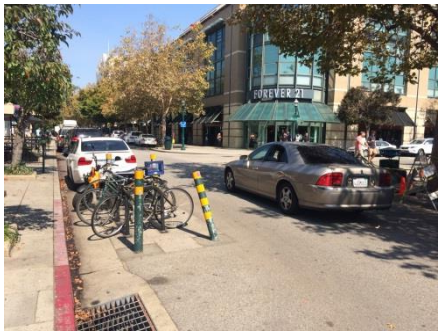
CITY OF SANTA CRUZ

2016 Annual Traffic Safety Report



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I. Introduction

The purpose of the 2016 City of Santa Cruz Traffic Safety Report is to provide an overview of traffic safety trends to help guide future enforcement and engineering efforts. Collisions form a significant portion of the Police Department's workload, and create substantial costs to the City and society as a whole. In 2015, there were 611 reported collisions in the City of Santa Cruz, which caused 284 injuries and 3 fatalities. According to estimates from the American Association of State Highway Transportation Officials' *Highway Safety Manual*, these collisions resulted in nearly $37M in societal costs.

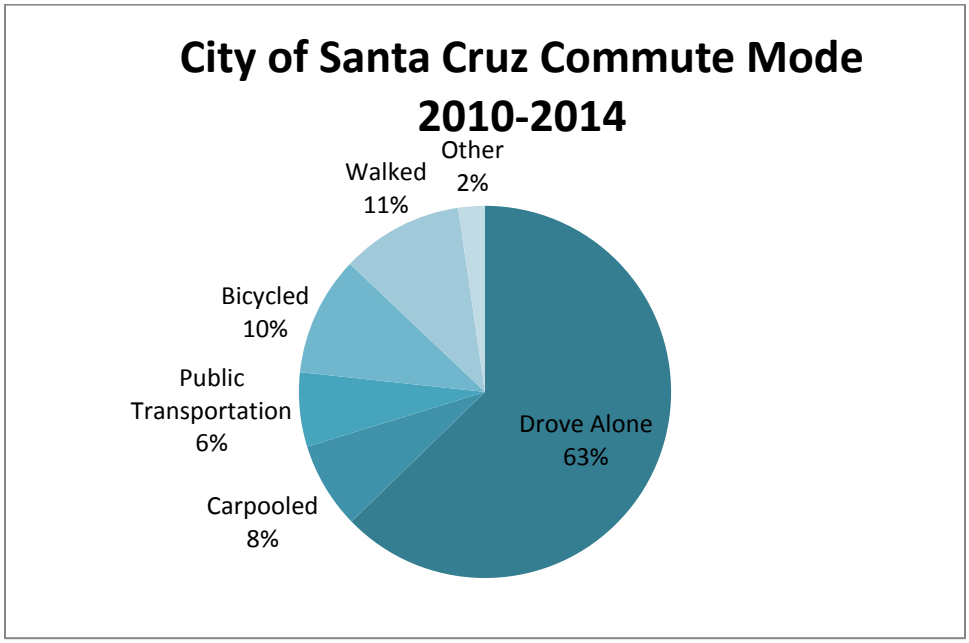
This report focuses on crash data of reported traffic collisions for the full year ending December 31, 2015 that resulted in injury or fatality. The majority of collision data for this report is accessed through the Statewide Integrated Traffic Records System (SWITRS), due the superior analysis and mapping features of the system. SWITRS data adoption is delayed, so the annual report for a given year will be submitted approximately one year later, and 2014-2015 data is still provisional. "Property damage only" collisions are not included in SWITRS, and therefore are not included in this report. Although not all collisions are reported, use of the reported collisions provides a consistent measure of the crash rates of different aspects of travel, and focusing on injury collisions allows for analysis of the most serious incidents.

This report examines travel mode split, current traffic safety campaigns, and high collision streets. Crash trends over the past 10 years are analyzed, including bike, pedestrian, motorcycle and youth crashes, as well as key factors in collisions. Overall, crash trends are positive: crashes are down 7.6% from 2014 to 2015, and motorcycle crashes are down 26%. Crashes involving pedestrians decreased 17% during the same time period, while crashes involving bicyclists increased by 2%. The number of hit and run and alchohol-involved collisions also both decreased. Youth-involved collisions increased from 2014 to 2015, and Section V includes an analysis of each 2015 youth collision incident. While the total number of youth-involved collisions is small, continued work will be done to direct enforcement, education and engineering efforts towards improving safe routes to schools.

II. Travel Modality

An understanding of the different ways people travel within the city is useful when analyzing crash data. Below is a graph of "mode splits"—the breakdown by percentage of the ways people travel to work in Santa Cruz. During the five years reported (2010-2014), 63% of commuters drove alone, 11% walked, 10% bicycled, 8% carpooled, 6% took the bus, and 1% used other modes such as taxi, motorcycle, etc. This data marks

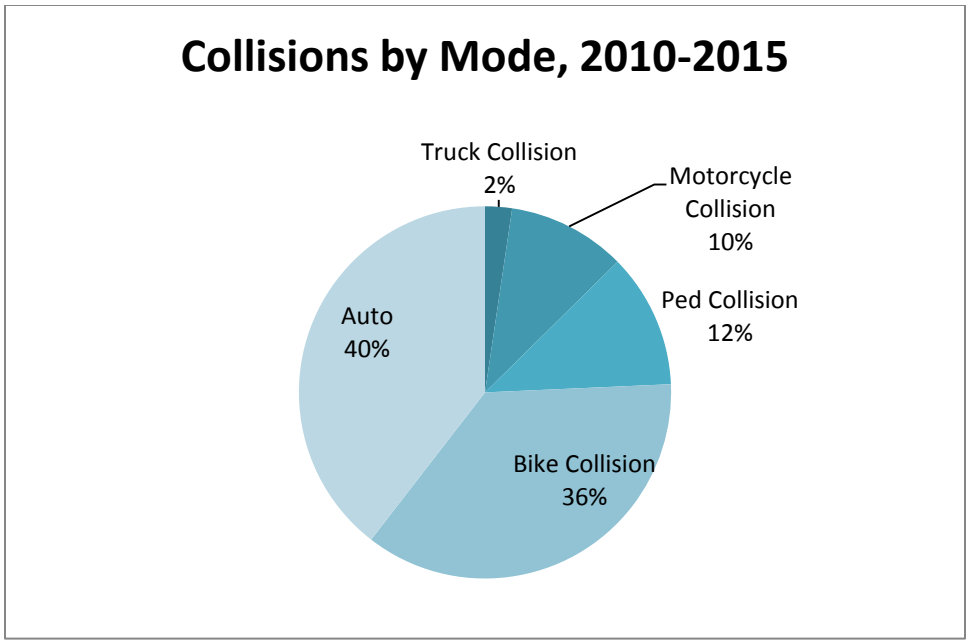
significant progress towards the City's Climate Action Plan goals to increase biking and walking and decrease single-occupancy vehicle use. Santa Cruz has one of the highest bicycle mode splits in the country, and a lower "Drive Alone" mode split than most California cities.



Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-year estimates

When mode split is compared with crashes by travel mode, the data shows that cyclists and motorcyclists are disproportionally involved in injury collisions. Bicyclists account for about 10% of work trips, but are involved in 36% of injury collisions in a similar time period. The California Office of Traffic Safety (OTS) collision rankings for cities of similar population size (50,000-100,000) consistently rank Santa Cruz among the highest for bicyclist crashes.

Motorcyclists represent less than 2% of commute trips but are involved in 10% of injury crashes. Pedestrian collision and mode split numbers are very similar, and car drivers are involved in injury crashes at disproportionately low rates. Focusing enforcement and engineering efforts on cyclist and motorcycle collisions could help address this disparity.



Source: SWITRS

III. Current Traffic Safety Campaigns

The City of Santa Cruz and partner agencies are currently involved in the following traffic safety campaigns:

Santa Cruz Public Works Department

The majority of Transportation Engineering activities are geared towards improving safety on our roadways. These activities include:

- Securing grant funding for a wide variety of projects, including safety improvements near schools and operational improvements
- Maintaining infrastructure and addressing traffic safety issues, such as potholes
- Responding to pedestrian and bicyclist hazard reports filed by community members
- Responding to requests for neighborhood safety improvements
- Reviewing traffic safety plans for projects in the public right-of-way

Santa Cruz Police Department

- Traffic safety tips shared via Police Department blog and social media
- Back to school bike and pedestrian safety videos
- School crossing guard program at all City of Santa Cruz elementary schools
- In-school safety presentations at elementary schools

- Bike safety rodeos at Santa Cruz City Schools
- Officer attendance at neighborhood meetings
- Targeted neighborhood speed enforcement
- Multi-jurisdictional speed enforcement efforts
- Online form available to residents to register traffic safety concerns
- Traffic safety plans for special events

Community Traffic Safety Coalition (sponsored by County of Santa Cruz Public Health)

- Ride 'n' Stride program provides bike and pedestrian safety education at elementary schools throughout the county
- Neighborhood Pace Car program encourages people to set an example by driving slowly in their neighborhoods
- Traffic Calming Trash Can Sticker program provides free "Please Slow Down" stickers to City of Santa Cruz residents
- Bike Traffic School provides a bike safety class to people who receive a traffic ticket while bicycling. Classes are open to the public.

Ecology Action

- Bike Smart program provides bike safety training for elementary, middle and high school students
- Walk Smart provides pedestrian safety training for elementary school students
- UCSC bike safety classes and bike light giveaways
- Santa Cruz City Schools Complete Streets Master Plan provides recommendations for improvements to improve safe routes to schools (partnership with City of Santa Cruz and Santa Cruz City Schools)

Bike Santa Cruz County

- Middle School Bike Clubs at Mission Hill and Branciforte Middle Schools teach bike safety skills to students

IV. Highest Crash Locations

The majority of crashes in Santa Cruz occur along our major corridors and other high-traffic areas, particularly at intersections. See below for a ranking of the top 9 injury collision locations from 2012-15. Data is divided into injury collision intersections and mid-block locations.

Highest Collision Intersection Locations, 2012-2015

1. Laurel St at Walti St – 8 crashes
2. Ocean St at Broadway – 8 crashes
3. Plymouth St at Ocean St – 8 crashes
4. State Hwy 1 at River St – 8 crashes
5. Washington St at Laurel St – 8 crashes
6. Laurel St at Pacific Av – 6 crashes
7. River St at Encinal St – 6 crashes
8. Water St at Ocean St – 5 crashes
9. Bay Dr at Meder St – 4 crashes

Highest Collision Mid-block Locations, 2012 – 2015

1. Water St from Ocean to River St – 5 crashes
2. West Cliff Dr from Beach to Bay St – 5 crashes
3. State Hwy 1 from River St to Chestnut St Extension – 4 crashes
4. Beach St from Riverside Ave to Cliff St – 4 crashes
5. Municipal Wharf from end to Beach St – 4 crashes
6. Front St. from Cathcart to Soquel – 3 crashes
7. Washington St from Center St to Laurel St – 3 crashes
8. Soquel Ave from Poplar to Seabright Ave – 3 crashes
9. Murray St from Lake Ave to Seabright – 3 crashes

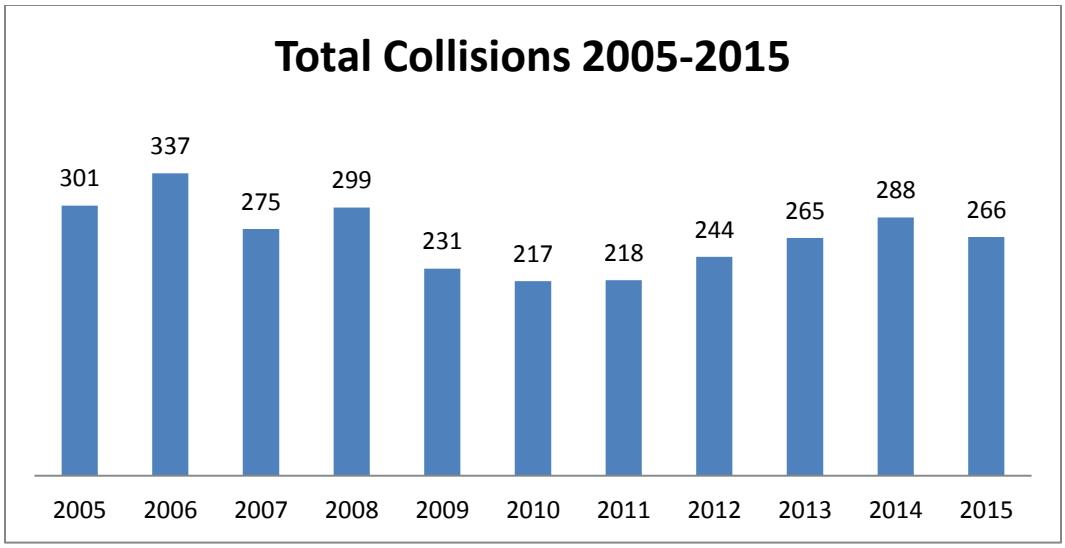
Source: Crossroads

V. Collision/Crash Trends

To establish collision trends, injury collisions for the 10-year period from 2005-2015 were analyzed. This is enough time to adjust for changes in population, economic variations, and transportation mode shifts.

The decline in collisions from 2008-2011 was likely due to the economic recession, which resulted in higher unemployment and fewer car trips nationally. Statewide collision data has followed a similar trend, with collisions decreasing significantly from 2005-2010, and rising steadily from 2010-2014[1]. Therefore, the rise in collisions between 2011 and 2014 should be viewed as a sign of increased overall trips as a result of economic recovery.

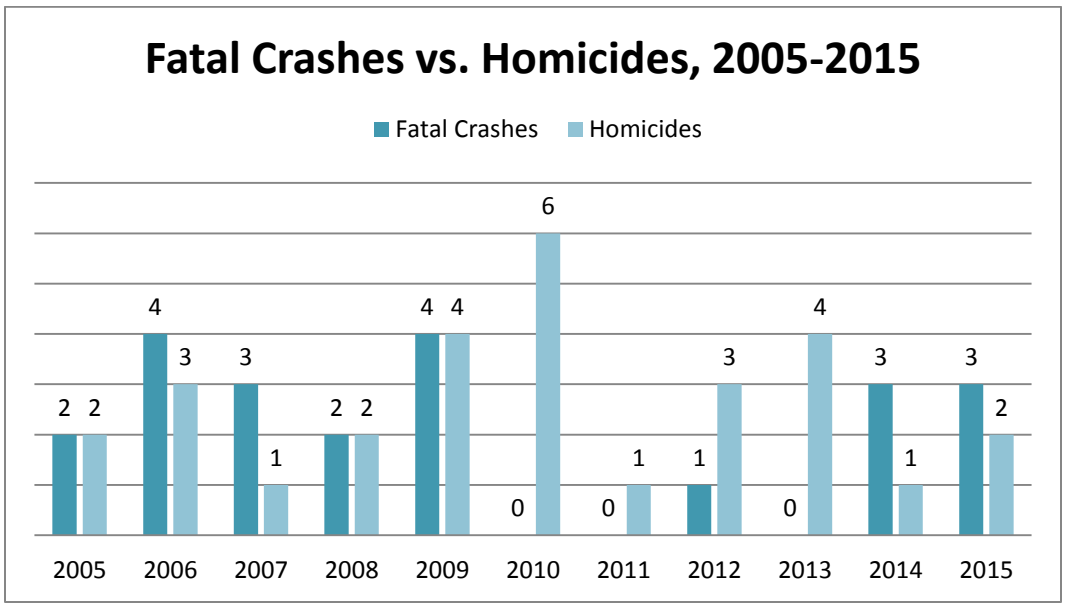
1. Brekke, Dan. "With Rising Numbers of Highway Deaths, California Bucks a National Trend". KQED News. Nov 2015.



Source: SWITRS

Of these total crashes, a very small percentage cause fatalities. The chart below is included to show both the random nature of fatal collisions and the importance of the Traffic Division of the Police Department and the Traffic Engineering Section of Public Works. Enforcement and engineering are the primary tools in the work required to eliminate fatal crashes.

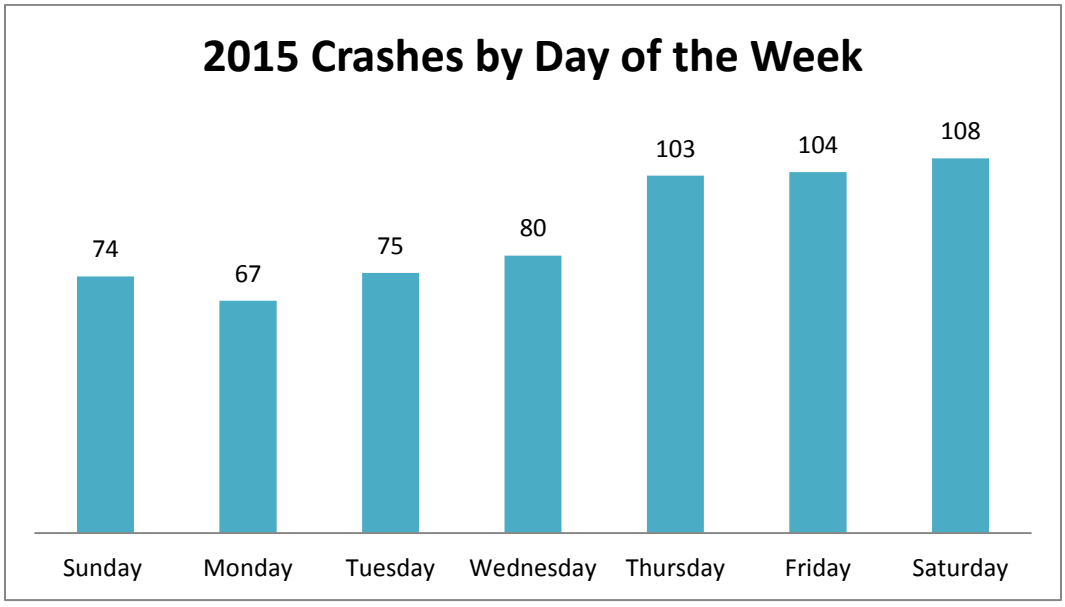
If one looks at 10 years of data comparing fatal crashes versus homicides, a trend does not appear. The number of incidents for any particular year is small, and so variations can appear to be significant.



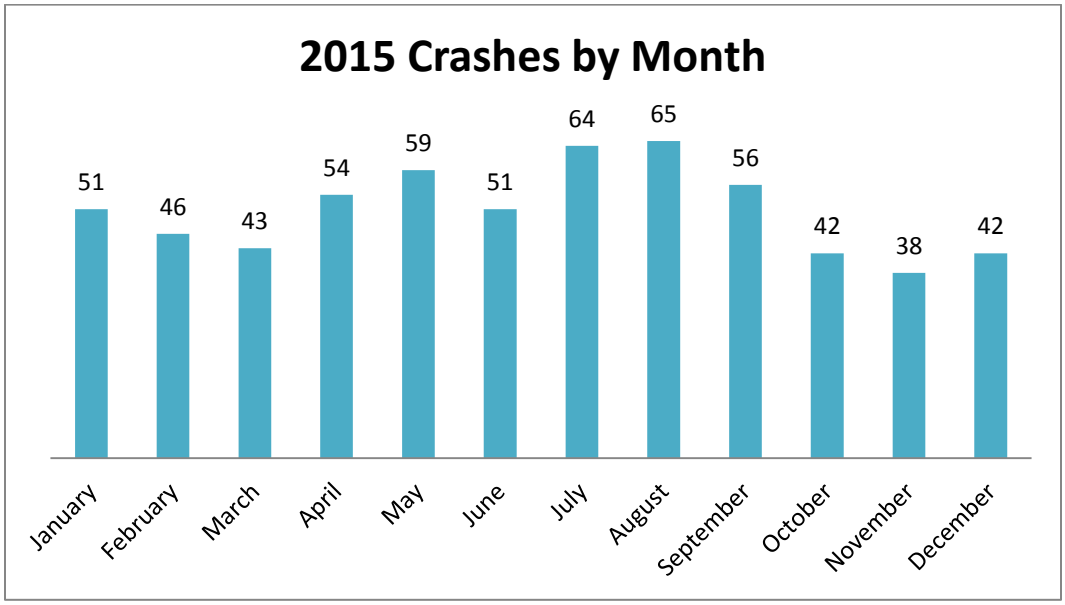
Source: SWITRS + SCPD

Crash Date and Time Data

Looking at all 2015 crashes by month, day of the week, and time of day does not reveal any surprises. Crashes are somewhat higher on weekends and in the summer, when traffic volumes are higher. Crashes are also higher on weekdays and during the peak commute time, 3:00pm-6:00pm.



Source: Crossroads



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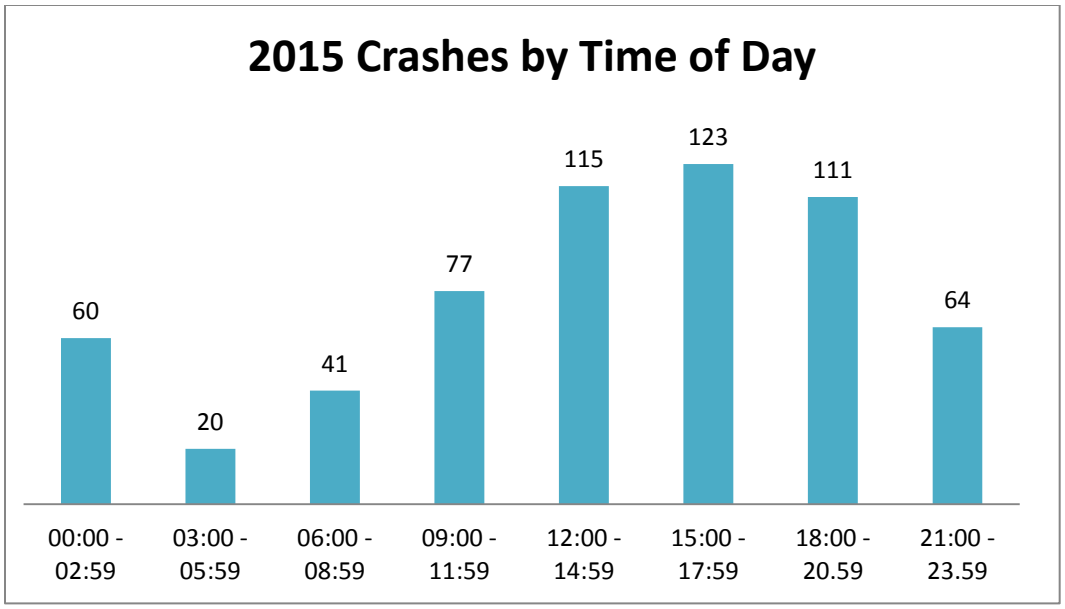
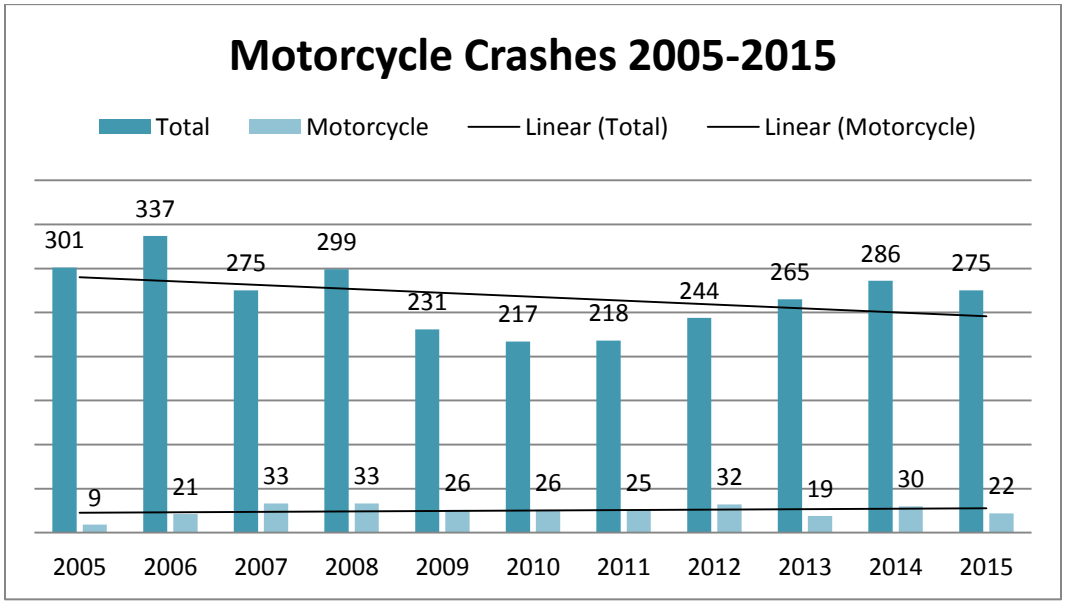


Source: Crossroads

Motorcycle Crashes

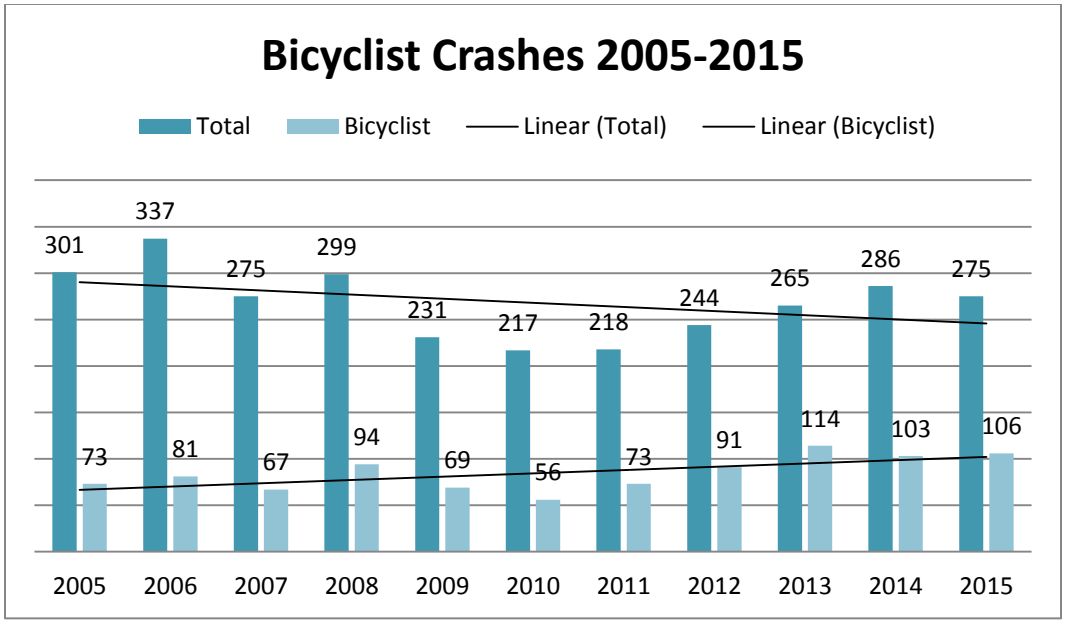
Motorcyclist crashes are consistently high for our jurisdiction. In 2012, the Office of Traffic Safety ranked Santa Cruz #3 out of 102 cities of similar size for motorcycle crashes. Comparing motorcyclist injury crashes to total injury crashes for the 10 year period, the trend line is consistent for motorcyclist crashes but overall crashes show a declining trend.



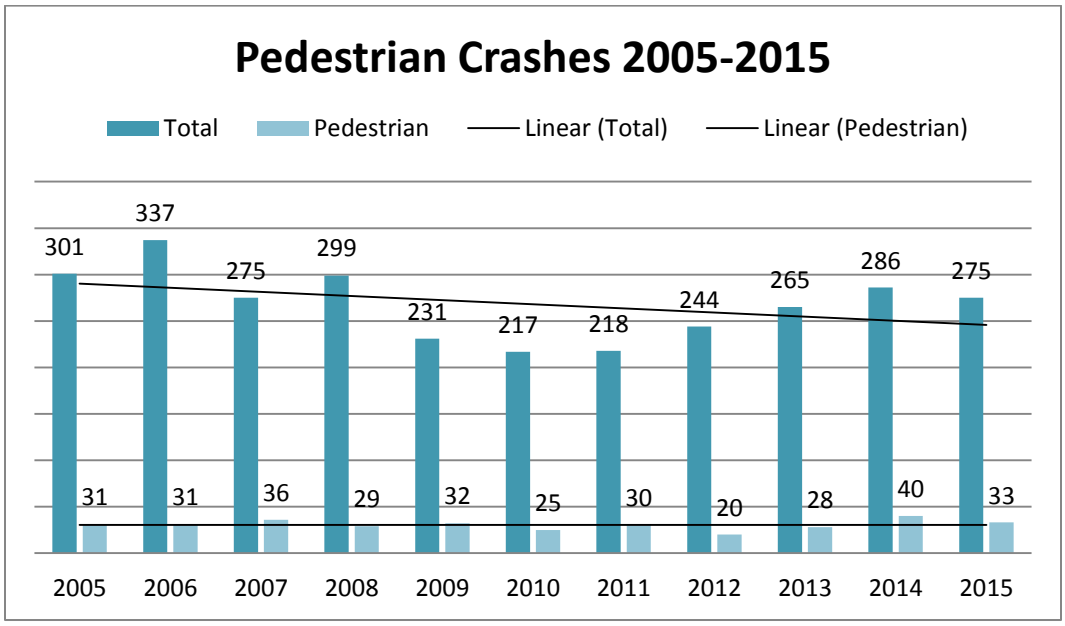
Source: SWITRS

Bike and Pedestrian Crashes

Santa Cruz has a high bike and pedestrian mode split, and a correspondingly high number of bike and pedestrian crashes. Over a 10-year period, the trend for bicyclist crashes is increasing as bicycle mode split increases, and cyclists continue to be disproportionately involved in injury collisions. The trend-line for pedestrian injury crashes is level, even as the pedestrian mode-split is increasing.



Source: SWITRS

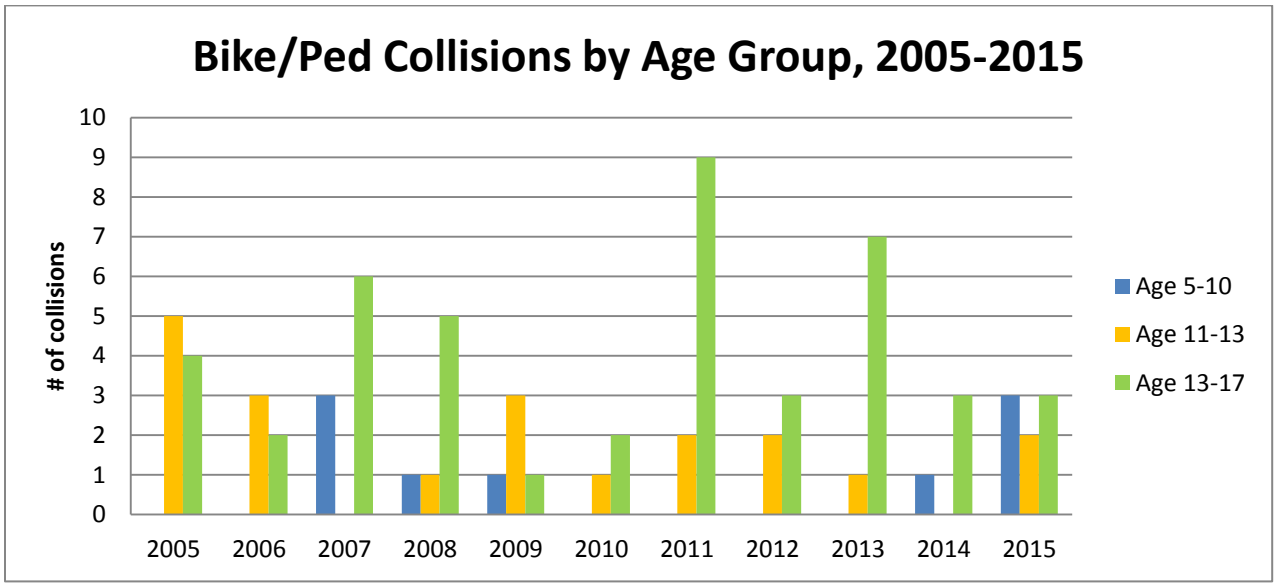


Source: SWITRS

Safe Route to Schools Data

The safety of youth biking and walking to school is a frequent concern in our community. Analysis of injury crashes involving school-aged pedestrians and bicyclists for the 10-year period, focusing on trips to and from school, provides insight into the data behind the perception of safety. The following graphs represent collisions that occurred on weekdays from September through June, between 6:00am and 6:00pm, and involving young people age 5-17.

Between 2005 and 2015, the majority of injury crashes (70%) involved bicyclists rather than pedestrians, and high school-aged youth had the highest rates of injury collisions, averaging 4.2 crashes annually. Elementary school students were involved in crashes at the lowest rate, averaging less than one injury per year for the entire city. Nearly half of injury collisions occur between 3pm-6pm, when young people are sharing the roads with commute traffic. 45% of crashes occurred on five streets, with Soquel Avenue accounting for 16% (12 crashes) of all crashes in this age group. King Street was the 2nd highest crash location, with 5 crashes in the ten year analysis.

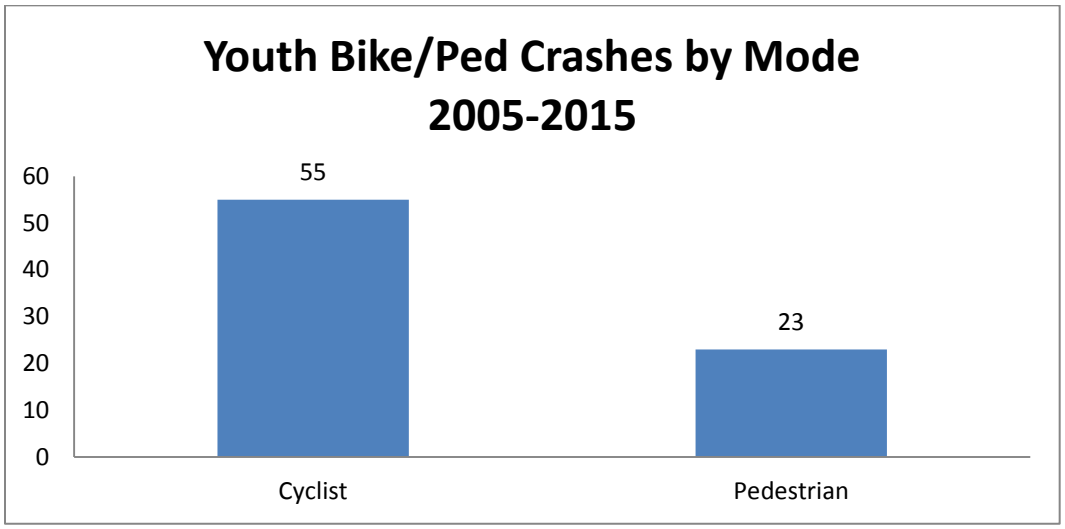


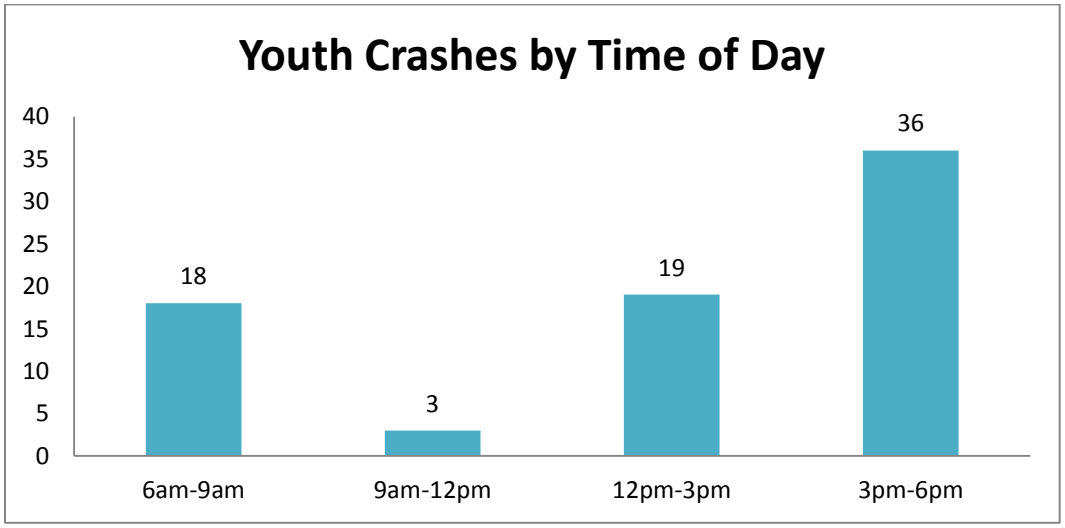
Source: SWITRS

2015 marked an increase in youth injury collisions over 2014. Of the eight crashes involving cyclists and pedestrians aged 5-17, 75% involved cyclists and 25% were pedestrians. Four crashes were caused by drivers of motor vehicles and three were caused by youth themselves. In one case, the party at fault was unknown due to conflicting stories. Collisions where youth were at fault were caused by a cyclist losing control and hitting a parked car, a skateboarder not looking when a driver was pulling out of a parking space, and a pedestrian running out unexpectedly into the street. The majority of crashes where the driver was at fault involved right- or left-hook collisions,

in which a driver turns into a cyclist riding in the bike lane, on a sidewalk or in a crosswalk. This nearly 50/50 split of party-at-fault is consistent to previous years. This data represents a more complete picture of the relative risk of biking or walking to school in Santa Cruz.

Top 5 Crash Streets 2005-2015	#	Average
SOQUEL AVE	12	>2/year
KING ST	5	1/year
BAY ST	4	<1/year
LAUREL ST	4	<1/year
MISSION ST/SEABRIGHT AVE/ WALNUT AVE	3	<1/year



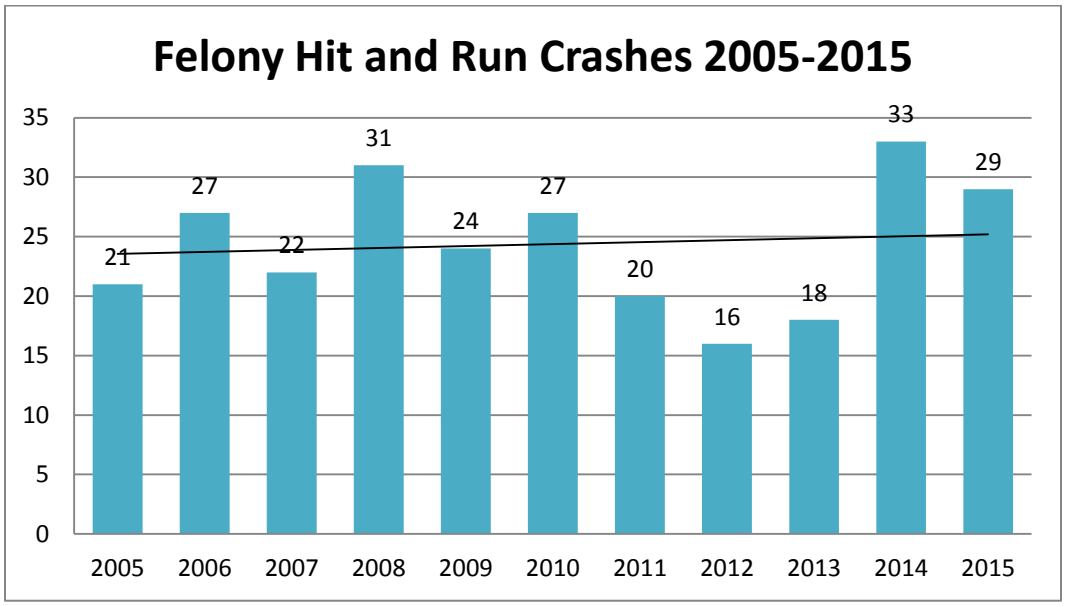


Source for all graphs: SWITRS

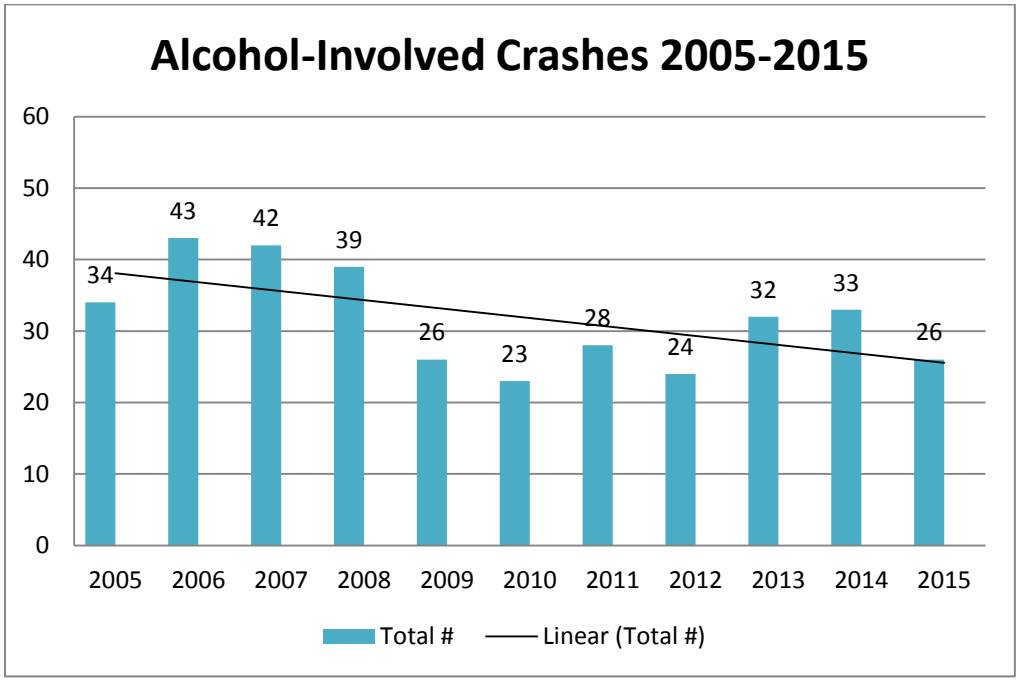
VI. Key Collision Factors

Finally, collision data was analyzed by primary collision factor, as well as hit and run and alcohol-involved crashes. After a decrease in 2011-2013, there was an increase in hit and run crashes in 2014-2015. Alcohol-involved crashes decreased 21% from 2014-2015.

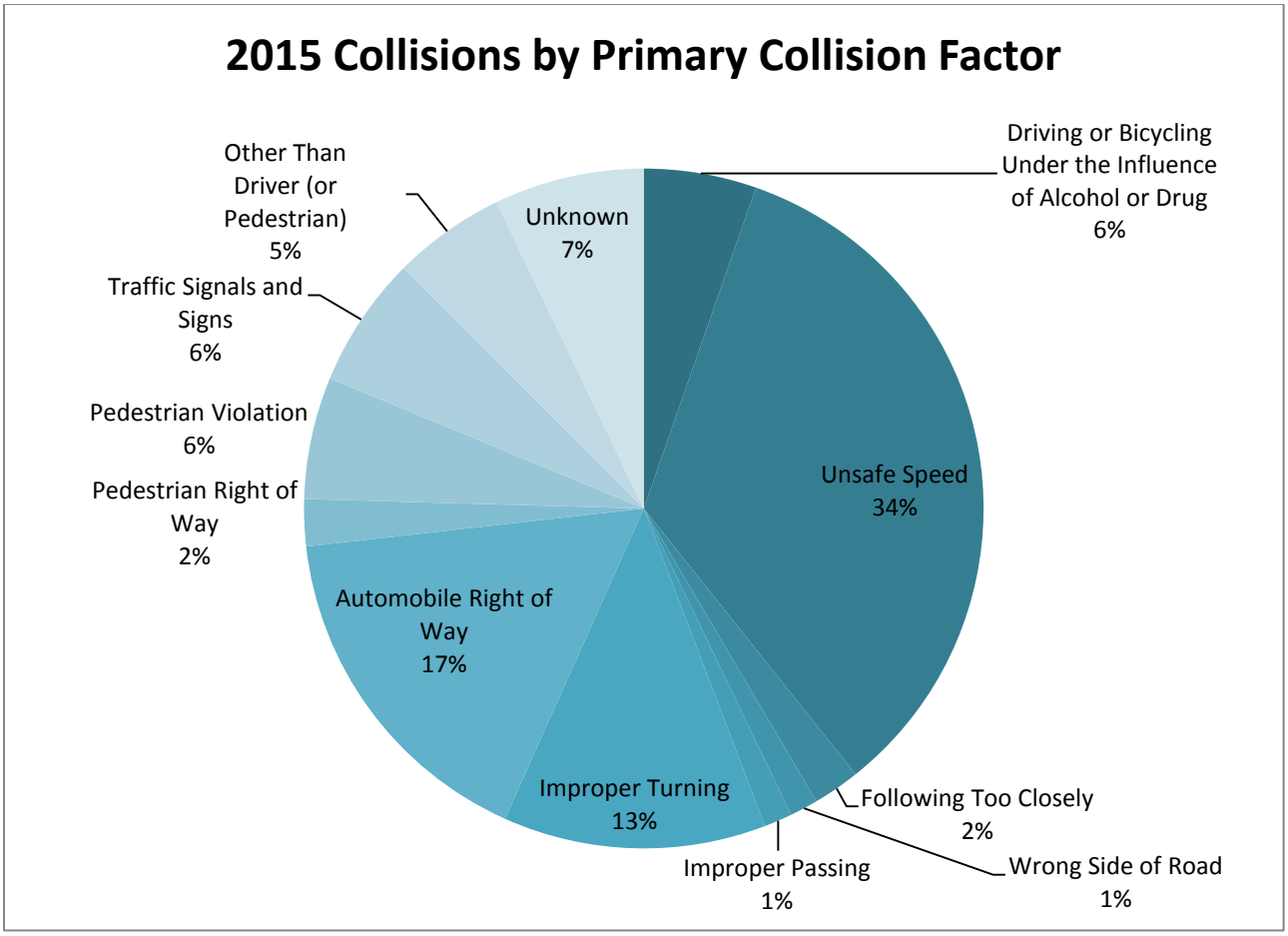
Unsafe Speed was the #1 cause of collisions, followed by Automobile Right of Way and Improper Turning.



Source: SWITRS



Source: SWITRS



Source: SWITRS

Primary Collision Factor Definitions

Unsafe speed: Driving at a speed greater than is reasonable or prudent, or without due regard for weather, visibility, traffic, etc.
Automobile Right of way: Failure to yield right of way to other roadway users.
Improper Turning: Making an unsafe turning movement, or failure to signal.
Driving or Bicycling Under the Influence of Alcohol or Drug: Operating a vehicle while under the influence.
Pedestrian Violation: Pedestrian failure to yield right of way to other vehicles while outside of a legal crosswalk.
Traffic Signals and Signs: Failure to obey posted traffic signs and signals.
Other than Driver (or Pedestrian): Collision caused by outside factor.
Pedestrian Right of Way: Driver failing to yield right of way to a pedestrian at a legal crosswalk.
Following Too Closely: Following another vehicle more closely than is reasonable and prudent.
Wrong Side of Road: Driving a vehicle on the wrong side of the road or against traffic.
Improper Passing: Passing another vehicle in a manner that is not in accordance with the California Vehicle Code.