U.S. Department of Transportation
National Highway Traffic Safety Administration

TRAFFIC SAFETY FACTS
Crash • Stats

NHTSA

DOT HS 812 749 | A Brief Statistical Summary | June 2019

Early Estimate of Motor Vehicle Traffic Fatalities in 2018

Summary

A statistical projection of traffic fatalities for 2018 shows that an estimated 36,750 people died in motor vehicle traffic crashes. This represents a slight decrease of about 1.0 percent as compared to the 37,133 fatalities that were reported to have occurred in 2017, as shown in Table 1. Preliminary data reported by the Federal Highway Administration (FHWA) shows that vehicle miles traveled (VMT) in 2018 increased by about 12.2 billion miles, or about a 0.4-percent increase. Also shown in Table 1 are the fatality rates per 100 million VMT, by quarter. The fatality rate for 2018 was 1.14 fatalities per 100 million VMT, down from 1.16 fatalities per 100 million VMT in 2017. The fourth quarter of 2018 represents the seventh consecutive quarter with year-to-year decreases in fatalities and the fatality rate. Fatalities are projected to have decreased by 1.8 percent during the fourth quarter of 2018. Analysis to generate gross estimates of changes reveals slight decreases in driver, passenger, and motorcyclist deaths for the Nation in 2018 as compared to 2017. Fatalities in crashes involving at least one large truck, pedestrian fatalities, and pedalcyclist fatalities are projected to increase by 3, 4, and 10 percent, respectively. Older drivers (65+) involved in fatal crashes also saw a slight increase. Also, 6 out of 10 NHTSA Regions are estimated to have decreases in fatalities in 2018 as compared to 2017. The fatality counts for 2017 and 2018 and the ensuing percentage change from 2017 to 2018 will be further revised as the final file for 2017 and the annual reporting file for 2018 are available later this year. These estimates may be further refined when the projections for the first quarter of 2019 are released in late spring of 2019.

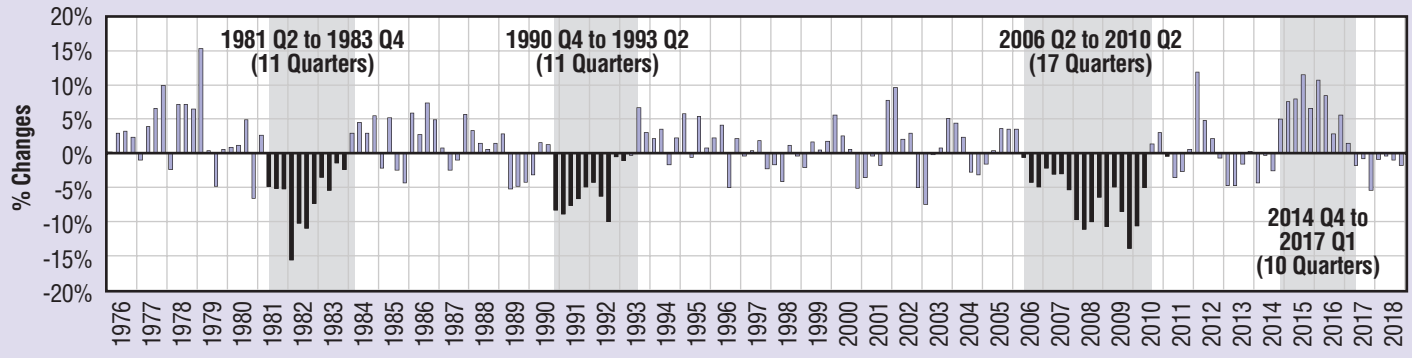
Table 1: Fatalities and Fatality Rate by Quarter, Full Year, and the Percentage Change From the Corresponding Quarter or Full Year in the Previous Year

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					
2007	9,354	10,611	11,056	10,238	41,259
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	7,166 [-4.7%]	8,207 [-4.7%]	9,024 [-1.6%]	8,496 [+0.2%]	32,893 [-2.6%]
2014	6,856 [-4.3%]	8,179 [-0.3%]	8,799 [-2.5%]	8,910 [+4.9%]	32,744 [-0.5%]
2015	7,370 [+7.5%]	8,823 [+7.9%]	9,805 [+11.4%]	9,486 [+6.5%]	35,484 [+8.4%]
2016	8,154 [+10.6%]	9,563 [+8.4%]	10,078 [+2.8%]	10,011 [+5.5%]	37,806 [+6.5%]
2017	8,272 [+1.4%]	9,392 [-1.8%]	9,999 [-0.8%]	9,470 [-5.4%]	37,133 [-1.8%]
2018†	*8,200 [-0.9%]*	*9,350 [-0.4%]*	*9,900 [-1.0%]*	*9,300 [-1.8%]*	*36,750 [-1.0%]*
Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)					
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	1.04	1.07	1.17	1.15	1.10
2014	0.99	1.03	1.11	1.17	1.08
2015	1.03	1.08	1.20	1.21	1.15
2016	1.11	1.16	1.23	1.27	1.19
2017	1.12	1.12	1.20	1.18	1.16
2018†	*1.11*	*1.11*	*1.19*	*1.15*	*1.14*

†2018 Statistical projections and rates based on these projections.
Sources: Fatalities: 2005-2016 FARS Final File, 2017 FARS Annual Report File; VMT: FHWA December 2018 Traffic Volume Trends for 2017 & 2018

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 number of consecutive quarters with increases/declines as compared to the corresponding quarters of the previous years. The declines during 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. Also, more recently, the significant increase in fatalities occurred over 10 consecutive quarters ending after the first quarter of 2017.

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



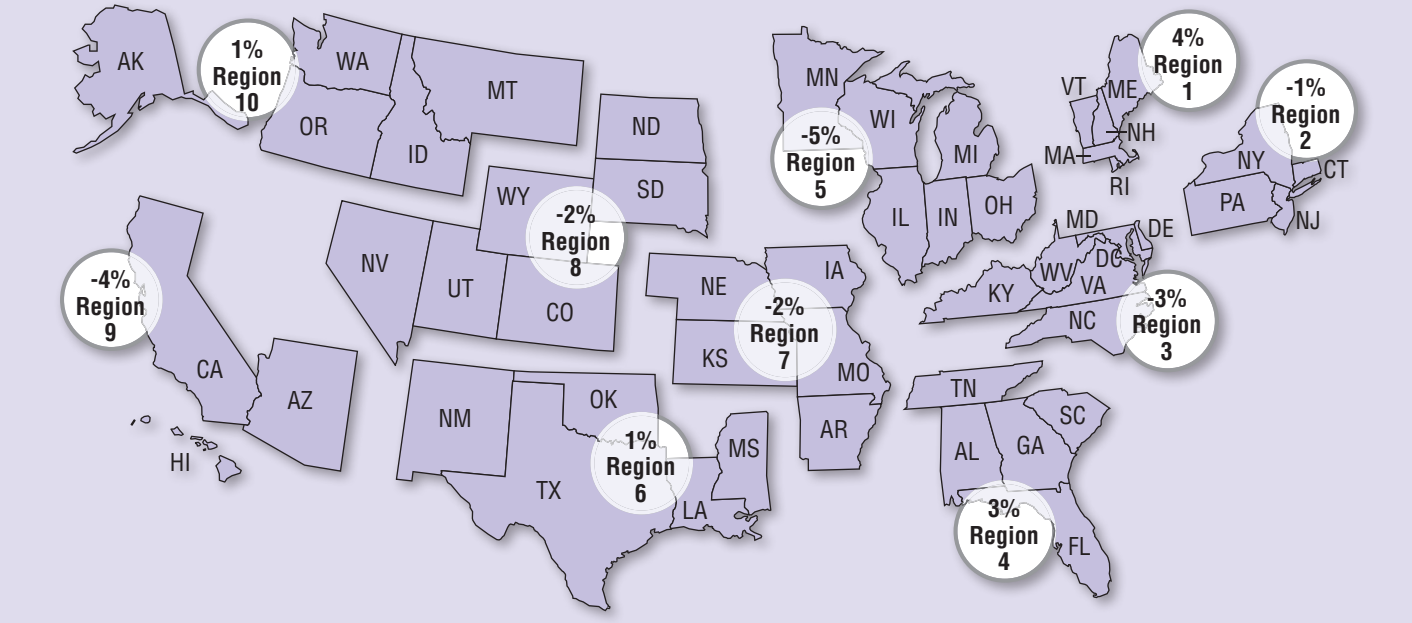
Breakdown of Estimated Changes

The significant changes projected to have occurred during 2017 have warranted a look into changes by categories (pedestrians, occupants, etc.) of interest. While NHTSA's FastFARS does not collect such detailed information, cases currently coded for 2018 into NHTSA's Fatality Analysis Reporting System (FARS) were used to construct estimated changes along these categories. Also, NHTSA's methodology for estimating overall fatalities allows for the examination of regional changes.

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 2018 with the reported 2017 counts, as depicted by the estimated percentage changes in Figure 2. Six of 10 NHTSA Regions experienced decreases during 2018 as compared to reported totals during 2017. The estimated regional year-to-year percentage changes shown in Figure 2 are subject to change as fatality counts for 2017 and 2018 are finalized.

Figure 2: Percentage Change in Estimated Fatalities in 2018 From Reported 2017 Fatality Counts, by NHTSA Region



Estimated Changes by Sub-Categories

The input data streams used in the forecasting model are not reported by sub-categories of interest such as pedestrian and motorcyclist fatalities. Therefore, a statistical model-based approach is not feasible to generate estimates by sub-categories. However, cases currently coded for 2018 into NHTSA's FARS provide a basis for constructing gross estimates of fatalities by sub-categories.

Estimates based on the data coded thus far into NHTSA's FARS for 2018 reveals that the Nation saw slight estimated decreases in driver, passenger, and motorcyclist deaths. Fatalities in crashes involving at least one large truck, pedestrian fatalities, and pedalcyclist fatalities are projected to increase by 3, 4, and 10 percent, respectively. Older drivers (65+) involved in fatal crashes also saw a slight increase. These estimates are created by inflating current 2018 cases coded into NHTSA's FARS to the estimated regional totals presented in this note for the overall fatalities. Essentially, ratio inflation factors, by NHTSA Region and month, are estimated and applied to the current 2018 cases coded thus far into FARS. These estimates are subject to change as more information gets coded into these cases as well as when more cases are entered into FARS and may also change subject to the revision of the overall fatality estimate for 2018.

Discussion

The National Highway Traffic Safety Administration is continuing to gather and finalize data on crash fatalities for 2017 and 2018 using information from police crash 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 2017 as well as the annual file for 2018 will be available in late fall of 2019 that usually results in the revision of fatality totals and the ensuing rates and percentage changes. NHTSA has reported that the significant increase in fatalities in 2016 was primarily driven by increases in pedestrian, motorcyclist, and pedalcyclist fatalities (2016 Fatal Motor Vehicle Crashes: Overview, Report No. DOT HS 812 456).

From 2012 to 2014, 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 in seven out of eight quarters (2013 Q4 was a slight increase) until the 4.9-percent increase reported for the fourth quarter of 2014. Fatalities increased 10 consecutive quarters beginning with the fourth quarter of 2014, until the 1.8-percent decline seen in the second quarter of 2017. The fatalities and the fatality rates for the second, third and fourth quarters of 2017 are lower than those for the corresponding quarters in 2016. In addition, both fatalities and the fatality rate in four quarters of 2018 are projected to have decreased as compared to four corresponding quarters of 2017.

Data

The data used in this analysis comes from several sources: NHTSA's 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 non-occupant) within 30 days of the crash. FARS final files from January 2003 to December 2016 and FARS Annual Report file in 2017 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. 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 December 2018 are used. MFCs are reported mid-month for all prior months of the year. In order to estimate the traffic fatality counts for 2018, 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 2018 is the same as the one used by NHTSA to project the decrease in the fatalities for the whole of 2017 (*Early Estimates of Motor Vehicle Traffic Fatalities in 2017*, Report No. DOT HS 812 542).

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