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

TRAFFIC SAFETY FACTS
Crash • Stats

NHTSA

DOT HS 813 298 | A Brief Statistical Summary | May 2022

Early Estimates of Motor Vehicle Traffic Fatalities And Fatality Rate by Sub-Categories in 2021

Introduction and Summary

NHTSA has released a companion report presenting early estimates of traffic fatalities and fatality rates in 2021 (*Early Estimate of Motor Vehicle Traffic Fatalities in 2021,* Report No. DOT HS 813 283). That report shows the increased trend in fatalities in 2020 has continued into 2021, and the increased trend in fatality rate per 100 million VMT in 2020 continued into the first quarter of 2021 but decreased during the second, third, and the fourth quarters of 2021. This NHTSA note is being issued after conducting a special analysis of the fatalities and the fatality rates per 100 million VMT by key sub-categories in 2021. The analysis is based on ratio-adjusted estimates of 2021 fatal crash data coded thus far into NHTSA's Fatality Analysis Reporting System (FARS), as described in the Data and Methodology section.

For the whole of 2021, a statistical projection of traffic fatalities shows an increase of about 10.5 percent as compared to reported fatalities in 2020. Some categories showed large shifts in fatalities and fatality rates in a given month, compared to the corresponding month in 2020. For instance, the share of fatalities on urban roads went from 57 percent in March 2020 to 62 percent in March 2021, a 5-percentage-point increase. Correspondingly, the total fatalities (fatality counts) on urban roads increased from 21,940 in 2020 to 25,411 in 2021, a 16-percent increase. In summary, the traffic fatalities (fatality counts) in the following categories showed relatively large increases in 2021 as compared to 2020:

- on rural interstate roads (up 15%), urban arterial (up 15%), and urban collector/local (up 20%);
- during daytime (up 11%);
- during the weekend (up 11%);
- during out-of-state travel (up 15%), reversing the trend seen in 2020;
- in newer (vehicle age < 10 years) passenger vehicles (up 10%);
- in multi-vehicle crashes (up 16%);
- in on-road crashes (up 21%);
- in speeding-related crashes (up 5%) – still higher as compared to the pre-pandemic levels of 2019;
- in the 25-to-34 age group (up 10%), the 35-to-44 age group (up 15%), the 45-to-54 age group (up 12%), and the 65-and-older age group (up 14%), reversing the declining trend in fatalities to those 65 and older seen in 2020;
- females (up 12%);
- unrestrained occupants of passenger vehicles (up 3%) – still higher as compared to the pre-pandemic levels of 2019;
- in police-reported alcohol involvement crashes (up 5%) – still higher as compared to the pre-pandemic levels of 2019;
- motorcyclist fatalities (up 9%), continuing the trend seen in 2020;
- pedestrian fatalities (up 13%);
- pedalcyclist fatalities (up 5%); and
- in crashes involving at least one large truck (up 13%), reversing the trend seen in 2020.

Additionally, the trend of the total fatality rate per 100 million VMT in 2021 was strongly driven by the trends in the fatality rates per 100 million VMT on the rural arterial, rural local/collector/street roadways, and urban arterial. Overall, the estimated fatality rate for 2021 was 1.33 fatalities per 100 million VMT, marginally down from the reported 1.34 fatalities per 100 million VMT in 2020.

Data and Methodology

NHTSA uses the Early Notification (EN) data and Monthly Fatality Counts (MFC) data for the early estimate of motor vehicle traffic fatalities every month. However, EN and MFCs do not include detailed crash characteristics and information necessary to compute fatality counts and fatality rates by sub-categories. NHTSA's FARS data include such detailed information but are incomplete at this point since not every case has been entered into FARS. This analysis adjusts fatal crash cases currently coded for 2021 into NHTSA's FARS and scales them up to the projected fatality counts in 2021 (see cited 2021 early estimates report above).

The estimates of fatalities by sub-categories are carried out in two steps. The first step is to inflate current 2021 total cases coded into NHTSA's FARS data (*FARS_21*) to the estimated total fatalities (*F_Est_21*) that are from the early estimated fatalities based on latest EN and MFC data. In general, the inflation rate (*IR*) is calculated by the formula here.

$$IR = \frac{F_Est_21}{FARS_21}$$

Inflation rates are computed for each month (*m*) and region (*r*) for a total of 60 inflation rates (6 months x 10 regions).

$$IR_{mr} = \frac{F_Est_21_{mr}}{FARS_21_{mr}}$$

For example, in the calculation performed at a month, the inflation rates range from 0.932 (there are five IR_{mr} values less than 1) to 1.912. Generally, the earlier the crash month the smaller the inflation rate as the data has relatively stabilized. In the second step, the inflation rate (IR_{mr}) is then used as the *weight* in the frequency calculation for the estimate of fatalities by each sub-category variable. For instance, to compute the estimated male fatailites in month *m* and region *r*, the count of male fatalities in FARS, $FARS_21\ (Gender_{male})_{mr}$, is weighted by the inflation rate IR_{mr} as follows, $F_Est_21\ (Gender_{male})_{mr} = FARS_21\ (Gender_{male})_{mr} \times IR_{mr}$. For a different interpretation, the estimated number of male fatalities in month *m* and region *r* can also be seen as the estimated fatalities in month *m* and region *r* multiplied by the fraction of male fatalities in FARS data (*FARS_21*) for month *m* and region *r*.

$$F_{Est_21(Gender_{male})_{mr}} = F_Est_21_{mr} \times \left(\frac{FARS_21(Gender_{male})_{mr}}{FARS_21_{mr}}\right)$$

The two metrics NHTSA mainly examined is the relative proportion of fatalities in each level of the sub-category variables (i.e., the *percentage distribution* of fatalities) or the *percentage* of the total fatalities, and the actual yearly fatality counts (fatalities) and the percentage change in fatalities from 2020 to 2021 for each level of the sub-category variables. Estimated fatalities by sub-categories may vary due to the continuous updating of 2021 FARS data ($FARS_21_{mr}$), especially for several sub-category variables (e.g., speeding, roadway departure, and police-reported alcohol involvement[1]) that may take extra time to report and code (see *"Limitations"* section). Since the results (the *percentage distribution* of fatalities or the *percentage* of the total fatalities) are identical or fairly close in three calculations performed during three consecutive months, these estimates are considered to be relatively stable.

Results

This report examines the same major factors that NHTSA previously reviewed and investigated in 2020 and the results were published in *Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2020* (DOT HS 813 118). These key factors may be linked to changes in driving and travel patterns and transportation options owing to COVID-19 emergency measures. In 2020, the stay-at-home orders started in mid-March, followed by the first full month of stay-at-home measures in April. During May, some States began to reopen in some way while almost all States partially reopened by June. After June, States continued to adapt their local and statewide COVID-19 guidelines and assess specific reopening and potential re-closing efforts accordingly.

The 2021 study results and the comparisons with 2020 are presented below.

Fatalities

The findings for the trends of sub-category variables are based on the comparison of two metrics: the *percentage distribution* of fatalities or the *percentage* of total fatalities, between the same month of 2020 and 2021 (labeled by [20] and [21] in the comparison of 2-year results), and the estimated fatality counts (fatalities) and the percentage change in fatalities from 2020 to 2021 for each sub-category variable. They are summarized as follows (see Tables 1 and 2 and Figure 1 for details).

Roadway and Environmental Factors

- The proportion of estimated fatalities in *urban* areas increased in January and March to December (Figure 1). The greatest increase occurred in March (62% [21] *versus* 57% [20]) and June (59% [21] *versus* 54% [20]). Total estimated fatalities increased by 16 percent in *urban* areas from 2020 to 2021.

  Specifically, as shown in Table 1, the share of estimated fatalities increased on *rural interstate* in several months from January to December, on *urban arterial* from March

[1] Further adjustments of these three factors for the later months have been made.

to August and in Novermber, and on *urban collector/local* roads in January, March–April, June–September, and December. Total estimated fatalities increased on *rural interstate* (up 15%), *urban interstate* (up 11%), *urban arterial* (up 15%), and *urban collector/local* roads (up 20%) from 2020 to 2021.

- Fatalities during *nighttime* greatly increased from 2019 to 2020 (12%). This year the proportion of estimated fatalities during *nighttime* (6 p.m. to 5:59 a.m.) increased from January to May and in October (Figure 1). The greatest increase occurred in January (55% [21] *versus* 51% [20]). Total estimated fatalities during *nighttime* increased by 11 percent from 2020 to 2021. Note that the total estimated fatalities during *daytime* increased as well by 11 percent from 2020 to 2021.
- Fatalities during the *weekend* greatly increased from 2019 to 2020 (9.5%). In 2021, as displayed in Figure 1, the proportion of estimated fatalities occurring during the *weekend* (6 p.m. Friday to 5:59 a.m. Monday) greatly increased in January, July, and October. The greatest increase occurred in January (43% [21] versus 36% [20]). In addition, the increase in the proportion of estimated fatalities occurred on *weekdays* (6 a.m. Monday to 5:59 p.m. Friday) in February, March, August, and November. Total estimated fatalities increased by 11 and 10 percent during the *weekends* and the *weekdays,* respectively, from 2020 to 2021.
- Total passenger vehicle occupant fatalities decreased by 2 percent during *out-of-State* travel from 2019 to 2020 due to the Covid-19 pandemic stay-at-home measures in 2020. In 2021, the proportion of estimated passenger vehicle occupant fatalities that occurred during *out-of-State* travel increased from March to October and in December (Figure 1). However, this proportion sharply decreased in November (8% [21] versus 10% [20]) – potentially due to the fact that more people traveled by air than by car during the 2021 Thanksgiving holiday period compared to the 2020 Thanksgiving holiday period. Total estimated passenger vehicle occupant fatalities that occurred during *out-of-State* travel increased by 15 percent from 2020 to 2021.

Vehicle-Related Characteristics

- Reported data displayed that the sales/use of *older vehicles* (vehicle age ≥ 10 years) increased during the COVID-19 pandemic in 2020. This study shows that the estimated passenger vehicle occupant fatalities still increased by 2 percent in *older vehicles* (vehicle age ≥ 10 years) from 2020 to 2021 (Figure 1). Note that the estimated passenger vehicle occupant fatalities in *newer vehicles* (vehicle age < 10 years) increased more (10%).
- The vehicle occupant fatalities in *rollover* crashes greatly increased from 2019 to 2020. This year the data show that the estimated vehicle occupant fatalities in *rollover* crashes decreased (4%) from 2020 to 2021 (Figure 1). Note that the estimated fatalities in *rollover* crashes in 2021 were still higher as compared to the pre-pandemic levels of 2019.
- Fatalities for vehicle occupants (excluding motorcycles) *who were ejected* greatly increased from 2019 to 2020. As displayed in Figure 1, the estimated fatally injured vehicle occupants (excluding motorcycles) *who were ejected*, as a proportion of all fatalities, increased for the months of January and February. The greatest increase occurred in January (23% [21] versus 19% [20]). Total estimated fatalities for vehicle occupants (excluding motorcycles) *who were ejected* increased by 2 percent from 2020 to 2021. This might be largely due to a similar increase in estimated *unrestrained* passenger vehicle occupant fatalities, as described in the person-related characteristics section.
- Different from last year, the estimated fatalities in *multi-vehicle* crashes, as a proportion of all fatalities, increased from March to August, and November to December (Table 1). The greatest increase occurred in April (47% [21] versus 40% [20]). Total estimated fatalities in *multi-vehicle* crashes increased by 16 percent from 2020 to 2021. This might be related to the fact that the number of vehicle miles traveled (VMT) has largely increased since March 2021.
- As shown in Table 1, the estimated fatalities in crashes that occurred *on roads* (versus *roadway departure*-related crashes), as a proportion of all fatalities, increased from March to December. Total estimated fatalities in crashes *on roads* increased by 21 percent from 2020 to 2021. This might be linked to the above point regarding the increase of *multi-vehicle* crashes from March to August, and November to December.
- During the COVID-19 pandemic in 2020, *speeding-related* fatalities greatly increased from 2019 to 2020 (17%). This year the data show that *speeding-related* fatalities still increased (up 5%) from 2020 to 2021 (Table 2). Therefore, the estimated fatalities in *speeding-related* crashes in 2021 were still higher as compared to the pre-pandemic levels of 2019.

Person-Related Characteristics

- As shown in Table 1, estimated traffic fatalities among *young* people (16 to 44 years old), as a proportion of all fatalities, increased in several months from January to December. Correspondingly, estimated fatalities among *older* people (65+), as a proportion of all

fatalities, decreased in the first 3 months but increased in April, and June–December (in the year 2020, older adults largely stayed at home during the COVID-19 public health emergency, and hence the reported fatalities for people *65 and older* greatly decreased from 2019 to 2020). Total estimated fatalities increased by 10 percent for the *25-to-34* age group, by 15 percent for the *35-to-44* age group, by 12 percent for the *45-to-54* age group, and by 14 percent for people *65 and older* from 2020 to 2021.

- *Male* fatalities greatly increased from 2019 to 2020. In 2021 the estimated *female* fatalities, as a proportion of overall fatalities, increased in April, May, July, and August (Table 1). Total estimated *male* and *female* fatalities increased by 10 and 12 percent, respectively, from 2020 to 2021.
- *Unrestrained* passenger vehicle (PV) occupant fatalities greatly increased from 2019 to 2020. This year the estimated *unrestrained* PV occupant fatalities, as a proportion of all PV occupant fatalities, still increased in January, February, May, and August (Figure 1). The greatest increase occurred in January (54% [21] versus 49% [20]. Total estimated *unrestrained* passenger vehicle occupant fatalities increased by 3 percent from 2020 to 2021. Therefore, the estimated *unrestrained* PV occupant fatalities in 2021 were still higher as compared to the pre-pandemic levels of 2019.
- During the COVID-19 pandemic in 2020, the fatalities in *police-reported, alcohol-involved* crashes greatly increased from 2019 to 2020 (16%). This year, as shown in Table 2, the estimated fatalities in *police-reported, alcohol-involved* crashes still increased by 5 percent from 2020 to 2021. This indicates that the estimated fatalities in *police-reported, alcohol-involved* crashes in 2021 were still higher as compared to the pre-pandemic levels of 2019.

  It should be pointed out that this measure is different from NHTSA's traditional reporting of alcohol-impaired-driving crashes, which is based on both reported and imputed blood alcohol concentration (BAC) values. BAC values have a significant reporting lag and will be finalized later next year, which is why this analysis used police-reported alcohol involvement to get an indication of changes from 2020 to 2021.

Fatalities by Person Type and in Crashes Involving Large Trucks

- Fatalities among vehicle *drivers,* as a percentage of total fatalities, increased during several months in 2021 (Table 2). The total projected *driver* fatalities increased by 12 percent from 2020 to 2021.
- Fatalities among vehicle *passengers,* as a percentage of total fatalities, increased in February and March (Table 2). The total projected *passenger* fatalities increased by 9 percent from 2020 to 2021.
- Fatalities among *motorcyclists,* as a percentage of total fatalities, increased in March, June, September, and December (Table 2). The total projected *motorcyclist* fatalities increased by 9 percent from 2020 to 2021.
- Fatalities among *pedestrians,* as a percentage of total fatalities, increased in April, June, August, and October–December (Table 2). Total projected pedestrian *fatalities* increased by 13 percent from 2020 to 2021.
- Fatalities among *pedalcyclists,* as a percentage of total fatalities, increased in February, September–October, and December (Table 2). Total projected *pedalcyclist* fatalities increased by 5 percent from 2020 to 2021.
- Fatalities in crashes *involving at least one large truck* (gross vehicle weight rating of more than 10,000 lbs.), as a percentage of total fatalities, increased from April to July and November to December (Table 2). Total estimated fatalities in crashes *involving at least one large truck,* increased by 13 percent from 2020 to 2021. This estimate is based on involvement of large trucks, both in commercial and non-commercial use at the time of the crash.

Table 1: Relative Proportion of Fatalities by Roadway Function Class, Age Group, Gender, and Crash Type, 2020–2021

Fatalities		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% change
2020		2,666	2,674	2,553	2,320	3,096	3,725	3,789	3,802	3,724	3,793	3,445	3,237	38,824	
2021		3,130	2,585	3,220	3,570	3,775	3,790	3,875	4,040	3,865	4,085	3,555	3,425	42,915	10.5%
Roadway Function Class															
Rural Interstate	2020	4%	5%	5%	4%	5%	5%	5%	5%	5%	5%	5%	4%	1,864	
	2021	4%	4%	5%	5%	5%	5%	5%	5%	5%	5%	6%	6%	2,147	15%
Urban Interstate	2020	7%	9%	9%	10%	8%	8%	8%	8%	8%	8%	8%	8%	3,151	
	2021	9%	8%	8%	8%	7%	7%	8%	9%	8%	8%	8%	8%	3,511	11%
Rural Arterial	2020	20%	20%	18%	18%	19%	20%	21%	20%	21%	19%	19%	19%	7,609	
	2021	19%	20%	18%	19%	19%	18%	18%	19%	19%	18%	17%	17%	7,899	4%
Urban Arterial	2020	42%	39%	37%	33%	35%	35%	33%	34%	37%	37%	36%	40%	14,094	
	2021	39%	39%	40%	37%	38%	38%	35%	36%	37%	37%	40%	39%	16,197	15%
Rural Local/Collector	2020	17%	15%	19%	22%	20%	21%	21%	20%	18%	18%	18%	17%	7,320	
	2021	15%	17%	15%	16%	18%	18%	19%	18%	18%	18%	16%	17%	7,424	1%
Urban Collector/Local	2020	11%	13%	12%	13%	13%	12%	13%	12%	12%	13%	13%	12%	4,787	
	2021	13%	12%	13%	15%	13%	14%	14%	14%	13%	13%	13%	13%	5,736	20%
Age Group															
<16	2020	3%	3%	3%	3%	4%	4%	4%	4%	3%	3%	4%	3%	1,299	
	2021	3%	3%	4%	3%	4%	4%	3%	3%	3%	3%	3%	3%	1,379	6%
16–24	2020	16%	16%	17%	18%	17%	19%	16%	17%	17%	15%	17%	16%	6,463	
	2021	17%	18%	16%	16%	17%	17%	16%	15%	15%	16%	16%	15%	6,903	7%
25–34	2020	18%	19%	19%	22%	20%	20%	20%	21%	20%	20%	20%	19%	7,747	
	2021	20%	19%	20%	20%	21%	21%	21%	20%	19%	19%	19%	18%	8,494	10%
35–44	2020	14%	14%	15%	15%	15%	14%	16%	15%	17%	16%	15%	15%	5,862	
	2021	15%	14%	17%	16%	15%	16%	15%	16%	16%	16%	15%	16%	6,714	15%
45–54	2020	14%	13%	14%	12%	14%	14%	13%	14%	13%	13%	13%	13%	5,245	
	2021	13%	14%	13%	14%	13%	13%	14%	14%	15%	13%	14%	13%	5,853	12%
55–64	2020	15%	14%	16%	16%	15%	14%	14%	14%	14%	15%	14%	15%	5,630	
	2021	15%	15%	13%	14%	13%	13%	15%	14%	15%	14%	14%	15%	6,042	7%
65+	2020	20%	21%	17%	14%	16%	15%	16%	16%	16%	18%	18%	18%	6,578	
	2021	17%	17%	16%	17%	16%	17%	17%	18%	17%	19%	20%	20%	7,530	14%
Gender															
Male	2020	70%	71%	71%	73%	75%	73%	74%	73%	73%	72%	71%	70%	28,106	
	2021	70%	72%	71%	72%	72%	73%	73%	72%	73%	72%	72%	70%	30,876	10%
Female	2020	30%	29%	29%	27%	25%	27%	26%	27%	27%	28%	29%	30%	10,718	
	2021	30%	28%	29%	28%	28%	27%	27%	28%	27%	28%	28%	30%	12,039	12%
Crash Type 1: Single- vs. Multi-Vehicle															
Multi-Vehicle	2020	44%	45%	43%	40%	42%	45%	44%	45%	45%	47%	43%	44%	17,083	
	2021	44%	45%	46%	47%	48%	47%	47%	47%	45%	43%	47%	46%	19,777	16%
Single-Vehicle	2020	56%	55%	57%	60%	58%	55%	56%	55%	55%	53%	57%	56%	21,741	
	2021	56%	55%	54%	53%	52%	53%	53%	53%	55%	57%	53%	54%	23,138	6%
Crash Type 2: Roadway Departure Related															
Departure	2020	48%	50%	52%	54%	54%	54%	52%	51%	49%	48%	50%	50%	19,769	
	2021	50%	51%	50%	51%	50%	47%	44%	45%	42%	42%	42%	48%	19,939	1%
On-Road	2020	52%	50%	48%	46%	46%	46%	48%	49%	51%	52%	50%	50%	19,055	
	2021	50%	49%	50%	49%	50%	53%	56%	55%	58%	58%	58%	52%	22,976	21%

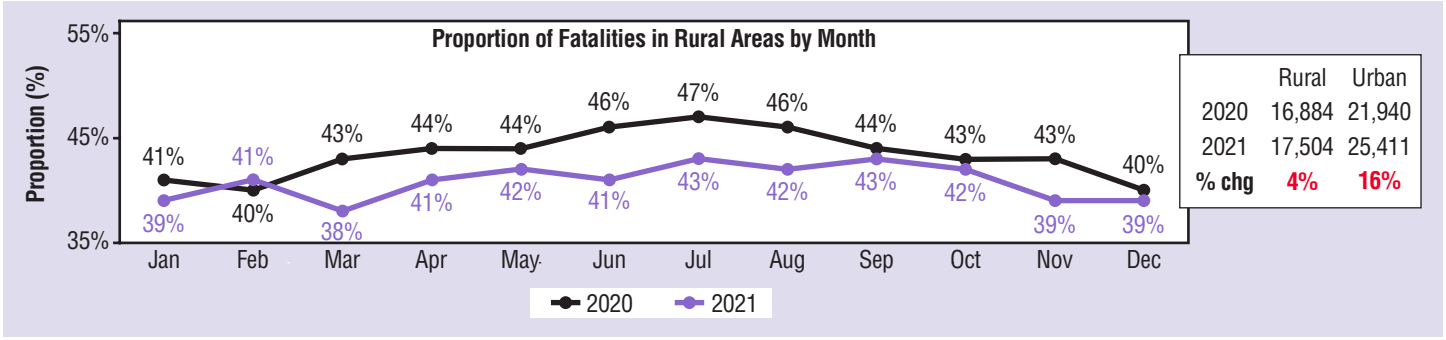
Notes: The last two columns contain fatalities and percentage change from 2020 to 2021. Unknown cases are proportionally distributed.
Numbers in bold red/blue indicate the increase/decrease in the month (or whole) of 2021 as compared to the same month (or whole) of 2020 (in bold black).
Source: 2020 FARS ARF, 2021 statistical projection

Table 2: Fatalities by Person Type, in Large Truck-/Speeding-/Police-Reported Alcohol-Related Crashes, as a Percentage of Total Fatalities for 2020–2021

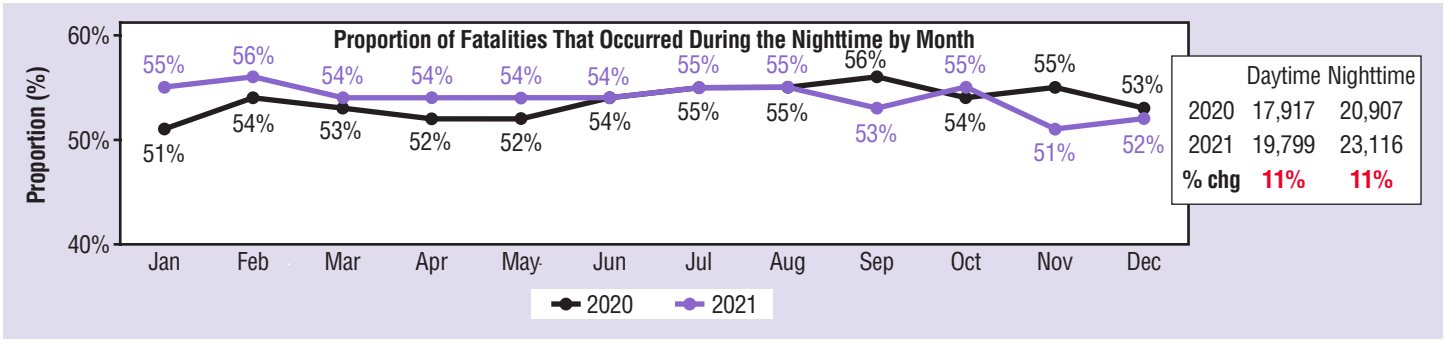
Fatalities		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% change
2020		2,666	2,674	2,553	2,320	3,096	3,725	3,789	3,802	3,724	3,793	3,445	3,237	38,824	
2021		3,130	2,585	3,220	3,570	3,775	3,790	3,875	4,040	3,865	4,085	3,555	3,425	42,915	10.5%
Driver	2020	54%	55%	51%	51%	49%	49%	47%	48%	47%	50%	51%	55%	19,519	
	2021	55%	55%	51%	51%	50%	49%	48%	49%	48%	51%	53%	53%	21,837	12%
Passenger	2020	15%	15%	14%	16%	16%	17%	16%	15%	14%	15%	15%	15%	5,966	
	2021	15%	16%	16%	16%	16%	16%	16%	15%	14%	13%	15%	15%	6,530	9%
Motorcyclist	2020	6%	8%	12%	16%	18%	18%	19%	20%	18%	15%	11%	7%	5,579	
	2021	6%	7%	13%	15%	18%	19%	19%	18%	19%	14%	9%	8%	6,101	9%
Pedestrian	2020	23%	21%	19%	14%	14%	12%	14%	13%	17%	17%	20%	20%	6,516	
	2021	21%	20%	17%	16%	13%	13%	14%	16%	16%	19%	21%	21%	7,342	13%
Pedalcyclist	2020	2%	1%	2%	3%	3%	3%	3%	3%	2%	2%	2%	2%	938	
	2021	2%	2%	2%	2%	2%	2%	3%	2%	3%	3%	2%	3%	985	5%
Involving Large Trucks	2020	14%	14%	12%	13%	11%	13%	12%	13%	13%	14%	12%	13%	4,965	
	2021	12%	13%	12%	14%	13%	14%	13%	13%	13%	12%	13%	14%	5,601	13%
Speeding Related	2020	27%	27%	29%	33%	33%	32%	30%	29%	29%	26%	26%	28%	11,258	
	2021	30%	28%	28%	28%	29%	27%	26%	27%	26%	24%	28%	28%	11,780	5%
Alcohol Involved	2020	18%	20%	19%	19%	21%	22%	21%	23%	19%	19%	20%	19%	7,795	
	2021	20%	20%	20%	20%	21%	20%	20%	19%	18%	18%	17%	17%	8,174	5%

Notes: The last two columns contain fatalities and percentage change from 2020 to 2021. Unknown cases are proportionally distributed.
Numbers in bold red/blue indicate the increase/decrease in the month (or whole) of 2021 as compared to the same month (or whole) of 2020 (in bold black).
Source: 2020 FARS ARF, 2021 statistical projection

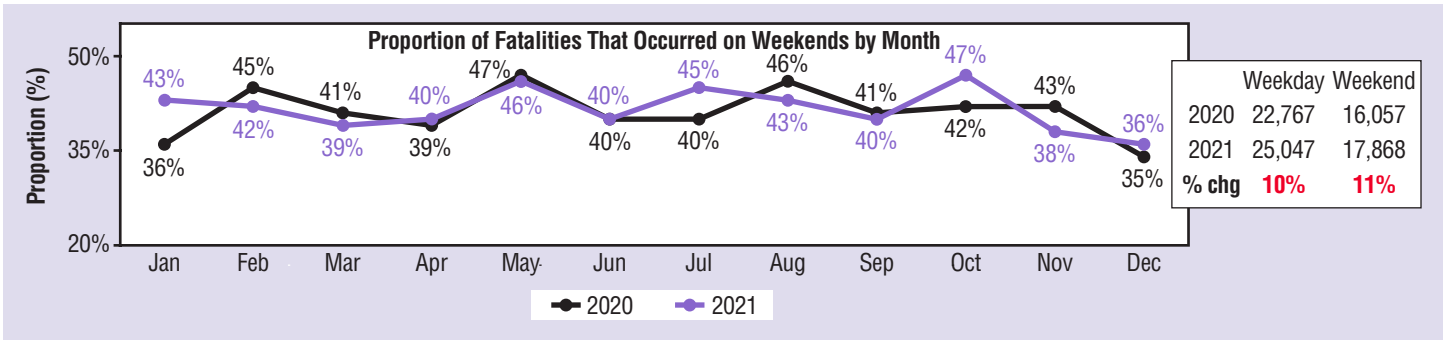
Figure 1: Relative Proportion of Total Fatalities by Land Use, Time of Day, Day of the Week, Vehicle Travel Pattern, Vehicle Age, Vehicle Occupant Fatalities by Rollover Occurrence and Ejection Status, and Passenger Vehicle Occupant Fatalities by Restraint Use for 2020–2021



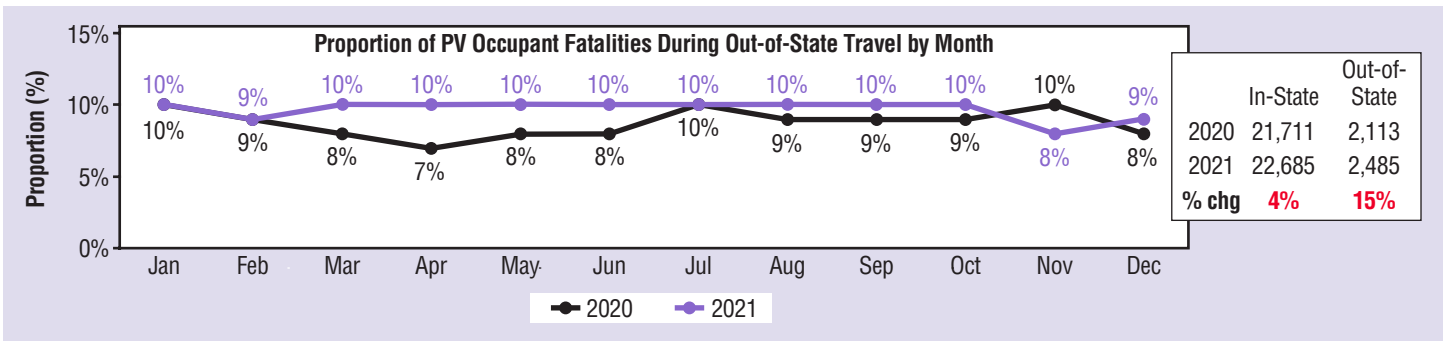
	Rural	Urban
2020	16,884	21,940
2021	17,504	25,411
% chg	4%	16%



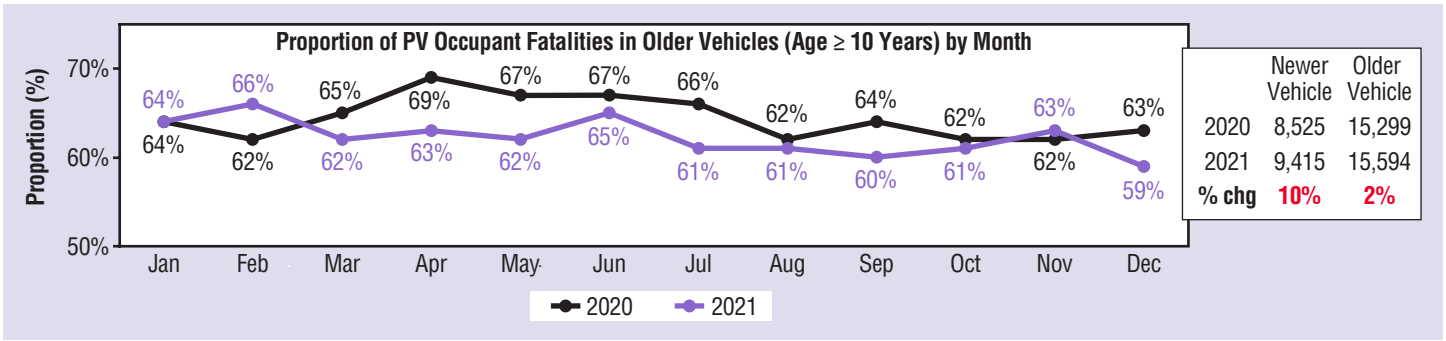
	Daytime	Nighttime
2020	17,917	20,907
2021	19,799	23,116
% chg	11%	11%



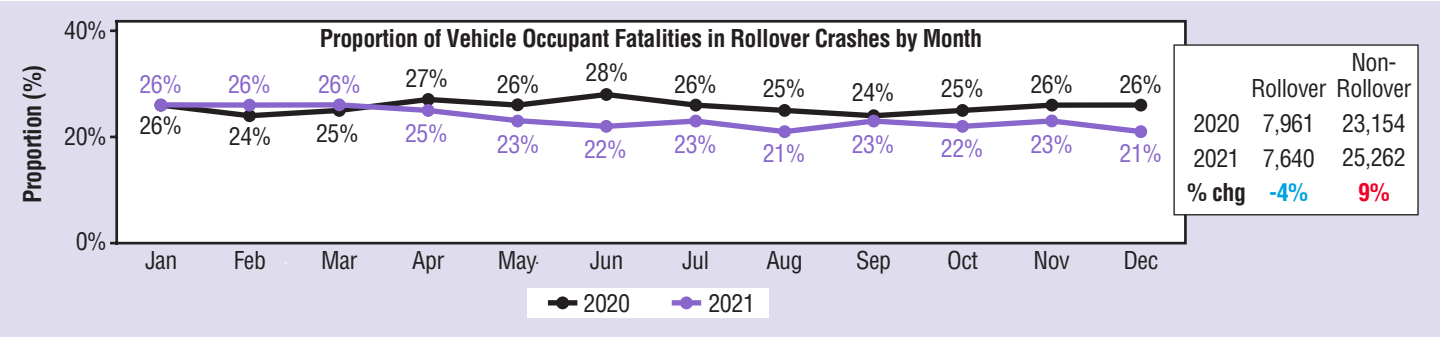
	Weekday	Weekend
2020	22,767	16,057
2021	25,047	17,868
% chg	10%	11%

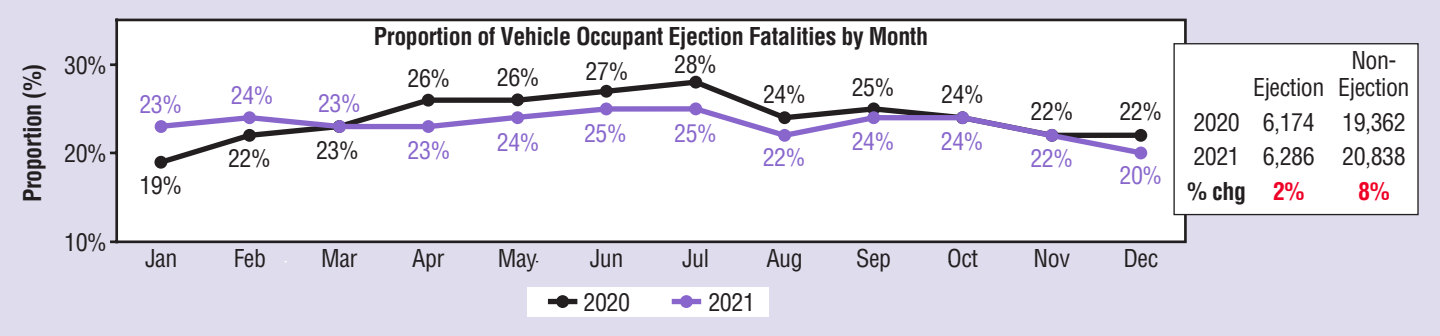


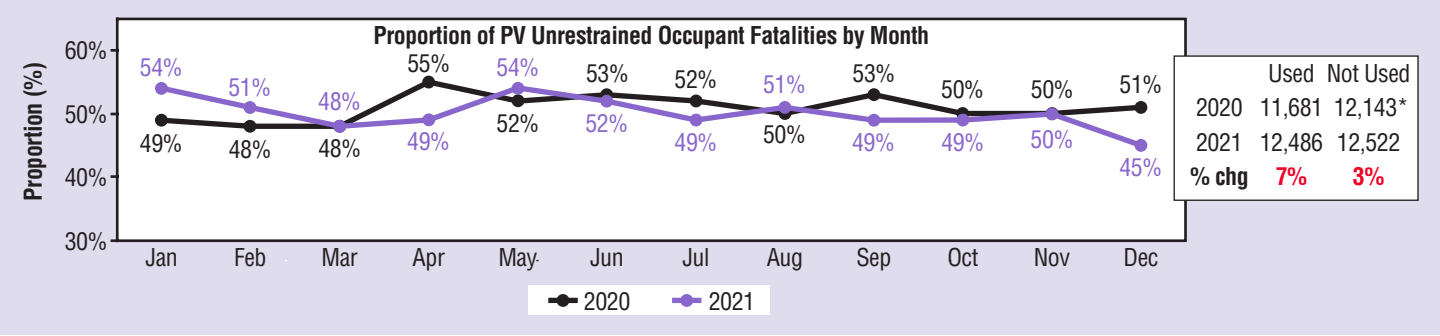
	In-State	Out-of-State
2020	21,711	2,113
2021	22,685	2,485
% chg	4%	15%



	Newer Vehicle	Older Vehicle
2020	8,525	15,299
2021	9,415	15,594
% chg	10%	2%





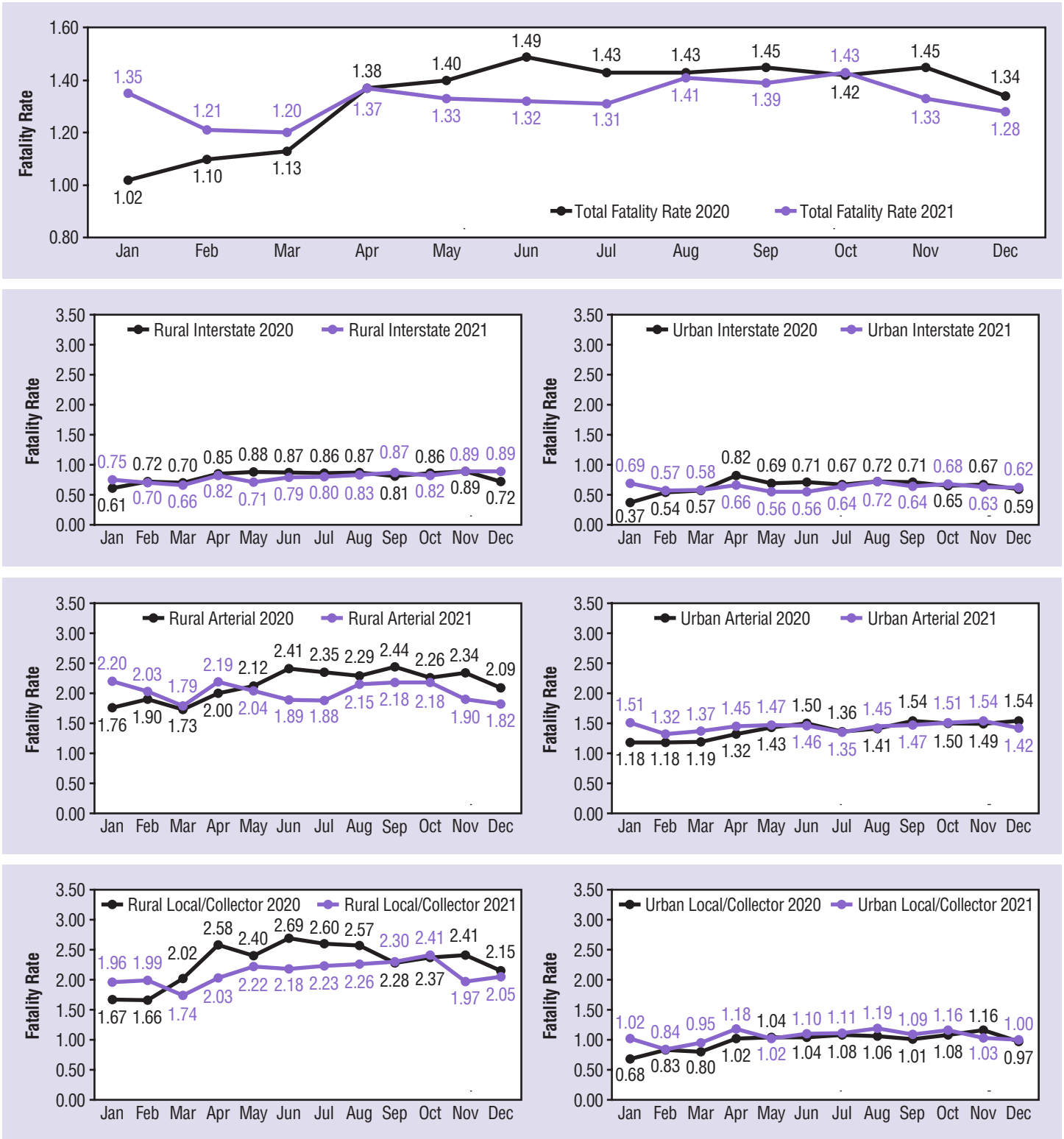


Notes: The text box in the chart contains fatality counts and the percentage change from 2020 to 2021. Unknown cases are proportionally distributed.
* After distributing the unknown cases, this number is higher than the reported one (*Overview of Motor Vehicle Crashes in 2020*, March 2022, DOT HS 813 266).
Source: 2020 FARS ARF, 2021 statistical projection

Fatality Rate

The total fatality rate per 100 million VMT is broken down by roadway function class: rural versus urban interstate, arterial, local/collector/street. The results shown in Figure 2 indicate that the trend of the total fatality rate per 100 million VMT from January to September 2021 was mainly driven by the fatality rate per 100 million VMT on the rural *arterial*, rural *local/collector/street* roadways, and urban *arterial*. Overall, the estimated fatality rate for 2021 was 1.33 fatalities per 100 million VMT, marginally down from the reported 1.34 fatalities per 100 million VMT in 2020.

Figure 2: Total Fatality Rate per 100 Million VMT and the Fatality Rate per 100 Million VMT by Roadway Function Class for 2020–2021



Note: Unknown cases are proportionally distributed.
Sources: 2020 FARS ARF, 2021 statistical projection; FHWA December 2021 TVT for 2020 & 2021 VMT

Limitations

In this study the fatal crashes currently coded for 2021 into NHTSA's FARS are used as a basis for constructing the gross estimates of traffic fatalities by sub-categories. The results from this analysis can be affected by two factors. First, any COVID-19 pandemic-related lag to the fatal crash investigation and reporting are unknown and not captured in these projections. Second, the traditional FARS identification and reporting lag issue could also affect these estimates (e.g., the speeding-related, the roadway departure, and the police-reported alcohol involvement crashes reporting and coding). The estimates for the month and the sub-categories for particular regions with higher inflation rate (IR_{mr}) are more likely to affect the sensitivity of the overall projections. Also, these calculations assume that the cases not yet coded into 2021 FARS are similar in the sub-categories to those that are already in the 2021 FARS. In short, the estimated results are subject to change as more information gets coded into these cases as well as when more cases are entered into 2021 FARS ($FARS_21_{mr}$). These results may also change as the final file for 2020 fatality counts and the annual reporting file for 2021 ($F_Est_21_{mr}$) are available later this year.

Suggested APA format citation for this document:

National Center for Statistics and Analysis. (2022, May). *Early estimates of motor vehicle traffic fatalities and fatality rate by sub-categories in 2021* (Crash•Stats Brief Statistical Summary. Report No. DOT HS 813 298). National Highway Traffic Safety Administration.

U.S. Department of Transportation

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/#/.