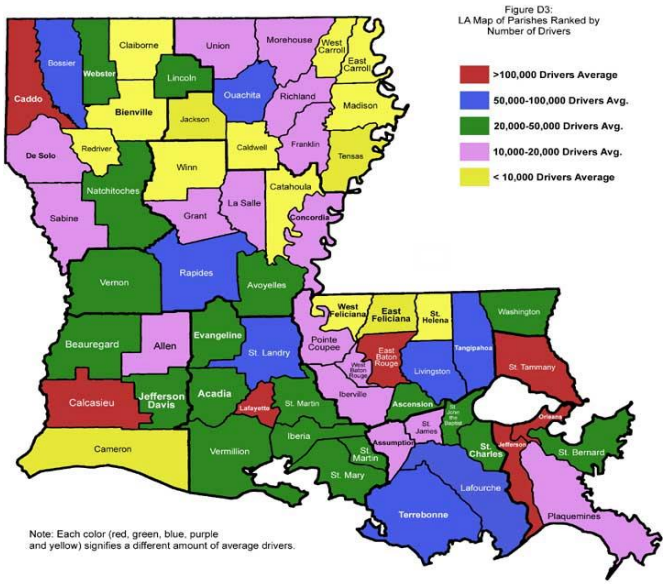
Analysis of 2014 Crash Data with Special Emphasis on Impaired Driving And Occupant Protection



Submitted to:
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Executive Director
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By:
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2014 Summary

Overall, the state of Louisiana has made progress towards highway safety in 2014. Safety-belt use has increased considerably for two years in a row from 82% in 2013 to 84.1% in 2014 and 85.9% in 2015. The largest increase in belt use in 2015 was among males, SUV occupants, and Caucasians. Also, the safety belt use in rear seats has increased by 13.9 percentage points to 68.86% in 2015. Notwithstanding the improvement in highway safety in the past, the decline in fatalities has leveled off during the past three years and there are signs that involvement of young drivers in fatal crashes is on the rise again. Fatalities on Louisiana Highways have increased by 5% from 2013 to 2014. This trend of young drivers (ages 18-20) in fatal crashes increased from 40 per 100,000 licensed drivers in 2013 to 44 in 2014. Also, after several years of decline, the estimated alcohol-related fatalities and the number of fatalities in crashes involving impaired driving (BAC>=0.08) are on an upward trend. Alcohol involvement of drivers ages 18-20 in fatal crashes increased from 9 per 100,000 licensed drivers in 2013 to 11 in 2014. This is the first increase in the past five years.

There are signs that highway fatalities are slowly increasing partly due to an increased economy. Thus increased enforcement efforts will be necessary to prevent fatalities from rising significantly in future years.

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1. Crash Overview

In 2014 there were 663 fatal crashes with 738 fatalities on Louisiana roads and highways. Compared to 2013, this was an increase of 1.8% and 5.0%, respectively. As Figure 1 shows the fatalities and the fatal crashes from 2007 to 2014, the downward trend has clearly leveled off after a four-year decline. Although the number of fatalities in 2014 (738) was still 26% below its level of 993 in 2007 (see Table 1) and 10.4% below the number of fatalities five years ago, there has been a steady increase in fatalities over the past three years.

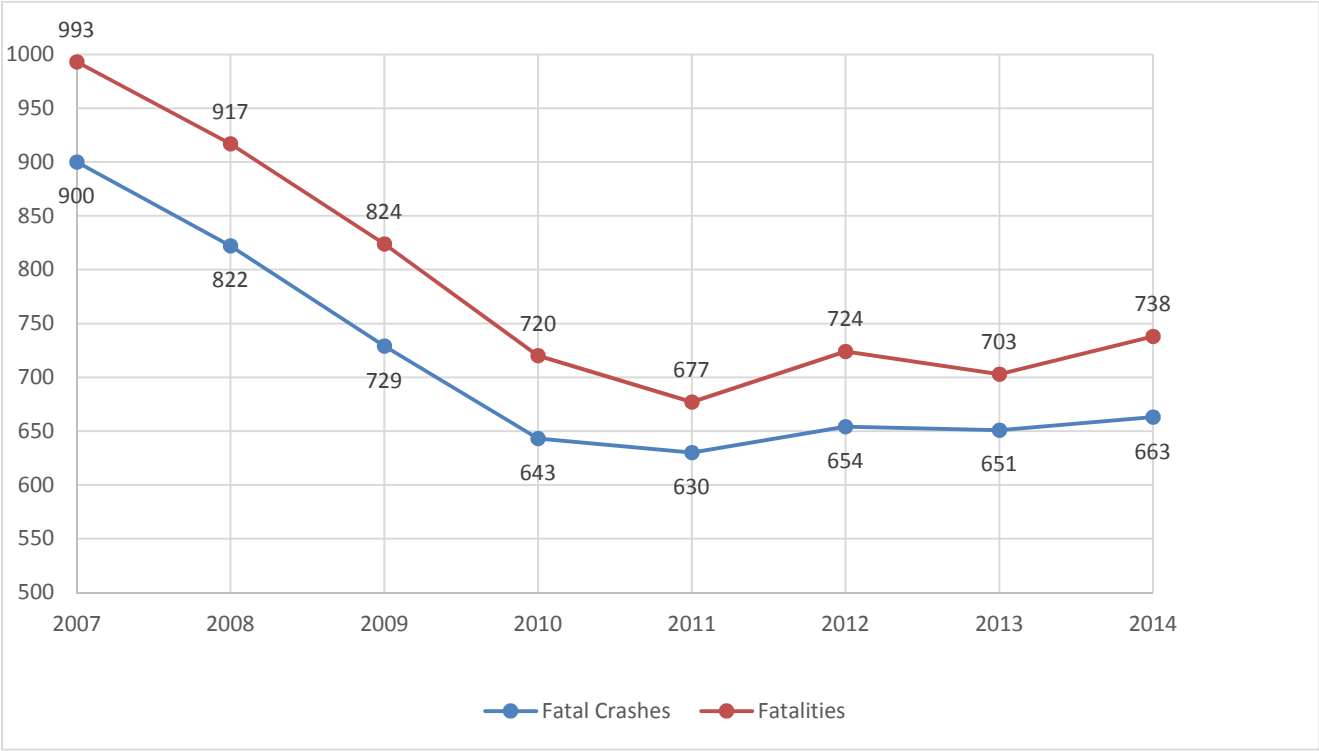

Figure 1: Trend of Fatal Crashes and Fatalities

Table 1 shows a number of various statistics for the state of Louisiana that need to be taken into consideration when looking at trends. The total vehicle miles traveled in Louisiana increased by 1.10% from 478 hundred million miles traveled in 2013 to 483 hundred million miles traveled in 2014. The number of licensed drivers was unchanged from 2014.

Table 1: Louisiana Crash Trends

Year	Vehicle Miles Traveled (100 Million Miles)	Licensed Drivers (1,000)	Population (1,000)	Injury Crashes (1,000)	All Injuries (1,000)	Fatal Crashes	Fatalities	Driver Fatalities	Number of Vehicles Involved in Fatal Crashes	Property Damage Only Crashes (1,000)
2005	450	2,869	4,507	49.5	82.9	874	965	649	1,408	108.1
2006	454	2,856	4,288	48.8	80.1	890	987	688	1,385	112.5
2007	454	2,838	4,293	48.1	78.9	900	993	662	1,363	110.4
2008	450	2,851	4,300	46.6	76	822	917	597	1,217	110.3
2009	449	2,860	4,492	45.4	73.9	729	824	556	1,096	109.9
2010	455	2,869	4,533	42.5	68.8	643	720	469	977	104.6
2011	465	2,902	4,575	43.4	70.4	630	677	468	1,020	105.8
2012	468	2,927	4,602	44.6	72.5	654	724	458	992	108
2013	478	2,941	4,625	43.5	70.7	651	703	489	1,001	109.8
2014	483	2,941	4,650	44.8	72.7	663	738	489	992	111.4
Difference										
1 YEAR	1.0%	0.0%	0.5%	2.8%	2.8%	1.8%	5.0%	0.0%	-0.8%	1.5%
5 YEAR	7.5%	2.9%	3.5%	-1.3%	-1.7%	-9.1%	-10.4%	-12.1%	-9.5%	1.4%
AVERAGE	4.3%	1.4%	1.9%	2.1%	2.0%	0.2%	1.2%	0.2%	-2.5%	3.6%

Note: Δ5 Y Avg is the difference between the current year and the average of the past 5 years

As illustrated in Figure 1 and Table 1, the downward trend in fatal crashes that began in 2008 started to level off in 2011. While the decline in 2008, 2009 and 2010 was 8%, 10% and 13% respectively, the decline in 2011 was only 6.1% followed by a 6.8% increase in 2012, a decline of 2.9% in 2013 and an increase of 4.8% in 2014.

The fatality rate (per 100 million miles traveled), shown in Figure 2, also shows the same pattern, namely, that it declined from 2.04 (per 100 million miles traveled) in 2007 to 1.46 in 2011, but increased

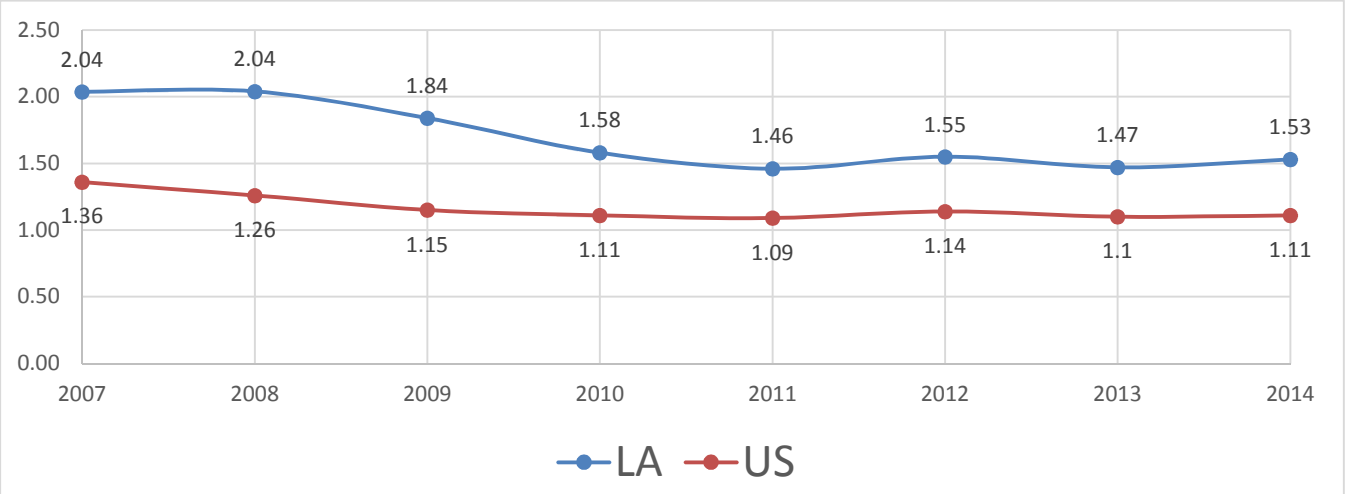

Figure 2: Fatalities per 100 Million Miles Traveled

again starting in 2012. The fatality rate in the US has varied around a rate of 1.1 (per 100 million miles traveled) over the past five years. Figure 1 also shows that Louisiana cut in half the gap between the average fatality in the US and the fatality rate in Louisiana. This gap was 0.78 (2.04-1.26) fatalities per 100 million miles traveled in 2007 and decreased to 0.42 (1.53-1.11) in 2014.

A preliminary review of 2015 crash data shows that Louisiana likely will see a similar number of fatal crashes in 2015 as during the past two years. Figure 3 shows the fatal crashes on a quarterly basis. Note that the third and fourth quarter for 2015 are not available yet. While the first and second quarters of 2014 had a decline of 10 and 11 fatal crashes, respectively, when compared to 2013, the third and fourth quarters had increases of 8 and 25 fatal crashes, respectively. The first two quarters of 2015 also show a small decline compared to 2014, although data may not be complete. The third quarter exhibits the most consistent trend from year to year and indicates a steady decline in fatal crashes from 250 in 2007 to 144 in 2015, although the 2015 data are not final.

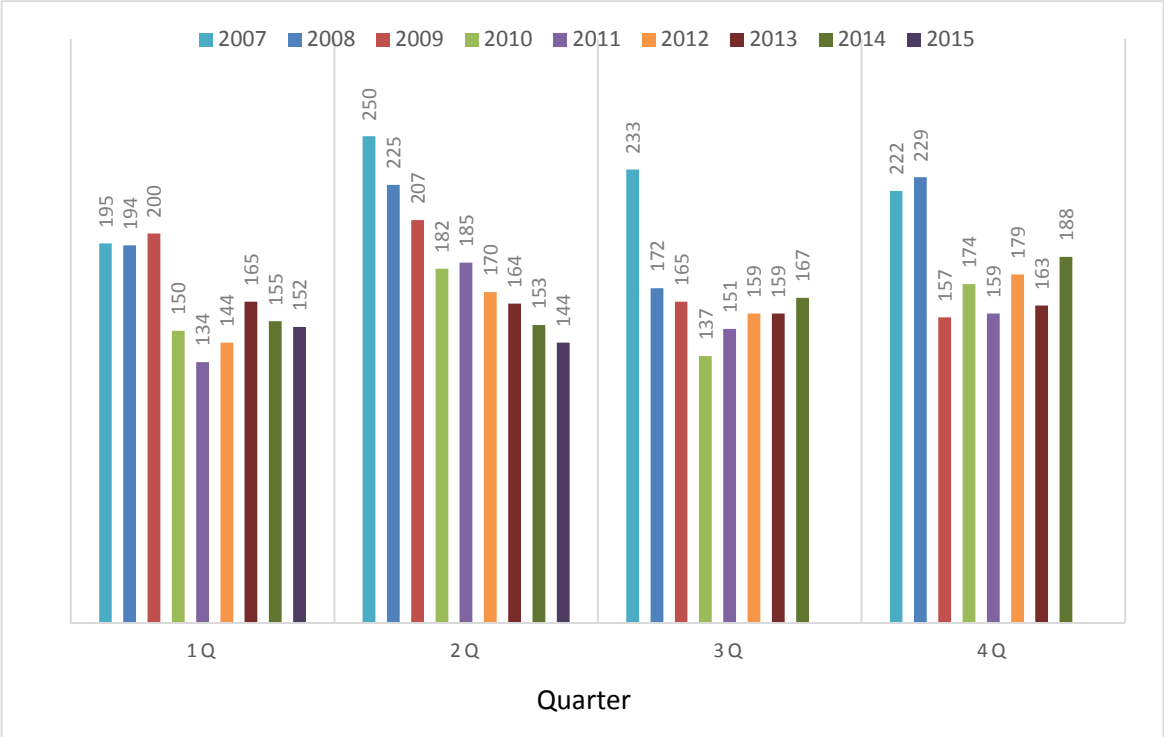

Figure 3: Fatal Crashes by Quarter 2007-2015

While the 5-year overall decline in fatal crashes from 2007 to 2014 was 26%, there were specific age groups where the decline was higher than average and subsequently these age groups are of specific interest in 2014 as well. When fatal crashes are compared between age groups, as shown in Figure 4, the

number of crashes in each age group must be adjusted by the number of licensed drivers in the age group. Thus the resulting crash rate is the number of drivers involved in fatal crashes per 100,000 licensed drivers. This number is neither the total number of drivers involved in fatal crashes nor the total number of drivers killed, rather it is a rate that is the most suitable measure assessing differences between age groups. In 2014 the data show an increase of this crash rate for the age groups 18-21 and 21-24 compared to 2013. The increase was from 40 to 44 fatal crashes per 100,000 licensed drivers for the age group 18-21 and an increase from 50 to 58 fatal crashes per 100,000 licensed drivers for the age group 21-24. The age group 18-20 had a decline from 49 to 34 fatal crashes per 100,000 licensed drivers.

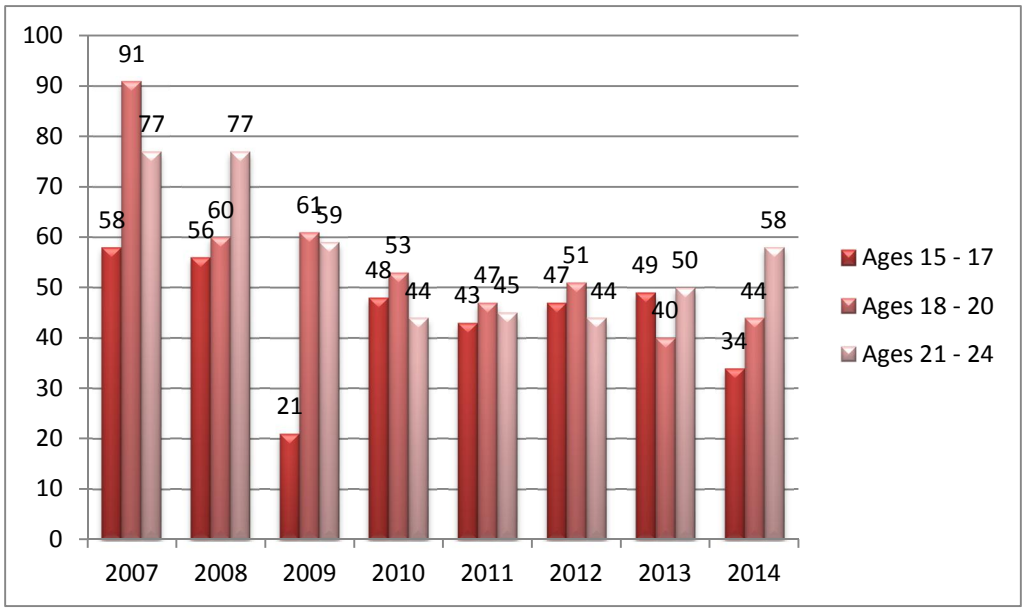

Figure 4: Fatal Crash Rates of Youths Ages 15-24 by Age Groups 15-17, 18-20 and 21-24

Of specific interest is the crash rate of 18-20-year-old drivers, shown in Table 2, a large percentage of whom have left home for the first time. This age group of licensed drivers had a crash rate of about 80 fatal crashes per 100,000 licensed drivers since 1995, the year for which statistics were first computed by the HSRG. In 2006 and 2007 this rate increased to about 90. Since 2007 this rate has dramatically dropped from 91 fatal crashes per 100,000 licensed drivers in 2007 to 40 fatal crashes per 100,000 licensed drivers in 2013, but has increased again to 44 fatal crashes per 100,000 licensed drivers in 2014. The fatal crash rate of drivers ages 21-24 has also dropped from 77 in 2007 to 44 in 2012 but increased again to 50 in 2013 and 58 in 2014.

Table 2: Youth Crash Rates

Year	Ages 15 - 17		Ages 18 - 20		Ages 21 - 24	
	Fatal	Injury	Fatal	Injury	Fatal	Injury
2007	58	5,059	91	6,348	77	5,249
2008	56	4,925	60	5,809	77	5,019
2009	21	1,818	61	5,434	59	5,103
2010	48	4,229	53	5,404	44	4,420
2011	43	4,147	47	5,155	45	4,500
2012	47	4,053	51	5,196	44	4,673
2013	49	3,944	40	5,056	50	4,506
2014	34	3,986	44	5,144	58	4,638
Difference						
Δ1 Year	-31%	1%	9%	2%	16%	3%
Δ5 Years	57%	119%	-27%	-5%	-2%	-9%
Δ5 Y Avg	-19%	10%	-12%	-2%	19%	0%

Note: Δ5 Y Avg is the difference between the current year and the average of the past 5 years

The increase in fatalities from 2013 to 2014 was largely due to an increase in passenger fatalities from 111 to 135. However, this is about the same level as in 2012 when there were 131 passenger fatalities. Figure 5, which depicts the trend in fatalities by role, shows that the driver fatalities in passenger vehicles has been 358 on average over the past five years with some variation from year to year. The prior five years (2005-2009) had on average 501 driver fatalities, a decline of 29%. Significant declines in passenger fatalities have also occurred over the past five years when compared to the prior five years, namely on average 130 versus 187, a decline of 31%.

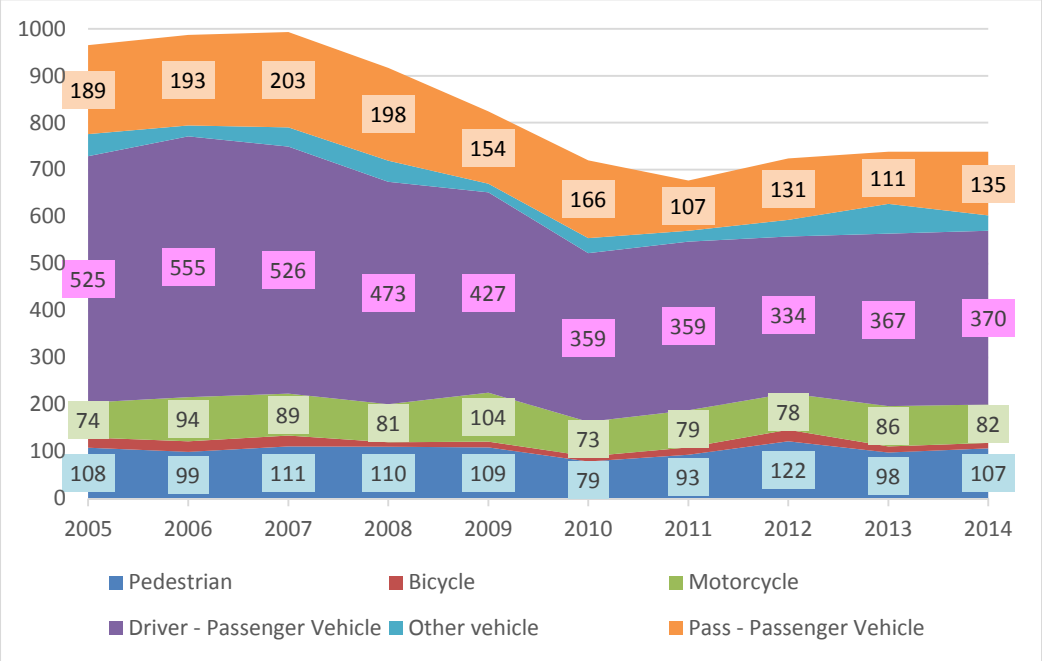

Figure 5: Fatalities by Vehicle Type and Role

The next highest contributors to overall motor vehicle crash fatalities in Louisiana are pedestrians and motorcyclists. However, the decline in fatalities among these groups have been small compared to drivers and passengers. On average there were 100 pedestrian fatalities over the past five years compared to 107 for the prior five years, a 7% decline. Motorcycle fatalities were on average 80 over the past five years compared to 88 over the prior five years, a decline of 10%. For that reason, as Figure 6 shows, the driver and passenger fatalities make up a smaller proportion of total fatalities in the past five years compared to the prior five years, namely 68% versus 74%.

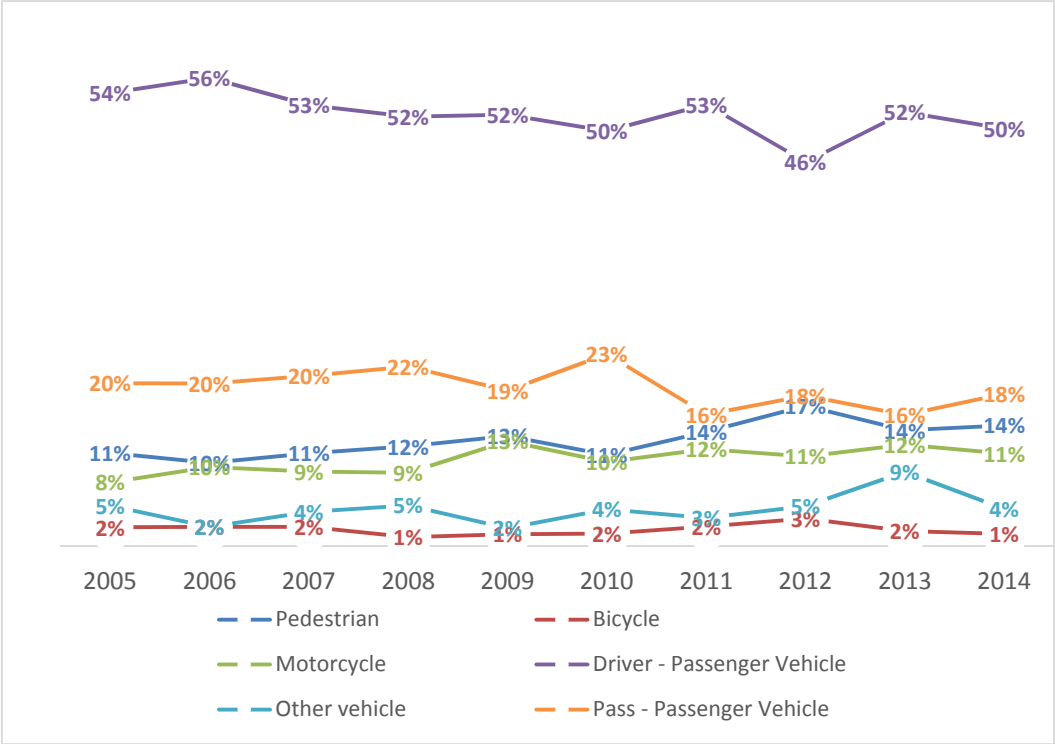

Figure 6: Percent of Fatalities by Vehicle Type and Role

A closer look at the type of passenger car crashes reveals that there is an upward trend in single vehicle fatal crashes over the past two years as depicted in Figure 7. In contrast to single-vehicle fatal crashes, multi-vehicle fatal crashes have stayed at about the same level over the past five years as shown in Figure 8.

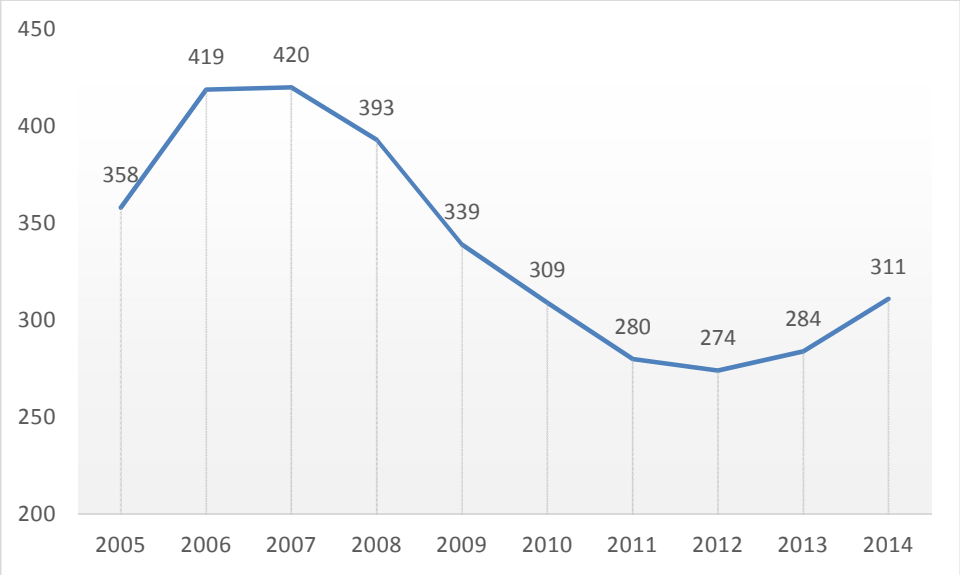

Figure 7: Single Passenger Vehicle Fatal Crashes

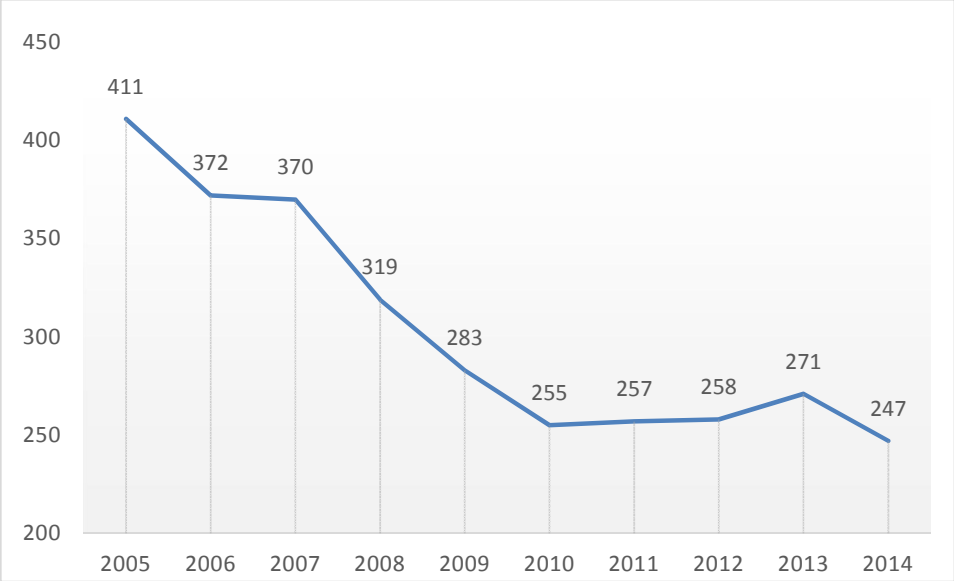

Figure 8: Multi-Vehicle Fatal Crashes

Interstate fatalities have decreased in 2014 compared to 2013, namely 110 compared to 115 amounting to a 4% decline. A trend chart is depicted in Figure 9 which shows that there was a considerable drop in fatalities from 2010 to 2011 and fatalities have stayed below the 2007-2010 average since then.

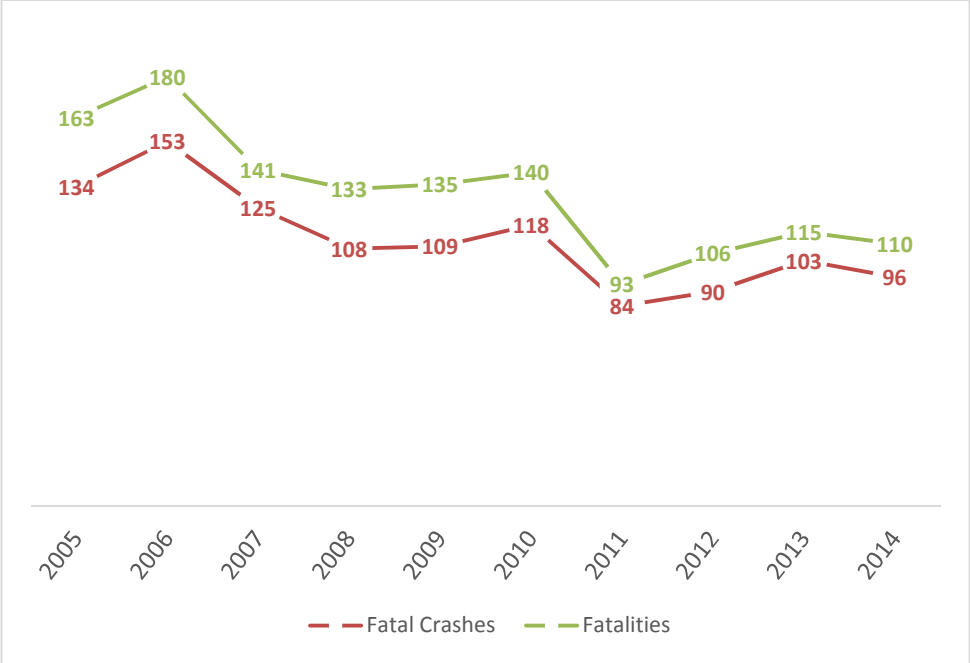

Figure 9: Interstate Fatal Crashes and Fatalities

2. Major Contributing Factors for Fatal Crashes

The major leading causes for fatalities in crashes are (1) lack of seatbelt use, (2) alcohol, and (3) aggressive driving which is defined in this analysis as driving above the safe or posted speed limit, failure to yield, driving too closely, cutting in, improper passing, disregard of traffic controls and careless operation.

2.1 Driving Under the Influence of Alcohol

There is a difference between alcohol-related and alcohol-impaired driving. NHTSA changed its reporting from alcohol related to alcohol impaired a few years ago. NHTSA considers drivers as "alcohol-impaired when their blood alcohol concentrations (BACs) are .08 grams per deciliter (g/dL) or higher." Using this definition, fatal crashes involving a driver of a motor vehicle "with a BAC of .08 or higher is considered to be an alcohol-impaired-driving crash, and fatalities occurring in those crashes are considered to be alcohol-impaired-driving fatalities."

In the past, NHTSA used imputation methods to estimate alcohol-related crashes and fatalities. NHTSA now estimates alcohol-impaired driving crashes and fatalities "using BAC values reported to the Fatality Analysis Reporting System (FARS) and BAC values imputed when they are not reported." Neither the term "alcohol-related" nor the term "alcohol-impaired" indicate that a crash or a fatality was caused by alcohol, only that alcohol was present or an alcohol-impaired driver was involved in the crash.

In this report alcohol-related crashes are reported when a driver had a positive (>0.02) alcohol BAC and is imputed when no BAC result is available. The HSRG algorithm was updated in 2012 which led to a more accurate prediction of the percentage of alcohol-related crashes. This estimated percentage of alcohol involvement does not indicate whether or not the driver was over the legal limit. The percentage of alcohol-related crashes and fatalities should only be used to look at trends rather than to draw any conclusions about the actual DWI of a single driver, i.e., driving over the legal limit. The most accurate way of assessing impaired and alcohol involvement driving is to have the test results for all drivers in crashes. Although the cases with BAC pending and not tested drivers have decreased over the past years, they still account for 30.8% percent of all drivers in fatal crashes and 29.4% of all driver fatalities.

The difficulty of deriving a valid estimate for the percentage of alcohol-related crashes stems from the number of unknown test results. Table 3 shows the number of driver fatalities in crashes over the past seven years along with the percentages of known and unknown BAC results.

Table 3: BAC Results for Driver Fatalities 2008-2014

	BAC=0		BAC UNK		BAC>0		
	Drivers	%	Drivers	%	Drivers	%	Total
2008	181	30%	240	40%	176	29%	597
2009	170	31%	203	37%	181	33%	556
2010	167	36%	165	35%	137	29%	469
2011	167	36%	154	33%	147	31%	468
2012	198	43%	117	26%	143	31%	458
2013	239	49%	89	18%	161	33%	489
2014	187	38%	150	31%	151	31%	488

For instance, in 2014, of the 488 driver fatalities, 187 had a zero BAC and 151 had a positive BAC, while 150 killed drivers had no BAC results. The table indicates that the number of driver fatalities with unknown BAC results increased by 69% from 2013 to 2014. This does not include surviving drivers in fatal crashes which had 320 unknown BAC results.

2.1.1 Alcohol-Related Fatal Crashes and Alcohol-Impaired Fatal Crashes

Because of a high percentage of missing test results, imputation is required. While the NHTSA imputation model is not readily available, it may not be suitable for Louisiana because it was developed using national data. The HSRG uses an imputation model for alcohol-related fatalities. The number of fatalities that involved a driver with known BAC at or above 0.08 is presented in Figure 10 along with the estimated

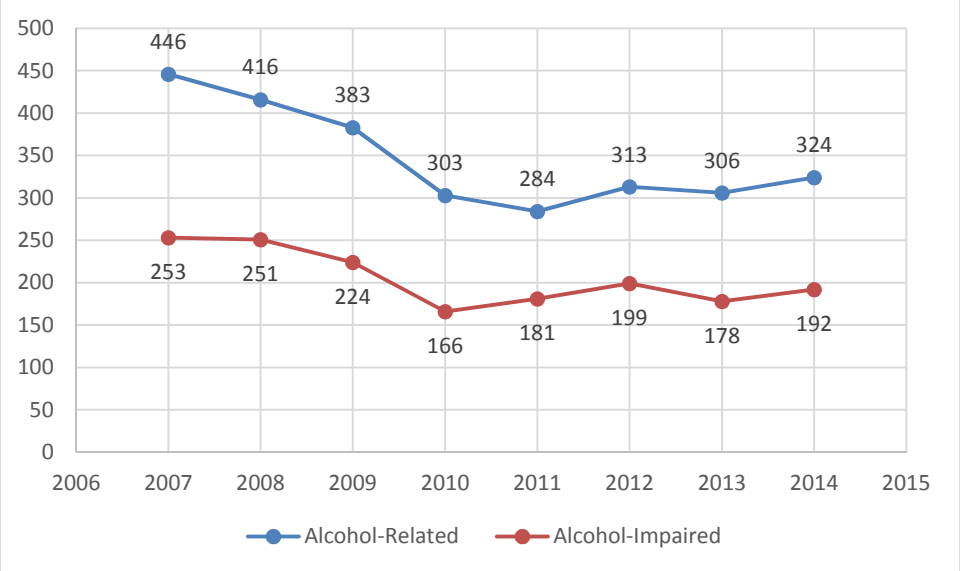

Figure 10: Fatalities - Alcohol Related and Alcohol Impaired

number of alcohol-related fatalities. It is estimated that in 2014, 291 of the 662 fatal crashes involved alcohol with 324 fatalities. However, the number of fatalities that involved a driver with BAC above the legal limit of 0.08 was only 192 in 2014. As shown in Figure 11, the percentage of alcohol-related fatalities in 2014 was at 44%, unchanged from 2013. The percentage of alcohol-related fatalities should only be used for trend analysis. The percentage of fatalities in crashes involving at least one driver with alcohol above the legal limit of 0.08 was 42% in 2014, one percentage point higher than in 2013, but at the same level as in 2012. However, this figure does not include underage DUI's and this alcohol-impaired percentage is computed using only known BAC result. Thus estimates may be larger or smaller than the estimate for the percentage of alcohol-related fatalities.

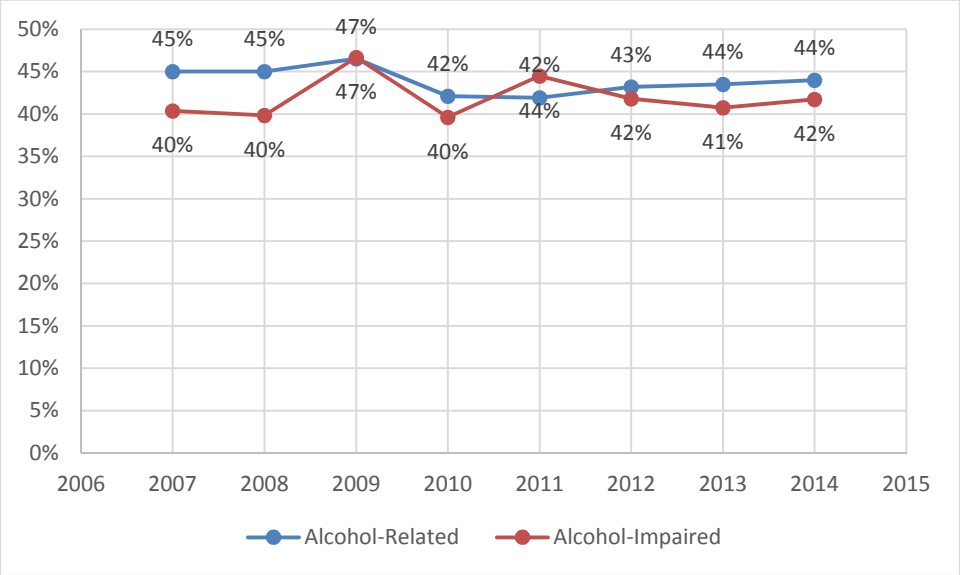

Figure 11: Percentage of Alcohol-Related and Alcohol Impaired Fatalities

The alcohol-related fatal crash rate (number of crashes per 100,000 drivers) of young drivers ages 18-24 has increase in 2014 for the first time in five years as illustrated in Figure 12. The alcohol-related crash rate of 21-24-year-old drivers was 11 per 100,000 licensed drivers in 2013 and increased to 18 in 2014. The alcohol-related crash rate for drivers ages 18-20 was 9 per 100,000 licensed drivers in 2013 compared to 11 in 2014. Rather than using the crash rate, one can compare the percentage of drivers in an age group with the percentage they account for among all drivers in alcohol-related crashes in order

to judge whether an age group is overrepresented among drivers using alcohol. In 2013, this age group made up 4.5% of licensed drivers and this age group accounted for 4.6% of drivers involved in alcohol-related fatal crashes, only about half the percentage as in 2007 and in line with the percentage of drivers

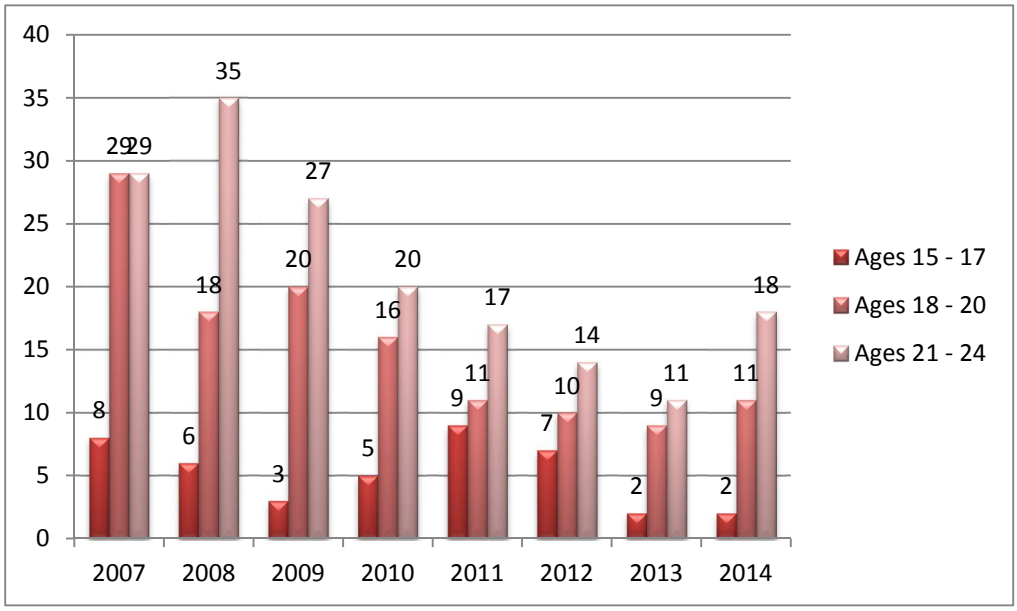

Figure 12: Youth Alcohol Fatal Crash Rates

in this age group. In 2014, the age group of 18-20-year-old drivers accounted for 5.0% of drivers in all alcohol-related fatal crashes while drivers of this age group made up 4.4% of the licensed drivers. A third way of measuring this change is to look at the alcohol involvement by age group. The percentage of alcohol-related fatal crashes for this age group dropped from 32.3% in 2007 to 22.2% in 2013, but increased to 24.6% in 2014. The comparison is summarized in Table 4. Hence, there is an indication that there is a upward trend in youths alcohol related crashes.

Table 4: Involvement of 18-20-Year-Old Drivers in Alcohol-Related Crashes

	Per 100,000 licensed Drivers	Percent of Drivers in Fatal Alcohol-Related Crashes	Percent of drivers in this age group who had been using alcohol in the crash	Percentage of Licensed Drivers
2013	9	4.6%	22.2%	4.5%
2014	11	5.0%	24.6%	4.4%

2.1.2 Alcohol-Related Fatal Crashes by Troop Area

Table 5 shows the number of fatalities and alcohol-related fatalities by troop area for all agencies, not just the State Police. While Troop B which includes New Orleans had a decrease of 17 fatalities with a decrease of 12 alcohol-related fatalities and 5 fatalities in crashes involving an alcohol impaired driver, Troop area A which includes Baton Rouge had an increase of 22 fatalities with an increase of 19 alcohol related fatalities and 11 fatalities in crashes involving a driver who was impaired. Troop area G had an increase of 15 fatalities but an increase of 17 alcohol-related fatalities and 9 fatalities in a crash involving an impaired driver.

Table 5: Fatal Crashes by Troop 2013-2014

Troop	Non-Alcohol	Alcohol Involved	Number of Fatalities	% Alcohol-Related Fatalities	Difference Fatalities 2013-2014	Difference Alcohol Involved 2013-2014	Difference Alcohol Impaired (BAC>0) 2013-2014
A (EBR)	85	60	145	41%	22	19	10
B (NO)	54	41	95	43%	-17	-12	-5
C (Houma)	36	23	59	39%	8	-1	-4
D (Lake Charles)	17	24	41	59%	1	6	0
E (Alexandria)	43	32	75	43%	5	3	3
F (Monroe)	44	21	65	32%	-2	-3	-1
G (Shreveport)	39	33	72	46%	15	17	9
I (Lafayette)	68	58	126	46%	4	-6	0
L (Hammond)	33	26	59	44%	-2	-3	3

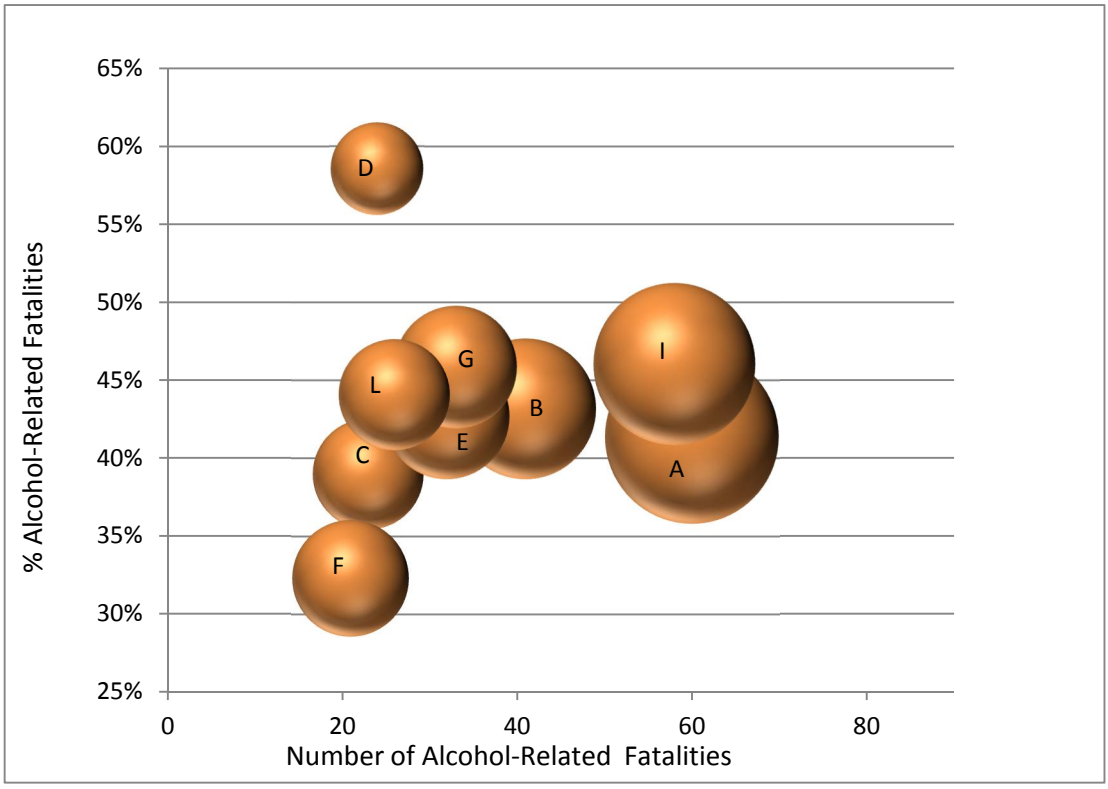

Figure 13: Percent of Alcohol-Related Fatal Crashes versus Number of Alcohol-Related Fatal Crashes by Troop in 2014

Figure 13 illustrates the relationship between the number of alcohol-related fatalities, the percentage of alcohol-related fatalities and the total number of fatalities. The size of the bubble is the total number of fatalities by troop area in 2014. The x-axis shows the number of alcohol-related fatalities in 2014 and the y-axis shows the percentage of alcohol-related fatalities. Because of their size, Troop areas A (EBR), B (N.O.) and I (Lafayette) have a high number of fatalities (size of the bubble) and a high number of alcohol-related fatalities, but Troops B and I also have a much higher percentage of alcohol-related fatalities. Troop G (Shreveport) which had a far below-average overall alcohol-related percentage of fatalities in 2013 had an estimated 46% alcohol-related fatalities in 2014. Troop area A had an increase in alcohol related fatalities and is now at 41%. Troop areas B and I continued to have an above average percentage of alcohol-related fatal crashes (>=42%) in 2014. Troop area D had the highest alcohol-related percentage of fatalities.

Figures 14 and 15 show the fatalities and alcohol-related fatalities by troop and year. Figure 14 shows that while fatalities declined in all troop areas since 2007 some troop areas have seen increases in fatalities over the past three years. For instance, Troop areas A and B had increases in fatalities over the past three years when compared to the low levels in fatalities of 20010 and 2011.

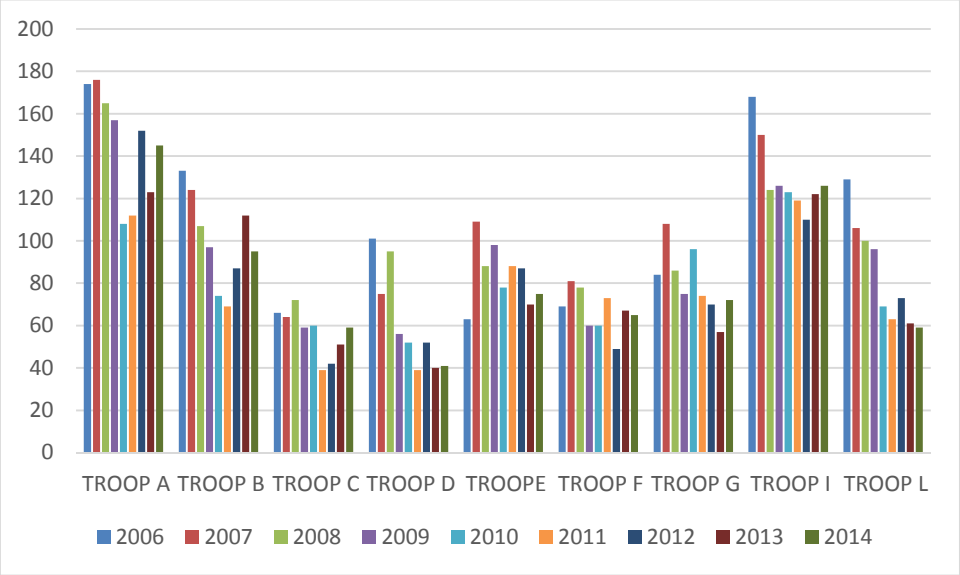

Figure 14: Fatalities by Troop Area and Year

Figure 15 shows the number of alcohol-related fatalities by troop area. Troop area A, B and I had

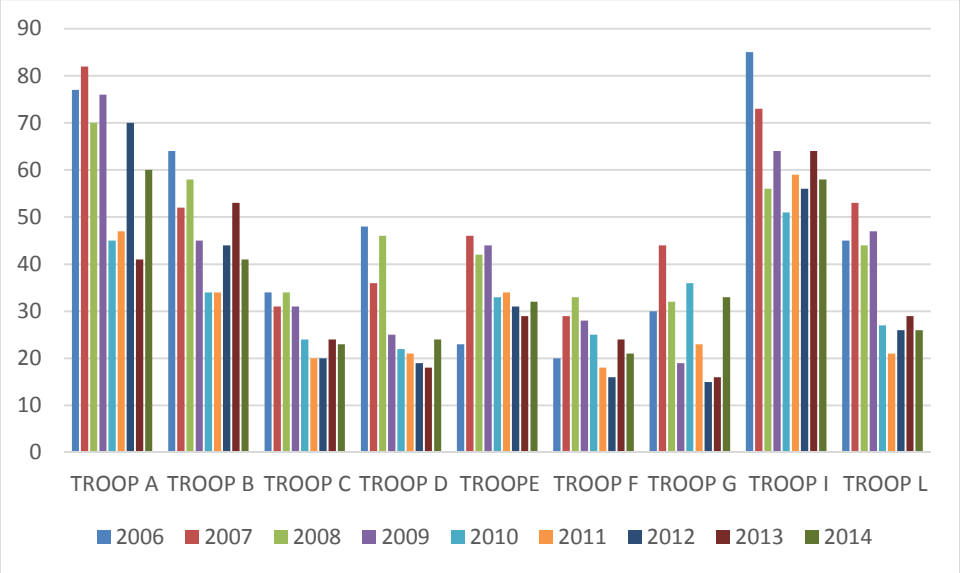

Figure 15: Alcohol-Related Fatalities by Troop and Year

some visible increases in alcohol-related fatalities over the past three years. The increase in Troop G from 2013 to 2014 could be an outlier because there has been a large variation from year to year over the past nine years.

2.1.3 DWI Enforcement

DWI enforcement plays a major role in the reduction of alcohol-related fatalities. In 2014, there were 22,860 DWI arrests logged in the COBRA system with 21,414 adult DWI arrests (BAC >=0.08), 5,572 refusals, and 1,430 age 16-20 DWIs. These figures include out-of-state licensed drivers. Many of the remaining arrests may have been due to other impairments than alcohol. The number of arrests in 2014 (22,860) was slightly below the 2013 level of 23,546 arrests, a decline of 2.9%. Figure 16 shows that the number of arrests have been trending downwards since 2010. The figure also includes results for blood samples submitted to the La Crime Lab in 2013 and 2014. No blood test results were available for this report for before the years 2013. Also, blood sample test results are not available from other labs.

Table 6 shows the DWI arrests by troop. Comparing raw arrest numbers between troop areas is difficult because of the different size of the troop areas and the different number of DWI drivers on the road.

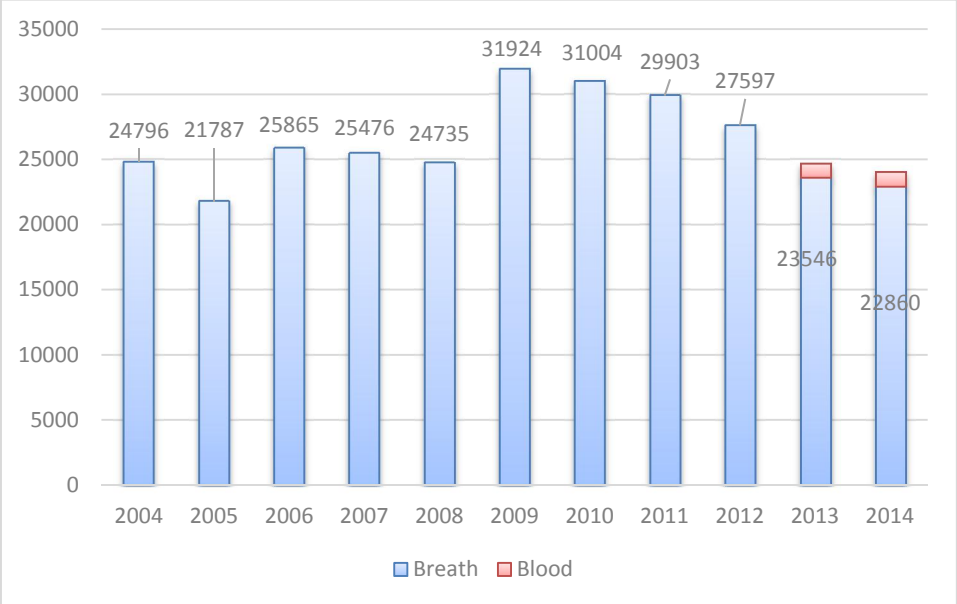

Figure 16: DWI Arrests by Year

To adjust the arrests by the size of the troop area, one should use the arrests per 100,000 licensed drivers, although this still lacks the adjustment by the number of (unknown) DWI drivers on the roads. Nevertheless, some observations can be made using this arrest rate depicted in Table 6. The column for the arrests per 100,000 licensed drivers (DWI/Licensed drivers) in the table shows that Troop

Area I had the lowest arrest rate (611) followed by the Troop area A with 648 arrests per 100,000 licensed drivers, respectively.

Table 6: DWI Arrests and Arrest Rates by Troop Area 2013 versus 2014

	2013			2014		
Troop	DWI	Licensed Drivers	DWI/LIC DR	DWI	Licensed Drivers	DWI/LIC DR
A (EBR)	4,187	516,845	810	3,352	517,466	648
B (NO)	4,244	577,794	735	4,271	580,533	736
C (Houma)	1,359	152,264	893	1,299	152,239	853
D (Lake Charles)	1,947	198,983	978	1,861	199,340	934
E (Alexandria)	1,989	238,133	835	2,387	236,809	1,008
F (Monroe)	1,997	224,517	889	1,888	221,814	851
G (Shreveport)	2,295	307,033	747	2,750	304,794	902
I (Lafayette)	2,620	434,890	602	2,664	436,259	611
L (Hammond)	2,908	290,916	1,000	2,388	292,162	817

While the DWI arrests have been trending down over the past four years, there is considerable variation from month to month. The DWI arrests per month and year are depicted in Figure 17. The figure shows that DWI arrests are generally higher at the beginning of the year, peak in August and are lowest at the end of the year.

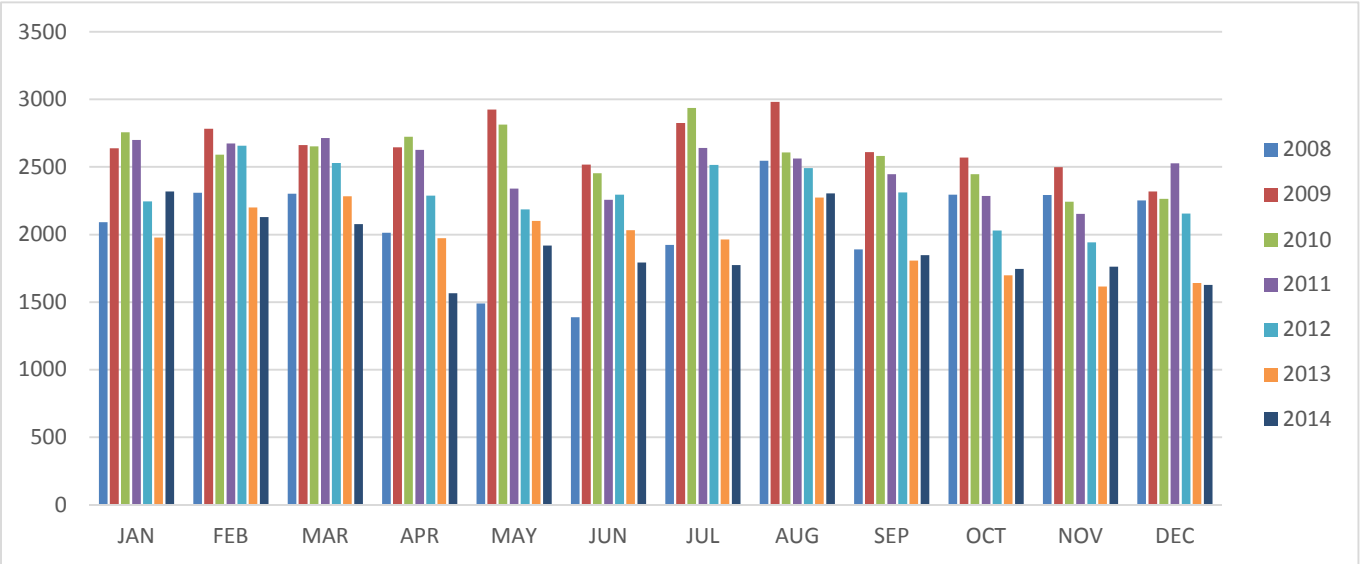

Figure 17: DWI by Month and Year

Of specific interest are DWI arrests for young drivers. Figure 18 shows the DWI arrests for drivers ages 16-20. The number of DWI arrests for drivers in this age bracket has declined considerably over the past two years and was less than half of the number of arrests of 2006.

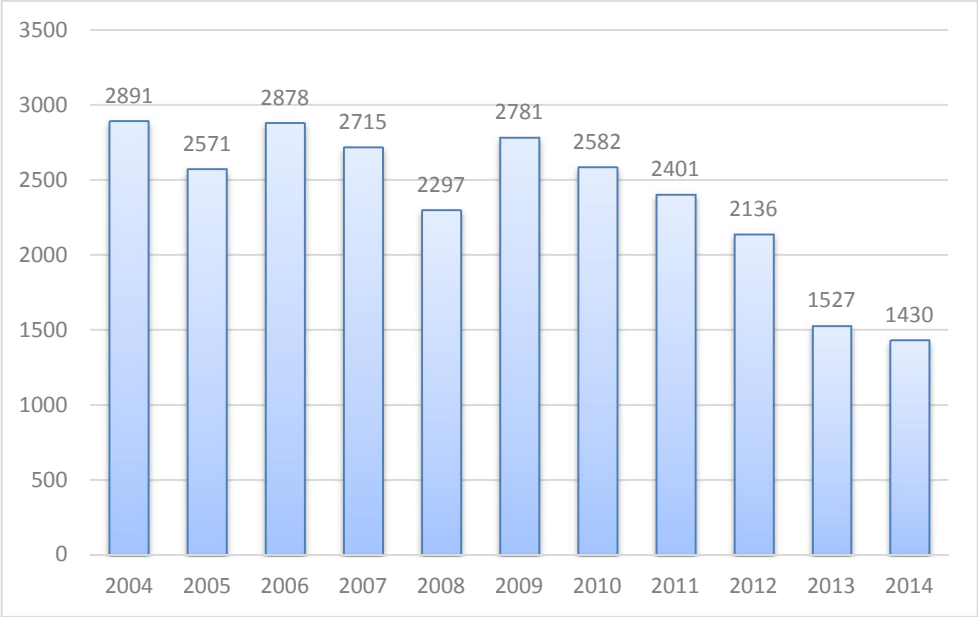

Figure 18: Youth DUI Arrests

Refusals also have declined over the past five years from 32.6% in 2007 to 24.4% in 2014.

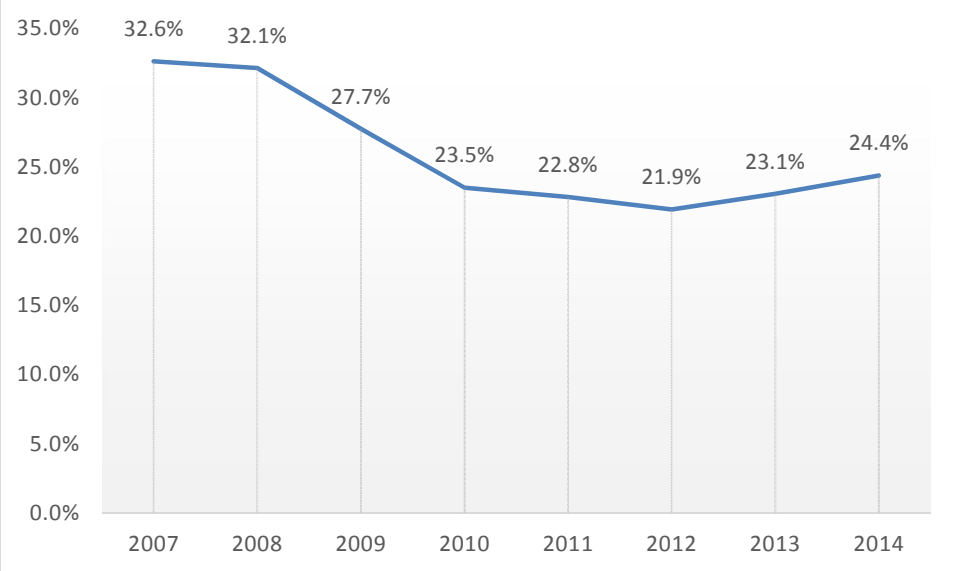

Figure 19: Percent Refusals by Year

2.2 Occupant Protection

Occupant protection includes seat belts and helmets for motorcycles. Two sources of information were used to evaluate the effect of seat-belt usage on the number of fatalities: survey data and observed seat-belt usage in fatal crashes.

2.2.1 Seat Belt Use

In 2015 the safety-belt usage rate on Louisiana roads and highways was 84.1% and it increased to 85.9% in 2015. Figure 20 shows the observed safety-belt usage of front-seat occupants from 2007 to 2014 and safety belt usage of all killed occupants. The figure shows that seat-belt usage in Louisiana has been on the rise for the past four years.

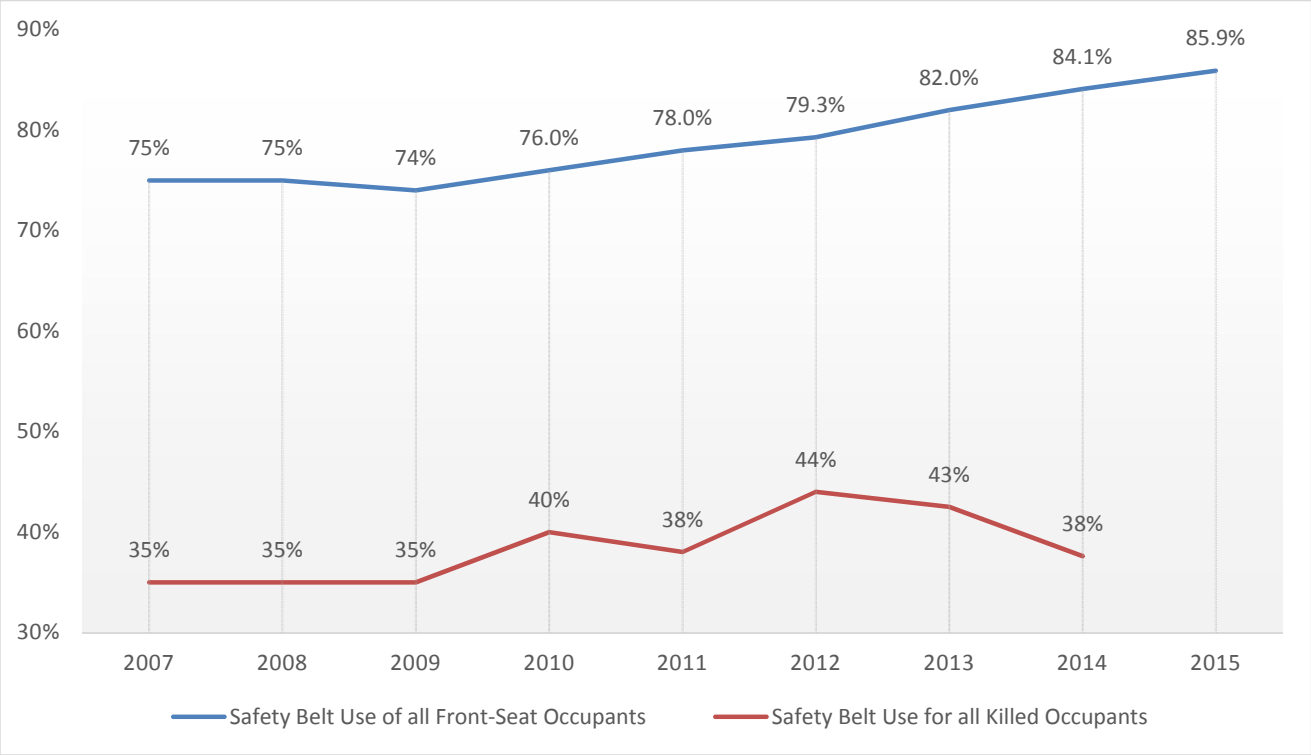

Figure 20: Observed Safety Belt Use by Year – Roadside Survey and Killed Front-Seat Occupants

The chart also shows that there is large gap between occupants wearing a seat belt (84.1%) and those killed wearing a seat belt (38%). Hence, occupants not wearing a seat belt make up only about 16% of the driving population but account for 62 percent of the occupants killed, i.e. most of the deaths in motor vehicle crashes are associated with not wearing a seat belt. Not buckling up is still one of the most important factors related to motor vehicle fatalities.

Table 7 depicts the survey results of seat belt use by region. Because of the different number of

cars observed in the sample for different regions, the standard error for the observed safety-belt use varies from region to region and therefore the differences between years on a regional level may be due to chance. Only Region 6 (Alexandria) and Region 8 (Monroe) had a significant change at a 95% confidence level. All other regions had changes that were not statistically significant.

Table 7: Seat Belt Usage by Region

	Region Estimate						
Region	*%AUTO*	*%PKUP*	*%SUV*	*%VAN*	*2014*	*2015*	*Diff*
1 (NO)	82.5%	76.9%	85.5%	86.3%	81.0%	82.4%	1.3%
2 (EBR)	83.9%	79.2%	87.7%	78.5%	84.4%	83.0%	-1.4%
3 (Houma)	96.0%	78.5%	96.7%	84.5%	87.7%	91.2%	3.5%
4 (Lafayette)	83.6%	80.0%	83.5%	84.2%	85.0%	82.5%	-2.5%
5 (Lake Charles)	86.2%	81.4%	88.7%	93.1%	89.9%	85.6%	-4.2%
6 (Alexandria)	87.4%	82.6%	89.2%	92.8%	70.9%	87.3%	16.5%
7 (Shreveport)	91.2%	84.9%	92.0%	90.8%	87.9%	89.4%	1.5%
8 (Monroe)	81.1%	85.0%	89.0%	89.0%	74.8%	84.2%	9.5%
Louisiana Average	87.1%	80.3%	89.7%	86.3%	84.1%	85.9%	1.8%

Figure 21 shows the trend of safety-belt usage by region which may be more indicative of any permanent change than the year to year changes. All eight regions had safety-belt usage rates above 80% in 2015 and the trend chart indicates that this is likely due to a true improvement in belt use. Two regions, Alexandria (6) and Monroe (8), show a highly fluctuating belt use rate with no consistency over the past five years. However, these two regions have also the lowest sample size and thus the highest standard error.

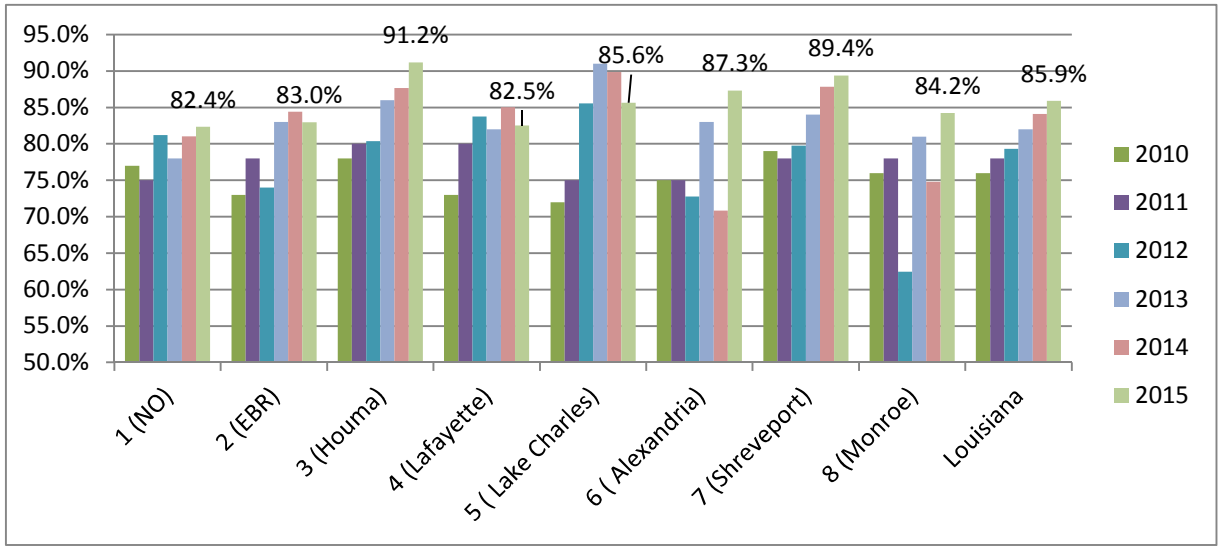

Figure 21: Seat Belt Use by Region

The road side survey also allows an estimation of the percentage of belt use by gender, race and vehicle type. The results depicted in Table 8 show that belt usage of female drivers is now above 90% while male drivers' belt usage is slightly over 80%. Also, passenger belt use is slightly below drivers' belt use, 2.7 percentage points; African American drivers have the lowest belt usage among all races; and pickup truck drivers have the lowest belt usage (80.4%) of all vehicle types.

Table 8: Front Seat Belt Estimate by Gender, Race and Vehicle Type

	% Use Rate					
	Driver		Passenger		All Front Seat	
	Estimate	STD Error	Estimate	STD Error	Estimate	STD Error
Sex						
Male	82.5%	0.9%	79.6%	2.2%	82.1%	0.9%
Female	90.5%	0.7%	87.8%	1.5%	90.0%	0.7%
Race						
White	89.1%	0.6%	87.4%	1.5%	88.9%	0.6%
African-American/Black	78.8%	1.3%	79.0%	2.4%	78.9%	1.2%
Hispanic	84.2%	3.7%	69.3%	9.7%	81.0%	3.9%
Other	93.5%	3.4%	96.9%	0.1%	97.3%	1.2%
Vehicle Type						
Car	87.5%	0.8%	85.2%	1.9%	87.1%	0.8%
Pick-up	80.4%	1.4%	79.5%	2.9%	80.3%	1.3%
SUV	90.4%	1.0%	86.8%	2.5%	89.7%	1.0%
Van	86.8%	2.6%	84.6%	5.4%	86.3%	2.4%

Although the safety-belt use among female as well as male drivers increased from 2014 to 2015, there is still a gender gap of eight percentage points. The increase was 3.3 percentage points for males and 1.3 percentage points for females (see Table 8).

Table 8: Safety-Belt use of Driver by Gender

Gender	2014	2015
Male	79.2%	82.5%
Female	89.2%	90.5%

There are also differences by race with respect to seat belt use as shown in Table 9. The sample size of Hispanic occupants was too low to draw valid conclusions. The belt usage rate of African American drivers was 10.3 percentage points lower than for Caucasian drivers in 2015. While safety belt use for white drivers has increased by 2.5 percentage points from 2014 to 2015, belt use for African Americans has only increased by 0.6 percentage points.

Table 9: Safety-Belt Use of Driver by Race

RACE	2014	2015
White	86.6%	89.1%
Black	78.2%	78.8%
Hispanic	92.7%	84.2%

Using an unweighted estimate, the breakdown by race and gender shows that the difference between male African American and Caucasian drivers was 6.1 percentage points and between female African American and Caucasian drivers was 4.1 percentage points in 2015.

Table 10: Safety Belt Use by Gender and Race

		Belt Use	
Gender	**Race**	**Belt Used**	**No belt Use**
Female	Black	88.1%	11.4%
	Hispanic	91.9%	7.8%
	Other	94.9%	4.5%
	White	92.3%	7.3%
Male	Black	81.0%	18.3%
	Hispanic	87.6%	12.2%
	Other	93.4%	6.3%
	White	87.4%	12.2%

Safety belt use has increased from 2014 to 2015 for all vehicle types except vans. However, the sample size for vans is too small to detect statistical significant differences.

Table 10: Safety Belt use by Vehicle Type

Vehicle Type	2014	2013
Car	87.1%	85.5%
Pick-up	80.3%	78.5%
SUV	89.7%	86.8%
Van	86.3%	88.7%

Figure 22 shows the belt usage rate of front-seat occupants by Parish in 2015. Compared to 2014, belt use has increased in the Monroe and Alexandria regions. Rural parishes still have the lowest belt use.

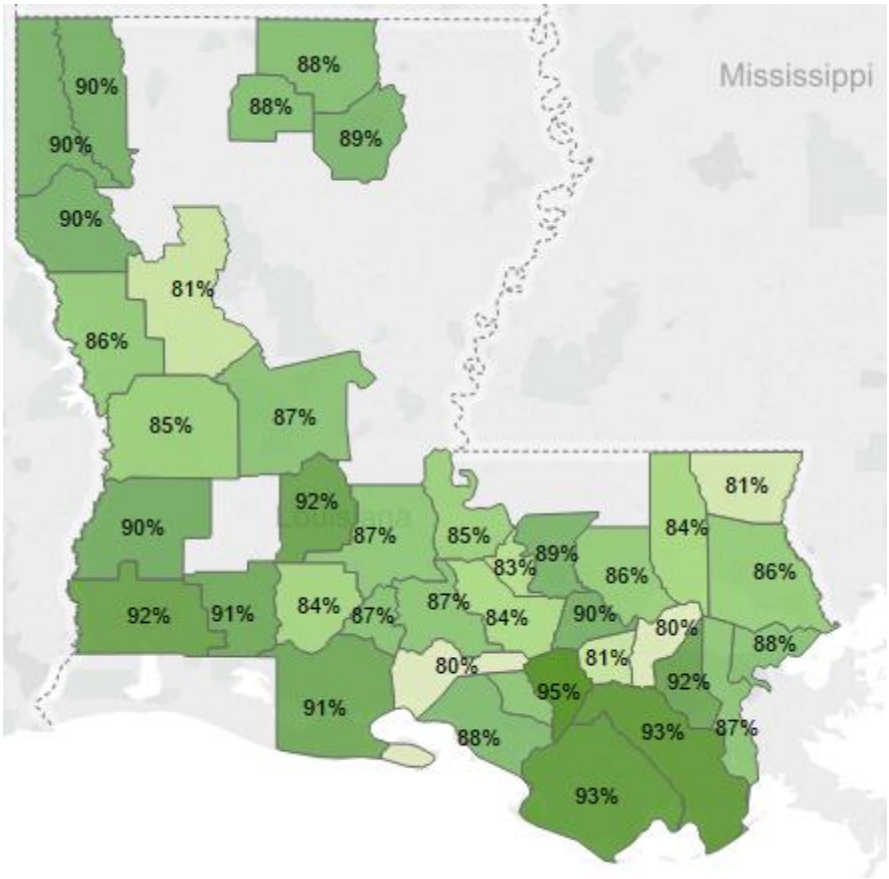

Figure 22: Belt Use Rate by Parish 2015

Rear Seat Safety-Belt Use

Louisiana law did not require safety-belt use in back seats until August 2009. The roadside survey in 2015 shows that safety-belt usage in the back seat is at 68.9%, increased by about 14 percentage points compared to 2014. Pickup trucks have the lowest rear seat safety belt use.

Table 9: Rear Seat Safety-Belt Usage

	Auto	Pickup	SUV	Van	Total
Rear Seat 2008	27.30%	12.50%	31.30%	29.40%	27.20%
Rear Seat 2010	50.00%	47.80%	77.20%	90.70%	58.40%
Rear Seat 2011	46.00%	40.30%	71.40%	93.60%	53.80%
Rear Seat 2013	50.88%	46.97%	67.09%	62.30%	54.84%
Rear Seat 2014	48.76%	42.39%	69.31%	77.36%	54.92%
Rear Seat 2015	67.85%	55.12%	80.53%	79.22%	68.86%

2.2.2 Motorcycle Helmet Use

In 2014 there were 83 motorcycle riders killed compared to 86 in 2013, a decrease of 2.6%. The mandatory motorcycle helmet law that took effect in the fall of 2004 reduced the percentage of fatalities

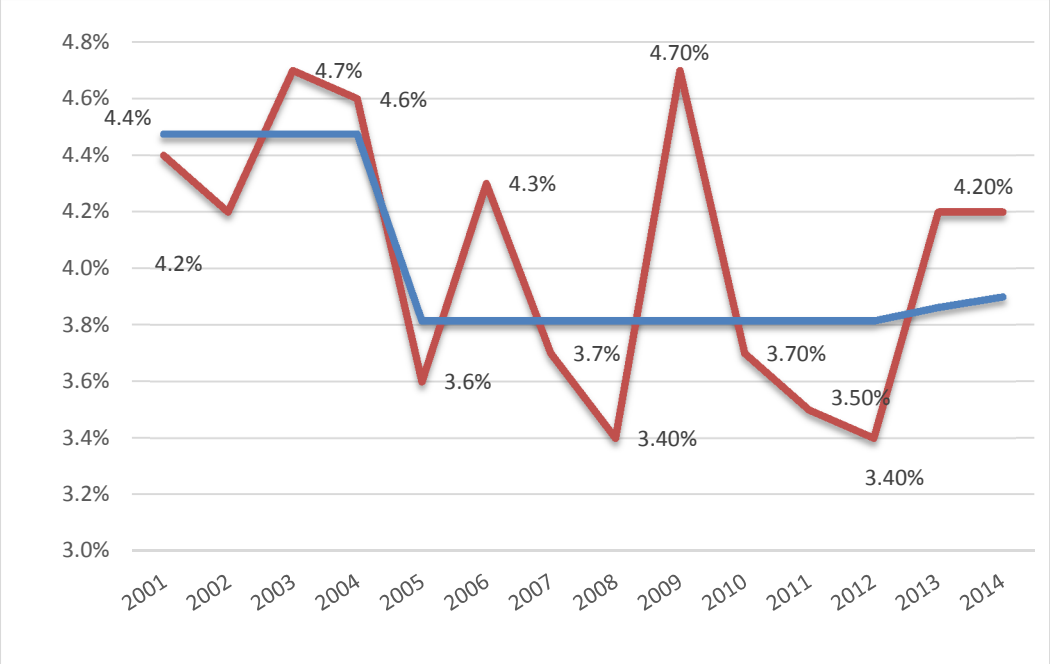

Figure 23: Percentage of Motorcycle Fatalities in Motorcycle Crashes

among motorcycle drivers from 4.48% before the law was passed to 3.9% after the law was passed. However it should be noted that the comparison is only based on a few years and thus the difference is not statistically significant.

3. Distractions

Distractions are also a major cause for crashes that have received national attention because of the increased use of electronic devices. The Louisiana Crash Report has two fields that relate to distractions. In 2014, there were 5 known fatalities associated with a driver using a cell phone.

4. Costs

The total economic present and future cost associated with motor vehicle crashes in the U. S. were estimated at $277 billion for crashes occurring in 2010 (Blincoe at al. 2014). The factors included in these costs are loss of market productivity, medical costs, emergency services, travel delays, legal costs, workplace costs, insurance administration and household-associated costs. Using estimated base cost figures from Table 1-10 of the 2010 NHTSA report by Blincoe (2014) updated by the consumer price index, the total current and future cost due to 2014 motor vehicle crashes for the citizens of Louisiana was $8.12 billion or $2,762 for every licensed driver. This cost estimate is higher than past estimates because new base cost estimates from 2010 were used. Since the base cost estimates for a fatality, injury or property damage may vary from state to state, the actual costs in Louisiana may be lower or higher than the estimates provided here. The 2014 cost estimates were 3.9% higher than for the crashes in 2013.

Table 10: Estimated Current and Future Cost of 2014 Louisiana Motor Vehicle Crashes

Type	Average Cost per Person	Total Cost by Injury Category	Total Cost of Alcohol related Crashes	Total Injury Cost for Occupants without Seat Belt	Per Licensed Driver	% Change from last Year
Fatal	$1,506,363	$1,110,189,207	$479,023,294	$463,959,668	$377	6.8%
Severe Injuries	$390,024	$524,971,741	$112,716,815	$106,086,414	$179	3.1%
Moderate Injuries	$114,422	$1,382,785,761	$154,812,506	$172,776,707	$470	1.6%
Complaint Injuries	$24,829	$1,468,691,515	$87,175,005	$67,113,084	$499	5.4%
No Injury	$4,774	$1,663,383,796	$56,020,463		$566	3.0%
PDO	$6,623	$1,973,765,268	$85,646,567		$671	3.9%
Grand Total Cost		$8,123,787,288	$975,394,650	$809,935,874		3.9%
Cost per licensed Driver		$2,762			$2,762	3.9%

5. Summary of Findings

The most important factors affecting traffic safety in Louisiana are driving under the influence of alcohol and lack of seatbelt use. But not all areas have the same magnitude of both problems. Some regions in Louisiana have higher frequencies of DWIs and other regions have low belt use. Also important is the size of the region. Figure 24 compares the percentiles of total fatalities, alcohol-related fatalities, and fatalities using no seat belt by troop area. The figure shows that Alexandria (Troop E) and Monroe (Troop F) had the highest fatality rate (per licensed driver) over the past five years. Troop areas I and C also had a high rate of fatalities associated with high alcohol-related fatality rates. New Orleans (Troop B) area and Baton Rouge (Troop A), Lake Charles (Troop D), Shreveport (Troop G) and Hammond (Troop L) had the lowest fatality rates.

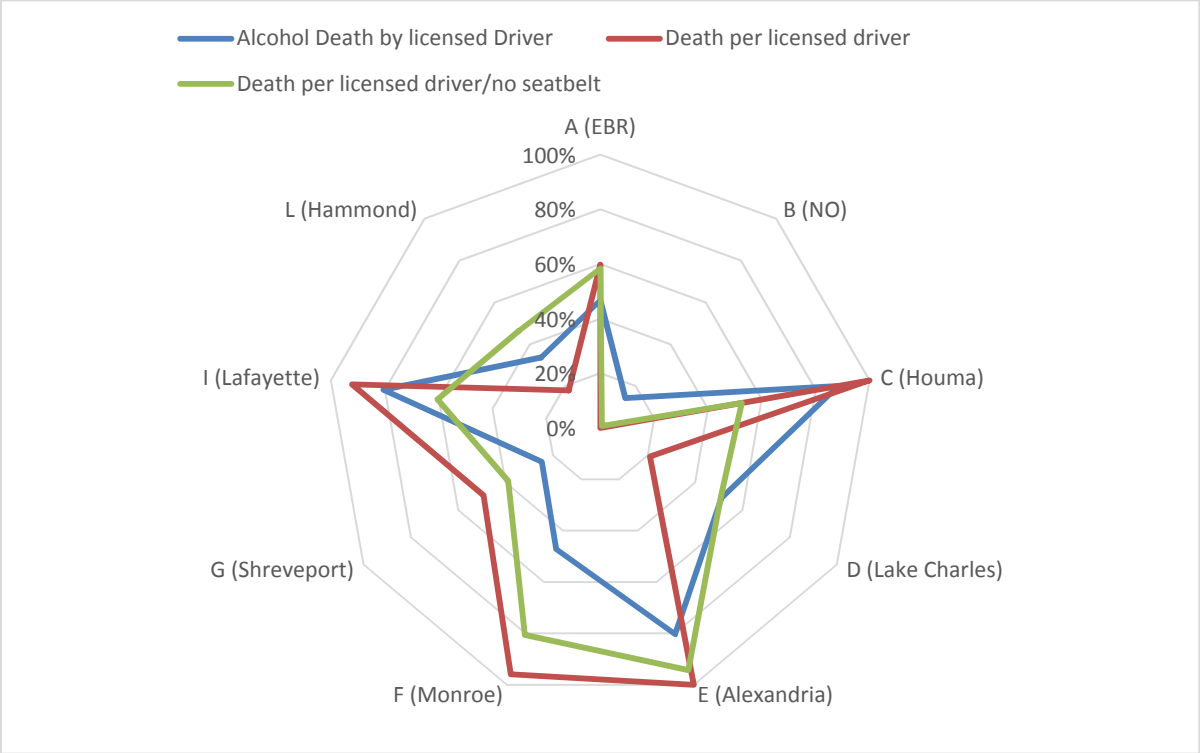

Figure 25: Radar Chart for Fatalities, Alcohol Fatalities, and Fatalities No Seat Belt by Troop Area (5-year Average)

The following bullet points summarize the 2014 traffic crash facts:

1. The state of Louisiana had an increase of 5% in fatalities from 2013 to 2014. The fatality rate also increased from 1.47 fatalities per 100 million miles traveled in 2013 to 1.53 in 2014.

2. Involvement of youth (ages 18-24) in fatal crashes increased in 2014 when compared to 2013.

3. The fatal alcohol-related crash rate for youths (ages 18-24) increased for the first time in five years in 2014.

4. Safety-belt use has increased considerably for two years in a row and was 85.9% in 2015.

5. Belt use increase for male drivers (3.3 percentage points) is more than for female drivers (1.3 percentage points) from 2014 to 2015.

6. White drivers safety belt use has increased by 2.5 percentage points, while black drivers only showed a 0.6 percentage point gain from 2014 to 2015.

7. The 2015 roadside survey of passengers in back seats showed the rear seat belt usage increased by 13.9 percentage points to 68.86% from 2014 to 2015.

8. Motorcycle fatalities have decreased by from 86 in 2013 to 83 in 2014.

9. There were 5 fatalities in 2014 that were associated with cellphone usage compared to 9 fatalities in 2013.

10. The total estimated cost of crashes in Louisiana in 2014 was 3.9% higher than in 2013.

References

Blincoe, L. J., Miller, T. R., Zaloshnja & Lawrence, B. A. (2014, May), The Economic and Social Impact of Motor Vehicle Crashes, 2010, DOT HS 812 013, Washington , DC: National Highway Traffic Safety Administration

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Appendix

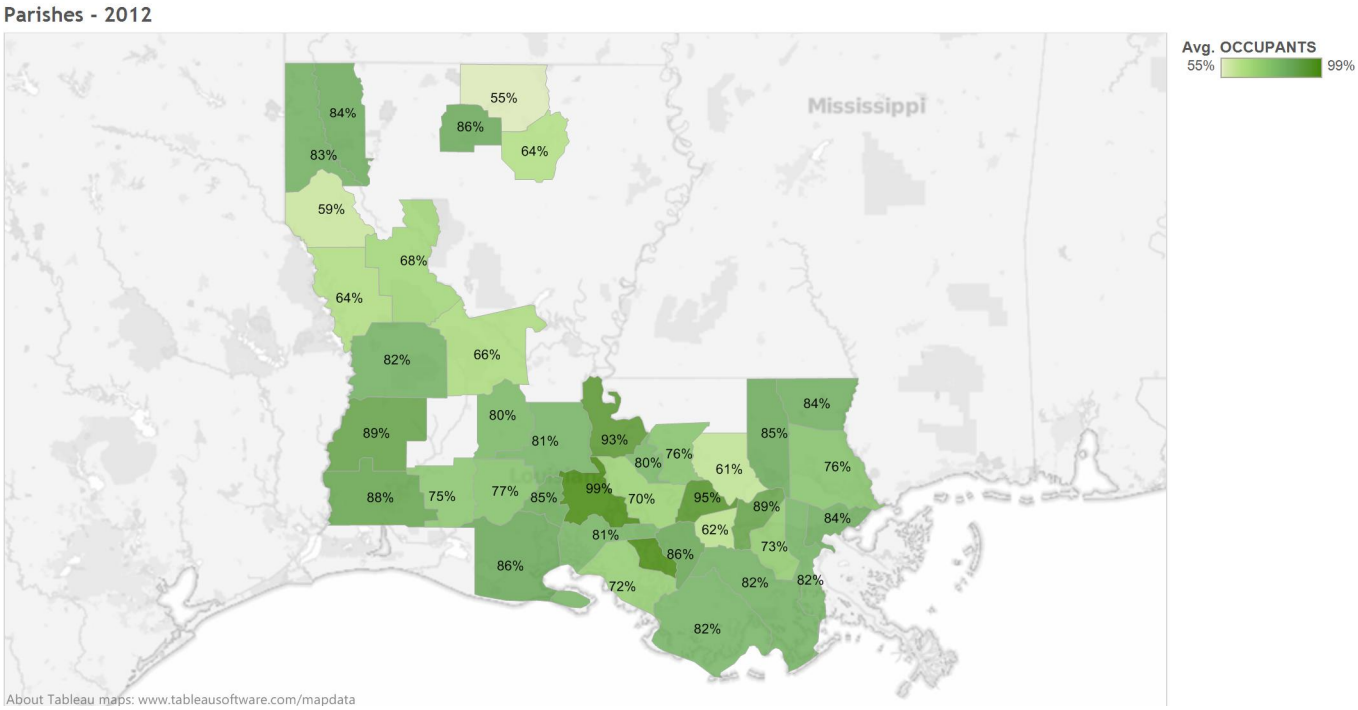


Figure A1: Seat Belt Use by Parish 2012

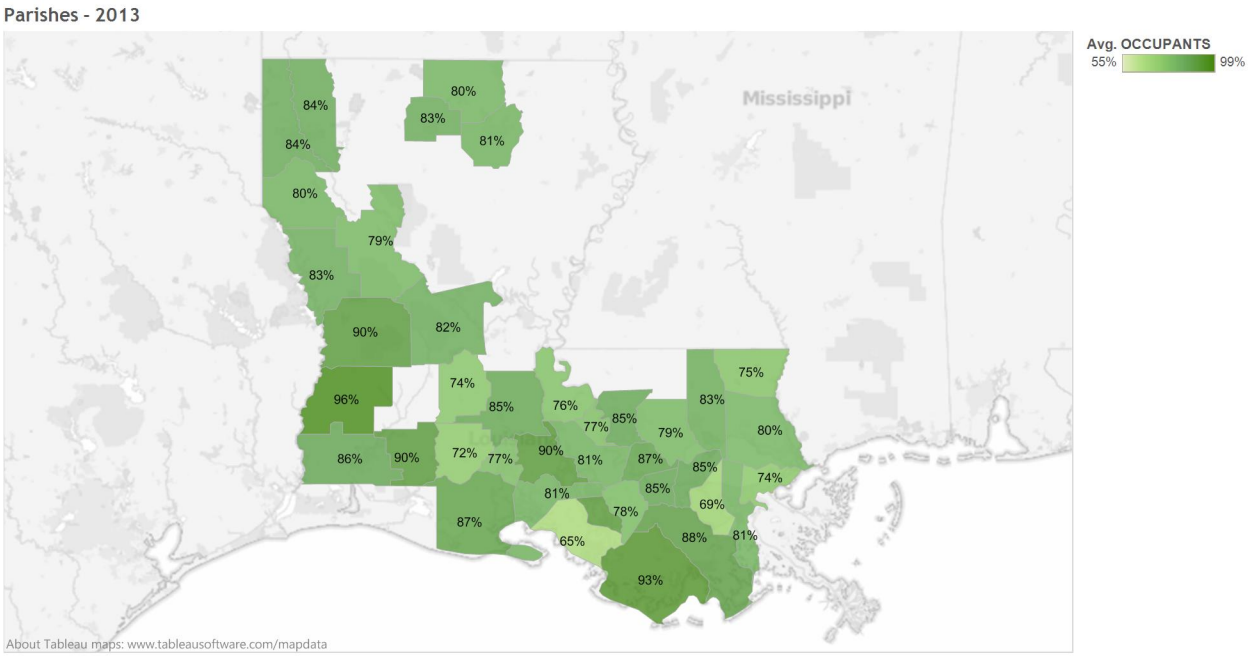
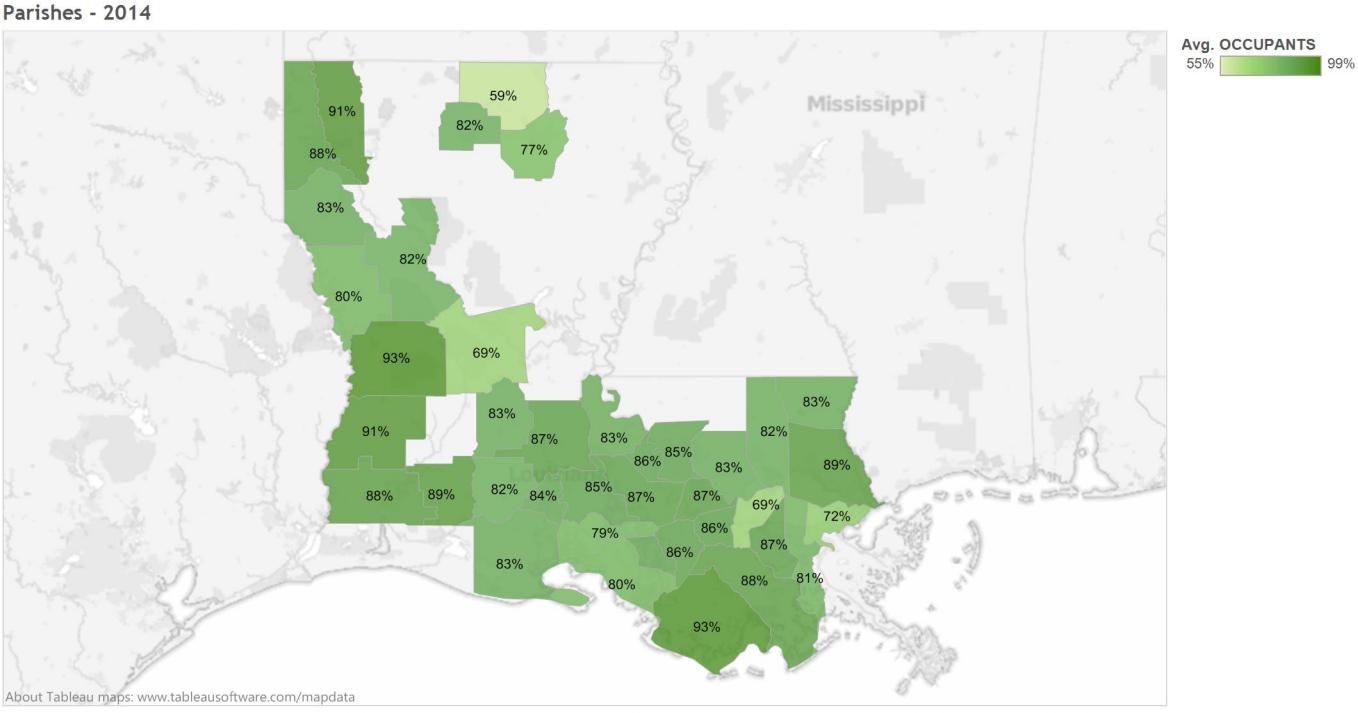


Figure A2: Seat Belt Use by Parish 2013



Map based on Longitude (generated) and Latitude (generated). Color shows average of OCCUPANTS. Details are shown for Parish. The view is filtered on Parish, which keeps 38 of 64 members.

Figure A3: Seat Belt Use by Parish 2014