Berkeley SafeTREC
SAFE TRANSPORTATION RESEARCH AND EDUCATION CENTER

OTS CALIFORNIA OFFICE OF TRAFFIC SAFETY

TRAFFIC SAFETY FACTS

Speed-Related Crashes

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PROBLEM IDENTIFICATION AND DATA ANALYSIS

A speeding-related crash is defined as one where a driver is speeding, racing, driving too fast for the conditions, or driving in excess of the posted speed limit. In the United States, in 2020, over one in four (29.0 percent) fatalities involved speeding, a rate that increased after plateauing in the late 2010s, following a decline earlier in the decade. Speeding reduces a driver's ability to steer safely around curves or objects, reduces the amount of time a driver has to react to a dangerous situation, and extends safe stopping distances. Analyses presented in the police traffic services program area refer to speeding-related fatal and serious injuries.

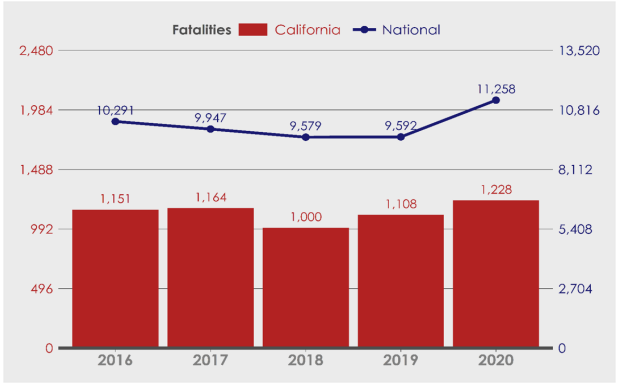
The United States Department of Transportation uses the Safe System Approach to work towards zero roadway fatalities and serious injuries. Reducing kinetic energy is central to the Safe System approach. The Safe System Approach recognizes human mistakes and vulnerabilities, and designs a system with many redundancies in place to protect everyone. Designing streets to limit the impact of kinetic energy transfer from speed-related crashes, as well as to protect people even when they make unsafe decisions, are examples of providing redundancies in the system to build forgiveness, limit speeding, and reduce fatal and serious injury.

KEY FINDINGS

NATIONAL DATA

- In the United States, there were 11, 258 people killed in a speeding-related traffic crash in 2020, a 17.4 percent increase from 9,592 in 2019. This is the highest number of speeding-related fatalities since 2008 (see Figure 1).
- Drivers involved in a fatal speeding-related crash were also more likely to engage in other risky behaviors compared to non-speeding drivers. Of all speeding drivers in fatal crashes, 39.1 percent had a BAC of .08 or higher compared to only 16.8 percent of non-speeding drivers involved in fatal crashes in 2020.
- In 2020, 54.4 percent of speeding passenger vehicle drivers involved in fatal crashes were known to be restrained, compared to 78.6 percent of non-speeding drivers.
- In 2020, 33.6 percent of motorcycle riders involved in fatal crashes were speeding, a larger proportion than any other vehicle type.

Figure 1: Speed-Related Fatality Trends, Nationwide and California, 2016-2020



Source: FARS 2016 – 2019 Final File, 2020 ARF

- According to AAA's 2020 Traffic Safety Culture Index report, about half (45.1 percent) of drivers reported driving 15 mph over the speed limit on freeways and about one-third (35.3 percent) reported driving 10 mph over the speed limit on residential streets in the past 30 days. This self-reported behavior differed from respondents' beliefs about social disapproval of speeding. In response, 83.5 percent of drivers believed that people important to them would somewhat or completely disapprove of speeding by more than 15 miles per hour (mph) on a freeway, and 91 percent believed that people important to them would somewhat or completely disapprove of speeding by over 10 mph on a residential street.

CALIFORNIA DATA

- In California, there were 1,228 people killed in speeding-related traffic crashes in 2020, a 10.8 percent increase from 1,108 in 2019, and a 6.7 percent increase from 1,151 in 2016.
- In 2020, 31.9 percent of California's 3,847 motor vehicle fatalities were speeding-related.
- The 2021 OTS Traffic Safety Survey reported that 32.8 percent of drivers surveyed perceive that it is safe to drive 10 mph over the speed limit on freeways; this is a significant decrease from 35.9 in 2020 ($p<.05$). When asked about the safety of driving 5 mph over the speed limit in a residential area, 23.5 percent of drivers surveyed believe it is safe; this is not significantly different from 25.6 percent in 2020.. The survey also found "speeding and aggressive driving" was the second-most commonly mentioned safety problem on California roadways, comprising 18.8 percent of responses. Speeding and aggressive driving has been among the top three concerns consistently since 2010.

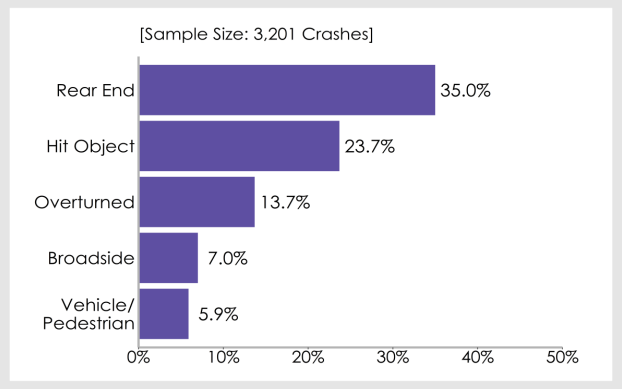
State-level Analysis

The figures in this section refer to drivers, passengers, bicyclists, and pedestrians fatally or seriously injured in a speeding-related crash in California in 2020. These numbers are the products of UCB SafeTREC analysis.

Speeding-Related Fatal and Serious Injury Crashes by County

- The highest number of speeding-related fatal injuries were in Fresno, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Joaquin counties (see Figure 3). The highest rate of speeding-related fatal injuries per population were concentrated in more rural parts of California in Calaveras, Del Norte, Lassen, Modoc, Plumas, Sierra, and Trinity counties.
- Serious injuries followed a similar pattern. The highest number of speeding-related serious injuries were in Alameda, Los Angeles, Orange, Riverside, Sacramento, San Bernardino, San Diego, and Santa Clara counties. The highest rate of speeding-related serious injuries per population were concentrated in more rural parts of California in Alpine, Del Norte, Inyo, Modoc, Mono, Sierra, Siskiyou, and Trinity counties.

Figure 2: Top Five Crash Types for Speed-Related Fatal and Serious Injury Victims, California, 2016-2020



Source: Provisional SWITRS 2020

Primary Crash Factors for Speeding-Related Fatal and Serious Injury Crashes

- This program area is defined by crashes in which drivers are speeding; therefore, 100 percent of the crashes in this program area had a primary crash factor of unsafe speed .

Crash Types for Speeding-Related Fatal and Serious Injury Crashes

- Over one-third (35.0 percent) of speeding-related crashes were rear end crashes. Other common crash types for speeding-related crashes were hitting an object at 23.7 percent and overturned vehicle at 13.7 percent (See Figure 2).

Time and Day of Speeding-Related Fatal and Serious Injuries

- Over half (51.6 percent) of fatal injuries from speeding occurred between 6 PM and 3 AM. About one-third (36.3 percent) of fatal and serious injuries occurred on weekends. The peak period was 6 PM to 9 PM on Friday evening, with 45 fatal injuries, 3.7 percent of the total.
- Serious injuries seem to be concentrated earlier in the day. Over half (54.0 percent) of serious injuries from speeding occurred between noon and 9 PM. About one-third (35.2 percent) of fatal and serious injuries occurred on weekends. The peak period was 3 PM to 6 PM on Sunday evening, with 111 serious injuries, 3.6 percent of the total.

CALIFORNIA DATA

Speeding-Related Fatal and Serious Injury Crash Victim Demographics

- Just over three-quarters (77.5 percent) of fatally injured speeding-related crash victims were males. About half (50.4 percent) of all fatal and seriously injured speeding-related crash victims were aged 15 to 34.
- Serious injury demographics were very similar. About three-quarters (73.1 percent) of seriously injured speeding-related crash victims were males. Just under half (49.0 percent) of all fatal and seriously injured speeding-related crash victims were aged 15 to 34.
- Race was not reported for 39.1 percent of the speeding-related fatalities. Of the 748 fatalities with a known race, 77.3 percent (or 578) were white.

Crash Location of Speeding-Related Fatal Injury Crash Victims

- About three-quarters (73.7 percent) of speeding-related fatalities occurred in urban areas compared to 26.1 percent on rural roads. However only about 18.5 percent of travel took place on rural roads in 2020.
- Over one-third (38.5 percent) of all speeding-related fatalities occurred on non-interstate principal arterials. The next most common locations for speeding-related fatalities were non-interstate minor arterials at 24.5 percent, interstates at 15.5 percent, and non-interstate collectors at 13.4 percent.

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COUNTY TABLE: SPEED-RELATED CRASHES

Figure 3: Speeding-Related Fatalities and Serious Injuries, by Number and Rate, 2020

County	Population	Fatalities	Serious Injuries	Fatal & Serious Injuries (FSI)	FSI per 100K Population
Alameda	1,681,700	31	100	131	7.79
Alpine	1,199	0	2	2	166.81
Amador	40,506	3	7	10	24.69
Butte	211,216	13	21	34	16.10
Calaveras	45,277	4	9	13	28.71
Colusa	21,826	0	3	3	13.75
Contra Costa	1,166,669	34	81	115	9.86
Del Norte	27,745	3	13	16	57.67
El Dorado	191,282	10	25	35	18.30
Fresno	1,008,860	51	73	124	12.29
Glenn	28,822	1	2	3	10.41
Humboldt	136,514	4	22	26	19.05
Imperial	178,537	9	13	22	12.32
Inyo	18,977	0	8	8	42.16
Kern	907,021	62	75	137	15.10
Kings	153,085	3	9	12	7.84
Lake	68,099	1	17	18	26.43
Lassen	32,025	4	5	9	28.10
Los Angeles	10,012,474	269	765	1,034	10.33
Madera	156,519	7	24	31	19.81
Marin	262,410	3	37	40	15.24
Mariposa	17,123	0	1	1	5.84
Mendocino	91,602	6	17	23	25.11
Merced	280,873	10	32	42	14.95
Modoc	8,703	2	8	10	114.90
Mono	13,185	1	5	6	45.51
Monterey	439,008	15	39	54	12.30
Napa	138,433	5	17	22	15.89
Nevada	102,392	4	19	23	22.46
Orange	3,184,513	56	143	199	6.25
Placer	405,308	12	39	51	12.58
Plumas	19,666	2	5	7	35.59
Riverside	2,421,480	97	178	275	11.36
Sacramento	1,585,666	34	117	151	9.52
San Benito	64,110	2	4	6	9.36
San Bernardino	2,181,983	126	244	370	16.96
San Diego	3,303,736	91	187	278	8.42
San Francisco	870,985	15	46	61	7.00
San Joaquin	780,676	41	84	125	16.01
San Luis Obispo	282,996	12	15	27	9.54
San Mateo	763,497	11	43	54	7.07
Santa Barbara	448,659	10	24	34	7.58
Santa Clara	1,933,516	34	110	144	7.45
Santa Cruz	272,360	6	25	31	11.38
Shasta	181,881	12	27	39	21.44
Sierra	3,233	1	5	6	185.59
Siskiyou	44,091	1	12	13	29.48
Solano	453,405	11	45	56	12.35
Sonoma	489,880	9	41	50	10.21
Stanislaus	553,995	17	46	63	11.37
Sutter	100,751	4	12	16	15.88
Tehama	65,643	3	7	10	15.23
Trinity	16,135	2	6	8	49.58
Tulare	473,482	31	35	66	13.94
Tuolumne	55,500	1	2	3	5.41
Ventura	844,545	19	56	75	8.88
Yolo	216,544	8	29	37	17.09
Yuba	81,468	5	11	16	19.64
Total	**39,541,786**	**1,228**	**3,047**	**4,275**	**10.81**

Source: FARS ARF 2020; Provisional SWITRS 2020; California Department of Finance 2021.

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