

Pilot Program Takes on Wrong-Way Collisions



Caltrans photo by Scott Lorenzo

From January through June 2015, five nighttime fatal wrong-way collisions on Sacramento-area freeways left 16 people dead. San Diego-area freeways experienced four fatal wrong-way crashes in that same period that left eight people dead. What was going on?

According to a report to the state Legislature on July 1, motorists driving under the influence was a contributing factor in eight of those nine cases, a little higher than the norm. The 2009 to 2013 Traffic Accident Surveillance and Analysis System (TASAS) data on fatal wrong-way collisions indicates that 69 percent of the wrong-way collisions had been under the influence of drugs or alcohol. Caltrans and the California Highway Patrol are [working toward zero deaths](#) on this state's highways, so both are looking at ways they can stop, or at least reduce, the number of deaths due to wrong-way drivers.

Supported by a mandate by state lawmakers, Caltrans has launched pilot programs in both districts using a combination of innovative methods, with all enhanced off-ramp pilot locations expected to be operational by the end of 2016.

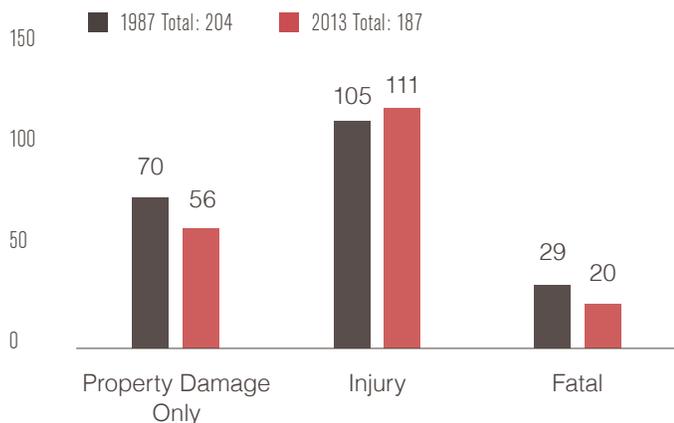
Wrong-way collisions at freeway speeds, though horrifying, are quite rare. And last year's cluster of wrong-way collisions in the Sacramento and San Di-

ego areas seemed contrary to years of decline prior to 2015.

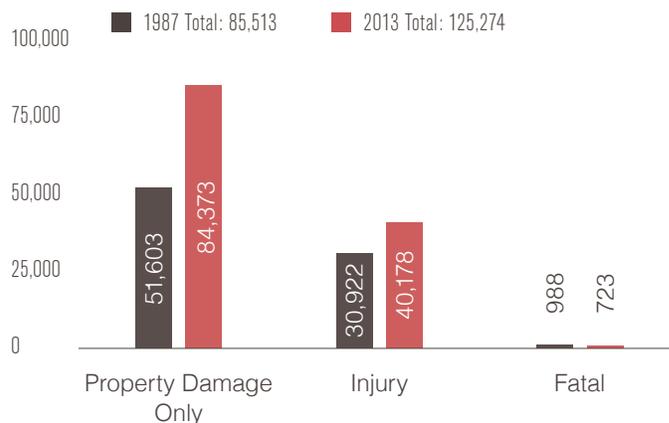
Caltrans has a unit of measurement called vehicle-miles traveled to indicate the number of miles motorists travel on California roads. Between 1989 and 2013, California's freeways and expressways saw a 26 percent increase in vehicle-miles traveled. At the same time, fewer wrong-way collisions have occurred. About 35 wrong-way fatal collisions occurred annually between 1961 and 1987. From 1995 and 2013, that annual average dropped to 23 statewide. That means fatal wrong-way collisions dropped from nearly 0.4 per billion vehicle-miles traveled in 1989 to about 0.13 per billion in 2013 (the most recent year in which verified collision data is available).

In 2015, 313 reported wrong-way drivers in District 3 (the Sacramento region) caused 11 collisions resulting in injury or death. In 2016 through April 15, there were 102 reported wrong-way drivers, re-

Wrong Way Collisions on Freeways and Expressways



All Types of Collisions on Freeways and Expressways



The charts above show wrong-way collisions (left) as compared to the total number of recorded collisions (right) on California freeways and expressways during 1987 and 2013. About 0.24 percent of the collisions were wrong-way in 1987, and 0.15 percent in 2013. This represents an approximate decrease of 37.5 percent. In 2013, about 2.8 percent of all fatal collisions were due to wrong-way driving.

sulting in only one collision which had injuries or fatalities. In 2015, 100 reported wrong-way drivers were either never located or were not the cause of any known collisions. Through April 15, 2016, that number stood at 39.

Also in 2015, District 11 (the San Diego area) had 384 reported wrong-way drivers that caused eight collisions that resulted in injuries or fatalities. From January to April of this year, there were 117 reported wrong-way drivers, resulting in two collisions that had injuries or fatalities. In 2015, 353 reported wrong-way drivers were either never located or were not the cause of any known collisions. Through April 15, 2016, that number stood at 100.

The Pilot Programs

Caltrans and the CHP began a wrong-way driver working group in May 2015 to discuss potential methods to combat wrong-way drivers. Evidence shows wrong-way traffic collisions are not specific to any location or off-ramp, therefore, the working group proposed pilot projects in Districts 3 and 11. The locations are on Interstate 80, U.S. Highway 50 and I-5 in and near Sacramento and on State Route 15, I-15, I-5, and I-8 in San Diego County.

In Sacramento, this segment of Highway 50 was chosen not only due to wrong-way collisions, but also because it is a corridor between the Bay Area

and South Lake Tahoe. Non-local drivers are more likely to be unfamiliar with the route and its various interchanges, making a wrong-way movement more likely if a driver exits the freeway for gas or food, then attempts to re-enter the freeway.

Although it is possible for any off-ramp to be driven the wrong-way, this project directed its focus on those ramps where the combination of ramp alignment and local road features suggested the ramp may have a higher potential for a wrong-way movement than other ramp layouts.

Freeway main lanes already feature sections of pavement markers that reflect red when the headlights of a wrong-way vehicle shine on them. These pilot projects will expand on that enhancement by installing red-backside retroreflective pavement markers on off-ramps. The goal is to get the attention of wrong-way drivers so that they turn around before they reach the main lanes.

In addition to these pavement markers already installed on many off-ramps, active monitoring systems will be added to select ramps by the end of 2016.

The active monitoring systems use dual radars to detect the wrong-way drivers and activate red flashing lights bordering the wrong-way signs. Caltrans and the CHP will be notified in real time of the wrong way drivers through photos and alerts sent to joint Traffic Management Centers. Once a wrong-

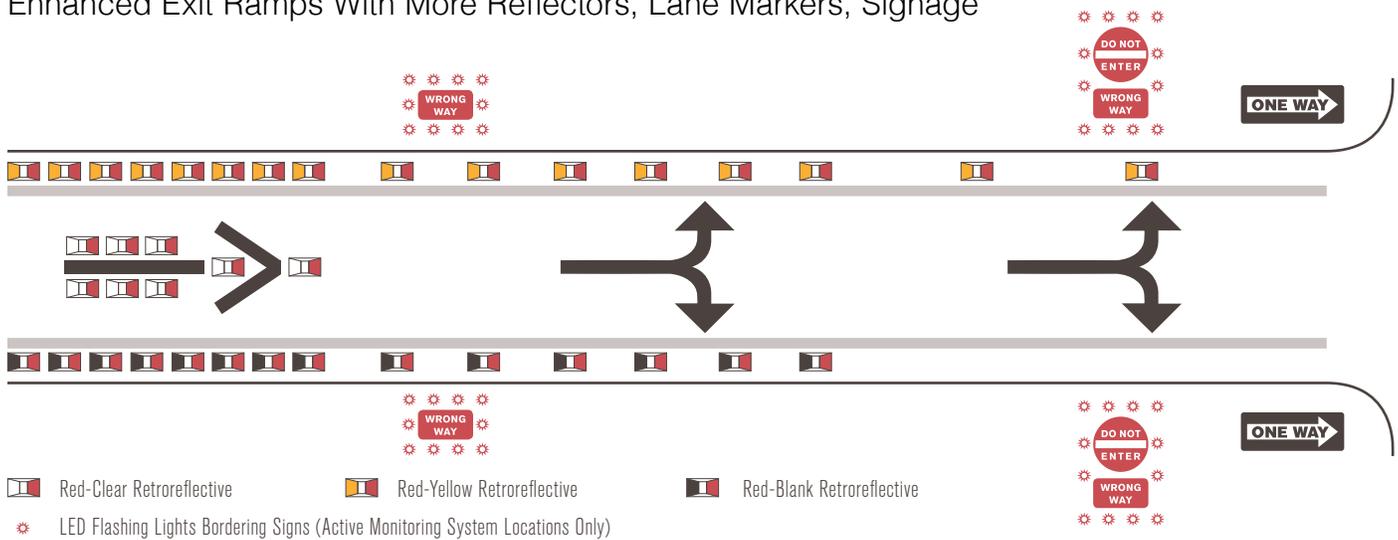
way driver has been detected, the centers quickly dispatch calls to the CHP and allied agencies with updates as they are received from callers, primarily through cellular phones.

A separate, auxiliary research project is being conducted by the Advanced Highway Maintenance Construction Technology Research Laboratory (AHMCT) at the University of California, Davis, with oversight and direction provided by Caltrans'

Division of Research, Innovation and System Information to study the effectiveness of the pilot project enhancements with before-and-after studies. AHMCT will deliver a final report to Caltrans by Dec. 31, 2017. **MM**

Source: John F. Holzbauser P.E., T.E., Transportation Permits, Division of Traffic Operations

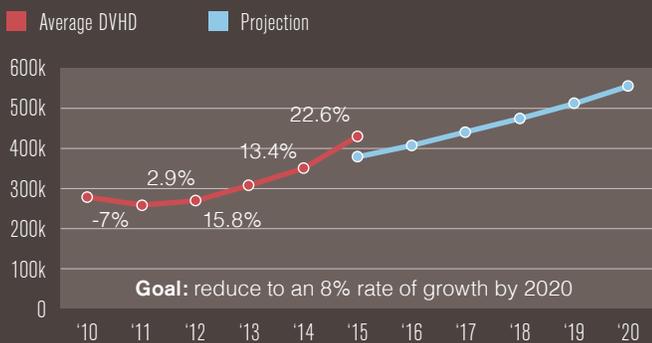
Enhanced Exit Ramps With More Reflectors, Lane Markers, Signage



Caltrans Mile Markers, *continued from page 1*

SYSTEM PERFORMANCE

Average Growth in Daily Vehicle Hours of Delay vs. Projection



ORGANIZATIONAL EXCELLENCE

Employees who say that they work in a positive environment

Last reporting period, December 2015 | 50%
Next reporting period | December 2016

Employees who agree that innovation is encouraged at Caltrans

Last reporting period, December 2015 | 40%
Next reporting period | December 2016

Stakeholders who say Caltrans meets their needs

Last reporting period, December 2015 | 40%
Next reporting period | December 2016

Partners who view Caltrans as a collaborative partner

Last reporting period, December 2015 | 40%
Next reporting period | December 2016

Stakeholders who say Caltrans' communication, professionalism, and service levels have improved

Last reporting period, December 2015 | 36%
Next reporting period | December 2016

Stakeholders who give positive feedback on the Mile Marker

Last reporting period, December 2015 | 43%
Next reporting period | December 2016