



Early Estimate of Motor Vehicle Traffic Fatalities in 2010

Summary

A statistical projection of traffic fatalities in 2010 shows that an estimated 32,788 people died in motor vehicle traffic crashes. This represents a decline of about 3 percent as compared to the 33,808 fatalities that occurred in 2009, as shown in Table 1. If these projections are realized, fatalities will be lowest on record (since 1949). Also, in 2010, fatalities declined in the first (down 11.4%) and second (down 5%) quarters and increased in the third (up about 1.6%) and fourth quarters (up about 1.8%), as compared to the respective quarters in 2009. The fourth quarter of 2010 is the second consecutive quarter of increase after 17 consecutive quarters of decreases up to the second quarter of 2010, as illustrated by the highlighted percentages in Table 1. Traffic fatalities have been steadily declining over the last 5

years since reaching a near-term peak in 2005, decreasing by about 25 percent from 2005 to 2010. Preliminary data reported by the Federal Highway Administration (FHWA) shows that vehicle miles traveled (VMT) in 2010 increased by about 20.5 billion miles, or about a 0.7 percent increase. On a quarterly basis, the VMT dropped by 0.7 percent during the first quarter and increased by 0.8 percent in the second quarter, increased by 1.4 percent in the third quarter and increased by 1.2 percent in the fourth quarter. Also shown in Table 1 are the fatality rates per 100 million VMT, by quarter and for the whole year. The fatality rate for 2010 are projected to decline to the lowest on record, to 1.09 fatalities per 100 million VMT, down from 1.13 fatalities per 100 million VMT in 2009.

Table 1: Fatalities and Fatality Rate by Quarter and the Percentage Change From the Corresponding Quarter in the Previous Year

Quarter	1st Quarter (Jan–Mar)	2nd Quarter (Apr–Jun)	3rd Quarter (Jul–Sep)	4th Quarter (Oct–Dec)	Total (Full Year)
Fatalities and Percentage Change in Fatalities for the Corresponding Period from the Prior Year					
2005	9,239	11,005	11,897	11,369	43,510
2006	9,558 [+3.5%]	10,942 [-0.6%]	11,395 [-4.2%]	10,813 [-4.9%]	42,708 [-1.8%]
2007	9,354 [-2.1%]	10,611 [-3.0%]	11,056 [-3.0%]	10,238 [-5.3%]	41,259 [-3.4%]
2008	8,459 [-9.6%]	9,435 [-11.1%]	9,947 [-10.0%]	9,582 [-6.4%]	37,423 [-9.3%]
2009	7,539 [-10.9%]	8,970 [-4.9%]	9,094 [-8.6%]	8,205 [-14.4%]	33,808 [-9.7%]
2010†	6,678 [-11.4%]	8,518 [-5.0%]	9,237 [+1.6%]	8,355 [+1.8%]	32,788 [-3.0%]
Fatality Rate per 100 Million Vehicle Miles of Travel (VMT)					
2005	1.32	1.42	1.54	1.54	1.46
2006	1.35	1.41	1.47	1.44	1.42
2007	1.31	1.35	1.41	1.37	1.36
2008	1.22	1.25	1.33	1.32	1.26
2009	1.09	1.16	1.17	1.12	1.13
2010†	0.97	1.09	1.18	1.12	1.09

†2010 Statistical projections and rates based on these projections.

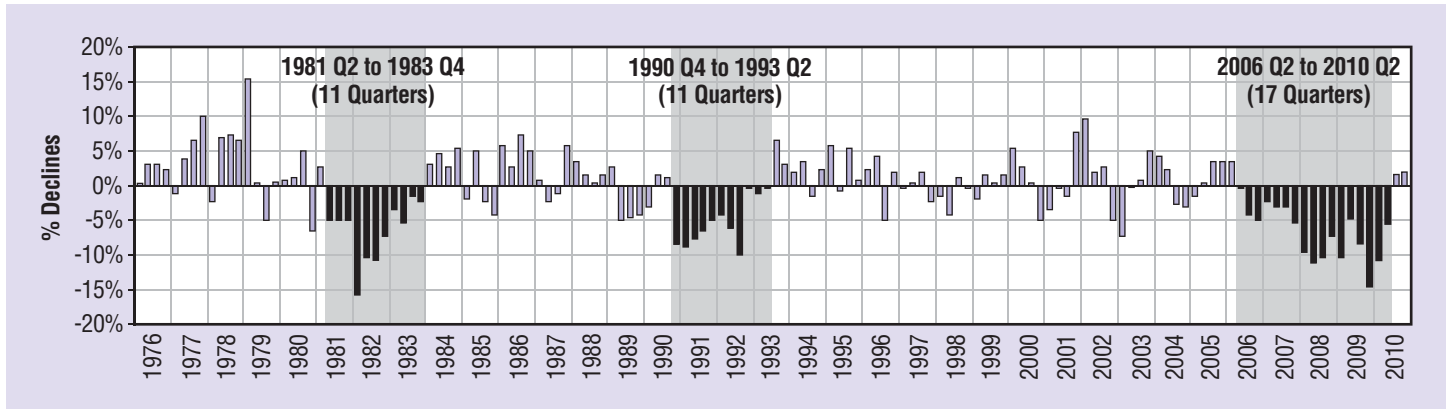
Source: Fatalities: 2005-2008 FARS Final File, 2009 FARS Annual Report File

VMT: FHWA December 2010 Traffic Volume Trends, Reported February 2011

Figure 1 shows the historical trend of the percentage change every quarter from the same quarter in the previous year, going back to 1976. NHTSA has fatality data going back to 1975, and the years during the early 1980s

and 1990s are the only two other periods with such significant consecutive quarters with declines as compared to the corresponding quarters of the previous years. Both of these periods had 11 consecutive quarters of declines.

Figure 1: Percentage Change in Fatalities in Every Quarter as Compared to the Fatalities in the Same Quarter During the Previous Year



Regional Differences

As discussed in the methodology section later in this note, the statistical procedures employed in these projections were generated for each NHTSA administrative Region (see Figure 2) and were collated back

together to create the national estimate. This allows for the comparison of regional estimates in 2010 with the reported 2009 counts, as depicted in the map in Figure 2.

Figure 2: Percentage Change in Estimated Fatalities in 2010 From Reported 2009 Fatality Counts, by NHTSA Region

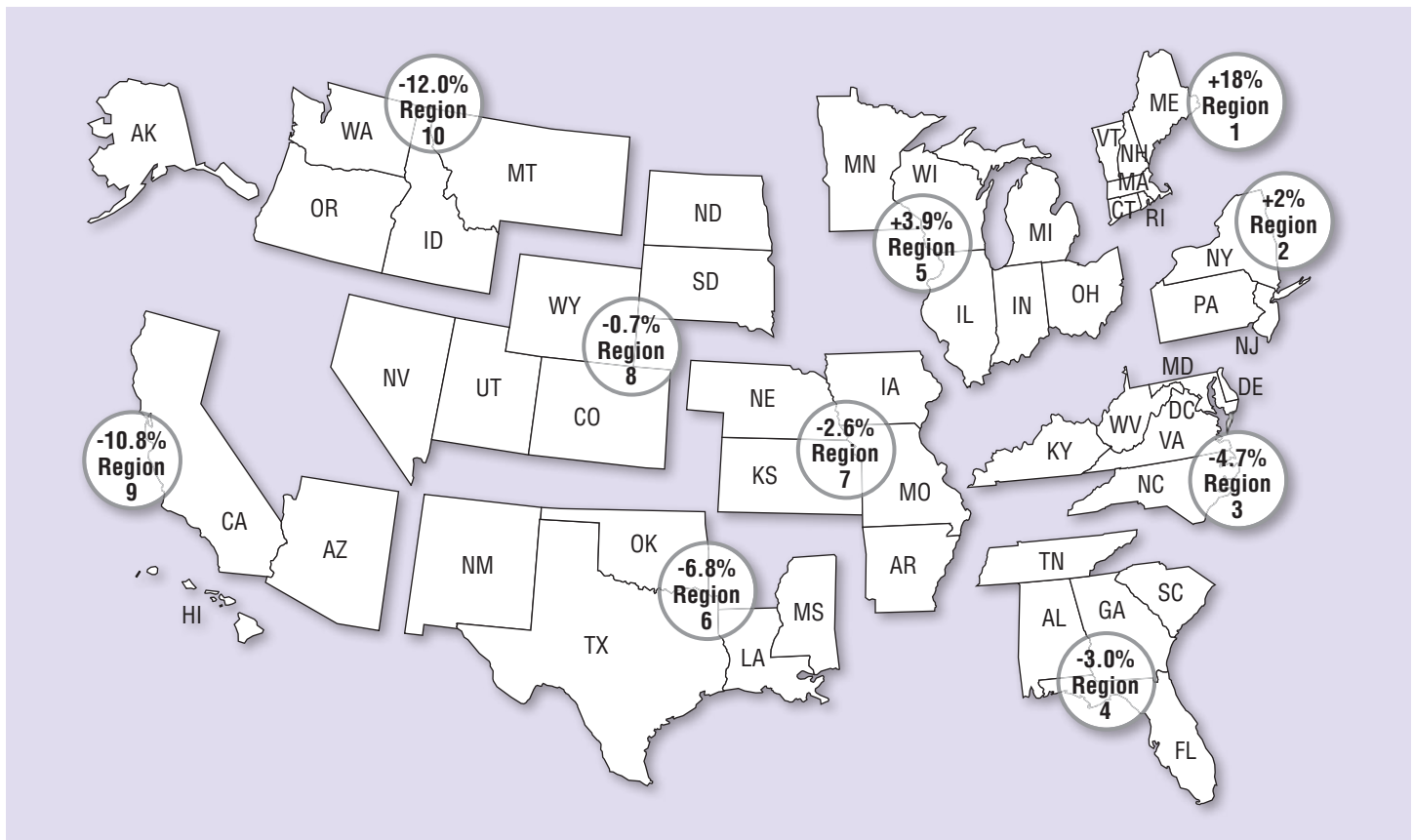


Table 2: Estimate of Fatalities in 2010 and Its Comparison With Fatality Counts From FARS in 2009, by NHTSA Region

NHTSA Region	Fatalities From FARS in 2009*	Estimate of Fatalities of 2010	Difference (%)
Region 1	983	1,157	17.7%
Region 2	2,995	3,067	2.4%
Region 3	3,910	3,725	-4.7%
Region 4	6,573	6,375	-3.0%
Region 5	4,478	4,655	3.9%
Region 6	5,691	5,304	-6.8%
Region 7	2,444	2,380	-2.6%
Region 8	1,357	1,347	-0.7%
Region 9	3,997	3,565	-10.8%
Region 10	1,380	1,215	-12.0%
Total	33,808	32,788	-3.0%

*FARS annual file in 2009

Table 2 depicts the counts and estimates underlying the percentage changes shown in Figure 2. Seven of the 10 NHTSA Regions experienced declines in 2010 as compared to 2009. The States in Region 1 (CT, MA, ME, NH, RI and VT) collectively had the largest increase, estimated at about 18 percent. Regions 5 and 2 were the other two Regions where fatalities increased in 2010. Regions 9 and 10, down 12 and 10.8 percent, respectively, were Regions with double-digit percentage declines.

As in 2009, Region 4 had the highest number of fatalities (6,375) while Region 1 had the lowest number (1,157) of fatalities.

Data

The data used in this analysis comes from several sources, such as the Fatality Analysis Reporting System

(FARS), FastFARS (FF), and Monthly Fatality Counts (MFC). FARS is a census of fatal traffic crashes in the 50 States, the District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway and result in the fatality of at least one person (occupant of a vehicle or a nonoccupant) within 30 days of the crash. FARS final files from January 2003 to December 2008 and FARS Annual Report file in 2009 are used. The FF program is designed as an Early Fatality Notification System to capture fatality counts from States more rapidly and in real-time. It aims to provide near-real-time notification of fatality counts from all jurisdictions reporting to FARS by electronically transmitting the data. The MFC data provides monthly fatality counts by State through sources that are independent from the FastFARS or FARS systems. MFCs from January 2003 up to January 2011 are used. MFCs are reported mid-month for all prior months of the year. The VMT data was reported by FHWA.

In order to estimate the traffic fatality counts for each month of 2010, time series cross-section regression (TSCSR) was applied to analyze the data with both cross-sectional values (by NHTSA Region) and time series (by month), to model the relationship among FARS, MFC and FF, the details of which are available in a companion Research Note. The methodology used to generate the estimates for 2010 is the same as the one used by NHTSA to project the decline in the fatalities for the whole of 2009 (*Early Estimates of Motor Vehicle Traffic Fatalities in 2009*, DOT HS 811 291) as well as projections of fatalities for the first quarter of 2010 (*Early Estimates of Motor Vehicle Traffic Fatalities in the First Quarter (January-March) of 2010*, DOT HS 811 345) and the first half of 2010 (*Early Estimates of Motor Vehicle Traffic Fatalities in the First Half (January – June) of 2010*, DOT HS 811 403).



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