



LANE DEPARTURES

The Lane Departures Challenge Area focuses on identifying strategies to reduce instances of vehicles leaving the roadway or deviating from their lane of travel into oncoming traffic. This includes head-on, hit object, and overturned crashes as well as instances where a vehicle runs off the road or crosses into the opposing lane prior to the crash.

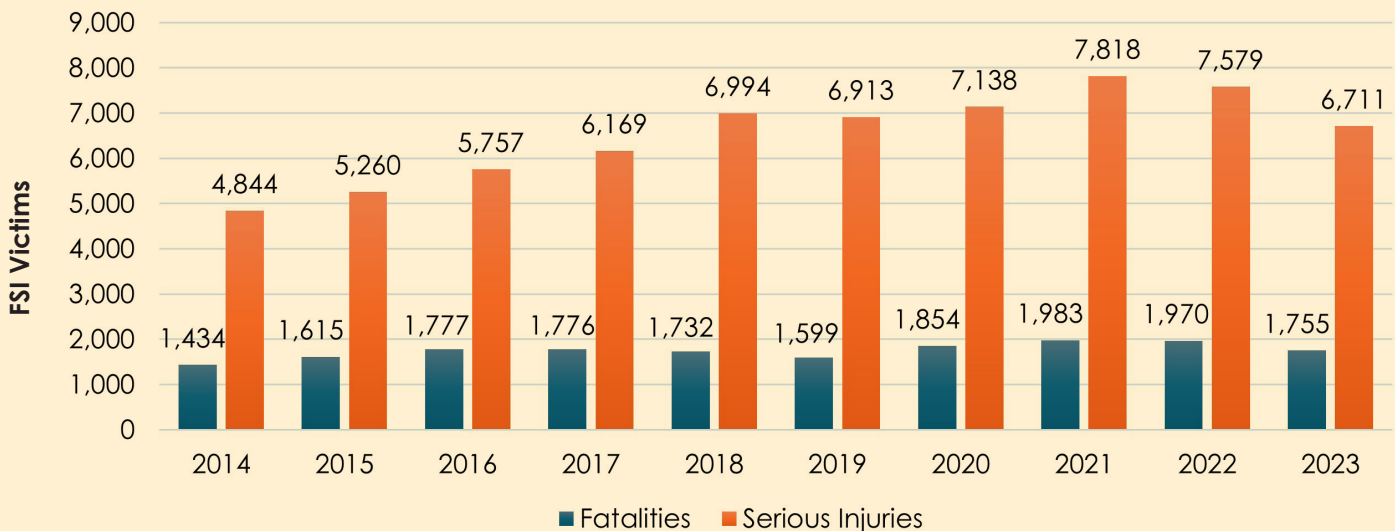
Defined as: All fatalities and serious injuries involved in a crash related to Lane Departures

Lane Departures Fatal and Serious Injury (FSI) Victims

82,678

43% of statewide FSI victims

FSI Victims by Year



Top Three Challenge Area Overlaps

Lane Departures FSI crashes also involve:



34%

Impaired Driving



31%

Driver Licensing*



28%

Speed Management/
Aggressive Driving

*Driver Licensing includes only fatal crashes (from FARS)

Crashes often involve more than one factor and overlap with multiple Challenge Areas. See related fact sheets for overlapping Challenge Areas, as addressing one Challenge Area can improve the safety outcomes of the others.

Share of FSI Victims: State Highways vs. Local Roads



45%
State
Highways

VS

55%
Local
Roads



Share of FSI Victims: Rural vs. Urban Roads¹



46%
Rural
Roads

VS

54%
Urban
Roads



Source: All crash data is from Statewide Integrated Reporting System (SWITRS) 2014–2023 unless otherwise noted.

1. Rural and urban data determined by 2020 US Census "Urban Areas" dataset. FSI crashes with unknown geolocation were excluded.

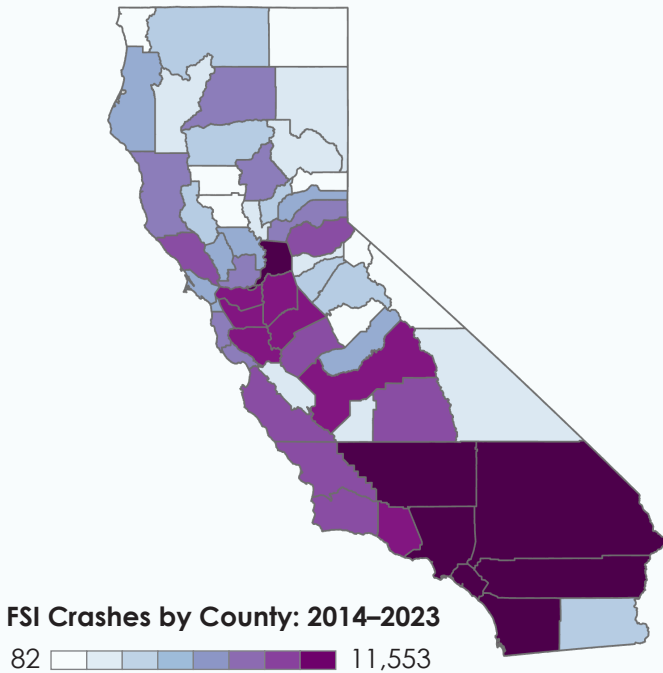
For more information,
visit the SHSP Crash
Data Dashboard:





FSI Crash Frequency and FSI Crash Rate by County

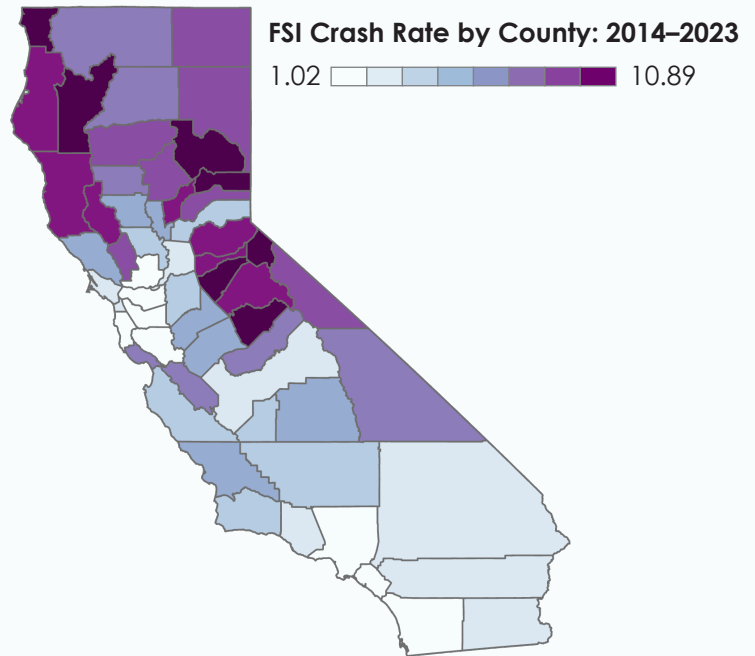
FSI Crash Frequency



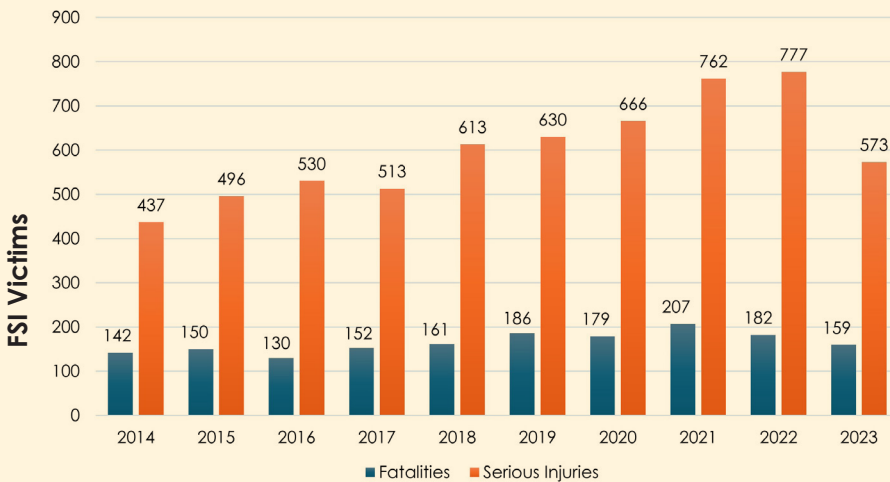
DVMT Source: Highway Performance Monitoring System

FSI Crash Rate

FSI Crashes per HMVMT (Hundred Million Vehicle Miles Traveled)



Yearly Trend for FSI Victims in Tribal Areas^{1,2}



Lane Departures make up **55%** of tribal area FSI victims.

Since 2014, FSI victims in tribal areas increased by **52%**, versus the overall statewide increase of **24%**.

Source: All crash data is from SWITRS (2014–2023) unless otherwise noted.

1. Tribal boundaries provided by University of California, Berkeley's Safe Transportation Research and Education Center.

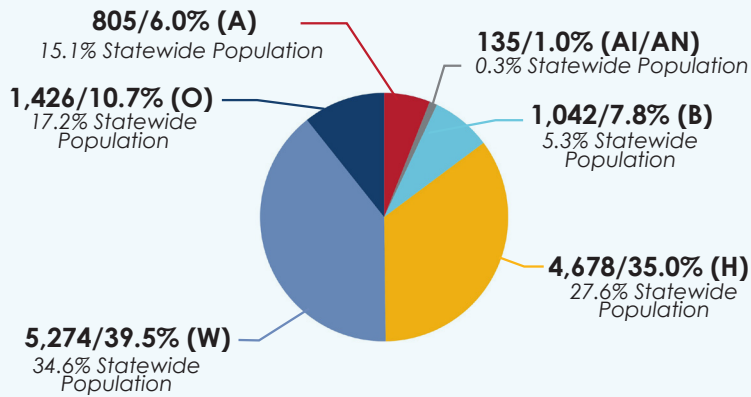
2. Tribal areas defined as areas within 5 miles of tribal boundaries.



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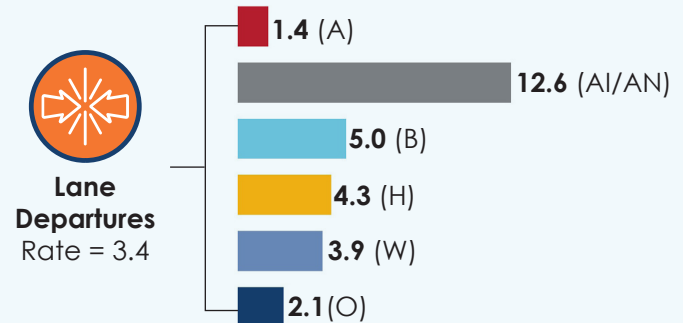
Race/Ethnicity in Traffic Fatalities

Distribution of California Traffic Fatalities by Race/Ethnicity



Fatality Rate by Race/Ethnicity

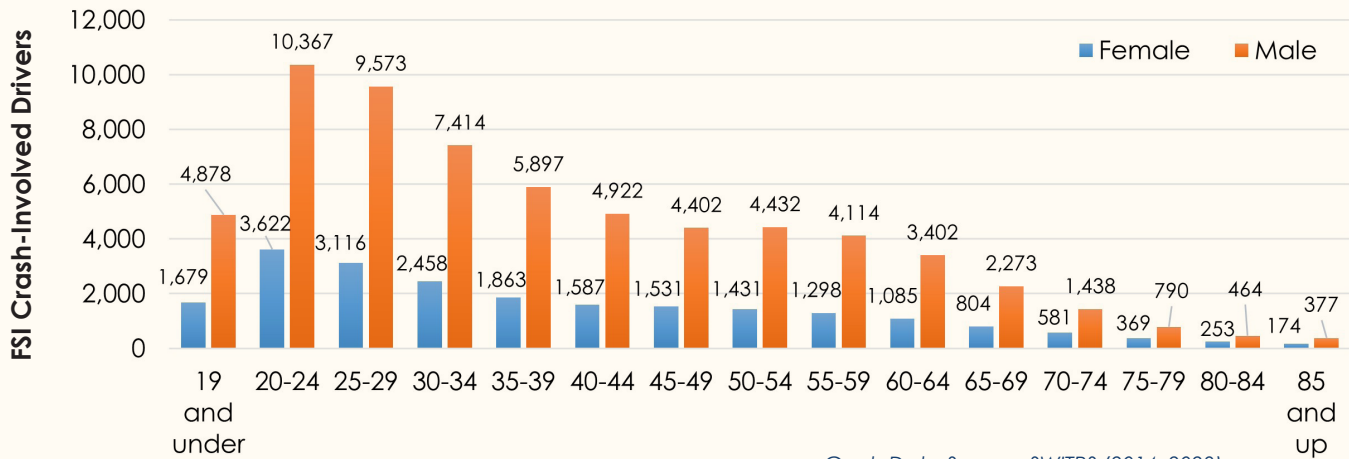
(Fatality Rate per 100,000 Population)



Asian (A) American Indian/Alaskan Native (AI/AN) Black (B) Hispanic (H) White (W) Other (O)

Comparison of Crash-Involved Drivers by Age and Sex

Male drivers are **3x** as likely to be involved in a Lane Departures FSI crash



Crash Data Source: SWITRS (2014–2023)

Income Impact in Traffic Fatalities^{1,2,3}

Increased Rate of Fatalities in Disadvantaged Communities Versus Non-Disadvantaged Communities

Statewide
Fatalities



40%
Higher

Lane Departures
Fatalities



32%
Higher

1. Income data is available for the Census Tracts where a traffic fatality occurs and not the individual (i.e. this data represents the income information of the Census Tracts where the crash occurred and not the income of the crash victim).

2. Disadvantaged communities were determined using 2023 ACS 5-Year estimate data for median household income at Census Tract level. The 2023 ACS 5-Year Estimate data was used to determine fatality rates per 100,000 population.

3. Assembly Bill 1550 stipulates that 80% of statewide median household income to be used as threshold for disadvantaged communities. 2023 threshold is \$77,067.

Source: US Census Bureau 2023 ACS 5-Year Estimate data and FARS 2014–2023 unless otherwise noted



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Top Three Crash Types*



52%
Hit Object



23%
Head-On



21%
Overturned

Top Three Primary Crash Factors*



33%
Improper
Turning



27%
Under the
Influence



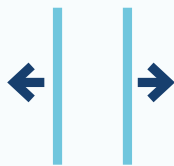
19%
Unsafe Speed

Potential Countermeasures to Mitigate Lane Departures FSI Crashes

These countermeasures have been selected as data-backed strategies to improve traffic safety within the Lane Departures Challenge Area. See related fact sheets for overlapping Challenge Areas, as addressing one Challenge Area can improve the safety outcomes of other Challenge Areas.



Rumble Strips^{1,3}



Wider Edge Lines¹



Median Barriers^{1,3}



**Curve Advance
Warning Signage^{1,3}**



**GDL
Intermediate License
Nighttime
Restrictions²**



**Communications
and Outreach on
Drowsy Driving²**



**Retroreflective
Chevron Signs at
Curves^{1,3}**



**Guardrails and
Impact Attenuators
at Curves^{1,3}**

Countermeasure References and Resources

- [1. 28 Proven Safety Countermeasures, supported by Caltrans and FHWA](#)
- [2. NHTSA Countermeasures that Work, 2023](#)
- [3. Caltrans Local Roadway Safety Manual \(Version 1.7, April 2024\)](#)

Source: All crash data is from SWITRS unless otherwise noted.

*Percentages are calculated based on a total of 69,039 Lane Departures FSI crashes.