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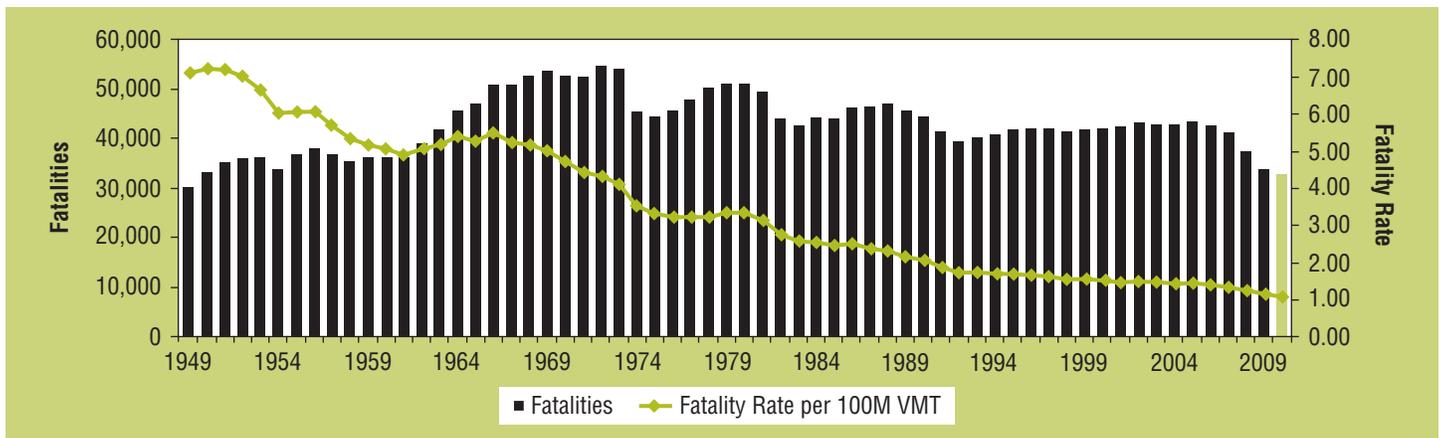
Revised February 2012

# 2010 Motor Vehicle Crashes: Overview

In 2010, 32,885 people died in motor vehicle traffic crashes in the United States—the lowest number of fatalities since 1949 (30,246 fatalities in 1949) (see Figure 1). This was a 2.9-percent decline in the number of people killed, from 33,883 in 2009, according to NHTSA's 2010 Fatality Analysis Reporting System (FARS). In 2010, an estimated 2.24 million people were

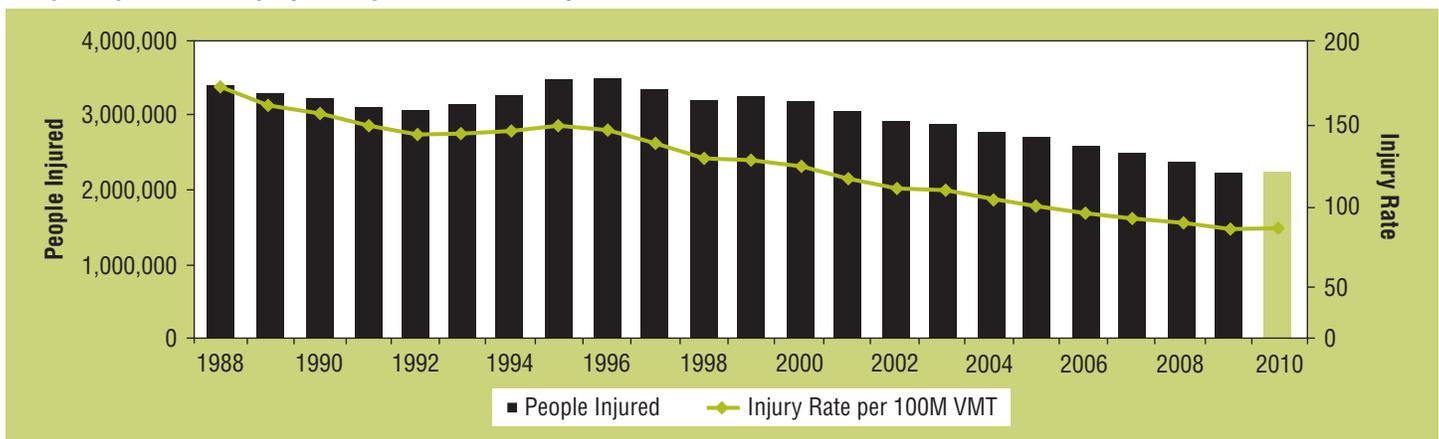
injured in motor vehicle traffic crashes, compared to 2.22 million in 2009 according to NHTSA's National Automotive Sampling System (NASS) General Estimates System (GES). This slight increase (1.0% increase) in the estimated number of people injured is not statistically significant from the number of people injured in crashes in 2009.

Figure 1  
Fatalities and Fatality Rate per 100M VMT by Year



1949–1974: National Center for Health Statistics, HEW, and State Accident Summaries (Adjusted to 30-Day Traffic Deaths by NHTSA)  
FARS 1975–2009 (Final) 2010 Annual Report File (ARF); Vehicle Miles Traveled (VMT): Federal Highway Administration.

Figure 2  
People Injured and Injury Rate per 100M VMT by Year



NASS GES 1988–2010; Vehicle Miles Traveled (VMT): Federal Highway Administration.

## Fatality and Injury Rates

The fatality rate per 100 million vehicle miles traveled (VMT) fell to a historic low of 1.10 in 2010 (Table 1). The overall injury rate remained the same from 2009 to 2010. The 2010 rates are based on VMT estimates from the Federal Highway Administration's (FHWA) August 2011 Traffic Volume Trends (TVT). Overall 2010 VMT increased by 1.6 percent from 2009 VMT—from 2,953,501 million to 2,999,974 million. VMT data will be updated when FHWA releases the 2010 Annual Highway Statistics.

Table 1  
Fatality and Injury Rates per 100 Million VMT

	2009	2010	Change	% Change
Fatality Rate	1.15	1.10	-0.05	-4.3%
Injury Rate	75	75	0	0.0%

Source: FARS, GES, and FHWA VMT (August 2011 TVT)

## Occupants and Nonoccupants

The large decrease in fatalities among passenger vehicle occupants was partially negated by increases in fatalities of other occupants and pedestrians, as shown in Table 2 below. There were 1,260 fewer passenger vehicle occupant fatalities in 2010 than in 2009, with very similar distribution of the decrease between passenger cars and light trucks. After experiencing a large (26%) decrease in fatalities from 2008 to 2009, large-truck occupants increased the greatest percentage in 2010 (up 6% from 2009). Motorcyclist fatalities increased slightly in 2010 to 4,502 accounting for 14 percent of total fatalities for the year. This increase in motorcycle fatalities for the

Table 2  
Occupants and Nonoccupants Killed and Injured in Traffic Crashes

Description	Killed				Injured			
	2009	2010	Change	% Change	2009	2010	Change	% Change
Total*	33,883	32,885	-998	-2.9%	2,217,000	2,239,000	+22,000	+1.0%
<b>Occupants</b>								
Passenger Vehicles	23,447	22,187	-1,260	-5.4%	1,976,000	1,986,000	+10,000	+0.5%
Passenger Cars	13,135	12,435	-700	-5.3%	1,216,000	1,253,000	+37,000	+3.0%
Light Trucks	10,312	9,752	-560	-5.4%	759,000	733,000	-26,000	-3.4%
Large Trucks	499	529	+30	+6.0%	17,000	20,000	+3,000	+18%
Motorcycles	4,469	4,502	+33	+0.7%	<b>90,000</b>	<b>82,000</b>	<b>-8,000</b>	<b>-8.9%</b>
<b>Nonoccupants</b>								
Pedestrians	4,109	4,280	+171	+4.2%	<b>59,000</b>	<b>70,000</b>	<b>+11,000</b>	<b>+19%</b>
Pedalcyclists	628	618	-10	-1.6%	51,000	52,000	+1,000	2.0%
Other/Unknown	151	182	+31	—	7,000	8,000	+1,000	—

Source: Fatalities - FARS 2009 (Final), 2010 (ARF), Injured - NASS GES 2009, 2010 Annual Files

\*Total includes occupants of buses and other/unknown occupants not shown in table.

Changes in injury estimates shown in **bold** are statistically significant.

year picks up the overall increasing trend over the last 13 years that saw a one-year decline in 2009. The greatest increases in the estimated number of injured people from 2009 to 2010 are among passenger car occupants and pedestrians. The greatest decrease in the estimated number of injured people is among motorcyclists, with an 8.9-percent decrease (decline of 8,000 people).

## Alcohol-Impaired-Driving Fatalities

Alcohol-impaired-driving fatalities (fatalities in crashes involving a driver or motorcycle rider (operator) with a blood alcohol concentration (BAC) of .08 grams per deciliter (g/dL) or greater) declined by 4.9 percent in 2010 (Table 3) accounting for 31 percent of overall fatalities. The number of alcohol-impaired drivers in fatal crashes declined for most vehicle types with the largest decline was among drivers of pickup trucks (8.1%). Although the percentage increase in the number of

Table 3  
Total and Alcohol-Impaired (AI) Driving Fatalities\*

	2009	2010	Change	% Change
Total Fatalities	33,883	32,885	-998	-2.9%
AI Driving Fatalities	10,759	10,228	-531	-4.9%
<b>Alcohol-Impaired Drivers in Fatal Crashes by Vehicle Type</b>				
Passenger Car	4,186	4,082	-104	-2.5%
Light Truck – Van	291	292	+1	+0.3%
Light Truck – Utility	1,583	1,527	-56	-3.5%
Light Truck – Pickup	2,258	2,075	-183	-8.1%
Motorcycles	1,325	1,285	-40	-3.0%
Large Trucks	54	61	+7	+13%

Source: FARS 2009 (Final), 2010 (ARF)

\*See definition in text.

alcohol-impaired large-truck drivers is high (13%) the actual number of alcohol-impaired large-truck drivers is a very small percentage of the overall drivers involved in alcohol-impaired crashes.

## Crash Type

The number of motor vehicle crashes, by crash type and severity, is presented in Table 4. The total number of police-reported traffic crashes declined from 2009 to 2010, as both fatal and non-fatal crashes declined. While non-fatal crashes declined, the number of injury crashes increased 1.6 percent from 2009 to 2010. The estimated changes in each type of crash were not statistically significant. Because FARS data is a census of fatal crashes no significance testing is required.

Table 4  
Number of Crashes, by Crash Type

Crash Type	2009	2010	Change	% Change
Fatal Crashes	30,862	30,196	-666	-2.2%
Non-Fatal Crashes	5,474,000	5,389,000	-85,000	-1.6%
Injury Crashes	1,517,000	1,542,000	+25,000	+1.6%
Property-Damage Only	3,957,000	3,847,000	-110,000	-2.8%
Total Crashes	5,505,000	5,419,000	-86,000	-1.6%

Source: FARS 2009 (Final), 2010 (ARF)

## Restraint Use and Time of Day

Among fatally injured passenger vehicle occupants, more than half (51%) of those killed in 2010 were unrestrained (Table 5). Of those occupants killed during the night 61 percent were unrestrained, compared to 42 percent during the day. Most of the change in passenger vehicle occupant fatalities occurred in nighttime

Table 5  
Passenger Vehicle Occupant Fatalities, by Restraint Use and Time of Day

Type	2009		2010		Change	% Change
	#	%	#	%		
<b>Fatalities</b>	23,447	100	22,187	100	-1,260	-5.4%
Restraint Used	10,993	47	10,761	49	-232	-2.1%
Restraint Not Used	12,454	53	11,426	51	-1,028	-8.3%
<b>Day</b>	11,636	50	11,371	51	-265	-2.3%
Restraint Used	6,508	56	6,543	58	+35	+0.5%
Restraint Not Used	5,128	44	4,828	42	-300	-5.9%
<b>Night</b>	11,630	50	10,647	48	-983	-8.5%
Restraint Used	4,393	38	4,124	39	-269	-6.1%
Restraint Not Used	7,237	62	6,523	61	-714	-9.9%

Source: FARS 2009 (Final), 2010 (ARF);

Day: 6 a.m. to 5:59 p.m.; Night: 6 p.m. to 5:59 a.m.; Total fatalities include those at unknown time of day; unknown restraint use has been distributed proportionally across known use.

crashes—983 of the 1,260 (78%). Among the 983 decline in nighttime fatalities a large proportion (73%) was among unrestrained passenger vehicle occupants.

## Fatal Crashes Involving Large Trucks

There was an 8.7-percent increase in the number of people killed in crashes involving large trucks. Fatalities in large-truck crashes increased in all categories—large-truck occupants, occupants of other vehicles and non-occupants. The greatest percentage increase can be seen in the number of large-truck occupants killed in multivehicle crashes, 16 percent. This is in contrast to a 9.1-percent increase in fatalities of other vehicle occupants involved in those multivehicle crashes.

Table 6  
People Killed in Large-Truck Crashes

Type	2009	2010	Change	% Change
Truck Occupants	499	529	+30	+6.0%
Single-Vehicle	333	337	+4	+1.2%
Multivehicle	166	192	+26	+16%
Other Vehicle Occupants	2,558	2,790	+232	+9.1%
Nonoccupants	323	356	+33	+10%
Total	3,380	3,675	+295	+8.7%

Source: FARS 2009 (Final), 2010 (ARF)

## Crash Location

Fatalities in rural crashes declined by 6.7 percent (Table 7); those in urban crashes increased slightly by 0.3 percent. Roadway departure crashes declined by 3.9 percent and intersection crashes declined by 7.1 percent. Following are the definitions used for roadway departure and intersection crashes as defined by FHWA.

Table 7  
People Killed in Motor Vehicle Traffic Crashes, by Roadway Function Class, Roadway Departure, and Relation to Junction

	2009	2010	Change	% Change
Total	33,883	32,885	-998	-2.9%
<b>Roadway Function Class</b>				
Rural	19,323	18,026	-1,297	-6.7%
Urban	14,501	14,546	+45	+0.3%
<b>Roadway Departure*</b>				
Roadway Departure	18,052	17,389	-663	-3.7%
<b>Relation to Junction</b>				
Intersection*	7,278	6,758	-520	-7.1%

Source: FARS 2009 (Final), 2010 (ARF)

\*See definitions in text.

**Roadway Departure crash:** A non-intersection crash in which a vehicle crosses an edge line, a centerline, or leaves the traveled way. Includes intersections at interchange areas.

**Types of crashes fitting the definition:** Non-intersection fatal crashes in which the first event for at least one of the involved vehicles: ran-off-road (right or left); crossed the centerline or median; went airborne; or hit a fixed object.

**Intersection:** Non-interchange — intersection or intersection-related.

## Other Highlights

- When looking at the time of day of crashes, 86 percent of the total decline in fatalities could be seen in nighttime crashes (day: 6 a.m. to 5:59 p.m.; night: 6 p.m. to 5:59 a.m.). Of the 998 fewer fatalities in 2010, there were 857 fewer fatalities in nighttime crashes.
- Just over three-quarters (78% in crashes with known day of week) of the overall decline in fatalities came from a decline in weekend (6 p.m. Friday through 5:59 a.m. Monday) crash fatalities—a decline of 769 weekend fatalities.
- With respect to motorcyclist fatalities, fatalities among motorcyclists 50 and older increased by 119, whereas fatalities among motorcyclists under 50 declined by 84.
- Age discrepancies can be seen in overall fatalities as well. Fatalities of people 55 and older increased by 409, whereas fatalities of people under 55 decreased by 1,391.
- In 2010, there were 117 fewer children under the age 16 killed in motor vehicles crashes, a 7.6-percent decline from 2009. The majority of those fatalities were from a reduction in child occupant fatalities (107 fewer in 2010 than 2009).
- Broadening the view to the most recent five years to look at the trend in young drivers, fatalities from crashes with young drivers (16 to 20 years old) have declined at a faster rate than overall fatalities between 2006 and 2010. There has been a 39-percent decrease in fatalities in young driver-involved crashes compared to a 23-percent decrease in overall fatalities during the 2006 to 2010 time period.

## State by State Distribution of Fatalities

Table 8 compares the total number of fatalities for 2009 and 2010, the change in the number of total fatalities, and the percentage change for each State, the District of Columbia, and Puerto Rico. Thirty-one States, the District of Columbia, and Puerto Rico had reductions in the number of fatalities. Four States had reductions of over 100 fatalities, led by California with 375 fewer fatalities in 2010 than in 2009. Florida (-115), Louisiana (-114), and Texas (-106) were the other States with more than 100 fewer fatalities in 2010. Five States saw increases of more than 50 overall fatalities from 2009 to 2010. Connecticut had the greatest increase in the number of fatalities, going up 95 fatalities or 42 percent. Michigan (70), Pennsylvania (68), Indiana (61), and Ohio (58) were the other States that had increases in overall fatalities of more than 50.

Additional State-level data is available at NCSA's State Traffic Safety Information Web site <http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/STSI/USA%20WEB%20REPORT.HTM>

NHTSA's Fatality Analysis Reporting System is a census of all crashes of motor vehicles traveling on public roadways in which a person died within 30 days of the crash. Data for the National Automotive Sampling System General Estimates System comes from a nationally representative sample of police-reported motor vehicle crashes of all types, from property-damage-only to fatal.

The information in this Research Note represents an overview of the 2010 FARS and GES files. Additional information and details will be available at a later date.

Table 8  
**Total Fatalities, 2009 and 2010, by State**

State	2009 Total Fatalities	2010 Total Fatalities	2009 to 2010 Changes in Total Fatalities	
			Change	% Change
Alabama	848	862	+14	+1.7%
Alaska	64	56	-8	-13%
Arizona	806	762	-44	-5.5%
Arkansas	596	563	-33	-5.5%
California	3,090	2,715	-375	-12%
Colorado	465	448	-17	-3.7%
Connecticut	224	319	+95	+42%
Delaware	116	101	-15	-13%
Dist of Columbia	29	24	-5	-17%
Florida	2,560	2,445	-115	-4.5%
Georgia	1,292	1,244	-48	-3.7%
Hawaii	109	113	+4	+3.7%
Idaho	226	209	-17	-7.5%
Illinois	911	927	+16	+1.8%
Indiana	693	754	+61	+8.8%
Iowa	371	390	+19	+5.1%
Kansas	386	431	+45	+12%
Kentucky	791	760	-31	-3.9%
Louisiana	824	710	-114	-14%
Maine	159	161	+2	+1.3%
Maryland	549	493	-56	-10%
Massachusetts	340	314	-26	-7.6%
Michigan	872	942	+70	+8.0%
Minnesota	421	411	-10	-2.4%
Mississippi	700	641	-59	-8.4%
Missouri	878	819	-59	-6.7%
Montana	221	189	-32	-14%
Nebraska	223	190	-33	-15%
Nevada	243	257	+14	+5.8%
New Hampshire	110	128	+18	+16%
New Jersey	584	556	-28	-4.8%
New Mexico	361	346	-15	-4.2%
New York	1,158	1,200	+42	+3.6%
North Carolina	1,313	1,319	+6	+0.5%
North Dakota	140	105	-35	-25%
Ohio	1,022	1,080	+58	+5.7%
Oklahoma	737	668	-69	-9.4%
Oregon	377	317	-60	-16%
Pennsylvania	1,256	1,324	+68	+5.4%
Rhode Island	83	66	-17	-20%
South Carolina	894	810	-84	-9.4%
South Dakota	131	140	+9	+6.9%
Tennessee	986	1,031	+45	+4.6%
Texas	3,104	2,998	-106	-3.4%
Utah	244	236	-8	-3.3%
Vermont	74	71	-3	-4.1%
Virginia	758	740	-18	-2.4%
Washington	492	458	-34	-6.9%
West Virginia	357	315	-42	-12%
Wisconsin	561	572	+11	+2.0%
Wyoming	134	155	+21	+16%
<b>National</b>	<b>33,883</b>	<b>32,885</b>	<b>-998</b>	<b>-2.9%</b>
Puerto Rico	365	340	-25	-6.8%

Source: FARS 2009 (Final), 2010 Annual Report File (ARF)

## Appendix A

The National Automotive Sampling System (NASS) General Estimates System (GES) data file was made available to the public in December 2011. Shortly after posting the file, a coding error was discovered that led to subsequent investigation to identify other potential coding errors in the system. Additional coding errors were found and have been corrected. There were 8 data elements (vehicle trailing, vehicle configuration, body type, cargo body type, jackknife, vehicle model, vehicle model year, and vehicle identification number) corrected

for 842 vehicles out of 81,406 vehicles on the 2010 NASS GES file.

This change in coding has resulted in slight changes in some estimates from GES, thus the revision to this Research Note from the December 2011 publication. The table below shows changes in Table 2 from the Research Note. The table contains the data as it appeared in the December 2011 publication and as it appears in this February 2012 publication. This data also appears in some of the text throughout the document.

	People Injured, December 2011 Research Note			People Injured, February 2012 Research Note		
	Injured	Change from '09	% Change	Injured	Change from '09	% Change
Total	2,243,000	+26,000	+1.2%	2,239,000	+22,000	+1.0%
Passenger Vehicles	1,990,000	+14,000	+0.7%	1,986,000	+10,000	+0.5%
Passenger Cars	1,258,000	+42,000	+3.5%	1,253,000	+37,000	+3.0%
Light Trucks	732,000	-27,000	-3.6%	733,000	-26,000	-3.4%
Large Trucks	19,000	+2,000	+12%	20,000	+3,000	+18%
Motorcycles	82,000	-8,000	-8.9%	82,000	-8,000	-8.9%
Pedestrians	70,000	+11,000	+19%	70,000	+11,000	+19%
Pedalcyclists	51,000	+1,000	+2.0%	52,000	+1,000	+2.0%
Other/Unknown	8,000	+1,000	-	8,000	+1,000	-

The following table shows revisions to Table 4 of the Research Note. Again, it contains data as it appeared in the December 2011 publication and the revised data

included in this February 2012 publication. The whole table is not included, only those figures that changed.

	People Injured, December 2011 Research Note			People Injured, February 2012 Research Note		
	Injured	Change from '09	% Change	Injured	Change from '09	% Change
Injury Crashes	1,546,000	+29,000	+1.9%	1,542,000	-25,000	+1.6%
Property-Damage Only	3,843,000	-114,000	-2.9%	3,847,000	-110,000	-2.8%

In addition to the revisions to GES, the roadway departure crash figures were updated to reflect revisions to FHWA's criteria. In the December 2011 Research Note, fatalities associated with roadway departure in 2010 was

17,346. The revised figure for fatalities in 2010 is 17,389. Table 7 in this document shows the revised fatality figure, change figure, and percentage-change figure.



U.S. Department  
of Transportation  
**National Highway  
Traffic Safety  
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This research note and other general information on highway traffic safety may be accessed by Internet users at: [www-nrd.nhtsa.dot.gov/CATS/index.aspx](http://www-nrd.nhtsa.dot.gov/CATS/index.aspx)