

Commercial Vehicle Safety - 2018

**COMMERCIAL VEHICLE SAFETY
IN LOUISIANA
An Analysis of Truck Crashes for 2018**

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Summary

In 2018, the total number of reported CMV crashes decreased by -0.8% compared to 2017. The number of fatal CMV crashes decreased from 96 in 2017 to 94 in 2018, a decrease of 2.1%. The number of injury CMV crashes decreased slightly from 1,609 to 1,552 during the same period, a decrease of 3.5%.

The percentage of CMV drivers in fatal crashes cited for violations decreased from 2017 to 2018. The percentage of CMV drivers receiving violations in fatal crashes decreased from 39.3% in 2017 to 35.5% in 2018. Careless Operation and Failure To Yield were the most frequent citations. CMV drivers in injury and property damage crashes were cited for violations 48.9% and 48.0% 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 34.2% of all violations given to the driver of the CMV in fatal crashes and 34.4% in all crashes. Other violations with relatively high occurrence rates were failure to yield, with 15.8% in fatal and 12.9% 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 34.2% of all violations the CMV driver receives. In all CMV crashes, this percentage is 36.0%. When failure to yield is included, these percentages increase to 50.0% for fatal crashes and 48.8% for all crashes.

The manner of collision most common in all CMV crashes are rear-end types at 30.6% and non-collision types (single vehicle crashes) at 18.6%. For fatal crashes, the types were head-on collisions at 21.3%, rear-end collisions at 33.0%, right angle collisions at 13.8%, and non-collision with motor vehicle crashes at 23.4%.

During 2018, 33.8% of all CMV crashes in Louisiana occurred on interstates, 30.9% occurred on state highways, and 16.3% occurred on U.S. highways. In 2017, the respective percentages were 34.0%, 30.6%, and 18.0%. From 2017 to 2018, the number of fatal interstate crashes decreased slightly from 37 to 25. U.S. highways experienced an increase in fatal crashes of 40.0% and state highways saw an increase of 8.1%. Thus, the overall decrease in CMV related fatalities of 3.1% was largely due to the decrease of fatalities on interstates.

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The number of fatal CMV crashes in work zones increased from 7 to 11 from 2017 to 2018. The number of fatal crashes within 5 miles of the construction zone (construction zone plus 5 miles on either end) increased by 6.7%, namely from 15 to 16. However, the number of fatal crashes in the 5 miles approaching the construction zone from either end (excluding the construction zones) decreased from 8 in 2017 to 5 in 2018.

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 2018 and trend data for the past five years. Table 1 depicts CMV crashes from 2013 to 2018 and shows that the fatal CMV crashes have decreased by 2.1% from 2017 to 2018 while the 5-year change in fatal CMV crashes was 13.3%. The CMV involved injury crashes decreased by 3.5% while the CMV involved PDO crashes increased by 1.1% from 2017 to 2018. The total number of CMV crashes decreased by 0.8% from 2017 to 2018, less than the decrease observed for all vehicle crashes, which was 1.3%.

Table 1: CMV Crashes 2013-2018

Year	CMV Crashes				CMV Crashes Percentages				All Crashes				%CMV			
	Fatal	Injury	PDO	Total CMV	Fatal	Injury	PDO	Total CMV	Fatal	Injury	PDO	Total	Fatal	Injury	PDO	Total
2013	83	1,583	2,104	3,770	2.2%	42.0%	55.8%	2.4%	652	43,552	109,868	154,072	12.7%	3.6%	1.9%	2.4%
2014	92	1,622	2,284	3,998	2.3%	40.6%	57.1%	2.5%	665	44,810	111,544	157,019	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	48,372	119,546	168,616	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	49,823	123,155	173,682	12.6%	3.3%	1.9%	2.4%
2017	96	1,609	2,413	4,118	2.3%	39.1%	58.6%	2.5%	706	47,451	117,800	165,957	13.6%	3.4%	2.0%	2.5%
2018	94	1,552	2,440	4,086	2.3%	38.0%	59.7%	2.5%	715	45,953	117,038	163,706	13.1%	3.4%	2.1%	2.5%
1 Yr % Change	-2.1%	-3.5%	1.1%	-0.8%	0.0%	-1.1%	1.1%	0.0%	1.3%	-3.2%	-0.6%	-1.3%	-0.5%	0.0%	0.0%	0.0%
5 Yr % Change	13.3%	-2.0%	16.0%	8.4%	0.1%	-4.0%	3.9%	0.0%	9.7%	5.5%	6.5%	6.3%	0.4%	-0.3%	0.2%	0.0%
Average	5.6%	-3.7%	5.7%	2.0%	0.1%	-2.2%	2.2%	0.0%	4.4%	-1.8%	0.6%	-0.1%	0.2%	-0.1%	0.1%	0.0%

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While injury crashes involving all motor vehicles decreased by 3.2% from 2017 to 2018, CMV injury crashes decreased by 3.5% in the same period. CMV property damage crashes increased by 1.1% from 2017 to 2018, while all CMV crashes combined decreased by 0.8%.

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 2018 by 0.5 percentage points compared to 2017 while the CMV injury crashes as percent of all injury crashes decreased by 0.01 percentage points compared to 2017.

Figure 1: CMV and Non-CMV Crashes 2013-2018

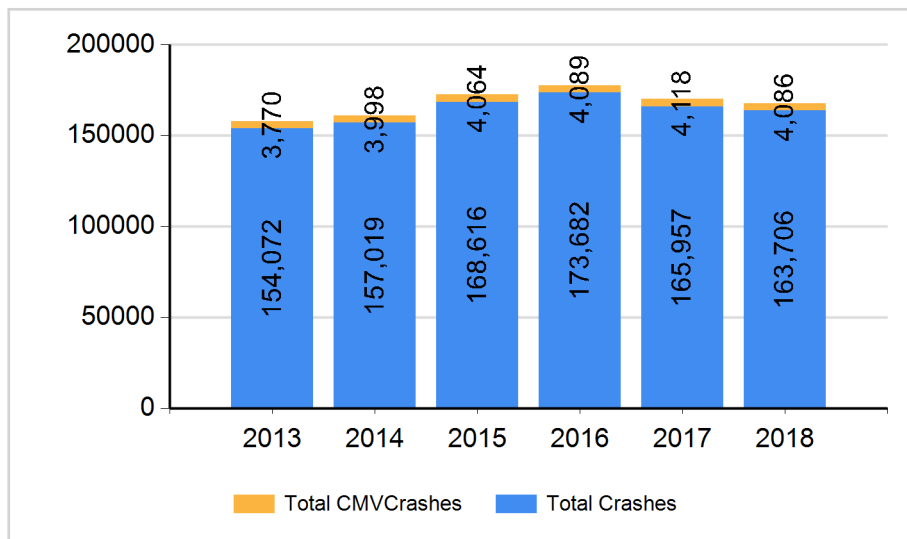
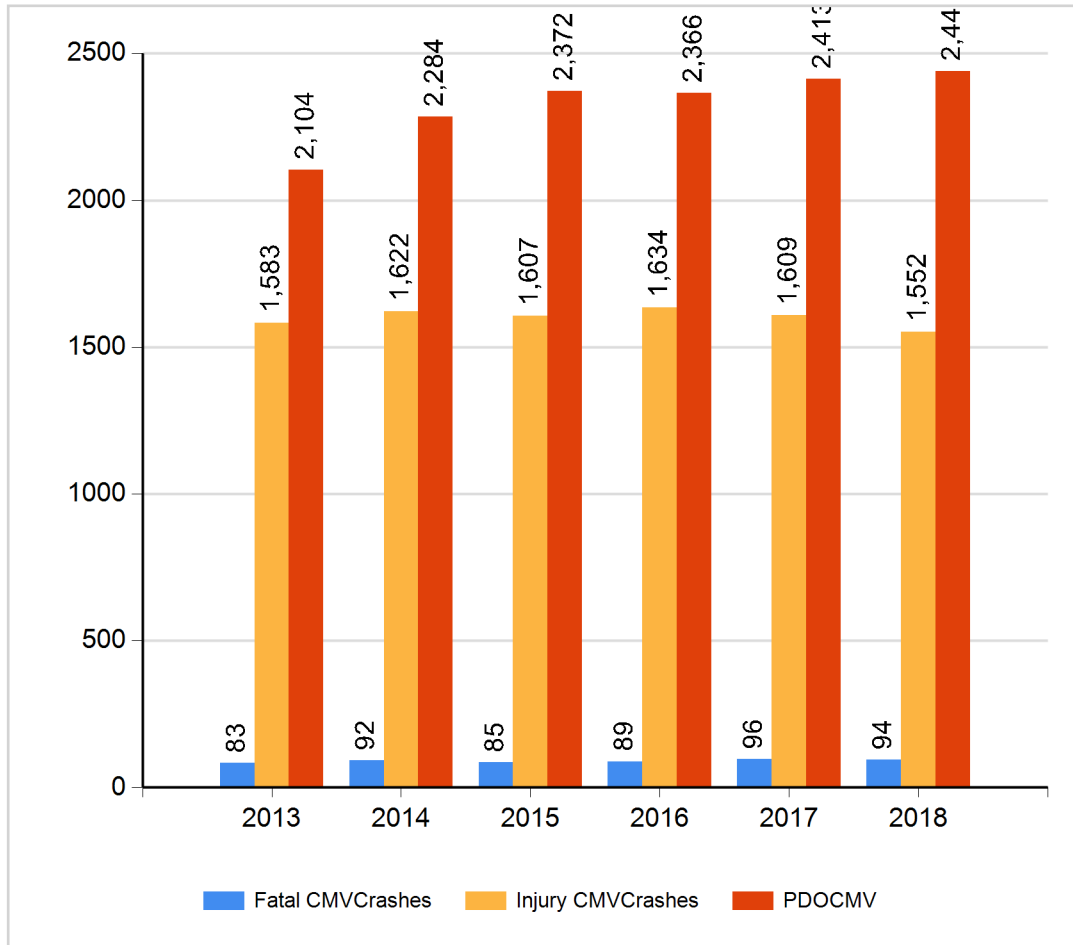


Figure 1 highlights the number of all crashes and CMV crashes from 2013 to 2018. There were 32 less CMV crashes and 2,251 less non-CMV crashes in 2018 compared to 2017. In addition, as Table 1 shows, CMV crashes accounted for 2.5% of all crashes in 2018, about the same as the 2.5% in 2017.

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Figure 2 shows that the number of fatal injury CMV crashes decreased from 2017 to 2018, while the number of property damage only CMV crashes increased.

Figure 2: CMV Crashes by Severity: 2013-2018



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Figure 3: CMV and Non-CMV Fatal Crashes 2013-2018

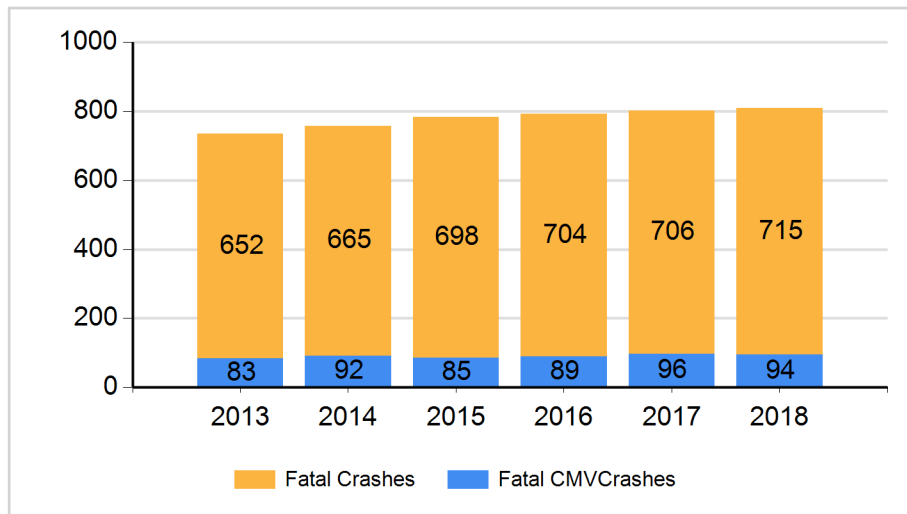
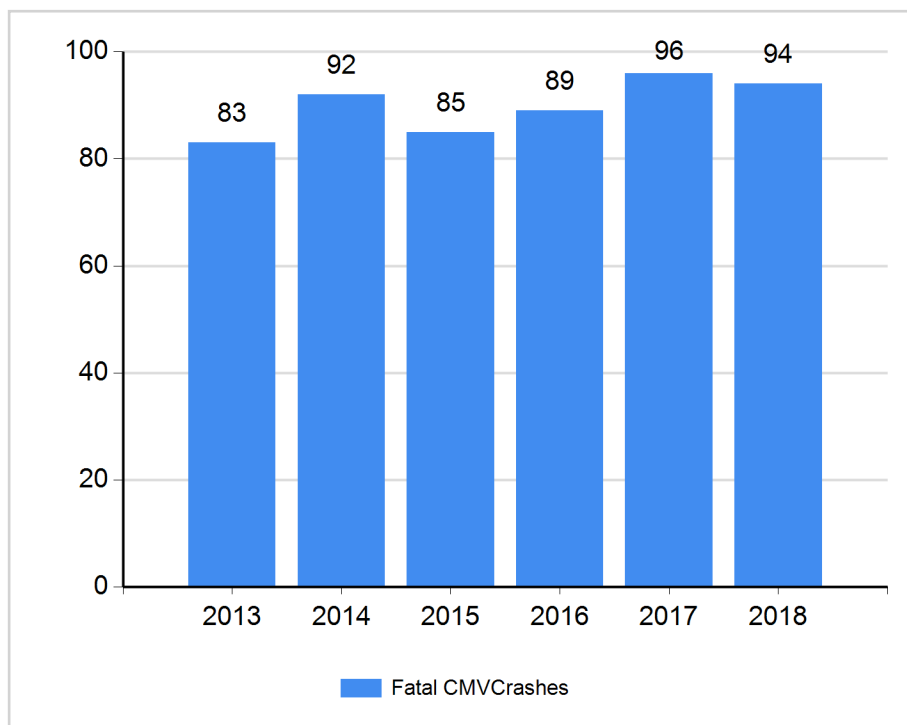


Figure 4: Fatal CMV Crashes by Year: 2013-2018



Figures 3 and 4 illustrate fatal non-CMV and CMV crashes from 2013 to 2018. While the increase in the number of non-CMV fatal crashes was 1.3% from 2017 to 2018, the CMV fatal crashes experienced a large decrease of 2.1%, which amounts to 2 less fatal CMV crashes and 4.8% less fatalities. Figure 4 shows the trend of fatal CMV crashes which indicates that 2013 had the lowest number of fatal CMV crashes in the past five years. In fact, 2013 had the lowest number of CMV fatal crashes since at least 1999 when the yearly report was first compiled.

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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 0.19 in 2018, the same as in 2017. 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 2013-2018 per 100 Million Miles Traveled

Year	CMV Crash Rates				Crash Rates for All Vehicles			
	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
2013	0.17	3.31	4.41	7.89	1.37	91.19	230.05	322.61
2014	0.19	3.36	4.73	8.29	1.38	92.87	231.17	325.42
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	101.63	251.21	354.28
2017	0.20	3.28	4.92	8.40	1.44	96.79	240.29	338.52
2018	0.19	3.17	4.98	8.33	1.46	93.73	238.73	334.01

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.

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Table 3: CMV Crashes by Month in 2018

MONTH	FATAL CRASHES	TOTAL KILLED	INJURY CRASHES	PDO	TOTAL CRASHES	TOTAL TRUCKS AND BUSES	% CRASHES
January	6	8	137	223	366	396	9.0%
February	4	4	104	164	272	290	6.7%
March	14	14	129	204	347	376	8.5%
April	9	10	128	203	340	361	8.3%
May	7	10	137	184	328	346	8.0%
June	11	13	119	171	301	316	7.4%
July	4	4	116	180	300	315	7.3%
August	10	10	141	181	332	353	8.1%
September	8	9	122	215	345	369	8.4%
October	11	12	160	251	422	459	10.3%
November	7	7	123	230	360	384	8.8%
December	3	3	136	234	373	396	9.1%
TOTAL	94	104	1552	2440	4086	4361	100.0%

Nevertheless, as the data in Table 3 indicates, March had the highest number of fatal crashes with 14 fatal crashes and 14 deaths. The analysis of the CMV crash data for 2018 indicates yearly fatal crash counts in any given month may vary from 3 to 14 with the three highest months being March, June, and October with 14, 13, and 12 people killed.

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.

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The percentage of CMV drivers in fatal crashes who received a citation has decreased by 3.7 percentage points from 2017 to 2018. In 2018, of all the CMV drivers in fatal crashes, 35.5% were cited for a violation compared to 39.3% in 2017. For injury and property damage crashes, 48.9% and 48.0% of the CMV drivers were cited for violations, respectively. Also 46.4% of non-CMV drivers received violations in fatal CMV crashes in 2018. These figures show that in fatal crashes non-CMV drivers continued to have a higher percentage of citations than CMV drivers. In PDO crashes 48.0% of CMV drivers and 54.2% of non-CMV drivers received citations. The percentages of CMV drivers receiving citations in injury crashes was 48.9% which is higher than the 47.6% 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 2017 to 2018, i.e. from 41.6% in 2017 to 42.7% in 2018 (see Table 4b). For injury and property damage only crashes (PDO) the CMV driver received 51.3% and 51.0% of violations, respectively.

Table 4a: Violations as a Percentage of Drivers

As Percentage of Drivers								
Year	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver
2013	34.8%	62.8%	48.8%	48.2%	48.6%	53.4%	48.4%	51.2%
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%	48.5%	47.9%	55.7%	48.1%	52.6%
2018	35.5%	46.4%	48.9%	47.6%	48.0%	54.2%	48.0%	51.3%

*These are the percentage of drivers receiving citations.

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Table 4b: Violations as a Percentage of all Violations

As Percentage of Violations								
YEAR	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver
2013	34.4%	65.6%	49.0%	51.0%	51.5%	48.5%	50.0%	50.0%
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%	51.0%	49.0%

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 42.7% going to the CMV driver in fatal crashes and 57.3% going to the non-CMV driver. Thus in 2018, although the total percentage of citations in fatal CMV crashes declined, citations were given less frequently (49.0%) to the non-CMV drivers in 2018 compared to 2017 where 49.9% 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.

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Figure 5: CMV and Non-CMV Driver Violations in Fatal Crashes: 2013-2018

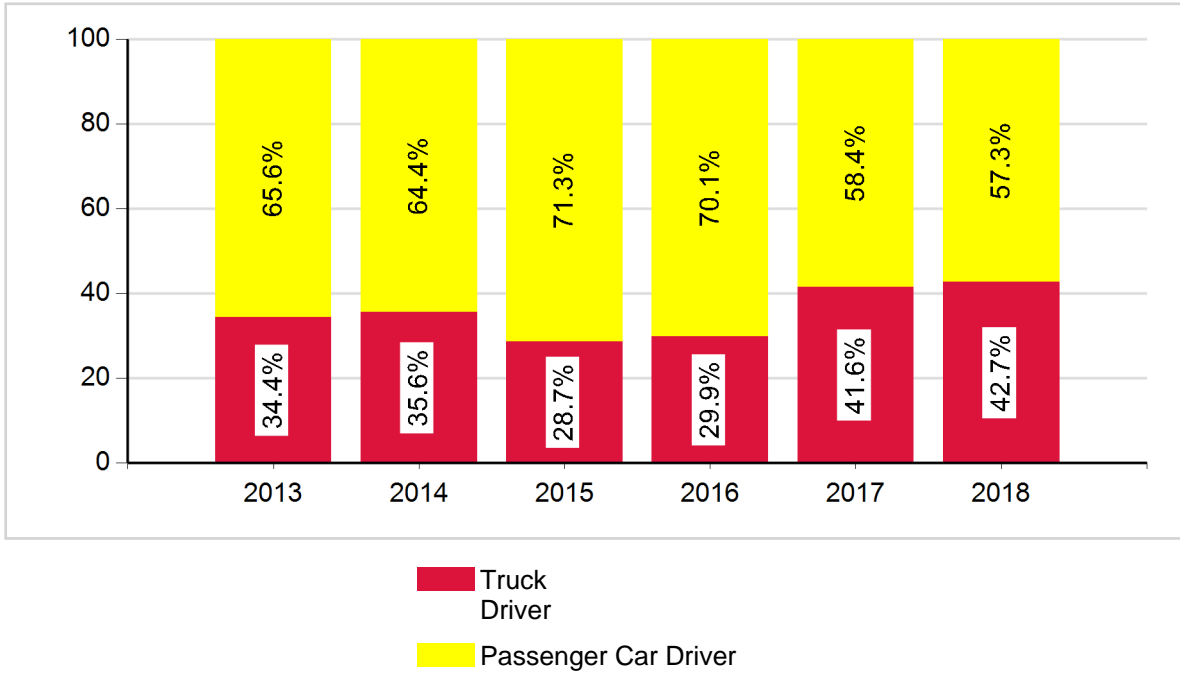


Table 5 shows the types of violations drivers receive. Including unknown violations, CARELESS OPERATION and FAILURE TO YIELD violations accounted for the majority of violations of the CMV driver in fatal crashes for 2018, namely 13 and 6, respectively, which combined accounted for 50.0% of violations. The percentage of CARELESS OPERATION and FAILURE TO YIELD violations for CMV drivers was 47.2% for injury CMV crashes and 47.3% for PDO crashes.

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Table 5: Type of Violation of CMV Driver

VIOLATIONS	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
CARELESS OPERATION	13	34.2%	264	32.5%	442	35.7%	719	34.4%
CUT CORNER ON LEFT TURN	0	0.0%	6	0.7%	14	1.1%	20	1.0%
CUTTING IN, IMPROPER PASSING	1	2.6%	26	3.2%	55	4.4%	82	3.9%
DISREGARDED TRAFFIC CONTROL	1	2.6%	21	2.6%	32	2.6%	54	2.6%
DRIVER CONDITION	1	2.6%	20	2.5%	20	1.6%	41	2.0%
DRIVING LEFT OF CENTER	4	10.5%	9	1.1%	21	1.7%	34	1.6%
EXCEEDING SAFE SPEED LIMIT	0	0.0%	7	0.9%	21	1.7%	28	1.3%
EXCEEDING STATED SPEED LIMIT	0	0.0%	3	0.4%	1	0.1%	4	0.2%
FAILED TO DIM HEADLIGHTS	0	0.0%	1	0.1%	0	0.0%	1	0.0%
FAILED TO SET OUT FLAGS, FLARES	1	2.6%	0	0.0%	2	0.2%	3	0.1%
FAILURE TO SIGNAL	0	0.0%	1	0.1%	1	0.1%	2	0.1%
FAILURE TO YIELD	6	15.8%	119	14.7%	144	11.6%	269	12.9%
FOLLOWING TOO CLOSELY	2	5.3%	116	14.3%	94	7.6%	212	10.1%
IMPROPER BACKING	0	0.0%	19	2.3%	39	3.1%	58	2.8%
IMPROPER PARKING	0	0.0%	7	0.9%	7	0.6%	14	0.7%
IMPROPER STARTING	0	0.0%	1	0.1%	1	0.1%	2	0.1%
MADE WIDE RIGHT TURN	0	0.0%	7	0.9%	14	1.1%	21	1.0%
OTHER	2	5.3%	77	9.5%	116	9.4%	195	9.3%
OTHER IMPROPER TURNING	0	0.0%	22	2.7%	41	3.3%	63	3.0%
TURNED FROM WRONG LANE	0	0.0%	9	1.1%	16	1.3%	25	1.2%
UNKNOWN	6	15.8%	58	7.1%	117	9.4%	181	8.7%
VEHICLE CONDITION	1	2.6%	19	2.3%	41	3.3%	61	2.9%
NO VIOLATIONS	69		848		1,342		2,259	
TOTAL VIOLATIONS	38	100.0%	812	100.0%	1,239	100.0%	2,089	100.0%
% Violations from Table 4a	35.5%		48.9%		48.0%		48.0%	
% from Table 4b	42.7%		51.3%		51.0%		51.0%	

**Includes multiple violations for the driver*

Manner of Collision

Table 6 shows the manner of collision. "REAR END," "HEAD-ON," and "RIGHT ANGLE" collisions make up more than 88.9%, $[(31 + 20 + 13) / (94 - 22)]$ of all fatal multi-vehicle CMV crashes. This is a 6.8 percentage point decrease from 95.7% in 2017 for these three types of collisions. Also, the non-collision fatal CMV crashes decreased from 27 in 2017 to 22 in 2018.

Table 6: Manner of Collision

MANNER OF COLLISION	FATAL CRASHES		INJURY CRASHES		PDO		TOTAL CRASHES	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
HEAD-ON	20	21.3%	58	3.7%	33	1.4%	111	2.7%
LEFT TURN - ANGLE	1	1.1%	39	2.5%	60	2.5%	100	2.4%
LEFT TURN - OPPOSITE DIRECTION	2	2.1%	51	3.3%	68	2.8%	121	3.0%
LEFT TURN - SAME DIRECTION	0	0.0%	20	1.3%	43	1.8%	63	1.5%
NON-COLLISION WITH MOTOR VEHICLE	22	23.4%	224	14.4%	515	21.1%	761	18.6%
OTHER	0	0.0%	84	5.4%	193	7.9%	277	6.8%
REAR END	31	33.0%	522	33.6%	698	28.6%	1251	30.6%
RIGHT ANGLE	13	13.8%	238	15.3%	257	10.5%	508	12.4%
RIGHT TURN - OPPOSITE DIRECTION	0	0.0%	5	0.3%	15	0.6%	20	0.5%
RIGHT TURN - SAME DIRECTION	0	0.0%	24	1.5%	31	1.3%	55	1.3%
SIDESWIPE - OPPOSITE DIRECTION	3	3.2%	49	3.2%	60	2.5%	112	2.7%
SIDESWIPE - SAME DIRECTION	2	2.1%	238	15.3%	467	19.1%	707	17.3%
Total	94	100.0%	1,552	100.0%	2,440	100.0%	4,086	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.

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 32.4% from 37 in 2017 to 25 in 2018 while the number of fatal crashes in construction zones increased by 57.1% from 7 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 2018 had 36.7% more 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 increased from 4.5 fatal crashes per day-mile in 2017 to 5.2 fatal crashes per day-mile in 2018.

The number of fatal crashes within the +/-5 miles of the construction zones increased from 15 in 2017 to 16 in 2018 and the number of fatal crashes per day mile decreased from 3.2 in 2017 to 2.6 in 2018 largely due to the 36.7% decrease in construction.

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Also seen in Table 7a is an increase in all CMV crashes within the +/- 5 miles of the approaches that do not include the construction zones, i.e., from 342 in 2017 to 408 in 2018, an increase of 19.3%, while the number of crashes within construction zones increased from 200 in 2017 to 401 in 2018, an increase of 100.5% .

**Table 7a: Work-Zone CMV Crashes on Interstates (2017-2018)
(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

	WHERE	2018				2017				Percent Change			
		FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL
ALL CMV CRASHES ON INTER-STATES	Count	25	467	883	1375	37	452	904	1393	-32.4%	3.3%	-2.3%	-1.3%
	Per 100K Miles	7.3	136.6	258.3	402.2	10.8	132.2	264.5	407.5	-32.4%	3.3%	-2.3%	-1.3%
CONSTRUCTION ZONES	Count	11	133	257	401	7	61	132	200	57.1%	118.0%	94.7%	100.5%
	Per 100K Day-Miles	5.2	63.0	121.8	190.0	4.5	39.5	85.5	129.6	15.0%	59.5%	42.4%	46.7%
WITHIN 5 MILES OF CONSTRUCTION ZONE	Count	16	270	523	809	15	178	349	542	6.7%	51.7%	49.9%	49.3%
	Per 100K Day-Miles	2.6	43.0	83.4	128.9	3.2	37.9	74.3	115.4	-47.6%	55.3%	51.2%	49.8%
IN 5 MILE APPROACH TO CONSTRUCTION ZONES	Count	5	137	266	408	8	117	217	342	-37.5%	17.1%	22.6%	19.3%
	Per 100K Day-Miles	1.2	32.9	63.9	98.0	2.5	37.1	68.8	108.4	-52.6%	-11.3%	-7.1%	-9.6%

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 2017 and 2018, 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 only 1 in 2017 and 0 in 2018.

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**Table 7b: Work-Zone CMV Crashes on Interstates (2017-2018)
(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

	WHERE	2018				2017				Percent Change			
		FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL
ALL CMV CRASHES	Count	25	467	883	1375	37	452	904	1393	-32.4%	3.3%	-2.3%	-1.3%
ON INTER-STATES	Per 100K Day-Miles	7.3	136.6	258.3	402.2	10.8	132.2	264.5	407.5	-32.4%	3.3%	-2.3%	-1.3%
CONSTRUCTION	Count	0	48	39	87	1	30	36	67	-100.0%	60.0%	8.3%	29.9%
ZONES	Per 100K Day-Miles	0.0	22.7	18.5	41.2	0.6	19.4	23.3	43.4	-100.0%	17.1%	-20.7%	-5.0%

**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 2018, 40.0% of CMV drivers killed in a crash did not wear a seat belt while 56.5% 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 45.5% compared to 59.7% for passenger vehicles.

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Table 8: Seat Belt Usage

This includes only drivers with known seat belt use.

Year	CMV Drivers						All Drivers					
	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
2014	6	13	46.2%	3	13	23.1%	233	370	63.0%	199	621	32.0%
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	604	32.8%
2018	4	10	40.0%	5	10	50.0%	210	372	56.5%	175	536	32.6%
Year Total	24	54	45.5%	13	51	25.3%	1,145	1,916	59.7%	991	3,015	32.9%

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 2013 to 2018, on average, about 14.8% of crashes involving hazardous material resulted in a release of the hazardous material. This percentage was 14.6% in 2018. 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 42.7% of all crashes involving hazardous materials in 2018. Specifically, Interstate 10 accounts for 51.2% of all hazardous material crashes on interstates in 2018. US highways account for 17.7% of all hazardous material crashes in 2018, with US 90 and US 190 accounting for 35.3% of hazardous material crashes on US highways. State highways accounted for 30.2% of all hazardous crashes in 2018.

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Table 9: Hazardous Material Crashes
(Includes only known Chemicals Transported)

Year	Transport Crashes	Released Crashes	% Released	Transport Fatal Crashes	Released Fatal Crashes
2013	115	15	13.0%	7	1
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%	3	1

The types of hazardous material reported in CMV crashes are displayed in Table 10. On average, 16.7% involve corrosive material, 16.7% involve flammable gasses, and 50.0% 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	2013		2014		2015		2016		2017		2018	
	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	15	2	23	2	24	5	14	2	26	3	16	1
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
ENVIRONMENTALLY HAZARDOUS SUBSTANCES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0
EXPLOSIVES	0	0	0	0	0	0	0	0	1	0	0	0
EXPLOSIVES WITH A MASS EXPLOSION HAZARD	1	0	0	0	0	0	1	0	0	0	0	0
EXPLOSIVES WITH A NO SIGNIFICANT BLAST HAZARD	0	0	0	0	0	0	1	0	2	0	0	0
EXPLOSIVES WITH A PREDOMINANTLY A FIRE HAZARD	0	0	0	0	1	0	0	0	1	0	0	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	15	1	20	0	17	2	2	0	10	2	16	2
FLAMMABLE LIQUIDS	73	11	69	17	62	15	44	8	55	6	48	9
FLAMMABLE SOLIDS	0	0	1	0	2	0	1	0	2	1	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	1	0	0	0	1	0	0	0	4	0	3	0
GASES TOXIC BY INHALATION	1	0	1	0	4	0	3	0	0	0	0	0
INFECTIOUS SUBSTANCES	0	0	0	0	0	0	0	0	0	0	0	0
MISC DANGEROUS GOODS	4	0	11	2	10	1	8	2	12	2	8	0
MISC DANGEROUS GOODS (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0
NON-FLAMMABLE, NON-TOXIC COMPRESSED GASES	2	0	7	0	8	2	2	0	7	1	0	0
ORGANIC PEROXIDES	0	0	1	0	2	0	1	0	0	0	0	0
OXIDIZERS	0	0	1	1	1	0	5	0	1	0	0	0
OXIDIZERS AND ORGANIC PEROXIDES	0	0	0	0	0	0	0	0	0	0	1	1
RADIOACTIVE MATERIALS	1	0	2	0	0	0	0	0	0	0	0	0
SPONTANEOUSLY COMBUSTIBLE MATERIALS	0	0	1	0	1	0	0	0	0	0	0	0
TOXIC MATERIALS	2	1	4	1	5	0	4	0	2	0	2	0
TOXIC MATERIALS AND INFECTIOUS SUBSTANCES	0	0	0	0	0	0	0	0	0	0	1	1
VERY INSENSITIVE EXPLOSIVES; BLASTING AGENTS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	115	15	141	23	138	25	86	12	123	15	96	14

(Includes only known Chemicals Transported)

Distractions

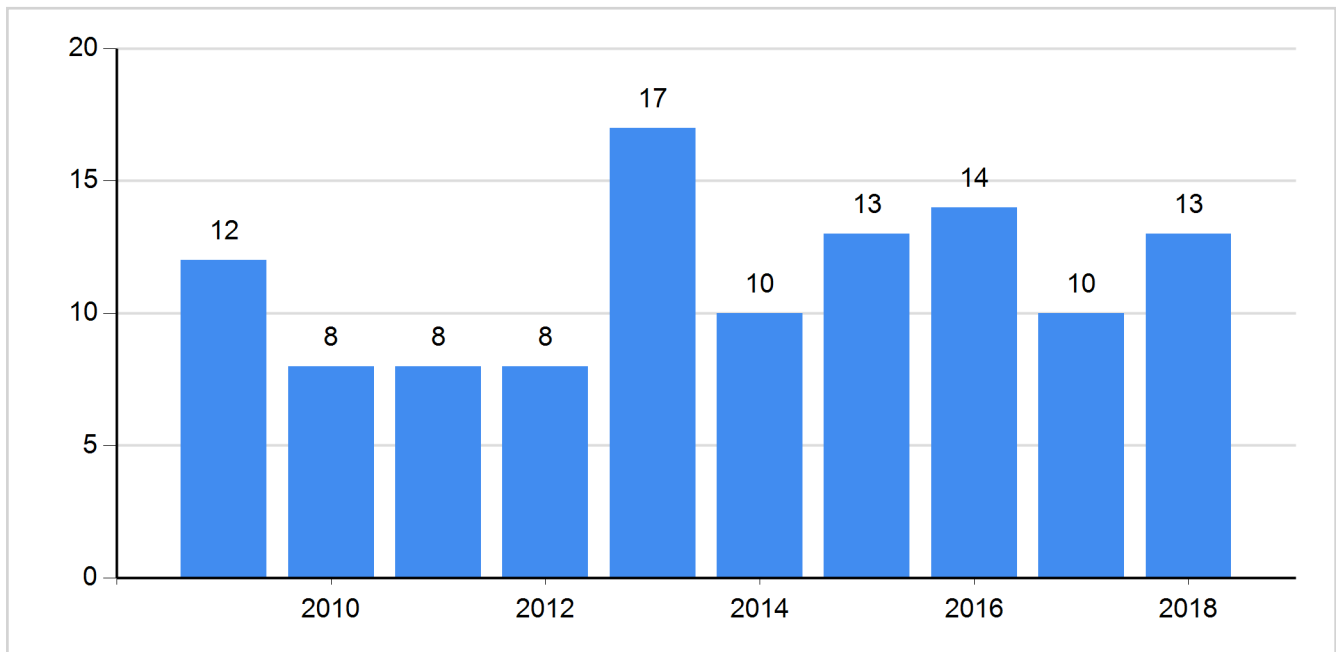
Although distractions play an important role in all crashes, including CMV crashes, 1 fatal CMV crashes were reported in 2018 in which cell phone usage was the cause of distraction. Table 11 shows the breakdown of crashes by type of distraction for CMV crashes.

Table 11: Distractions

Driver Distraction Description	Fatal	Injury	PDO	Total
CELL PHONE	1	05	07	13
NOT DISTRACTED	81	1,815	1,504	3,400
OTHER ELECTRONIC DEVICE	0	01	02	03
OTHER INSIDE THE VEHICLE	0	24	22	46
OTHER OUTSIDE THE VEHICLE	0	37	23	60
UNKNOWN	23	421	326	770

The number of CMV crashes with cell phone usage has varied between 12 in 2010 to a low of 8 in 2010 to 2012 and was 13 in 2018.

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 2017 to 2018, Louisiana experienced a significant increase in all CMV crashes along the I10/I12 corridor and I20: Ascension (23.4%), Caddo (22.8%), and Bossier (19.4%). Calcasieu (11.4%) and Ouachita (9.8%) 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

PARISH	FATAL CRASHES		TOTAL CRASHES		TOTAL CRASHES	
	2018	2017	2018	2017	Diff	% Change
East Baton Rouge	8	8	356	362	-6	-1.7%
Calcasieu	4	2	304	273	31	11.4%
Orleans	2	3	286	294	-8	-2.7%
Lafayette	3	4	210	234	-24	-10.3%
Caddo	6	1	183	149	34	22.8%
Jefferson	2	4	182	226	-44	-19.5%
St. Tammany	2	6	182	211	-29	-13.7%
Tangipahoa	4	5	154	170	-16	-9.4%
Ouachita	1	5	135	123	12	9.8%
West Baton Rouge	4	4	129	95	34	35.8%
Livingston	3	1	126	123	3	2.4%
Ascension	6	5	116	94	22	23.4%
St. Martin	0	5	114	101	13	12.9%
Bossier	1	1	111	93	18	19.4%
Rapides	4	0	96	114	-18	-15.8%
St. Landry	6	3	91	75	16	21.3%
TOTAL	56	57	2,775	2,737	38	1.4%

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 increased by 6 or 40.0% from 2017 to 2018, the fatal CMV crashes on state highways increased by 3 (8.1%), and the fatal CMV crashes on interstates decreased by 12 or -32.4%.

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The injury crashes during the same period exhibit an increase of 3.3% on interstates, a decrease of 9.1% on state highways and a decrease of 11.4% on US highways.

Table 13a: CMV Crashes by Highway Type 2018

HIGHWAY TYPE	FATAL CRASHES			INJURY CRASHES			PDO			TOTAL		
	2018 CRASH	2017 CRASH	DIFFERENCE	2018 CRASH	2017 CRASH	DIFFERENCE	2018 CRASH	2017 CRASH	DIFFERENCE	2018 CRASH	2017 CRASH	DIFFERENCE
INTERSTATE	25	37	-32.4%	467	452	3.3%	883	904	-2.3%	1,375	1,393	-1.3%
US HIGHWAY	21	15	40.0%	287	324	-11.4%	354	400	-11.5%	662	739	-10.4%
STATE ROAD	40	37	8.1%	461	507	-9.1%	754	713	5.8%	1,255	1,257	-0.2%
PARISH ROAD	02	02	0.0%	91	84	8.3%	156	145	7.6%	249	231	7.8%
CITY/LOCAL ROADS	05	05	0.0%	237	233	1.7%	282	244	15.6%	524	482	8.7%
OTHERS	01	00	0.0%	09	09	0.0%	11	07	57.1%	21	16	31.3%
ALL ROADWAYS	94	96	-2.1%	1,552	1,609	-3.5%	2,440	2,413	1.1%	4,086	4,118	-0.8%
% Interstates	26.9%	38.5%	-11.7%	30.3%	28.3%	2.0%	36.4%	37.6%	-1.2%	33.8%	34.0%	-0.1%
% US	22.6%	15.6%	7.0%	18.6%	20.3%	-1.6%	14.6%	16.6%	-2.1%	16.3%	18.0%	-1.7%
% State	43.0%	38.5%	4.5%	29.9%	31.7%	-1.8%	31.0%	29.6%	1.4%	30.9%	30.6%	0.2%
% State, US, & Interstate	92.5%	92.7%	-0.2%	78.7%	80.2%	-1.4%	82.0%	83.8%	-1.9%	81.0%	82.6%	-1.6%

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 60.0% of the fatal interstate CMV crashes occurred in rural areas and about 56.7% of the injury interstate CMV crashes occurred in rural areas. Overall, 71.0% of fatal CMV crashes and 55.5% of all CMV crashes occur in rural areas. Thus, rural interstates, US highways, and state highways should continue to be the focus of enforcement.

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Table 13b: Percentage of CMV Crashes Outside City Limits 2018

HWY Type	Fatal	Injury	PDO	Total
INTERSTATE	60.0%	56.7%	58.4%	57.9%
US HIGHWAY	66.7%	55.4%	51.7%	53.8%
STATE ROAD	87.5%	69.4%	71.0%	70.9%
PARISH ROAD	100.0%	84.6%	85.3%	85.1%
CITY/LOCAL ROADS AND STREETS	0.0%	1.3%	0.4%	0.8%
ALL ROADWAYS	71.3%	53.4%	56.2%	55.5%

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 2018, there were 97 large bus crashes where 247 passengers were injured inside the bus. There were 39 small bus crashes with no people killed but 38 passengers were injured. There were 183 school bus crashes with 383 passengers injured. Overall, in 2018, there were 5 people killed in 319 bus crashes and 668 injured. The number of bus crashes has decreased from 321 in 2017 to 319 in 2018, and the number of injuries has decreased from 741 in 2017 to 668 in 2018. The number of school bus crashes has increased by 14.4%, while small bus crashes have decreased by 15.2%, and large bus crashes have decreased by 15.7%.

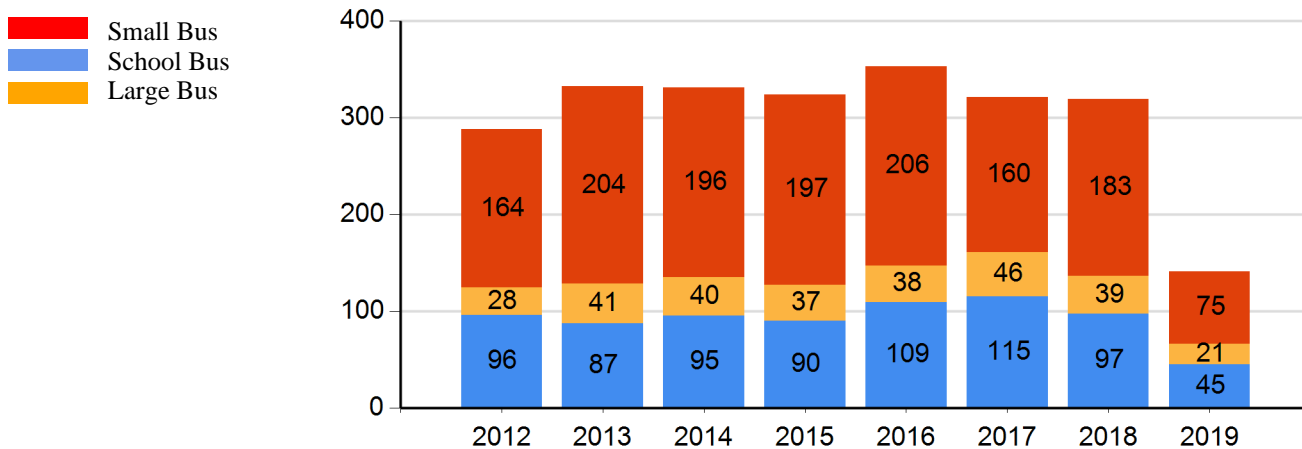
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Table 14: CMV Bus Crashes in 2017-7/23/2019

Year		Count	SCHOOL BUS	SMALL BUS	LARGE BUS	TOTAL
2017	Bus Crash	Number of Crashes	160	46	115	321
		Number of Fatal Crashes	0	0	1	1
		Number Total Killed	0	0	1	1
		Number Killed Inside Bus	0	0	0	0
		Number Injured Inside Bus	429	56	256	741
2018	Bus Crash	Number of Crashes	183	39	97	319
		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	75	21	45	141
		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	131	13	87	231

Figure 14 shows the trend in bus crashes. The graph shows that the total number of bus crashes have decreased from 321 in 2017 to 319 in 2018.

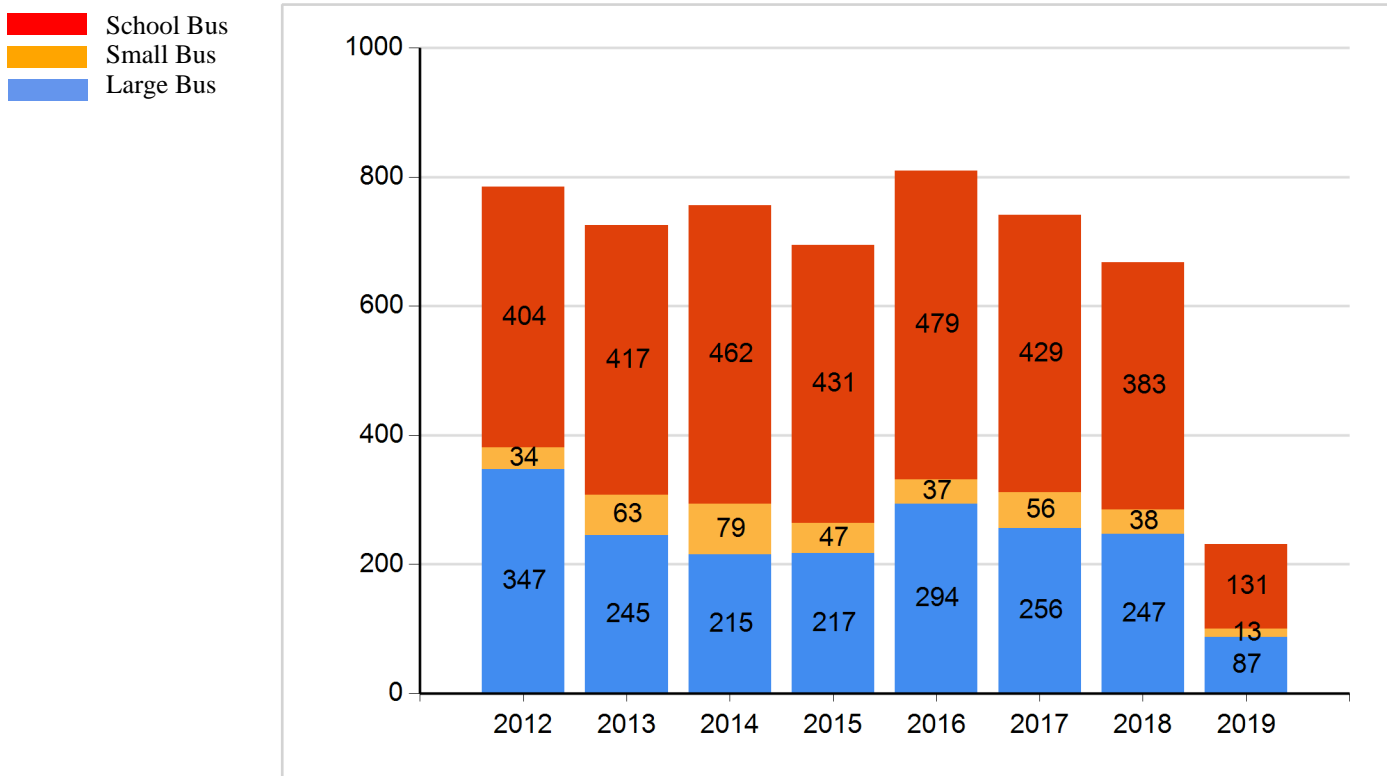
Figure 14: CMV Bus Crashes 2012 to 7/23/2019



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

Figure 15 : Bus-Crash Injuries 2012 to 7/23/2019



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While the number of bus crashes has decreased by 0.6% from 2017 to 2018, namely from 321 to 319, the number of injuries have decreased by 9.85%, namely from 741 to 668.

2019 YTD Crash Results

The 2019 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 2019

CMV Crashes and Type	2019 YTD*
Total CMV Fatal Crashes	29
Total Fatalities	37
Total Passenger Carrier Crashes	141
Total Passenger Carrier Fatal Crashes	1
Total Passenger Carrier Fatalities (In Crash)	0
Total HazMat Crashes	65
Total HazMat Fatal Crashes	0
Total HazMat Fatalities	0
Total Construction Zone Fatal Crashes (Table 7a)	0
Total in 5 Mile Approach to Construction Zone (Table 7a)	0

***As of Tuesday, July 23, 2019, 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.