



Early Estimate of Motor Vehicle Traffic Fatalities in 2014

Summary

A statistical projection of traffic fatalities shows that an estimated 32,675 people died in motor vehicle traffic crashes in 2014. This represents a very marginal decrease of about 0.1 percent as compared to the 32,719 fatalities that were reported to have occurred in 2013, as shown in Table 1. Also in 2014, fatalities decreased in the first (down 3.9%), second (down 0.2%), and third (down 1.9%) quarters and increased in the fourth (up 5.0%) quarter, as compared to the corresponding quarters in 2013. Preliminary data reported by the Federal Highway Administration (FHWA) shows that vehicle miles traveled (VMT) in 2014 increased by about 27.3 billion miles, or about a 0.9-percent increase. On a quarterly basis, the 2014 VMT, since decreasing by

0.3 percent in the first quarter, has increased in each subsequent quarter of 2014 (by 1.8%, 2.1% and 3.0% in the second, third, and fourth quarters, respectively). The fatality rate for 2014, per 100 million VMT, is projected to decrease to 1.08 fatalities per 100 million VMT, down from 1.09 fatalities per 100 million VMT in 2013. Also, the 5-percent increase in fatalities in the fourth quarter of 2014 represents the first quarterly increase since the third quarter of 2012. The actual counts for 2013 and 2014 continue to be updated, and the number of fatalities as well as the ensuing percentage-changes and fatality rates are, therefore, subject to revision with the release of the final file for 2013 and the annual report and final files for 2014.

Table 1: Fatalities and Fatality Rate by Quarter, Full Year, and the Percentage Change From the Corresponding Quarter or Full Year 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 Quarter 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 | 7,552 [-10.7%] | 8,975 [-4.9%] | 9,104 [-8.5%] | 8,252 [-13.9%] | 33,883 [-9.5%] |
| 2010 | 6,755 [-10.6%] | 8,522 [-5.0%] | 9,226 [+1.3%] | 8,496 [+3.0%] | 32,999 [-2.6%] |
| 2011 | 6,726 [-0.4%] | 8,227 [-3.5%] | 8,984 [-2.6%] | 8,542 [+0.5%] | 32,479 [-1.6%] |
| 2012* | 7,521 [+11.8%] | 8,612 [+4.7%] | 9,171 [+2.1%] | 8,478 [-0.7%] | 33,782 [+4.0%] |
| 2013 | 7,128 [-5.2%] | 8,166 [-5.2%] | 8,971 [-2.2%] | 8,454 [-0.3%] | 32,719 [-3.1%] |
| 2014† | 6,850 [-3.9%] | 8,150 [-0.2%] | 8,800 [-1.9%] | 8,875 [+5.0%] | 32,675 [-0.1%] |
| Fatality Rate per 100 Million Vehicle Miles Traveled (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 | 1.15 |
| 2010 | 0.98 | 1.09 | 1.18 | 1.14 | 1.11 |
| 2011 | 0.98 | 1.09 | 1.18 | 1.17 | 1.10 |
| 2012* | 1.08 | 1.12 | 1.21 | 1.16 | 1.14 |
| 2013 | 1.03 | 1.06 | 1.16 | 1.15 | 1.09 |
| 2014† | 1.00 | 1.04 | 1.12 | 1.17 | 1.08 |

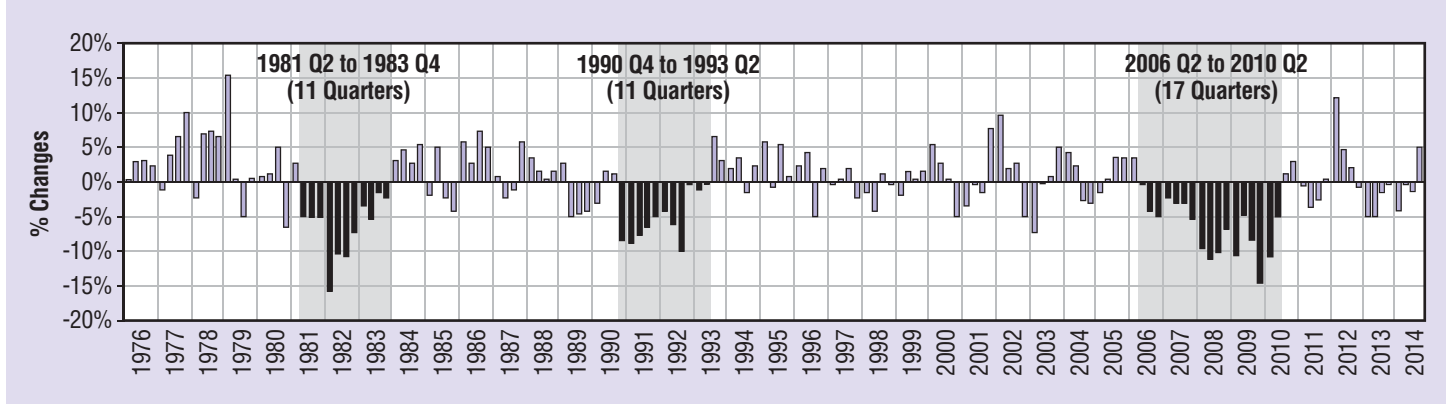
*2014 statistical projections and rates based on these projections.
Source: Fatalities: 2005–2012 FARS Final File, 2013 FARS Annual Report File

*A marginal part of the increase is attributed to 2012 being a leap year.
VMT: FHWA December 2014 Traffic Volume Trends, February 2015

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 of 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

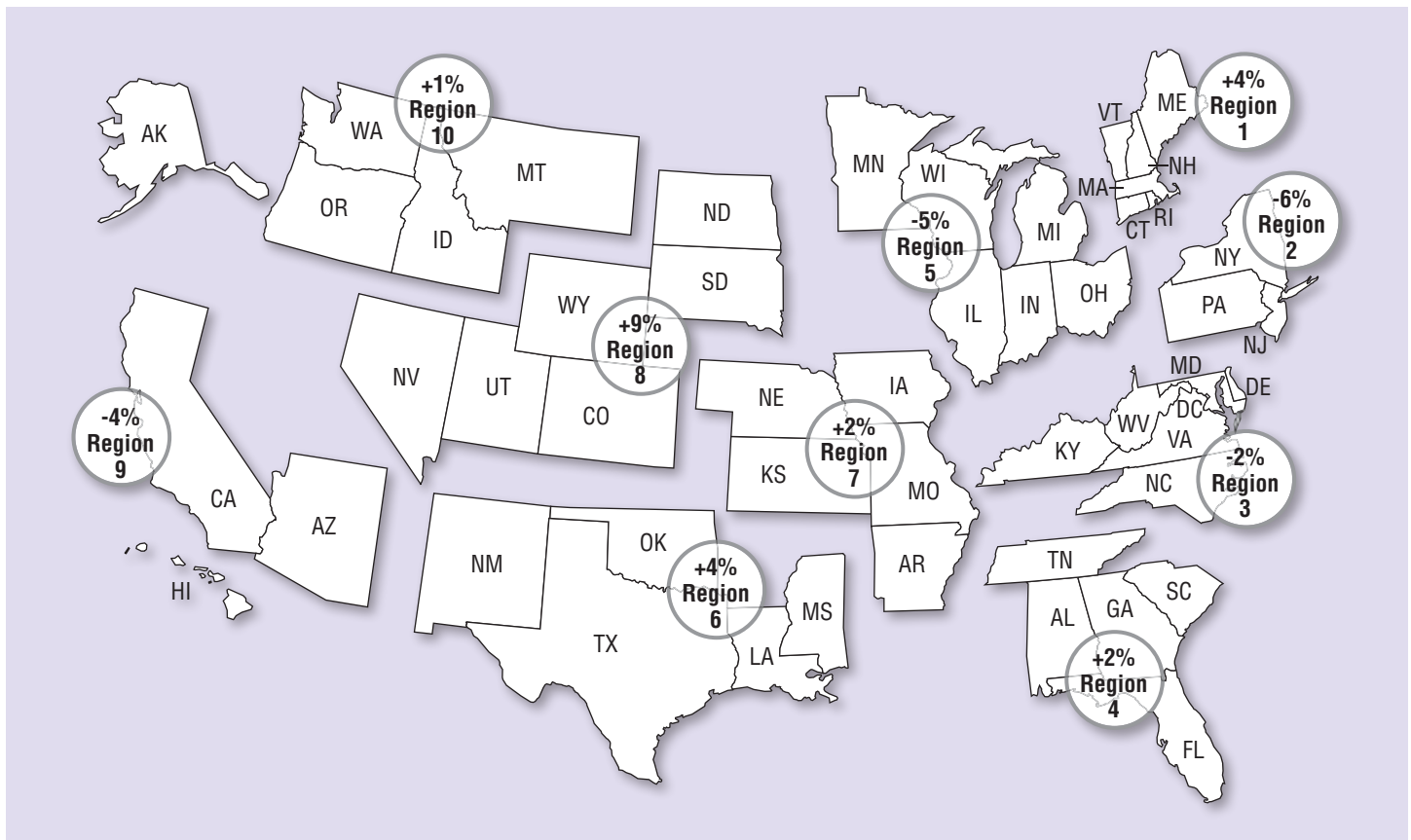


Regional Differences

As discussed in a methodology Research Note (*Statistical Methodology to Make Early Estimates of Motor Vehicle Traffic Fatalities*, Report No. DOT HS 811 123), the statistical procedures employed in these projections were generated for each NHTSA administrative Region and were collated to create the national estimate. This allows for the comparison of

regional estimates in 2014 with the reported 2013 counts, as depicted by the estimated percentage changes in Figure 2. Six of the 10 NHTSA Regions experienced increases in 2014 as compared to 2013. The estimated regional year-to-year percentage changes shown in Figure 2 are subject to change when actual fatality counts for 2014 are reported through FARS this fall.

Figure 2: Percentage Change in Estimated Fatalities in 2014 From Reported 2013 Fatality Counts, by NHTSA Region



Discussion

The National Highway Traffic Safety Administration is continuing to gather data on crash fatalities for 2013 and 2014 using information from police accident reports and other sources. It is too soon to speculate on the contributing factors or potential implications of any changes in deaths on our roadways. The final data for 2013 as well as the annual file for 2014 will be available in late fall which usually results in the revision of fatality totals and the ensuing rates and percentage changes.

In the last few years, since recording a significant increase of 11.8 percent during the first quarter of 2012, the magnitude of the increases steadily declined during each subsequent quarter. Fatalities are reported to have increased by about 4.7 percent in the second quarter and by about 2.1 percent in the third quarter of 2012. Subsequently, beginning with the fourth quarter of 2012, fatalities have declined eight consecutive quarters until the 5-percent increase estimated for the fourth quarter of 2014. The fatality rates per 100 million VMT in 2014, when compared to the rates for the corresponding quarters in 2013, are lower for the first three quarters of 2014 and higher for the fourth quarter of 2014.

Data

The data used in this analysis comes from several sources: NHTSA's Fatality Analysis Reporting System (FARS), FastFARS (FF), and Monthly Fatality Counts (MFC); and from FHWA's VMT estimates. 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 must 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 2012 and the FARS Annual Report file from 2013 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. 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 March 2015 are used. MFCs are reported mid-month for all prior months of the year.

In order to estimate the traffic fatality counts for each month of 2014, time series cross-section regression 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 2014 is the same as the one used by NHTSA to project the increase in the fatalities for the whole of 2013 (*Early Estimates of Motor Vehicle Traffic Fatalities in 2013*, Report No. DOT HS 812 024) as well as projections of fatalities for the first six months of 2014 (*Early Estimates of Motor Vehicle Traffic Fatalities for the First Six Months of 2014*, Report No. DOT HS 812 093, available at www-nrd.nhtsa.dot.gov/Pubs/812093.pdf).



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