



# Early Estimate of Motor Vehicle Traffic Fatalities For the First Quarter (January – March) of 2011

## Summary

A statistical projection of traffic fatalities for the first quarter of 2011 shows that an estimated 6,618 people died in motor vehicle traffic crashes. This represents a marginal decline of about 0.9 percent as compared to the 6,678 fatalities that were projected to have occurred in the first quarter of 2010, as shown in Table 1. Preliminary data reported by the Federal Highway Administration (FHWA) shows that vehicle miles traveled (VMT) in the first three months of 2011 dropped by about 0.8 billion miles, or about a 0.1-percent decline. Also shown in Table 1 are the

fatality rates per 100 million VMT, by quarter. The fatality rate for the first three months of 2011 declined marginally to 0.96 fatalities per 100 million VMT, down from 0.97 fatalities per 100 million VMT in the first quarter of 2010. Previously, in 2010, fatalities had increased in the last two quarters after 17 consecutive quarters of year-to-year declines beginning in the second quarter of 2006. Also, the estimated fatalities for the first quarter of 2011 are down about 31 percent from those reported during the first quarter of 2006.

**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)
<b>Fatalities and Percentage Change in Fatalities for the Corresponding Quarter From the Prior Year</b>					
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%]
2011†	6,618 [ -0.9%]	-	-	-	-
<b>Fatality Rate per 100 Million Vehicle Miles of Travel (VMT)</b>					
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	1.14
2010†	0.97	1.09	1.18	1.12	1.09
2011†	0.96	-	-	-	-

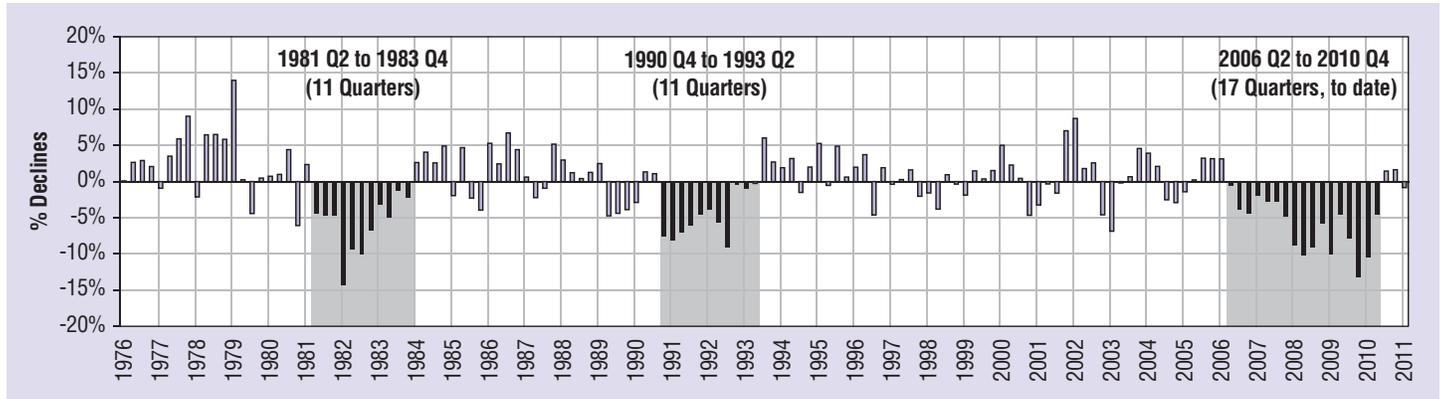
†2010 and 2011 Statistical projections and rates based on these projections.

Source: Fatalities: 2005-2008 FARS Final File, 2009 FARS Annual Report File VMT: FHWA Traffic Volume Trends, March 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 shading in the chart depicts the years during which there were significant consecutive quarters with declines as com-

pared to the corresponding quarters of the previous years. The declines in the early 1980s and 1990s lasted 11 consecutive quarters while the most recent decline occurred over 17 consecutive quarters ending in the second quarter of 2010.

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



## Discussion

Fatalities in motor vehicle traffic crashes have been on a downward trend since 2005. In fact, fatalities have declined about 25 percent from the recent peak of 43,510 fatalities in 2005 to a projected 32,788 fatalities in 2010. Correspondingly, the fatality rate per 100 Million VMT dropped from 1.46 in 2005 to 1.09 in 2010. On a first quarter basis, fatalities are projected to be the lowest in NHTSA recorded history (since 1975) and as indicated earlier, are down about 31 percent from the near-term high reported during the first quarter of 2006. Correspondingly, the fatality rate for the first quarter dropped from 1.35 during the first quarter of 2006 to 0.96 during the first quarter of 2011. It should be noted that the rate for the first quarter each year is traditionally significantly lower than the rates for the other three quarters, potentially due to, but not restricted to the effects of winter weather. Consequently, the fatality rate for the first quarter should not be used to make inferences for the fatality rate for the whole of 2011.

An analysis of the recent significant decline in fatalities that began in 2008 revealed that a significant portion of the declines were driven by drops in crashes involving young drivers (*Analysis of the Significant Decline in Motor Vehicle Traffic Fatalities in 2008*, DOT HS 811 346). NHTSA will release projections for the first half of 2011 in early September.

## 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 death 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. 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 April 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 the first three months of 2011, 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 the first quarter is the same as the one used by NHTSA to project the decline in the fatalities for the whole of 2010 as compared to 2009 (*Early Estimates of Motor Vehicle Traffic Fatalities in 2010*, DOT HS 811 451) as well as projections of fatalities for the first quarter of 2010 (*Early Estimates of Motor Vehicle Traffic Fatalities in the 1st Quarter of 2010*, DOT HS 811 345).

Actual fatality counts from FARS for 2010 will be reported during late summer of 2011 while fatality counts for 2011 will be reported late summer of 2012. Also, VMT estimates are revised by FHWA as more data becomes available and may change the fatality rates reported in this document.

