COMMERCIAL VEHICLE SAFETY IN LOUISIANA
An Analysis of Truck Crashes for 2019

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Summary

In 2019, the total number of reported CMV crashes decreased by -6.5% compared to 2018. The number of fatal CMV crashes decreased from 95 in 2018 to 88 in 2019, a decrease of 7.4%. The number of injury CMV crashes decreased slightly from 1,552 to 1,505 during the same period, a decrease of 3.1%.

The percentage of CMV drivers in fatal crashes cited for violations increased from 2018 to 2019. The percentage of CMV drivers receiving violations in fatal crashes increased from 35.2% in 2018 to 45.5% in 2019. Careless Operation and Failure To Yield were the most frequent citations. CMV drivers in injury and property damage crashes were cited for violations 47.8% and 49.6% of the time, respectively. Within this same year, careless operation accounted for the majority of violations committed in association with commercial vehicle crashes. Careless operation made up 30.0% of all violations given to the driver of the CMV in fatal crashes and 35.4% in all crashes. Other violations with relatively high occurrence rates were failure to yield, with 8.0% in fatal and 11.3% in all crashes. Since careless operation is often a proxy for speed violations, we can look at the combined percentage of speed and careless operation violations. For fatal CMV crashes, the combined violations (speeding & careless operation) make up 34.0% of all violations the CMV driver receives. In all CMV crashes, this percentage is 36.8%. When failure to yield is included, these percentages increase to 42.0% for fatal crashes and 48.1% for all crashes.

The manner of collision most common in all CMV crashes are rear-end types at 31.3% and non-collision types (single vehicle crashes) at 20.0%. For fatal crashes, the types were head-on collisions at 11.4%, rear-end collisions at 31.8%, right angle collisions at 15.9%, and non-collision with motor vehicle crashes at 21.6%.

During 2019, 33.4% of all CMV crashes in Louisiana occurred on interstates, 32.6% occurred on state highways, and 18.7% occurred on U.S. highways. In 2018, the respective percentages were 34.6%, 32.1%, and 17.5%. From 2018 to 2019, the number of fatal interstate crashes decreased slightly from 26 to 24. U.S. highways experienced a decrease in fatal crashes of 4.8% and state highways saw a decrease of 2.4%. Thus, the overall decrease in CMV related fatalities of 7.4% was largely due to the decrease of fatalities on interstates, state highways, and US highways.

The number of fatal CMV crashes in work zones increased from 8 to 10 from 2018 to 2019. The number of fatal crashes within 5 miles of the construction zone (construction zone plus 5 miles on either end) decreased by 35.3%, namely from 17 to 11. However, the number of fatal crashes in the 5 miles approaching the construction zone from either end (excluding the construction zones) decreased from 9 in 2018 to 1 in 2019.

These counts are based on the construction schedule provided by the LA DOTD and may thus differ from the actual number of crashes occurring in construction zones because the schedule may not accurately reflect the actual times work was being done.

Overview

This section provides an overview of the most important issues relating to CMV crashes in 2019 and trend data for the past five years. Table 1 depicts CMV crashes from 2014 to 2019 and shows that the fatal CMV crashes have decreased by 7.4% from 2018 to 2019 while the 5-year change in fatal CMV crashes was -4.3%. The CMV involved injury crashes decreased by 3.1% while the CMV involved PDO crashes decreased by 8.0% from 2018 to 2019. The total number of CMV crashes decreased by 6.1% from 2018 to 2019, less than the decrease observed for all vehicle crashes, which was 2.0%.

Table 1: CMV Crashes 2014-2019

	CMV Crashes				CMV Crashes Percentages				All Crashes				%CMV			
Year	Fatal	Injury	PDO	Total CMV	Fatal	Injury	PDO	Total CMV	Fatal	Injury	PDO	Total	Fatal	Injury	PDO	Total
2014	92	1,622	2,284	3,998	2.3%	40.6%	57.1%	2.5%	665	44,810	111,542	157,017	13.8%	3.6%	2.0%	2.5%
2015	85	1,607	2,372	4,064	2.1%	39.5%	58.4%	2.4%	698	48,373	119,547	168,618	12.2%	3.3%	2.0%	2.4%
2016	89	1,634	2,366	4,089	2.2%	40.0%	57.9%	2.4%	704	49,833	123,093	173,630	12.6%	3.3%	1.9%	2.4%
2017	96	1,609	2,412	4,117	2.3%	39.1%	58.6%	2.5%	706	47,454	117,771	165,931	13.6%	3.4%	2.0%	2.5%
2018	95	1,552	2,438	4,085	2.3%	38.0%	59.7%	2.5%	717	45,982	117,074	163,773	13.2%	3.4%	2.1%	2.5%
2019	88	1,505	2,244	3,837	2.3%	39.2%	58.5%	2.4%	676	44,593	115,150	160,419	13.0%	3.4%	1.9%	2.4%
1 Yr % Change	-7.4%	-3.0%	-8.0%	-6.1%	0.0%	1.2%	-1.2%	-0.1%	-5.7%	-3.0%	-1.6%	-2.0%	-0.2%	0.0%	-0.1%	-0.1%
5 Yr % Change	-4.3%	-7.2%	-1.8%	-4.0%	0.0%	-1.3%	1.4%	-0.2%	1.7%	-0.5%	3.2%	2.2%	-0.8%	-0.2%	-0.1%	-0.2%
Average	-3.7%	-6.2%	-5.5%	-5.7%	0.0%	-0.2%	0.2%	-0.1%	-3.2%	-5.7%	-2.3%	-3.2%	-0.1%	0.0%	-0.1%	-0.1%

Injury crashes involving all motor vehicles decreased by 3.0% from 2018 to 2019, the same decrease occurred for CMV injury crashes during the same period. CMV property damage crashes decreased by 8.0% from 2018 to 2019, while all CMV crashes combined decreased by 6.1%.

The number of CMV crashes is expected to follow the trend of all crashes. Thus, the CMV crashes as a percent of all crashes may provide some insight in how programs specifically designed for the reduction of CMV crashes have worked. Fatal CMV crashes as a percent of all fatal crashes decreased in 2019 by 0.2 percentage points compared to 2018 while the CMV injury crashes as percent of all injury crashes stayed the same in 2018.

Figure 1: CMV and Non-CMV Crashes 2014-2019

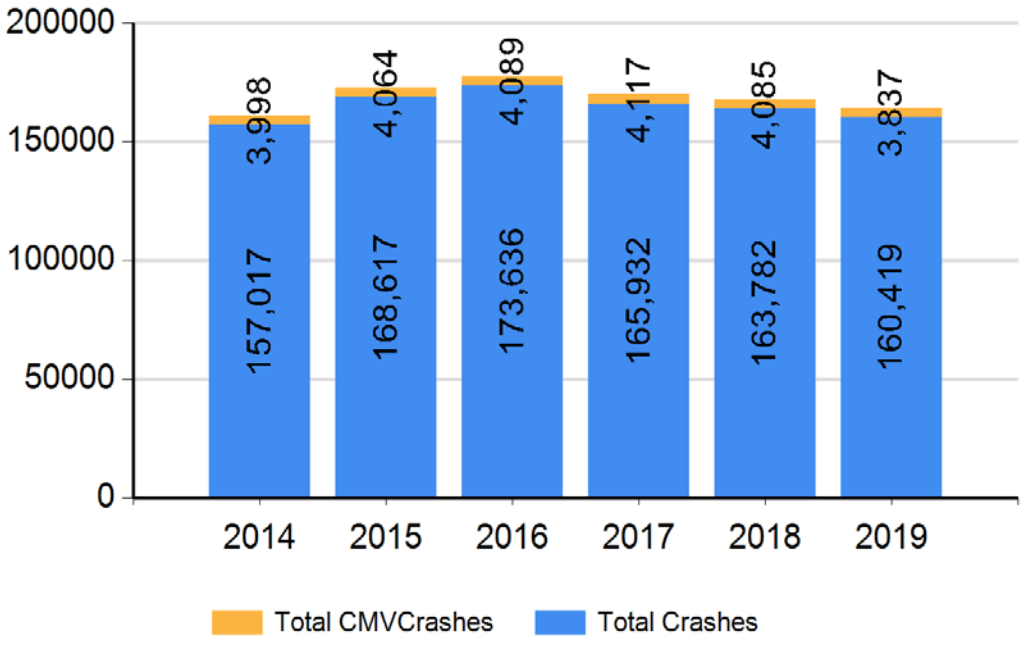


Figure 1 highlights the number of all crashes and CMV crashes from 2014 to 2019. There were 248 less CMV crashes and 3,363 less non-CMV crashes in 2019 compared to 2018. In addition, as Table 1 shows, CMV crashes accounted for 2.4% of all crashes in 2019, which is less than the 2.5% in 2018.

Figure 2 shows that the number of fatal injury CMV and property damage CMV crashes both decreased from 2018 to 2019.

Figure 2: CMV Crashes by Severity: 2014-2019

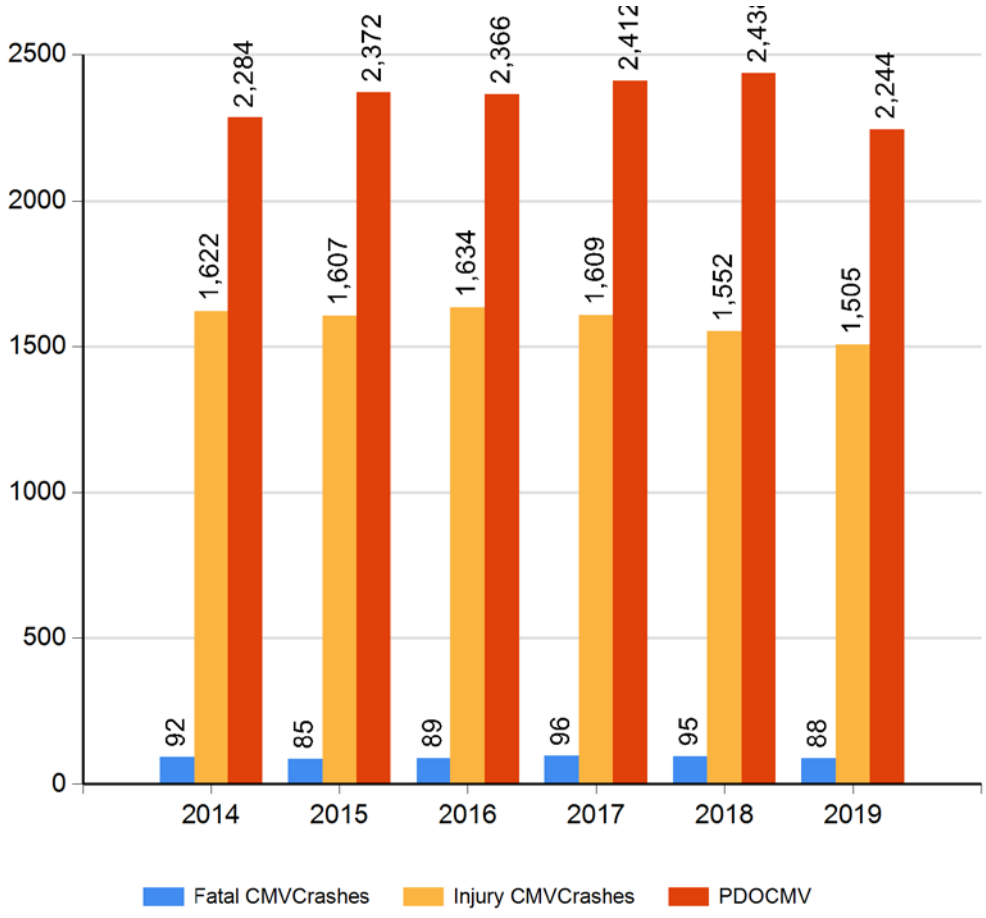


Figure 3: CMV and Non-CMV Fatal Crashes 2014-2019

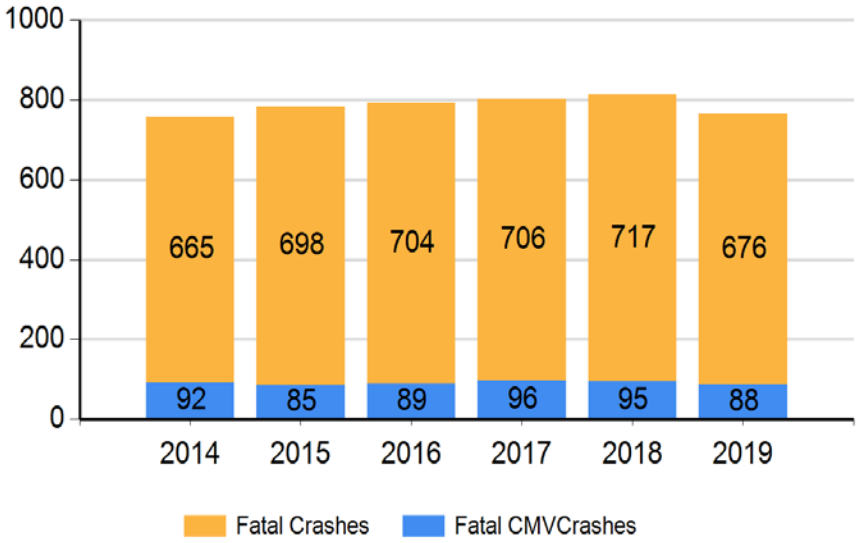
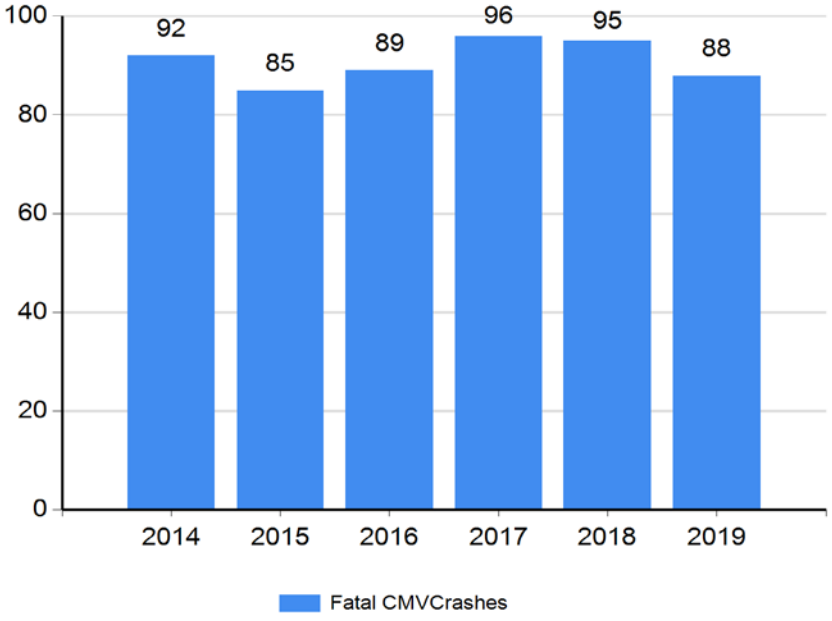


Figure 4: Fatal CMV Crashes by Year: 2014-2019



Figures 3 and 4 illustrate fatal non-CMV and CMV crashes from 2014 to 2019. While the decrease in the number of non-CMV fatal crashes was 5.7% from 2018 to 2019, the CMV fatal crashes experienced a larger decrease of 7.4%, which amounts to 7 less fatal CMV crashes and 6.1% less fatalities. Figure 4 shows the trend of fatal CMV crashes which indicates that 2015 had the lowest number of fatal CMV crashes in the past five years. In fact, 2015 had the lowest number of CMV fatal crashes since at least 1999 when the yearly report was first compiled.

Due to a steady increase in Louisiana traffic over the years, the number of crashes should be adjusted by the vehicle miles traveled (VMT) by commercial vehicles. In past reports, vehicle miles traveled for CMVs were obtained from the FMCSA website which was discontinued in 2007. The new FMCSA guidelines now proposes to use total VMT rather than commercial vehicle VMT. Table 2 depicts the fatal crashes, injury crashes, PDO crashes, and all crashes per 100 million miles traveled by all vehicles. The fatality rate for CMV crashes was 0.18 in 2019, a decrease from 0.19 in 2018. While these crash rates can be used to look at trends, it is important to note that with the new measure used by FMCSA the CMV rates cannot be compared with the rates for all vehicles because of the use of total VMT to normalize CMV crashes.

Table 2: CMV and All Crashes 2014-2019 per 100 Million Miles Traveled

	CMV Crash Rates				Crash Rates for All Vehicles			
Year	Fatal Crash Rate	Injury Crash Rate	PDO Crash Rate	Total CMV Crash Rate	Fatal Crash Rate	Injury Crash Rate	PDO Crash Rate	Total Crash Rate
2014	0.19	3.36	4.73	8.29	1.38	92.87	231.17	325.41
2015	0.18	3.33	4.92	8.43	1.45	100.38	248.07	349.91
2016	0.18	3.33	4.83	8.34	1.44	101.65	251.08	354.18
2017	0.20	3.27	4.90	8.36	1.43	96.40	239.24	337.08
2018	0.19	3.10	4.87	8.16	1.43	91.85	233.87	327.24
2019	0.18	3.01	4.48	7.66	1.35	89.08	230.03	320.57

Analysis of Crashes by Month

Since monthly crash data fluctuates considerably from year to year, it is difficult to conclude that the month of the year has any effect on the number of crashes. Specifically, the fatal crash count exhibits large variations since small crash numbers vary more, percentage wise, than large crash numbers.

Table 3: CMV Crashes by Month in 2019

MONTH	FATAL CRASHES	TOTAL KILLED	INJURY CRASHES	PDO	TOTAL CRASHES	TOTAL TRUCKS AND BUSSES	% CRASHES
January	6	7	116	183	305	323	7.9%
February	4	7	125	173	302	317	7.9%
March	2	3	136	215	353	371	9.2%
April	7	10	109	201	317	345	8.3%
May	6	6	129	202	337	352	8.8%
June	7	7	105	159	271	289	7.1%
July	10	12	135	182	327	356	8.5%
August	10	10	132	167	309	334	8.1%
September	9	10	137	213	359	389	9.4%
October	8	8	150	221	379	406	9.9%
November	6	6	121	169	296	314	7.7%
December	13	13	110	159	282	298	7.3%
TOTAL	88	99	1505	2244	3837	4094	100.0%

Nevertheless, as the data in Table 3 indicates, December had the highest number of fatal crashes with 13 fatal crashes and 13 deaths. The analysis of the CMV crash data for 2019 indicates yearly fatal crash counts in any given month may vary from 2 to 13 with the two highest months being December and July with 23 fatalities.

Violations

There are two ways one can evaluate the citations in CMV crashes, depending on whether we use the number of drivers or the number of citations as the denominator. In a crash, either the CMV driver or the non-CMV driver or both may receive a citation. Thus, when the number of CMV drivers and the number of car drivers are used as the denominator, respectively, the two percentages do not add up to 100%. They may be lower or higher than 100% if there are many crashes where no driver received a citation, and this percentage will be higher than 100% if there are many crashes where both drivers received a citation. For instance, in 2014 the two percentages added up to more than 100% for fatal crashes. The average of both percentages approximates the percentage of all drivers involved in CMV crashes that received citations.

The percentage of CMV drivers in fatal crashes who received a citation has increased by 10.3 percentage points from 2018 to 2019. In 2019, of all the CMV drivers in fatal crashes, 45.5% were cited for a violation compared to 35.2% in 2018. For injury and property damage crashes, 47.7% and 49.6% of the CMV drivers were cited for violations, respectively. Also 62.5% of non-CMV drivers received violations in fatal CMV crashes in 2019. These figures show that in fatal crashes non-CMV drivers continued to have a higher percentage of citations than CMV drivers. In PDO crashes 49.6% of CMV drivers and 54.4% of non-CMV drivers received citations. The percentages of CMV drivers receiving citations in injury crashes was 47.7% which is lower than the 49.4% received by non-CMV drivers.

Secondly, we can look at the percentage of citations going to CMV versus the non-CMV driver. These two percentages add up to 100% all of the time. Even if the percentage of all citations in crashes would decline to say 10%, still half, for example, could go to the CMV driver and half could go to the non-CMV driver. The percentage of citations in fatal crashes going to the CMV driver has increased from 2018 to 2019, i.e. from 42.7% in 2018 to 50.0% in 2019 (see Table 4b). For injury and property damage only crashes (PDO) the CMV driver received 48.5% and 52.2% of violations, respectively.

Table 4a: Violations as a Percentage of Drivers

As Percentage of Drivers								
	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
Year	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver
2014	29.9%	74.4%	47.2%	50.3%	47.2%	55.3%	46.8%	53.4%
2015	28.4%	73.6%	49.8%	48.3%	49.0%	52.6%	48.9%	51.2%
2016	26.5%	57.5%	48.8%	48.1%	48.1%	53.7%	47.9%	51.3%
2017	39.3%	56.7%	49.0%	48.6%	47.9%	55.7%	48.1%	52.6%
2018	35.2%	45.9%	48.9%	47.7%	48.0%	54.3%	48.0%	51.3%
2019	45.5%	62.5%	47.8%	49.3%	49.6%	54.4%	48.8%	52.3%

*These are the percentage of drivers receiving citations.

Table 4b: Violations as a Percentage of all Violations

As Percentage of Violations								
	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
YEAR	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver
2014	35.6%	64.4%	48.2%	51.8%	51.5%	48.5%	49.8%	50.2%
2015	28.7%	71.3%	50.7%	49.3%	52.5%	47.5%	51.2%	48.8%
2016	29.9%	70.1%	48.9%	51.1%	51.0%	49.0%	49.7%	50.3%
2017	41.6%	58.4%	49.7%	50.3%	50.8%	49.2%	50.1%	49.9%
2018	42.7%	57.3%	51.3%	48.7%	51.0%	49.0%	50.9%	49.1%
2019	50.0%	50.0%	48.6%	51.4%	52.2%	47.8%	50.7%	49.3%
These are all the citations in a crash and the percentages going to either CMV driver or other car driver.								

The different views become apparent when the total number of citations given to the drivers change over time. The relative distribution of the citations changed in fatal crashes in the past year with 50.0% going to the CMV driver in fatal crashes and 50.0% going to the non-CMV driver. Thus in 2019, although the total percentage of citations in fatal CMV crashes declined, citations were relatively evenly distributed (49.3%) to the non-CMV drivers in 2019 compared to 2018 where 49.1% went to the non-CMV driver (Table 4b).

Figure 5 visualizes the findings expressed above, namely the relative percentage citations going to CMV drivers versus non-CMV drivers in fatal CMV crashes. Overall, the percentages have been relatively stable over the past years for fatal crashes with roughly one third of citations going to the CMV driver and the remaining going to the non-CMV driver.

Figure 5: CMV and Non-CMV Driver Violations in Fatal Crashes: 2014-2019

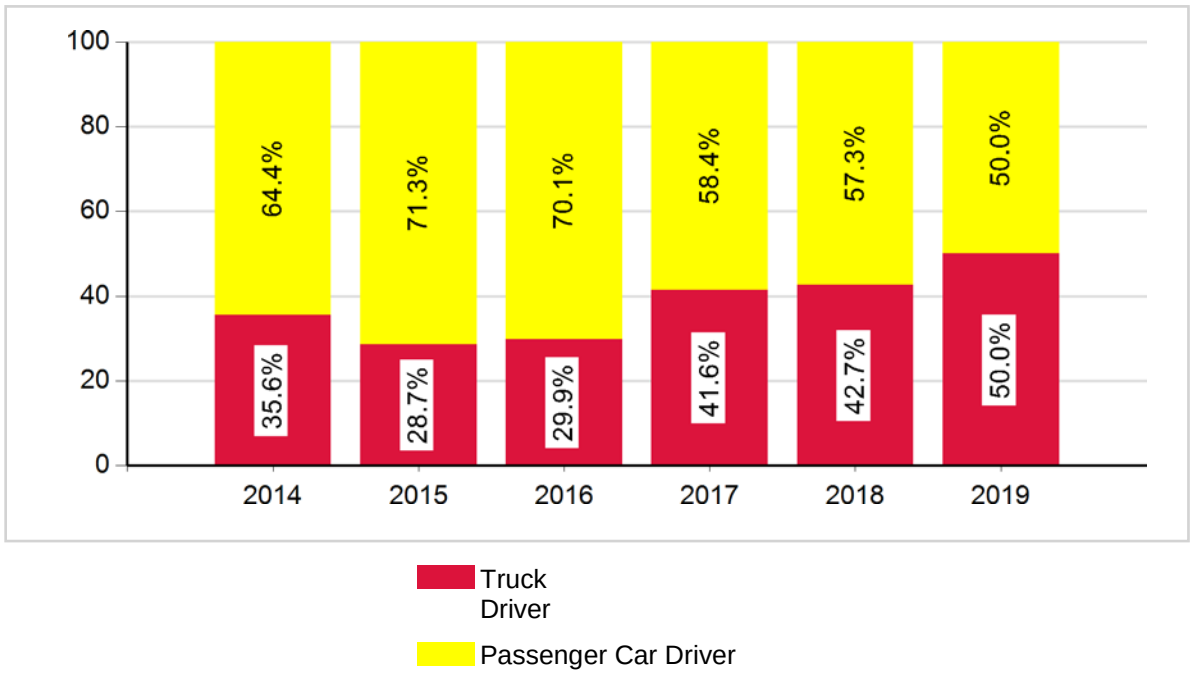


Table 5 shows the types of violations drivers receive. Including unkown violations, CARELESS OPERATION and OTHER violations accounted for the majority of violations of the CMV driver in fatal crashes for 2019, namely 15 and 5, respectively, which combined accounted for 40.0% of violations. The percentage of CARELESS OPERATION and OTHER violations for CMV drivers was 41.6% for injury CMV crashes and 45.5% for PDO crashes.

Table 5: Type of Violation of CMV Driver

VIOLATIONS	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
CARELESS OPERATION	15	30.0%	260	34.4%	428	36.3%	703	35.4%
CUT CORNER ON LEFT TURN	0	0.0%	2	0.3%	7	0.6%	9	0.5%
CUTTING IN, IMPROPER PASSING	1	2.0%	23	3.0%	49	4.2%	73	3.7%
DISREGARDED TRAFFIC CONTROL	2	4.0%	30	4.0%	27	2.3%	59	3.0%
DRIVER CONDITION	2	4.0%	17	2.2%	12	1.0%	31	1.6%
DRIVING LEFT OF CENTER	4	8.0%	20	2.6%	12	1.0%	36	1.8%
EXCEEDING SAFE SPEED LIMIT	1	2.0%	7	0.9%	15	1.3%	23	1.2%
EXCEEDING STATED SPEED LIMIT	1	2.0%	4	0.5%	0	0.0%	5	0.3%
FAILED TO DIM HEADLIGHTS	0	0.0%	0	0.0%	0	0.0%	0	0.0%
FAILED TO SET OUT FLAGS, FLARES	0	0.0%	1	0.1%	0	0.0%	1	0.1%
FAILURE TO SIGNAL	0	0.0%	0	0.0%	1	0.1%	1	0.1%
FAILURE TO YIELD	4	8.0%	97	12.8%	123	10.4%	224	11.3%
FOLLOWING TOO CLOSELY	3	6.0%	101	13.3%	109	9.3%	213	10.7%
IMPROPER BACKING	1	2.0%	18	2.4%	35	3.0%	54	2.7%
IMPROPER PARKING	2	4.0%	6	0.8%	4	0.3%	12	0.6%
IMPROPER STARTING	0	0.0%	2	0.3%	0	0.0%	2	0.1%
MADE WIDE RIGHT TURN	0	0.0%	4	0.5%	10	0.8%	14	0.7%
OTHER	5	10.0%	55	7.3%	108	9.2%	168	8.5%
OTHER IMPROPER TURNING	1	2.0%	26	3.4%	41	3.5%	68	3.4%
TURNED FROM WRONG LANE	0	0.0%	14	1.8%	18	1.5%	32	1.6%
UNKNOWN	8	16.0%	60	7.9%	117	9.9%	185	9.3%
VEHICLE CONDITION	0	0.0%	10	1.3%	62	5.3%	72	3.6%
NO VIOLATIONS	60		826		1,196		2,082	
TOTAL VIOLATIONS	50	100.0%	757	100.0%	1,178	100.0%	1,985	100.0%
% Violations from Table 4a	45.5%		47.8%		49.6%		48.7%	
% from Table 4b	50.0%		48.6%		52.2%		50.7%	

Includes multiple violations for the driver

Manner of Collision

Table 6 shows the manner of collision. "REAR END," "RIGHT ANGLE," and "HEAD-ON" collisions make up more than 75.4%, [(28 + 14 + 10) / (88 - 19)] of all fatal multi-vehicle CMV crashes. This is a 13.7 percentage point decrease from 89.0% in 2018 for these three types of collisions. Also, the non-collision fatal CMV crashes decreased from 22 in 2018 to 19 in 2019.

Table 6: Manner of Collision

MANNER OF COLLISION	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
HEAD-ON	10	11.4%	46	3.1%	31	1.4%	87	2.3%
LEFT TURN - ANGLE	1	1.1%	53	3.5%	50	2.2%	104	2.7%
LEFT TURN - OPPOSITE DIRECTION	2	2.3%	52	3.5%	63	2.8%	117	3.0%
LEFT TURN - SAME DIRECTION	1	1.1%	19	1.3%	33	1.5%	53	1.4%
NON-COLLISION WITH MOTOR VEHICLE	19	21.6%	219	14.6%	531	23.7%	769	20.0%
OTHER	1	1.1%	82	5.4%	157	7.0%	240	6.3%
REAR END	28	31.8%	534	35.5%	639	28.5%	1201	31.3%
RIGHT ANGLE	14	15.9%	214	14.2%	211	9.4%	439	11.4%
RIGHT TURN - OPPOSITE DIRECTION	0	0.0%	8	0.6%	5	0.2%	13	0.3%
RIGHT TURN - SAME DIRECTION	2	2.3%	24	1.6%	44	2.0%	70	1.8%
SIDESWIPE - OPPOSITE DIRECTION	3	3.4%	51	3.4%	54	2.4%	108	2.8%
SIDESWIPE - SAME DIRECTION	7	8.0%	203	13.5%	426	19.0%	636	16.6%
Total	88	100.0%	1,505	100.0%	2,244	100.0%	3,837	100.0%

High Crash Locations in Interstate Corridors

There are two main corridors in Louisiana, (1) Interstate 10/12 corridor in south Louisiana from the Texas state line to the Mississippi state line, and (2) Interstate 20 corridor in north Louisiana from the Texas state line to the Mississippi state line. Both corridors have significant interstate traffic.

Interstate 10/12 Corridor

The Interstate 10/12 Corridor includes 16 parishes, and these parishes accounted for 56.8% of fatal CMV crashes and 58.2% of all crashes in 2019.

Figure 6: CMV Crashes in Interstates 10/12 Corridor

The corridor includes Louisiana Interstates 10, 110, 310, 610, 12, 55, and parts of 59 as shown in Figure 6. The major US Highways along the corridor are US 90, US 190 and US 61.

The cumulative percentage graphs provide an easy to understand method to identify high crash locations. For any interval of mileposts, the steeper the graph, the more crashes occur within the mileposts. For instance, Figure 7 shows the cumulative frequency of commercial vehicle crashes for 2019 and 2018 by milepost on interstate 10 along with all crashes. The comparison between 2018 and 2019 shows the percentage of crashes within the first 50 miles of Interstate 10 has decreased slightly from 27.7% to 25.6%.

Figure 7: Cumulative Percentage of Interstate 10 Crashes in 2018 and 2019

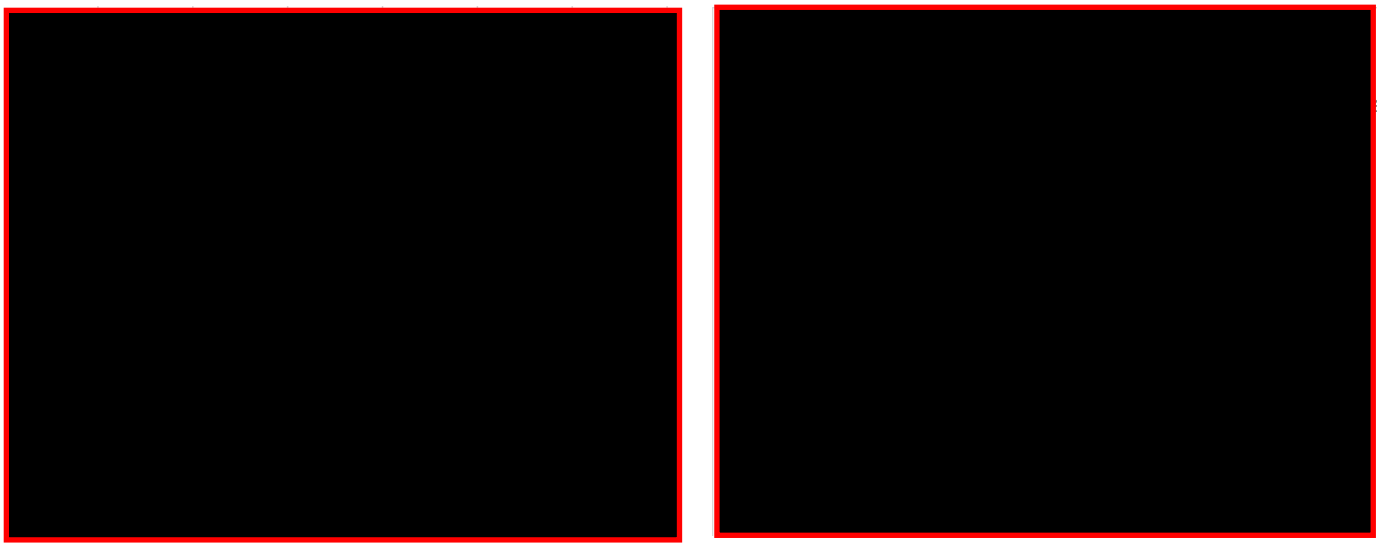


Figure 8a: CMV Interstate 10 in New Orleans between Mileposts 200 to 230

The interstate section of I10 between West Baton Rouge and the I10/12 split has about 3.2% of all crashes on I10, but about 6.6% of all CMV crashes. These crashes are shown in Figure 8b.

Figure 8b: CMV Crashes on Interstate 10 Between WBR and I10/12 Split

Figure 8c shows that several CMV crashes in 2019 occurred on the I10 bridge in Baton Rouge.

Figure 8c: CMV Crashes on Interstate 10 Bridge in Baton Rouge

Figure 8d: CMV Crashes on Interstate 10 West of I10 Bridge

Figure 9 shows an increase in the cumulative percent of CMV crashes within the first 20 miles of Interstate 12 from 10.0% in 2018 to 17.7% in 2019.

Figure 9: Cumulative Percent of Interstate 12 Crashes 2018 and 2019

Figure 10a shows the Interstate 12 corridor between Baton Rouge and Slidell, which had a decrease in CMV crashes from 195 in 2018 to 196 in 2019, and an increase in fatalities over the same period (6 to 13).

Figure 10a: CMV Crashes on Interstate 12 Corridor

Figure 10b shows crashes at the intersection of I12 and I55.

Figure 10b: CMV Crashes on Interstate 12 and I55

Figure 10c shows crashes on Interstate 12 around US190.

Figure 10c: CMV Crashes on Interstate 12 Near US 190

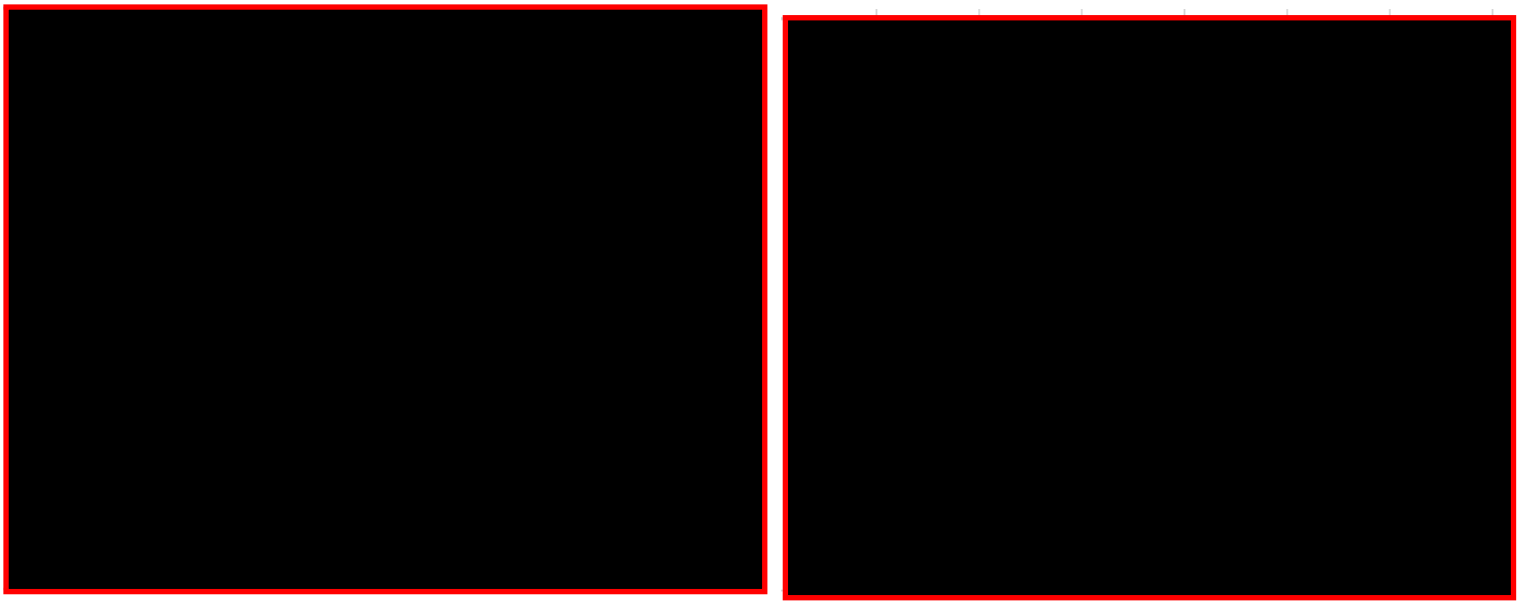
Interstate 20 Corridor

The Interstate 20 corridor includes 10 parishes. The three parishes (Caddo, Ouachita, and Bossier) account for 11.4% of all commercial vehicle crashes in 2019. As illustrated in Figure 11, the corridor includes Interstate 20, 220 and parts of Interstate 49. The major US highways along the corridor are 61, 65, 71, 80, 165, 167.

Figure 11: Interstate 20 Corridor

Figure 12 shows the cumulative frequency of commercial motor vehicle crashes by milepost on Interstate 20 along with all crashes. The percentage of CMV crashes within the first 50 miles of Interstate 20 increased from about 40.1% in 2018 to about 41.5% in 2019.

Figure 12: Cumulative Frequency of CMV and all Crashes on Interstate 20



Work-Zone Crashes

Work zones are of specific interest for enforcement activities because they are potential hotspots for crashes. The work zones were derived from a DOTD file containing all scheduled work on interstates. Because this schedule may not accurately reflect the actual construction, the numbers in Table 7a are likely to be higher than the true number of work zone crashes. There are also work-zone indicators on the crash report form (Work Zone Indicator (Yes/No) and a Road Condition field with 14 options, two of which are Construction Repair and Construction No Warning). However, these crash report fields have drawbacks, as they may not be filled out consistently in cases where there is a work zone but no work is performed. Also, since many of the crashes occur before the work zone when traffic slows down or comes to a standstill, these crashes may be missed in the crash report. This analysis will include the 5 miles of the approach to the construction zone. Since we do not have the detailed information about the lane the construction is in or if both lanes are under construction, we include 5 miles on either side of the construction zone indicated in the work schedule by DOTD.

Table 7a shows that the number of fatal CMV crashes on all interstates decreased by 7.7% from 26 in 2018 to 24 in 2019 while the number of fatal crashes in construction zones increased by 25.0% from 8 to 11 when only the schedule is used. However, the number of crashes must be adjusted by the construction time and miles under construction. For instance, the year 2019 had 18.8% less construction zone day miles, i.e. miles times days under construction. We will therefore adjust the crash count by the miles multiplied by the days under construction to normalize the count. This adjustment does not take into consideration the VMT of CMV within the construction zones because it is not readily available. When miles and days under construction are taken into account, fatal crashes decreased from 3.8 fatal crashes per day-mile in 2018 to 4.4 fatal crashes per day-mile in 2019.

The number of fatal crashes within the +/-5 miles of the construction zones decreased from 17 in 2018 to 16 in 2019 and the number of fatal crashes per day mile decreased from 2.7 in 2018 to 2.2 in 2019 although there was a 18.8% increase in construction.

Also seen in Table 7a is an decrease in all CMV crashes within the +/- 5 miles of the approaches that do not include the construction zones, i.e., from 582 in 2018 to 347 in 2019, a decrease of 40.4%, while the number of crashes within construction zones increased from 439 in 2018 to 530 in 2019, an increase of 20.7% .

Table 7a: Work-Zone CMV Crashes on Interstates (2018-2019) (Based on DOTD Schedule)

 # Within 5 miles of construction zone refers to 2 times 5 miles plus the length of construction
In 5 miles approach to construction zone refers to only the 5 miles on either side of the construction zone excluding the construction zone

		2019				2018				Percent Change			
	WHERE	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL
ALL CMV CRASHES ON INTER-STATES	Count	24	443	812	1279	26	480	907	1413	-7.7%	-7.7%	-10.5%	-9.5%
	Per 100K Miles	7.0	129.6	237.5	374.2	7.6	140.4	265.3	413.4	-7.7%	-7.7%	-10.5%	-9.5%
CONSTRUCTION ZONES	Count	11	174	345	530	8	152	279	439	37.5%	14.5%	23.7%	20.7%
	Per 100K Day-Miles	4.4	69.4	137.7	211.5	3.8	72.0	132.2	208.0	15.8%	-3.6%	4.1%	1.7%
WITHIN 5 MILES OF CONSTRUCTION ZONE	Count	16	309	552	877	17	340	664	1021	-5.9%	-9.1%	-16.9%	-14.1%
	Per 100K Day-Miles	2.2	43.1	76.9	122.2	2.7	54.2	105.8	162.7	-32.3%	-41.7%	-64.2%	-56.2%
IN 5 MILE APPROACH TO CONSTRUCTION ZONES	Count	5	135	207	347	9	188	385	582	-44.4%	-28.2%	-46.2%	-40.4%
	Per 100K Day-Miles	1.1	28.9	44.3	74.3	2.2	45.1	92.5	139.8	-50.4%	-35.9%	-52.0%	-46.8%

Using crashes that are marked both on the crash report as both (Work Zone Indicator "Yes" and a Road Condition field "Construction Repair" or "Construction No Warning"), the number of fatal crashes in the approach to the construction zones was zero (0) in 2018 and 2019, since the crashes in the approaches are not to be counted as work zone crashes according to the crash manual unless the crash falls within the first warning signs. Table 7b therefore does not report crashes before or after construction zones. The number of fatal CMV crashes based on the crash report was 0 in 2018 and 4 in 2019.

Table 7b: Work-Zone CMV Crashes on Interstates (2018-2019)
(Based on Crash Report)

Within 5 miles of construction zone refers to 2 times 5 miles plus the length of construction
In 5 miles approach to construction zone refers to only the 5 miles on either side of the construction zone excluding the construction zone

		2019				2018				Percent Change			
	WHERE	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL
ALL CMV CRASHES	Count	24	443	812	1279	26	480	907	1413	-7.7%	-7.7%	-10.5%	-9.5%
ON INTER-STATES	Per 100K Day-Miles	7.0	129.6	237.5	374.2	7.6	140.4	265.3	413.4	-7.7%	-7.7%	-10.5%	-9.5%
CONSTRUCTION	Count	4	43	52	99	0	49	39	88	N/A	-12.2%	33.3%	12.5%
ZONES	Per 100K Day-Miles	1.6	17.2	20.7	39.5	0.0	23.2	18.5	41.7	∞	-26.1%	12.3%	-5.3%

Same As within construction zones; **Not available based on the crash report.

Seat Belt Usage

Seat belt usage is one of the most important factors preventing death in a crash. Table 8 shows that in 2019, 40.0% of CMV drivers killed in a crash did not wear a seat belt while 58.0% of all drivers killed in all motor vehicle crashes were not wearing a seat belt. However, since the number of CMV drivers killed is relatively small, these percentages vary more than the percentages for all drivers. The five-year average shows that CMV drivers killed had a higher rate of seat belt usage than drivers of passenger vehicles. The 5-year average of CMV drivers killed not wearing a seat belt was 44.2% compared to 58.7% for passenger vehicles.

Table 8: Seat Belt Usage
This includes only drivers with known seat belt use.

	CMV Drivers						All Drivers					
Year	Drivers Killed w/o Seatbelt	Total Number of Drivers Killed	% of Drivers Killed w/o seatbelt	Drivers Seriously Injured w/o Seatbelt	Total Number of Drivers Seriously Injured	% of Drivers Seriously Injured w/o seatbelt	Drivers Killed w/o Seatbelt	Total No. of Drivers Killed	% of Drivers Killed w/o seatbelt	Drivers Seriously Injured w/o Seatbelt	Total No. of Drivers Seriously Injured	% of Drivers Seriously Injured w/o seatbelt
2015	2	7	28.6%	2	10	20.0%	262	413	63.4%	210	633	33.2%
2016	5	7	71.4%	3	9	33.3%	211	366	57.7%	209	621	33.7%
2017	7	17	41.2%	0	9	0.0%	229	395	58.0%	198	605	32.7%
2018	4	10	40.0%	5	10	50.0%	209	372	56.2%	177	539	32.8%
2019	6	15	40.0%	0	10	0.0%	206	355	58.0%	236	627	37.6%
Year Total	24	56	44.2%	10	48	20.7%	1,117	1,901	58.7%	1,030	3,025	34.0%

Hazardous Material

CMV crashes involving CMVs carrying hazardous material are of particular interest due to their potential danger to the environment and community when hazardous materials are released. Over the past 6 years, from 2014 to 2019, on average, about 15.2% of crashes involving hazardous material resulted in a release of the hazardous material. This percentage was 15.5% in 2019. The actual percentage of release may be higher since many of the CMVs identified as transporting hazardous material may actually be returning with an empty load, thus the percentage of releases based on crashes with full loads of hazardous material may be much higher than the percentages shown in Table 9.

The interstates accounted for 43.1% of all crashes involving hazardous materials in 2019. Specifically, Interstate 10 accounts for 50.0% of all hazardous material crashes on interstates in 2019. US highways account for 15.5% of all hazardous material crashes in 2019, with US 90 and US 190 accounting for 44.4% of hazardous material crashes on US highways. State highways accounted for 33.6% of all hazardous crashes in 2019.

Table 9: Hazardous Material Crashes

(Includes only known Chemicals Transported)

Year	Transport Crashes	Released Crashes	% Released	Transport Fatal Crashes	Released Fatal Crashes
2014	141	23	16.3%	1	0
2015	138	25	18.1%	4	0
2016	86	12	14.0%	4	1
2017	123	15	12.2%	5	2
2018	96	14	14.6%	4	1
2019	117	18	15.4%	4	2

The types of hazardous material reported in CMV crashes are displayed in Table 10. On average, 17.9% involve corrosive material, 15.4% involve flammable gasses, and 46.2% involve flammable liquids. The remaining percentages are various chemicals. Note that Table 10 does not include unknown chemicals.

Table 10: Type of Hazardous Material in CMV Crashes

Year	2014		2015		2016		2017		2018		2019	
Material	Transp.	Rel.	Transp.	Rel.	Transp.	Rel.	Transp.	Rel.	Transp.	Rel.	Transp.	Rel.
CORROSIVE GASES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0
CORROSIVE MATERIALS	23	2	24	5	14	2	26	3	16	1	21	3
DANGEROUS WASTES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0
DANGEROUS WHEN WET MATERIALS	0	0	0	0	0	0	0	0	0	0	0	0
ENVIRONMETALLY HAZARDOUS SUBSTANCES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0
EXPLOSIVES	0	0	0	0	0	0	1	0	0	0	1	0
EXPLOSIVES WITH A MASS EXPLOSION HAZARD	0	0	0	0	1	0	0	0	0	0	0	0
EXPLOSIVES WITH A NO SIGNIFICANT BLAST HAZARD	0	0	0	0	1	0	2	0	0	0	0	0
EXPLOSIVES WITH A PREDOMINANTLY A FIRE HAZARD	0	0	1	0	0	0	1	0	0	0	1	0
EXPLOSIVES WITH A PROJECTION HAZARD	0	0	0	0	0	0	0	0	0	0	0	0
EXTREMELY INSENSITIVE DETONATING ARTICLES	0	0	0	0	0	0	0	0	0	0	0	0
FLAMMABLE GASES	20	0	17	2	2	0	10	2	16	2	18	3
FLAMMABLE LIQUIDS	69	17	62	15	44	8	55	6	48	9	54	10
FLAMMABLE SOLIDS	1	0	2	0	1	0	2	1	1	0	1	0
FLAMMABLE SOLIDS OR SPONTANEOUSLY COMBUSTIBLE MATERIALS OR DANGEROUS WHEN WET MATERIALS	0	0	0	0	0	0	0	0	0	0	0	0
GASES	0	0	1	0	0	0	4	0	3	0	1	0
GASES TOXIC BY INHALATION	1	0	4	0	3	0	0	0	0	0	0	0
INFECTIOUS SUBSTANCES	0	0	0	0	0	0	0	0	0	0	1	0
MISC DANGEROUS GOODS	11	2	10	1	8	2	12	2	8	0	6	2
MISC DANGEROUS GOODS (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0
NON-FLAMMABLE, NON-TOXIC COMPRESSED GASES	7	0	8	2	2	0	7	1	0	0	6	0
ORGANIC PEROXIDES	1	0	2	0	1	0	0	0	0	0	0	0
OXIDIZERS	1	1	1	0	5	0	1	0	0	0	3	0
OXIDIZERS AND ORGANIC PEROXIDES	0	0	0	0	0	0	0	0	1	1	0	0
RADIOACTIVE MATERIALS	2	0	0	0	0	0	0	0	0	0	0	0
SPONTANEOUSLY COMBUSTIBLE MATERIALS	1	0	1	0	0	0	0	0	0	0	1	0
TOXIC MATERIALS	4	1	5	0	4	0	2	0	2	0	3	0
TOXIC MATERIALS AND INFECTIOUS SUBSTANCES	0	0	0	0	0	0	0	0	1	1	0	0
VERY INSENSITIVE EXPLOSIVES; BLASTING AGENTS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	141	23	138	25	86	12	123	15	96	14	117	18

(Includes only known Chemicals Transported)

Distractions

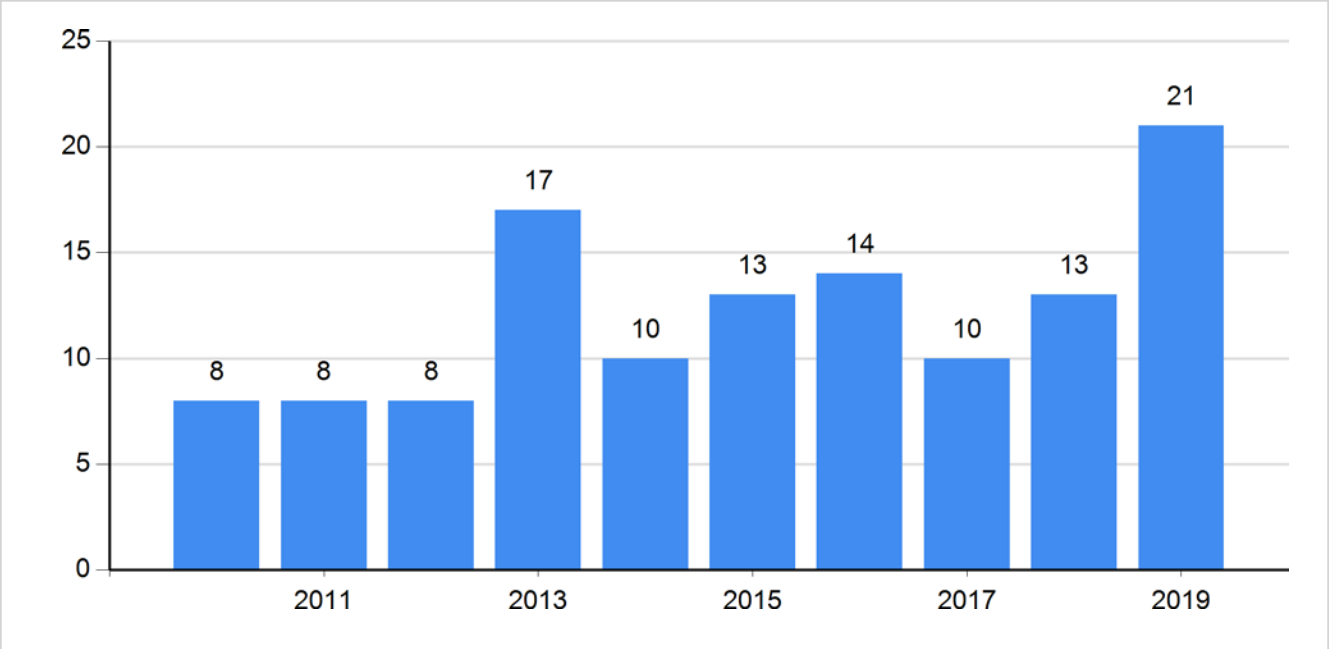
Although distractions play an important role in all crashes, including CMV crashes, 2 fatal CMV crashes were reported in 2019 in which cell phone usage was the cause of distraction. Table 11 shows the breakdown of crashes by type of distraction for CMV crashes.

Table 11: Distractions

Driver Distraction Description	Fatal	Injury	PDO	Total
CELL PHONE	2	12	07	21
NOT DISTRACTED	82	1,719	1,357	3,160
OTHER ELECTRONIC DEVICE	0	02	02	04
OTHER INSIDE THE VEHICLE	1	38	23	62
OTHER OUTSIDE THE VEHICLE	3	37	26	66
UNKNOWN	17	367	324	708

The number of CMV crashes with cell phone usage has varied between 17 in 2003 to a low of 8 in 2010 - 2012 and was 21 in 2019.

Figure 13: Cell Phone Use as a Distraction in CMV Crashes



Changes in Number of Crashes by Parish

The 15 parishes with the highest number of fatal and non-fatal CMV crashes are listed in Table 12. From 2018 to 2019, Louisiana experienced a significant increase in all CMV crashes along the I10/I12 corridor and I20: Rapides (26.0%), Caddo (15.8%), and Terrebonne (11.7%). Jefferson (3.3%) and Lafourche (2.5%) also had considerable increases in CMV crashes. Thus, the I10/I12 corridor and I20 are candidates for increased enforcement to counteract the increasing trend in crashes.

Table 12: CMV Crashes by Parishes

	FATAL CRASHES		TOTAL CRASHES		TOTAL CRASHES	
PARISH	2019	2018	2019	2018	Diff	% Change
East Baton Rouge	10	8	346	358	-12	-3.4%
Calcasieu	3	4	272	302	-30	-9.9%
Orleans	4	2	234	285	-51	-17.9%
Caddo	3	6	212	183	29	15.8%
Lafayette	3	3	199	207	-8	-3.9%
Jefferson	1	1	187	181	6	3.3%
St. Tammany	4	3	181	183	-1	-1.1%
Ouachita	1	1	128	133	-2	-3.8%
Tangipahoa	2	4	126	154	-28	-18.2%
Rapides	3	4	121	96	25	26.0%
Livingston	4	4	109	127	-18	-14.2%
Ascension	2	6	101	114	-13	-11.4%
West Baton Rouge	2	4	98	124	-26	-21.0%
Bossier	0	1	97	111	-14	-12.6%
St. Martin	3	0	88	116	-28	-24.1%
DeSoto	2	1	86	73	13	17.8%
TOTAL	47	52	2,585	2,747	-162	-5.9%

Rural CMV Crashes

Table 13a displays the count of crashes on rural roads by highway type. Although the data shows that rural roads account for most of the fatal and injury crashes, rural roads make up the majority of the roadway sections. While the fatal CMV crashes on US highways decreased by 1 or 4.8% from 2018 to 2019, the fatal CMV crashes on state highways decreased by 1 (-2.4%), and the fatal CMV crashes on interstates decreased by 2 or -7.7%.

The injury crashes during the same period exhibit a decrease of 7.7% on interstates, a decrease of 1.6% on state highways and a decrease of 2.5% on US highways.

Table 13a: CMV Crashes by Highway Type 2019

HIGHWAY TYPE	FATAL CRASHES			INJURY CRASHES			PDO			TOTAL		
	2019 CRASH	2018 CRASH	DIFFERENCE	2019 CRASH	2018 CRASH	DIFFERENCE	2019 CRASH	2018 CRASH	DIFFERENCE	2019 CRASH	2018 CRASH	DIFFERENCE
INTERSTATE	24	26	-7.7%	443	480	-7.7%	812	907	-10.5%	1,279	1,413	-9.5%
US HIGHWAY	20	21	-4.8%	311	319	-2.5%	388	376	3.2%	709	716	0.4%
STATE ROAD	40	41	-2.4%	498	490	1.6%	712	780	-8.7%	1,250	1,311	-4.7%
PARISH ROAD	04	02	100.0%	250	138	81.2%	323	231	39.8%	577	371	55.5%
CITY/LOCAL ROADS	00	05	-100%	03	124	-97.6%	07	143	-95.1%	10	272	-96.3%
OTHERS	00	00	0.0%	00	01	-100%	02	01	100%	02	02	0.0%
ALL ROADWAYS	88	95	-7.4%	1,505	1,552	-3.0%	2,244	2,438	-8.0%	3,837	4,085	-6.1%
% Interstates	27.3%	27.4%	-0.1%	29.4%	30.9%	-1.5%	36.2%	37.2%	-1.0%	33.4%	34.6%	-1.3%
% US	22.7%	22.1%	0.6%	20.7%	20.6%	0.1%	17.3%	15.4%	1.9%	18.7%	17.5%	1.2%
% State	45.5%	43.2%	2.3%	31.1%	31.6%	1.5%	31.8%	32.0%	-0.2%	3.6%	32.1%	0.5%
% State, US, & Interstate	95.5%	92.6%	2.8%	73.2%	83.1%	0.15%	85.3%	84.7%	0.6%	84.7%	84.3%	0.4%

The crash report does not indicate if a crash was urban or rural besides the city code which is not a reliable indicator. Because of urban sprawl over the years there are many urbanized areas outside the city limits.

Table 13b shows the percentage of crashes by severity and highway type coded with city code 00. This code is most often used by the state police to identify crashes that occurred outside of city limits. However, some crashes worked by state police could have been inside city limits. About 70.8% of the fatal interstate CMV crashes occurred in rural areas and about 55.5% of the injury interstate CMV crashes occurred in rural areas. Overall, 78.4% of fatal CMV crashes and 56.2% of all CMV crashes occur in rural areas. Thus, rural interstates, US highways, and state highways should continue to be the focus of enforcement.

Table 13b: Percentage of CMV Crashes Outside City Limits 2019

HWY Type	Fatal	Injury	PDO	Total
INTERSTATE	70.8%	55.5%	58.3%	57.5%
US HIGHWAY	85.0%	46.3%	50.8%	49.8%
STATE ROAD	85.0%	63.9%	68.0%	66.9%
PARISH ROAD	25.0%	35.6%	41.5%	38.8%
CITY/LOCAL ROADS AND STREETS	0.0%	33.3%	0.0%	10.0%
ALL ROADWAYS	78.4%	53.0%	57.4%	56.2%

Bus Crashes

Small and large busses are of particular interest to law enforcement because of the potential risk of high number of fatalities in a single crash. The number of CMV bus crashes, injuries, and fatalities is depicted in Table 14. In 2019, there were 95 large bus crashes where 171 passengers were injured inside the bus. There were 43 small bus crashes with no people killed but 22 passengers were injured. There were 161 school bus crashes with 442 passengers injured. Overall, in 2019, there were 5 people killed in 299 bus crashes and 635 injured. The number of bus crashes has decreased from 320 in 2018 to 299 in 2019, and the number of injuries has decreased from 668 in 2018 to 635 in 2019. The number of school bus crashes has decreased by 12.0%, while small bus crashes have increased by 7.5%, and large bus crashes have decreased by 2.1%.

Table 14: CMV Bus Crashes in 2018-5/12/2020

Year		Count	SCHOOL BUS	SMALL BUS	LARGE BUS	TOTAL
2018	Bus Crash	Number of Crashes	183	40	97	320
		Number of Fatal Crashes	3	0	1	4
		Number Total Killed	4	0	1	5
		Number Killed Inside Bus	1	0	0	1
		Number Injured Inside Bus	383	38	247	668
2019	Bus Crash	Number of Crashes	161	43	95	299
		Number of Fatal Crashes	3	0	2	5
		Number Total Killed	3	0	2	5
		Number Killed Inside Bus	0	0	1	1
		Number Injured Inside Bus	442	22	171	635
2020	Bus Crash	Number of Crashes	42	13	42	97
		Number of Fatal Crashes	1	0	0	1
		Number Total Killed	1	0	0	1
		Number Killed Inside Bus	0	0	0	0
		Number Injured Inside Bus	72	5	53	130

Figure 14 shows the trend in bus crashes. The graph shows that the total number of bus crashes have decreased from 320 in 2018 to 299 in 2019.

Figure 14: CMV Bus Crashes 2013 to 7/23/2020

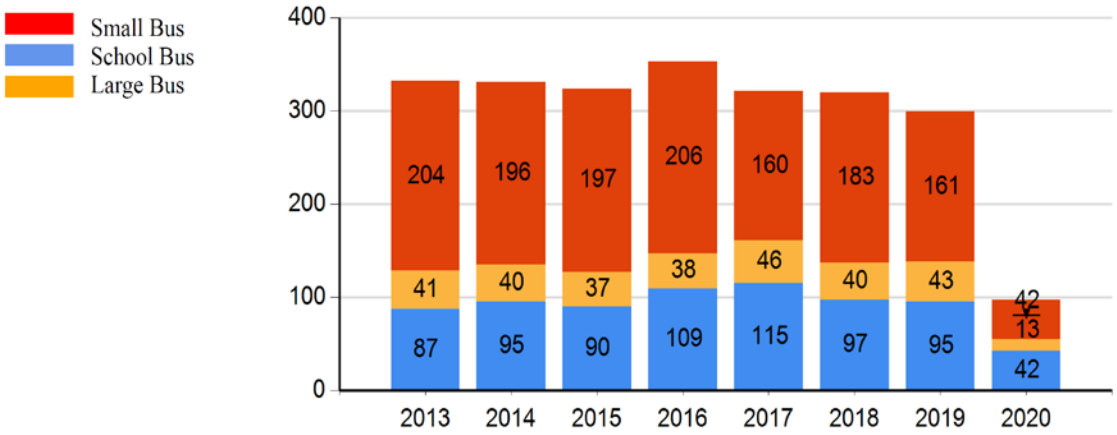
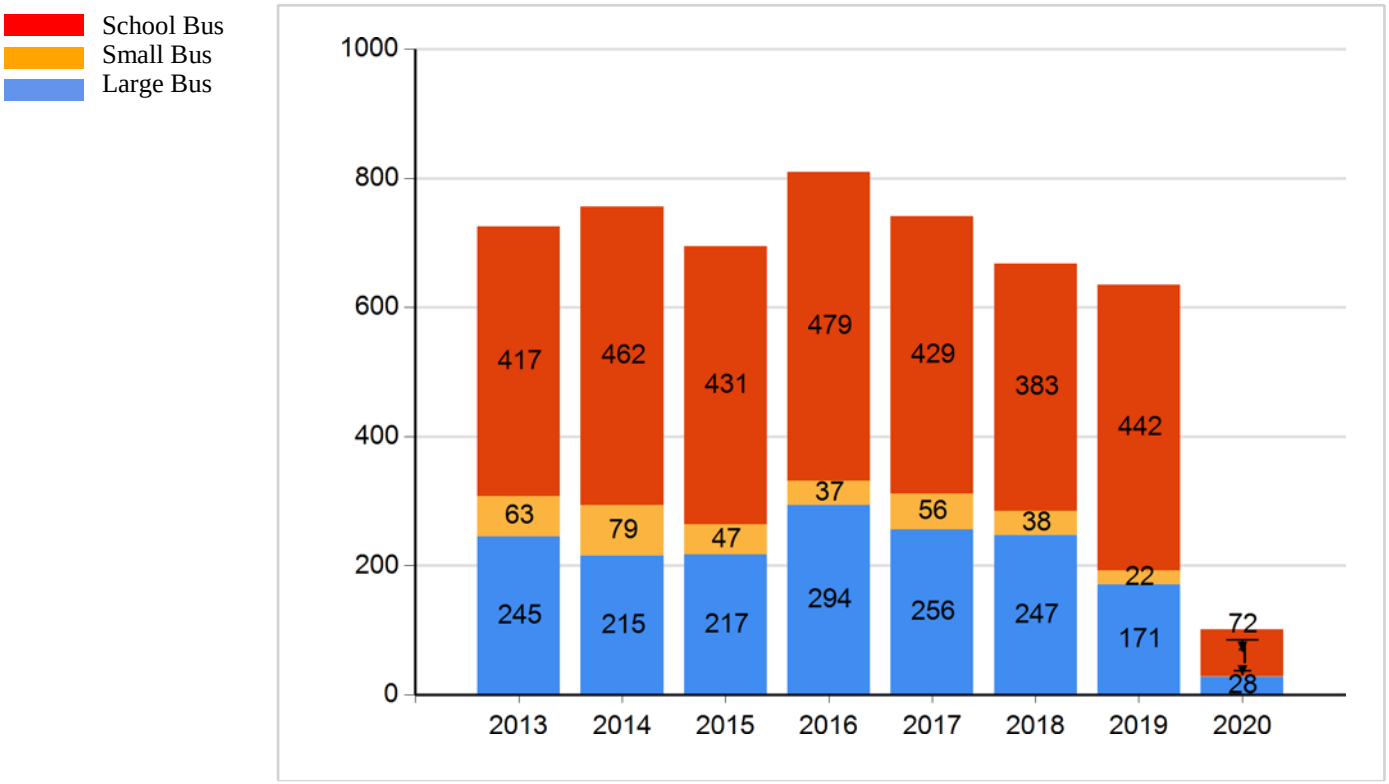


Figure 15 shows that injuries in bus crashes peaked in 2016 with 810 injuries reported.

Figure 15 : Bus-Crash Injuries 2013 to 7/23/2020



While the number of bus crashes has decreased by 7.0% from 2018 to 2019, namely from 320 to 299, the number of injuries have decreased by 4.94%, namely from 668 to 635.

2020 YTD Crash Results

The 2020 data is still being collected at this time, but the following Table 15 provides a snapshot of CMV crashes YTD.

Table 15: CMV Crashes YTD 2020

CMV Crashes and Type	2020 YTD*
Total CMV Fatal Crashes	25
Total Fatalities	26
Total Passenger Carrier Crashes	97
Total Passenger Carrier Fatal Crashes	1
Total Passenger Carrier Fatalities (In Crash)	0
Total HazMat Crashes	46
Total HazMat Fatal Crashes	1
Total HazMat Fatalities	1
Total Construction Zone Fatal Crashes (Table 7a)	0
Total in 5 Mile Approach to Construction Zone (Table 7a)	0

As of Thursday, July 23, 2020, NA: Not available at this time.

Note: Definition of Reportable CMV Crashes: To qualify for reporting to the SafetyNET, the crash has to involve a private or public motor carrier, a GCWR weight of at least 10,001 pounds or above, a motor vehicle that can transport 9 or more people including the driver seat or a vehicle displaying a hazmat placard and one of the three conditions apply: (1) a tow of one of the vehicles, (2) the transportation of an injured person to medical treatment away from the crash scene, or (3) a fatality.