

# Technical Memorandum

## An Analysis of 2016 Impaired Driving Crashes in Texas



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## Executive Summary

Approximately one-third of all motor vehicle crashes in Texas involve driving under the influence (DUI). Despite experiencing reductions, Texas must remain committed to reducing and preventing DUI crashes. What will assist Texas in reducing crashes is to have a clear understanding of what factors and trends are associated with DUI crashes. The following are key findings from an analysis performed on 2016 DUI crashes:

- There were 3,408 fatal motor vehicle crashes in 2016. Of these crashes, 1,157 were fatal DUI crashes, meaning 33.95% of all fatal crashes in Texas involved a driver under the influence of alcohol and/or drugs. While the overall number of fatal motor vehicle crashes increased from 3,187 to 3,408, the number of fatal DUI crashes actually decreased from 1,212 to 1,157 from 2015 to 2016, respectively.
- Approximately the same number of DUI fatal crashes occurred in rural and urban locations, with 585 and 572 respectively in 2016.
- More DUI fatal crashes occurred on Saturdays and Sundays (250 each) than any other day of the week in 2016.
- More DUI fatal and incapacitating crashes occurred between 2:00 – 2:59 AM than any other hour of the day, representing 10.28% of all DUI fatal and incapacitating crashes in 2016.
- More DUI fatal and incapacitating crashes occurred during the month of July than any other month of the year, representing 9.50% of all DUI fatal and incapacitating crashes in 2016.
- More DUI fatal and incapacitating crashes were single motor vehicle crashes than any other collision type (including angle, same direction, and opposite direction crashes).
- The most common age of an individual in a DUI fatal and incapacitating crash was 22 years old in 2016. The next most common age was 27.
- The average blood alcohol concentration (BAC) of an individual who was DUI was 0.170 – more than twice the legal limit. Females had an average BAC of 0.174 while males had an average BAC of 0.169.
- Approximately 20% of drivers in DUI fatal and incapacitating crashes did not hold a valid driver's license in 2016.
- 51% of drivers in DUI fatal crashes were not wearing a seatbelt.

## Introduction

### Impaired Driving Safety Challenge

Impaired driving continues to be a significant traffic safety challenge in the state of Texas. Approximately one-third of all fatal motor vehicle traffic crashes in Texas involves impairment – a trend that has persisted well beyond the 10 years for which traffic records are maintained in the State. Although significant progress has been made in reducing fatalities, injuries, and crashes caused by alcohol and/or drug impairment, there is still more work to do, and our resolve and commitment to reduce and prevent these crashes must be stronger than ever.

Texas isn't the only state that faces this problem: it is a safety challenge the entire nation faces. Nationwide there were 10,265 deaths from alcohol impaired crashes in 2015 (the most recent year for which national data was available).<sup>1</sup> While drunk driving fatalities have fallen by a third in the last three decades, the chance of being in an alcohol-impaired crash is still one in three over the course of a lifetime.

Additionally, although alcohol-impaired driving crashes remain the primary factor in impaired driving crashes, neither the State nor the nation can afford to overlook the emerging trend of drug-impaired driving crashes. As more states legalize recreational marijuana and as the prevalence of prescription opioids continues to rise, the likelihood of being involved in a drug-impaired crash has also risen. A recent study conducted on the involvement of prescription opioids in fatal motor vehicle crashes found a sevenfold increase, rising from 1% in 1995 to over 7% in 2015.<sup>2</sup>

Impaired driving crashes have consequences beyond just the individuals immediately involved. These crashes impact the economy through lost productivity, medical costs, legal and court costs, emergency service costs, insurance administration costs, congestion costs, and property damage. The National Highway Traffic Safety Administration (NHTSA) estimates that deaths and damages from drunk driving crashes contribute to a cost of \$52 billion a year.<sup>3</sup>

### Data

The following report details 2016 impaired driving crashes in Texas in order to better understand crash factors and trends in the State.

This report defines driving under the influence (DUI) crashes as a crash involving a driver with a:

- blood alcohol concentration greater than 0.00, or
- positive alcohol test, or
- positive drug test, or
- contributing factor flagged as had been drinking, taking medication, under the influence – alcohol, or under the influence – drugs

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<sup>1</sup> National Highway Traffic Safety Administration. Drunk Driving. Retrieved July 15, 2017, from <https://www.nhtsa.gov/risky-driving/drunk-driving>

<sup>2</sup> Columbia University's Mailman School of Public Health. (2017, July 26). Involvement of prescription opioids in fatal car crashes climbs sevenfold. ScienceDaily. Retrieved July 31, 2017 from [www.sciencedaily.com/releases/2017/07/170726125448.htm](http://www.sciencedaily.com/releases/2017/07/170726125448.htm)

<sup>3</sup> NHTSA, *ibid*.

Unless otherwise noted, all data included in this report originated from the Texas Department of Transportation's Crash Records Information System (TxDOT CRIS). CRIS data is populated from Texas peace officers' completed crash reports. CRIS data includes only TxDOT reportable crashes which are crashes that have occurred on a public roadway and resulted in injury or death to a person or caused at least \$1,000 in property damage.

Crash data referenced in this report was used to produce a crash data snapshot presentation given at the 2017 Texas Impaired Driving Forum in April 2017 and two infographics that have been circulated to impaired driving stakeholders. This report serves to supplement the abovementioned materials by providing additional detail for which both time and space did not previously allot. CRIS data used in this report was pulled on March 9, 2017. CRIS data is fluid and dynamic, meaning that crash reports are continually being updated, and CRIS data is constantly in flux.

This report includes data on only the most severe DUI injury crashes – fatalities and incapacitating injuries. For the purposes of clarification, the following terms are defined as:

- **Fatal Injury (Fatality)** – Any injury sustained in a motor vehicle traffic crash that results in death within thirty days of the motor vehicle traffic crash
- **Fatal Crash** - Any injury crash that results in one or more fatal injuries
- **Incapacitating Injury** – Any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities s/he was capable of performing before the injury occurred
- **Incapacitating Crash** – Any crash in which the most severe injury sustained was an incapacitating injury

Both crashes and injuries are used in analysis for this report because together they offer a more complete picture of the impaired driving safety challenge. Examining only the number of DUI fatalities or only the number of DUI crashes may be misleading, as the number of fatalities can be skewed by particularly tragic instances, such as a bus load of individuals who were killed in a DUI crash.

With a finite amount of State resources, Texas must be able to identify and understand impaired driving crash factors and trends in order to develop and implement targeted outreach campaigns, enforcement strategies, and treatment options.

## Impaired Driving in Texas

### Overview

In 2016, there were 3,408 fatal motor vehicle crashes in Texas compared to 3,187 fatal motor vehicle crashes in 2015. Texas experienced 221 more fatal motor vehicle crashes in 2016 than in 2015, representing a 6.93% increase. Table 1 below displays the number of fatal and incapacitating, and fatalities and incapacitating injuries for all motor vehicle crashes from 2010 – 2016. Each year since 2010 (except for 2015), Texas has experienced an increase in the total number of fatal motor vehicle crashes. Along the same lines, the total number of fatalities in motor vehicle crashes has also steadily risen every year in Texas since 2010 (except in 2013).

Table 1. All Motor Vehicle Crashes in Texas, 2010 - 2016

Crash Year	Fatal Crashes	Incapacitating Crashes	Fatalities	Incapacitating Injuries
2010	2,781	11,780	3,060	15,233
2011	2,804	11,728	3,068	14,761
2012	3,037	12,846	3,417	16,170
2013	3,064	13,420	3,407	16,785
2014	3,190	13,665	3,536	17,132
2015	3,187	13,693	3,579	17,095
2016	3,408	14,155	3,777	17,523

In 2016, there were 1,157 people killed in a motor vehicle crash where the driver was impaired, representing 33.9% of all fatal motor vehicle crashes in the State. The number of DUI fatal crashes in 2015 was 1,212. Texas experienced 55 fewer DUI fatal crashes in 2016 than in 2015, representing a 4.53% decrease. Even though the total number of fatal motor vehicle crashes increased from 2015 to 2016, both the number of DUI fatal crashes and the percentage of DUI fatal crashes against all fatal motor vehicle crashes experienced declines.

Table 2. DUI Crashes in Texas, 2010 - 2016

Crash Year	DUI Fatal Crashes	DUI Incapacitating Crashes	DUI Fatalities	DUI Incapacitating Injuries
2010	1,157	2,018	1,303	2,954
2011	1,118	1,988	1,250	2,753
2012	1,147	2,154	1,305	3,053
2013	1,215	2,012	1,387	2,746
2014	1,259	1,914	1,414	2,657
2015	1,212	1,860	1,369	2,635
2016	1,157	1,878	1,321	2,662

Every year since 2013, the percentage of fatal motor vehicle crashes that were DUI has declined. In 2016, 33.95% of fatal motor vehicle crashes were DUI crashes. Despite an increase in the number of fatal motor vehicle crashes, this is the lowest percentage of motor vehicle crashes that were DUI fatal since 2010. Similarly, the percentage of motor vehicle crashes where there was a fatal injury was 34.97% in 2016, the lowest percentage since 2010. Table 3 below displays percentage of motor vehicle crashes that were DUI from 2010 – 2016.

Table 3. Percentage of DUI Motor Vehicle Crashes, 2010 – 2016

Crash Year	DUI Fatal Crashes	DUI Incapacitating Crashes	DUI Fatalities	DUI Incapacitating Injuries
2010	41.60%	17.13%	42.58%	19.39%
2011	39.87%	16.95%	40.74%	18.65%

Crash Year	DUI Fatal Crashes	DUI Incapacitating Crashes	DUI Fatalities	DUI Incapacitating Injuries
2012	37.77%	16.77%	38.19%	18.88%
2013	39.65%	14.99%	40.71%	16.36%
2014	39.47%	14.01%	39.99%	15.51%
2015	38.03%	13.58%	38.25%	15.41%
2016	33.95%	13.27%	34.97%	15.19%

### Rural and Urban Crashes

Urban crashes are those crashes located within the limits of a city or town having a population of 5,000 or more. Rural crashes are those crashes that cannot be defined as urban.

In 2016, there were 585 rural DUI fatal crashes and 572 urban DUI fatal crashes. While urban DUI fatal crashes have remained relatively the same over the past three years, rural DUI fatal crashes have steadily been decreasing during the same time period. Table 4 displays DUI crash and injury data from 2010 – 2016 broken down by rural and urban locations.

Table 4. Rural and Urban DUI Crashes, 2010 - 2016

Crash Year	DUI Fatal Crashes		DUI Incapacitating Crashes		DUI Fatalities		DUI Incapacitating Injuries	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
2010	575	582	955	1,063	652	651	1,415	1,539
2011	596	522	972	1,016	674	576	1,353	1,400
2012	604	543	1,007	1,147	691	614	1,463	1,590
2013	636	579	1,014	998	750	637	1,399	1,347
2014	670	589	931	983	753	661	1,299	1,358
2015	639	573	847	1,013	748	621	1,246	1,389
2016	585	572	872	1,006	685	636	1,283	1,379

There were 585 rural DUI fatal crashes in 2016, representing 34.51% of all rural fatal crashes in the Texas that year. This marks a 9% decrease in rural DUI fatal crashes from 2016 to 2015. Table 5 displays rural and rural DUI fatal crash data from 2010 – 2016.

Table 5. Rural Crashes and Rural DUI Crashes, 2010 - 2016

Crash Year	Rural Fatal Crashes	Rural DUI Fatal Crashes	Percent of DUI Fatal Crashes that are Rural
2010	1,477	575	38.93%
2011	1,495	596	39.87%
2012	1,641	604	36.81%
2013	1,648	636	38.59%
2014	1,729	670	38.75%
2015	1,677	639	38.10%
2016	1,695	585	34.51%

There were 572 urban DUI fatal crashes in 2016, representing 33.39% of all urban fatal crashes in Texas that year. Although the difference between the number of urban DUI fatal crashes in 2015 and 2016 is just one crash, the percent of DUI fatal crashes that were urban crashes declined by 13% because the overall number of urban fatal crashes increased in 2016. Table 6 displays urban crash and urban DUI crash data from 2010 – 2016.

Table 6. Urban Crashes and Urban DUI Crashes, 2010 - 2016

Crash Year	Urban Fatal Crashes	Urban DUI Fatal Crashes	Percent of DUI Fatal Crashes that are Urban
2010	1,304	582	44.63%
2011	1,309	522	39.88%
2012	1,396	543	38.90%
2013	1,416	579	40.89%
2014	1,461	589	40.31%
2015	1,510	573	37.95%
2016	1,713	572	33.39%

### Crashes by Day of Week

More fatal DUI crashes occurred on Saturday and Sunday than any other day of the week in 2016. There were 250 fatal DUI crashes on both Saturday and Sunday in 2016. In fact, 60.09% of fatal DUI crashes occurred on just three days of the week: Fridays, Saturdays, and Sundays. Table 7 below displays DUI fatal crashes by day of week for 2016.

Table 7. DUI Fatal Crashes by Day of Week, 2016

Crash Year	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total
<b>2010</b>	258	99	90	114	137	196	263	1,157
<b>2011</b>	251	110	80	118	115	157	287	1,118
<b>2012</b>	272	108	103	129	119	149	267	1,147
<b>2013</b>	255	120	119	118	139	179	285	1,215
<b>2014</b>	273	121	121	138	128	179	299	1,259
<b>2015</b>	282	110	134	123	136	182	245	1,212
<b>2016</b>	250	134	102	107	126	188	250	1,157
<b>Total</b>	<b>1,841</b>	<b>802</b>	<b>749</b>	<b>847</b>	<b>900</b>	<b>1,230</b>	<b>1,896</b>	<b>8,265</b>

Similarly, more DUI incapacitating crashes occurred on Saturday than any other day of the week. There were 3,396 DUI incapacitating crashes on Saturdays in 2016. DUI incapacitating crashes that occurred on Fridays, Saturdays, and Sundays accounted for 63.47% of all DUI incapacitating crashes in 2016. Table 8 below displays DUI incapacitating crashes by day of week for 2016.



Table 8. DUI Incapacitating Crashes by Day of Week, 2016

Crash Year	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total
2010	456	180	159	163	224	315	521	2,018
2011	471	159	151	169	203	302	533	1,988
2012	557	186	152	200	220	322	517	2,154
2013	457	182	179	175	236	315	468	2,012
2014	428	197	151	171	196	302	469	1,914
2015	456	150	148	190	192	272	452	1,860
2016	421	193	154	164	205	305	436	1,878
<b>Total</b>	<b>3,246</b>	<b>1,247</b>	<b>1,094</b>	<b>1,232</b>	<b>1,476</b>	<b>2,133</b>	<b>3,396</b>	<b>13,824</b>

Given that many law enforcement agencies are working with a finite amount of resources, day of the week that serious DUI injury crashes predominantly occur is an important consideration in order to better target and deploy resources and enforce DUI/DWI laws.

Figure 1 below displays fatal and incapacitating DUI crashes by day of the week in 2016. It contains the same data displayed in the above tables but is visually displayed differently.

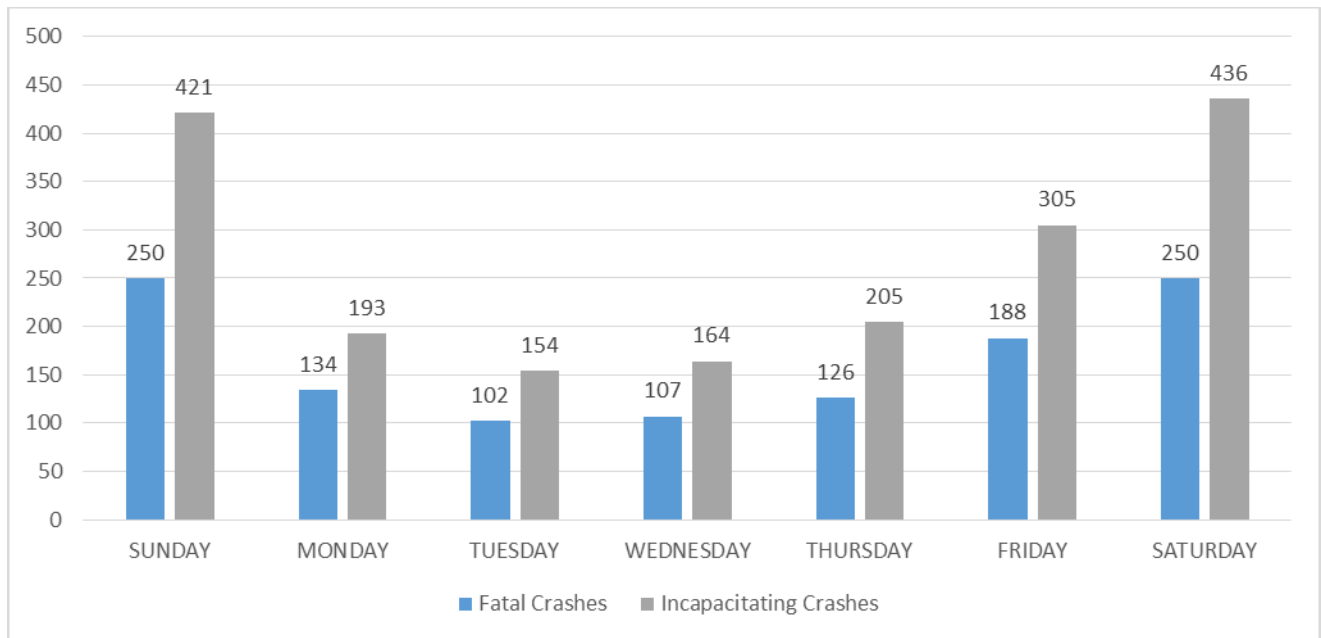


Figure 1. Fatal and Incapacitating DUI Crashes by Day of Week, 2016

## Crashes by Lighting Condition

DUI crashes can also be analyzed by examining the lighting conditions. Figure 2 below illustrates that 71% of fatal and incapacitating DUI crashes occurred when the lighting condition was dark in 2016. This finding aligns with findings in the next section, which show the time/hour of day that fatal and incapacitating DUI crashes predominantly occurred (typically in the early morning hours, namely between 2:00 – 3:00 AM).

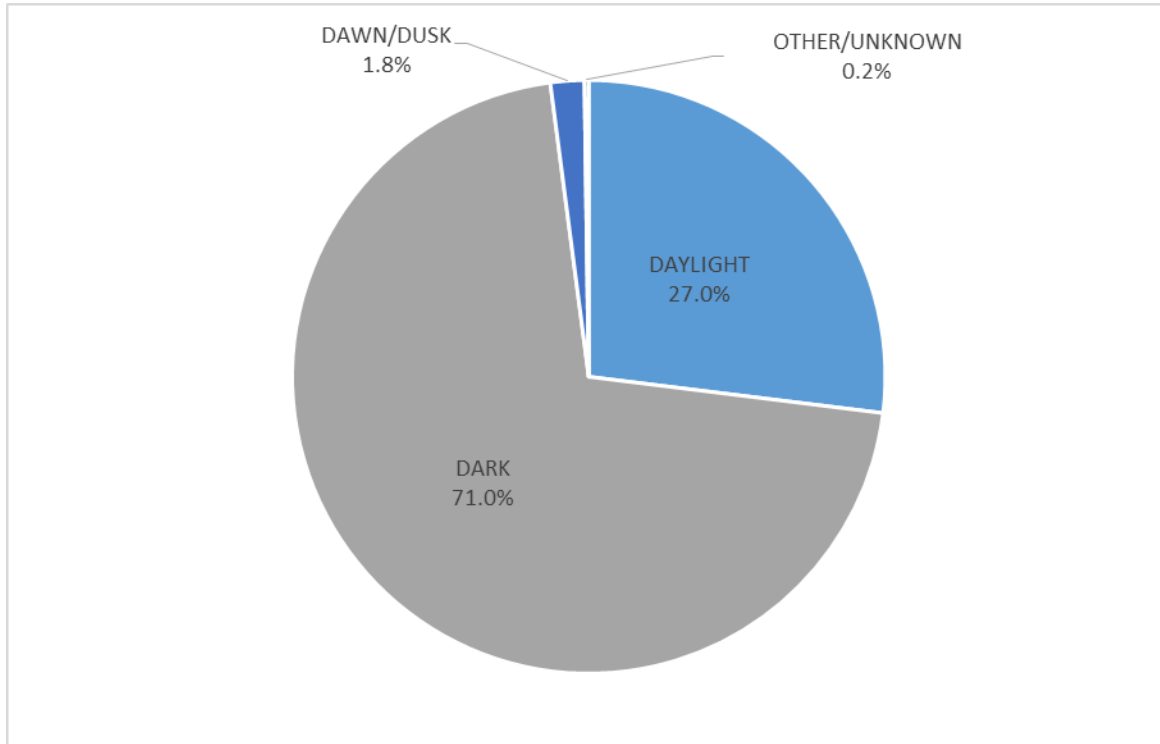


Figure 2. Fatal and Incapacitating DUI Crashes by Lighting Condition, 2016

When examining both day of week and lighting condition, more DUI fatal and incapacitating crashes occurred on Sunday when the lighting was dark in 2016. This was followed closely by Saturday when the lighting was dark. Table 9 below displays DUI fatal and incapacitating crashes by lighting and condition of the week in 2016.

Table 9. DUI Fatal and Incapacitating Crashes by Lighting Condition and Day of Week, 2016

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTAL
DAYLIGHT	136	106	89	82	95	129	181	818
DARK	516	215	159	184	230	357	493	2,154
DAWN/DUSK	17	5	7	4	5	6	12	56
OTHER/UNKNOWN	2	1	1	1	1	1	0	7
TOTAL	671	327	256	271	331	493	686	3,035

Figure 3 below displays the same information as in Table 9, but the data is displayed as percentages. As can be seen, more DUI fatal and incapacitating crashes occurred on Sunday when the lighting was dark than any other combination of day and lighting condition in 2016.

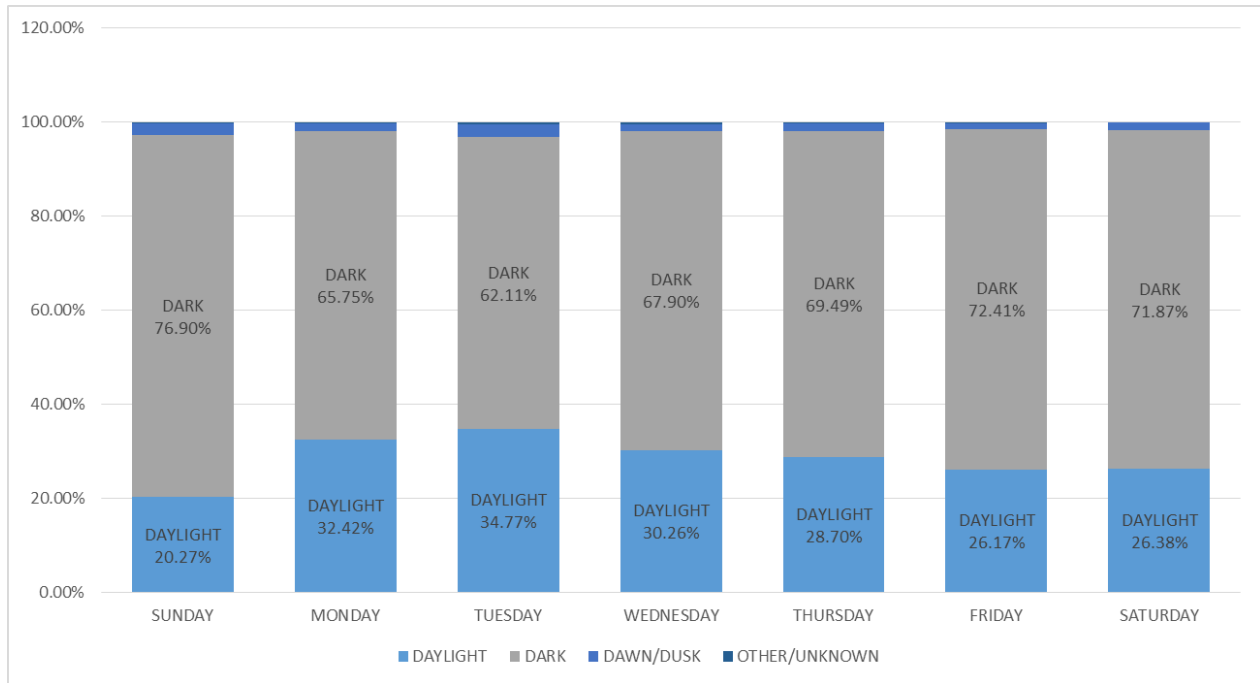


Figure 3. Fatal and Incapacitating DUI Crashes by Light Condition and Day of Week, 2016

### Crashes by Month and Hour

Examining the time of year that DUI fatal and incapacitating crashes occur can provide further insight into DUI crash trends.

Table 10. DUI Fatal and Incapacitating Crashes by Month and Hour, 2016

Crash Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
00:00 - 00:59	15	17	15	18	18	18	25	19	17	25	16	13	216
01:00 - 01:59	15	16	28	20	29	22	29	16	18	14	22	21	250
02:00 - 02:59	30	27	15	32	17	28	26	20	28	39	24	26	312
03:00 - 03:59	23	14	10	10	8	18	21	7	10	16	8	10	155
04:00 - 04:59	10	8	13	10	8	13	11	8	10	12	6	4	113
05:00 - 05:59	10	12	6	4	11	3	5	10	7	6	6	7	87
06:00 - 06:59	5	5	3	4	7	2	7	10	2	7	7	4	63
07:00 - 07:59	5	8	4	2	4	5	5	3	3	7	5	5	56
08:00 - 08:59	1	2	2	3	1	5	3	3	4	9	3	3	39
09:00 - 09:59	4	2	3	0	3	6	2	3	2	3	3	0	31
10:00 - 10:59	3	4	3	4	6	4	4	4	1	4	4	0	41
11:00 - 11:59	2	2	6	3	5	4	0	2	3	3	2	2	34
12:00 - 12:59	4	6	7	4	11	6	7	4	1	3	4	4	61
13:00 - 13:59	11	5	1	1	4	2	7	1	2	6	6	5	51
14:00 - 14:59	6	5	6	9	3	6	12	8	8	4	3	4	74
15:00 - 15:59	8	9	8	10	6	4	8	7	8	5	6	9	88
16:00 - 16:59	6	5	9	8	11	8	8	6	7	10	7	5	90
17:00 - 17:59	8	10	12	6	12	8	8	12	4	4	11	10	105
18:00 - 18:59	14	15	9	10	10	16	12	12	16	12	13	10	149
19:00 - 19:59	15	16	17	14	11	15	18	10	12	26	16	15	185
20:00 - 20:59	12	11	17	27	16	18	11	7	23	18	19	10	189
21:00 - 21:59	22	20	23	25	34	15	15	11	15	13	16	8	217
22:00 - 22:59	11	13	16	19	16	18	21	22	19	16	15	19	205
23:00 - 23:59	21	20	24	23	12	14	26	16	13	15	24	16	224
<b>Total</b>	<b>261</b>	<b>252</b>	<b>257</b>	<b>266</b>	<b>263</b>	<b>258</b>	<b>291</b>	<b>221</b>	<b>233</b>	<b>277</b>	<b>246</b>	<b>210</b>	<b>3,035</b>

Table 10 above displays DUI fatal and incapacitating crashes by month and hour in 2016. Cells highlighted in:

- Red – An above average number of crashes occurred during this time
- Orange – A slightly above average number of crashes occurred during this time
- Yellow – A moderately above average number of crashes occurred during this time
- Green – A moderately below average number of crashes occurred during this time
- Blue – A slightly below average number of crashes occurred during this time

Overall, an above average number of DUI fatal and incapacitating crashes occurred during the month of July, with 291 crashes. DUI fatal and incapacitating crashes in the month of July accounted for 9.5% of all DUI fatal and incapacitating crashes in 2016. The month with the next highest number of DUI fatal and incapacitating crashes was October.

Table 10 also illustrates that more DUI fatal and incapacitating crashes occurred from 2:00 – 2:59 AM than any other hour of the day. There were 312 DUI fatal and incapacitating crashes during this hour in 2016, representing 10.28% of DUI fatal and incapacitating crashes. Again, this information is particularly important when considering the time of day and time of year to increase or concentrate DUI/DWI enforcement efforts and outreach/media campaigns.

### Collision Group

This section examines DUI fatal and incapacitating crashes by type of collision.

- Angle – T-bone collisions
- One Motor Vehicle – Only one vehicle was involved in the crash – the DUI vehicle; colliding with stationary objects such as trees, guardrails, parked vehicles
- Opposite Direction – Head-on collisions
- Same Direction – Rear-end, side-swiped collisions

More rural DUI fatal and incapacitating crashes were one motor vehicle crashes than any other type of collision in 2016. One motor vehicle collisions mean that only the DUI vehicle was involved in the crash. These types of crashes frequently involve the DUI vehicle colliding with a tree or guardrail. One motor vehicle DUI fatal crashes represented 56% of rural DUI fatal crash type collisions. In these cases, the only individual who was killed was the impaired driver. One motor vehicle crashes represented 69.38% of rural DUI incapacitating crashes in 2016. Table 11 further displays rural DUI crashes by collision type.

Table 11. DUI Fatal and Incapacitating Rural Crashes by Collision Group, 2016

Rural Crashes	DUI Fatal Crashes		DUI Incapacitating Crashes		DUI Fatal & Incapacitating Crashes Total	
	Crash Count	Percent	Crash Count	Percent	Total Crash Count	Total Percent
Angle	42	7.18%	49	5.62%	91	6.25%
One Motor Vehicle	332	56.75%	605	69.38%	937	64.31%
Opposite Direction	168	28.72%	104	11.93%	272	18.67%
Same Direction	43	7.35%	114	13.07%	157	10.78%
<b>Total</b>	<b>585</b>	<b>100.00%</b>	<b>872</b>	<b>100.00%</b>	<b>1,457</b>	<b>100.00%</b>

Similarly, one motor vehicle crashes accounted for the largest percentage of urban fatal and incapacitating DUI crashes in 2016. One motor vehicle crashes accounted for 59.09% and 55.01% of urban fatal and incapacitating DUI crashes in 2016 respectively. Table 12 further displays crash data for the other types of collisions.

Table 12. DUI Fatal and Incapacitating Urban Crashes by Collision Group, 2016

Urban Crashes	DUI Fatal Crashes		DUI Incapacitating Crashes		DUI Fatal & Incapacitating Crashes Total	
	Crash Count	Percent	Crash Count	Percent	Total Crash Count	Total Percent
Angle	61	10.66%	149	14.81%	210	13.31%
One Motor Vehicle	338	59.09%	530	52.68%	868	55.01%
Opposite Direction	87	15.21%	120	11.93%	207	13.12%
Same Direction	86	15.03%	207	20.58%	293	18.57%
<b>Total</b>	<b>572</b>	<b>100.00%</b>	<b>1,006</b>	<b>100.00%</b>	<b>1,578</b>	<b>100.00%</b>

## Gender

Drivers across all DUI injury severity crashes (fatality, incapacitating, non-incapacitating, possible injury, unknown injury, and no injury) were predominantly male. In 2016, 78.91% of impaired drivers were male while only 20.51% were female. Even when separating DUI fatal crashes from DUI incapacitating crashes, males were chiefly behind the wheel in both types of DUI injury severity crashes, 80.98% and 77.60% respectively. Table 13 displays DUI drivers by gender.

Table 13. Gender in Fatal and Incapacitating DUI Crashes, 2016

	Crash Count	Percent Crash Count
Female	638	20.51%
Male	2,455	78.91%
No Data	4	0.13%
Unknown	14	0.45%
<b>Grand Total</b>	<b>3111</b>	<b>100.00%</b>

## Age

The most common age of an impaired driver in a DUI fatal and/or incapacitating crash was 22 years old followed closely by the age of 27. These ages are important to note as 22 years of age is the typical age of a senior in college, and 27 is several years removed from college graduation. This information is useful, especially when developing outreach campaigns, to ensure that the targeted audience is receiving the appropriate message. However, it's also important to note that impaired drivers' age ranged from between 15 and 92 years old in DUI fatal and incapacitating crashes in 2016. Figure 5 is a histogram of the ages of impaired drivers in DUI fatal and incapacitating crashes in 2016. It also displays how common (the frequency) the age of the impaired driver was.

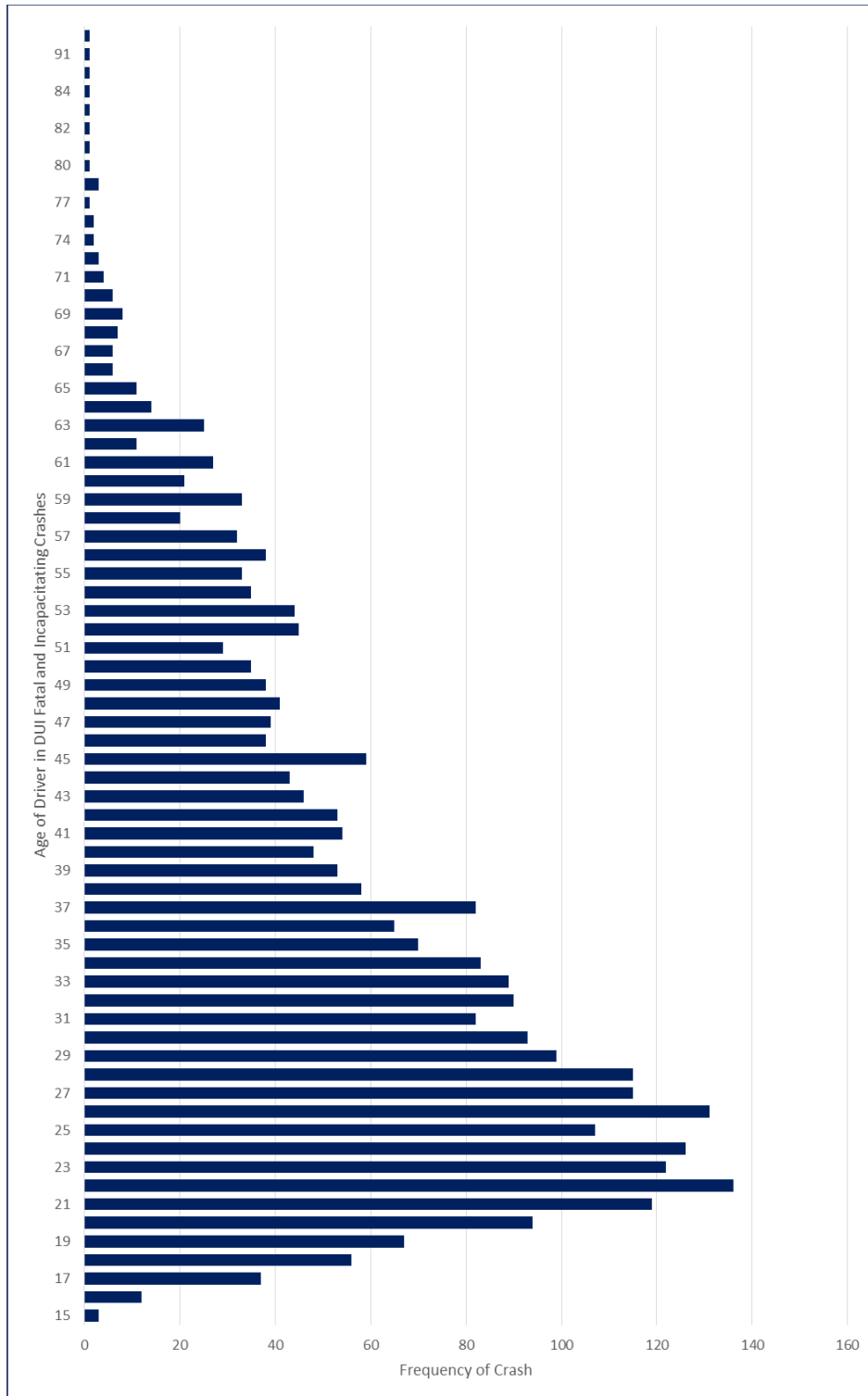


Figure 4. Age of Driver in DUI Fatal and Incapacitating Crashes, 2016

## Blood Alcohol Concentrations of Impaired Drivers

### Frequency of BACs (BAC > 0.00)

The average BAC of an impaired driver with a blood alcohol concentration (BACs) of greater than 0.00 was 0.170 in 2016. The most common BAC (greater than 0.00) of a DUI driver was 0.190. Both of these BACs are more than twice the legal limit. This is an important distinction to make, as a common conception is that individuals are being pulled over and arrested for DWI after consuming one or two alcoholic beverages. Figure 5 displays the BACs of drivers in DUI fatal and incapacitating crashes in 2016. The lowest BAC recorded was 0.01 while the highest was 0.72.

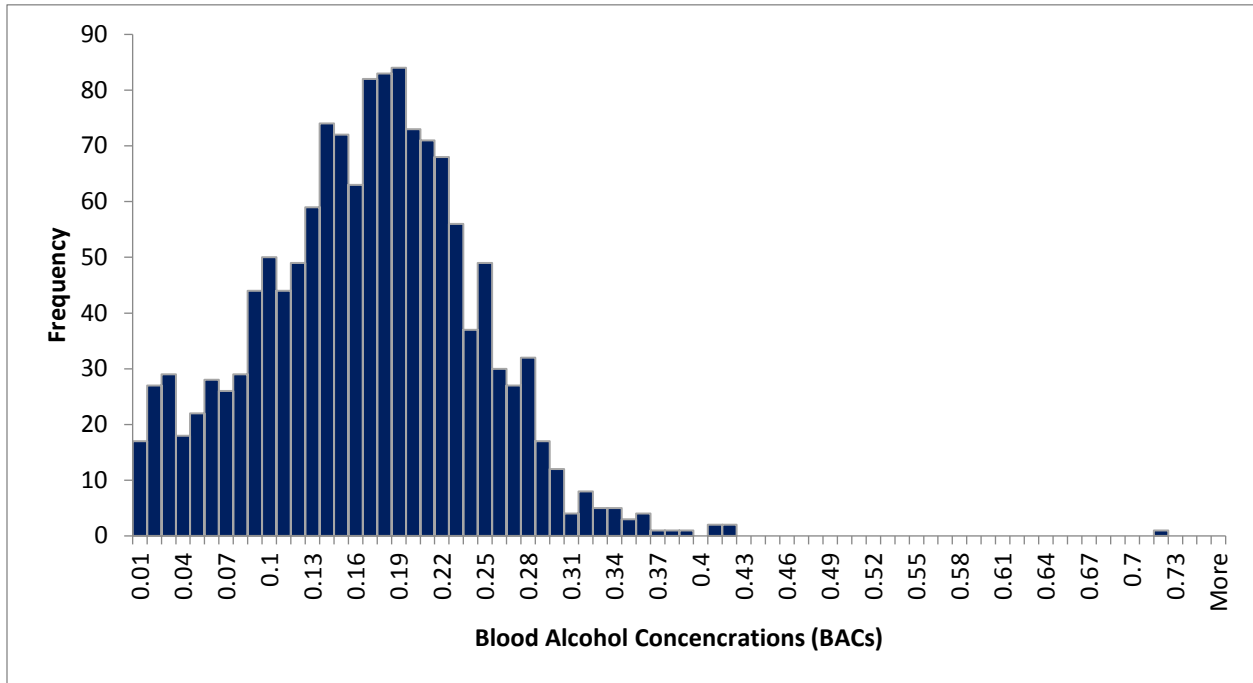


Figure 5. BACs of Impaired Drivers in DUI Fatal and Incapacitating Crashes, 2016

### Average BAC by Gender (BAC > 0.00)

Separated by gender, the average BAC of a female who was DUI was 0.174 while the average BAC of a male who was DUI was 0.169. This is also interesting to note, as DUI is largely a traffic offense committed by young, white, male drivers. Yet, the average BAC of a female who was DUI was slightly higher than male counterparts. This is displayed in Table 14 below.

Table 14. Average BAC Test Results in DUI Crashes, 2016

Driver Gender	Average BAC Test Results of Driver
Female	0.174
Male	0.169
Unknown	0.169
<b>Grand Total</b>	<b>0.170</b>

### Average BAC in DWI Crashes (BAC ≥ 0.08)

The average BAC of intoxicated drivers in DWI crashes (driver BAC was equal to or greater than 0.08) in 2016 was 0.180. Although impairment can occur at any level of BAC, analysis is often performed by only including toxicology results of drivers with a BAC of greater than or equal to 0.08, the legal definition of intoxication. Even in excluding lower BAC results, the average BAC of an intoxicated driver was still more than twice the legal limit. This can be seen in Table 15 below.

Table 15. Average BAC of Drivers in DWI Crash (BAC ≥ 0.08), 2016

Driver Gender	Average BAC Test Results of Driver
Female	0.182
Male	0.180
Unknown	0.184
<b>Grand Total</b>	<b>0.180</b>

### Average BAC for Individuals DUI by Ethnicity and Gender

As was previously discussed, the average BAC of a female individual who was DUI was 0.174. Separated by gender and ethnicity, American Indian/Alaskan Natives had the highest average BAC of 0.194 while Asian females had the lowest average BAC at 0.151. White males had the average highest BAC of .171 while Asian males (the next known ethnicity) had the lowest BAC average at 0.161. Table 16 further displays average BAC of drivers by ethnicity and gender in 2016.

Table 16. Average BAC > 0.00 by Ethnicity and Gender, 2016

Ethnicity	Average Female BAC	Average Male BAC	Average Unknown Gender BAC	Average BAC
Amer. Indian/Alaskan Native	0.194	0.168		0.179
Asian	0.151	0.161	0.059	0.158
Black	0.172	0.162		0.165
Hispanic	0.167	0.170	0.091	0.169
No data	0.166	0.158	0.230	0.165
Other	0.175	0.165		0.167
Unknown	0.155	0.169	0.212	0.173
White	0.178	0.171	0.120	0.173
<b>Grand Total</b>	<b>0.174</b>	<b>0.169</b>	<b>0.169</b>	<b>0.170</b>

### Average BAC for Motorcycle Operators (BAC > 0.00)

The average BAC for a motorcycle operator was 0.158. Female motorcycle operators had an average BAC of 0.101 while male motorcycle operators had an average BAC of 0.159. Table 17 displays average BAC of motorcycle operators in 2016.



Table 17. Average BAC of Motorcycle Operators, 2016

Motorcycle Operator	Average BAC Test Results of Motorcycle Operator
Female	0.101
Male	0.159
<b>Grand Total</b>	<b>0.158</b>

### License Class

In 2016, 19.77% of drivers in DUI fatal crashes were unlicensed while 22.03% of drivers in DUI incapacitating crashes were unlicensed. This is a significant portion of drivers who were unlicensed at the time of the crash – nearly one in five were unlicensed. Again, this kind of information is particularly important when developing public information and education campaigns about DUI crashes, as a large portion of DUI drivers do not even hold valid licenses. Table 18 below displays the types of licenses drivers held who were involved in DUI fatal and incapacitating crashes in 2016.

Table 18. License Class of Drivers in DUI Fatal and Incapacitating Crashes, 2016

License Class	DUI Fatal Crashes		DUI Incapacitating Crashes	
	Crash Count	Percent	Count	Percent
Class A	55	4.55%	75	3.94%
Class A and M	10	0.83%	13	0.68%
Class B	6	0.50%	8	0.42%
Class B and M	2	0.17%	0	0.00%
Class C	724	59.88%	1176	61.83%
Class C and M	96	7.94%	92	4.84%
Class M	0	0.00%	0	0.00%
No Data	12	0.99%	23	1.21%
Other/Out-of-State	58	4.80%	65	3.42%
Unknown	7	0.58%	31	1.63%
Unlicensed	239	19.77%	419	22.03%
<b>Grand Total</b>	<b>1209</b>	<b>100.00%</b>	<b>1902</b>	<b>100.00%</b>

### Restraint Use

In 2016, 51.79% of drivers killed in a DUI crash – who had access to a seatbelt based on the vehicle style involved in the crash – were not restrained. On the other hand, 32.72% of drivers who received an incapacitating injury in a DUI incapacitating crash were not restrained. On average, Texas has a very high seatbelt compliance rate, which has hovered in the low 90s for many years. Lack of restraint use illustrates the poor decision-making that impaired individuals are prone to make.

Type of Restraint	Fatal Injury	Incapacitating Injury	Grand Total
Shoulder & Lap Belt	40.84%	55.37%	50.05%

Type of Restraint	Fatal Injury	Incapacitating Injury	Grand Total
Shoulder Belt Only	0.14%	0.25%	0.21%
Lap Belt Only	0.14%	0.00%	0.05%
None	50.79%	32.72%	39.33%
Child Seat, Facing Forward	0.14%	0.00%	0.05%
Unknown	7.94%	11.66%	10.30%
<b>Grand Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

## Conclusion

While great strides have been made in reducing impaired driving fatalities and crashes over the decades, there is still a great deal of work that must be done. But, before Texas begins making those decisions about where and how to direct funding to combatting the problem, the State must identify and understand the multiple crash factors and trends that are associated with DUI crashes. As Texas continues to build toward a 10-year traffic record retention plan, the State will be better equipped to identify DUI crash trends. Understanding DUI crash trends, and specifically, DUI driver characteristics, better equips the State to deploy targeted enforcement strategies and outreach campaigns. This data-driven approach better ensures that the State's finite resources are directed to the most promising strategies and campaigns.