



## **CALIFORNIA SPEEDING AND AGGRESSIVE DRIVING STUDY 2019**

### **DATA ANALYSIS AND COMPARISON WITH 2015 SURVEY DATA RESULTS**

Conducted on Behalf of

The California Highway Patrol (CHP) and Safe Transportation  
Research and Education Center - University of California,  
Berkeley (SafeTREC)

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## TABLE OF CONTENTS

SUMMARY OF FINDINGS.....	3
I. INTRODUCTION.....	4
II. METHODS.....	4
SAMPLE FRAME.....	4
DIVISION VARIABLE.....	4
III. RESULTS.....	6
SURVEY COMPLETES BY DIVISION AND COUNTY.....	6
RESPONDENT DEMOGRAPHICS .....	7
DRIVING FREQUENCY BY DIVISION (Q1) .....	8
SPEED DIFFERENTIAL ON FREEWAYS (Q2, Q3) .....	8
DEFINITION AND PERCEPTION OF “SPEEDING” ON FREEWAYS (Q4, Q5).....	9
NEGATIVE CONSEQUENCES OF “SPEEDING” ON FREEWAYS (Q6, Q7, Q8).....	10
SPEED DIFFERENTIAL ON RESIDENTIAL ROADS (Q9) .....	11
NEGATIVE CONSEQUENCES OF “SPEEDING” ON RESIDENTIAL ROADS (Q10) .....	11
PERCEPTION OF “SPEEDING” ON RESIDENTIAL ROADS (Q11).....	13
DEFINITION AND PERCEPTION OF “AGGRESSIVE DRIVING” (Q12, Q13, Q14).....	13
NEGATIVE CONSEQUENCES OF “AGGRESSIVE DRIVING” (Q15) .....	16
SPEEDING AND AGGRESSIVE DRIVING (Q16).....	16

## SUMMARY OF FINDINGS

### Driving frequency

- In 2019, majority of drivers surveyed, 58.1%, said that they drive on a freeway “6-7 days a week” a significant 7.8% increase since 2015 (Table Q1\_1).

### Speed differential on freeways

- Over two-thirds of drivers, 68.4%, have driven 10 miles per hour over the speed limit on freeways, a decrease of 4.2% from 2015 (Table Q2\_1).
- 19.5% of drivers have driven 20 miles per hour over the speed limit on freeways, compared to 22.7% in 2015. (Table Q3\_1).

### Definition and perception of speeding on freeways

- Similar to 2015, 46.0% of drivers define speeding as “Going faster than speed limit” (Table Q4\_2).
- 22.3% of Northern and Golden Gate region drivers state speeding to be “Not a problem at all”, which was significantly higher than the perception in the other three regions, which ranged from 4.2% to 13.0% (Table Q5\_1).

### Negative consequences of speeding on freeways

- 32.1% of all respondents have seen a crash caused by speeding drivers in the past 12 months on California freeways, compared to 25.2% in 2015, a significant increase of 6.9% since 2015 (Table Q6\_1).
- 30.8% of all drivers surveyed have received a speeding ticket on a California freeway (Table Q6\_1).
- Drivers in the Inland and Border region and the Northern and Golden Gate region reported significantly higher instances of being ticketed than the Coastal and Southern region (Table Q7\_1).

### Speeding differential on residential roads

- 23.6% of drivers have driven 10 miles per hour over the speed limit on residential roads, a significant 6.4% decrease from 2015 (Table Q9\_1).
- 87.5% of drivers in the Inland and Border regions have not observed a crash by a speeding driver on a residential street, which is significantly less often than the other regions (Table Q10\_1).
- In 2019, 76.4% of all drivers believe that speeding on residential roads is a “Very big problem” or “Somewhat of a problem”, compared to 81.0% of all drivers in 2015, a significant 4.6% decrease (Table Q11\_1).

### Perception of “aggressive driving”

- All drivers interpret “aggressive driving” as “Failing to yield the right of way”, except drivers in the Northern and Golden Gate region, who stated “Making frequent lane changes” as indicative of aggressive driving (Table Q12\_3).

### Negative consequences of aggressive driving

- 33.2% confirmed that they have witnessed a crash involving aggressive driving behavior, compared to 27.3% of drivers in 2015, a significant increase of 5.9% (Table Q15\_1).

## I. INTRODUCTION

The Speeding and Aggressive Driving Study 2019 report describes the analysis results of second wave of a statewide California Public Opinion Survey on driver perceptions on speeding and aggressive driving on California roadways. The first wave of the Speeding and Aggressive Driving Study was implemented in 2015 and repeated with an updated sample frame for the 2019 wave. The study was conducted by Ewald & Wasserman Research Consultants (E&W) for the California Highway Patrol (CHP) and the Safe Transportation Research and Education Center (SafeTREC) at the University of California, Berkeley.

Objective was the surveying of a cross-sectional representative sample of California drivers and their perceptions and behaviors related to speeding and aggressive driving. Using in-person surveys at selected gas stations with an electronic data collection tool resulted in 1,526 completed intercept surveys in 21 selected counties and 67 site locations throughout the State of California. Survey data was collected from randomly selected California adult drivers in English or Spanish during the months of July and August, 2019.

## II. METHODS

### SAMPLE FRAME

The sample frame for the Speeding and Aggressive Driving Study 2019 was created in a multi-stage proportional random site selection based on the Daily Vehicle Miles Traveled (DVMT) on California roadways, using DVMT by county as the primary sampling units. The DVMT information was derived from the California Department of Transportation's Highway Performance Monitoring System (HPMS) 2017 California Public Road Data. The maintained daily vehicle miles traveled by jurisdictions and by county were summarized to create the overall main sample frame for the site selection.

Next, all counties in the State of California accounting for less than 2.0% each of the total DVMT in the State were excluded. In this process, 37 of California's 58 counties were removed, leaving the sample frame with 21 counties and jurisdictions.

### DIVISION VARIABLE

The geographic segmentation of the State of California for this data collection included four divisions, based on the CHP geographical organization of California counties and included "Northern and Golden Gate", "Valley and Central", "Coastal and Southern", and the "Inland and Border" divisions including the counties as listed in Table D1.

**Table D1. Four geographic divisions and respective counties**

Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border
Alameda	Stanislaus	Monterey	Orange
San Francisco	Fresno	Ventura	Riverside
Santa Clara	Tulare	Los Angeles	San Diego
San Mateo	Kern	--	San Bernardino
Solano	Sacramento	--	--
Sonoma	San Joaquin	--	--

Contra Costa	Placer	--	--
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The included counties accounted for 87.3% of the total California DMVT. The percentage of DMVT each county within a division contributed to that division, as well as the percentage of county-DMVT of the total statewide DMVT of included counties is shown in Table D2.

Also shown are the number of targeted intercepts by county, which were calculated proportionally as the percentage of DMVT that county contributed to the statewide total of DMVT of all counties included. Table D2 also includes the number of actual completes per county and division.

**Table D2. Four geographic divisions and DMVT of included counties**

	<b>% OF TOTAL DIVISION</b>	<b>% OF DMVT OF STATE</b>	<b>TARGETED COMPLETES</b>	<b>ACTUAL COMPLETES</b>
<b>Inland and Border Division</b>				
Orange	27.7%	9.2%	137	140
Riverside	20.8%	6.9%	104	111
San Diego	29.8%	9.9%	148	144
San Bernardino	21.7%	7.2%	108	113
<b>COMBINED DIVISION TOTAL</b>	<b>100.0%</b>	<b>33.1%</b>	<b>497</b>	<b>508</b>
	<b>% OF TOTAL DIVISION</b>	<b>% OF DMVT OF STATE</b>	<b>TARGETED COMPLETES</b>	<b>ACTUAL COMPLETES</b>
<b>Valley and Central Division</b>				
Stanislaus	8.7%	1.5%	22	22
Fresno	17.8%	3.0%	45	46
Tulare	7.9%	1.3%	20	19
Kern	18.4%	3.1%	46	48
Sacramento	26.1%	4.4%	65	69
San Joaquin	13.5%	2.3%	34	35
Placer	7.5%	1.3%	19	19
<b>COMBINED DIVISION TOTAL</b>	<b>100.0%</b>	<b>16.7%</b>	<b>250</b>	<b>258</b>
	<b>% OF TOTAL DIVISION</b>	<b>% OF DMVT OF STATE</b>	<b>TARGETED COMPLETES</b>	<b>ACTUAL COMPLETES</b>
<b>Coastal and Southern Division</b>				
Monterey	4.2%	1.3%	19	19
Ventura	7.4%	2.3%	34	35
Los Angeles	88.4%	27.0%	405	405
<b>COMBINED DIVISION TOTAL</b>	<b>100.0%</b>	<b>30.6%</b>	<b>458</b>	<b>459</b>
	<b>% OF TOTAL DIVISION</b>	<b>% OF DMVT OF STATE</b>	<b>TARGETED COMPLETES</b>	<b>ACTUAL COMPLETES</b>
<b>Northern and Golden Gate Division</b>				
Alameda	25.9%	5.1%	76	77
San Francisco	6.0%	1.2%	18	26
Santa Clara	25.7%	5.0%	76	76
San Mateo	11.6%	2.3%	34	35
Solano	8.4%	1.7%	25	29
Sonoma	7.5%	1.5%	22	22
Contra Costa	14.9%	2.9%	44	36

<b>COMBINED DIVISION TOTAL</b>	<b>100.0%</b>	<b>19.6%</b>	<b>294</b>	<b>301</b>
<b>STATEWIDE</b>	<b>--</b>	<b>100.0%-</b>	<b>1,500</b>	<b>1,526</b>

### III. RESULTS

The results in this report are based on a total of 1,526 completed intercept surveys with adult drivers, distributed among the four defined division within the state of California. All data presented includes only valid answers and excludes “Skipped” answers, which are the result of respondents wishing to skip a question or respondents not knowing an answer. The valid percentage of responses therefore differs for each question due to the number of valid answers given to a particular question and is reflected in the total number of completes listed in each table. Due to rounding to one decimal point, some percentages presented do not always add up to the exact value of 100.0%.

**Overall, 1,526 vehicle drivers were intercepted for the study, resulting in an overall confidence interval of +/- 2.51, at a confidence level of 95%.**

**Analysis note:** All significances mentioned refer to a two-tailed probability with the resulting value of “z” and a *p* value indicating the difference between the listed (and assumed independent) proportion of drivers interviewed in 2015 and 2019. Where applicable, calculations were adjusted for pairwise comparisons using the Bonferroni correction. Significant findings are highlighted in the tables and described in the text.

**Analysis note:** For multiple choice questions, a respondent may give more than one answer. The results shown, unless indicated otherwise, are calculated with the total number of answers given by all respondents as the denominator, for a column adding up to 100.0% and excluding responses of “Skip”.

### SURVEY COMPLETES BY DIVISION AND COUNTY

The completed intercepts by geographic division shows 301 completes in the “Northern and Golden Gate” Division, 258 in “Valley and Central”, 459 in “Coastal and Southern”, and the 508 in the “Inland and Border” division.

**Table D3. Completed intercepts by division**

<b>Division</b>	<b># completes</b>	<b>% completes</b>
Northern and Golden Gate	301	19.7%
Valley and Central	258	16.9%
Coastal and Southern	459	30.1%
Inland and Border	508	33.3%
<b>Total</b>	<b>1,526</b>	<b>100.0%</b>

Table D4 shows the number of completed intercept surveys by county and division.

**Table D4. Completed intercepts by division and county**

County	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border
Stanislaus	--	22	--	--
Fresno	--	46	--	--
Tulare	--	19	--	--
Kern	--	48	--	--
Sacramento	--	69	--	--
San Joaquin	--	35	--	--
Placer	--	19	--	--
Monterey	--	--	19	--
Ventura	--	--	35	--
Los Angeles	--	--	405	--
Alameda	77	--	--	--
San Francisco	26	--	--	--
Santa Clara	76	--	--	--
San Mateo	35	--	--	--
Solano	29	--	--	--
Sonoma	22	--	--	--
Contra Costa	36	--	--	--
Orange	--	--	--	140
Riverside	--	--	--	111
San Diego	--	--	--	144
San Bernardino	--	--	--	113
<b>Total</b>	<b>301</b>	<b>258</b>	<b>459</b>	<b>508</b>

## RESPONDENT DEMOGRAPHICS

The age and gender distribution of intercept respondents is shown in Table R1. The age variable was provided by the respondent; gender was coded by the field staff. Overall, the distribution of age and gender is comparable among the California regions.

**Table R1. Age and gender distribution by geographic regions**

Gender	Age Group	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total
Male	18-24	12.4%	15.2%	15.1%	9.4%	12.7%
	25-34	33.2%	21.3%	25.1%	28.1%	27.2%
	35-44	21.8%	15.9%	18.3%	25.9%	21.0%
	45-54	16.3%	22.6%	24.3%	21.6%	21.3%
	55-69	12.9%	19.5%	13.5%	12.6%	14.2%
	70 or older	3.5%	5.5%	3.6%	2.5%	3.6%
<b>Total</b>		<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Female	18-24	11.1%	19.8%	19.4%	9.3%	14.4%
	25-34	32.2%	15.4%	24.0%	27.0%	25.0%
	35-44	18.9%	20.9%	17.9%	24.8%	21.1%
	45-54	22.2%	25.3%	15.3%	20.4%	19.7%
	55-69	7.8%	9.9%	18.9%	15.5%	14.6%
	70 or older	7.8%	8.8%	4.6%	3.1%	5.1%
<b>Total</b>		<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## DRIVING FREQUENCY BY DIVISION (Q1)

The driving frequency question asked drivers how often they drove on a freeway in California with the answering options provided as outlined in Table Q1\_1. The majority of answers stated “6-7 days a week”, which was given by 58.1% of respondents. In comparison to 2015, the increase of 7.8% of driving “6-7 days a week” is significant ( $p < 0.00$ ).

**Table Q1 1. “About how often do you drive on a freeway in California?” by division**

Q1	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
6-7 days a week	58.8%	48.8%	52.0%	67.8%	58.1%	50.3%
3-5 days a week	19.3%	22.9%	28.0%	21.9%	23.4%	28.9%
1-2 times a week	14.0%	22.9%	11.9%	7.3%	12.6%	13.7%
Less than once a week	8.0%	5.4%	8.1%	3.0%	5.9%	7.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100%</b>	<b>100.0%</b>

## SPEED DIFFERENTIAL ON FREEWAYS (Q2, Q3)

Overall, 68.4% of all drivers stated to drive 10 or more miles over the speed limit while driving on a freeway, about 4.2% fewer drivers compared to 2015 ( $p = 0.01$ , Table Q2\_1). The differences between California regions in driving 10 miles over the speed limit in freeways range from 72.5% in the Northern and Golden Gate region to 65.4% in the Coastal and Southern region, but the difference is not significant.

**Table Q2 1. “Thinking about driving on a freeway, do you ever drive 10 miles over the speed limit?” by division**

Q2	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	72.5%	67.8%	65.4%	69.0%	68.4%	72.6%
No	27.5%	32.2%	34.6%	31.0%	31.6%	27.4%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100%</b>	<b>100.0%</b>

In response to the question if drivers ever drove 20 miles per hour over the speed limit on freeways, 19.5% stated that they did, ranging from 14.7% of drivers in the Inland and Border area to 23.5% of Northern and Golden Gate region drivers. Inland and Border region drivers drive significantly less often 20 miles over the speed limit on freeways compared to drivers in the Northern and Golden Gate and the Coastal and Southern region ( $p < 0.05$ ).

In comparison to 2015, overall significantly fewer drivers (19.5% in 2019 compared to 22.7% in 2015, a 3.2% reduction,  $p < 0.05$ ) drive 20 miles over the speed limit on freeways (Table Q3\_1).

**Table Q3 1. “Still thinking about driving on a freeway, do you ever drive 20 miles over the speed limit?” by division**

Q3	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	23.5%	19.0%	22.5%	14.7%	19.5%	22.7%
No	76.5%	81.0%	77.5%	85.3%	80.5%	77.3%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100%</b>	<b>100.0%</b>



## DEFINITION AND PERCEPTION OF “SPEEDING” ON FREEWAYS (Q4, Q5)

All drivers were asked to state their perception and the meaning of the term “speeding” in a multiple-choice question. The answers, including open-ended comments are shown in Table Q4\_1. All provided open-ended answers were coded into additional categories and are highlighted in the table below.

The answering option “Going so fast that it is unsafe” was amended to “Going so fast that it is unsafe/recklessness” to include open-ended comments stating reckless and dangerous driving.

**Table Q4 1. “In your opinion, what does “speeding” mean? “answering options**

Going faster than speed limit
Going faster than the rest of the traffic
Going so fast that it is unsafe
Other
Breaking traffic laws
More than 5mph over speed limit
More than 10mph over speed limit
More than 15mph over the speed limit
More than 20mph over the speed limit
Driving at any speed over 60mph

The combined responses by region and the comparison to the 2015 data are shown in Table Q4\_2. Similarly to the 2015 findings, the most prevalent opinion on the meaning of the term “speeding” given was “Going faster than speed limit”, with 46.0% of all answers, ranging from 43.1% in “Northern and Golden Gate” to 56.4% in the “Coastal and Southern” division.

**Table Q4 2. “In your opinion, what does “speeding” mean?” by division**

Q4	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Going faster than speed limit	43.1%	45.2%	56.4%	40.5%	46.0%	47.4%
Going faster than the rest of the traffic	19.4%	23.7%	15.0%	27.8%	22.3%	16.9%
Going so fast that it is unsafe/recklessness	19.4%	23.1%	17.1%	29.4%	23.5%	22.9%
Other	5.2%	1.2%	4.2%	0.8%	2.5%	1.8%
Breaking traffic laws	0.0%	0.0%	0.2%	0.4%	0.2%	1.0%
More than 5mph over speed limit	1.5%	1.6%	0.9%	0.0%	0.7%	1.7%
More than 10mph over speed limit	7.4%	2.8%	1.8%	0.4%	2.2%	3.6%
More than 15mph over the speed limit	0.9%	1.6%	0.4%	0.0%	0.5%	0.8%
More than 20mph over the speed limit	0.6%	0.9%	0.9%	0.1%	0.5%	1.9%
Driving at any speed over 60mph	2.5%	0.0%	3.2%	0.7%	1.5%	2.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

The subsequent question asked drivers about their perception of speeding causing problems on California freeways, with the results by division shown in Table Q5\_1. Overall, 73.3% of respondents stated that speeding is a “Very big problem”, or “Somewhat of a problem”, similarly to the 72.0% of drivers in 2015.

There are some differences in the distribution of answers between the regions. A total of 22.3% of Northern and Golden Gate region drivers state speeding to be “Not a problem at all”, which was significantly higher than the perception in the other three regions (ranging from 4.2% to 13.0%,  $p=0.00$ ).

**Table Q5\_1. “On California freeways do you think speeding is a...” by division**

Q5	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Very big problem	25.3%	26.4%	33.6%	24.5%	27.7%	37.0%
Somewhat of a problem	34.9%	43.3%	40.8%	57.1%	45.6%	35.0%
A small problem	17.5%	17.3%	17.1%	14.2%	16.3%	15.6%
Not a problem at all	22.3%	13.0%	8.5%	4.2%	10.5%	12.4%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100%</b>	<b>100.0%</b>

### NEGATIVE CONSEQUENCES OF “SPEEDING” ON FREEWAYS (Q6, Q7, Q8)

A total of 32.1% of all drivers stated that they have seen a crash caused by speeding drivers in the past 12 months on California freeways, compared to 25.2% of drivers asked in 2015 (Table Q6\_1). The increase of 6.9% since 2015 of drivers having witnessed a crash caused by speeding is significant ( $p=0.00$ ).

There are no significant differences between regions on that observation.

**Table Q6\_1. “In the past 12 months, have you witnessed a crash that involved a vehicle driver who you think was speeding on a freeway?” by division**

Q6	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	32.7%	28.9%	36.0%	30.1%	32.1%	25.2%
No	67.3%	71.1%	64.0%	69.9%	67.9%	74.8%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Combined, 30.8% of drivers surveyed stated to have received a speeding ticket on a California freeway, ranging from 22.7% in the Coastal and Southern region compared to 37.4% in the Inland and Border region and 32.0% in the Northern and Golden Gate region – a significant difference between the geographic areas ( $p=0.00$ , Table Q7\_1). In contrast, there has not been a significant change in the amount of tickets received since 2015.

**Table Q7\_1. “Have you ever received a speeding ticket on a California freeway?” by division**

Q7	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	32.0%	30.7%	22.7%	37.4%	30.8%	32.8%
No	68.0%	69.3%	77.3%	62.6%	69.2%	67.2%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Respondents who have received a speeding ticket on a California freeway were asked how much over the speeding limit the officer told them they were driving. The responses were converted into actual mileage,

with ranges provided coded as the mid-point of the provided range, and “Don’t know” answers were excluded from analysis (Table Q8\_1).

**Table Q8 1. “How much over the speed limit did the officer say you were traveling?” by division**

Q8	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Number of cases	88	73	72	136	369	495
Mean	15.4	16.1	12.5	14.6	14.7	15.2
Median	13.0	15.0	10.0	15.0	15.0	15.0
Minimum	5	6	5	10	5	2
Maximum	55	60	30	30	60	45

### SPEED DIFFERENTIAL ON RESIDENTIAL ROADS (Q9)

Drivers were asked if they ever drive 10 miles over the speed limit on residential roads, and 23.6% of all respondents stated that they have, ranging from 20.5% in the Northern and Golden Gate regions to 27.9% in the Valley and Central region, but without significant differences between the geographic areas.

The comparison between 2019 and 2015 results however show a 6.4% decrease in the frequency of driving 10 miles over the speed limit on residential roads (significant at  $p=0.00$ , Table Q9\_1).

**Table Q9 1. “Thinking about these residential roads, do you ever drive 10 miles over the speed limit?” by division**

Q9	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	20.5%	27.9%	25.8%	21.1%	23.6%	30.0%
No	79.5%	72.1%	74.2%	78.9%	76.4%	70.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

### NEGATIVE CONSEQUENCES OF “SPEEDING” ON RESIDENTIAL ROADS (Q10)

All intercepted drivers were also asked if they ever witnessed a crash involving a speeding driver on a residential road, and 20.4% of drivers confirmed this, a comparable finding to the 2015 survey results.

A comparison of the four geographic regions shows that 87.5% of drivers in the Inland and Border region have not observed a crash by a speeding driver on a residential street, which is significantly less often compared to all other regions ( $p=0.00$ , Table Q10\_1).

**Table Q10 1. “In the past 12 months, have you witnessed a crash that involved a vehicle driver who was speeding on a residential road?” by division**

Q10	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	29.6%	20.7%	23.2%	12.5%	20.4%	19.9%
No	70.4%	79.3%	76.8%	87.5%	79.6%	80.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>



## PERCEPTION OF “SPEEDING” ON RESIDENTIAL ROADS (Q11)

A total of 76.4% of all drivers believe that speeding on residential roads is a “Very big problem” or “Somewhat of a problem”, compared to 81.0% of all drivers in 2015. This 4.6% decrease in the perception of speeding on residential roads as a problem is significant at  $p=0.00$ .

The comparison between regions shows no differences in the perception of drivers for the combined responses of “Very big problem” or “Somewhat of a problem”. However, individually looking at the “Very big problem” responses and the “Somewhat of a problem” response does show some significant differences between the four geographic areas, with the Inland and Border region drivers less frequently stating that speeding on residential roads is a “Very big problem” compared to the other regions ( $p=0.00$ ).

**Table Q11 1. “On residential roads in California do you think speeding is a...” by division**

Q11	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Very big problem	47.4%	40.2%	37.3%	22.8%	34.9%	47.0%
Somewhat of a problem	28.7%	35.2%	40.7%	52.9%	41.5%	34.0%
A small problem	16.0%	16.0%	18.9%	22.6%	19.1%	13.4%
Not a problem at all	7.8%	8.6%	3.1%	1.8%	4.5%	5.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## DEFINITION AND PERCEPTION OF “AGGRESSIVE DRIVING” (Q12, Q13, Q14)

The question on the perceived definition of the term aggressive driving was asked in multiple choice format with an added open-ended comment. The additionally coded open-ended comments are highlighted in Table Q12\_1.

**Table Q12 1. “In your opinion, what does the term “aggressive driving” mean?” answering categories**

Speeding
Tailgating
Making frequent lane changes
Failing to yield the right of way
Express frustration/Aggression/Impatience (incl. gestures)
Doing other things while driving (read, eat, talk/text on phone)
Other
Failing to signal lane change
Unsafe passing (swerving, weaving, passing)
Failure to stop (red lights, stop signs, etc.)
Reckless driving
Not paying attention
Selfishness/lacking respect for others
Unsafe, dangerous driving, risk taking

Between the 1,526 respondents a total of 3,313 responses were provided for the multiple-choice question, including all answers that could be coded into the outlined answer categories. The most frequently mentioned definition of aggressive driving was “Failing to yield the right of way”, which was given by 679 drivers (46.4% of all drivers). The second most frequent answer was “Making frequent lane changes”, which was a definition provided by 635 drivers (43.4%). The third most frequently identified aggressive driving behavior was “Tailgating” with 605 drivers providing this answer (41.3%, Table Q12\_2),

**Table Q12 2. “In your opinion, what does the term “aggressive driving” mean?” combined answers**

Q12 combined	# of answers	% of answers	% of drivers
Failing to yield the right of way	679	20.5%	46.4%
Making frequent lane changes	635	19.2%	43.4%
Tailgating	605	18.3%	41.3%
Speeding	521	15.7%	35.6%
Express frustration/ Aggression/ Impatience (incl. gestures)	339	10.2%	23.2%
Doing other things while driving (read, eat, talk/text on phone)	173	5.2%	11.8%
Other	135	4.1%	9.2%
Selfishness/lacking respect for others	72	2.2%	4.9%
Failing to signal lane change	59	1.8%	4.0%
Unsafe/dangerous driving, risk taking	40	1.2%	2.7%
Reckless driving	22	0.7%	1.5%
Unsafe passing (swerving, weaving, passing)	15	0.5%	1.0%
Failure to stop (red lights, stop signs, etc.)	14	0.4%	1.0%
Not paying attention	4	0.1%	0.3%
<b>Total</b>	<b>3,313</b>	<b>100.0%</b>	<b>226.3%</b>

The combined answers to Q12 by geographic region are shown in Table Q12\_3, with the most frequently given answer in each division is highlighted. In all regions, except in the Northern and Golden Gate division, “Failing to yield the right of way” was the most common response, with the highest percentage in the “Inland and Border” division, accounting for 22.1% of all answers. By contrast, in the Northern and Golden Gate division, “Failing to yield the right of way” was the second most common response, while “Making frequent lane changes” was the most common definition of the term aggressive driving.

**Table Q12 3. “In your opinion, what does the term “aggressive driving” mean?” by division**

Q12	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border
Failing to yield the right of way	16.5%	22.2%	19.5%	22.1%
Tailgating	15.2%	16.6%	15.9%	21.9%
Making frequent lane changes	17.5%	19.5%	18.7%	20.0%
Speeding	15.4%	15.5%	15.5%	16.1%
Express frustration/ Aggression/ Impatience (incl. gestures)	11.8%	5.8%	12.3%	10.0%
Doing other things while driving (read, eat, talk/text on phone)	2.3%	5.3%	4.7%	6.7%
Other	7.4%	6.4%	4.5%	1.5%
Failing to signal lane change	1.9%	2.6%	2.8%	0.7%
Selfishness/lacking respect for others	4.6%	2.7%	2.9%	0.5%
Unsafe/dangerous driving, risk taking	3.8%	1.5%	1.0%	0.2%
Failure to stop (red lights, stop signs, etc.)	1.3%	0.0%	0.5%	0.2%
Not paying attention	0.0%	0.0%	0.2%	0.2%
Unsafe passing (swerving, weaving, passing)	1.1%	1.3%	0.2%	0.0%
Reckless driving	1.1%	0.7%	1.3%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

The response to the follow-up question on how many drivers respondents see displaying “aggressive driving behavior” in an average week, is shown in Table Q13\_1. Overall, the mean number of drivers showing “aggressive driving behavior” was 16.08 in an average week, ranging from 24.05 in the Northern and Golden Gate region to 9.67 in the Inland and Border region.

**Table Q13\_1. “How many drivers do you see displaying one or more “aggressive driving behavior” in an average week?” by division**

Q13	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Number of cases	285	232	193	374	1,084	1,570
Mean	24.1	16.7	15.9	9.7	16.1	15.2
Median	7.0	10.0	7.0	5.0	5.5	5.0
Minimum	0	0	1	0	0	0
Maximum	1,000	100	100	100	1,000	1,000

The type of specific aggressive driving behaviors by geographic region is shown in Table Q14\_1 with the most frequent answer per region highlighted. In the Northern and Golden Gate division, “Making frequent lane changes” was the most frequently given response as to the specific behavior observed among the aggressive driving, with 23.1% of all mentions. In all three other divisions, “Failing to yield the right of way” was the most frequently mentioned aggressive behavior, with 26.8% of all answers by drivers in the Valley and Central region, 24.5% of answers by Coastal and Southern division drivers and 22.3% of Inland Border drivers.

**Table Q14\_1. “What type of ‘aggressive driving’ or specific behavior do you typically observe in those drivers?” by division**

Q14	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border
Failing to yield the right of way (cutting others off)	19.8%	26.8%	24.5%	22.3%
Making frequent lane changes	23.1%	22.3%	18.8%	22.2%
Tailgating	17.1%	15.9%	14.7%	21.1%
Speeding	14.6%	15.0%	14.9%	16.7%
Express frustration/ Aggression/ Impatience (incl. gestures)	11.1%	5.3%	11.7%	9.7%
Doing other things while driving (read, eat, talk/text on phone)	2.3%	7.1%	5.1%	6.5%
Other	4.9%	2.0%	5.0%	0.6%
Failing to signal lane change	2.5%	2.7%	2.6%	0.6%
Selfishness/lacking respect for others	0.8%	0.9%	0.9%	0.2%
Unsafe passing (swerving, weaving, passing)	1.9%	0.9%	0.5%	0.0%
Failure to stop (red lights, stop signs, etc.)	1.4%	0.4%	0.8%	0.0%
Reckless driving	0.0%	0.7%	0.5%	0.0%
Unsafe/dangerous driving, risk taking	0.4%	0.0%	0.0%	0.0%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

The observed aggressive driving behavior comparison between 2015 and 2019 is shown in Table Q14\_2. Overall, the distribution of answers is very comparable.

**Table Q14 2. “What type of ‘aggressive driving’ or specific behavior do you typically observe in those drivers?” by division**

Q14	Total 2019	Total 2015
Failing to yield the right of way (cutting others off)	23.2%	22.6%
Making frequent lane changes	21.4%	20.1%
Tailgating	17.7%	14.4%
Speeding	15.6%	16.3%
Express frustration/ Aggression/ Impatience (incl. gestures)	9.8%	12.9%
Doing other things while driving (read, eat, talk/text on phone)	5.5%	3.8%
Other	2.9%	3.6%
Failing to signal lane change	1.8%	2.3%
Selfishness/lacking respect for others	0.6%	1.6%
Unsafe passing (swerving, weaving, passing)	0.6%	1.2%
Failure to stop (red lights, stop signs, etc.)	0.6%	1.1%
Reckless driving	0.2%	--
Unsafe/dangerous driving, risk taking	0.1%	--
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

## NEGATIVE CONSEQUENCES OF “AGGRESSIVE DRIVING” (Q15)

The response to the questions if respondents had witnessed a crash involving a driver displaying aggressive behavior is shown in Table Q15\_1. A total of 33.2% confirmed that they have witnessed a crash involving aggressive driving behavior, compared to 27.3% of drivers in 2015, a significant increase of observed crashes of 5.9% ( $p=0.00$ ).

A comparison between regions reveals a difference in the frequency of having observed a crash due to an aggressive driver reveals that Inland and Border drivers less frequently observed crashes compared to all other regions. At the same time, Coastal and Southern drivers observe crashes more frequently than drivers in all other regions ( $p=0.00$ ).

**Table Q15 1. “In the past 12 months, have you witnessed a crash that involved a vehicle driver who was doing any of these behaviors?” by division**

Q15	Northern and Golden Gate	Valley and Central	Coastal and Southern	Inland and Border	Total 2019	Total 2015
Yes	33.5%	34.4%	45.3%	21.8%	33.2%	27.3%
No	66.5%	65.6%	54.7%	78.2%	66.8%	72.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## SPEEDING AND AGGRESSIVE DRIVING (Q16)

The questions if speeding is a type of “aggressive driving” was confirmed by 73.5% of all drivers. Drivers in the Coastal and Southern region however significantly more often consider speeding a type of aggressive driving, with 84.1% of drivers compared to all other regions ( $p=0.00$ , Table Q16\_1). The comparison to the 2015 findings are comparable.



**Table Q16\_1. “Would you say that speeding is a type of “aggressive driving?” by division**

<b>Q16</b>	<b>Northern and Golden Gate</b>	<b>Valley and Central</b>	<b>Coastal and Southern</b>	<b>Inland and Border</b>	<b>Total 2019</b>	<b>Total 2015</b>
Yes	70.1%	73.4%	84.1%	66.3%	73.5%	71.5%
No	29.9%	26.6%	15.9%	33.7%	26.5%	28.5%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100%</b>	<b>100.0%</b>