



Early Estimate of Motor Vehicle Traffic Fatalities for the First 9 Months (Jan–Sep) of 2020

Summary

A statistical projection of traffic fatalities for the first 9 months of 2020 shows that an estimated 28,190 people died in motor vehicle traffic crashes. This represents an increase of about 4.6 percent as compared to 26,941 fatalities reported to have occurred in the first 9 months of 2019, as shown in Table 1. Preliminary data reported by the Federal Highway Administration (FHWA) shows that vehicle miles traveled (VMT) in the first 9 months of 2020 decreased by about 355.5 billion miles, or about a 14.5-percent decrease. Also

shown in Table 1 are the fatality rates per 100 million VMT, by quarter. The fatality rate for the first 9 months of 2020 increased to 1.35 fatalities per 100 million VMT, up from the 1.10 fatalities per 100 million VMT in the first 9 months of 2019. The counts for 2019 and 2020 and the ensuing percentage change from 2019 to 2020 will be further revised as the final FARS files for 2019 are available next year. These estimates may be further refined when the projections for the whole of 2020 are released in late April 2021.

Table 1: Fatalities and Fatality Rate by Quarter, First 9 Months, and the Percentage Change From the Corresponding Quarter or First 9 Months in the Previous Year

Quarter	1st Quarter (Jan–Mar)	2nd Quarter (Apr–Jun)	3rd Quarter (Jul–Sep)	4th Quarter (Oct–Dec)	Total (Full Year)	1st Nine Months (Jan–Sep)
Fatalities and Percentage Change in Fatalities for the Corresponding Quarter From the Prior Year						
2008	8,459 [-9.6%]	9,435 [-11.1%]	9,947 [-10.0%]	9,582 [-6.4%]	37,423 [-9.3%]	27,841 [-10.3%]
2009	7,552 [-10.7%]	8,975 [-4.9%]	9,104 [-8.5%]	8,252 [-13.9%]	33,883 [-9.5%]	25,631 [-7.9%]
2010	6,755 [-10.6%]	8,522 [-5.0%]	9,226 [+1.3%]	8,496 [+3.0%]	32,999 [-2.6%]	24,503 [-4.4%]
2011	6,726 [-0.4%]	8,227 [-3.5%]	8,984 [-2.6%]	8,542 [+0.5%]	32,479 [-1.6%]	23,937 [-2.3%]
2012	7,521 [+11.8%]	8,612 [+4.7%]	9,171 [+2.1%]	8,478 [-0.7%]	33,782 [+4.0%]	25,304 [+5.7%]
2013	7,166 [-4.7%]	8,207 [-4.7%]	9,024 [-1.6%]	8,496 [+0.2%]	32,893 [-2.6%]	24,397 [-3.6%]
2014	6,856 [-4.3%]	8,179 [-0.3%]	8,799 [-2.5%]	8,910 [+4.9%]	32,744 [-0.5%]	23,834 [-2.3%]
2015	7,370 [+7.5%]	8,823 [+7.9%]	9,805 [+11.4%]	9,486 [+6.5%]	35,484 [+8.4%]	25,998 [+9.1%]
2016	8,154 [+10.6%]	9,563 [+8.4%]	10,078 [+2.8%]	10,011 [+5.5%]	37,806 [+6.5%]	27,795 [+6.9%]
2017	8,301 [+1.8%]	9,460 [-1.1%]	10,081 [+0.0%]	9,631 [-3.8%]	37,473 [-0.9%]	27,842 [+0.2%]
2018	8,203 [-1.2%]	9,323 [-1.4%]	9,934 [-1.5%]	9,375 [-2.7%]	36,835 [-1.7%]	27,460 [-1.4%]
2019	7,816 [-4.7%]	9,172 [-1.6%]	9,953 [+0.2%]	9,155 [-2.3%]	36,096 [-2.0%]	26,941 [-1.9%]
2020*	7,860 [+0.6%]	9,070 [-1.1%]	11,260 [+13.1%]	—	—	28,190 [+4.6%]
Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)*						
2008	1.22	1.25	1.33	1.32	1.26	1.26
2009	1.09	1.16	1.17	1.12	1.15	1.14
2010	0.98	1.09	1.18	1.14	1.11	1.09
2011	0.98	1.09	1.18	1.17	1.10	1.09
2012	1.08	1.12	1.21	1.16	1.14	1.14
2013	1.04	1.07	1.17	1.15	1.10	1.09
2014	0.99	1.03	1.11	1.17	1.08	1.05
2015	1.03	1.08	1.20	1.21	1.15	1.11
2016	1.11	1.16	1.23	1.27	1.19	1.17
2017	1.12	1.13	1.21	1.20	1.17	1.16
2018	1.10	1.11	1.18	1.15	1.14	1.13
2019	1.05	1.08	1.17	1.12	1.10	1.10
2020*	1.11	1.45	1.48	—	—	1.35

Source: Fatalities: 2008–2018 FARS Final File, 2019 FARS Annual Report File.

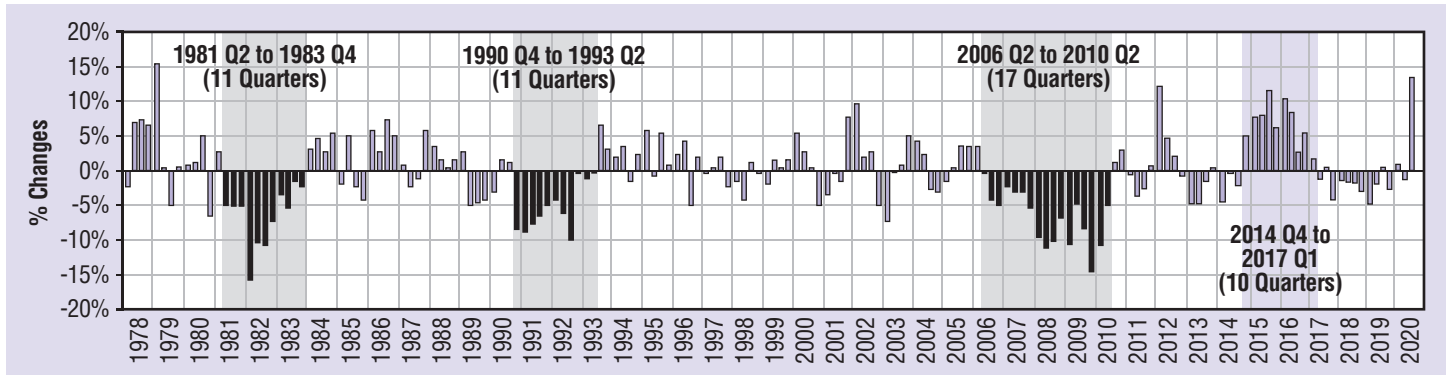
*2020 Statistical projections and rates based on these projections.

*VMT: FHWA September 2020 Traffic Volume Trends for 2019 & 2020 VMT.

Figure 1 shows the historical trend of the percentage change every quarter from the same quarter in the previous year, going back to 1978 (NHTSA has fatality data since 1975). 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



To examine the effect of the COVID-19 pandemic emergency, the quarterly projections of fatalities, fatality rates and VMT are further split into the respective monthly estimates for 2019 and 2020. The stay-at-home orders started in mid-March 2020, followed by the first full month of stay-at-home measures that were in effect during April. During the month of May, some States began to reopen in some way while almost all States partially reopened by

June. After June, each State continued to adapt their local and statewide plans and guidelines and also to assess specific reopening and potential re-closing efforts accordingly. Table 2 shows that fatalities are projected to have decreased in March, April and May, but increased from June to September. The fatality rate per 100 million VMT shows an increase during March-September of 2020 as compared to the corresponding months in 2019.

Table 2: Fatalities, VMT, and Fatality Rate by Month or Quarter in 2020, and the Percentage Change in Fatalities From the Corresponding Month or Quarter in 2019

Year	1st Quarter				2nd Quarter				3rd Quarter				4th Quarter			
	Jan	Feb*	Mar	Total	Apr	May	Jun	Total	Jul	Aug	Sep	Total	Oct	Nov	Dec	Total
Fatalities in 2020 and Percentage Change in Fatalities for the Corresponding Month and Quarter From the 2019																
2019	2,664	2,388	2,764	7,816	2,817	3,166	3,189	9,172	3,294	3,351	3,308	9,953	3,197	3,050	2,908	9,155
2020†	2,650 -0.5%	2,660 11%	2,550 -7.7%	7,860 0.6%	2,295 -19%	3,080 -2.7%	3,695 16%	9,070 -1.1%	3,710 13%	3,810 14%	3,740 13%	11,260 13.1%	—	—	—	—
Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)/VMT (in Billion)**																
2019	1.07 248.2	1.05 226.7	1.02 271.5	1.05 746.4	1.00 281.4	1.11 286.0	1.14 280.9	1.08 848.3	1.11 295.6	1.17 286.5	1.22 271.7	1.17 853.8	1.13 284.0	1.17 260.5	1.06 274.1	1.12 818.6
2020†	1.04 253.7	1.15 232.1	1.16 220.1	1.11 705.8	1.36 168.5	1.45 212.9	1.51 244.0	1.45 625.4	1.41 262.5	1.52 251.2	1.51 248.3	1.48 762.0	—	—	—	—

Source: 2019 FARS Annual Report File.

† 2020 Statistical projections and rates based on these projections.

*February 29, 2020, was a leap day.

**VMT: FHWA June 2020 Traffic Volume Trends for 2019 & 2020 VMT.

Discussion

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 increased 10 consecutive quarters beginning with the fourth quarter of 2014, until the 1.1-percent decline seen in the second quarter of 2017. The second quarter of 2019 represents the seventh consecutive quarter with year-to-year decreases in fatalities since the fourth quarter of 2017. The fourth quarter of 2019 represents the eleventh consecutive quarter with year-to-year decreases in fatality rate since the second quarter of 2017. The fatality rate shows an increased trend from March to September 2020 primarily due to the impact of national COVID-19 pandemic emergency situation.

NHTSA is continuing to gather and finalize data on crash fatalities for 2019 and 2020 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 file for 2019 as well as the annual report file for 2020 will be available in late fall of 2021 that usually results in the revision of fatality totals and the ensuing rates and percentage changes.

Data and Method

The data used in this analysis comes from several sources: NHTSA's Fatality Analysis Reporting System (FARS), Early Notification (EN) data, 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 traffic-way 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 2018 and FARS Annual Report file in 2019 are used. The EN program is designed as an Early Fatality Notification System to capture fatality counts from States more rapidly and 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 EN or FARS systems. MFCs from January 2003 up to September 2020 are used. MFCs are reported mid-month for all prior months of the year. In order to estimate the traffic fatality counts for 2020, 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 EN, the details of which are available in a Research Note (*Statistical Methodology to Make Early Estimates of Motor Vehicle Traffic Fatalities*, Report No. DOT HS 811 123). The methodology used to generate the estimates for 2020 is the same as the one used by NHTSA to project the decrease in the fatalities for the whole of 2019 (*Early Estimates of Motor Vehicle Traffic Fatalities in 2019*, Report No. DOT HS 812 946).

Suggested APA format citation for this document:

National Center for Statistics and Analysis. (2020, December). *Early estimate of motor vehicle traffic fatalities for the first 9 months (Jan-Sep) of 2020* (Crash•Stats Brief Statistical Summary. Report No. DOT HS 813 053). National Highway Traffic Safety Administration.

For questions regarding the information presented in this document, please contact NCSArequests@dot.gov. Internet users may access this Crash•Stats and other general information on traffic safety at crashstats.nhtsa.dot.gov/#/.



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