

## TRAFFIC SAFETY FACTS

# Bicycle Safety

—Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper—

## INTRODUCTION

Bicycling is becoming more popular across the country, for commuting, exercise, and leisure. However, in the event of a traffic crash between a motor vehicle and a bicyclist, the bicyclist is the more vulnerable party and more likely to be injured or killed than a motor vehicle occupant. In 2019, there were 846 bicyclists killed in a traffic crash in the United States. In citing concern about the level of bicycle fatalities, the Governors Highway Safety Association (GHSA) identified key recommendations for improving safety, including collection of better crash data, increased training for law enforcement to understand laws designed to protect bicyclists, partnerships with bicycling and community organizations regarding safety messaging and public education campaigns about infrastructure improvements.

Historically, road safety efforts focused on changing human behaviors to prevent crashes. The Safe System approach reframes efforts to save lives by expecting crashes to happen and focusing attention on reducing the severity of injuries when a crash occurs. By understanding the nuances of bicycle crashes, transportation professionals can better address every aspect of crash risks and implement multiple layers of protection to ensure that everyone traveling on California roadways will go safely. Analyses presented in the bicycling program area include fatal and serious injuries to bicyclists, other cyclists, and passengers on bicycles. Bicycle crashes are defined as crashes where one or more victims is a bicyclist, other cyclist, or bicycling passenger.

## KEY FINDINGS

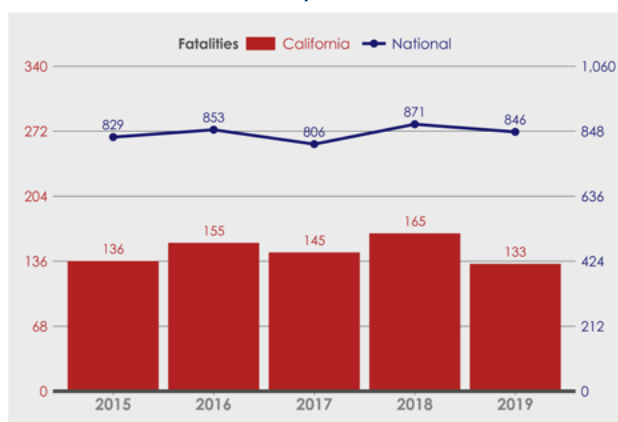
### NATIONAL DATA

- Bicycling fatalities decreased 2.9 percent from 871 in 2018 to 846 in 2019 (see Figure 1).
- Bicycle fatalities represented 2.3 percent of the total number of traffic fatalities in 2019.
- In 2018, 19.5 percent of bicyclists killed in a traffic crash had a BAC of .08 g/dL or higher. Bicycling fatalities in alcohol-impaired driving crashes increased 9.2 percent from 2017 to 2018.

### CALIFORNIA DATA

- In California, bicycle fatalities decreased 19.4 percent from 165 fatalities in 2018 to 133 fatalities in 2019.
- Bicycle fatalities represented 3.7 percent of the total number of traffic fatalities in 2019 in California.
- In 2018, 16.8 percent of bicyclists killed in a traffic crash had a BAC of .08 g/dL or higher.
- Bicyclists are required to follow the California Vehicle Code while riding on California roadways. Unless prohibited, bicyclists are allowed to ride in travel lanes. In the 2020 California Traffic Safety Survey, only 63.0 percent of drivers surveyed believed it is legal for bicyclists to ride on roadways when there is not a bicycle lane present, a significant reduction ( $p < 0.01$ ) from 80.2 percent in 2019.

Figure 1: Bicycling Fatality Trends, Nationwide and California, 2015-2019



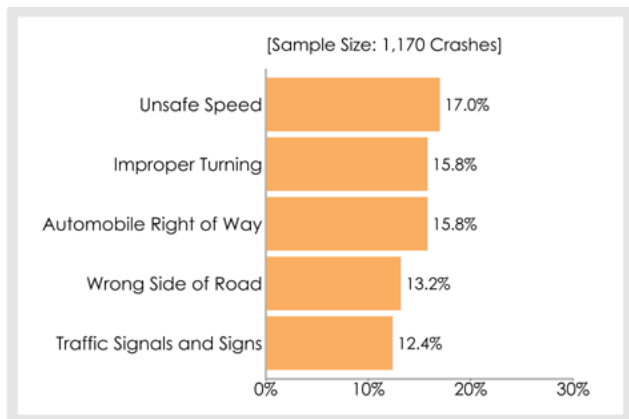
Source: FARS 2015-2018, FARS ARF 2019

**CALIFORNIA DATA** (continued)

**Fatal and Serious Injury Bicycle Crashes by County**

- Bicycle fatal and serious injuries were highest in densely populated areas of the state (see Figure 4). Los Angeles County had the highest number of fatal and serious injuries. The counties of Orange, San Diego, Sacramento, Alameda, Santa Clara, San Francisco, and San Joaquin also had relatively high numbers.
- Rates of bicycle fatal and serious injuries per population were highest in Del Norte and Plumas counties, followed by Santa Cruz, Tuolumne, Mono, Santa Barbara, and Humboldt counties.
- Six counties reported no bicycle fatal or serious injuries: Alpine, Lassen, Mariposa, Modoc, Sierra, and Trinity counties. An additional 18 counties reported three or fewer bicycle fatal and serious injuries.

**Figure 2: Top Five Primary Crash Factors for Bicycling Fatal and Serious Injury Crashes, California, 2019**



Source: Provisional SWITRS 2019

**Primary Crash Factors of Bicycling Fatal and Serious Injury Crashes**

- Primary crash factors (PCF) varied considerably for bicycling fatal and serious injury crashes. The three top PCFs were unsafe speed at 17.0 percent followed by improper turning and automobile right of way both at 15.8 percent. Wrong side of road and traffic signals and signs were the next two most common PCFs, at 13.2 and 12.4 percent, respectively (see Figure 2).

**Crash Types for Bicycling Fatal and Serious Injury Crashes**

- The top two bicycling fatal and serious injury crash types were broadside (29.4 percent) followed by non-specified "other" crashes (29.0 percent).

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**Figure 3: Time of Day and Day of Week for Bicycling Fatal and Serious Injury Victims, California, 2019**

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
Midnight-3AM	3	4	9	5	5	8	16	50 [4.3%]
3-6AM	6	3	8	11	7	3	3	41 [3.5%]
6-9AM	20	29	32	29	26	15	12	163 [14.0%]
9AM-Noon	21	14	20	19	24	40	31	169 [14.6%]
Noon-3PM	22	18	16	17	25	30	28	156 [13.4%]
3-6PM	26	35	30	37	35	29	19	211 [18.2%]
6-9PM	35	41	32	38	43	17	34	240 [20.7%]
9PM-Midnight	21	17	14	15	24	30	9	130 [11.2%]
Unknown	0	0	0	0	0	1	0	1 [0.1%]
TOTAL	154 [13.3%]	161 [13.9%]	161 [13.9%]	171 [14.7%]	189 [16.3%]	173 [14.9%]	152 [13.1%]	1,161 [100.0%]

FSI Num+% 0 1-5 6-15 16-21 22-30 31-43

Source: FARS ARF 2019, Provisional SWITRS 2019

**Time and Day of Bicycling Fatal and Serious Injuries**

- The time of day when the highest number of bicycle fatal and serious injuries occurred was between 3pm and 9pm (38.8 percent). Fridays had a slightly elevated number of crashes accounting for 16.3 percent of bicycle fatal and serious injuries (see Figure 3).

**Bicycling Fatal and Serious Injury Victim Demographics**

- More male (84.7 percent) than female (15.3 percent) bicyclists sustained fatal and serious injuries in 2019.
- The bicyclists most likely to be fatally or seriously injured were middle aged, especially those aged 55 to 64 (18.4 percent) and those aged 45 to 54 (17.8 percent). Younger adults, aged 25 to 34 and 35 to 44, also experienced higher levels of injury at about 16.0 percent for both age groups.
- Race was unknown in FARS for 30.8 percent, or 41 of the bicyclist fatalities. Of the 92 fatalities with a known race, about 83.7 percent (or 77) were white.

**Crash Location for Bicycling Victims**

- Over four in five bicyclist fatalities (85.7 percent) occurred in urban areas compared to 14.3 percent in rural areas.
- Nearly half (46.6 percent) of all bicyclist fatalities occurred on non-interstate principal arterials, followed by minor arterials (24.8 percent), local roads (13.5 percent), and collectors (12.0 percent).

- National Center for Statistics and Analysis. (2020, July). Bicyclists and Other Cyclists: 2018 Data (Report No. DOT HS 812 884). Washington, DC: National Highway Traffic Safety Administration.
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### COUNTY TABLE: BICYCLE SAFETY

Figure 4: Bicycle Fatalities and Serious Injuries, by Number and Rate, 2019

County	Population	Fatalities	Serious Injuries	Fatal & Serious Injuries (FSI)	FSI per 100K Population
Alameda	1,668,965	3	56	59	3.54
Alpine	1,123	0	0	0	0.00
Amador	37,724	0	1	1	2.65
Butte	214,532	0	11	11	5.13
Calaveras	44,403	0	1	1	2.25
Colusa	22,045	1	0	1	4.54
Contra Costa	1,147,269	2	27	29	2.53
Del Norte	27,207	0	3	3	11.03
El Dorado	188,818	0	6	6	3.18
Fresno	1,018,437	7	4	11	1.08
Glenn	29,072	1	0	1	3.44
Humboldt	133,820	0	8	8	5.98
Imperial	188,962	2	6	8	4.23
Inyo	18,463	0	1	1	5.42
Kern	909,697	8	15	23	2.53
Kings	153,522	0	2	2	1.30
Lake	64,080	0	1	1	1.56
Lassen	28,972	0	0	0	0.00
Los Angeles	10,210,966	36	241	277	2.71
Madera	157,686	1	2	3	1.90
Marin	260,969	1	14	15	5.75
Mariposa	17,842	0	0	0	0.00
Mendocino	88,125	1	1	2	2.27
Merced	281,592	1	12	13	4.62
Modoc	9,458	0	0	0	0.00
Mono	13,585	1	0	1	7.36
Monterey	443,397	1	7	8	1.80
Napa	139,874	0	7	7	5.00
Nevada	97,808	0	1	1	1.02
Orange	3,195,197	9	80	89	2.79
Placer	394,626	0	9	9	2.28
Plumas	18,450	0	2	2	10.84
Riverside	2,428,464	4	30	34	1.40
Sacramento	1,548,760	6	59	65	4.20
San Benito	62,051	0	1	1	1.61
San Bernardino	2,176,150	7	24	31	1.43
San Diego	3,346,937	8	63	71	2.12
San Francisco	897,114	1	51	52	5.80
San Joaquin	767,935	8	31	39	5.08
San Luis Obispo	277,276	0	11	11	3.97
San Mateo	776,002	1	32	33	4.25
Santa Barbara	452,066	1	30	31	6.86
Santa Clara	1,960,932	5	49	54	2.75
Santa Cruz	272,185	2	23	25	9.19
Shasta	177,620	1	7	8	4.50
Sierra	3,127	0	0	0	0.00
Siskiyou	44,000	0	1	1	2.27
Solano	439,990	1	9	10	2.27
Sonoma	495,058	3	24	27	5.45
Stanislaus	554,212	3	16	19	3.43
Sutter	102,808	0	1	1	0.97
Tehama	65,163	0	1	1	1.53
Trinity	13,374	0	0	0	0.00
Tulare	477,731	2	11	13	2.72
Tuolumne	52,557	1	3	4	7.61
Ventura	844,213	3	20	23	2.72
Yolo	220,723	1	10	11	4.98
Yuba	78,061	0	3	3	3.84
<b>Total</b>	<b>39,761,195</b>	<b>133</b>	<b>1,028</b>	<b>1,161</b>	<b>2.92</b>

Source: FARS ARF 2019, Provisional SWITRS 2019, California Department of Finance 2020

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