methodology: 6/20/2017

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

Addresses SHSP priority or emphasis area

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
All crashes Fatal and serious injury crashes only	Volume Lane miles	Functional classification

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?

No

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

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

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

Rank of Priority Consideration

Other-meet minimum criteria : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. DLA does not have a pedestrian safety improvement monitoring program; however, it has pedestrian safety improvement projects.

Program: Roadway Departure

Date of Program Methodology: 11/15/2004

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

Addresses SHSP priority or emphasis area

2018 California Highway Safety Improvement Program

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
Other-see the optional description	Volume Lane miles Other-Fatal and injury crashes on Wet Pavement	Functional classification Roadside features Other-Fatal and injury crashes resulting in Overturned Vehicle

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

Crash frequency
Crash rate
Other-see the optional description for this question

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?

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

How are projects under this program advanced for implementation?

Other-see the optional description for this question

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

Relative Weight in Scoring

Other-100% top 25% of run-off-road concentration locations with higher scores +100% of identified long segments selected based on collision frequency, roadway type, geometric characteristics and traffic volume. : 100

Total Relative Weight : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. DLA does not have Roadway Departure Program.

Program: Wrong Way Driving

Date of Program Methodology: 1/15/1985

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

Addresses SHSP priority or emphasis area

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
All crashes	Volume	Functional classification
Fatal and serious injury crashes only	Lane miles	

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?

No

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

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

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical

rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Relative Weight in Scoring

Other-crash frequency and crash rate : 100

Total Relative Weight : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. DLA does not have Wrong-Way Driving Monitoring Program.

Program:	Other--2 and 3 Ln Cross Centerline Collision Monitoring Pro
Date of Program Methodology:	1/15/1985

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

Addresses SHSP priority or emphasis area

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 crashes only Other-See optional description pertaining to this subprogram	Volume Lane miles	Functional classification

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?

No

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

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

How are projects under this program advanced for implementation?

Other-All projects meeting established criteria can be programmed

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

Relative Weight in Scoring

Other-Crash frequency and rate : 100

Total Relative Weight : 100

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

On California State Highway System, if a proposed project meets data requirement and approved countermeasures, it will be funded. DLA does not have 2/3-Lane Cross Centerline Collision Monitoring Program.

What percentage of HSIP funds address systemic improvements?

60

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

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

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

California does incorporate tapered edge (also known as safety edge) in projects, however has not used HSIP funds to fund tapered edge projects.

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

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

We had HSM training classes last year and we are developing Safety Performance Functions.

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

Yes

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

We initiated bicycle safety monitoring.

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

Yes

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

For the most part, Local HSIP and State highway HSIP use the cost/benefit methodology as a qualifying criteria for HSIP funds with some differences. For State highway HSIP, the benefit / cost tool, called the safety index, is used for projects at spot locations whereas Local HSIP utilizes the benefit / cost methodology for both spot and systemic type of projects. For the State highway HSIP, the systemic approach is accomplished through various monitoring programs, like the Cross Median Collision Monitoring Program or the Two and Three Lane Cross Centerline Collision Monitoring Program. The Local HSIP utilizes set asides for low cost countermeasures, such as pedestrian crossing enhancements at non-signalized locations, horizontal curve signing and guardrail upgrades. These set asides do not require crash data to receive HSIP funding but is limited to a maximum dollar amount per agency and only specific low cost countermeasures can be selected.

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.

Based on state fiscal year calendar - starting from July 1, 2017 - June 30, 2018

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$533,240,000	$363,131,441	68.1%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$20,645,816	$20,645,816	100%
Penalty Funds (23 U.S.C. 164)	$16,938,871	$15,913,526	93.95%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$16,000,000	$16,000,000	100%
Other Federal-aid Funds (i.e. STBG, NHPP)	$38,010,723	$15,850,178	41.7%
State and Local Funds	$612,740,000	$214,892,384	35.07%
Totals	$1,237,575,410	$646,433,345	52.23%

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

Funding Category Descriptions: HSIP (23 U.S.C 148) is Federal HSIP Funding for Caltrans State and Local side; State and Local Funds are combination of Federal HSIP Funding and State Highway Operation and Protection Program (SHOPP) funds.

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

$69,392,000

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

$59,900,000

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

The costs reported above are based on state fiscal year.

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

$0

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

$0

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

There is no Non-Infrastructure Safety Projects from the State; however, Division of Local Assistance has Non-Infrastructure Safety Projects. They are funded by State Funds but not Federal HSIP.

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

$0

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

$0

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

Caltrans contributes 2.5 to 3 times the Federal HSIP amount every year in addition to the Federal HSIP funds from the SHOPP.

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

In the past two years, local HSIP project delivery has been enforced through (1) monthly update of delivery status report posted in the DLA website, (2) HSIP manager's phone calls and emails to district focal-point contacts responsible for monitoring project delivery, (3) the set drop-dead dates for late projects in various previous project cycles, (4) requesting local agencies to send HSIP program an official delivery commitment letter for project delay request, and (5) efforts made by various Local HSIP Advisory Committee members. This is proved to be successful and is now a Local HSIP policy that all current projects programmed need to have construction authorization within five years of being programmed. Project delivery delay flags are held in place for PE Authorization and Construction Authorization to alarm local agencies with delayed project flags that they will be ineligible to apply any future HSIP funding until these flags are cleared.

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

Yes

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

The DLA continues to investigate, with the help of locals and FHWA the delays caused by unnecessary environmental requirements in streamlining HSIP projects. The DLA has initiated the first every tribal HSIP set-aside this year for $2 M for safety improvements on tribal lands.

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**
17716	Intersection geometry	Intersection geometrics - modify intersection corner radius	1	Intersections	$14075000	$22352000	HSIP (23 U.S.C. 148)	Urban Minor Arterial	1,800	45	State Highway Agency	Spot	Intersections	Collision Reduction

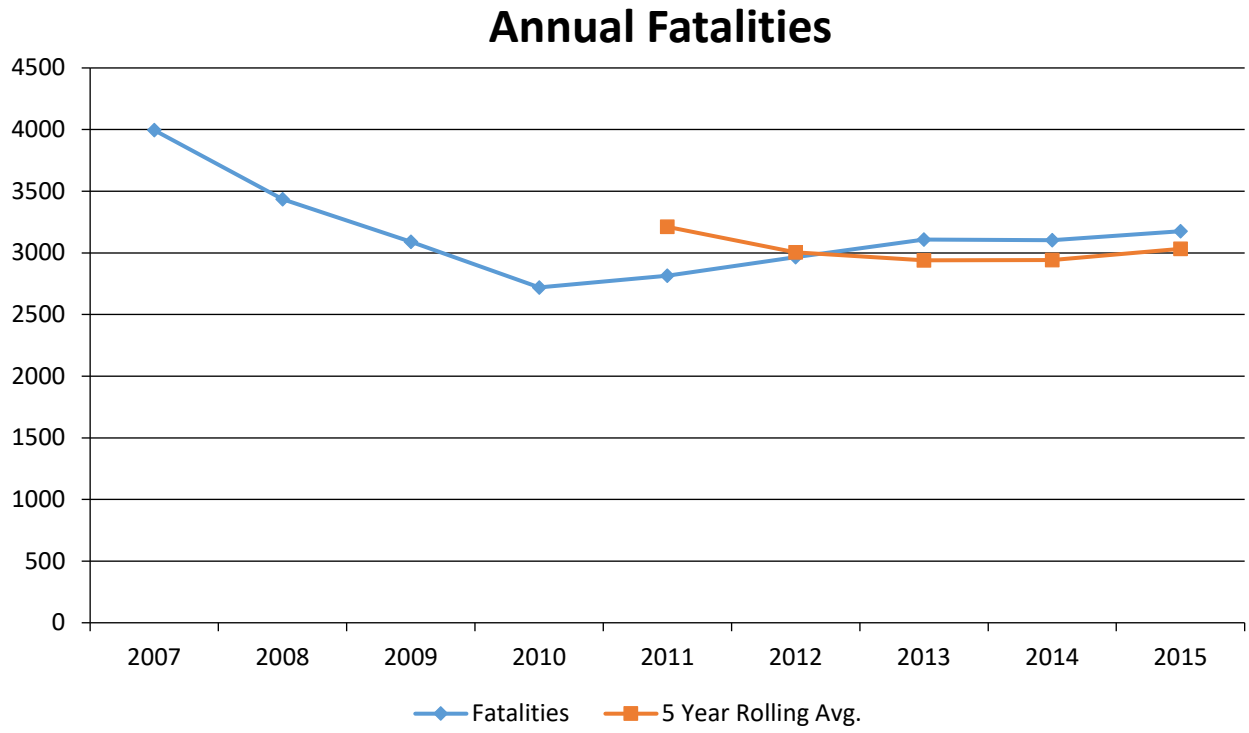
Enter additional comments here to clarify your response for this question or add supporting information.

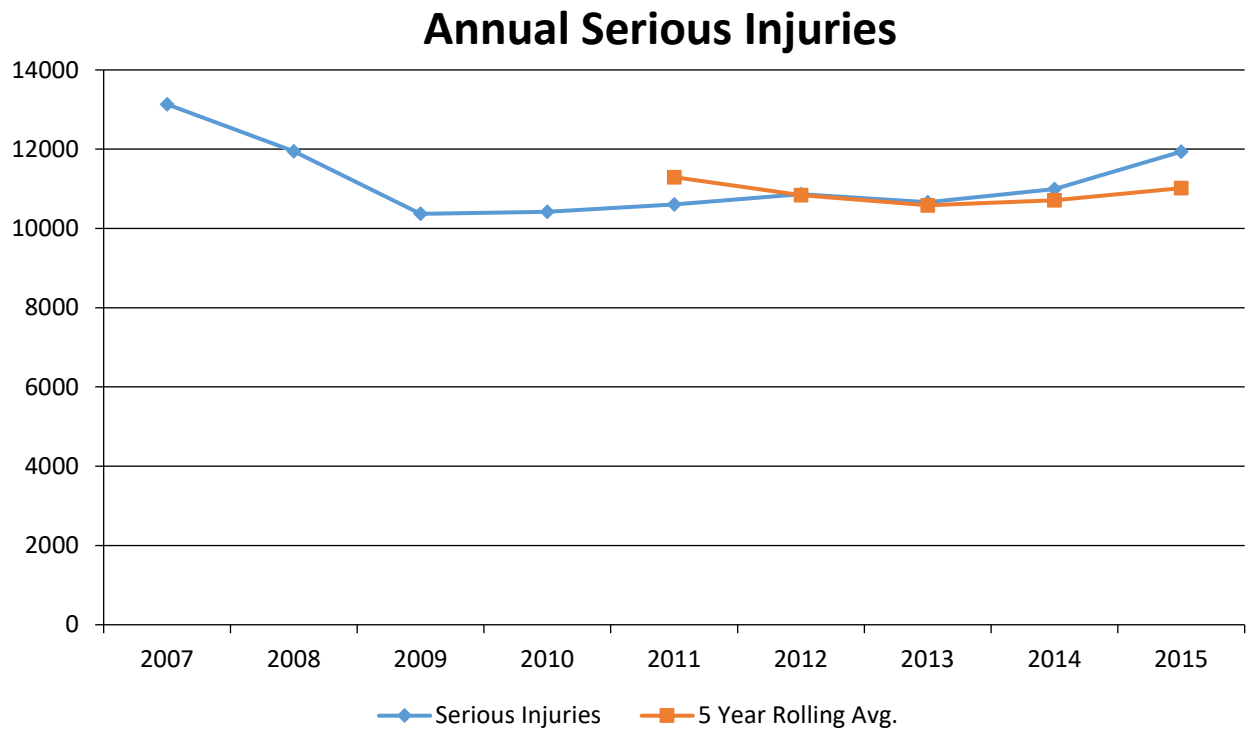
Safety Performance

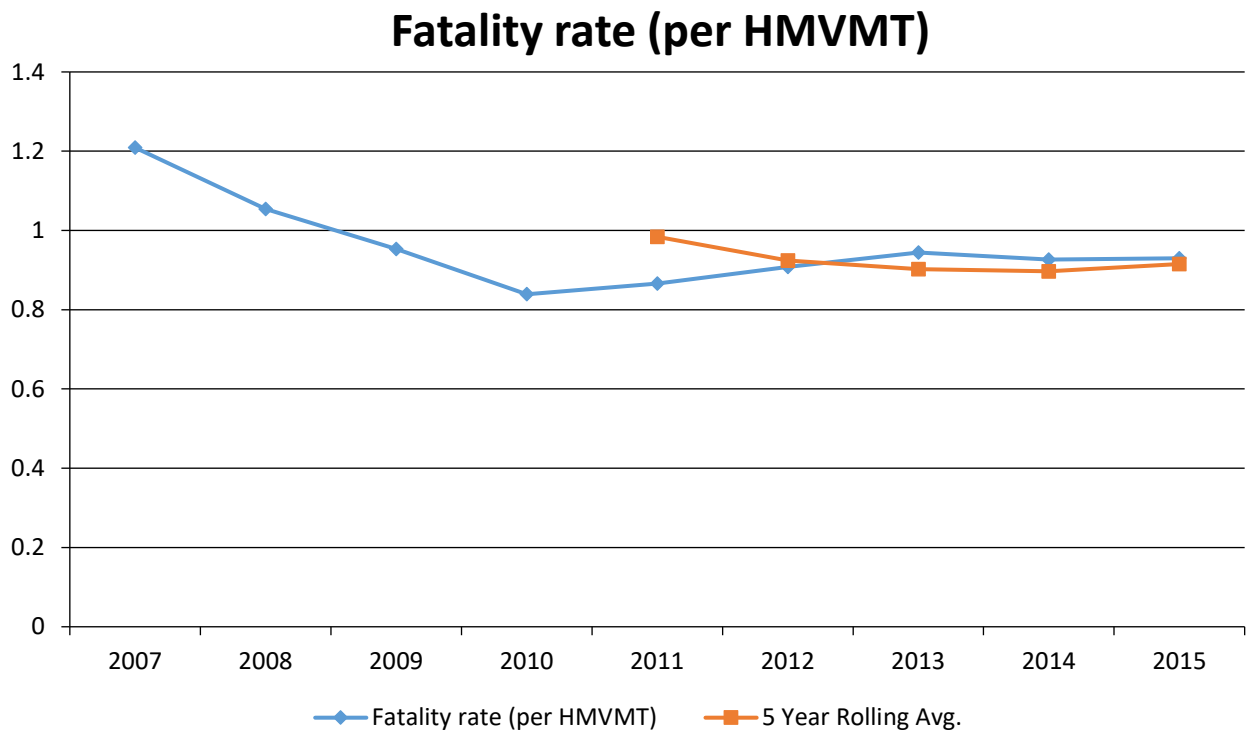
General Highway Safety Trends

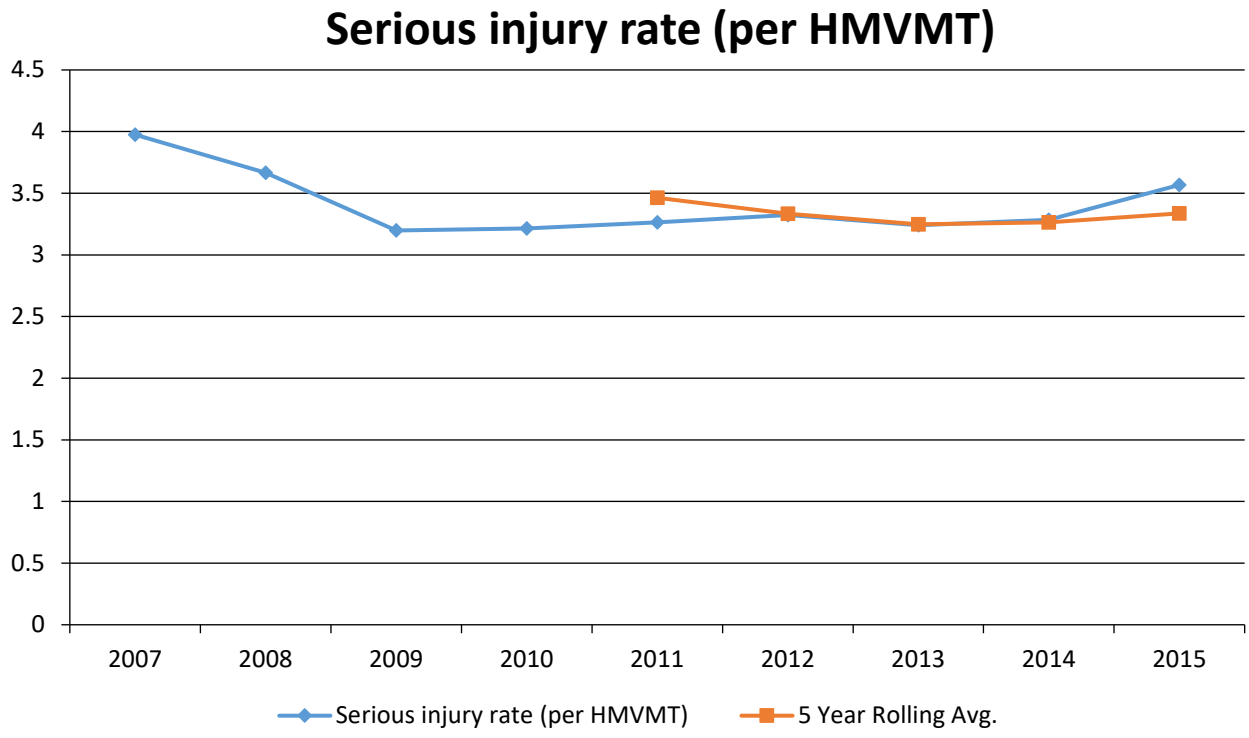
Present data showing the general highway safety trends in the State for the past five years.

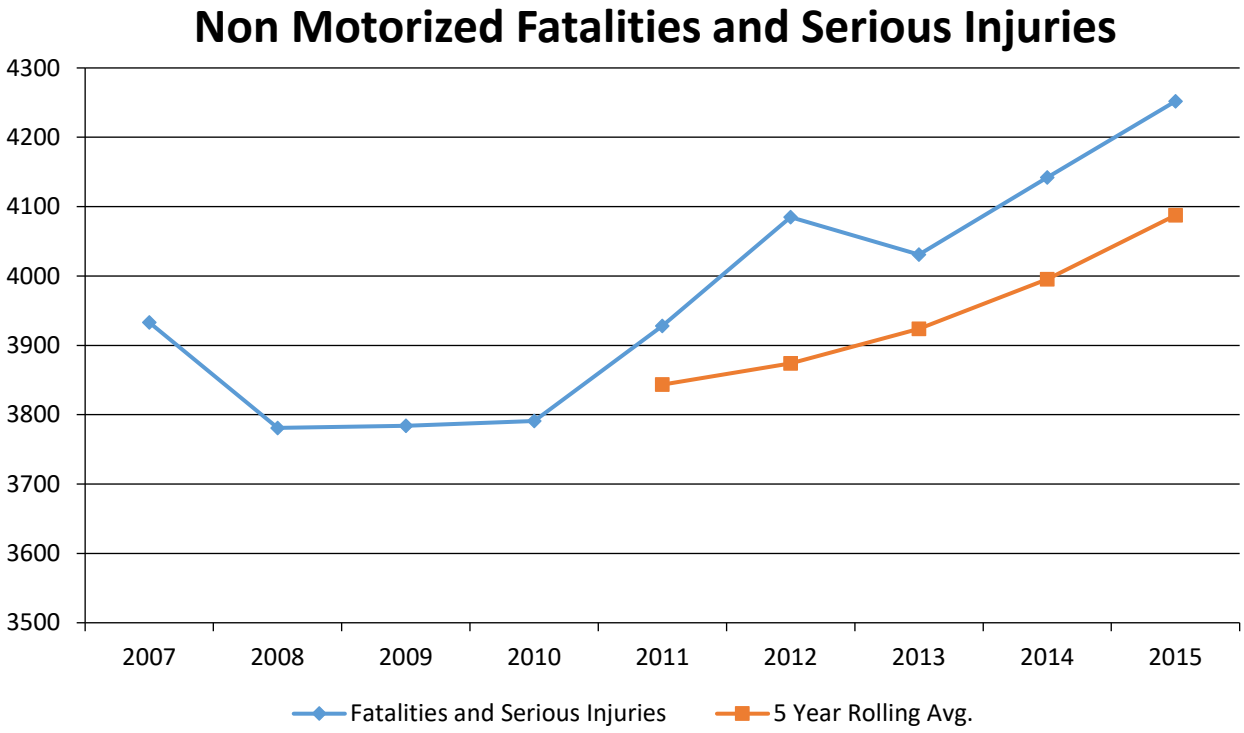
PERFORMANCE MEASURES	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatalities	3,995	3,434	3,090	2,720	2,816	2,966	3,107	3,102	3,176
Serious Injuries	13,133	11,943	10,369	10,423	10,607	10,864	10,664	10,995	11,942
Fatality rate (per HMVMT)	1.209	1.054	0.953	0.839	0.866	0.908	0.944	0.927	0.930
Serious injury rate (per HMVMT)	3.975	3.666	3.198	3.215	3.263	3.324	3.240	3.285	3.568
Number non-motorized fatalities	823	791	714	760	807	878	951	933	1,038
Number of non-motorized serious injuries	3,110	2,990	3,070	3,031	3,121	3,207	3,080	3,209	3,214


Annual Fatalities
4500
4000
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
14000
12000
10000
8000
6000
4000
2000
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
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)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
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.

Describe fatality data source.

State Motor Vehicle Crash Database

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

Caltrans requested the latest SWITRS data (raw data that contains all roadway types in CA) available through our external partner - California Highway Patrol. Working on raw data to extract data from Caltrans state highway system has been a challenge to achieve high level of confidence. SWITRS - Statewide Integrated Traffic Records System (Database). We also use FARS to cross check our numbers. Caltrans uses SWITRS data for all their numbers and rates.

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

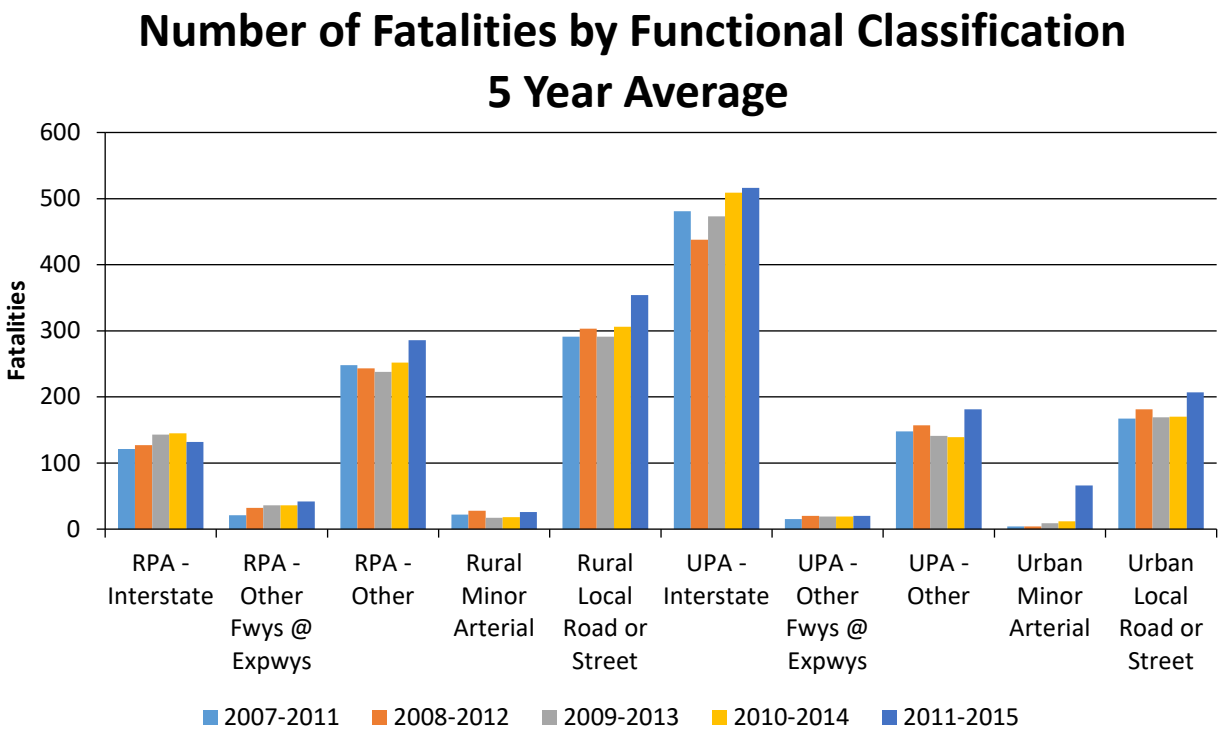
Year 2015

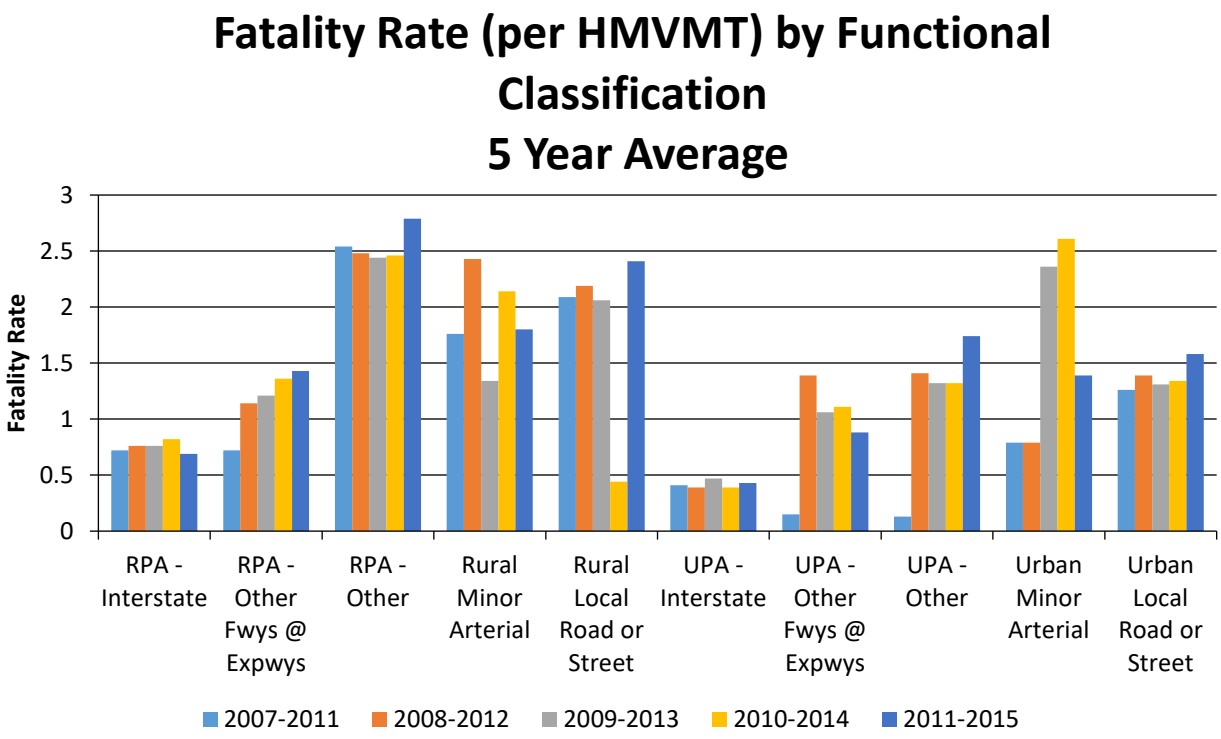
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	132		0.69	

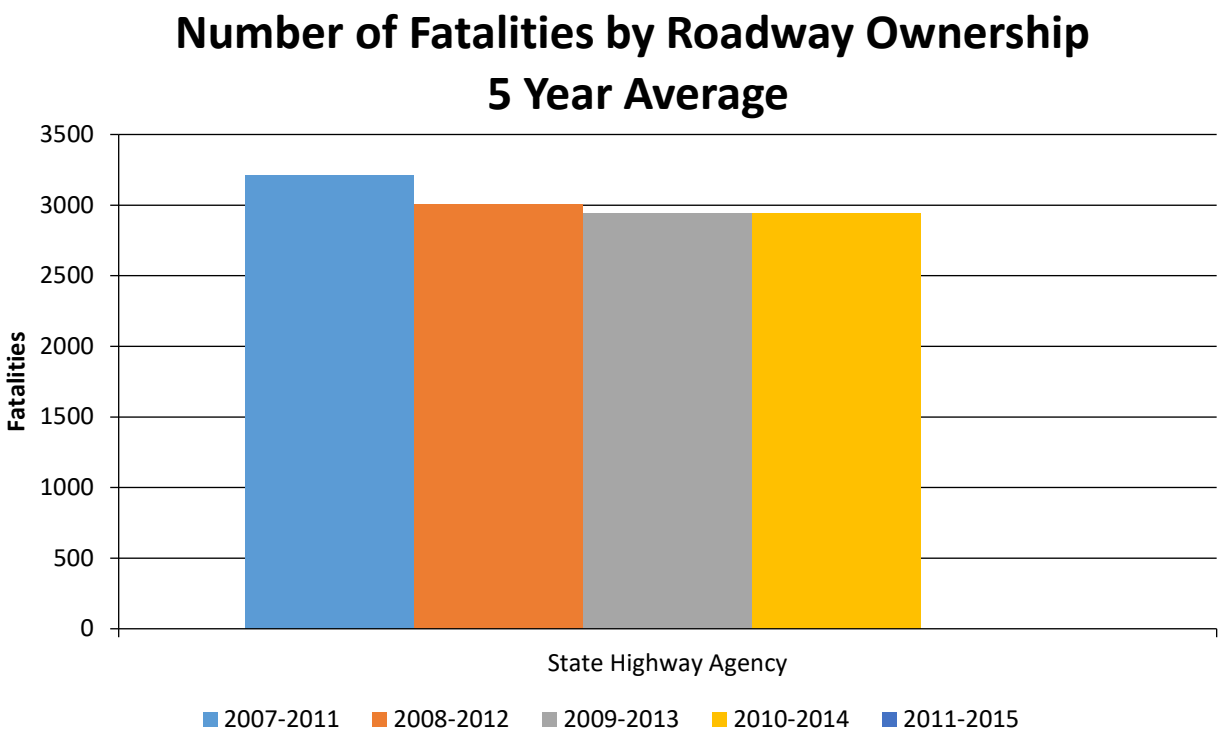
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Other Freeways and Expressways	42		1.43	
Rural Principal Arterial (RPA) - Other	286		2.79	
Rural Minor Arterial	26		1.8	
Rural Minor Collector				
Rural Major Collector				
Rural Local Road or Street	354		2.41	
Urban Principal Arterial (UPA) - Interstate	516		0.43	
Urban Principal Arterial (UPA) - Other Freeways and Expressways	20		0.88	
Urban Principal Arterial (UPA) - Other	181		1.74	
Urban Minor Arterial	66		1.39	
Urban Minor Collector				
Urban Major Collector				
Urban Local Road or Street	207		1.58	

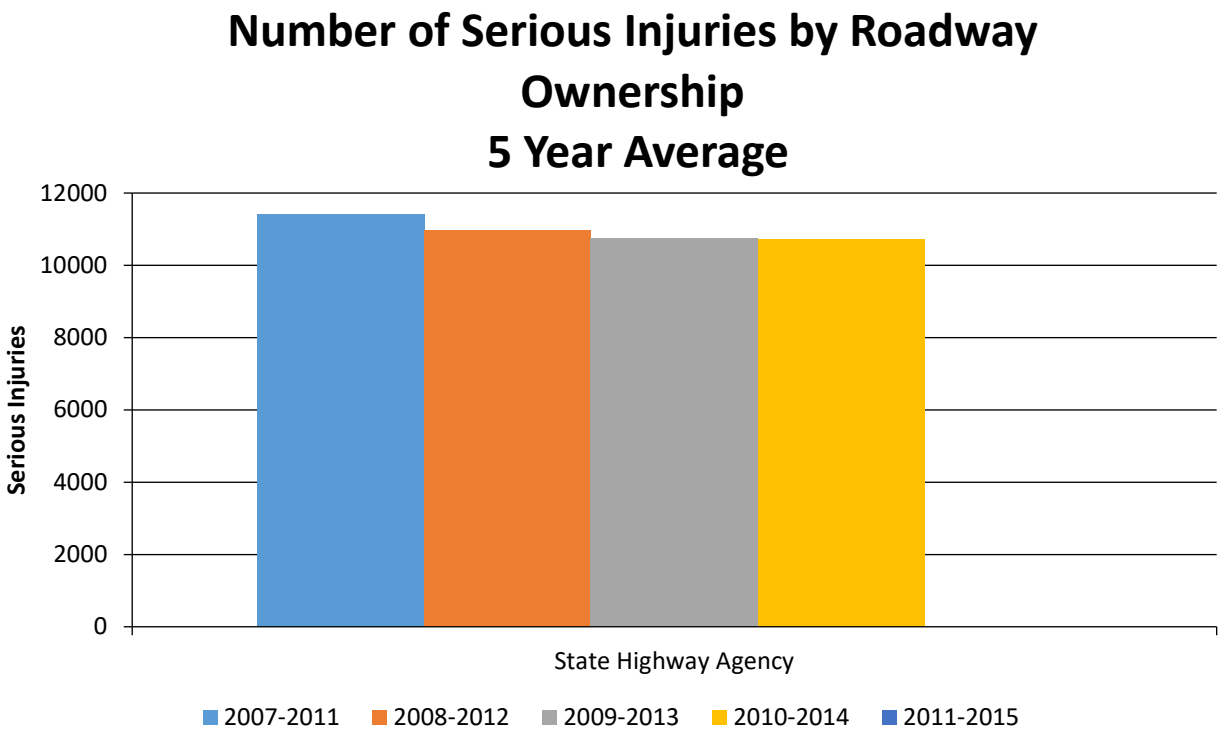
Year 2014

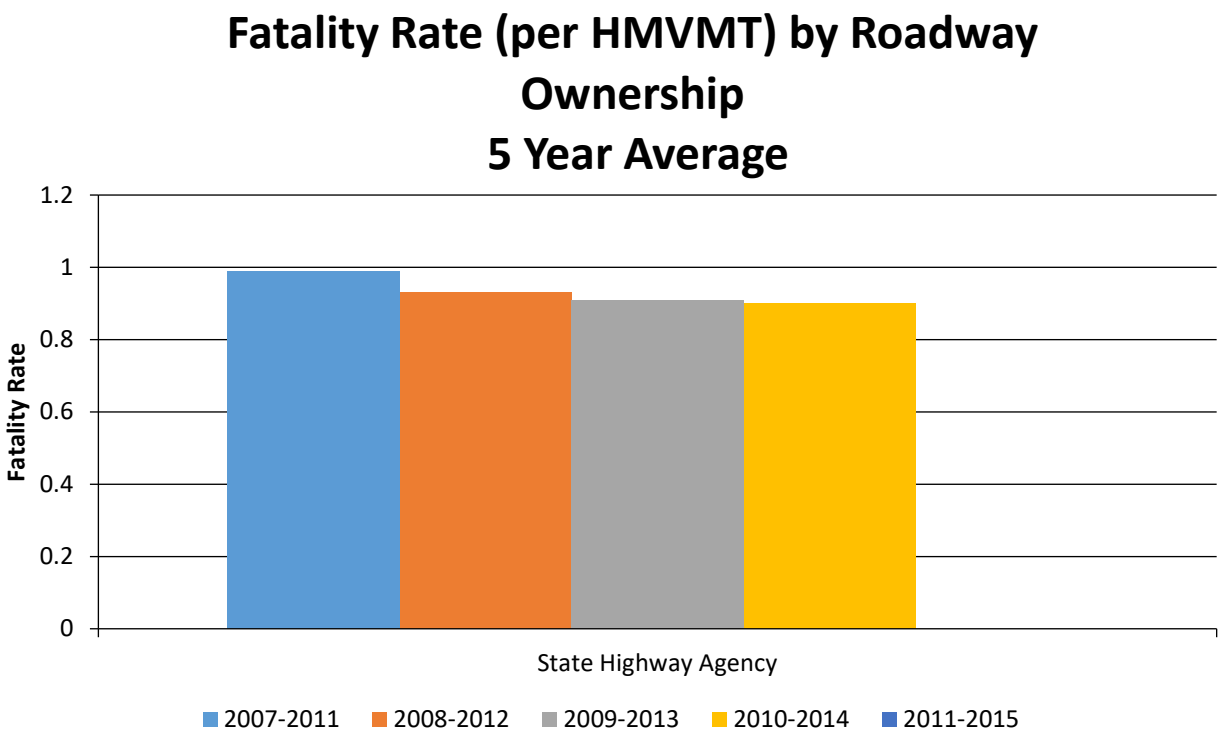
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	2,942.2	10,710.6	0.9	3.27
County Highway Agency				
Town or Township Highway Agency				
City of Municipal Highway Agency				
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				

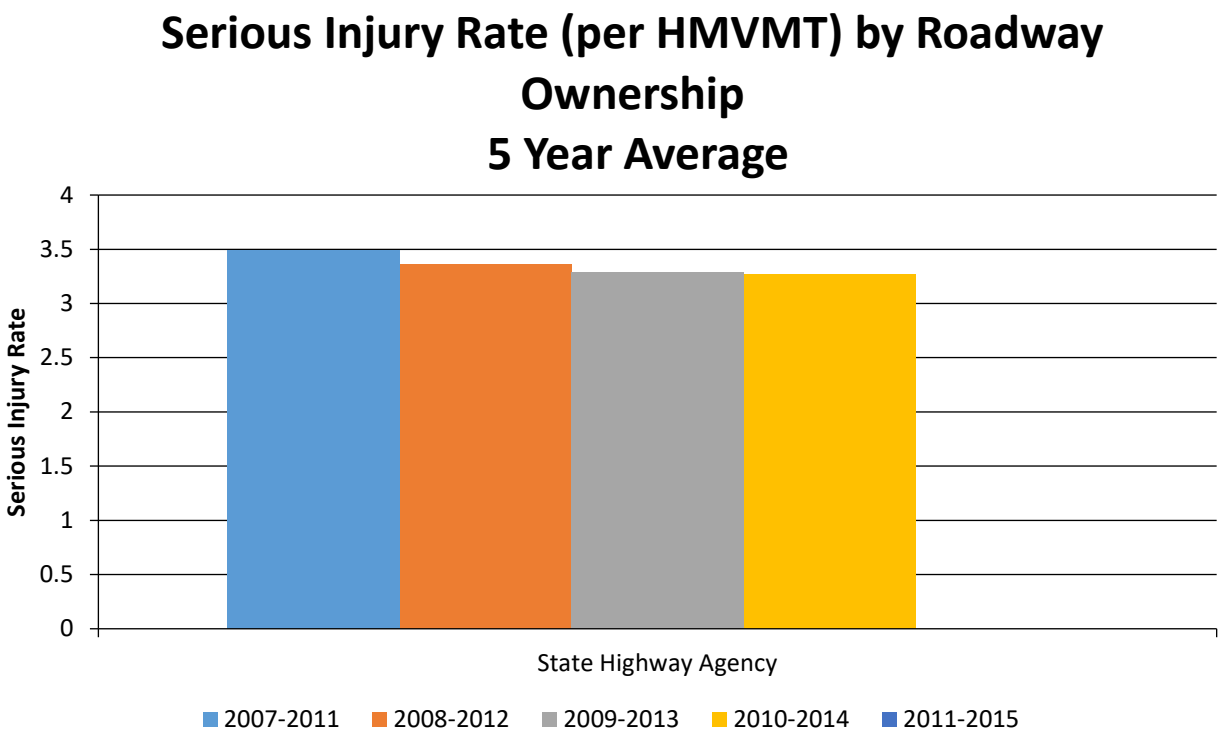

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
600
500
400
300
200
100
0
RPA - Interstate
RPA - Other Fwys @ Expwys
RPA - Other
Rural Minor Arterial
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @ Expwys
UPA - Other
Urban Minor Arterial
Urban Local Road or Street
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
3
2.5
2
1.5
1
0.5
0
RPA - Interstate
RPA - Other Fwys @ Expwys
RPA - Other
Rural Minor Arterial
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @ Expwys
UPA - Other
Urban Minor Arterial
Urban Local Road or Street
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


Number of Fatalities by Roadway Ownership
5 Year Average
3500
3000
2500
2000
1500
1000
500
0
Fatalities
State Highway Agency
2007-2011
2008-2012
2009-2013
2010-2014
2011-2015


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


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
1.2
1
0.8
0.6
0.4
0.2
0
Fatality Rate
State Highway Agency
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.

California DOT does not publish data on minor/major collector roads including number of serious injury and serious injury rate on all roads. These numbers are for State Highway System only.

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

Yes

Provide additional discussion related to general highway safety trends.

We input annual collision data for the years requested, and the ORT application generates a graph of 5-yr rolling average.

Safety Performance Targets

Safety Performance Targets

	Calendar Year 2019 Targets *
Number of Fatalities	3445.4

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

2019 performance target is based on current data that is available in FARS. This target is based on an annual decrease of 3.0%, which is consistent with the SHSP goal of reducing fatalities by 3% annually.

Number of Serious Injuries	12688.1

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

2019 performance target is based on current data that is available in SWITRS. This target is based on an annual decrease of 1.5%, which is consistent with the SHSP goal of reducing fatalities by 1.5% annually.

Fatality Rate	0.995

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

2019 performance target is based on current data that is available in FARS. This target is based on an annual decrease of 3.0%, which is consistent with the SHSP goal of reducing fatalities by 3% annually.

Serious Injury Rate	3.661

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

2019 performance target is based on current data that is available in SWITRS. This target is based on an annual decrease of 1.5%, which is consistent with the SHSP goal of reducing fatalities by 1.5% annually.

Total Number of Non-Motorized Fatalities and Serious Injuries	3949.8

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

2019 performance target is based on current data that is available in SWITRS. This target is based on an annual decrease of fatalities of 3.0% and an annual decrease of serious injuries of 1.5%, which is consistent with the SHSP goal.

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

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

The State has had training and a series of workshops in December, 2017 and March, 2018 with MPOs and other stakeholders to set the safety performance targets for 2019. Caltrans and OTS met in February, 2018 to discuss and agree on the three-like safety performance targets.

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?

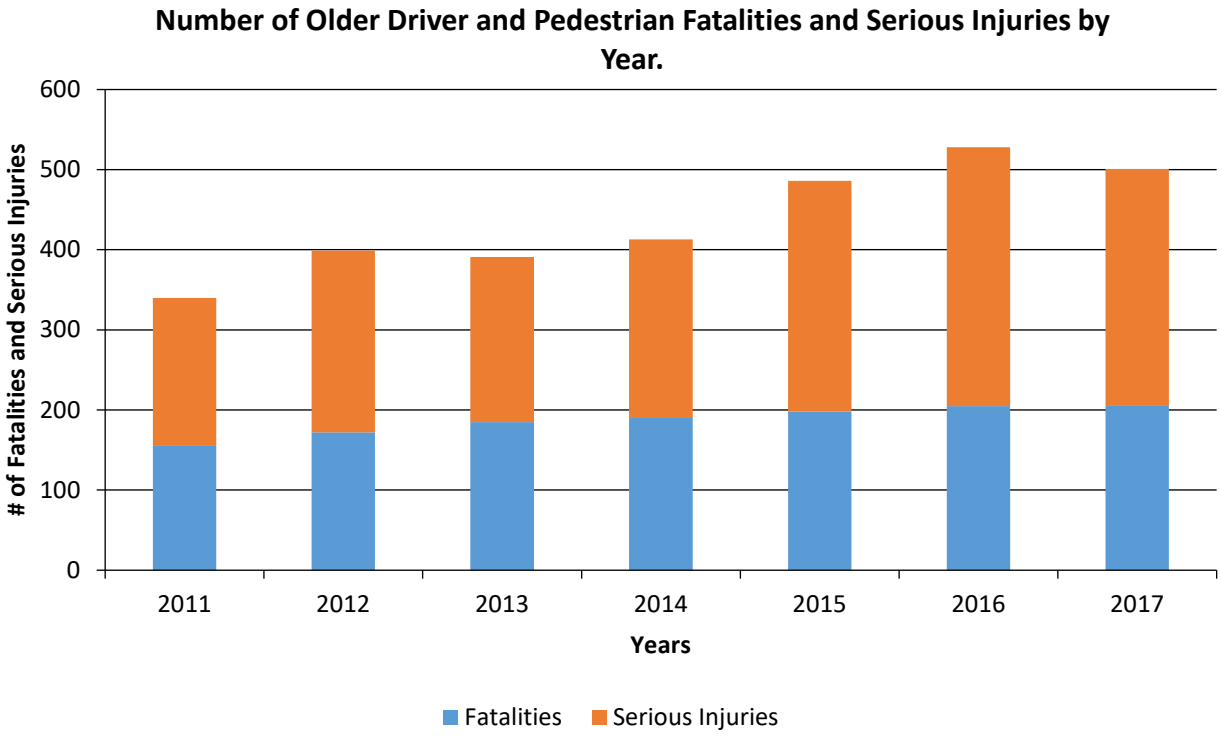
No

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

The HRRR special rule does not apply to California for this reporting period, as it has been determined that the 5-year average fatality rate on rural roads in California does not increase from 2008-2012 to 2011-2015.

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

PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017
Number of Older Driver and Pedestrian Fatalities	156	172	185	190	198	205	206
Number of Older Driver and Pedestrian Serious Injuries	184	227	206	223	288	323	295



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

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries
Benefit/Cost Ratio
Other-3-year before & after

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

There are 3 levels of Evaluation to determine the effectiveness of overall HSIP Program: (1) Evaluation of Approved Countermeasures, (2) Evaluation of Approved Projects, and (3) Evaluation of various Safety and Monitoring Programs within the HSIP Program. California State DOT, normally, performs at least one level of Evaluations annually by comparing fatality, injury, PDO, AADT from 3-year before and 3-year after, and including a Benefit-Cost Analysis to determine whether a low-cost and effective countermeasure does reduce certain type of collisions and patterns. DLA does a preliminary screening for approving safety improvement projects by using method of Benefit-Cost Analysis and data criteria. It has not measured effectiveness from a 3-year before and after evaluation until 2020 due to a lack of 3-year after collision data.

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

California State HSIP program in its efforts has reduced significant number of percentage for specific collision types and patterns in the past 10 years even though the overall other-type of collisions are increasing as well as increasing in AADT.
Local Assistance does not currently evaluate the effectiveness of HSIP funded projects on local roads, however they plan to evaluate the effectiveness starting in the year 2020.

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

More systemic programs
RSAs completed
Increased awareness of safety and data-driven process
Increased focus on local road safety
HSIP Obligations

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?

Yes

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

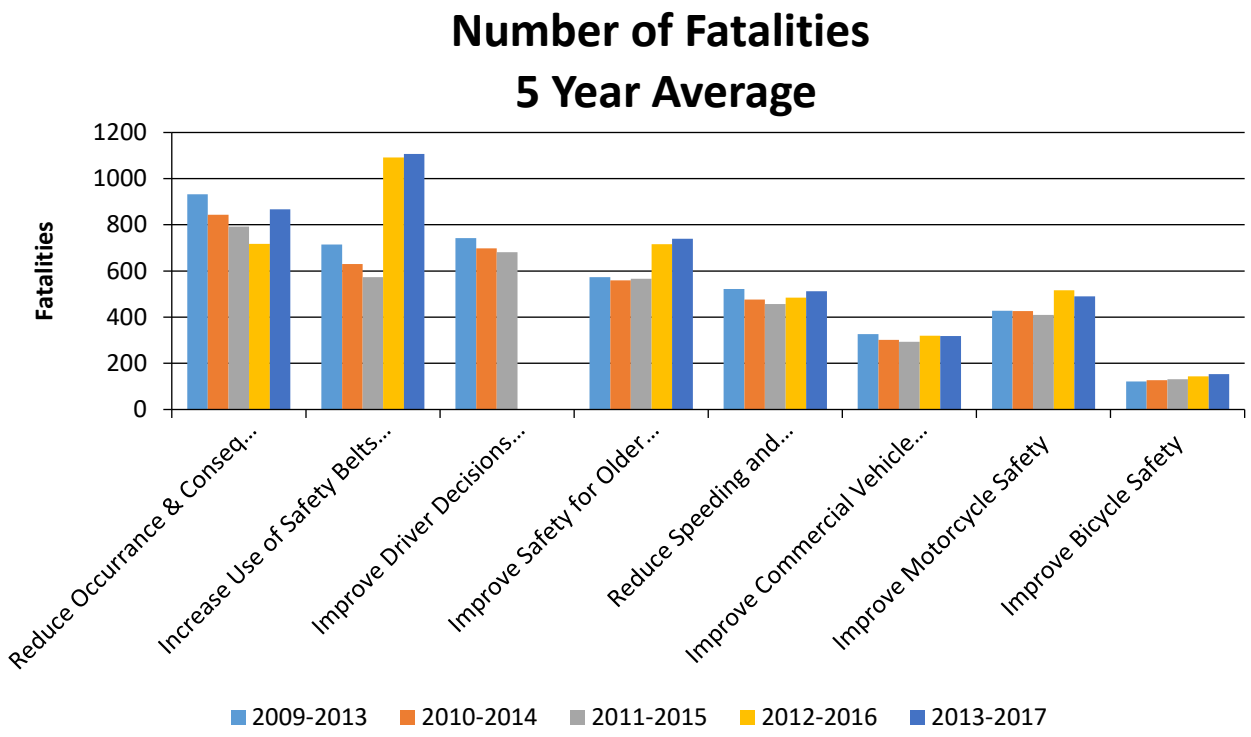
We initiated the Bicycle Safety Improvement Monitoring Pilot Program using HSIP and SHOPP funds.

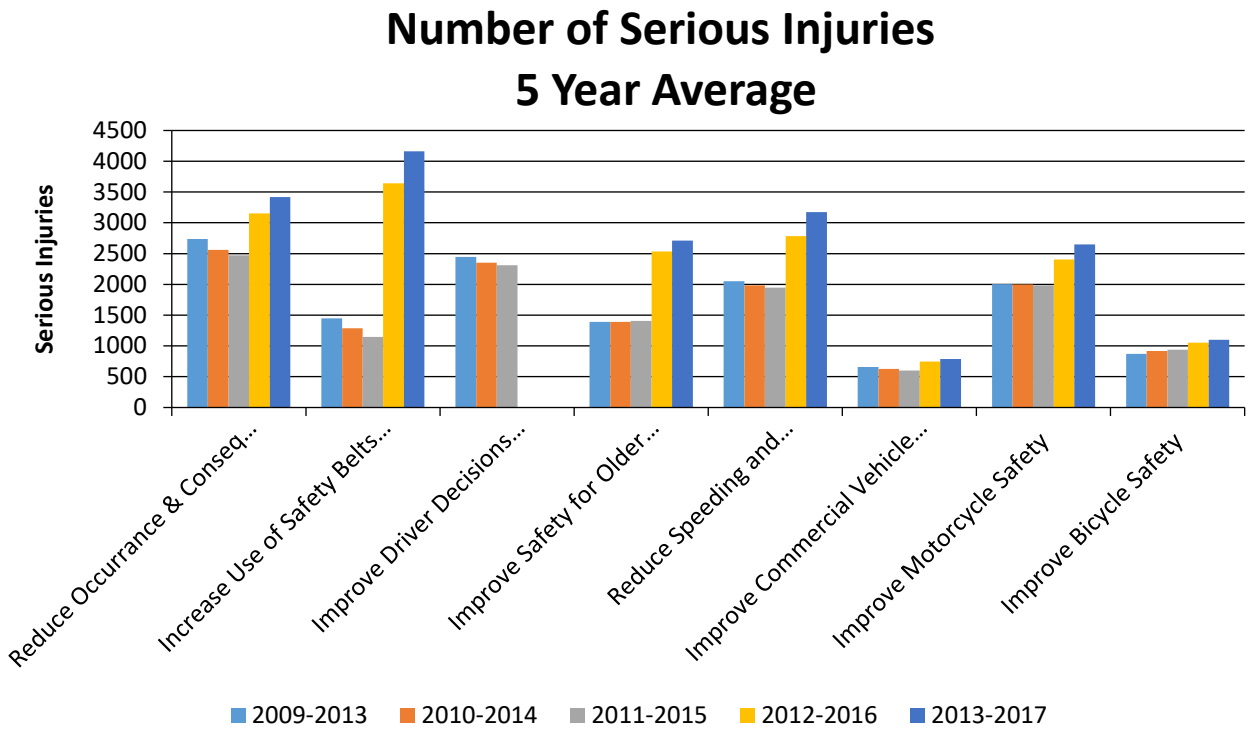
Effectiveness of Groupings or Similar Types of Improvements

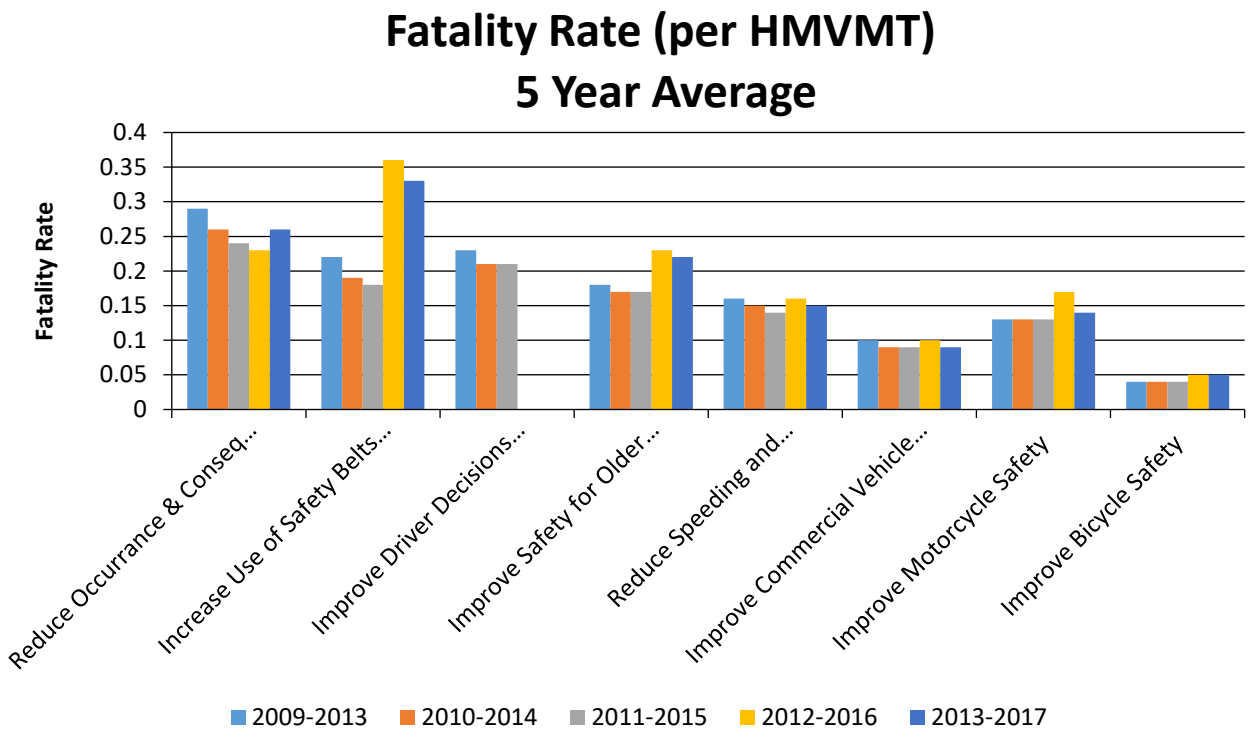
Present and describe trends in SHSP emphasis area performance measures.

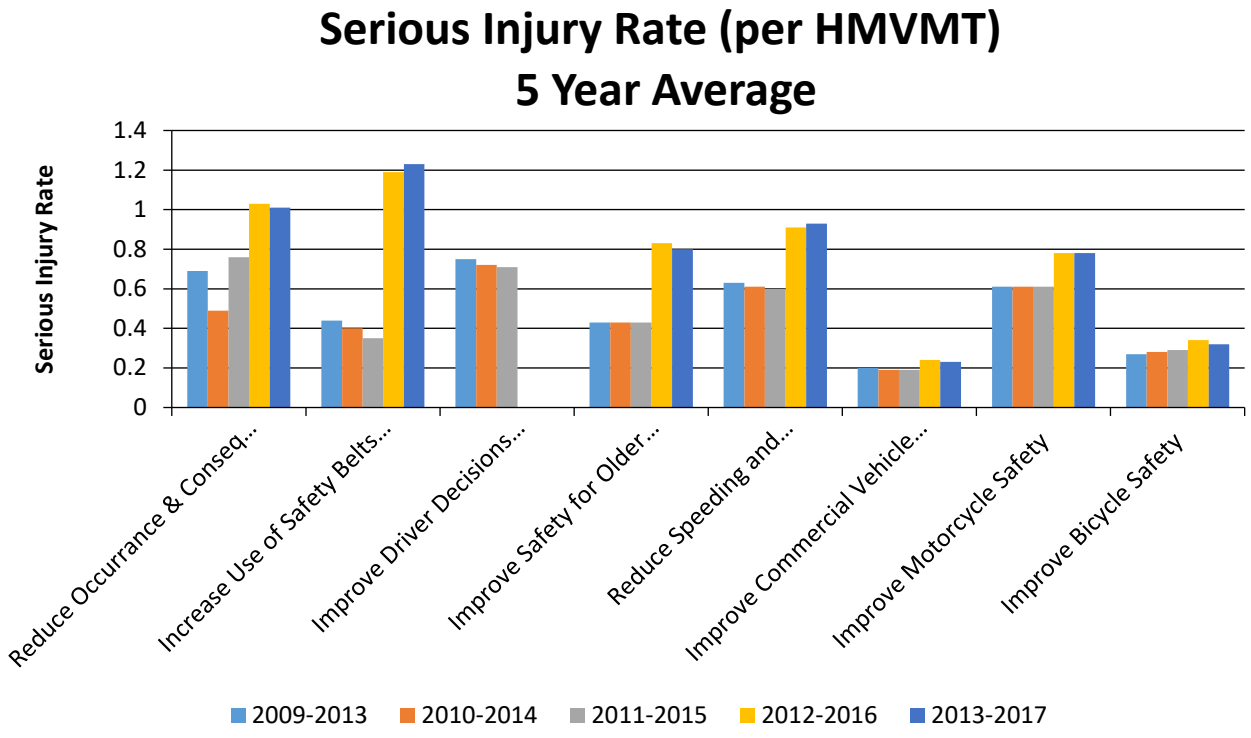
Year 2017

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)
Reduce Occurrance & Conseq of Leaving Roadway & Head-On Colli	Head on	867	3,420	0.26	1.01
Increase Use of Safety Belts and Child Safety Seats	Seat Belts	1,107	4,163	0.33	1.23
Improve Driver Decisions about Rights-of-Way and Turning					
Improve Safety for Older Roadway Users	Older Users	740	2,710	0.22	0.8
Reduce Speeding and Aggressive Driving	Speed-related	513	3,175	0.15	0.93
Improve Commercial Vehicle Safety	Truck-related	318	788	0.09	0.23
Improve Motorcycle Safety	Motorcyclist	490	2,650	0.14	0.78
Improve Bicycle Safety	Vehicle/bicycle	153	1,102	0.05	0.32


Number of Fatalities
5 Year Average
Fatalities
1200
1000
800
600
400
200
0
Reduce Occurrance & Conseq...
Increase Use of Safety Belts...
Improve Driver Decisions...
Improve Safety for Older ...
Reduce Speeding and...
Improve Commercial Vehicle...
Improve Motorcycle Safety
Improve Bicycle Safety
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries
5 Year Average
Serious Injuries
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Reduce Occurrance & Conseq...
Increase Use of Safety Belts...
Improve Driver Decisions...
Improve Safety for Older ...
Reduce Speeding and...
Improve Commercial Vehicle...
Improve Motorcycle Safety
Improve Bicycle Safety
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017





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

For other SHSP emphasis areas such as Emergency Medical Services, Driver Licensing and Competency, Alcohol and Drug Impairment, and Distracted Driving, we don't have data.

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

No

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

Caltrans has not completed any countermeasure effectiveness evaluations during the reporting period. Caltrans seldom conducts countermeasure effectiveness evaluations and typically refers to the CMF Clearinghouse for countermeasure effectiveness.

Project Effectiveness

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

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
09-INY-190 R65.9/R66.5	Rural Minor Arterial	Roadway	Roadway - other	2.00								2.00		8.35

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

The three year before/after evaluation does not take into consideration increases in traffic volumes. It is also a small sample size of projects which includes projects with countermeasures that often lead to an overall increase in the number of collisions but decrease in the severity of collisions. Such countermeasures include median barriers, traffic signals, and roundabouts. California is currently in the process of incorporating data driven safety analysis and Highway Safety Manual methodology which will assist in identifying future projects that will decrease the number of fatal and serious injury collisions.

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

Yes

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

Sub-programs such as multi-lane cross median collision monitoring program, 2&3-lane cross center-line collision monitoring program, and wrong way collision monitoring program have shown that from 2009 to 2014, the total number of collisions have been decreasing.

Compliance Assessment

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

09/01/2015

What are the years being covered by the current SHSP?

From: 2015 To: 2019

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

2019

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

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

	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
MIRE NAME (MIRE NO.)	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)	100	0								
Route/Street Name (9)	100	100								
Federal Aid/Route Type (21)	100	100								
Rural/Urban Designation (20)	100	100					100	100		
Surface Type (23)	100	10					100	10		
Begin Point Segment Descriptor (10)	100	100					100	100	100	100
End Point Segment Descriptor (11)	100	100					100	100	100	100
Segment Length (13)	100	100								
Direction of Inventory (18)	100	100								
Functional Class (19)	100	100					100	100	100	100
Median Type (54)	100	10								
Access Control (22)	100	100								

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
One/Two Way Operations (91)	100	50								
Number of Through Lanes (31)	100	100					100	100		
Average Annual Daily Traffic (79)	60	50					60	100		
AADT Year (80)	100	0								
Type of Governmental Ownership (4)	100	9					0	0	0	0
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			100	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						
Intersection/Junction Geometry (126)			50	0						
Intersection/Junction Traffic Control (131)			100	0						
AADT for Each Intersecting Road (79)			100	50						
AADT Year (80)			100	50						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	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)					100	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
Interchange Type (182)					100	0				
Ramp AADT (191)					60	0				
Year of Ramp AADT (192)					60	0				
Functional Class (19)					100	0				
Type of Governmental Ownership (4)					100	0				
Totals (Average Percent Complete):	**92.22**	**62.72**	**56.25**	**12.50**	**65.45**	**0.00**	**73.33**	**67.78**	**60.00**	**60.00**

*Based on Functional Classification

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

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.

California DOT will continue with its effort to continue collecting data and update MIRE Fundamental data elements annually to meet the requirement by September 30, 2026.

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	CHP 555 Collision Report Form	Yes	N/A	Yes	N/A	
Crash Report Form Instruction Manual	CHP 555 Instruction Manual	Yes	CHP 555 Instruction Manual	Yes	CHP 555 Instruction Manual	Yes
Crash Database	Statewide Integrated Traffic Record System (SWITRS)	Yes	N/A	Yes	N/A	
Crash Database Data Dictionary	Data Dictionary for SWITRS	Yes	Data Dictionary for SWITRS	Yes	Data Dictionary for SWITRS	Yes

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

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.

2021

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

Optional Attachments

Program Structure:

2017 STATE HSIP GUIDELINES FINAL.pdf

Project Implementation:

Q29-Projects-Listing-FY17-18-Final.xlsx
LOCAL_HSIP_ORT_Data_2018_Report.xlsx

Safety Performance:

Evaluation:

Q45-HSIP-Completed-Projects-3YR-Evaluation.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.