A Technical Memorandum for:

Traffic Operation Division

Texas Department of Transportation

Submitted by the

TEXAS A&M TRANSPORTATION INSTITUTE

COMPARATIVE ANALYSIS OF FATAL CRASHES IN TEXAS VS. CALIFORNIA

AND IMPLICATIONS FOR TRAFFIC SAFETY IN TEXAS

Authors:

Troy D. Walden, Ph.D.

Myunghoon Ko, Ph.D., P.E.

Lingtao Wu, M.S.

Texas A&M Transportation Institute

Technical Memorandum

Comparative Analysis of Fatal Crashes in Texas vs. California and Implications for Traffic Safety in Texas

Prelude

Texas and California are the two largest states in the contiguous United States; and as such, both states are experiencing higher traffic fatalities than other states (FARS 2014e). In recent years, the two states have experienced distinctively different trends in terms of traffic safety statistics. Until 2007, California recorded more traffic fatalities than Texas. Since that time, Texas has surpassed California in the recorded number of traffic fatalities, and the difference between the states is only growing. This translates to a greater risk of fatal crashes on Texas roadways than in California.

The purpose of this technical memorandum is to summarize the differences in traffic fatalities between Texas and California and identify which factors and programs implemented by California reduced fatalities significantly. The results should inform the Texas Department of Transportation (TxDOT) in decision-making related to statewide management of traffic safety, countermeasures, programs and policy development in Texas.

This technical memorandum is organized into the following sections:

- Introduction,
- Time of Day,
- Vehicle Types,
- Location,
- Driver Behavior,
- Driver Impairment,
- Distracted Driving,
- Environment, and
- Economic Factors.

Appendix A provides a detailed comparison of California and Texas Highway Traffic Safety Programs, specifically in terms of the outlay of highway safety funding dollars. The safety countermeasure projects selected by each state address safety emphasis areas identified through project activities. The intent of the appendix is to provide readers with a fundamental understanding of the differences between priority fiscal spending and the application of projects as countermeasures to address crash frequency and severity.

Table of Contents

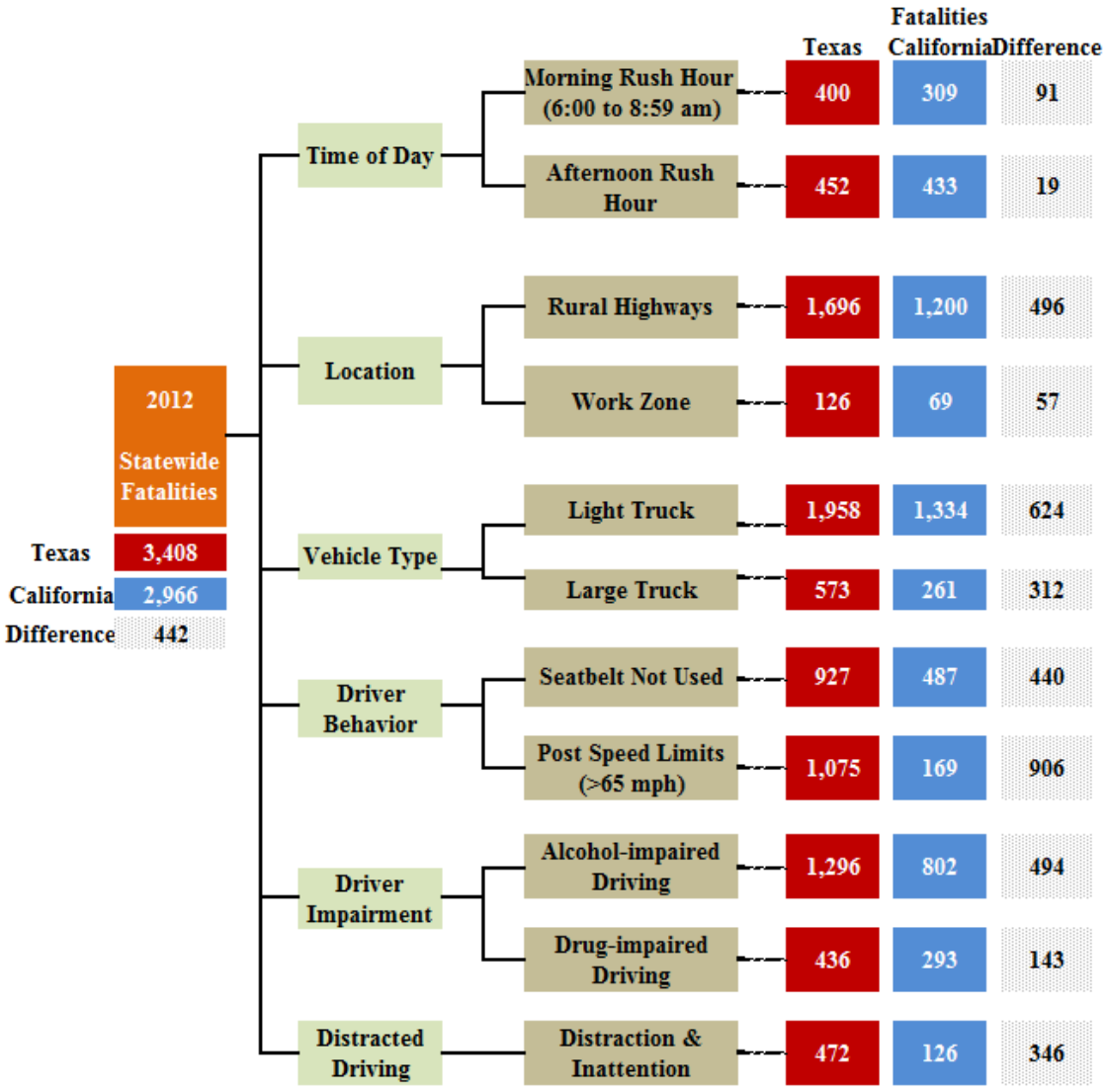
List of Figures

List of Tables

Executive Summary

In 2012 there were 3,408 fatalities in Texas and 2,966 fatalities in California (FARS 2014). Texas recorded 442 more deaths than California for that year. The numbers of fatalities in Texas relative to California are the greatest they have been since FARS started collecting fatal crash data in 1975.

There were 110 more deaths in Texas than California during the morning and afternoon commuting hours and 496 more fatalities on rural highways in Texas relative to California. Regarding vehicle types, there were 936 more fatalities involving crashes with light/ large trucks in Texas in 2012. Texas experienced twice as many fatalities as California related to non-use of seat belts and six times more fatal fatalities occurring on highways with speed limits greater than 65 mph. Driving under the influence by alcohol/drug was another critical contributing factor associated with crashes. Texas had 637 more deaths in the crashes caused by alcohol and drug impaired drivers than did California. Texas experienced 346 more fatalities by distracted drivers and inattention caused by cell phone use or texting. The figure below illustrates the fatality comparison between Texas and California in 2012 by the characteristics and factors.

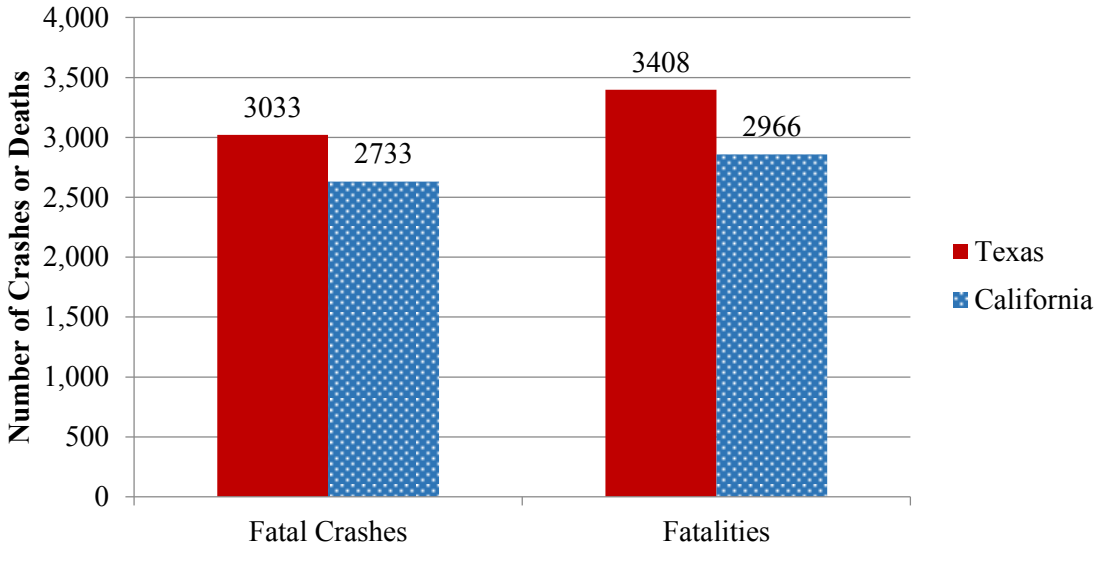

Fatalities
Texas
California
Difference
2012 Statewide Fatalities
Texas 3,408
California 2,966
Difference 442
Time of Day
Morning Rush Hour (6:00 to 8:59 am) 400 309 91
Afternoon Rush Hour 452 433 19
Location
Rural Highways 1,696 1,200 496
Work Zone 126 69 57
Vehicle Type
Light Truck 1,958 1,334 624
Large Truck 573 261 312
Driver Behavior
Seatbelt Not Used 927 487 440
Post Speed Limits (>65 mph) 1,075 169 906
Driver Impairment
Alcohol-impaired Driving 1,296 802 494
Drug-impaired Driving 436 293 143
Distracted Driving
Distraction & Inattention 472 126 346

Introduction

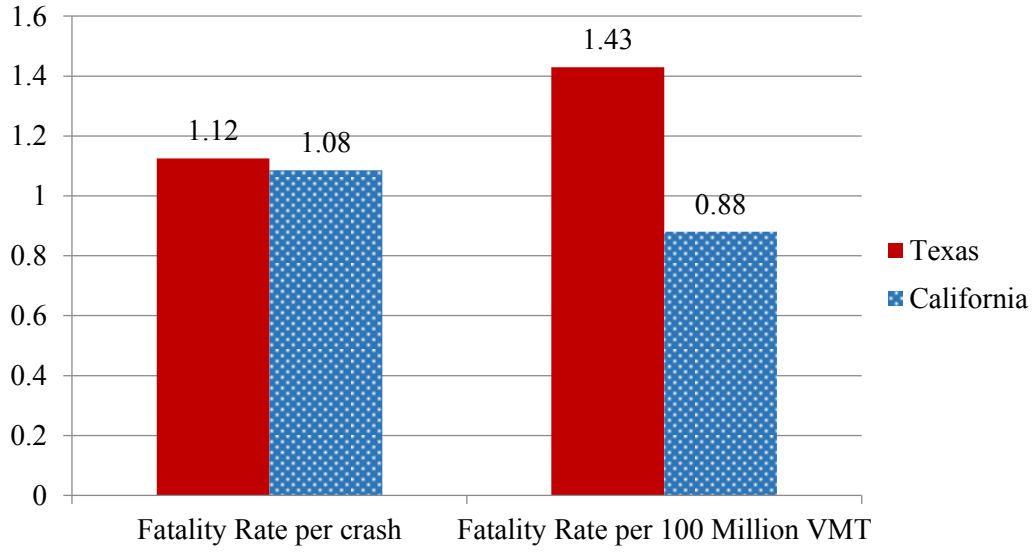
According to the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS), there were 3,033 fatal crashes (3,408 fatalities) in Texas and 2,733 fatal crashes (2,966 fatalities) in California in 2012. In 2012, Texas recorded 300 more fatal crashes and 442 more deaths than California.

Historically, Texas had experienced fewer fatalities than California until 2007. Looking as far back as 2003, Texas experienced 403 fewer fatalities than California but as time has passed, the difference between the two states has gradually decreased. In 2007 Texas surpassed California in the number of fatal crashes and fatalities. Furthermore, the difference of fatal crashes and fatalities of Texas relative to California has increased every year. Figure 1 (a) illustrates the number of fatal crashes and traffic fatalities of Texas and California in 2012.

In addition to the increased numbers of fatal crashes and fatalities, Texas recorded more fatalities per crash and per 100 million vehicle miles traveled (VMT) than California as shown in Figure 1 (b). Higher numbers of fatalities than fatal crashes generally means more road users are killed in a single fatal crash. Higher fatalities per 100 million VMT means people in Texas are generally at a higher risk of being killed from transportation activities than people in California.



(a) Fatal Crash and Fatalities



(b) Fatality Rate

Figure 1 (a&b) Fatal crashes, fatalities and fatality rates in Texas and California in 2012

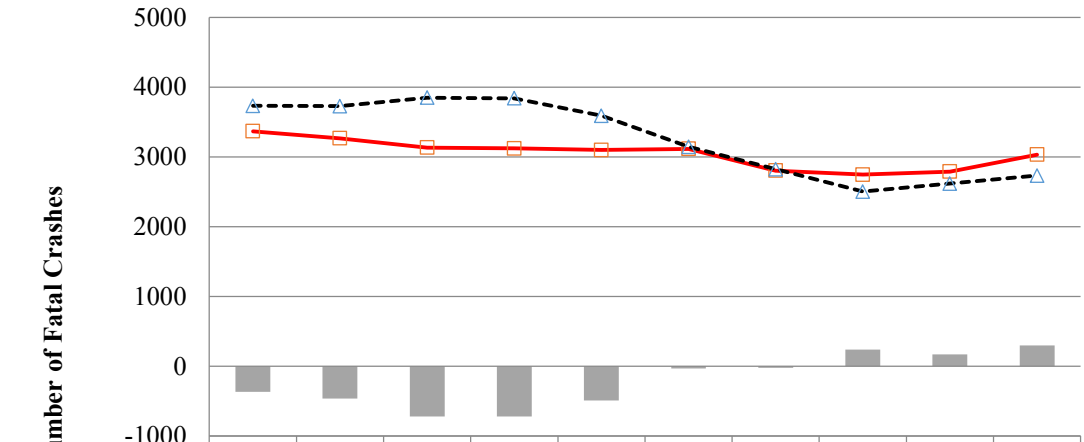
Source: FARS (2014a)

A crash may be one of the adverse outcomes associated with daily transportation activities. It is expected that more activity will result in a higher risk of being involved in a crash. Additionally, higher number vehicle miles traveled (VMT) lead to a higher potential for crashes. Figure 2(a & b) illustrates the traffic fatalities and fatality rates (number of persons killed per 100 million VMT) of Texas and California in recent decade

(2003 through 2012). It can be seen that overall fatalities decreased from 2005 through 2010 in both Texas and California, and increased in 2011 and 2012; 11% and 1% in Texas and California, respectively.

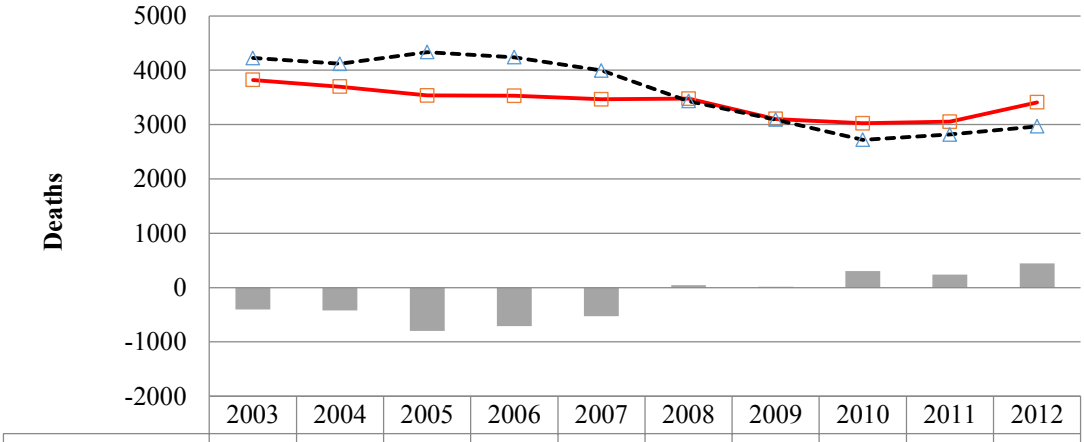
It is important to note that the traffic fatalities and fatal crash rate in California substantially decreased from 2007 to 2010. In this time period, there was an approximate 32% reduction in fatalities and 1,275 lives were saved over these four years. During the same period, Texas experienced a 12% reduction in fatalities and 443 lives were saved.

During the last decade, fatality rates regarding VMT were always greater in Texas than in California. Similarly with the trend of fatalities, the rates in California significantly decreased after 2007 and then remained at the lower level during the remainder of the period. In Texas, the rates decreased until 2010 and then they increased slightly. Even with the lower level of exposure (i.e., lower VMT) to transportation activities, Texas roadways still posed a higher risk for fatal crashes than did California. Figure 2(c & d) illustrates the fatality rate of Texas compared to California over a 10 year period.



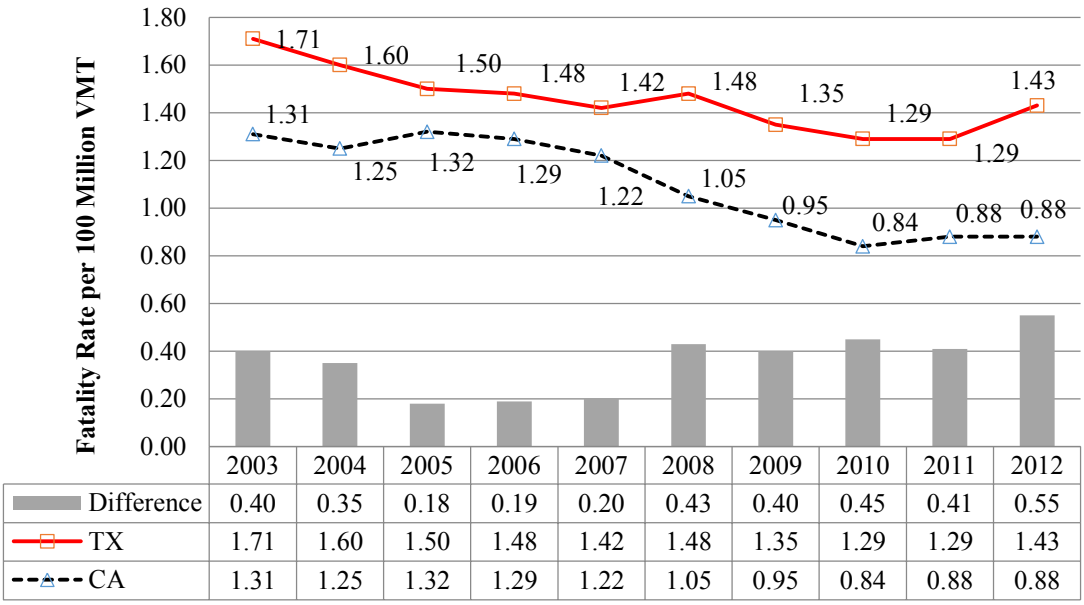
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-363	-461	-716	-717	-491	-29	-21	242	173	300
TX	3368	3266	3133	3122	3100	3116	2804	2746	2790	3033
CA	3731	3727	3849	3839	3591	3145	2825	2504	2617	2733

(a) Fatal Crashes



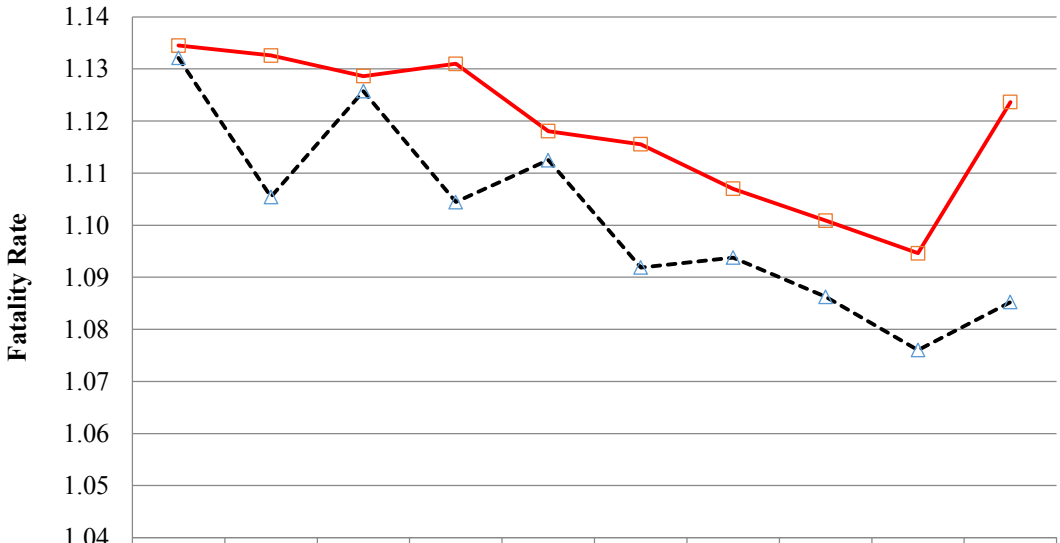
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-403	-421	-797	-709	-529	42	14	303	238	442
TX	3821	3699	3536	3531	3466	3476	3104	3023	3054	3408
CA	4224	4120	4333	4240	3995	3434	3090	2720	2816	2966

(b) Traffic Fatalities



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	0.40	0.35	0.18	0.19	0.20	0.43	0.40	0.45	0.41	0.55
TX	1.71	1.60	1.50	1.48	1.42	1.48	1.35	1.29	1.29	1.43
CA	1.31	1.25	1.32	1.29	1.22	1.05	0.95	0.84	0.88	0.88

(c) Fatalities per 100 million VMT



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
TX	1.13	1.13	1.13	1.13	1.12	1.12	1.11	1.10	1.09	1.12
CA	1.13	1.11	1.13	1.10	1.11	1.09	1.09	1.09	1.08	1.09

(d) Fatalities per a fatal crash

Figure 2 (a, b, c & b) Trends of Fatalities and Fatality Rate in California and Texas
Source: FARS (2014a)

Time of Day

Fatal Crashes in Morning and Afternoon Commuting Hours

The United States Department of Commerce (USDOC) American Community Survey reported that there were 11.6 million workers in Texas and 16.4 million workers in California that were gainfully employed in 2012. Among them 80% of the workers in Texas and 73% of workers in California drove cars, trucks, or vans independent of others. In comparison 11% of the workers in both states carpooled to and from work.

In terms of the use of public transportation (except for taxicab), 5.2% of workers in California used public modes while 1.6% of workers in Texas used public modes for their commute to and from work. These findings suggest that workers in Texas value or depend on private modes of transportation in their commuting rather than public modes. Comparing morning rush hours fatal crashes, Texas experienced 91 additional fatal crashes than did California, while during evening rush hours the frequency of fatal crashes remained relatively equal in both states. Figure 3 depicts the number of fatal crashes in the morning rush hours (6 to 9 a.m.) and evening rush hours (3 to 6 p.m.) in 2012 in Texas and California.

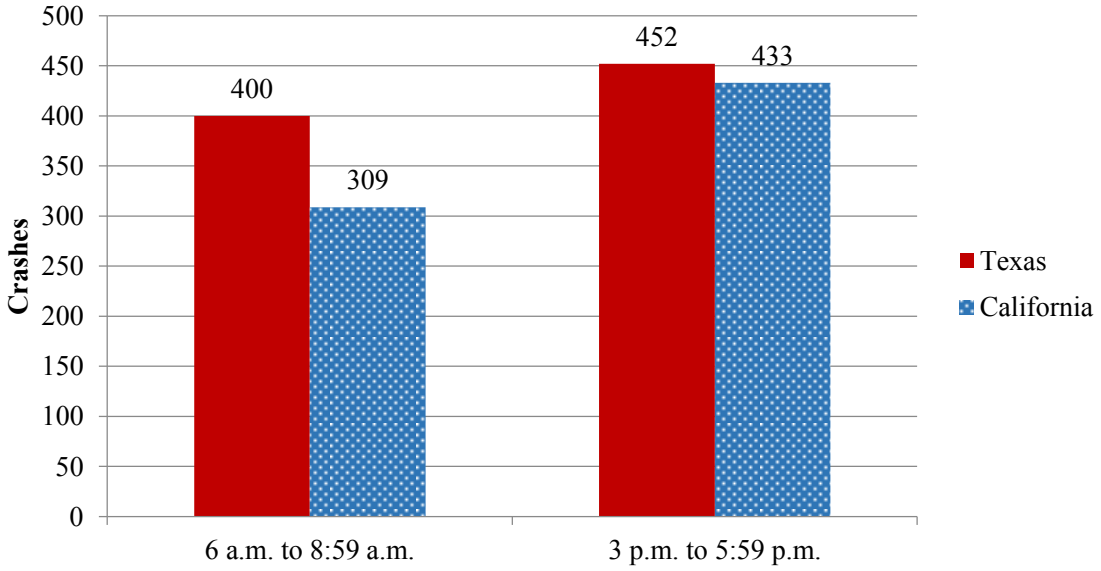
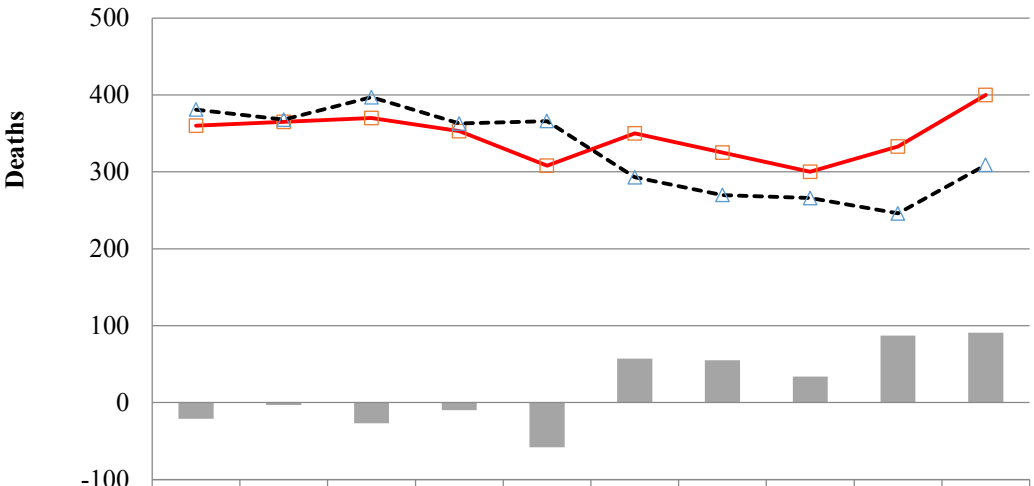


Figure 3 Fatal crashes in the morning and afternoon rush hours in Texas and California in 2012

Source: FARS (2014a)

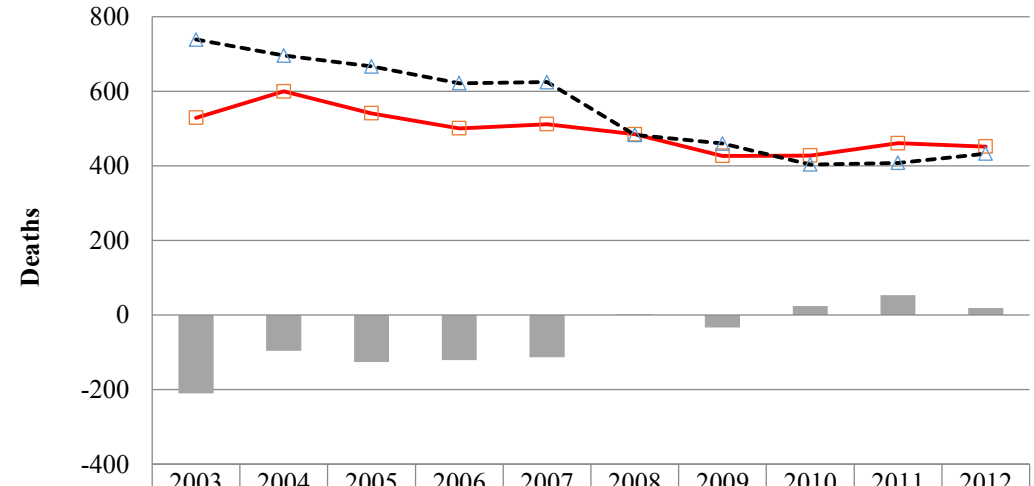
Figure 4(a & b) compares the number of fatal crashes by the time of day, specifically morning rush hours (6 to 9 a.m.) and evening rush hours (3 to 6 p.m.), from 2003 to 2012 for Texas and California. In comparison, the California morning rush hours experienced more fatal crashes than Texas until 2007. After that, the numbers of fatalities in Texas exceeded those of California and the gap between two states continued to increase through the remainder of the decade. Overall, fatal crashes in the morning rush hours increased slightly in Texas while they decreased significantly in California.

Regarding afternoon rush hours, California experienced more fatal crashes than did Texas up to 2009. After 2009, both states have had similar numbers of fatal crashes in the afternoon rush hours (3:00-6:00 PM). Figure 4 (a & b) compares the number of fatal crashes for each states morning and afternoon rush hour traffic.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-21	-3	-27	-10	-58	57	55	34	87	91
TX	360	365	370	353	308	350	325	300	333	400
CA	381	368	397	363	366	293	270	266	246	309

(a) Fatal Crashes at 6 a.m. to 8:59 a.m.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-210	-96	-126	-121	-113	2	-33	24	53	19
TX	529	600	541	501	512	485	427	428	461	452
CA	739	696	667	622	625	483	460	404	408	433

(b) Fatal Crashes at 3 p.m. to 5:59 p.m.

Figure 4 (a & b) Fatal Crashes in Morning and Afternoon Rush Hours, California vs. Texas

Source: FARS (2014a)

Vehicle Type

Fatal Crashes by Vehicle Type

In the comparison of vehicle types involved in fatal crashes, it was determined that trucks, both light and large, and motorcycles were involved in more fatal crashes in Texas than in California. In 2012, approximately 1,000 additional fatalities occurred in Texas that involved light and large trucks. This result was expected as light and large trucks accounted for 59% of all motor vehicles registered in Texas for 2012. By way of comparison, light and large trucks accounted for 49% of all registered vehicles in California during the same time period (FHWA Highway Statistics 2012).

Interestingly, Texas did experience a greater number of truck involved fatalities than did California. FARS data revealed that Texas had 624 more light truck fatalities than did California in 2012. In addition, Texas had 312 more heavy truck fatalities in 2012 as compared to California. Motorcycle crash fatalities remained relatively equal for both states in this same time period however Texas experienced 169 fewer passenger car fatalities than California. Figure 5 presents all fatalities by vehicle type in Texas and California for 2012.

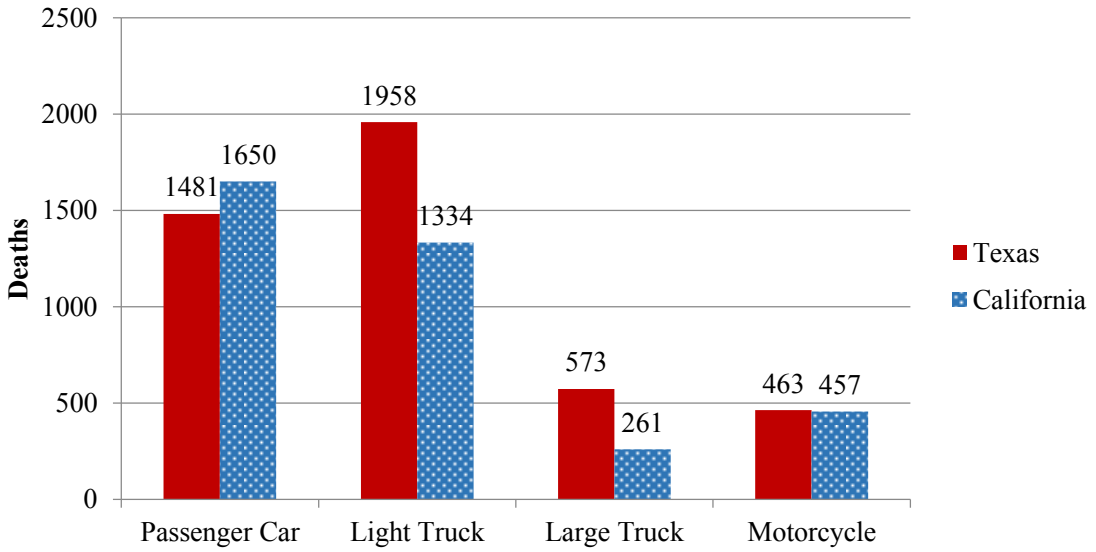
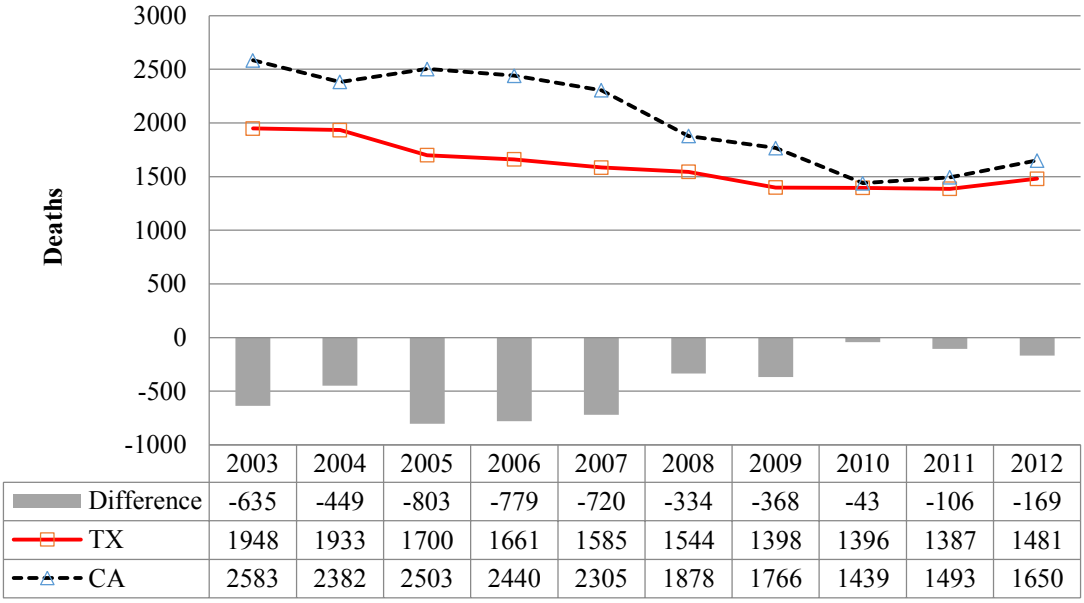


Figure 5 Fatalities by vehicle types in 2012
Source: FARS (2014a)

Passenger Cars

With higher fuel prices and more people using public modes of transportation instead of privately owned vehicles, it was expected that there would be fewer fatal crashes and fatalities involving passenger cars. As anticipated, the numbers of fatalities involving passenger cars decreased in both states. In 2008, approximately 22,000 workers in Texas and 43,000 workers in California changed their commuting mode from privately owned vehicles to public transportation. The use of public modes of transportation by more commuting workers in California made a significant contribution toward reducing their fatalities involving passenger cars. Figure 6 provides an illustration of the decline in passenger vehicle collision fatalities in Texas and California.



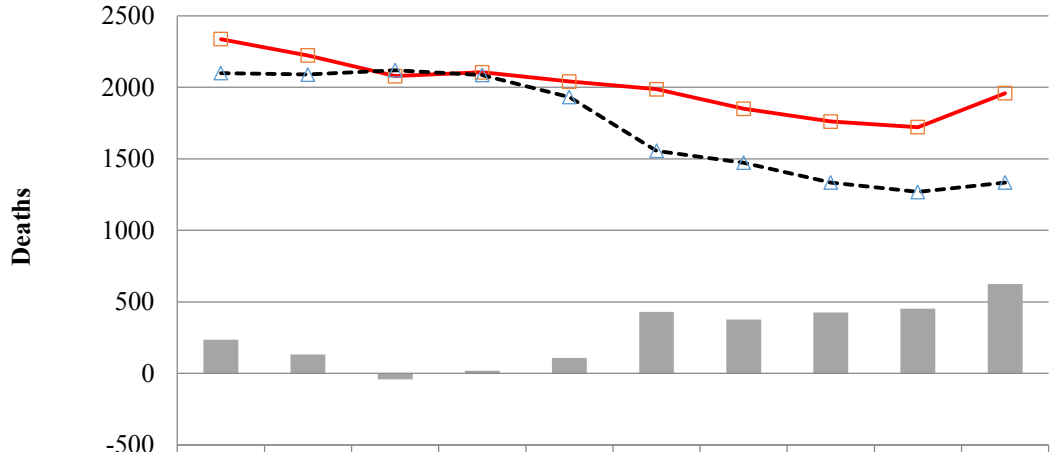
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-635	-449	-803	-779	-720	-334	-368	-43	-106	-169
TX	1948	1933	1700	1661	1585	1544	1398	1396	1387	1481
CA	2583	2382	2503	2440	2305	1878	1766	1439	1493	1650

Figure 6 Fatalities by Vehicle Types – Passenger Cars
Source: FARS (2014a)

Light and Large Trucks

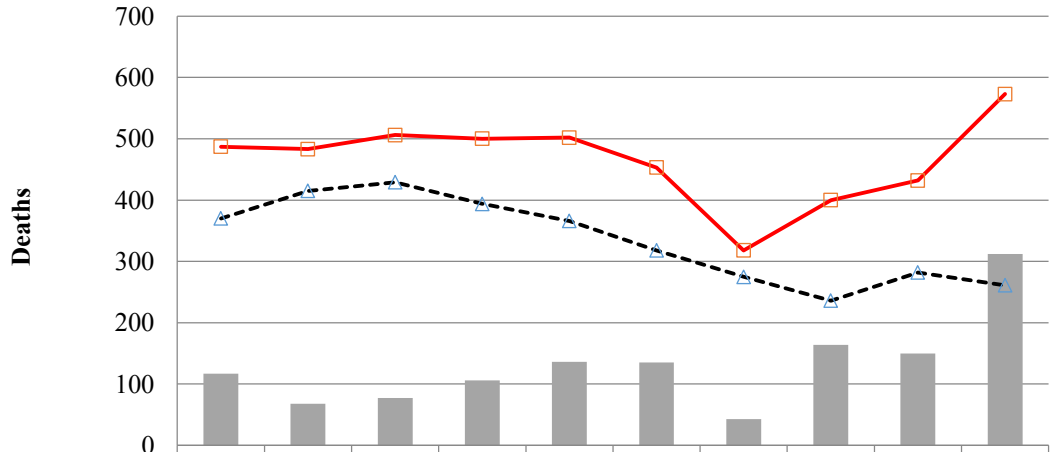
In the past 10 years, there were more fatalities involving light trucks in Texas than in California. While fatalities decreased in both states after 2007, reductions in California were much more significant than in Texas. Fatalities that involved light trucks are shown in Figure 7. Similarly, there were more fatalities that involved large trucks in Texas than in California. Since 2009, the difference in the number of fatalities between the two states has become significantly larger (see Figure 8). For example, in 2009, 43 more people in

Texas died in crashes related to large trucks while in 2012 the number increased to 312. Traffic safety related to large trucks appears to be a critical issue in Texas than in California.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	236	134	-42	19	108	430	377	427	453	624
TX	2336	2223	2078	2105	2040	1986	1850	1761	1721	1958
CA	2100	2089	2120	2086	1932	1556	1473	1334	1268	1334

Figure 7 Fatalities by Vehicle Types – Light Trucks
Source: FARS (2014a)



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	117	68	77	106	136	135	43	164	150	312
TX	487	483	506	500	502	453	318	400	432	573
CA	370	415	429	394	366	318	275	236	282	261

Figure 8 Fatalities by Vehicle Types – Large Trucks
Source: FARS (2014a)

During 2012 the number of registered trucks was approximately 11.9 million and 13.6 million in Texas and California, respectively (FHWA 2014a). Although, the number of all registered trucks in Texas was lower than that of California, the percentage of registered trucks to total registered vehicles was 59% in Texas and 49% in California. Based upon all registered vehicles, trucks in Texas are exposed to a higher risk of crash involvement due to greater saturation.

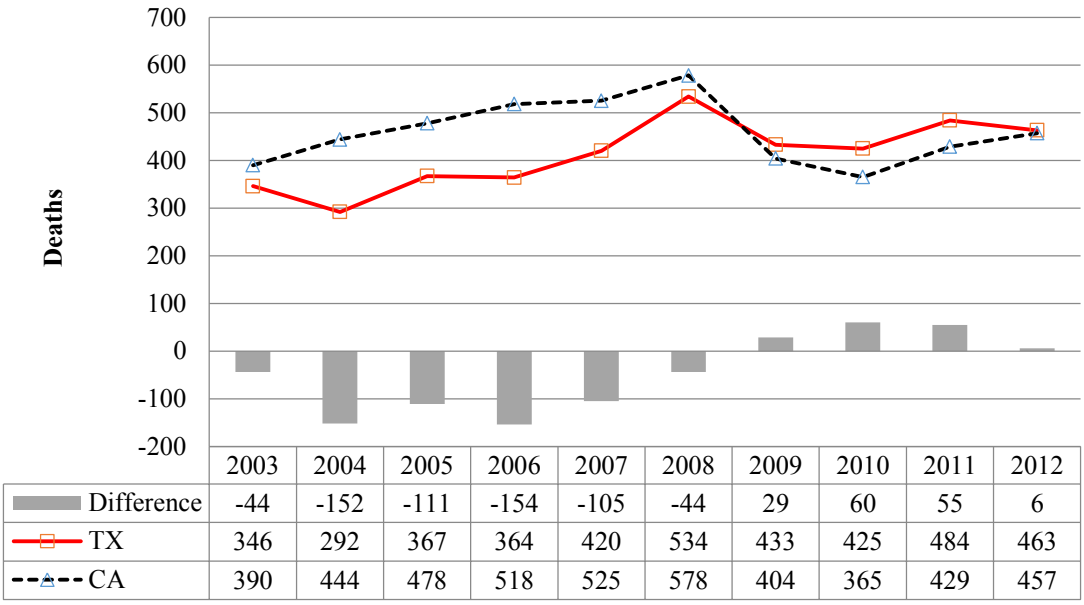
Transportation experts and public officials have attributed the rise in large truck related fatalities in Texas to a number of factors, including the following (Burwell Nebout Trial Lawyers 2014; Marynell Maloney Law Firm 2014):

- Increased truck traffic on Texas highways as a result of the current energy industry boom conditions
- Failure to maintain these large trucks properly
- Poorly trained or unqualified drivers
- Driver fatigue or error

Motorcycles

In 2012, motorcycles only made up about 3% of all registered vehicles in the United States, but motorcyclists were more than 26 times more likely than passenger car occupants to die in motor vehicle traffic crashes (FARS 2014f). Approximately 500 motorcyclists died each year in traffic crashes in either Texas or California, accounting for about 17% of total fatalities.

The overall trends of the two states are similar showing increases from 2003 to 2008, then decreases through 2010 only to increase in 2011 and 2012. Interestingly, the number of motorcyclist deaths in California was higher than that of Texas through 2008 but became lower as of 2009. Reasons for lower motorcycle fatalities in California may be credited to a strong Motorcyclist Safety Program and universal helmet law. Figure 9 shows the motorcyclist fatalities in Texas and California over the last decade.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-44	-152	-111	-154	-105	-44	29	60	55	6
TX	346	292	367	364	420	534	433	425	484	463
CA	390	444	478	518	525	578	404	365	429	457

Figure 9 Fatalities by Vehicle Types – Motorcycles
Source: FARS (2014a)

Nearly one-fourth of all national motorcycle riders involved in fatal crashes in 2012 were riding their vehicles without a valid motorcycle licenses at the time of the collisions (FARS 2014g). It is reasonable to believe that a trained motorcycle driver would be more apt to safely operate his/her motorcycle had they properly been trained as a condition of licensing. While it cannot be said that trained riders may not be involved in a motorcycle crash, it would stand to reason that their contribution to the crash event could be lessened by being properly trained and licensed. California began their official motorcycle safety training program in 1987. The program consists of a 15-hour classroom and on-cycle basic rider skills demonstration. The course is mandatory for those riders under the age of 21. As of March 2012, over 800,000 motorcycle riders have received training from CMSP (California CHP 2014b).

Another reason for lower motorcycle fatalities is the strict universal helmet law in California. Helmets are estimated to be 37% more effective in preventing fatal injuries to motorcycle riders (FARS 2014g) as opposed to un-helmeted riders. California is one of 19 states with laws requiring helmet use for all motorcycle riders. In Texas, helmet use is only mandatory for riders who are under 21years of age. If the rider is over 21 years of age and has not been through a state approved motorcycle safety training course or does

not possess medical insurance that covers medical expenses for injuries occurring from a motorcycle crash, a helmet must be worn while riding.

The helmeted rate in those states that require all riders to use head protection is approximately 95% while the usage rate in non-mandated states is approximately 50% according to the NHTSA National Occupant Protection Use Survey (FARS 2014g). Table 1 provides information on motorcycle helmet laws in Texas and California.

Table 1 Helmet Laws in Texas and California

State	Motorcyclists		
	Universal Helmet Law (Year Enacted)	Partial Law	Universal Helmet Law Repealed
Texas	-	<21; or no safety training course; or no health insurance coverage	1997
California	1992	-	-

** Must be 21 years of age and have completed a motorcycle safety training course or have an insurance policy that covers medical benefits for injuries incurred as a result of an accident.*

Motorcycle Safety Projects in California

The motorcycle safety program provides enhanced enforcement, public awareness and it increases rider awareness of proper helmet use, safety gear and safe and sober riding. Projects in this program also address the need for high publicity of motorcycle safety enforcement operations that target highway corridors and areas associated with greater than average motorcycle traffic. In 2012 – 2013, local law enforcement agencies and California Highway Patrol (CHP) conducted 405 motorcycle safety enforcement operations throughout the state.

Highlighted Promising Practice Projects: Motorcycle Safety (California)

a. California Motorcycle Safety Enforcement and Education by California Highway Patrol

This project provides for a 12 month law enforcement effort to reduce motorcycle involved crashes, fatalities and injuries. To maximize the effect, each CHP division identifies and focuses on problematic routes within their area where motorcycle

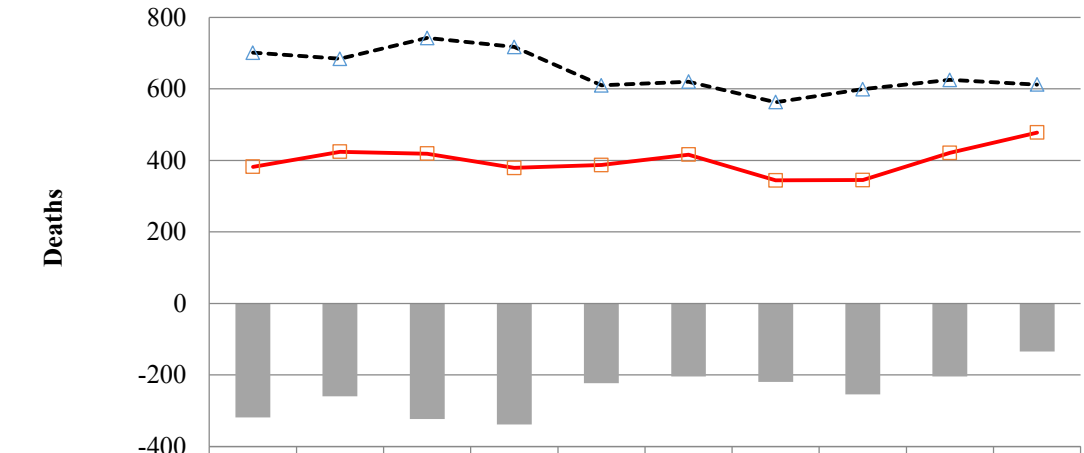
involved collisions are the highest. High visibility enforcement is used in conjunction with public awareness campaigns (media coverage, safety presentations, and educational material).

b. Motorcycle Collision Injury Outcomes Project by University of California, Berkeley Campus

This project evaluates helmet exchange programs as an approach to improving proper helmet use. It also tailors enforcement and other safety programs to communities and their collision trends. The project evaluates the role that helmet type, lane splitting, and the use of reflective gear have on crash occurrence. Information obtained helps traffic safety planners create action activities that address crash trends and injuries stemming from no helmet use, lane splitting and rider conspicuity.

Pedestrians

In contrast with occupants in passenger cars and trucks, pedestrians as vulnerable road users are more likely to be killed in traffic collisions. Nationwide, more than 10% of traffic fatalities are pedestrian involved and fatalities within this vulnerable group is increasing (FARS 2014d). In 2012, 478 and 612 pedestrians died in traffic related crashes in Texas and California, respectively. Overall, California has more pedestrian deaths than Texas however their pedestrian fatalities have decreased by 12.6% since 2003. Unfortunately, the number of pedestrian fatalities in Texas has increased by 24.5% since 2003. The pedestrian fatality rate (2012) in California was 1.61 (fatalities per 100,000 population) versus 1.83 in Texas (FARS 2014d). Figure 10 lists the number of pedestrian fatalities of Texas and California over the past decade.

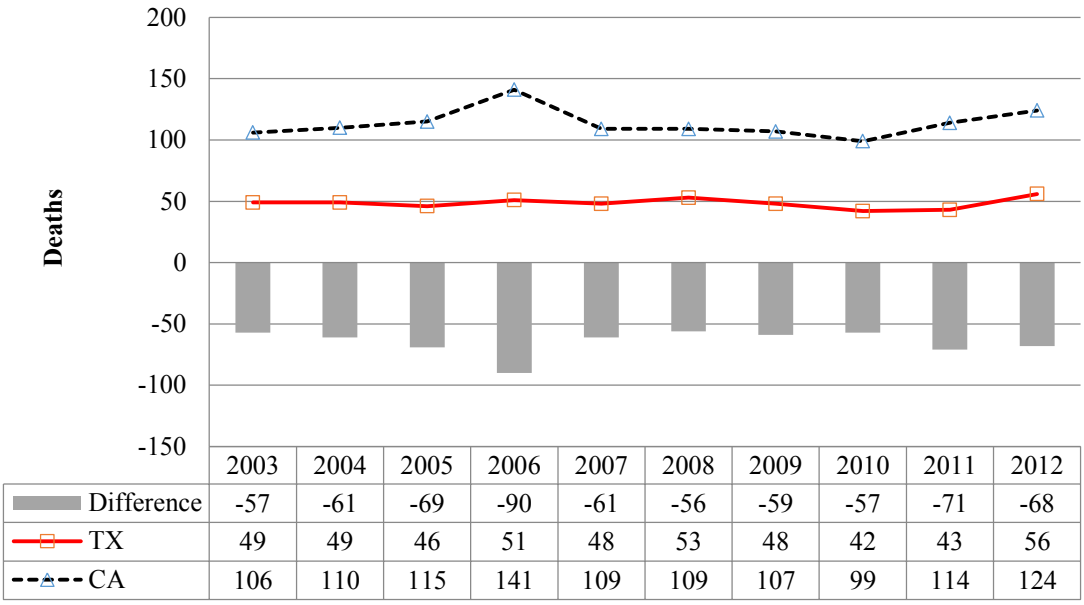


	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-319	-260	-323	-338	-223	-204	-219	-254	-204	-134
TX	382	424	419	379	387	416	344	345	421	478
CA	701	684	742	717	610	620	563	599	625	612

Figure 10 Fatalities by Transportation Mode – Pedestrian
Source: FARS (2014a)

Pedal-cyclist

Compared to other modes of transportation, pedal-cyclist fatalities in Texas and California are relatively stable. The average annual deaths of pedal-cyclists in Texas and California are around 56 and 124, respectively. It is worth noting that the pedal-cyclist fatalities showed an increasing trend in 2011 and 2012 for Texas. In the past decade, 2012 was the deadliest year recorded for pedestrian fatalities in Texas with 56 deaths. Figure 11 compares the pedal-cyclist fatalities in Texas and California over the past decade.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-57	-61	-69	-90	-61	-56	-59	-57	-71	-68
TX	49	49	46	51	48	53	48	42	43	56
CA	106	110	115	141	109	109	107	99	114	124

Figure 11 Fatalities by Transportation Mode – Pedal cyclist
Source: FARS (2014a)

Pedestrian & Bicycle Safety Projects in California

Funding for projects that address pedestrian and bicycle safety encourages safety through primary/secondary schools and local community efforts. Activities include: safety rodeos at school and community events, traffic safety workshops tailored to pedestrians and bicyclists, bicycle helmet distribution programs, diversion programs for cited youth, and increased enforcement of pedestrian and bicycle laws.

Highlighted Promising Practice Projects: Pedestrian and Bicycle Safety (California)

a. Safety Assessment for California Communities by University of California, Berkeley Campus

These projects report on the severity of collisions and the frequency of motorist, bicycle, and pedestrian injury/fatalities that are due to collisions on the roadway. Technical assistance is provided to local agencies by means of a Traffic Safety Assessments (TSA), Public Service Announcements (PSA), Pedestrian Safety Action Plan (PSAP) workshop, Bicycle Safety Assessments (BSA), and Rural Safety Assessments (RSA).

b. Community Safety Training Projects by University of California, Berkeley Campus

This 4 hour training workshop focuses on pedestrian safety best practices, walkability, and community engagement. 10 training workshops occur throughout the state of which 5 target high risk communities, 3 target older adults, and two target youth and parents. Follow up services are provided to communities.

Location

Fatal Crashes on Rural Highways

In 2012, Texas experienced 399 more fatal crashes and 496 more fatalities on rural highways relative to California. Fatal crashes and fatalities on rural highways in Texas account for approximately 50% of the total crash population. By comparison, rural highway fatal crashes and fatalities accounted for 42% of the total in California. Figure 12 shows the frequency of fatal crashes and fatalities on rural highways in Texas and California in 2012.

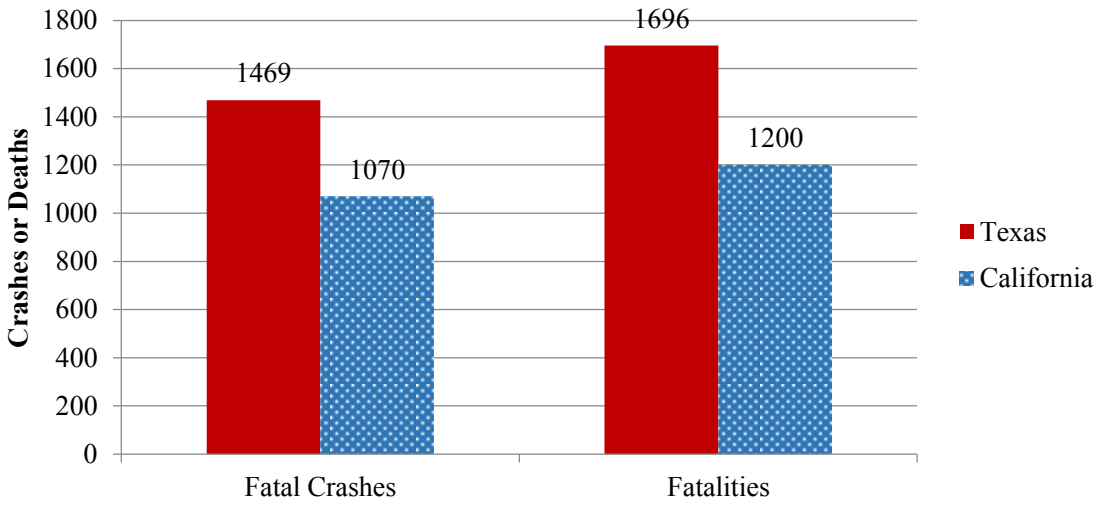


Figure 12 Fatal crashes and fatalities on rural highways in 2012
Source: FARS (2014a)

It is important to note that two-thirds of total public road length in Texas is rural highway, while less than half of the public roadway in California is considered rural. Table 2 provides a breakdown of urban versus rural public roadway length for both Texas and California. It is to be expected that more fatal crashes and fatalities would take place on rural highways in Texas rather than in California.

Table 2 Public Road Length in 2012

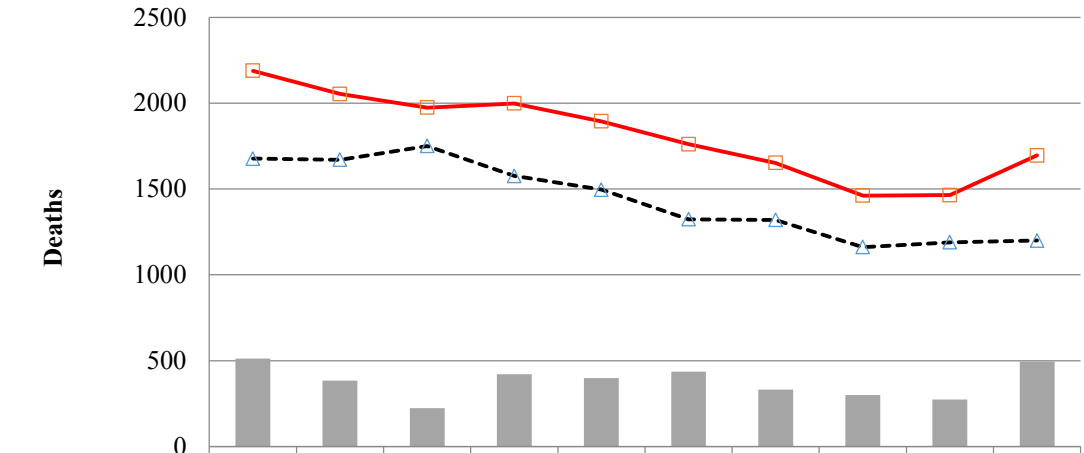
State	Urban		Rural		Total Length (miles)
	Length (miles)	Percentage	Length (miles)	Percentage	
Texas	99,276	32%	213,934	68%	313,210
California	94,629	54%	80,870	46%	175,499

Source: FHWA Highway Statistics in 2012

Fatality Comparison between Rural and Urban Areas

Overall, the fatalities on rural highways of both states showed a decreasing trend from 2003 to 2010. After that, the fatalities in both states increased. Fatalities on Texas rural highways have historically been higher than that of California with an average gap of around 350 deaths over the past decade (2003-2012) and about 500 in 2012 alone.

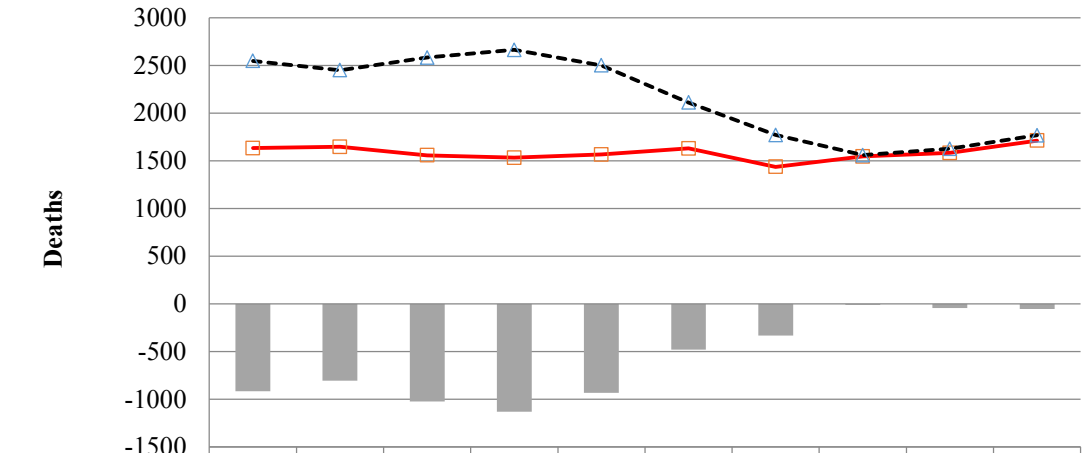
By way of comparison fatalities on urban roadways showed a greater difference. Fatalities in Texas urban areas remained stable from 2003 to 2009. After 2009, urban fatalities began to grow with an average increase of approximately 5% annually. By comparison, fatalities in urban areas of California significantly decreased between 2007 and 2010. From 2003-2007 there were about 1000 more urban crash fatalities in California than were in Texas. Post 2007 urban fatalities rapidly declined and at present (2012) they are only 55 more than that of Texas. The fatalities on rural highways and urban roadways over the last decade (2003-2012) in Texas and California are shown in Figure 13 and 14.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	512	383	223	422	398	437	332	300	274	496
TX	2189	2053	1974	1998	1894	1761	1652	1462	1464	1696
CA	1677	1670	1751	1576	1496	1324	1320	1162	1190	1200

Figure 13 Fatalities on Rural Highways

Source: Data extracted from FARS*



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-915	-804	-1025	-1131	-934	-481	-333	-12	-44	-55
TX	1632	1646	1557	1532	1565	1629	1437	1546	1582	1711
CA	2547	2450	2582	2663	2499	2110	1770	1558	1626	1766

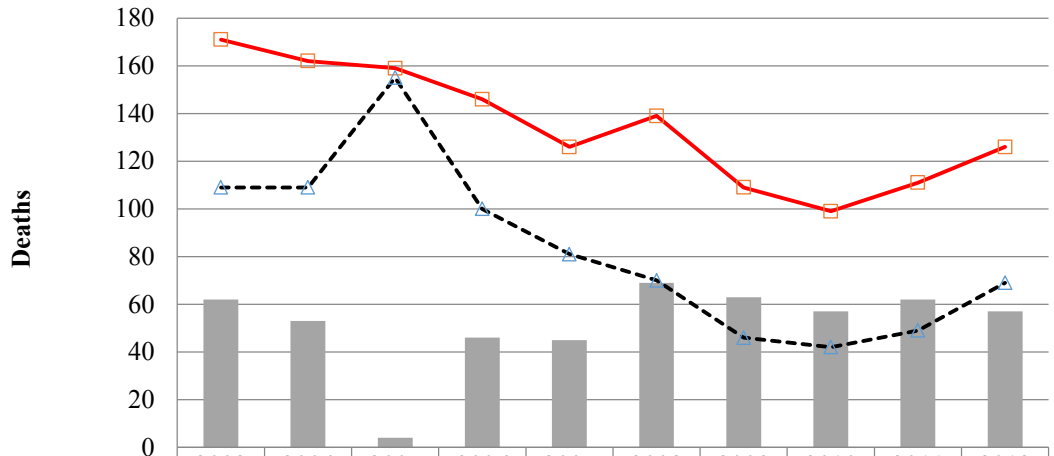
Figure 14 Fatalities on Urban Roads

Source: Data extracted from FARS

Fatal Crashes in a Work Zone

In 2012, there were 126 people killed in highway construction and maintenance zones in Texas. The number of work zone fatalities in Texas is about two times greater

than that of California in 2012. The fatality numbers in Texas have traditionally been much higher than that of California. Figure 15 compares the fatalities due to work zone crashes in Texas and California for the past 10 years (2003-2012).

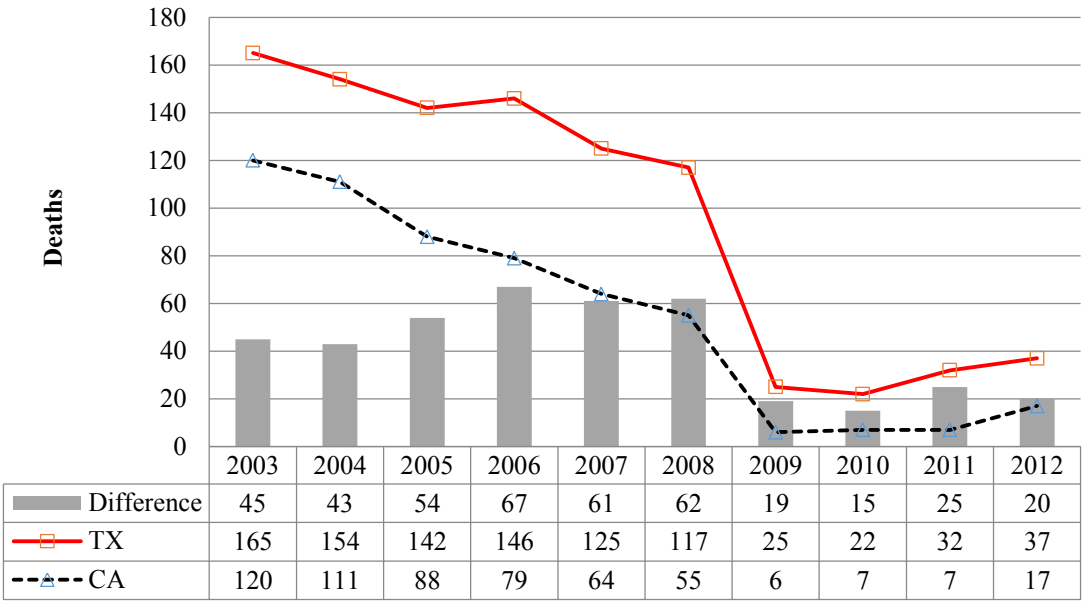


	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	62	53	4	46	45	69	63	57	62	57
TX	171	162	159	146	126	139	109	99	111	126
CA	109	109	155	100	81	70	46	42	49	69

Figure 15 Fatalities of Work Zones

Source: TTI (2015)

The two leading causes of work zone crashes have been identified as failure to control speed and driver inattention. The frequency of Texas' drivers being inattentive while driving has historically been higher than that of California. Of interest was the significant decrease in the number of careless driving fatalities in both states between 2008-2009. It is believed that the dramatic drop in the number of fatalities was due to FARS reclassification of the distracted driving coding element. Figure 16 shows the frequency of fatal crashes where drivers exhibited careless driving activities (e.g., inattentive/careless driving, failure to observe work zone, driving on wrong side of road, etc.).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	45	43	54	67	61	62	19	15	25	20
TX	165	154	142	146	125	117	25	22	32	37
CA	120	111	88	79	64	55	6	7	7	17

Figure 16 Frequency of Drivers' Careless Driving (Distraction, Inattention, etc.) in Work Zone Fatal Crashes
Source: Data extracted from FARS

The relative low number of fatalities and careful driving at work zones in California can be attributed to the "Slow for the Cone Zone" campaigns and the "Move Over" law. In California, fines are doubled in work zones and drivers must move over for vehicles with active amber lights. In addition, every roadway construction project site must have a California Highway Patrol officer assigned to provide enforcement support. This helps to deter speeding motorists and generally makes people more cautious when driving through active construction zones.

In addition, the California Department of Transportation (CalTrans) puts up billboards near active work zones that picture kids of CalTrans workers with the slogan "Be Alert, Our Dad's at Work" (shown in Figure 17 (b)). This emotional campaign in California encourages people to be more careful when they see highway workers. By way of comparison, many of the safety zone warning banners for Texas are more fine base incentivized (Figure 17 (a)) instead of personalized.

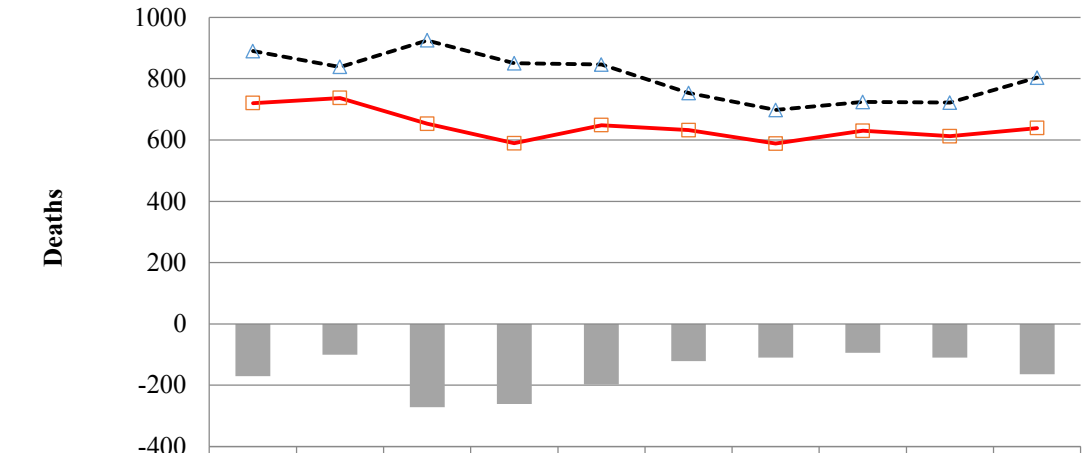
(a) Texas Campaign

(b) California Campaign

Figure 17 (a & b) Work Zones Safety Billboards

Intersection/-Related Fatal Crashes

Approximately half of the reported crashes in the United States (US) occur at intersections or are intersection related (ITE 2004). In addition, 21% of all annual fatalities and roughly 50% of all serious injuries have been attributed to intersection crashes (FHWA 2014b). Historically, Texas experiences fewer fatalities at intersections than does California, but the gap is becoming more narrow. Figure 18 provides a comparison of intersection fatalities in Texas and California for the past decade.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-170	-101	-272	-261	-198	-121	-110	-94	-110	-164
TX	720	737	653	589	648	632	588	630	612	639
CA	890	838	925	850	846	753	698	724	722	803

Figure 18 Fatalities of Intersection Related Crashes
Source: Data extracted from FARS

Automated Enforcement

One possible reason for the decrease of California's intersection related fatalities might be contributed to by the statewide use of automated traffic enforcement systems. Automated enforcement refers to the use of advanced devices that capture traffic violations that will be enforced at a later time. Studies have shown that the use of automated traffic enforcement systems can reduce traffic violations and collisions significantly at monitored intersections. Red light cameras are the most commonly used automated traffic enforcement system in California and Texas. An NCHRP investigation concluded that red light cameras improve the overall safety of intersections when they are actively in use (McGee and Eccles 2003). Hu et al. (2011) conducted the before-after analysis on red light running (RLR) fatal crashes at 14 large US cities, and found that annual RLR fatal crash rate per 100,000 population decreased by 62% with RLR camera program from 2004 to 2008 in San Diego, California.

California authorized its statewide automated traffic enforcement system program in 2007. To date, red light and speed cameras are permitted in California. In Texas the red light camera system requires that local ordinance be passed in the City of its use and that an engineering study be conducted (Governors Highway Safety Association 2014).

Deterrent effects in California may be greater than Texas due to higher violation fines. Texas also prohibits the use of speed enforcement cameras while municipalities in California may use them. Deterrent effects for speed and red light violations may provide benefits for crash reduction due to the nature of a driver's fear of being cited for a violation. The deterrent effects may also be responsible for changing driver behavior which could account for lower intersection and speed related fatalities in California. Table 3 lists automated traffic enforcement laws in California and Texas.

Table 3 Automated Enforcement Laws in Texas and California

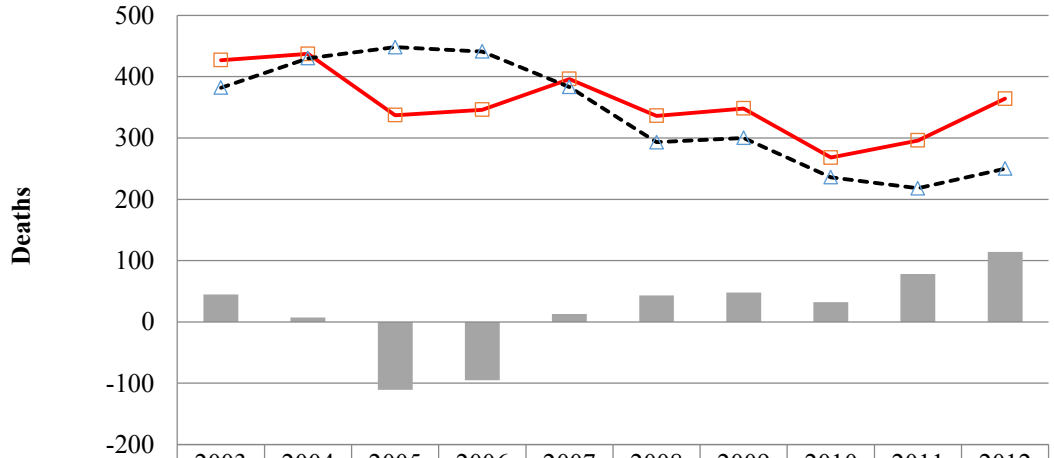
<table>
<tr><th>State</th><th>Violation / State Law</th><th>Permitted Locations/Criteria</th><th>Citation Issued To / Liability</th><th>Image Taken</th><th>Penalties (Traditional Penalties)</th></tr>
<tr><td rowspan="3">Texas</td><td colspan="5">Speed: prohibited</td></tr>
<tr><td rowspan="2">Red light: Limited</td><td rowspan="2">Local ordinance is required</td><td rowspan="2">Registered owner/Owner</td><td rowspan="2">2 or more photos or digital images of the tag</td><td>$75 max; Not criminal or recorded offense</td></tr>
<tr><td>($200 max)</td></tr>
<tr><td rowspan="3">California</td><td colspan="5">Speed: No state law or programs</td></tr>
<tr><td>Red light: Permitted</td><td>Statewide</td><td rowspan="2">Registered owner/Driver if Identifiable</td><td rowspan="2">Tag and driver</td><td rowspan="2">$490 ($100 fine + $390 in penalties and assessments); 1 point assessed to driver license</td></tr>
<tr><td>Rail crossing: Permitted</td><td>Statewide</td></tr>
</table>

Fatalities of Head-on Collisions

Fatalities involving head-on collisions in Texas fluctuated between 2003 and 2010 and then increased in 2011 and 2012. In comparison, head on crash fatalities in California decreased from 2006 through 2011 (except 2009 with a slight increase) then increased in 2012. Head-on collision fatalities in Texas were higher than that of California in the last decade except between 2005 and 2006. The gap in between Texas and California

regarding head on collision fatalities is becoming wider and more negatively pronounced for Texas.

The decline of head-on collisions in California may be a result of the Highway Safety Improvement Program (HSIP) projects "Median Barrier Monitoring Program" and "Upgrade Median Barrier". California spent $45.4 million for median improvements in 2012. California installed new median barriers along highways plus upgraded existing double metal beam barriers to either concrete or three beam metal barriers. Figure 19 compares the differences between Texas and California regarding head on collision fatalities.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	45	7	-111	-95	13	43	48	32	78	114
TX	427	437	337	346	396	336	348	268	296	364
CA	382	430	448	441	383	293	300	236	218	250

Figure 19 Fatalities of Head-on Collisions
Source: Data extracted from FARS

Driver Behavior

Use of Seatbelt in Fatal Crashes

Seatbelts are one of the most critical devices for occupant protection in a crash. Both Texas and California require seatbelt use for all vehicle occupants. According to NHTSA's National Occupant Protection Use Survey (NOPUS), the seatbelt use rates of Texas and California were 94.0% and 95.5%, respectively, in 2012. Despite high seatbelt compliance rates for both states in 2012, 927 passenger vehicle occupants in Texas and 487 passenger vehicle occupants in California died in crashes where their seatbelt was not used. Overall, fatalities in Texas in which a seatbelt was not used were almost double that of California in 2012.

In an analysis of fatalities in which a seatbelt was not used by age group, the numbers of crash deaths for each age group in Texas was nearly double that of the same groups in California. Additionally, the number fatalities for children 15 years old and under in Texas is more than five times greater than that of the same age group in California. Table 4 provides the total number of fatalities in which a seatbelt was not used by age group.

Table 4 Fatalities Seatbelt Not Used by Age Group

State	Seatbelt Not Used					
	Total	Age Group				
		<15	16 to 34	35 to 65	>65	Unknown
Texas	927	67	490	310	57	3
California	487	13	274	164	36	0
Ratio (TX vs. CA)	1.90	**5.15**	1.79	1.89	1.58	n/a

Seatbelt and Child Safety Seat Laws

Seatbelt laws are divided into two categories: *primary* and *secondary*. Primary seatbelt laws allow law enforcement officers to ticket a driver or passenger for not wearing a seatbelt, without any other traffic offense taking place. Secondary laws require that an officer enforce the primary law first before enforcement action can be taken on the secondary offense. A secondary law may not be enforced independent of enforcing a

primary law first. Both California and Texas are primary seatbelt law states. Table 5 compares statutory requirements for seatbelt use in Texas and California.

Table 5 Seatbelt Laws of Texas and California

State	Who is Covered (Yrs.)	In What Seat	Maximum Fine 1st Offense
Texas	≥15	All	$50 (driver or passenger)
	>8 (and >57") <17		$200 (driver)
California	≥16	All	$162 ($20 fine + $142 in penalties and assessments)

Child passenger restraint requirements vary based on age, weight, and height. Often, this happens in three stages: infants use rear-facing infant seats; toddlers use forward-facing child safety seats; and older children use booster seats. Texas and California laws require all children to ride in the rear seat whenever possible, and each state permits children over a particular age, height or weight to use an adult safety belt. Table 6 illustrates the requirements based on the laws of each state for child passenger restraints in Texas and California.

Table 6 Child Passenger Restraint Laws of Texas and California

State	Child Restraint Required*	Adult Safety Belt Permissible*	Maximum Fine 1st Offense
Texas	≤7 (and <57")	Not permissible	$25 min., maximum unlisted
California	<8 (and <57") in rear seat if available	8 - 15 (or ≥57")	$100

* Unless indicated, number refers to years old

Occupant Protection Safety Projects in California

The California occupant protection program is strongly committed to addressing safety belt use by all occupants, but especially older adults and children. Program funding goes toward the state's ongoing effort to educate and motivate the use of safety belts and child occupant restraint systems on every ride. A combination of laws, enforcement,

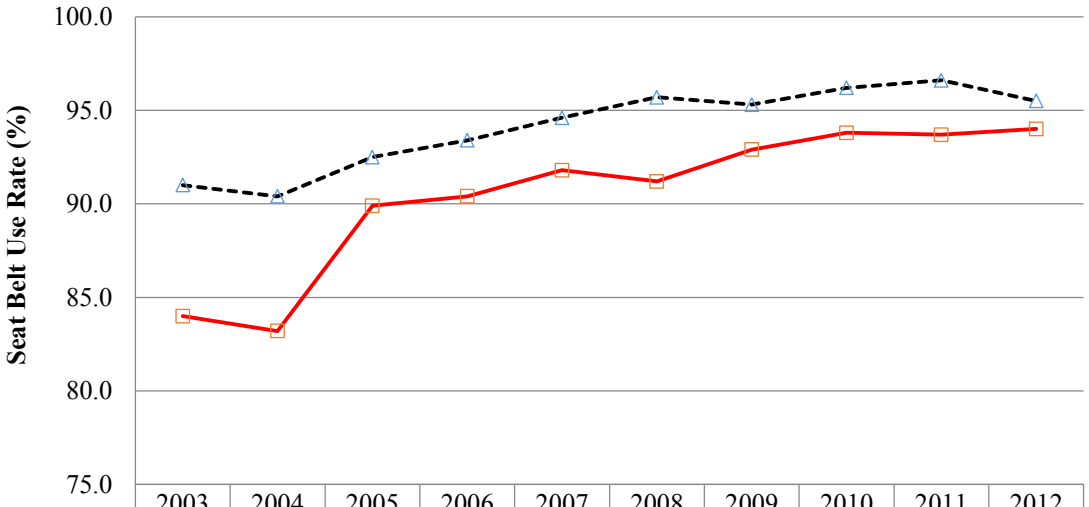
public information campaigns, education, and incentives help the state achieve significant and lasting increases in seatbelt and child safety seat usage.

Child passenger safety is a major focus for the occupant protection program in California. The main goal is to focus on increasing child protection compliance rates. Projects in this area fund child passenger seat technician and instructor trainings, child passenger seat restraint checkups, fitting stations, and educational presentations.

Occupant protection promising practice strategies include high visibility enforcement, “Click it or Ticket” campaigns, developing educational projects along multicultural and ethnic populations, conducting statewide surveys, urging the media to report occupant protection restraint usage as part of every collision investigated, working in cooperation with local courts, law enforcement, referral agencies, home and daycare providers, clinics and hospitals, and establishing senior driver safety programs.

Seat-belt Not Used

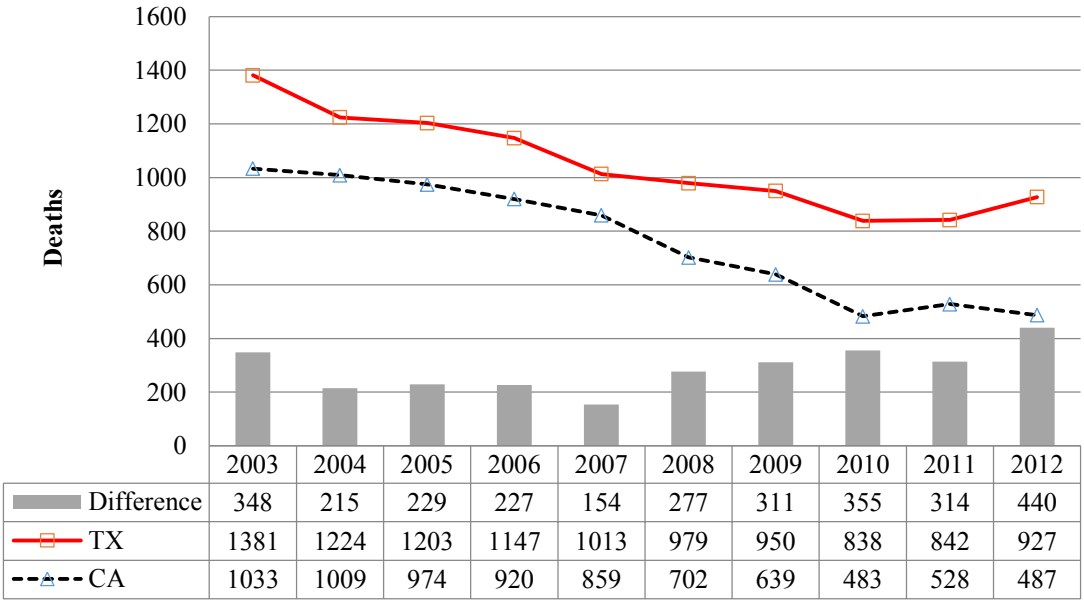
It is well known that seat belts reduce the risk of fatal injury by 45% to 60% (FARS 2014c). Both Texas and California have primary seat belt laws, but the observed seat belt use rate in California has been historically greater than that of Texas. Figure 20 illustrates the difference in seatbelt use rates between the two states.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
TX	84.0	83.2	89.9	90.4	91.8	91.2	92.9	93.8	93.7	94.0
CA	91.0	90.4	92.5	93.4	94.6	95.7	95.3	96.2	96.6	95.5

Figure 20 Observed Seat Belt Use Rate in California and Texas
Source: FARS (2014e)

Not surprisingly, unrestrained fatalities in Texas are higher than that of California over the past decade (2003-2012), as illustrated in Figure 21. In 2012, Texas experienced 440 more deaths than California where occupants were not wearing restrains at the time of the fatal crash. This number is nearly twice that of California which experienced 487 deaths.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	348	215	229	227	154	277	311	355	314	440
TX	1381	1224	1203	1147	1013	979	950	838	842	927
CA	1033	1009	974	920	859	702	639	483	528	487

Figure 21 Unrestrained Fatalities in California and Texas
Source: FARS (2014c)

Highlighted Promising Practice Projects: Occupant Protection in California

a. Vehicle Occupant Safety Program (VOSP) by California Department of Public Health

This project coordinates child passenger safety (CPS) efforts across the state. The program sustains essential CPS partnerships that link state and local policy, enforcement, and educational efforts to enhance effectiveness of local program implementation and CPS service. The program also supports local projects by providing technical assistance, data, and educational resources. Project participants conduct onsite programmatic reviews, national CPS technician certification courses, continuing education and training opportunities, promote national CPS week and

California booster seat law, and assists with providing the CPS violator education course.

b. Vehicle Occupant Restraint Education and Instruction by California Highway Patrol

This project provides 12 month coverage for community outreach and enforcement measures that increase the use of vehicle occupant restraint systems and child passenger restraint systems. The project provides for the inspection of child safety seat installations, distribution of child passenger safety seats, provide training and educational classes, and conduct the statewide enforcement and awareness campaign for adult and child occupant protection.

Fatal Crashes and Speed Limits

Vehicle speed is a critical factor affecting crash severity, as well as crash causation and risk. In terms of analysis by posted speed limits, Texas had fewer fatal crashes and fatalities on highways with speed limits of 65 mph or lower. However, Texas had six times more fatal crashes and fatalities on highways with speed limits of greater than 65 mph. Table 7 compares the numbers of fatal crashes and fatalities for Texas and California by speed limits.

Table 7 Fatal Crashes and Fatalities by Posted Speed Limits

State	Posted Speed Limit (mph)	Fatalities	Fatality Ratio (TX vs. CA)	Fatal Crashes	Crash Ratio (TX vs. CA)
Texas	45 or below	1,025	0.78	957	0.76
	46 to 65	1,141	0.76	1,031	0.77
	66 or above	1,075	**6.36**	905	**6.19**
	Unknown	167	n/a	140	n/a
California	45 or below	1,310	--	1,249	--
	46 to 65	1,484	--	1,335	--
	66 or above	169	--	146	--
	Unknown	3	--	3	--

Source: Data extracted from FARS

Speed Limit Policy

Setting speed limits has traditionally been the responsibility of states, except for the period between 1973-1994. During that time, the federal government enacted mandatory speed limit ceilings on interstate highways and similar limited access roads

through a National Maximum Speed Limit. Congress repealed the National Maximum Speed Limit in 1995. Since then, 34 states have raised speed limits to 70 mph or higher on portions of their roadway systems.

Although California has set different speed limits depending on vehicle and roadway types, Texas has set different speed limits by roadway types regardless of vehicle type (cars and trucks). Table 8 below lists speed limits for both urban and rural interstates, as well as other limited access roads.

Table 8 Speed Limit Setting

State	Rural Interstates		Urban Interstates		Other Limited Access Roads	
	Cars (mph)	Trucks (mph)	Cars (mph)	Trucks (mph)	Cars (mph)	Trucks (mph)
Texas	75; 80 or 85 on specified segments	75; 80 or 85 on specified segments	75	75	75	75
California	70	55	65	55	70	55

Driver Impairment

Fatal Crashes Involving Alcohol-Impaired Driving

Crashes are deemed alcohol impaired driving (AID) when the driver has been revealed to have a detectable amount of alcohol in their system and the introduction of the alcohol played a role in the crash. In 2012, approximately 38% of the total fatalities that occurred on state roadways in Texas were AID. While in California, only 28% of total roadway fatalities were related to alcohol. Table 9 displays the breakdown of fatalities related to AID by location.

Table 9 Fatalities of Alcohol-Impaired Driving (BAC = 0.08+)

State	Fatalities related to AID			% (AID Fatalities of Total Fatalities)
	Urban (%)	Rural (%)	Total	
Texas	945 (73%)	351 (27%)	1,296 (100%)	38%
California	475 (59%)	327 (41%)	802 (100%)	28%

Source: FARS (2014b)

Policy and Laws against Alcohol-Impaired Driving

In addition to prohibiting driving with a BAC of .08 or greater, each state in the United States has adopted additional laws or policies that further prevent individuals from getting behind the wheel when impaired by alcohol. Table 10 compares the AID laws and policies of Texas and California.

Table 10 Alcohol Impaired Driving Policy and Laws

State	Increased Penalty for High BAC	Administrative License Suspension on 1st Offense	Limited Driving Privileges During Suspension	Ignition Interlocks	Vehicle and License Plate Sanctions	Repeat Offender Laws[1]
California	0.15	4 months	After 30 days	Mandatory[2]	Impoundment, vehicle confiscation	Yes
Texas	0.15	90 days if .08+; 180 days for refusal	Yes	Mandatory for repeat convictions*	Impoundment	Yes

NOTE: [1]Meeting Federal Requirements; [2]Mandatory for all convictions in Alameda, Los Angeles, Tulare and Sacramento counties.

Alcohol-Impaired Driving Projects in California

Projects that show evidence for changing behavior and making lasting changes include those that focus on jail time, alternative sanctions, and driving under influence (DUI) court programs that are designed to prohibit repeat offenders. Through strong judicial supervision, random drug and alcohol testing, mandated treatment and the use of other sanctions, California is improving traffic safety concerning AID. Since implementation of these programs California has been able to decrease their alcohol related crash deaths from 1,298 fatalities in 2005 to 802 in 2012.

Longer licensing sanctions and the mandatory use of ignition interlock devices in coordination with DUI courts have also shown signs of success for reducing recidivism. Since 2010, California has mandated by statute that first time DUI offenders in Sacramento, Alameda, Los Angeles, and Tulare counties must have an ignition interlock placed upon any vehicle that they drive for a minimum period of 12 months.

High Visibility Enforcement

The use of high visibility enforcement appears to be the benchmark for addressing problems associated with alcohol and other drug driving offenses. High visibility enforcement projects include efforts such as:

- DUI checkpoints

- DUI saturation patrol
- Court stings for DUI
- DUI warrant details and stakeouts

These, as well as other high visibility enforcement projects, promote increased enforcement activities at holiday periods that have a strong drinking relationship tied to their associated festivities. High visibility enforcement is performed, and intense media campaigns are conducted that promote cooperation between multiple law enforcement agencies and safety partners. Emphasis is placed upon citizens to report DUI drivers through the use of 625 fixed freeway changeable message signs and promotion of national campaigns such as "Drive Sober or Get Pulled Over" are promoted in daily press releases and on social media. Increased non-traditional enforcement is conducted by the California Alcoholic Beverage Commission (CABC) by way of a wide variety of underage drinking projects ranging from minor decoys to retail sale operation stings. DUI corridor projects are conducted on targeted roadway sections where data suggests significant DUI crash activity.

Emphasis is also placed on impaired driving projects designed to educate younger drivers. DUI court proceedings (trials and sentencing) are sponsored by high schools in order to provide students with an opportunity to see the consequences of DUI to individual drivers in their own communities. Other high school alcohol awareness projects include "A Life Interrupted", "Every 15 Minutes", "Teens in the Driver Seat", "Rockers Against Drunk Driving" (RADD)" and "Sober Graduation." Outreach promoting DUI prevention and education efforts are also given to middle school and to college campuses throughout the state. These projects involve crashed car exhibits, presentations, and use of victim impact panels.

Training projects are a large component of addressing DUI driving in California. Training includes national programs such as Standardized Field Sobriety Testing (SFST), Advanced Roadside Impaired Driving Enforcement (ARIDE), and the Drug Evaluation and Classification Program (DECP). Mothers Against Drunk Driving (MADD) is also a strong partner with law enforcement to perform various training events related to impaired driving.

Sobriety Checkpoints

Sobriety checkpoints are roadside events where law enforcement officers have an opportunity to check drivers for signs of intoxication and impairment due to AID. Many jurisdictions utilize sobriety checkpoints as part of their larger AID deterrence program. However, sobriety check points are not utilized by all jurisdictions due to legal issues surrounding their use. While some states have laws authorizing sobriety checkpoints, others forbid them, or remain undecided on the issue. Even still, states with no explicit statutory authority may or may not conduct sobriety checkpoints.

In many states, the judiciary has stepped in to uphold or restrict sobriety checkpoints based on interpretation of State or Federal Constitutions. Nationally, 12 states prohibit the use of sobriety checkpoints. Texas prohibits sobriety checkpoints based on its interpretation of the State and U.S. Constitution. Table 11 illustrates the legality of sobriety checkpoints in Texas and California respectively.

Table 11 Legality of Sobriety Checkpoints in Texas and California

State	Checkpoints Conducted?	Frequency	Legality
Texas	No	None	Illegal under Texas' interpretation of the state and federal Constitution
California	Yes	2,500+ annually	Upheld under state and federal Constitution

Highlighted Promising Practice Projects - Alcohol Impaired Driving (California)

a. Reducing Impaired Driving (RID) by California Highway Patrol

This is a 12 month program that combats fatal and injury collisions that are DUI related. Activities include sobriety/driver's license checkpoints, DUI task force operations, proactive DUI saturation patrol operations based upon available data, broad public awareness campaigns in order to decrease alcohol involved fatal and injury collisions on California roadways.

b. A Life Interrupted by Bakersfield Police Department

A Life Interrupted is a teen alcohol prevention and careless driver program designed to deliver true stories that involve teens that have lost their life in a

preventable traffic collision. The project allows law enforcement agencies to present and display their wrecked car trailer at schools, DUI checkpoints, and community events in order to educate teens about the dangers of impaired driving. The program was presented at a total of 59 community presentations, 66 school assemblies, and the trailer was displayed at 14 DUI checkpoints.

c. DUI Hot List Continuation and Monitoring Project by California Department of Motor Vehicles (DMV)

The California DMV has designed, developed and implemented a web based application that distributes "hot lists" containing DUI offender information to law enforcement agencies. The "hot lists" provide law enforcement agencies with driver license numbers of suspended or revoked DUI multiple offenders. The purpose of the list is to allow law enforcement the ability to conduct investigations of repeat offenders in an attempt to curtail DUI recidivism in the state. Hot list activities for the first year of use included: 174 enforcement stops, 308 in person checks of offenders to ensure compliance with probation requirements, 469 mailings to offenders warning them not to drive and 258 stakeouts of offenders at bars, residences, and other locations. The activities resulted in 115 citations for driving on suspended license, 129 vehicle impoundments, 23 DUI arrests and 53 arrests for other reasons. The hot lists are updated bi-monthly, and allow law enforcement agencies to collaborate and organize increased enforcement and intervention efforts.

d. DUI Avoid by Office of Traffic Safety

DUI Avoid is one of the state's most notable safety efforts. It combines high visibility law enforcement, educational outreach and focused media campaigns that address impaired driving at peak drinking holiday periods on a local level. This sustained awareness and enforcement effort focuses on lowering deaths and injuries related to alcohol and drug impaired driving. DUI Avoid grants fund coalitions of local and state law enforcement coordinate to perform sobriety checkpoints, DUI task force deployments, DUI warrant/probation operations, and high visibility media

campaigns. It is estimated the DUI Avoid campaign has reached 98 percent of the state's population.

e. Sobriety Checkpoint Program- Office of Traffic Safety

Sobriety checkpoints provide local law enforcement agencies with the opportunity to conduct roadside checks of drivers to determine alcohol or drug impairment. Checkpoints usually occur during the NHTSA national mobilization periods (December 14th- January 1st and August 16th- September 2nd) in addition to spot checkpoints throughout the year. The sobriety checkpoints serve different areas of the state with emphasis being placed on the higher population areas of the state. In 2012-2013, there were 1,359 checkpoints conducted yielding 4,536 alcohol related DUI arrests, 821 drug related DUI arrests, 86 alcohol/drug combination DUI arrests, 285 drug possession arrests, and 426 criminal arrests.

f. Intensive Supervision of DUI Probationers – Probation Departments

This project concentrates on reducing recidivism among California's high-risk DUI probation population. Intensive supervision is utilized to ensure compliance of high-risk offenders with court ordered terms, and hold those offenders accountable when they fail to do so. In 2012-2013, over 15 county probation departments facilitated the supervision of over 1,100 probationers. Probationers were required to complete an alcohol education program, keep regular scheduled visits with probation officer, complete random alcohol and drug screening, and be subject to random after hours home searches and worksite visits. Table 12 provides the results of participating probation department's intensive DUI supervision for 2012-2013.

Table 12 Results of Probation Departments Intensive Supervision of DUI Offenders, 2012-2013

Intensive Supervision of DUI Probationers	Total
Probationers on Intensive Supervision	1,180
Attempted Field Contacts	8,244
Announced Field Contacts Made	284
Unannounced Field Contacts Made w/out Search	1,821
Unannounced Field Contacts Made w/ Search	4,306
Office Contacts Made	11,380
Alcohol/Drug Tests Conducted	14,906
Positive Alcohol/Drug Tests	339
Known Violations Discovered	875
DUI warrant Service Operation Completed	87
Warrant Service Attempts	962
Warrants Successfully Served	185
Total	44,569

Source: California Annual Performance Report (2012-2013), Office of Traffic Safety.

Fatal Crashes Involving Drug-Impaired Driving

Drug-impaired driving (DID) is another national area of concern for traffic safety. In 2012, there were 143 more deaths at crashes related to DID in Texas than in California. In Texas, fatalities related to DID crashes have risen significantly since 2008. In 2012, the number of fatalities related to DID was 2 ½ times higher than in 2008.

In cooperation with the California District Attorneys Association and the state Traffic Safety Resource Prosecutor, California has developed and implemented several strategic actions that are aimed specifically at DID. The strategic actions involve high visibility enforcement, training initiatives, public awareness, and prosecutorial assistance that are aimed specifically at reducing fatal and injury crashes that involve DID.

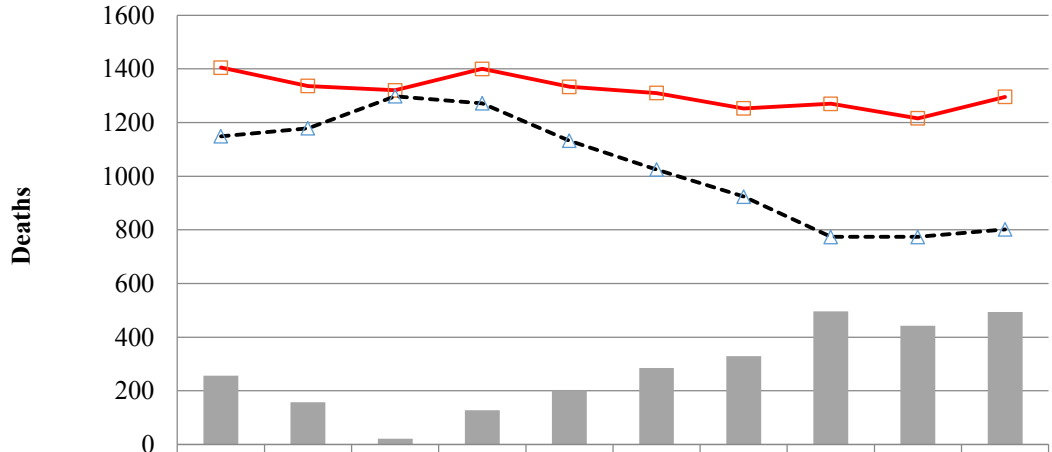
Most all of the enforcement projects, including DUI checkpoints, include overtime funding for high visibility enforcement patrols directed at detection and apprehension of drug impaired drivers. In addition, California requires by statute the collection of data related to drug impaired or alcohol/drug impaired arrests resulting from a DUI checkpoint or saturation patrol, to be reported in a post-operational media release.

Highlighted Promising Practice Projects: Driving Under the Influence of Drugs (California)

a. Drug Recognition Evaluator (DRE) Program by California Highway Patrol
   The DRE program provides new training to practitioners, ongoing training to certified practitioners and new training to instructors of the DRE training courses. Funding is used to train law enforcement personnel, education professionals, private companies, and other vested stakeholders in the process of identifying drivers/persons under the influence of drugs.

Alcohol-Impaired Driving and Drug-Impaired Driving Trends: 2003-2012

Approximately one third of the national fatalities are alcohol-related. The national proportion of alcohol related fatalities is consistent with those found in the state of Texas and California (FARS 2014a). Alcohol-impaired driving (AID) fatalities in California dropped significantly from 2007, while AID related fatalities in Texas remained relatively unchanged. Since 2010, AID fatalities in California have remained consistent averaging 783 deaths per year through 2012. Figure 22 compares AID fatalities in Texas and California between the years 2003 to 2012.



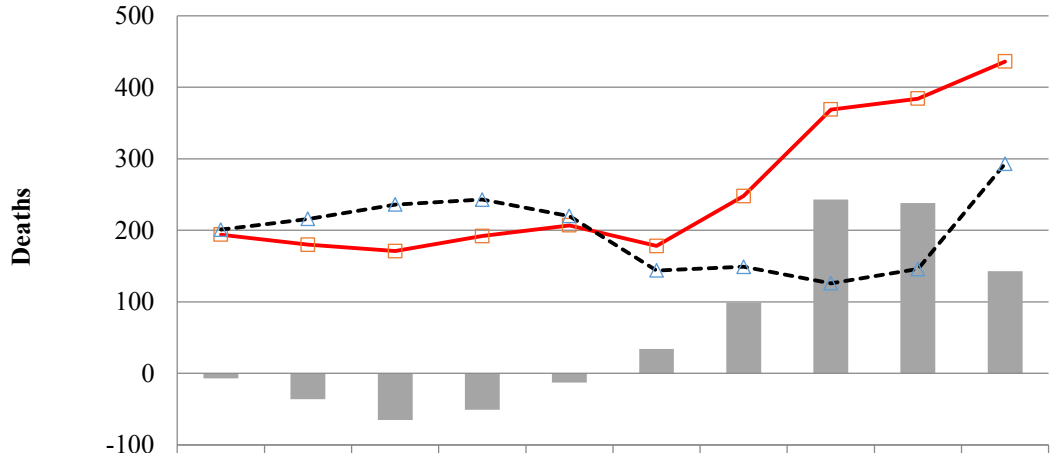
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	256	157	22	128	201	285	329	496	442	494
TX	1405	1336	1320	1400	1333	1310	1253	1270	1216	1296
CA	1149	1179	1298	1272	1132	1025	924	774	774	802

Figure 22 Fatalities of Alcohol-Impaired Driving (BAC = .08+)
Source: FARS (2014b)

Historically, Texas has regularly generated fewer DID fatalities than California even though DID fatalities between the two states were similar prior to 2007. Unfortunately, DID related fatalities in Texas have been increasing significantly after 2008 while they have gradually declined in California between 2008 and 2011.

In 2008, DID fatalities in Texas surpassed California for the first time recording 34 related crash deaths. Since 2008, Texas has shown a significant increases in DID fatalities rising from 178 deaths in 2008 to 436 in 2012. California DID fatalities plateaued between 2008 and 2011 averaging 141 DID deaths. However from 2011 to 2012 California aggressively spiked upward to 293 DID deaths from just 146 the

previous year before. Figure 23 compares the fatalities associated with DID in Texas and California in the last decade (2003-2012).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-7	-36	-65	-51	-13	34	99	243	238	143
TX	194	180	171	192	207	178	248	369	384	436
CA	201	216	236	243	220	144	149	126	146	293

Figure 23 Fatalities of Drug-Impaired Driving
Source: Data extracted from FARS

Improvements in AID and DID related fatalities in California can be attributed to the strict enforcement on driving under influence (DUI) laws. Since 2007 California has increased its efforts to curb driving under the influence offenses. (California CHP 2014a).This has been primarily achieved through:

- Sobriety Checkpoint Enforcement: The California Highway Patrol (CHP) aggressively enforces the state's 0.08% blood alcohol concentration law. They increased DUI checkpoints in targeting areas where there was a high frequency of impaired driving. In Texas this checkpoint enforcement is not allowed.
- Proactive DUI Enforcement Programs. The CHP launched grant-funded overtime programs, which significantly increased the number of officers on patrol at locations where a high incidence of DUI related traffic accidents occurred.

- DUI Task Force Operations. The CHP conducted DUI task force operations, or saturation patrols, in areas experiencing a high incidence of DUI related traffic collisions.

Distracted Driving

Fatal Crashes Involving Distraction and Inattention - Cellphone Use and Texting

In 2012, distraction and inattention including cell phone talking and texting caused 472 fatalities in Texas and 126 fatalities in California. Sadly Texas experienced 346 more distracted/inattention driving crash deaths than did California. One reason explaining California's lower rate of fatalities may be due to banning the use of cellphones while driving. The statewide ban was introduced in 2008 and since then it is believed that fewer users of cellphones have helped reduce traffic crashes and fatalities.

In comparison, Texas does not have a statewide ban on cell phone use. While Texas does have restricted cell phone use bans *(ordinance)* for certain school zones, driver experience, ages, and school bus operators, the majority of the state cell phone users have no statutory requirement that prohibits them from using their device while driving. To date, forty Texas cities prohibit the use of electronic hand-held devices while driving (by city ordinance). Many of the ordinances fall under three general bans: all use of wireless communications (voice or text), texting only, or prohibiting talking or texting when the vehicle driven is in motion. Table 13 below represents the effective dates and enforcement types of cellphone bans in California and Texas.

Table 13 Driver Cellphone and Texting Bans in California and Texas

State	All-Driver Ban		Teenage-Driver Ban	
	Hand-held cellphone conversations	Texting	Any hand-held and hands-free cellphone use	Texting
Texas	*Designated school zones, drivers <18 yoa, school bus operators when children are riding, drivers with learning permit: 1st 6 months	*Designated school zones drivers <18 yoa, school bus operators when children are riding, drivers with learning permit: 1st 6 months	09/01/2005	09/01/2005
California	7/1/2008	1/1/2009	7/1/2008	7/1/2008

Source: McCartt et al. (2014), http://www.txdot.gov/driver/laws/cellphones.html ***Ban is for the use of wireless communication device while driving under municipal/city ordinance.***

In cooperation with federal, state, local, and private stakeholders, California has developed and implemented several strategic actions aimed at distracted driving. Strategic actions involve high visibility enforcement and educational efforts that are aimed specifically at reducing fatal and injury crashes that involve distracted driving.

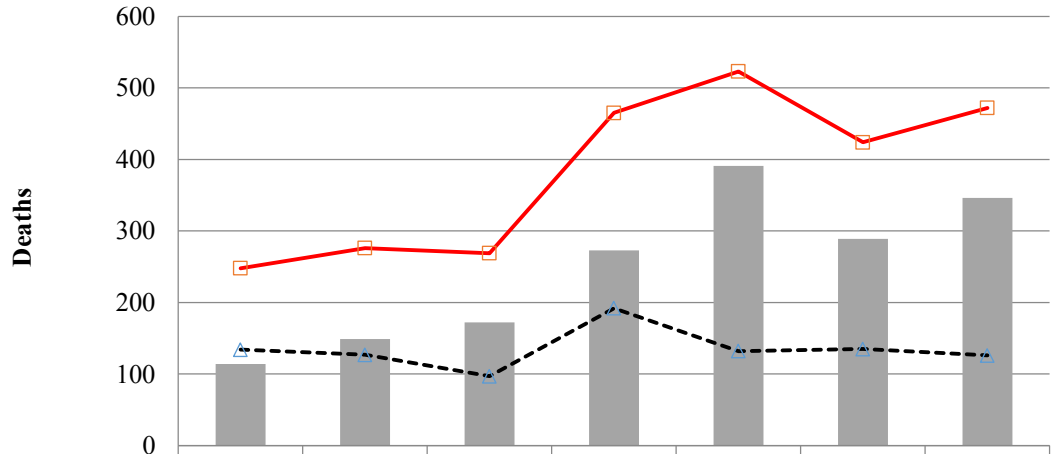
California made the decision to fund projects to law enforcement agencies in order to increase enforcement of distracted driving laws. In 2012, California enlisted the assistance of over 265 individual law enforcement agencies across the state to conduct "zero tolerance" enforcement operations during the month of April. The effort corresponded with the National Distracted Driving Awareness month and in addition to "no tolerance" enforcement, aggressive multimedia public awareness campaigns were used. The California Department of Transportation (CalTrans) committed to assist by illuminating 265 fixed freeway changeable message signs with the safety message, "It's Not Worth It."

Public and private education efforts continued to focus on impacting teen drivers, parents of teens, adults, and employees not to call their family or friends when they know they are driving. Ongoing efforts were made to have cell phone owners add a distracted driver message to their no answer voice mail greeting such as "I'm either driving or away from my cell phone right now".

Distracted driving education was also provided to persons who are responsible for driving children. The effort assists the states effort by teaching drivers to provide good examples to children by not using the cell phone while driving. In an effort to better understand the distracted driving problem, California also conducted research through the annual cell phone and texting observational survey. This effort provided the state with attitudes, behaviors, and trends that are relevant to distracted driving.

Distraction and Inattention Trends: 2003-2012

Multiple studies have indicated that crash risk is highly associated with the use of cellphone while driving (Laberge-Nadeau et al. 2003; Bellinger et al. 2009). Calling or texting while driving causes distraction, which is one of the main contributing factors of traffic collisions. The difference in distracted driving fatalities between Texas and California has significantly increased and since 2009 and the gap has continued to grow. Figure 24 depicts the difference between Texas and California regarding distracted driving-cellphone and texting fatalities.



	2006	2007	2008	2009	2010	2011	2012
Difference	114	149	172	273	391	289	346
TX	248	276	269	465	523	424	472
CA	134	127	97	192	132	135	126

Figure 24 Fatalities of Distracted Driving – Cellphone and Texting
Source: FARS (2014a) FARS did not provide fatal crash information for distraction and inattention while driving before 2006

Highlighted Promising Practice Projects: Distracted Driving (California)

a. Worksite Intervention to Reduce Cell Phone Distracted Driving by University of California San Diego

The project aims to reduce cell phone distracted driving among commercial and non-commercial drivers in San Diego County. Educational courses are delivered in the workplace to inform drivers of the importance of not using their handheld cell phones while operating their vehicle. Training workshops are delivered to agencies representing county government and private sector companies, including large freight and delivery companies. The educational effort provides technical assistance to organizations on developing cell phone policies in the workplace and promoting accountability associated with misuse of cell phone technology while driving.

b. Teen Distracted Drivers Education and Enforcement by California Highway Patrol

This 12-month effort focuses on distracted driving among teens. The project provides for enhanced enforcement of teenage distracted driving as well as a broad public awareness and educational campaign. The project utilized a teen driver safety education group to provide presentations to stakeholders. A strong media campaign is conducted to educate teen drivers about the dangers of distracted driving. Partnerships between teachers, parents and teens are formed to enhance involvement and end handheld cell phone use while driving.

c. Adult Distracted Drivers by California Highway Patrol

The project provides public education outreach by presenting distracted driving messages to communities and other stakeholders. The focus is on preventing other forms of distracted driving such as interacting with passengers/pets, using cell phones, eating, attending to personal hygiene, reading, and manipulating electronic equipment. The purpose of this campaign is to expose distracted driving in all forms as opposed to just talking and texting cellular activities.

Environment

Public Road Length (miles) per One Law Enforcement Officer

According to the 2008 Bureau of Justice Statistics census, there were 96,116 law enforcement officers in Texas and 126,538 in California (state and local). (Reaves 2011) The length of public roads of the two states were 306,404 for Texas and 172,512 miles for California, respectively (FHWA 2012). The length of public roads in Texas is nearly twice that of California yet the number of law enforcement officers is lower. Statistically, Texas has one law enforcement officer accounting for 3.19 miles of roadways while peace officers in California account for 1.36 miles. That is to say the probability of a traffic law violation being encountered by an officer in California was approximately twice that of one being encountered in Texas. The rates of 2004 were quite similar, as shown in Figure 25. As the census on law enforcement officers was only conducted in 2004 and 2008 in the past decade, the rates for other years are not available.

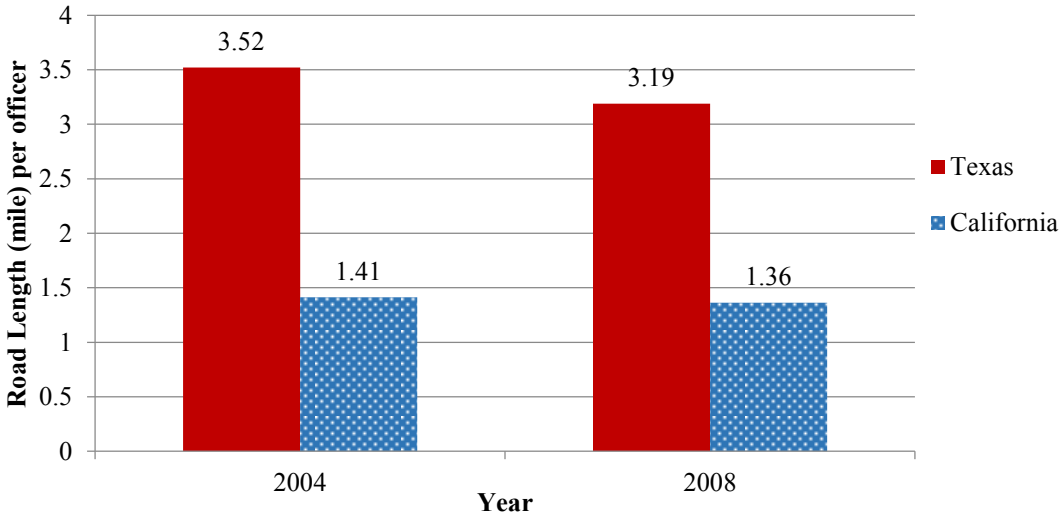


Figure 25 Average Road Length per Officer in Texas and California
Source: Reaves (2007; 2011) and FHWA (2009)

Police Traffic Services Projects in California

Program development and administrative coordination plays a critical role in the police traffic services (PTS) area. PTS projects provide for staff time and expenses incurred by persons as it relates to planning, developing, coordinating, monitoring, auditing, and evaluating projects within this program area. Assistance is provided to

individuals to attend and participate in committees, training sessions, educational meetings, or conferences. Funding also covers expenses charged by the California Highway Patrol for grant administration.

Selective Traffic Enforcement Program (STEP) is also funded under police traffic services. STEP funded strategies include: DUI checkpoints, saturation patrols, warrant service operations, stakeout operations, hot sheet program, educational presentations, and court stings. Program emphasis is also aimed at: speed, distracted driving, seat belt enforcement, intersection operations, and special enforcement operations encouraging motorcycle safety.

The California Highway Patrol (CHP) is funded to evaluate and enforce high crash locations where known cause factors have been identified. CHP conducts speed and safety belt enforcement, implements corridor projects, provides presentations, and provides high visibility enforcement directed at reducing motorcycle involved fatalities and injuries.

Transportation research is also funded from the PTS element. Activities include: conducting public education and outreach with stake holders, and data analysis to promote traffic safety programs at the neighborhood and local levels.

Highlighted Promising Practice Projects: Police Traffic Services (California)

a. Focused High-Collision Reduction by California Highway Patrol

   This 12-month project addresses the top five crash factors in order to reduce the number of victims killed and injured in traffic collision. CHP executive management confirm the top five causal factors based upon crash information located in the state crash record database. Enhanced enforcement and public education and awareness campaigns are directed at reducing traffic collision in the designated region. Traffic enforcement task forces are formed from local, regional, state, federal, and private organizations/agencies to address crash issues identified in the region by comprehensively evaluating crash causes and possible remedies. Long and short term solutions are formed and individually tailored to positively reduce crashes in each affected area.

b. Keeping Everyone Safe by California Highway Patrol

This 12-month project establishes safety and mobility programs for elderly drivers. Collaborative groups of community members assess elderly driving issues and make recommendations that address the needs of the senior driving community. Collaborative groups include members from law enforcement, health and aging professionals, transportation agency representatives, and other stakeholders.

c. Start Smart Teen Driver Safety Education- California Highway Patrol

This 12-month project focuses on providing newly licensed teen drivers (15-19) and their parents with enhanced education that emphasizes the dangers typically encountered by members of their age group. Training facilitators discuss crash factors that are associated with commissions involving teens, safe and defensive driving practices and California driving laws. Interaction and open communication between the parents and teens regarding driving responsibility is encouraged. This project is provided in both English and Spanish to assist with newly licensed drivers and their accountability for becoming a safe driver in California.

d. Real Time Point Coordination Function (PCF) Enforcement by California Highway Patrol

This project reduces the frequency of persons killed or injured in crashes that are associated with speeding and driving under the influence of alcohol or drugs. The project uses daily crash data to identify trending crash patterns, enhance enforcement efforts, and provide traffic safety education and awareness. Daily statistical crash information is used to identify locations where speed and DUI traffic collisions are increasing. High visibility patrol and enforcement activity is conducted in the identified areas and the primary violations that are associated with the elevated crashes are enforced.

e. SafeTREC- University of California Berkeley Campus

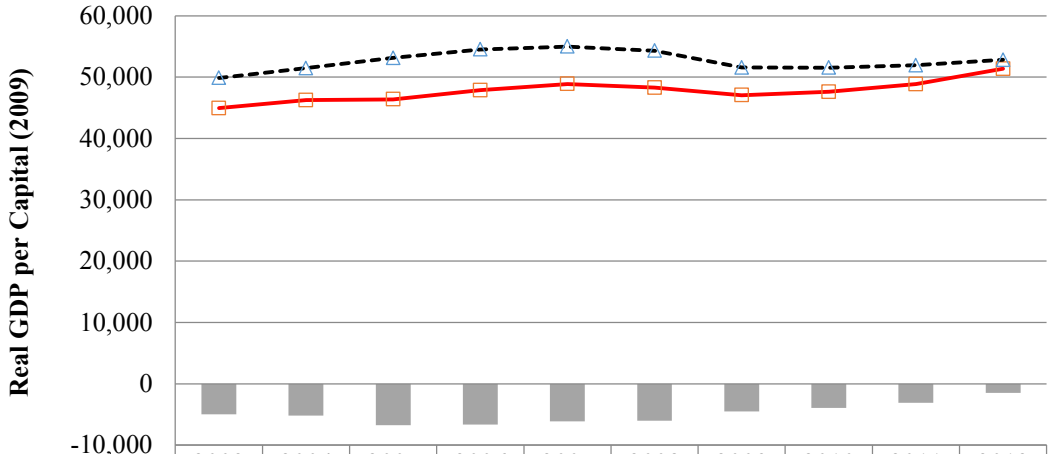
SafeTREC is an acronym for Safe Transportation Research and Education Center. This center and its research activities involve partnerships with city and state

planning agencies, public policy, and transportation engineering organizations. Project research that is carried out involves multiple ongoing efforts to reduce fatal and serious injury crashes through education and training, technical assistance, data analysis and outreach. SafeTREC projects include sobriety checkpoints, Transportation Injury Mapping System (TIMS), the California Active Transportation Safety Information Pages, and Global Road Safety and Community pedestrian Safety Training.

Economic Factors

Trends of Economy

Studies have suggested that the economy is an important factor that is tied directly to crash frequency (Schick 2009; Al-Reesi et al. 2013). Economic growth usually leads to increased transportation activity such as personal travel and freight shipping. The Gross Domestic Product (GDP) of both Texas and California decreased in 2008-2010 and then increased in the following years. However, the increased GDP rate in Texas was greater than that which was experienced in California. The improving economic conditions in Texas have shown a much more rapid recovery from the 2008 financial crisis than has California. Figure 26 shows the GDP of both Texas and California over the past decade.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Difference	-4,951	-5,198	-6,766	-6,634	-6,103	-6,028	-4,515	-3,929	-3,089	-1,468
TX	44,934	46,255	46,382	47,874	48,886	48,273	47,063	47,617	48,846	51,367
CA	49,885	51,453	53,148	54,508	54,989	54,301	51,578	51,546	51,935	52,835

Figure 26 Trends of GDP in California and Texas
Source: The Bureau of Economic Analysis (2014)

Changes of Gasoline Prices and Effect on Transportation Modes

All vehicles except for electric cars run by consuming fuel. The price of fuel greatly affects transportation activity. During a time of a relatively high fuel prices, people and industry will modify their transportation activities; for example:

- Commuting modes shifting from privately-owned cars to public transportation
- Vehicle miles traveled reduced by eliminating unnecessary trips
- Vehicle type changing for those with better fuel economy

- Fuel efficient driving such as keeping to posted speed limits

Over the past 10 years fuel prices in California were higher than in Texas by approximately $0.60 per gallon. The higher price of fuel may have had a stronger effect on people's transportation activities in California relative to that of Texas. Gasoline prices increased steeply up to $4.64 per gallon until the end of 2008 then dropped to less than $2.00 per gallon in a relatively short period. Then, in 2011 and 2012 the prices rebounded and remained high. Figure 27 illustrates the trends of average retail gasoline prices in Texas and California in the last decade.

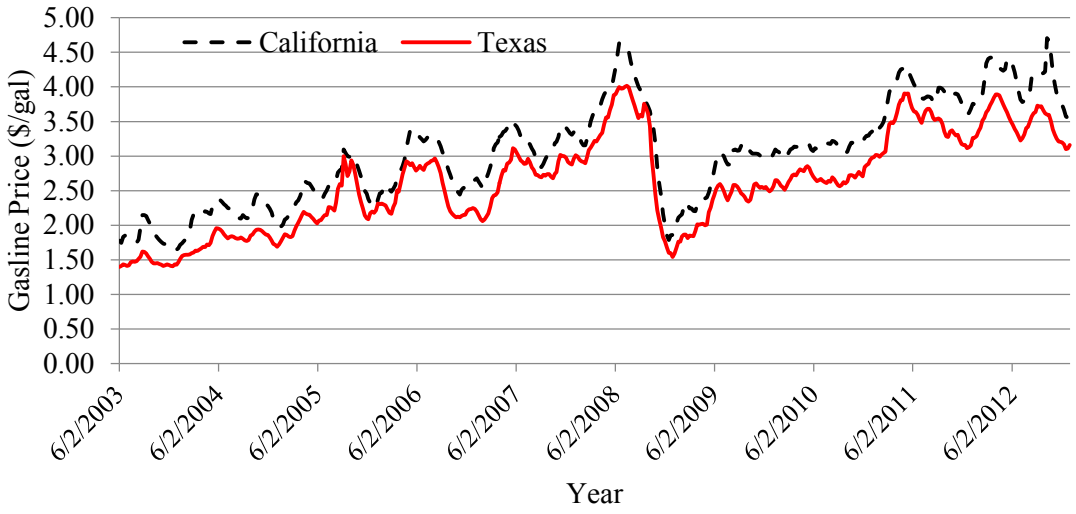


Figure 27 Trends of Gasoline Prices in California and Texas
Source: U.S. Department of Energy (2014)

While fuel prices were elevated, more people used public modes of transportation instead of using privately-owned vehicles. In Texas and California, commonly the numbers of commuting workers using public and bi-wheel modes of transportation increased until 2008. Those numbers decreased in 2009 and 2010, but the numbers increased again after 2010. Not surprisingly the trends of commuting transportation modes were very close to the "ebb and flow" of changing gasoline prices. Figure 28 on the following page presents the numbers of commuting workers by two categories--one for public transportation and the other for taxicab, motorcycle, and bicycle--in Texas and California, from 2006 to 2012.

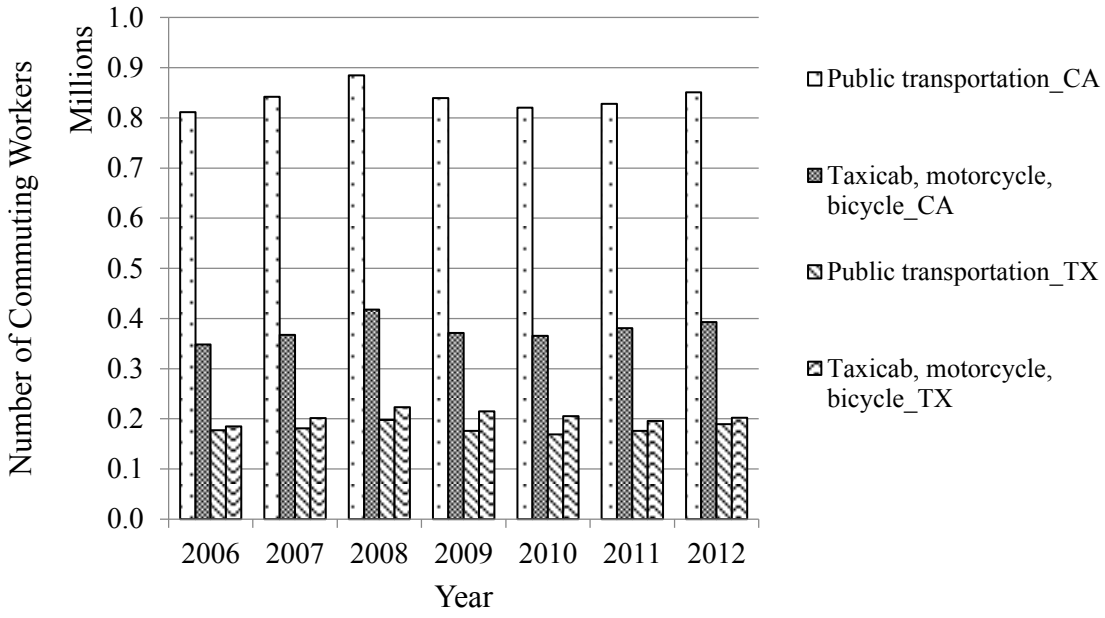


Figure 28 Commuting Workers in Texas and California from 2006 to 2012
Source: Bureau of Transportation Statistics

By reviewing fuel price and their effect on commuting transportation modes in Texas and California, it was evident that fewer people used personal vehicles due to high fuel costs. Reductions in the number of privately-owned vehicles being driven could contribute to lower risk of crashes in California. Traffic fatalities significantly decreased in California relative to Texas and fatalities in California have historically been lower than Texas since 2008.

Conclusions

This analysis compared the numbers of fatal crashes and fatalities between Texas and California during the last decade, 2003 to 2012, and identified crash risk factors and categories that show significant increases in fatalities between Texas and California. In addition, each section highlighted state laws and promising practices that impact traffic safety.

Texas and California have higher traffic fatalities than other states in the United States. Until 2007, California had recorded more traffic fatalities and fatal crashes than Texas. Since that time, however, Texas has surpassed California in the recorded number of traffic fatalities, and the difference between the states is growing.

One of distinctive changes in transportation before and after the 2008 financial crisis was that more people used public transportation modes such as bus or subways instead of privately-owned cars. This change partially contributed to lower fatal crashes and fatalities at both states, especially at California.

Relative to California, workers in Texas value or depend on private modes of transportation in their commuting rather than public modes. In the comparison by time of day at the crashes, there had been more fatalities during the morning commuting hours in California than Texas until 2007. After that, the numbers of fatalities in Texas exceeded those of California and the gap between the two states continued to increase through the remainder of the decade. Overall, fatalities in the morning commuting hours increased in Texas while they decreased significantly in California.

Traffic safety related to trucks appears to be a critical issue in Texas than in California. In the past 10 years, there were more fatalities involving light or large trucks in Texas than in California. Trucks in Texas are exposed to a higher risk of crash involvement due to higher proportion of all other traffic on the highways. Crash reduction related trucks could play an important role in traffic safety improvement in Texas.

Regarding location, fatalities on Texas rural highways have historically been higher than that of California with an average gap of around 350 deaths over the past

decade (2003-2012). However, this is not a surprising result in consideration of greater rural highway length in Texas over that in California.

In the crashes at work zones, the fatalities in Texas have traditionally been much higher than that of California. Treatments to improve speed control and driver attention in work zones should be addressed.

Regarding driver behavior, fatalities in which a seatbelt was not used were greater in Texas than California, especially the number fatalities for children 15 years of age and under. Sadly for those aged 15 or younger, Texas fatalities for not wearing a seatbelt were more than five times greater than that of the same age group in California. Texas should prioritize strategies to increase seatbelt compliance, especially for young occupants.

Approximately one third of the fatalities at both states are alcohol-related. Alcohol-impaired driving fatalities in California dropped significantly from 2007. In Texas, alcohol-impaired driving accounted for approximately 38% of the total fatalities in 2012 while 28% in California. This improvement in California could be attributed to strict enforcement, such as sobriety checkpoints, on driving under influence laws since 2007.

In 2008, California promulgated the cellphone ban while driving. Since then, the difference in distracted driving fatalities between Texas and California has significantly increased. In 2012, Texas had about four times more fatalities where the crashes were caused by distraction and inattention which included verbal cell phone use and texting.

Finally, strict traffic laws and proactive traffic enforcement have been shown to be effective in reducing fatal crashes related to non-seatbelt use, impaired and distracted driving. However, the probability of a traffic law violation being encountered by an officer in Texas was significantly lower than that of one being encountered in California. This was due in part to law enforcement officers having to account for twice the highways miles than the counterparts in California.

References

AASHTO. 2010. *Highway Safety Manual*. 1st Edition ed. Washington, D.C.: American Association of State Highway and Transportation Officials.

Al-Reesi, H., S. S. Ganguly, S. Al-Adawi, L. Laflamme, M. Hasselberg, and A. Al-Maniri. 2013. "Economic growth, motorization, and road traffic injuries in the Sultanate of Oman, 1985-2009." *Traffic Injury Prevention* 14 (3):322-328.

Bellinger, D. B., B. M. Budde, M. Machida, G. B. Richardson, and W. P. Berg. 2009. "The effect of cellular telephone conversation and music listening on response time in braking." *Transportation Research Part F-Traffic Psychology and Behaviour* 12 (6):441-451.

Bureau of Transportation Statistics. 2014. "Bureau of Transportation Statisitics." Accessed February 16, 015. http://www.rita.dot.gov/bts/home.

Burwell Nebout Trial Lawyers. 2014. "Unsafe Trucks Spur Increase in Traffic Fatalities for Southeast Texas." Accessed February 10, 2015. http://burwellnebout.com/unsafe-trucks-spur-increase-in-traffic-fatalities-for-southeast-texas/.

California CHP. 2014a. "Active Support of California's Strict DUI Laws." Accessed February 11, 2015. http://www.chp.ca.gov/programs/dui_enforcement.html.

California CHP. 2014b. "California Motorcyclist Safety Program." Accessed February 10, 2015. http://www.chp.ca.gov/programs/motorcycle.html.

Caltrans. 2014. "California Calls for Drivers to "Be Work Zone Alert" on State Highways." Accessed February 17, 2015. http://www.dot.ca.gov/hq/paffairs/news/pressrel/14pr055.htm.

Crash Analysis Program. 2012. An Empirical Bayes Analysis of Photographic Traffic Enforcement Systems in Texas. College Station, TX: Texas Transportation Institute.

Eluru, N., M. Bagheri, L. F. Miranda-Moreno, and L. Fu. 2012. "A latent class modeling approach for identifying vehicle driver injury severity factors at highway-railway crossings." *Accident Analysis & Prevention* 47:119-127. doi: http://dx.doi.org/10.1016/j.aap.2012.01.027.

FARS. 2014a. "Traffic Safety Fact Sheets." Accessed November 24, 2014. http://www-nrd.nhtsa.dot.gov/cats/listpublications.aspx?Id=A&ShowBy=DocType.

FARS. 2014b. "Traffic Safety Facts 2012 Data Alcohol-Impaired Driving." Accessed February 11, 2015. http://www-nrd.nhtsa.dot.gov/Pubs/811870.pdf.

FARS. 2014c. "Traffic Safety Facts 2012 Data Occupant Protection." http://www-nrd.nhtsa.dot.gov/Pubs/811892.pdf.

FARS. 2014d. "Traffic Safety Facts 2012 Data Pedestrians." Accessed February 10, 2015. http://www-nrd.nhtsa.dot.gov/Pubs/811888.pdf.

FARS. 2014e. "Traffic Safety Facts 2012 Data State Traffic Data." Accessed February 12, 2015. http://www-nrd.nhtsa.dot.gov/Pubs/812033.pdf.

FARS. 2014f. "Traffic safety facts 2012 Data: Motorcycles." Accessed February 10, 2015. http://www-nrd.nhtsa.dot.gov/Pubs/812035.pdf.

FARS. 2014g. "traffic safety facts: Motorcycle Helmet Use in 2012 Overall Results." Accessed February 10, 2015. http://www-nrd.nhtsa.dot.gov/Pubs/811759.pdf.

FHWA. 2009. "Highway Statistics 2008." Accessed February 13, 2015. http://www.fhwa.dot.gov/policyinformation/statistics/2008/hm10.cfm.

FHWA. 2014a. "Highway Statistics." Accessed February 17, 2015. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

FHWA. 2014b. "Intersection Safety." Accessed February 12, 2015. http://safety.fhwa.dot.gov/intersection/.

FRA. 2014. "U.S. Department of Transportation's Federal Railroad Administration." Accessed February 15, 2015. http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx.

Governors Highway Safety Association. 2014. "Seat Belt Laws." Accessed February 12, 2015. http://www.ghsa.org/html/stateinfo/laws/seatbelt_laws.html.

Hu, W., A. T. McCartt, E. R. Teoh. 2011. "Effects of red light cameras enforcement on fatal crashes in large US cities." *Journal of Safety Research* 42 (4): 277-282.

ITE. 2004. "Introduction: Intersection Safety Issue Briefs." Accessed February 12, 2015. http://library.ite.org/pub/e26c6c49-2354-d714-511a-40d6569511c4.

Laberge-Nadeau, C., U. Maag, F. Bellavance, S. D. Lapierre, D. Desjardins, S. Messier, and A. Saidi. 2003. "Wireless telephones and the risk of road crashes." *Accident Analysis and Prevention* 35 (5):649-660.

Marynell Maloney Law Firm. 2014. "Texas experiences a substantial increase in large truck accidents." http://www.marynellmaloneylawfirm.com/Articles/Texas-experiences-a-substantial-increase-in-large-truck-accidents.shtml.

McCartt, A. T., D. G. Kidd, and E. R. Teoh. 2014. "Driver Cellphone and Texting Bans in the United States: Evidence of Effectiveness." *Annals of Advances in Automotive Medicine* 58:99-114.

McGee, H. W., and K. A. Eccles. 2003. Impact of Red Light Camera Enforcement on Crash Experience. Transportation Research Board.

PhotoEnforced. 2014. "Photo Enforcement Locations Map Database." Accessed February 12, 2015. http://www.photoenforced.com/.

Reaves, B. A. 2007. "Census of State and Local Law Enforcement Agencies, 2004." Accessed February 11, 2015. http://www.bjs.gov/content/pub/pdf/csllea04.pdf.

Reaves, B. A. 2011. "Census of State and Local Law Enforcement Agencies, 2008." Accessed February 11, 2015. http://www.bjs.gov/content/pub/pdf/csllea08.pdf.

Schick, S. 2009. "Accident Related Factors." Accessed February 11, 2015. http://www.trace-project.org/publication/archives/trace-wp3-d3-1-v3.pdf.

The Bureau of Economic Analysis 2014. "Regional Data GDP & Personal Income." Accessed February 11, 2015. http://www.bea.gov/index.htm.

TTI. 2015. "Work Zone Fatalities." Accessed February 12, 2015. https://www.workzonesafety.org/crash_data/workzone_fatalities.

TxDOT. 2014. "Workzone Safety Banner." Accessed February 17, 2015. http://ftp.dot.state.tx.us/pub/txdot-info/safety/work_zones/2014/WZA_Banner_PRINT.pdf.

US Department of Energy. 2014. "[to update]." http://www.energy.gov/.

Walden, T. D., S. Geedipally, M. Ko, R. Gilbert, and M. Perez. 2011. Evaluation of automated traffic enforcement systems in texas. College Station, TX: Texas Transportation Institute.

APPENDIX A

Purpose of Appendix

This appendix provides a detailed comparison of California and Texas Highway Safety Programs, specifically in terms of the outlay of highway safety funding dollars. The safety countermeasure projects selected by each state address safety emphasis areas identified through project activities. The intent of this appendix is to provide readers with a fundamental understanding of the differences between priority fiscal spending and the application of projects as countermeasures to address crash frequency and severity.

Both the Texas Department of Transportation and the California Office of Traffic Safety embrace the mission to effectively and efficiently administer traffic safety programs in order to reduce traffic fatalities, injuries and economic loss. Each states Highway Safety Plan (HSP) serves not only as the states application for federal funding but also provides a foundation for tactically addressing traffic safety issues. Transportation safety problems are identified, and goals and objectives are outlined to provide structured quantitative and qualitative metrics that measure achievement.

Program Areas

California and Texas each receive a large amount of funding from the federal government for traffic safety projects. In 2013-2014, California received $102,551,351 to fund their state traffic safety programs. Texas by way of comparison, received $102,836,553 to fund their state traffic safety program. From a financial standpoint, each state received equal federal support, but how the two states used the traffic safety funding differed from program to program. The following table provides a listing of the funding dollar amounts that were distributed across each states traffic safety program areas.

Funding Distribution by Traffic Safety Program Area

State	Alcohol-Impaired Driving	Distracted Driving	Drug Impaired Driving	Emergency Medical Service	Motorcycle Safety	Occupant Protection	Pedestrian & Bicycle	Planning & Administration	Police Traffic Services	Traffic Records
California	22,980,375	1,064,584	12,505,334	536,100	1,245,314	4,190,629	3,152,418	8,061,926	42,268,193	6,546,478
Texas	44,450,251*	**	*	1,242,115	1,533,238	10,599,613	1,727,417	2,736,882	21,864,892***	7,940,145

**Includes funding from drug impaired driving programs. California impaired driving programs (Alcohol and Drugs) combined= $35,485,709*

*** Distracted driving funding was combined and accounted for in other program areas*

**** Police Traffic Services was adjusted to represent adding $637,098 from Speed STEP projects from the Texas HSP-Speed Control Section*

While there are more safety areas in the Texas HSP, California chose to absorb their like projects into existing programs that had already been established. The following table lists the additional 5 traffic safety programs that are contained in the Texas HSP.

Additional Texas Programs Receiving Funding

State	Driver Education & Behavior	Railroad/Highway Crossing	Roadway Safety/Work Zones	Safe Communities	School Bus
California	-	-	-	-	-
Texas	$8,538,832.00	$127,378.00	$1,408,359.00	$281,935.00	$385,496.00

Each program area will illustrate how California and Texas approach traffic safety, the overall goals of each program area as well as progress towards that goal and highlighted best practices. A table is included outlining each program area for 2013–2014 in both California and Texas with the following: number of projects, task areas, project titles, funding received, and task purpose of each area.

Alcohol Impaired Driving Programs

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	56	Statewide Enforcement/Education/ Public Information (5)	• California Department of Alcoholic Beverage Control: Combined Responsibility to Educate and Eliminate Drunk Driving • California Department of Alcoholic Beverage Control: Teen Alcohol Enforcement Program • California Highway Patrol: DUI Warrant Service Team Effort • California Highway Patrol: Reducing Impaired Driving • California Highway Patrol: Regional Campaign Against Impaired Drivers	$ 700,000.00 $ 1,750,000.00 $ 370,000.00 $ 6,200,000.00 $ 563,116.00	*These projects provide for continued focus on traffic safety through enforcement, training for law enforcement personnel and alcohol retailers, and public education through outreach.*
		College/Younger Age Youth Programs (11)	• Santa Cruz County: Comprehensive Traffic Safety Youth and Community Education and Prevention Project (x2) • Tulare County Office of Education: California Friday Night Live Program • Shasta County Public Health Department: Shasta Teen Drive Aware and Unimpaired • California Highway Patrol: Teen Choices • California Highway Patrol: Temecula Area Arrive Alive • Santa Clara County: Countywide Impaired Driving Education and Prevention Program • Riverside County: Youth Alcohol Impaired Driving Program • Bakersfield: A Life Interrupted • Regents of the Univ. of California Berkeley Campus: RADD California College DUI Awareness Project • Regents of the Univ. of California Berkeley Campus: Teens in the Driver Seat	$ 240,000.00 $400,000.00 $134,974.00 $2,100,000.00 $123,360.00 $200,000.00 $160,000.00 $43,855.00 $982,260.00 $505,000.00	*These programs provide alcohol education and awareness efforts that focus on youth from middle school through college.*

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
		Judicial Support/Legal Process (1)	• San Joaquin County Superior Court: San Joaquin County DUI Court	$ 710,000.00	*These projects fund specialized courts to track DUI offenders through vertical prosecution and DUI courts. The projects address repeat offenders from re-offending. The goal is to reduce recidivism and reduce alcohol and drug driving collisions, injuries and fatalities. DUI court projects provide intensive judicial supervision, drug and alcohol testing, mandated treatment, and use of incentives and sanctions to make behavior changes. Collaboration between DUI courts and law enforcement focusing on multi-cultural awareness is emphasized.*
		Management Information Systems/Evaluations (1)	• California Department of Motor Vehicles: DUI Hot List Continuance and Monitoring Project	$ 185,000.00	*The projects provide for expanding, redesigning, and enhancing DUI management information systems for faster response times. They provide comprehensive traffic safety evaluations of traffic crashes along with assessment of certain DUI sanctions and their effectiveness.*
		Multiple DUI Warrant Service/ Supervised Probation Programs (13)	• Programs are conducted in 13 counties throughout the state	$ 3,403,706.00	*County probation departments work to reduce DUI fatalities and injury crashes by helping to prevent recidivism. High risk and repeat DUI offenders are targeted through intensive supervision to ensure compliance with condition of probations to prevent re-arrest. Activities include monitoring of treatment and DUI program participation, conducting visits, field contact, unannounced searches and random drug and alcohol testing, distribution of hot sheets and participating with law enforcement on Anti-DUI efforts.*
		Multi-Agency "Avoid DUI" Campaigns (25)	• Programs are conducted in 25 counties throughout the state	$ 4,208,228.00	*Law enforcement partner with OTS during holiday periods to conduct increased DUI enforcement. These programs publicize DUI task forces using high visibility sobriety checkpoints and DUI saturation patrols along with publicized media campaigns. "Avoid DUI" enforcement grants are funded directly through this effort.*
				$ 22,979,499.00	
Texas	66	Program Management (1)	• Statewide Working Group and Technical Assistance for Alcohol and Other Drug Countermeasures Program	$97,484.26	
		Enforcement (14)	• Bexar County No Refusal Initiative • Brazos County: Comprehensive Underage Drinking Program • Colin County: DWI No Refusal Mandatory Blood Draw Program	$269,458.68 $131,178.90 $64,125.35	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
			• Galveston County: DWI No Refusal-Blood Draw Grant for the Holiday and Festival Weekend • Harris County: Search Warrant Stop Impaired Drivers: Harris County DA Office No Refusal • Montgomery County Search Warrants to Stop Drunk Drivers • Tarrant County: No Refusal Program • Enhanced Visibility Enforcement Campaign to Reduce Underage Access to Alcohol • Texas DPS Evidential Breath and Blood Alcohol Testing • DWI Selective Traffic Enforcement Program (STEP) • STEP Wave DWI • Impaired Driving Mobilization Incentives STEP Grant Program • Impaired Driving Mobilization STEP Grant Program • Impaired Driving Mobilization STEP Grant Program	$17,210.44 $408,485.56 $179,601.91 $301,554.60 $252,431.43 $5,263,729.00 $54,027.43 $341,947.00 $60,000.00 $5,750,000.00 $3,000,000.00	
		Public Information Campaigns (8)	• Fiesta Safe Ride • Teen Safe Program • A Public Awareness Campaign to Educate the Public on Impaired Driving • Christmas/New Year Holiday Campaign • College and Young Adult (Impaired Driving) Campaign • Football Season (Impaired Driving) Campaign • Hispanic Impaired Driving Campaign • Labor Day Impaired Driving Campaign	$114,075.00 $405,416.83 $54,925.43 $2,230,846.00 $2,000,000.00 $2,000,000.00 $1,200,000.00 $3,000,000.00	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
		Training (40)	• Bexar County DWI Court • Your Decision Saves Lives: Understanding the True Impact of Alcohol and Drugs • Alcohol Drug and Safety Training Education Program Ad A STEP for Life • Workshops: Alcohol and Other Drugs Module Revision • Alcohol and Other Drug Prevention Counselor Toolkit • Texas RED Program • Take the Wheel Program- El Paso County • Take the Wheel Program- Bexar County • Take the Wheel Program- Harris and Montgomery County • Take the Wheel Program- Dallas, Travis, Cameron, and Hidalgo Counties • Take the Wheel Program- Smith and Gregg Counties • Safety City- Alcohol Awareness • Impaired Driving Initiatives-DECP, ARIDE, and DITEP • Drug Impairment Training for Texas Employers • Drug Impairment Training for Texas Community Supervision and Parole Officers • Zero Alcohol for Youth Campaign and Statewide Youth Advisory Council to reduce Impaired Driving • Screening and Brief Intervention for Risky Alcohol Use and Related Behavior Among College Students • Attitudes of Ignition Interlock Devices for First and Subsequent Offenders • Alcohol and Ignition Interlock Training for Texas Adult Probation Personnel • Alcohol and Drug Training for Texas DPS Blood and Breath Alcohol Forensic Scientists • Blood Alcohol Concentration Reporting in Texas- Improving ME and JP Reporting	$275,477.07 $98,118.23 $163,614.98 $9,786.40 $208,157.00 $310,605.61 $165,022.17 $189,358.90 $539,154.57 $1,109,552.44 $197,864.27 $37,263.56 $1,206,589.66 $226,259.58 $140,301.96 $324,044.95 $291,439.54 $72,158.20 $230,562.58 $149,825.64 $103,286.44	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
			• Jump Starting the Madrina Padrino Program in Communities of Greatest Needs	$44,853.60	
			• Peer to Peer Program for Decreasing Alcohol Impaired Driving Among College Students	$441,073.30	
			• Texas A&M Agrilife Extension Service Watch UR BAC Alcohol Awareness Program	$449,773.05	
			• Texas A&M Agrilife Extension Alcohol and Other Drugs Parent Education Program	$99,994.86	
			• TABC Source Investigation Law Enforcement Grant	$646,939.06	
			• TABC Special Events Education Grant	$173,277.35	
			• Rural Courts Impaired Driving Liaison	$328,877.64	
			• Texas Judicial Resource Liaison and DWI Judicial Education	$1,564,912.26	
			• Project Celebration	$250,000.00	
			• DWI Resource Prosecutor	$1,207,244.00	
			• Texas Justice Court Traffic Safety Initiative	$265,793.50	
			• Municipal Traffic Safety Initiatives	$553,455.52	
			• Law Enforcement Training to Reduce Impaired Driving by People under 21	$981,479.40	
			• Comprehensive Law Enforcement Advanced DUI/DWI Reporting System (LEADRS)	$1,153,251.31	
			• Texas Standardized Field Sobriety Testing Training	$1,160,802.34	
			• Regional Law Enforcement Training in Effective Investigation of Impaired Driving Cases	$34,608.43	
			• Comprehensive Underage Drinking Prevention Program	$483,070.95	
			• Mobile Video Instructor Training Course	$414,155.07	
			• Standardized Field Sobriety Testing/Blood Warrant/ Mobile Video Updates	$240,800.00	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
		Evaluation (3)	• Texas Specific Interlock Penetration Study • Evaluation of the Administrative License Revocation Program In Texas • No Refusal Program: Evaluating the Impact on Impaired Driving Crashes in Texas	$61,613.00 $217,289.11 $256,611.35	
				$44,274,816	

Distracted Driving

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	3	Enforcement/Education/ Public Information (2)	• California Highway Patrol: Adult Distracted Drivers V • California Highway Patrol: Teen Distracted Drivers Education and Enforcement (TDDEE) IV	$450,000.00 $438,000.00	*Projects provide statewide public information education and media campaigns that focus on dangers of distracted driving, texting and use of a cell phone while driving. Special emphasis is given to teen drivers.*
		Program Development and Administrative Coordination (1)	• University of California-San Diego: Worksite Intervention to Reduce Cell Phone Distracted Driving	$176,584.00	*This project aims to reduce cell phone distracted driving among commercial and non-commercial drivers.*
				$1,064,584.00	
****Texas**	4	Public Information Campaigns (2)	• The Katie Matthews Story • Distracted Driving Campaign	$42,576.76 $3,000,000.00	
		Training (2)	• Statewide Distracted Driver Education and Comprehensive Law Enforcement Liaison Support • Workshops: Distractions Module Revision	$1,421,881.97 $9,786.40	
				$4,474,245.13	*** Distracted driving funding was combined and accounted for in other program areas. Projects listed in the Texas Section were gleaned from across all Texas program areas.*

Drug Impaired Driving

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	28	Training (1)	• California Highway Patrol: Drug Recognition Evaluator Program	$1,563,000.00	*The project provides basic and instructor SFST, ARIDE, and DRE training and certification to law enforcement personnel.*
		Public Awareness (1)	• Ventura County: Drugged Driving Risks & Realities Campaign	$162,000.00	*The project provides for public awareness and education campaigns on the dangers of drug impaired driving, including illicit, prescription, and over the counter drugs along with the dangers of combining them with alcohol.*
		DUI Vertical Prosecution (26)	• El Dorado County • Shasta County • Marin County • Monterey County • Calaveras County • Kern County • Sonoma County • Stanislaus County • Placer County • Fresno County DA Office • Yolo County • Sacramento County • Orange County • Glenn County • San Bernardino • Lake County • San Diego • San Diego County • Los Angeles • Ventura County • Riverside County • Riverside County • Napa County • Solano County • San Francisco City/County • Sacramento County	$353,263.00 $260,582.00 $413,581.00 $404,925.00 $157,820.00 $425,889.00 $421,312.00 $346,802.00 $332,464.00 $800,000.00 $184,073.00 $993,000.00 $764,758.00 $174,137.00 $196,150.00 $228,737.00 $263,000.00 $577,965.00 $349,981.00 $360,065.00 $394,722.00 $488,280.00 $228,441.00 $279,334.00 $287,624.00 $1,093,431.00	*These projects provide statewide training for prosecutors and law enforcement in the investigation and prosecution of DUI drug and alcohol cases. Training covers presentation of evidence for forensic labs and law enforcement witnesses, DUI laws and sentencing alternatives, improved investigation and report writing.*

				$12,505,336.00	**Includes funding from drug impaired driving programs. California impaired driving programs (Alcohol and Drugs) combined= $35,485,709*
Texas	0	Alcohol and Other Drug Countermeasures	-	-	-
				$0.00	***Texas alcohol and drug programs are combined into a single program. While Texas combines these to define impairment, California separates them into individual program silos.*

Emergency Medical Services

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	2	First Responder Services (2)	• Oxnard* • Albany*	$197,000.00 $339,000.00	*These projects allow for the purchase and distribution of emergency extraction equipment to city, county and volunteer fire departments. Their goal is to improve EMS service delivery to crash victims and reduce response time for victim extraction at the scene of the collision.*
			**Regional Grants were used to purchase extraction equipment for City, County or Volunteer Fire Departments.*	**$536,000.00**	
Texas	1	Training (1)	• Rural/Frontier EMS Education Training Program	$1,124,115.10	
				$1,124,115.10	

Motorcycle Safety

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	2	Motorcycle Program Analysis and Evaluation (1)	• The Regents of the University of California, Berkeley Campus: Motorcycle Collision Injury Outcomes Project II	$245,314.00	*These projects are intended to improve and develop effective countermeasures to reach motorcyclists. They provide enhanced enforcement, public awareness of motor cyclists, helmet and safety gear use, safe and sober riding. Additional funding can be used to assist in developing educational materials related to alcohol use, helmet use and lane splitting*
		Enforcement* (1)	• California Highway Patrol: California Motorcycle Safety Enforcement and Education IV	$1,000,000.00	*These projects provide highly publicized motorcycle enforcement operations that target specific highway corridors and areas associated with significant motorcycle traffic*
			**The California Highway Patrol implements a 12 month program of training aimed at reducing motorcycle crashes, fatalities and injuries. 280 training occurs in 50 different California cities.*	**$1,245,314.00**	
Texas	4	Program Management (1)	• Motorcycle Program Assessment	$35,000.00	
		Public Information Campaigns (1)	• Motorcycle Safety Campaign	$1,000,000.00	
		Training (2)	• Statewide Motorist Awareness & Motorcycle Safety Outreach and Support • Increasing Recruitment/Retention of Motorcyclist Safety Training Instructor	$277,822.37 $220,416.02	
				$1,533,238.39	

Occupant Protection

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	15	Comprehensive Community Occupant Protection Grants (10)	• Butte County Public Health Department • San Luis Obispo County • Los Angeles • Rancho Cordova • Pomona • Oxnard • Tehama County Health Department • Riverside County • San Diego County • Yuba City Police Department	$112,127.00 $192,000.00 $450,000.00 $275,000.00 $140,135.00 $38,400.00 $138,000.00 $232,780.00 $245,500.00 $143,700.00	*These projects involve a wide variety of stakeholders to develop child safety seat programs that educate and train on correct use of safety belts and child safety seats. Activities include media events, public information campaigns, safety seat checkups, child safety seat and seat belt surveys, presentations, provision of the Child Passenger Seat Technicians course, court diversion classes, dissemination of educational materials, distributing no cost child safety seats to low income families, and serving as fitting stations.*
		Statewide Occupant Protection Grants (2)	• California Department of Public Health: Vehicle Occupant Safety Program • California Highway Patrol: Vehicle Occupant Restraint Education and Instruction IV	$309,074.00 $1,125,000.00	*These projects are conducted by the California Department of Health and the California Highway Patrol to increase safety belt and child safety seat education outreach. Activities include: media events, public information campaigns, child safety seat checkups, seat belt and child safety seat surveys, presentations, disseminating literature, providing child passenger seat technicians training, distribution of child passenger seats to low income families.*
		Statewide Usage Surveys (1)	• California State University Fresno: Statewide Observational Restraint Usage Surveys	$271,759.00	*These projects involve observational seat belt, teen seat belt and child safety seat usage rate evaluations.*
		Older Drivers (2)	• Riverside: Senior Driver Awareness Program • University of California San Diego: Training Professionals to Promote Older Driver Safety	$17,154.00 $500,000.00	*These projects involve providing training and public awareness to the community and other stakeholders regarding older drivers and the intellectually disabled*
				$4,190,629.00	
Texas	(18)	Enforcement (2)	• Click it or Ticket STEP Incentive Program • Click it or Ticket STEP Grant Program	$60,000.00 $500,000.00	
		Public Information Campaigns	• Texas KidSafe Program • Child Passenger Safety Campaign	$554,765.01 $1,000,000.00	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
		(4)	• Click it or Ticket Campaign • Teen Click it or Ticket (Grass Roots)	$3,000,000.00 $1,000,000.00	
		Training (9)	• Austin/Travis County Emergency Medical Service Child Safety Seat • Student Training In Occupant Protection (STOP) Program • Give Kids a Boost Dallas • Child Passenger Safety Training Dallas • Texans In Motion at Scott and White Healthcare • Texas A&M AgriLife Extension Service Passenger Safety • Increasing Child Restraint Usage in Greater Houston • Statewide Child Passenger Safety Education and Distribution Program • Preserving our Future	$45,850.00 $388,806.95 $147,884.00 $90,422.38 $305,801.22 $536,411.82 $495,131.08 $1,789,896.37 $181,624.10	
		Evaluation (3)	• Occupant Restraint Use Surveys • Nighttime Occupant Restraint Use • Click it or Ticket Evaluation Survey	$374,434.40 $72,451.83 $56,134.59	
				$10,599,613.79	

Pedestrian & Bicycle Safety

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	(17)	Pedestrian and Bicycle Safety Programs (14)	• Eureka • Gilroy • Sacramento • Santa Ana • Clovis • Riverside County • Gridley • San Francisco City/County • Bakersfield • Los Angeles County Metropolitan Transit Authority • Pasadena • Santa Clara • Malibu • California Highway Patrol	$100,000.00 $107,423 $165,000.00 $150,000.00 $50,000.00 $181,360.00 $75,000.00 $210,000.00 $96,322.00 $223,950.00 $172,000.00 $50,000.00 $124,250.00 $500,000.00	*These projects target bicycle and pedestrian safety through the school system and local community efforts. Projects include: traffic safety rodeos, helmet distribution programs, diversion alternatives for cited youth, and increased enforcement around schools. The primary goal is to decrease the number of fatal and injured victims resulting from traffic collisions with bicyclists and or pedestrians and to increase public awareness of safety practices for pedestrians, bicyclists and motorists.*
		Statewide Pedestrian and Bicycle Safety Programs (3)	• The Regents of the University of California, Berkeley Campus: Safety Assessment for California Communities • The Regents of the University of California, Berkeley Campus: Community Pedestrian Safety Training Project • The Regents of the University of California, Berkeley Campus: Community Bicycle Safety Training	$510,000.00 $295,000.00 $142,113.00	*These projects develop teams of transportation professionals to identify pedestrian problems and solutions to improve pedestrian environments. Pedestrian safety action plans and community pedestrian trainings are provided to address identified pedestrian problems. Projects address a coordinated approach to safety planning, assessment and educational efforts statewide.* *Funding is specifically provided to maintain web based resource that contains California centered bicycle and pedestrian data. Other projects provide free public service announcements for communities. Other projects involve in depth analysis of community enforcement and engineering practices with a goal of reducing the frequency and severity of bicycle and pedestrian crashes. Other projects involve identifying and implementing countermeasure solutions for identified high crash locations in the community.*
				$3,152,418.00	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
Texas	(6)	Public Information Campaigns (1)	• General and Assorted Traffic Safety Messages	$1,000,000.00	
		Training (5)	• Safety City, Teaching Kids to be Street Smart • Be Kind to Cyclists: An Educational Video Promoting Bicycle Safety for Bicyclists and Motorists • Safety City Building Safer Communities • Texas A&M AgriLife Extension Service: Safety City • Bike Texas College Active Transportation Safety (CATS) Program	$56,386.37 $237,082.71 $33,179.75 $96,953.74 $303,815.00	
				$1,727,417.57	

Police Traffic Services

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	151	Program Development and Administrative Coordination (1)	• California Highway Patrol	$457,472.00	*These projects provide for staff overtime and expenses incurred by the Office of Traffic Safety (OTS) for tasks associated with planning, development, coordination, monitoring, auditing and evaluating grants within this program area and with preparing the state Highway Safety Plan. Funding also covers attendance in committee meetings, training sessions, education meetings or conferences.*
		Selective Traffic Enforcement Program (STEP) (143)	• Statewide STEP	$35,076,534.00	*These projects are for reducing the number of persons killed and injured in crashes involving alcohol, speed, right of way, traffic signals or signs, pedestrian violations, and improper turning. Funding may go to: DUI checkpoints, DUI saturation patrols. Warrant service operations, stakeout operations, Hot sheet programs, educational presentations, and court stings. STEP projects may also include distracted driving, seat belt enforcement and enforcement operations encouraging motorcycle safety.*
		California Highway Patrol (6)	• California Highway Patrol: Focused High Collision Reduction II • California Highway Patrol: Keeping Everyone Safe (KEYS) IV • California Highway Patrol: Start Smart Teen Driver Education Safety Program VII • California Highway Patrol: Reduce Aggressive Driving Incidents and Tactically Enforce Speed (RADIATES) III • California Highway Patrol: Critical Impact PCF Enforcement • California Highway Patrol: Real Time PCF Enforcement	$425,000.00 $174,117.00 $1,050,000.00 $3,500,000.00 $74,870.00 $210,200.00	*The projects allow the California Highway Patrol to reduce overrepresented fatal collisions where primary causal factors have been identified. CHP conducts speed and seat belt enforcement, implement corridor projects, continue statewide presentations and provide enhanced enforcement directed at reducing motorcycle involved fatalities and injuries.*
		Safe Transportation Research Education Center (1)	• The Regents of the University of California: Berkeley Campus: Safe TREC X	$1,300,000.00	*These projects focus on public education and outreach, collaboration with stakeholders, and data analysis. The projects promote working closely with community based organizations to promote traffic safety at the neighborhood and community level.*

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
				$42,268,193.00	
Texas	70	Enforcement (69)	• Selective Traffic Enforcement Program (STEP): CMV- 3 agencies • STEP- Comprehensive- 54 agencies • STEP Wave Comprehensive- 5 agencies • STEP- Speed-7 agencies**	$833,256.26 $18,783,108.12 $86,319.93 $637,098.04	
		Training (1)	• Data Driven Approaches to Crime and Traffic Safety (DDACTS) • *Statewide Distracted Driver Education and Comprehensive Law Enforcement Liaison Support Program**	$103,228.20 *$1,421,881.97**	
			Statewide Distracted Driver Education and Comprehensive Law Enforcement Liaison Support Program was accounted for under distracted driving table. Funding was not calculated in the final total* * Speed STEP projects were listed under Speed Control SHSP emphasis area but added into the enforcement element of the Police Traffic Services.*	**$20,443,010.55**	

Traffic Records/Roadway Safety

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	11	Data Records Design and Implementation (3)	• California Department of Public Health: Crash Medical Outcomes Data Project • California Highway Patrol: Statewide Integrated Traffic Records System Backlog Project III • Emergency Medical Services Authority: California EMS Information System	$600,000.00 $1,244,304.00 $225,000.00	*These projects fund the provision of database and management systems by which the state and local agencies can supplement existing collision records with needed data.*
		Comprehensive Data System Design and Implementation (1)	• Riverside County: GIS Based Countywide Traffic Records System	$340,000.00	*These projects fund the Traffic Collision Database and Mapping System which provides data input and management for traffic collision reports. The project uses GIS mapping to query information from the database to identify high frequency locations and crash patterns.*
		Data Improvement Grants (5)	• California Polytechnic State University, Pamona: Empirical Bayes Estimated OTS Ranking III • The Regents of the University of California, Berkeley Campus: California Active Transportation Safety Information Pages • The Regents of the University of California, Berkeley Campus: Transportation Injury Mapping System Data and Application Improvements • The Regents of the University of California, Berkeley Campus: Tribal Safety Data Collection Project • California Department of Motor Vehicles *(No specified projects)*	$135,000.00 $75,000.00 $221,320.00 $113,096.00 $2,292,758.00	*Funds used for these projects are used for maintaining the California Active Transportation Safety Information Pages website, Transportation Injury Mapping System website, Empirical Bayes method for comparing collision numbers, and the Automated Knowledge Test Expansion project.*
		Strategic Highway Safety Planning* (1)	• California Department of Transportation: Strategic Highway Safety Plan Update*	$300,000.00	*The project funds provide support for statewide efforts for the California Strategic Highway Safety Plan*
		Public Awareness (1)	• California Department of Transportation: Highway Safety Campaign	$1,000,000.00	*These project funds provide capital to expand the "Slow for the Cone Zone" work zone safety campaign.*
				$6,546,478.00	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
Texas	17	Program Management (15)	• Increasing the Percent of Trauma Patients Linked to Crash Data, Department of State Health Services • CRASH Agency RMS Interface • CRASH Automated Program Call Assessment • CRASH Big Data • CRASH Intelligent Definition-Phase 1 • CRASH Intelligent Definition-Phase 2 • CRASH Locator Service • CRASH Pre-Population of Fields • CRASH Render Map from MSTR and Mobilize • CRASH Standards and Compliance • CRASH Unique Intersection Identifier • TxDOT Help Desk • CRASH Agency Support • Crash Records/ Data Analysis Operations and CRIS • FARS Support	$1,878,114.91 $164,713.00 $45,000.00 $199,350.00 $82,500.00 $90,720.00 $97,650.00 $174,960.00 $105,825.00 $168,500.00 $78,500.00 $696,000.00 $280,000.00 $3,224,564.00 $100,000.00	
		Training (1)	• Crash Reporting and Analysis for Safer Highways Training	$302,000.00	
		Evaluation (1)	• Electronic Citation Feasibility: Assessing Law Enforcement and TxDOT Needs for Improving Crash Reporting	$251,748.67	
			** The Texas SHSP is part of a separate Interagency Contact between TxDOT and the Texas A&M Transportation Institute (TTI) whereas the California SHSP is part of Traffic Records as a separate grant.*	**$7,940,145.58**	

Planning & Administration

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	0	-	-	$0.00	N/A
			**Projects that address Planning and Administration have been absorbed into other traffic safety program areas.*	**$0.00**	
Texas	6	Program Management (5)	• E-Grants Software Enhancement and Support Service • E-Grants Software Enhancement and Support Service • Statewide Traffic Safety Conference • E-Grants Business Analysis Tool • Traffic Safety Program Operations	$75,000.00 $50,000.00 $92,728.03 $400,000.00 $1,919,154.00	
		Public Information Campaigns (1)	• Toward Zero Deaths	$200,000.00	
				$2,736,882.03	

Driver Education & Behavior

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	10	Statewide Campaigns* (7)	• Holiday DUI Crackdown • Distracted Driving • Click it or Ticket • Child Protection System Week • Motorcycle and Bicycle Safety Months • DUI Enforcement Campaigns (holiday periods) • Office of Traffic Safety (OTS) Websites and Social Media (YouTube, Facebook and Twitter feeds)	$ Undisclosed amounts	
		Paid Advertising (2)	• DUI Crackdown • Distracted Driving	$1,000,000.00 $700,000.00	
		Marketing (1)	• OTS Sports and Venue Marketing Program (Occupant Protection, Impaired Driving, and Distracted Driving)	$1,225,000.00	
			**California did not document the financial outlays for Statewide Campaigns that were conducted. Statewide campaigns were mixed among the different program emphasis areas.*	**$2,925,000.00**	
Texas	13	Public Information Campaigns (4)	• *The Katie Matthews Story** • "Street Smarts" TV PSA Series and "On the Road in Texas" Radio PSA Series • *Distracted Driving Campaign** • Energy Sector	*$42,576.76* $1,000,000.00 *$3,000,000.00* $2,000,000.00	
		Training (7)	• Austin Independent School District Drivers Education Program • Texas Traffic SAFETY Educational Staff Improvement Program. Safety Alliance for Educating Texas Youth • *Workshops: Distractions Module Revision** • Mature Driver Program	$43,074.38 $159,654.05 *$9,786.40* $248,819.98 $406,743.88	

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
			• Our Driving Concern-Texas Employer Traffic Safety Program • Teens in the Driver Seat Program • Driving on the Right Side of the Road	$1,259,247.76 $237,161.71	
		Evaluation (2)	• Statewide Mobile Communication Device Use Survey • Driver Attitudes and Awareness of Traffic Safety Survey	$79,349.16 $52,418.13	
			**The Katie Matthews Story, Distracted Driving Campaign, and Workshops for Distractions Module Revision were not financially accounted for in this section. These projects were accounted for ($3,052,363.16) in the Distracted Driving segment of this report.*	**$5,486,469.05**	

Railroad & Highway Crossing

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	0	-	-	$0.00	N/A
			**Projects that address railroad and highway crossings have been absorbed into other traffic safety program emphasis areas*	**$0.00**	
Texas	1	Training (1)	• Highway Railroad Safety Awareness	$127,378.70	
				$127,378.70	

Roadway Safety/Work Zones

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	0	-	-	$0.00	N/A
			**Projects that address roadway safety/work zones have been absorbed into other traffic safety program emphasis areas.*	**$0.00**	
Texas	3	Public Information Campaigns (1)	• Work Zone Safety	$300,000.00	
		Training (2)	• Traffic Signal Safety Training • Texas City/County Work Zone Traffic Control Training	$124,872.24 $983,487.25	
				$1,408,359.49	

Safe Communities

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	0	-	-	$0.00	N/A
			**Projects that address safe communities have been absorbed into other traffic safety program emphasis areas.*	**$0.00**	
Texas	2	Training (2)	• Safe Communities Safe Driving Public Education Campaign • Brazos Valley Injury Prevention Coalition	$91,968.74 $189,966.56	
				$281,935.30	

School Bus

State	No. Projects	Task Areas	Project Title	Funding Received	Task Purpose
California	0	-	-	$0.00	N/A
			**Projects that address school bus safety have been absorbed into other traffic safety program emphasis areas.*	**$0.00**	
Texas	2	Training (2)	• School Bus Safety Training 101 • School Bus Safety Training	$190,694.97 $194,801.32	
				$ 385,496.29	