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

Traffic Safety Facts
CRASH•STATS

DOT HS 813 729 A Brief Statistical Summary May 2025

Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2024

Introduction and Summary

The National Highway Traffic Safety Administration recently issued a projection report of traffic fatalities and the fatality rate per 100 million vehicle miles traveled (VMT) for 2024 (*Early Estimate of Motor Vehicle Traffic Fatalities in 2024*, Report No. DOT HS 813 710). That report shows an estimated 39,345 people died in motor vehicle traffic crashes in 2024, a decrease of about 3.8 percent as compared to 40,901 fatalities reported in 2023. The 2024 estimated fatality rate is 1.20 fatalities per 100 million VMT, down from the reported rate of 1.26 fatalities per 100 million VMT in 2023.

This NHTSA report is being issued after conducting a special analysis of the fatalities and the fatality rates per 100 million VMT by key sub-categories in 2024. The analysis is based on ratio-adjusted estimates of 2024 fatal crash data coded thus far into NHTSA's Fatality Analysis Reporting System (FARS), as described in the Data and Methodology section.

There are decreases across almost all sub-categories. The trends of traffic fatalities in 2024 as compared to 2023 in the key sub-categories are summarized as follows.

- on rural interstates (up 3%), urban interstates (down 6%), urban arterial (down 5%), and urban collectors/local roads (down 6%)
- at night (down 5%)
- during weekends (down 6%)
- during out-of-State travel (down 14%)
- in newer (vehicle age <10 years) passenger vehicles (down 8%)
- in passenger vehicle rollover crashes (down 6%)
- ejected (down 9%)
- in single-vehicle crashes (down 3%)
- in roadway departure crashes (down 6%)
- in speeding-related crashes (down 6%)
- in younger than 15 age group (up 1%) and the 65-and-older age group (up 2%)
- males (down 4%) and females (down 4%)
- unrestrained passenger vehicle occupants (down 8%)
- drivers (down 4%) and passengers (down 7%)
- passenger vehicle occupants (down 7%)
- motorcyclists (down 2%)
- pedestrians (down 4%)

- pedalcyclists (down 5%)
- in crashes involving at least one large truck (down 3%)

Additionally, the trend of the total fatality rate per 100 million VMT in 2024, as we have already seen in recent years, was strongly driven by the trends in the fatality rates per 100 million VMT on rural arterials, rural local/collector/street roadways, and urban arterials.

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 data 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 includes such detailed information but is incomplete at this point since not every case has been entered into FARS. This analysis adjusts fatal crash cases currently coded for 2024 into NHTSA's FARS and scales it up to the most recent estimates of fatality counts in 2024 (see cited 2024 early estimates report above, DOT HS 813 710).

The estimates of fatalities by sub-categories are carried out in two steps. The first step is to inflate current 2024 total cases coded into NHTSA's FARS data (FARS_24) to the estimated total fatalities (F_Est_24) 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.

$$IR = \frac{F\_Est\_24}{FARS\_24}$$

Inflation rates are computed for each month (m) and region (r) for a total of 120 inflation rates (12 months × 10 regions).

$$IR_{mr} = \frac{F\_Est\_24_{mr}}{FARS\_24_{mr}}$$

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 fatalities in month m and region r, the count of male fatalities in FARS, $FARS\_24\ (Sex_{male})_{mr}$, is weighted by the inflation rate IR_{mr} as follows, $F\_Est\_24\ (Sex_{male})_{mr} = FARS\_24\ (Sex_{male})_{mr} \times IR_{mr}$. 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 ($FARS\_24$) for month m and region r.

$$F\_Est\_24\ (Sex_{male})_{mr} = F\_Est\_24_{mr} \times \left(\frac{FARS\_24(Sex_{male})_{mr}}{FARS\_24_{mr}}\right)$$

The two metrics NHTSA mainly examined are 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 estimated fatality counts (fatalities) and the *percentage change* in fatalities from 2023 to 2024 for each level of the sub-category variables.

Estimated fatalities by sub-categories may vary due to the continuous updating of 2024 FARS data ($FARS\_24_{mr}$), especially for several sub-category variables (speeding, roadway departure, and rollover, etc.[1]) that may take extra time to report and code (see "Limitations" section). However, since the results (the percentage distribution of fatalities or the percentage of the total fatalities) have been nearly identical in each of the 3 months prior to publication, the estimates are relatively stable.

[1] Further adjustments of these three factors, pedalcyclist fatalities, PV occupant fatalities who were ejected, and the large-truck-related crash fatalities were made in this report.

Results

This report examines the same major factors that NHTSA previously reviewed and investigated in 2023, the results of which were published in *Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2023* (DOT HS 813 581). These key factors in roadway safety may be linked to changes in driving behaviors, travel patterns, and transportation options owing to COVID-19 emergency measures.

The study results of projected fatalities for 2024 compared with the reported fatalities during 2023 are presented below. The data results for 2023 are from the FARS 2023 Annual Report File (ARF). Since the unknown values are proportionally imputed based on the distribution of observed counts (univariate imputation) in this study, the fatality counts for certain categories may not reflect the 2023 reported counts published in *Overview of Motor Vehicle Traffic Crashes in 2023*, April 2025, DOT HS 813 705.

Note that beginning in 2020 NHTSA changed to vPIC-based[2] vehicle classifications for data extractions, analysis, projections, and reporting. Also, prior to 2022 motorized bicycles were collected as motor vehicles in FARS and their operators and passengers were captured as motorists. Beginning in 2022, FARS is no longer collecting motorized bicycles as motor vehicles. Consequently, operators and passengers of motorized bicycles will be captured as pedalcyclists when involved in motor vehicle traffic crashes. Single-vehicle crashes involving motorized bicycles will no longer be captured.

Fatalities

The findings for the trends of sub-category variables are based on the comparison of two metrics.

1. The *percentage distribution* of fatalities or the *percentage* of total fatalities, between the same month of 2023 and 2024[3] (labeled by [23] and [24] in the comparison of 2-year results).
2. The estimated fatality counts (fatalities) and the *percentage change* in fatalities from 2023 to 2024 for each sub-category variable.

In 2024 total fatalities decreased in all months except in March, compared to the corresponding months in 2023 (Table 1). The findings are summarized as follows (see Tables 1 and 2 and Figure 1 for details).

Roadway and Environmental Factors

- The proportion of estimated fatalities in *rural* areas increased primarily in October (44% [24] versus 41% [23]), November (42% [24] versus 39% [23]), and December (43% [24] versus 38% [23]). Total estimated fatalities decreased 2 percent and 5 percent in *rural* and *urban* areas from 2023 to 2024 (Figure 1).
- Table 1 specifically shows the total estimated fatalities on *urban interstate*, *arterial* and *collector/local* roads decreased 6 percent, 5 percent, and 6 percent, respectively, from 2023 to 2024. However, total estimated fatalities on *rural interstate* increased 3 percent from 2023 to 2024.
- The proportion of estimated fatalities during *nighttime* (6 p.m. to 5:59 a.m.) decreased in most months (Figure 1). Total estimated fatalities during *daytime* and *nighttime* decreased 2 percent and 5 percent from 2023 to 2024.
- Figure 1 shows the proportion of estimated fatalities that occurred on *weekends* (6 p.m. Friday to 5:59 a.m. Monday) greatly increased in March (46% [24] versus 38% [23]). Total estimated fatalities decreased 2 percent and 6 percent during the *weekdays* and the *weekends*, respectively, from 2023 to 2024.
- The proportion of estimated passenger vehicle (PV) occupant fatalities that occurred during *out-of-State* travel decreased in most months of the year (Figure 1), indicating that a smaller proportion of people traveled long distances by car during these months of 2024, compared to the same months of 2023. Total

[2] NHTSA's Product Information Catalog and Vehicle Listing (vPIC) is a consolidated platform that presents data collected within manufacturer-reported data from vPIC's legislation, 49 CFR, Parts 551–595, for use in a variety of modern tools. Parts 551 to 595 specify the internal parts of the vPIC system.

[3] 2024 was a leap year and February 29, 2024, was the leap day.

estimated passenger vehicle occupant fatalities that occurred during *out-of-State* travel decreased 14 percent from 2023 to 2024.

Vehicle-Related Characteristics

- The estimated PV occupant fatalities decreased 5 percent in *older vehicles* (vehicle age ≥ 10 years) from 2023 to 2024 (Figure 1). Note that the estimated PV occupant fatalities in *newer vehicles* (vehicle age < 10 years) decreased 8 percent.
- The estimated PV occupant fatalities in *rollover* crashes decreased 6 percent from 2023 to 2024 (Table 2).
- As displayed in Figure 1, the estimated fatally injured PV occupants *who were ejected*, as a proportion of all fatalities, largely increased in March (21% [24] versus 18% [23]). Total estimated fatalities for PV occupants *who were ejected* decreased 9 percent from 2023 to 2024. This is highly correlated with a similar decrease (8 percent) in estimated *unrestrained* PV occupant fatalities, as described in the person-related characteristics section.
- As shown in Table 1, total estimated fatalities in *single-vehicle* crashes decreased 3 percent from 2023 to 2024. Note that the estimated fatalities in *multi-vehicle* crashes decreased 5 percent.
- Total estimated fatalities in *roadway departure/on roadway* crashes decreased 6 percent and 2 percent, respectively, from 2023 to 2024, as shown in Table 1.
- The *speeding-related* fatalities decreased 6 percent from 2023 to 2024 (Table 2).

Person-Related Characteristics

- As shown in Table 1, total estimated traffic fatalities among people between *15* and *64 years old* decreased from 2023 to 2024. However, total estimated fatalities increased 1 percent and 2 percent for people *younger than 15* and those *aged 65 and older*, respectively, from 2023 to 2024.
- As displayed in Table 1, the total estimated fatalities decreased 4 percent for both *males* and *females* from 2023 to 2024.
- As shown in Figure 1, total estimated *unrestrained* PV occupant fatalities decreased 8 percent from 2023 to 2024.

Fatalities by Person Type and in Crashes Involving Large Trucks[4]

As shown in Table 2, the following results for the percentage change of estimated fatalities from 2023 to 2024 are observed:

- Total estimated *driver* fatalities decreased 4 percent.
- Total estimated *passenger* fatalities decreased 7 percent.
- Total estimated *PV occupant* fatalities decreased 7 percent.
- Total estimated *motorcyclist* fatalities decreased 2 percent.
- Total estimated *pedestrian* fatalities decreased 4 percent.
- Total estimated *pedalcyclist* fatalities decreased 5 percent.
- Total estimated fatalities in crashes *involving at least one large truck* decreased 3 percent.

[4] A large truck is defined as any medium or heavy truck, excluding buses and motor homes, with a gross vehicle weight rating (GVWR) greater than 10,000 pounds. These include both commercial and non-commercial large trucks.

Table 1. Relative Proportion of Fatalities by Roadway Function Class, Age Group, Sex, and Crash Type for 2023–2024

Fatalities		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% change
2023		3,024	2,860	3,014	3,344	3,540	3,486	3,694	3,738	3,694	3,787	3,316	3,404	40,901	
2024		2,735	2,725	3,135	3,185	3,450	3,450	3,370	3,650	3,545	3,625	3,310	3,165	39,345	-4%
Roadway Function Class															
Rural Interstate	2023	4%	5%	4%	4%	4%	4%	5%	6%	4%	4%	4%	4%	1,797	
	2024	5%	4%	5%	5%	5%	4%	5%	5%	5%	5%	5%	5%	1,846	+3%
Urban Interstate	2023	9%	8%	7%	9%	8%	8%	8%	8%	7%	9%	7%	7%	3,329	
	2024	8%	8%	8%	8%	8%	7%	8%	8%	8%	8%	8%	8%	3,122	-6%
Rural Arterial	2023	19%	17%	20%	18%	19%	19%	19%	19%	19%	19%	18%	19%	7,668	
	2024	18%	18%	18%	18%	19%	20%	21%	18%	19%	19%	19%	20%	7,507	-2%
Urban Arterial	2023	41%	41%	39%	39%	39%	37%	36%	37%	38%	38%	42%	42%	15,985	
	2024	42%	42%	41%	41%	38%	36%	35%	37%	38%	37%	39%	40%	15,244	-5%
Rural Collector/Local	2023	15%	16%	17%	18%	18%	22%	19%	19%	20%	17%	17%	15%	7,297	
	2024	15%	16%	16%	17%	19%	20%	19%	19%	19%	20%	18%	17%	7,107	-3%
Urban Collector/Local	2023	11%	13%	12%	12%	12%	10%	12%	11%	12%	12%	11%	12%	4,824	
	2024	12%	12%	12%	12%	11%	12%	11%	12%	11%	12%	11%	9%	4,518	-6%
Age Group															
<15	2023	2%	2%	3%	2%	3%	2%	3%	2%	2%	2%	2%	2%	1,023	
	2024	3%	3%	3%	3%	3%	2%	3%	3%	2%	3%	2%	2%	1,038	+1%
15–24	2023	17%	16%	16%	19%	17%	19%	17%	18%	16%	17%	16%	16%	6,970	
	2024	16%	16%	17%	17%	17%	18%	18%	18%	18%	16%	16%	15%	6,669	-4%
25–34	2023	19%	20%	19%	18%	19%	18%	19%	19%	19%	18%	18%	19%	7,613	
	2024	17%	19%	18%	19%	18%	18%	16%	19%	17%	17%	16%	18%	6,989	-8%
35–44	2023	16%	16%	15%	16%	15%	15%	16%	15%	16%	16%	16%	16%	6,441	
	2024	17%	16%	16%	16%	15%	16%	17%	15%	16%	16%	17%	15%	6,308	-2%
45–54	2023	12%	12%	13%	13%	13%	14%	14%	13%	13%	13%	12%	12%	5,268	
	2024	13%	13%	13%	13%	13%	12%	13%	12%	12%	13%	13%	12%	4,970	-6%
55–64	2023	14%	13%	14%	14%	14%	15%	14%	14%	14%	15%	14%	13%	5,663	
	2024	13%	13%	13%	13%	13%	13%	13%	14%	14%	14%	12%	14%	5,290	-7%
65+	2023	20%	20%	21%	17%	19%	18%	18%	19%	19%	19%	22%	22%	7,923	
	2024	20%	20%	20%	19%	20%	19%	20%	20%	21%	21%	23%	23%	8,081	+2%
Sex															
Male	2023	71%	72%	71%	72%	74%	74%	74%	75%	74%	72%	70%	70%	29,647	
	2024	71%	72%	73%	73%	72%	72%	73%	74%	74%	73%	72%	71%	28,595	-4%
Female	2023	29%	28%	29%	28%	26%	26%	26%	25%	26%	28%	30%	30%	11,254	
	2024	29%	28%	27%	27%	28%	28%	27%	26%	26%	27%	28%	29%	10,750	-4%
Crash Type 1: Single- Versus Multi-Vehicle															
Multi-Vehicle	2023	46%	46%	47%	48%	50%	47%	46%	47%	45%	45%	46%	45%	18,999	
	2024	44%	46%	45%	47%	49%	47%	48%	46%	47%	46%	44%	45%	18,134	-5%
Single-Vehicle	2023	54%	54%	53%	52%	50%	53%	54%	53%	55%	55%	54%	55%	21,902	
	2024	56%	54%	55%	53%	51%	53%	52%	54%	53%	54%	56%	55%	21,211	-3%

Fatalities		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% change
Crash Type 2: Roadway-Departure-Related															
Departure	2023	47%	47%	48%	49%	48%	50%	49%	48%	45%	46%	45%	46%	19,328	
	2024	47%	47%	48%	45%	47%	48%	46%	46%	45%	46%	45%	46%	18,241	-6%
On Roadway	2023	53%	53%	52%	51%	52%	50%	51%	52%	55%	54%	55%	54%	21,573	
	2024	53%	53%	52%	55%	53%	52%	54%	54%	55%	54%	55%	54%	21,104	-2%

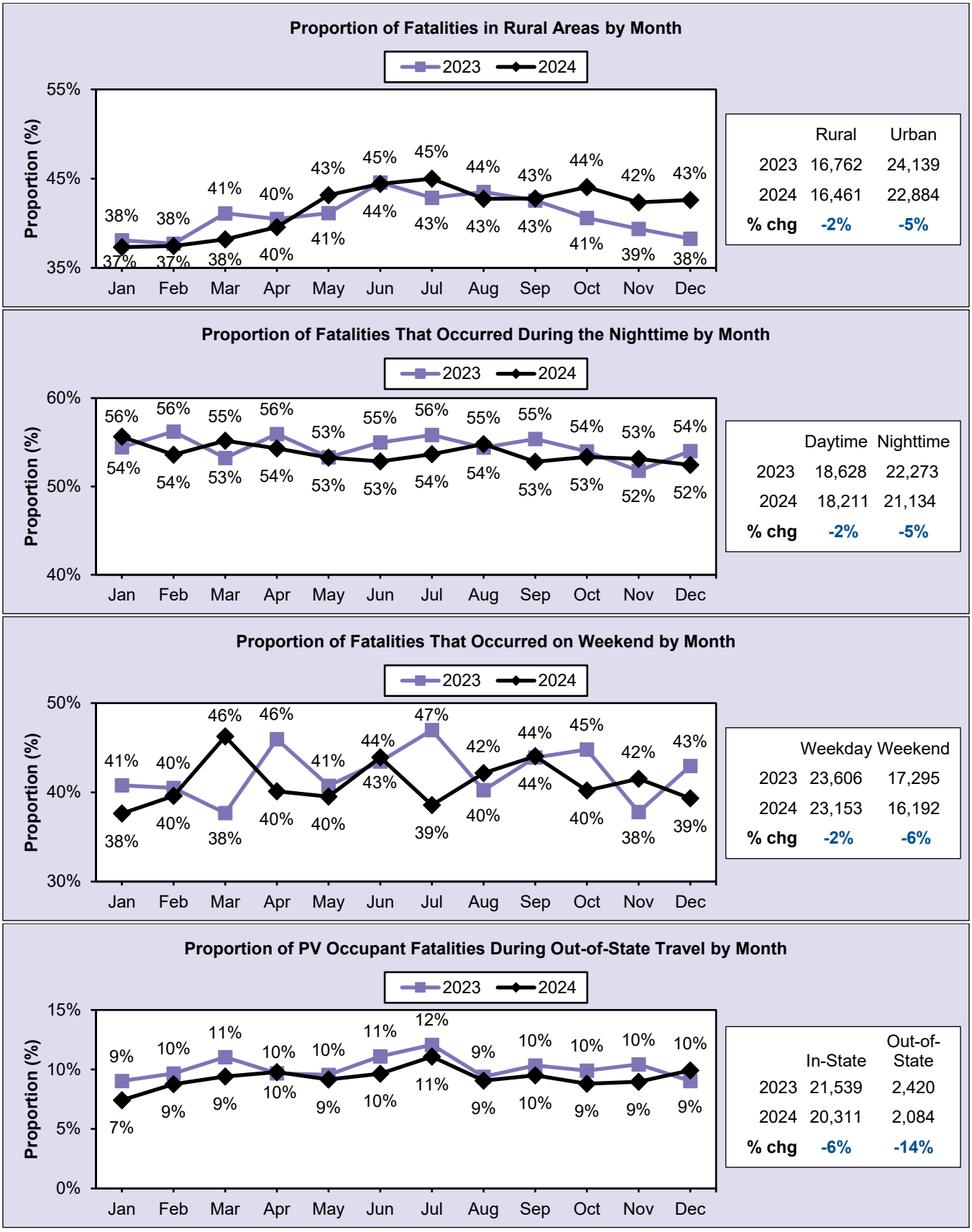
Notes: The last two columns contain fatalities and percentage change from 2023 to 2024. Unknown cases are proportionally imputed. Numbers in red/blue indicate the increase/decrease in the month (or the year) of 2024 as compared to the same month (or the year) of 2023 (in black).
Source: 2023 FARS ARF and 2024 statistical projections.

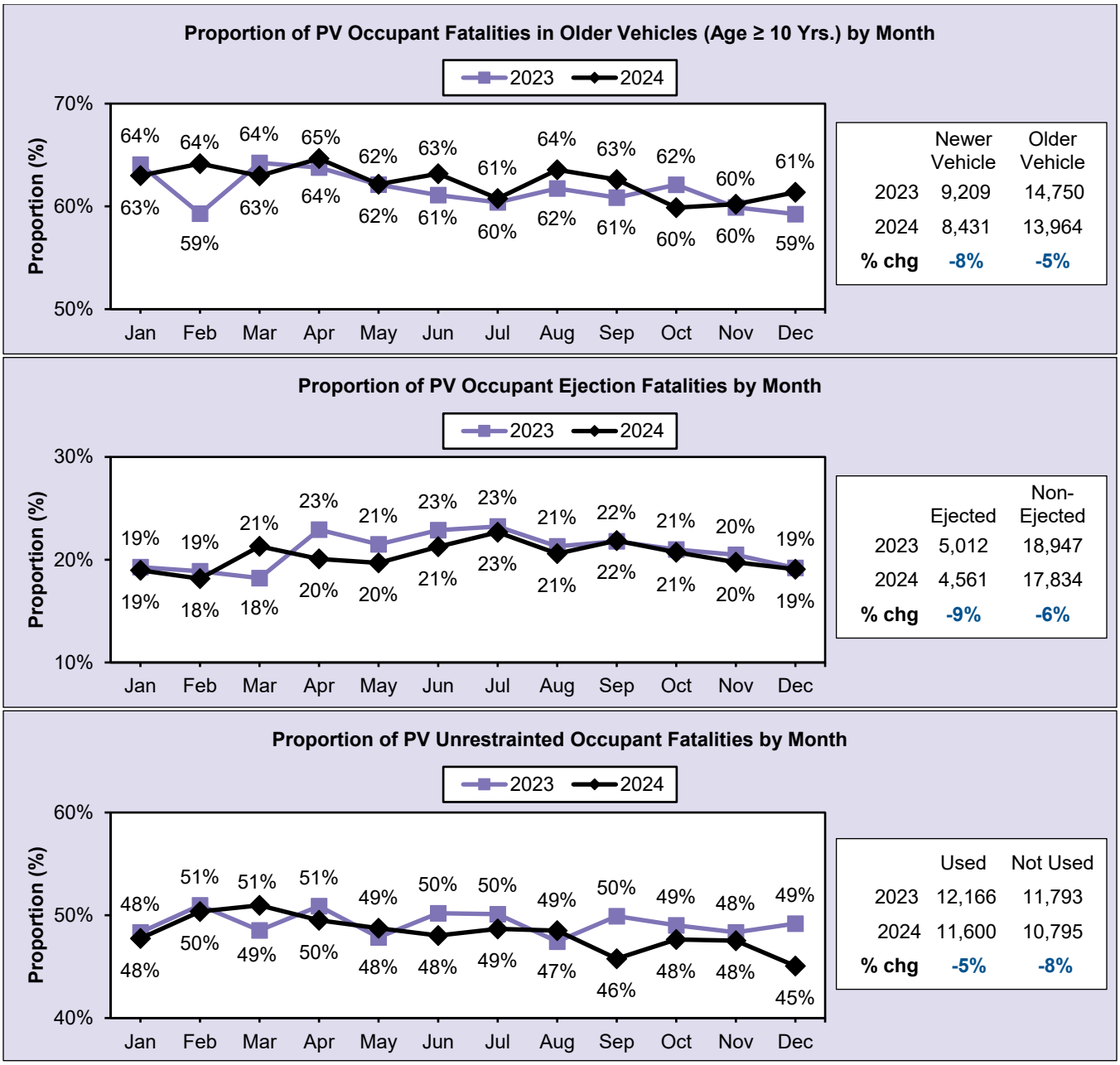
Table 2. Fatalities by Person Type, in Large-Truck-Related/Speeding-Related/PV Occupant in Rollover Crashes, as a Percentage of Total Fatalities for 2023–2024

Fatalities		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% change
2023		3,024	2,860	3,014	3,344	3,540	3,486	3,694	3,738	3,694	3,787	3,316	3,404	40,901	
2024		2,735	2,725	3,135	3,185	3,450	3,450	3,370	3,650	3,545	3,625	3,310	3,165	39,345	-4%
Driver	2023	52%	50%	50%	48%	47%	47%	44%	45%	44%	47%	49%	51%	19,553	
	2024	53%	51%	49%	48%	47%	46%	45%	46%	46%	45%	49%	53%	18,861	-4%
Passenger	2023	16%	15%	16%	16%	16%	15%	16%	14%	13%	14%	14%	16%	6,164	
	2024	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	5,718	-7%
PV Occupant	2023	64%	62%	62%	61%	58%	58%	55%	54%	52%	57%	59%	64%	23,959	
	2024	64%	63%	59%	58%	57%	56%	55%	53%	52%	53%	58%	58%	22,395	-7%
PV Occupant Rollover	2023	17%	18%	15%	17%	16%	17%	17%	16%	15%	15%	16%	16%	6,596	
	2024	15%	16%	18%	16%	16%	17%	15%	16%	15%	15%	16%	16%	6,181	-6%
Motorcyclist	2023	7%	10%	12%	16%	20%	21%	21%	21%	20%	15%	11%	8%	6,335	
	2024	7%	10%	15%	17%	19%	21%	20%	21%	20%	18%	11%	8%	6,228	-2%
Pedestrian	2023	22%	21%	19%	15%	14%	14%	15%	16%	17%	19%	22%	22%	7,314	
	2024	24%	20%	18%	18%	15%	13%	16%	15%	17%	19%	22%	22%	7,046	-4%
Pedalcyclist	2023	3%	2%	2%	2%	3%	2%	4%	3%	4%	4%	3%	3%	1,166	
	2024	2%	3%	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	1,110	-5%
Involving Large Trucks	2023	14%	13%	14%	13%	14%	13%	13%	14%	13%	14%	14%	11%	5,472	
	2024	15%	14%	13%	14%	13%	13%	14%	14%	13%	13%	13%	13%	5,297	-3%
Speeding Related	2023	28%	28%	28%	30%	31%	30%	31%	29%	28%	28%	27%	26%	11,775	
	2024	28%	28%	28%	29%	30%	29%	28%	27%	28%	28%	27%	26%	11,033	-6%

Notes: The last two columns contain fatalities and percentage change from 2023 to 2024. Unknown cases are proportionally imputed. Numbers in red/blue indicate the increase/decrease in the month (or the year) of 2024 as compared to the same month (or the year) of 2023 (in black).
Source: 2023 FARS ARF and 2024 statistical projections.

Figure 1. Relative Proportion of Total Fatalities by Rural/Urban, Time of Day, Day of the Week, and PV Occupant Fatalities by Vehicle Travel Pattern, Vehicle Age, Ejection Status, and Restraint Use for 2023–2024



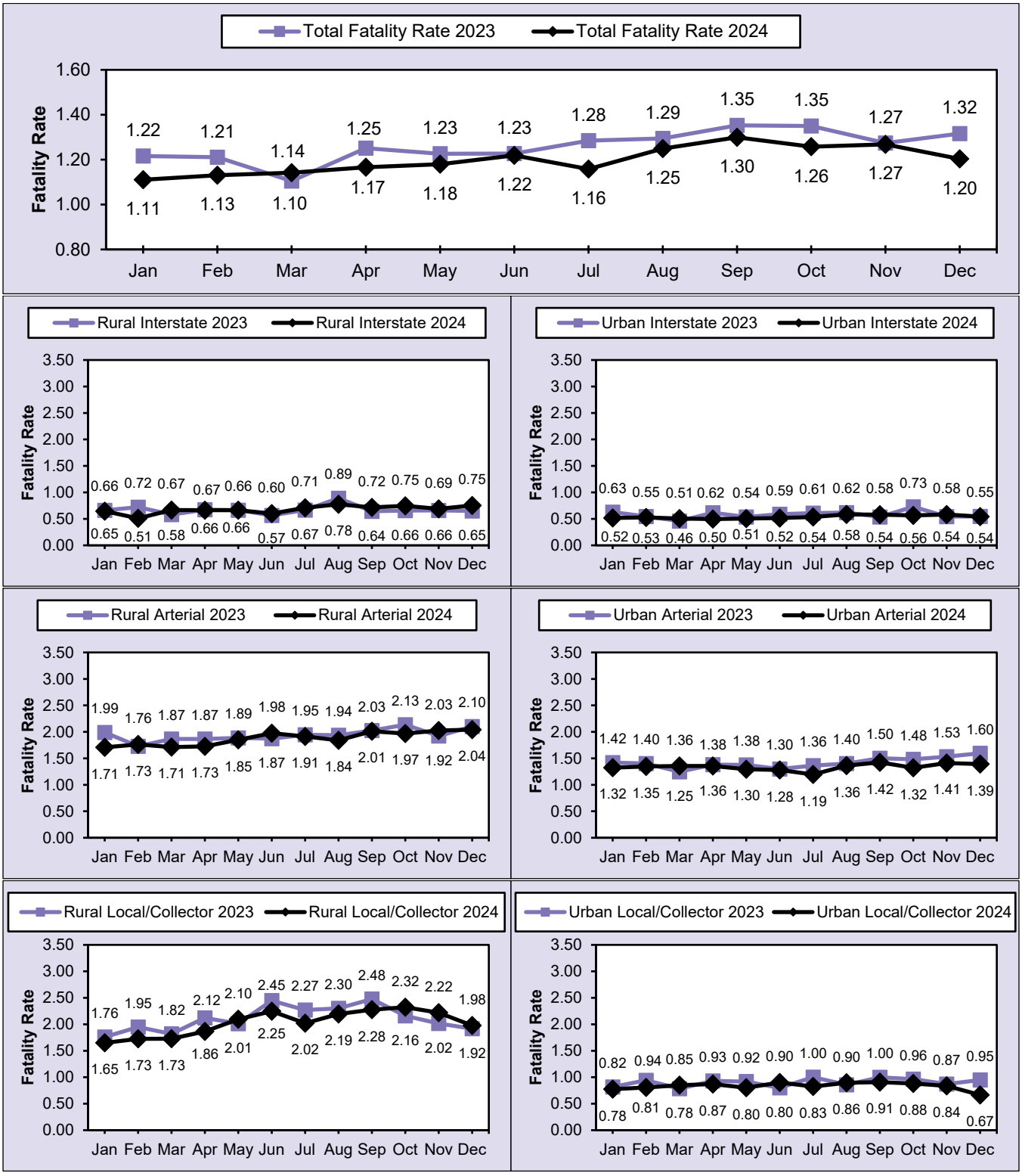


Notes: The text box in the chart contains fatality counts and the percentage change from 2023 to 2024. Unknown cases are proportionally imputed.
Source: 2023 FARS ARF and 2024 statistical projections.

Fatality Rate

The total fatality rate per 100 million VMT is broken down by roadway function class: rural versus urban interstates, arterials, local/collector/streets. The results shown in Figure 2 indicate that the trend of the total fatality rate per 100 million VMT in 2024, as we have already seen in recent years, is mainly driven by the fatality rate per 100 million VMT on *rural arterials, rural local/collector/street roadways*, and *urban arterials*, based on the magnitude of the fatality rate by roadway function class. Overall, the estimated fatality rate for 2024 was 1.20 fatalities per 100 million VMT, down from the reported 1.26 fatalities per 100 million VMT during 2023.

Figure 2. Total Fatality Rate per 100 Million VMT and the Fatality Rate per 100 Million VMT by Roadway Function Class for 2023–2024



Note: Unknown cases are proportionally imputed.
Source: 2023 FARS ARF and 2024 statistical projections. Federal Highway Administration December 2024 Traffic Volume Trends for 2023 & 2024 VMT.

Limitations

In this study, the fatal crashes currently coded for 2024 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 post-COVID-19 pandemic-related lag to 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 rollover crashes reporting and coding). The estimates for the month and the sub-categories for 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 2024 FARS are similar in the sub-categories to those that are already in the 2024 FARS. In short, the estimated results are subject to small changes as more information gets coded into these cases as well as when more cases are entered into 2024 FARS ($FARS\_24_{mr}$). These results may also change slightly as the FARS ARF and Final File for 2024 (then replace $F\_Est\_24_{mr}$) are available within the next two years.

Suggested APA format citation for this document:

National Center for Statistics and Analysis. (2025, May). *Early estimates of motor vehicle traffic fatalities and fatality rate by sub-categories in 2024* (Crash•Stats Brief Statistical Summary. Report No. DOT HS 813 729). National Highway Traffic Safety Administration.

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For questions regarding the information presented in this report, please contact NCSARequests@dot.gov. This Crash•Stats and other general information on traffic safety can be found at https://crashstats.nhtsa.dot.gov/.