

Louisiana Traffic Records Data Report 2021

Presented by
Dr. Helmut Schneider
September 2022

This Presentation of the Louisiana Traffic Records Data Report
was Funded by the Louisiana Highway Safety Commission



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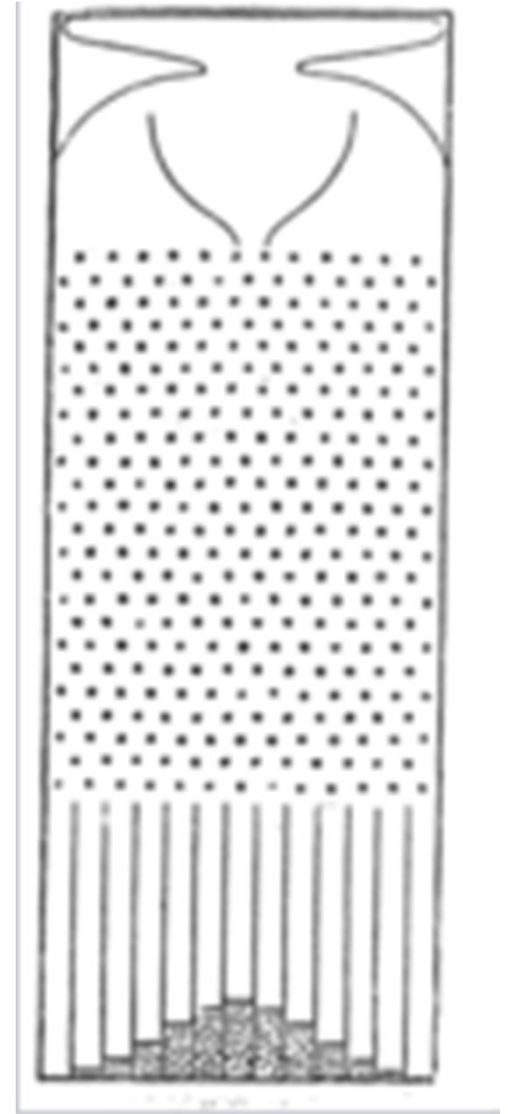
Overview

- Trends in Crashes, Fatalities & Injuries
- Predictive Analytics
- Specific Problem identification
 - Impaired Driving
 - Occupant Protection
- Crash Costs
- Note: No VMT in 2020 & 2021

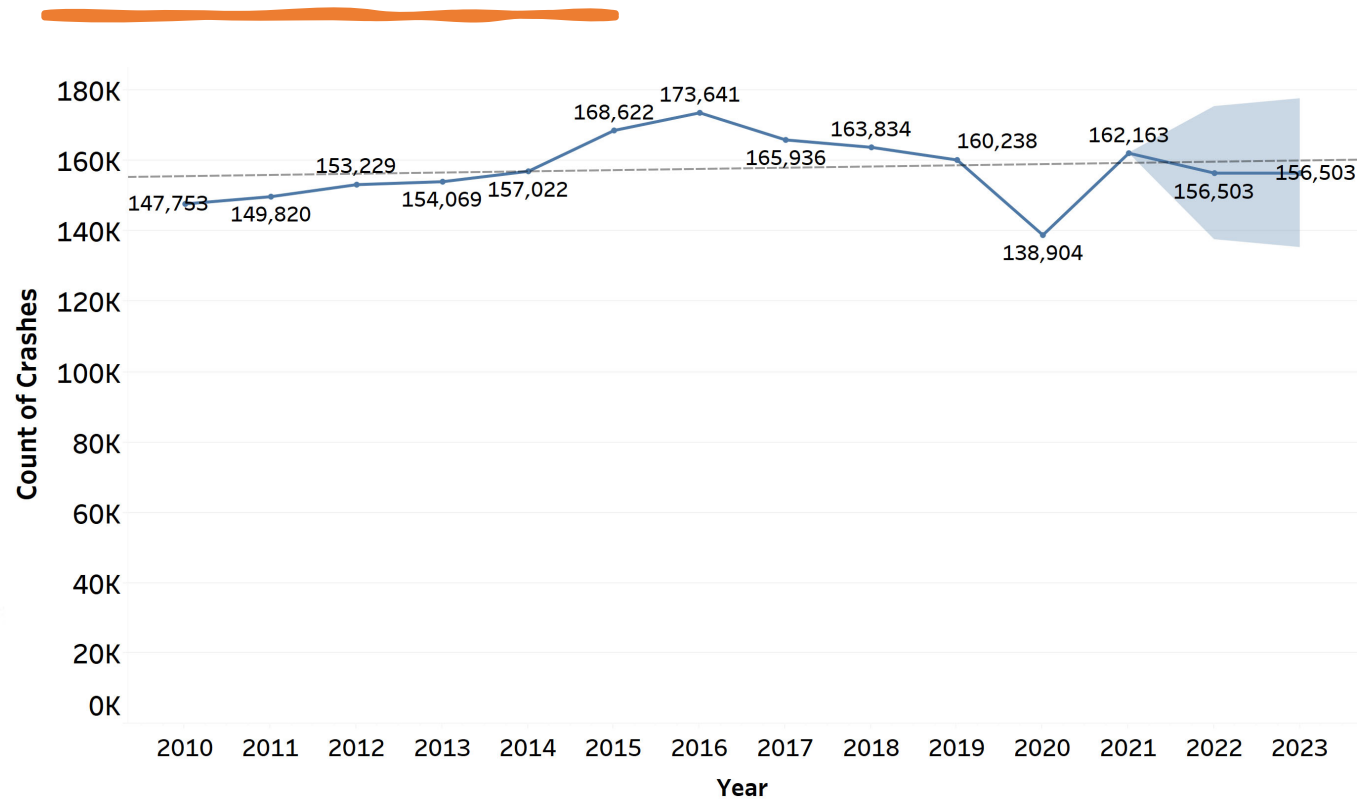


Some Notes about Interpretation of Crash Data

- Regression to the mean
- Explaining: Why did it happen?
- Causation versus correlation and confounding
- Predictions: Does it continue to happen?
 - “Prediction is very difficult, especially if it's about the future!” Niels Bohr
 - “All models are wrong, but some are useful”. George Box
 - Predictions include errors; thus, they should have confidence intervals
 - The more data, the smaller the confidence intervals
 - But bias may still be present even with large amounts of data



Model for Louisiana Crashes – large amount of data – small relative error





LOUISIANA STATE POLICE
COURTESY - LOYALTY - SERVICE
COLONEL LAMAR A. DAVIS, SUPERINTENDENT



TROOP G NEWS RELEASE
September 8, 2022

Unrestrained Man Killed in DeSoto Parish Crash

Keachi – On Thursday, September 8, 2022, just after 3:00 p.m., Troopers assigned to Louisiana State Police Troop G began investigating a one-vehicle fatality crash on LA Hwy 5, south of Kalmbach Road. This crash claimed the life of 34-year-old Eric Sweet, of Many, who was not wearing a seat belt.

The initial investigation revealed a 2016 Ram pickup driven by Sweet was traveling south on LA Hwy 5. For reasons still under investigation, he exited the roadway and struck a guardrail before overturning.

Sweet, who was not wearing a seat belt, suffered fatal injuries and was pronounced dead on the scene by the DeSoto Parish Coroner.

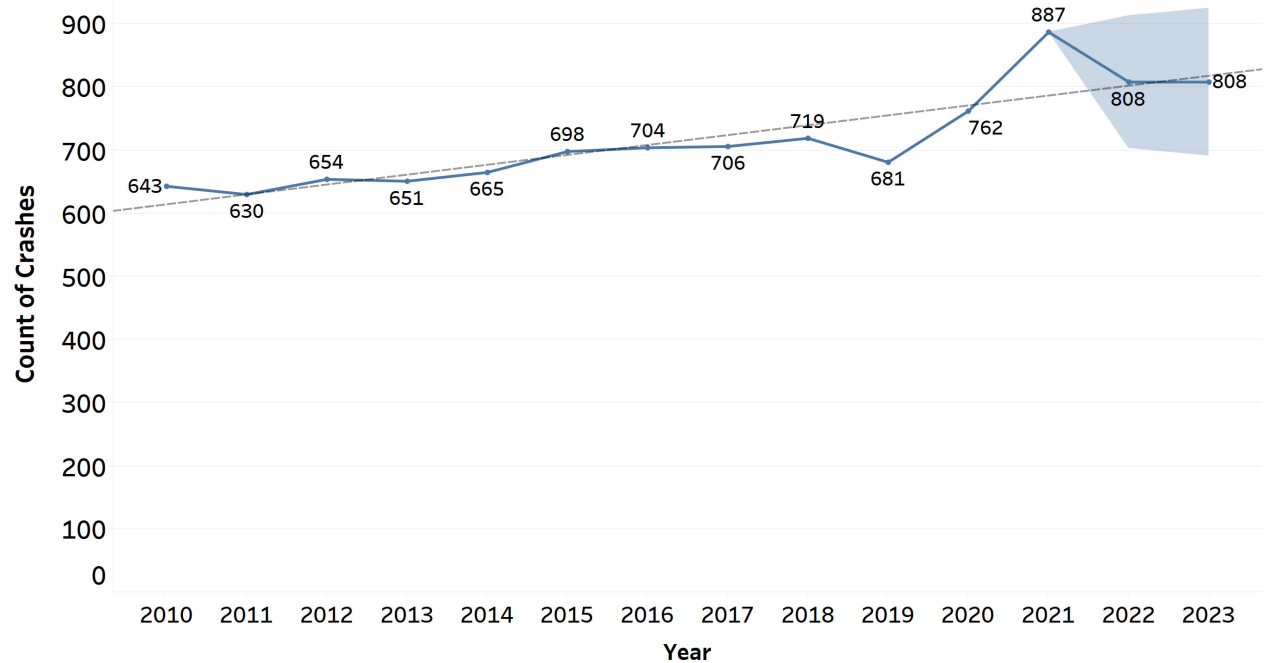
Impairment is not suspected to be a factor in this crash; however, routine toxicology samples were taken and submitted for analysis. The crash remains under investigation.

Buckling up is the most effective way to protect yourself during a vehicle crash. Failure to take a few seconds to buckle up can have devastating consequences. Louisiana law requires every person in a vehicle, regardless of seating position, to be properly restrained day or night.

In 2022, Troop G has investigated 27 fatal crashes, which have resulted in 30 deaths.

Contact Information:

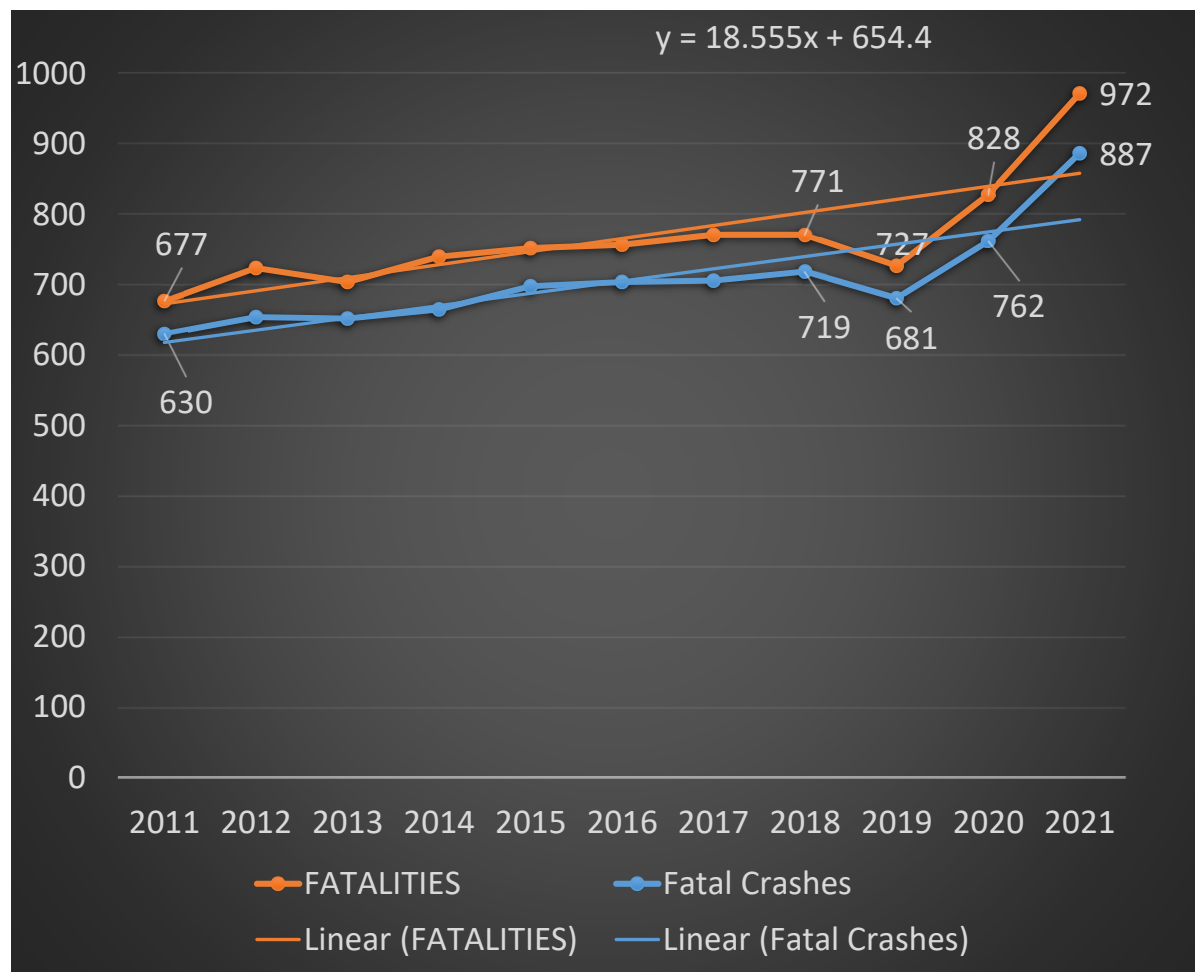
Tpr. Jonathan Odom
Louisiana State Police
Public Affairs Section
Office: (318) 741-7409
Jonathan.Odom2@la.gov



Predictions for fatal crashes in 2022 & 2023

Trends in Fatalities

- The increase in fatalities from 2020 to 2020 was 17.4%.
- However, fatalities have increased on average 18 fatalities per year over the past decade.
- While the 2020 fatalities were in line with the long-term trend the 2021 number of fatalities were above the long-term trend.



Slide 6

HS1

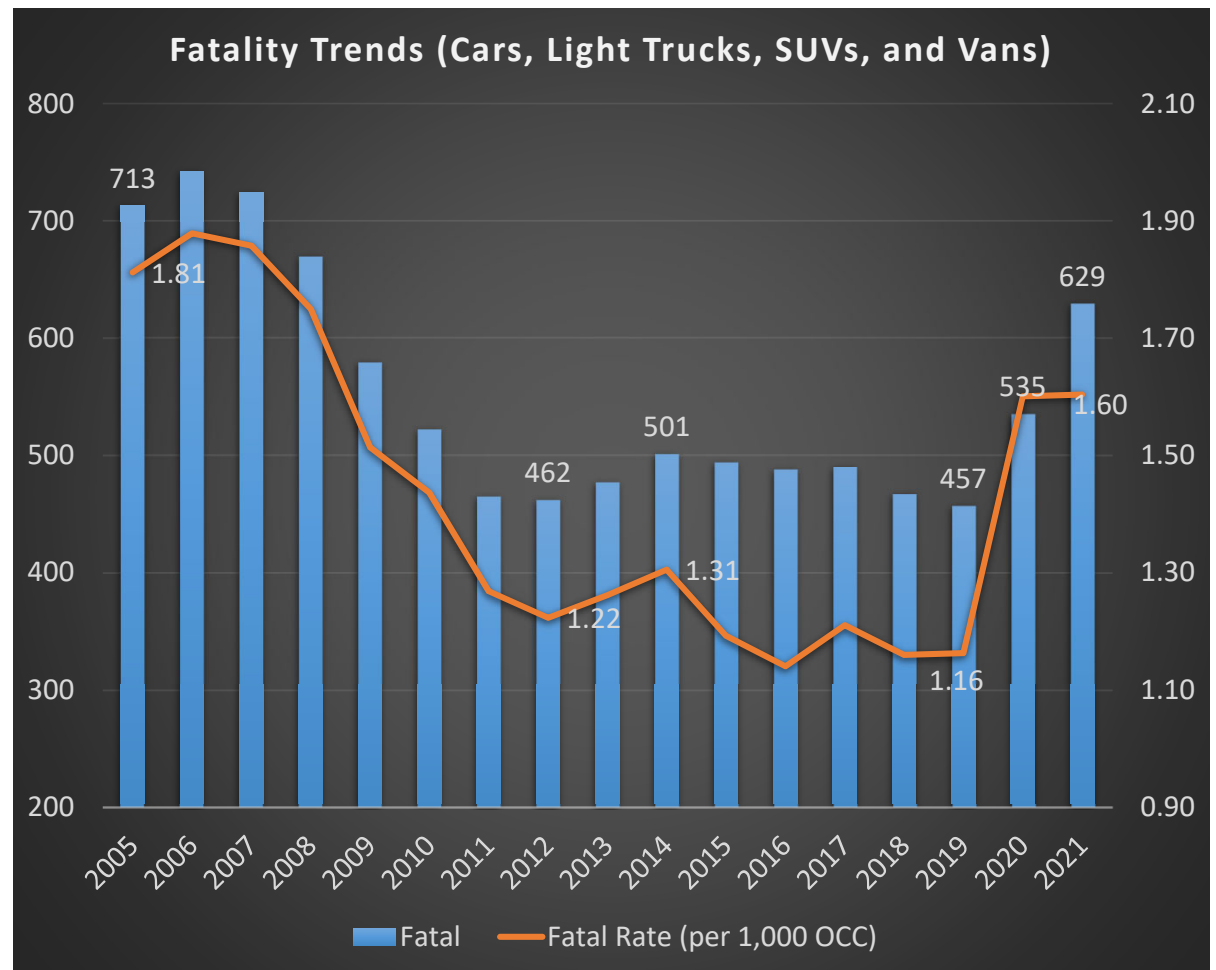
should be 257 in 2016

Helmut Schneider, 6/5/2017

Fatality Rate per 1,000 Occupants of Cars, Light Trucks, SUVs, and Vans

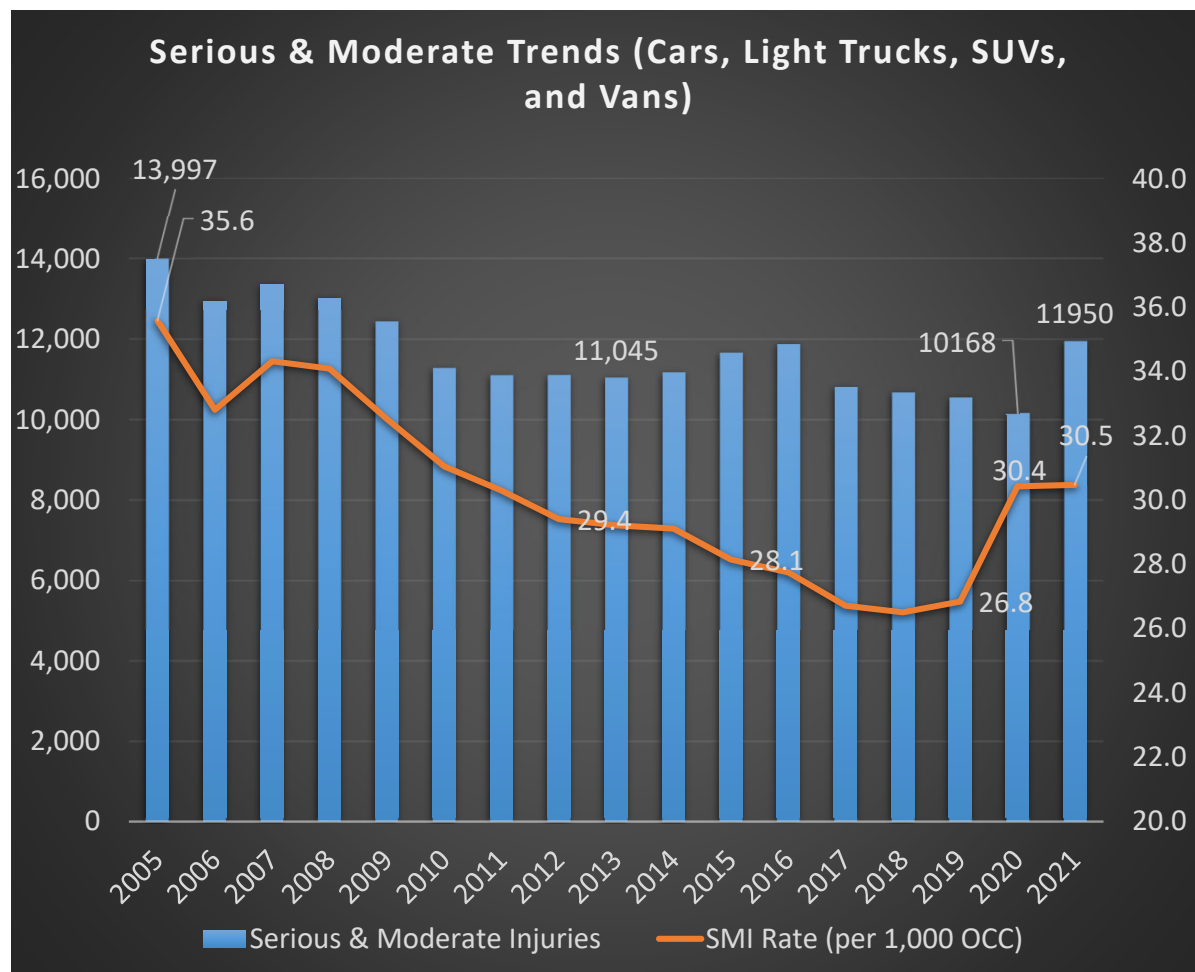
Fatalities in passenger vehicles increased from 535 in 2020 to 629 in 2021, a 17.6% increase.

Fatality rate was unchanged from 2020 to 2021.



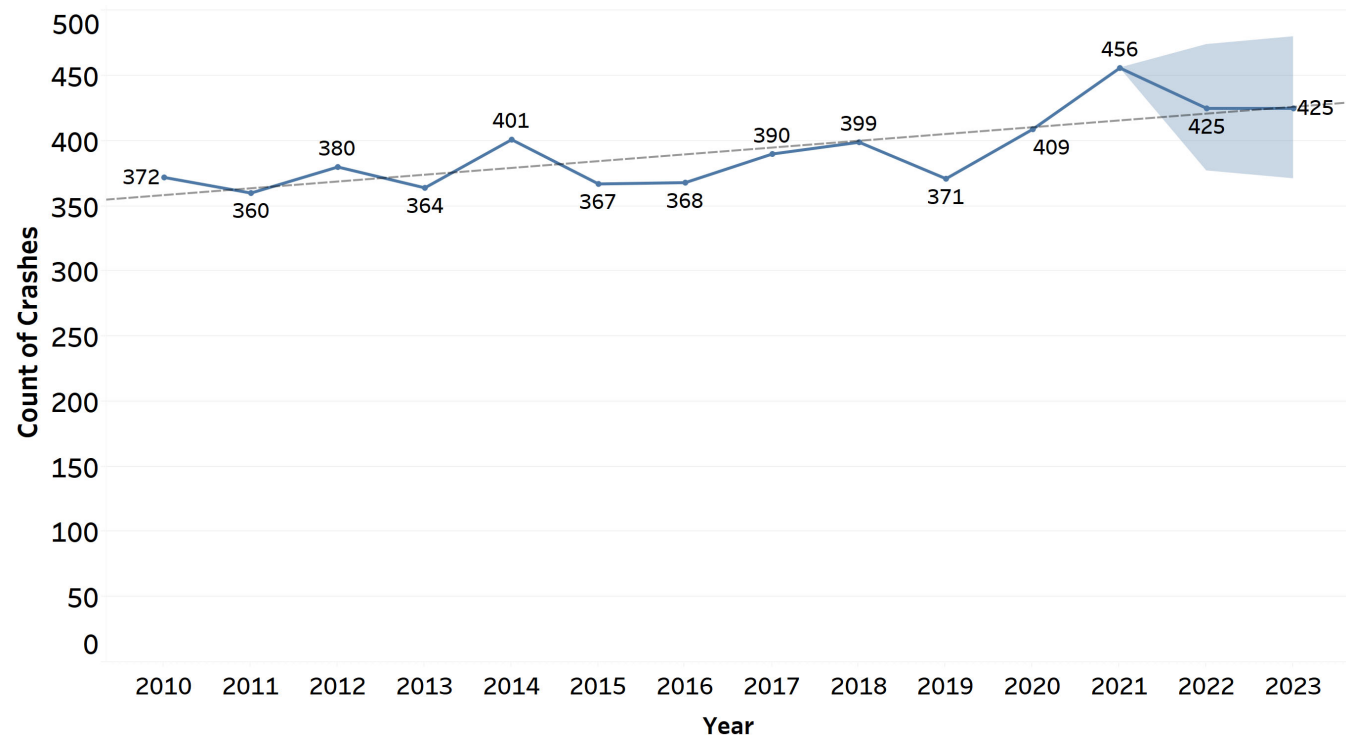
Moderate and Severe Injury (Cars, Light Trucks, SUVs, and Vans)

- **Moderate-to- Severe Injuries:**
- Decreased from
- 13,997 in 2005 to 10,168 in 2020, but increased in 2021 to 11,950.
- **The Moderate-to- Severe-Injury Rate:**
- (per 1,000 Occupants)
- Decreased from
- 35.6 in 2005 to 26.8 in 2019.
- But increased to 30.4 in 2020 and was 30.5 in 2021.

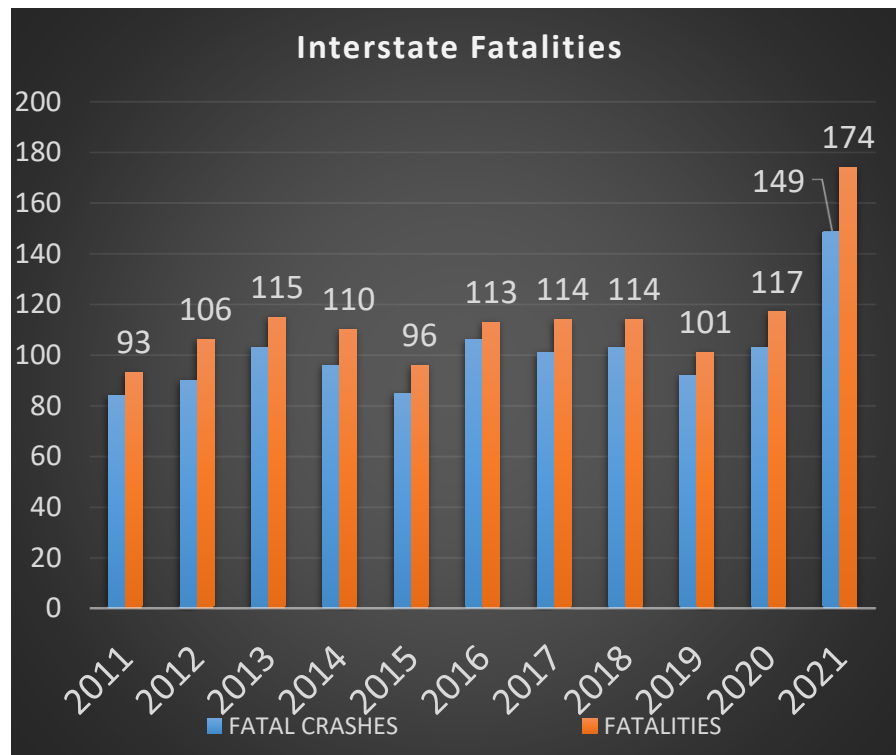


Single Vehicle Fatal Crashes

- Single vehicle fatal crashes were up 11.5% in 2021.
- The prediction for 2022 & 2023 are 425 provided by the regression line.



Interstate Fatalities



Heavy traffic on Interstate 10 in Lafayette near the exit for I-49. Advertiser File Photo

2021 Fatalities were:

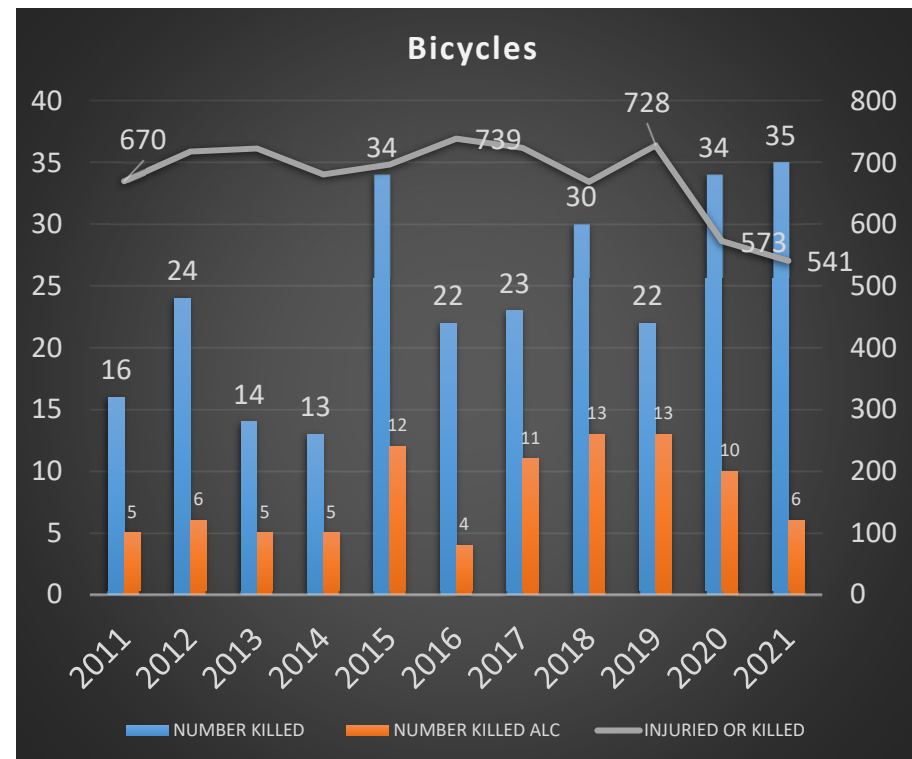
- Up 49% from 2020.
- 56% above 5-year average.



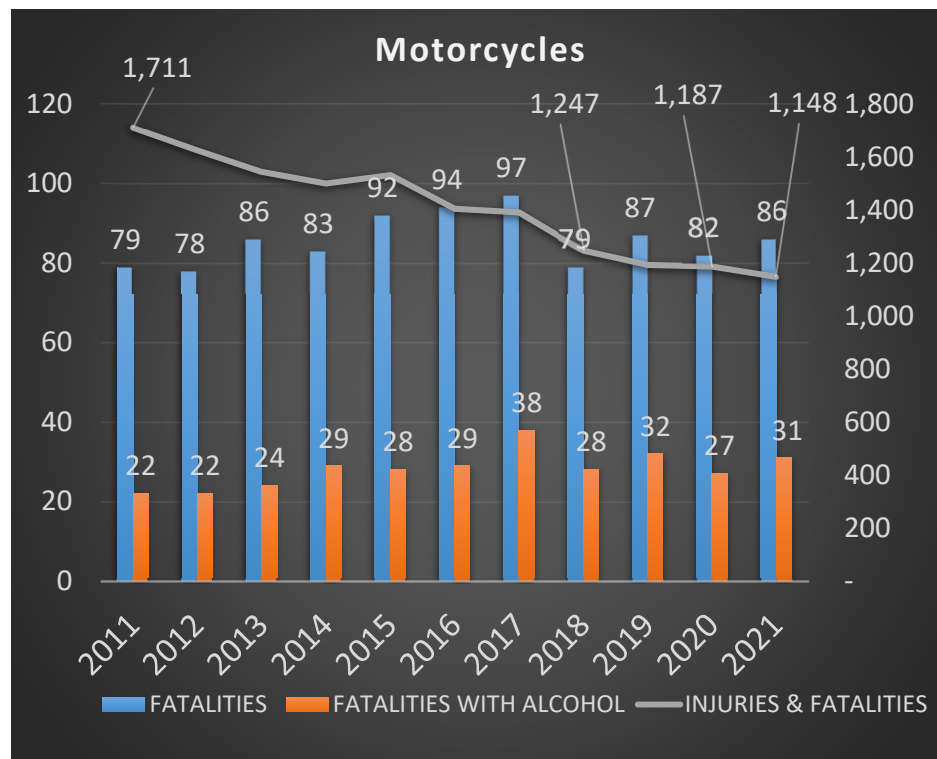
BICYCLE

Bicyclist Fatalities

- 2021 bicyclist fatalities were slightly **up 2.9%** from 2020.
- 2021 bicyclist fatalities 33% **above** 5-year average.
- Bicyclist's death Alcohol involving alcohol of the bicyclist have declined to 17.10% from 29.4% in 2020. They were 22 percentage points below the 5-year average of 38.9%.
- 2021 injuries were **down 5.6%** from 2020.

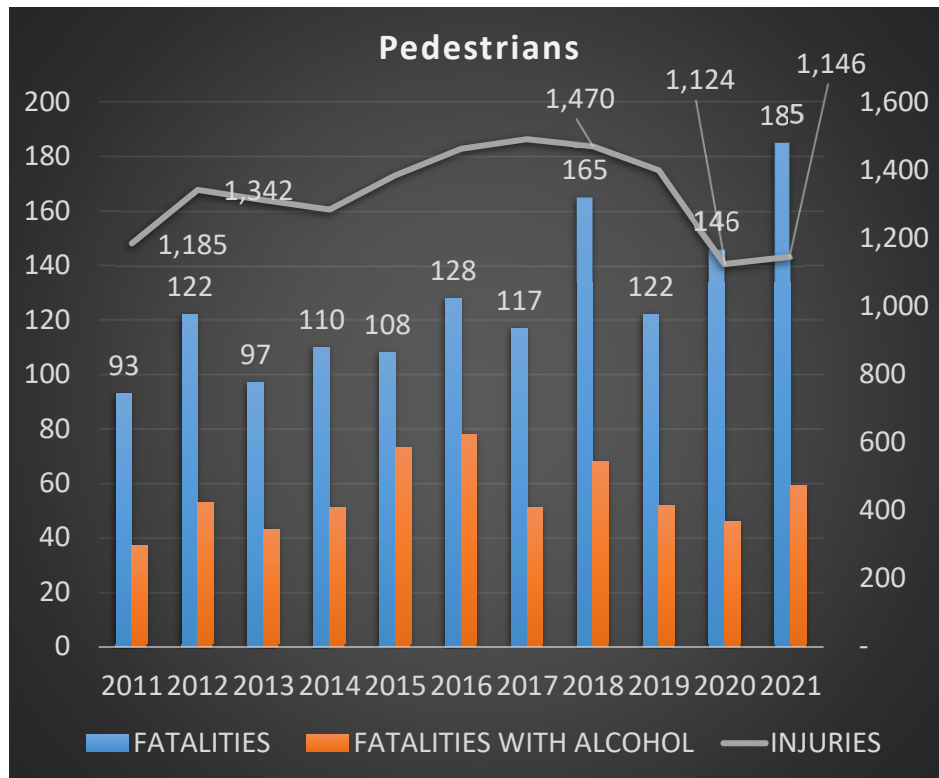


Motorcyclist Fatalities



- Motorcyclist fatalities **up 4.9%**
- Alcohol involved motorcyclist's death **up 14.8%**
- Injuries **down 3.3%**
- Injuries have been trending downward for the past decade.
- The fatality rate based on crashes was 5.6% in 2021 compared to 5.3% in 2020 and half a percentage point below the 5-year average.

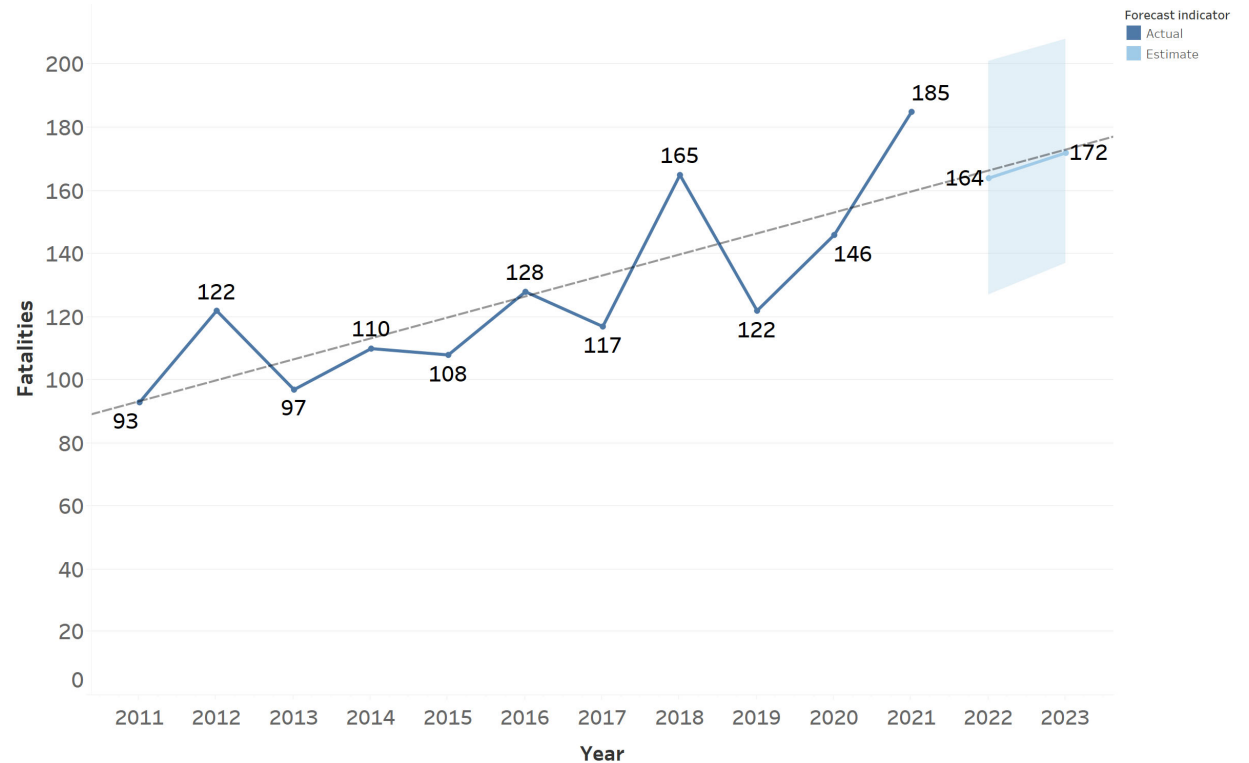
Pedestrian Fatalities & Injuries



- Pedestrian fatalities were at an all-time high of 185, **Up 26.8%** from 2020 to 2021
- Pedestrian fatalities were 44.5% above the past 5-year average.
- But injuries were only slightly **up 2%**.
- Pedestrian fatalities involving alcohol of the pedestrian was 31.9% in 2021 29 percentage points below the past 5-year average

Trend in Pedestrian Fatalities

- Increase of about 9 fatalities per year over the past 10 years.
- The forecast for 2022 is 164. We can expect between 130 and 200 pedestrian fatalities in 2022 with 95% confidence.



Pedestrian Actions by year

- CROSSING, ENTERING ROAD NOT AT INTERSECTION
- WALKING IN ROAD-WITH TRAFFIC
- STANDING IN ROADWAY

PedestrianActionDescription	Date AK					
	2016	2017	2018	2019	2020	2021
CROSSING, ENTERING ROAD NOT AT INTERSECTION	44	41	56	30	40	52
WALKING IN ROAD - WITH TRAFFIC	16	15	26	20	21	36
STANDING IN ROADWAY	12	3	15	12	12	22
CROSSING, ENTERING ROAD AT INTERSECTION	7	11	17	12	11	10
UNKNOWN	10	9	11	10	10	17
OTHER	8	16	8	14	8	7
WALKING IN ROAD - AGAINST TRAFFIC	9	5	10	4	13	11
NOT REPORTED	7	7	10	6	16	6
NOT IN ROADWAY	8	6	5	3	7	13
OTHER WORKING IN ROADWAY	1	1	3	4	3	5


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Pedestrian Actions by HWY Type 2015-2021

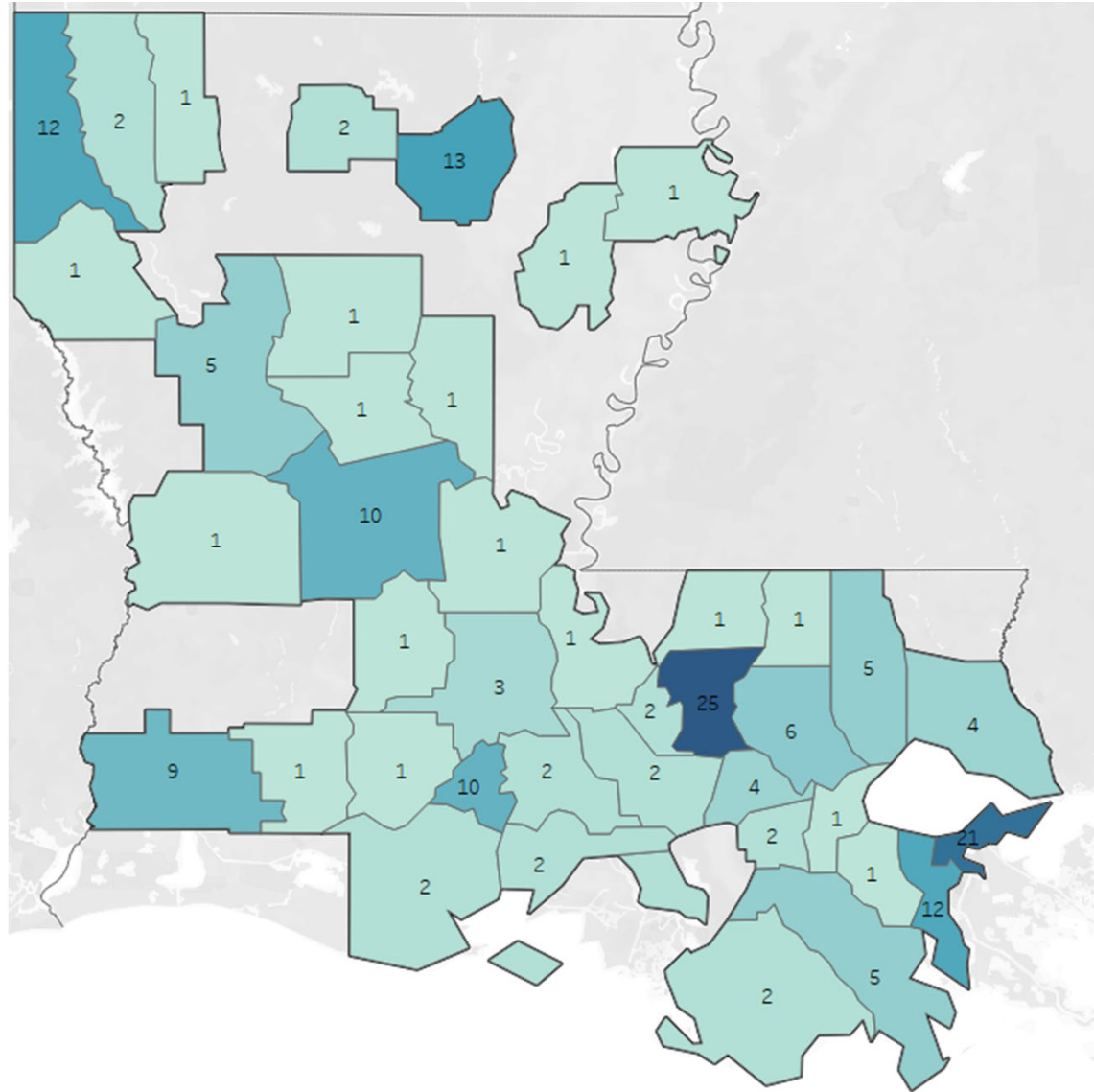
- CROSSING, ENTERING ROAD NOT AT INTERSECTION
- WALKING IN ROAD-WITH TRAFFIC
- STANDING IN ROADWAY

PedestrianActionDescription	Highway Type Code (group)				
	City Roads	Interst..	Parish Roads	State Highways	US Highway
CROSSING, ENTERING ROAD NOT AT INTERSECTION	22	42	13	93	93
WALKING IN ROAD - WITH TRAFFIC	14	17	7	66	30
STANDING IN ROADWAY	4	20	6	24	22
CROSSING, ENTERING ROAD AT INTERSECTION	15		4	20	29
UNKNOWN	17	8	5	24	13
OTHER	14	12	7	17	11
WALKING IN ROAD - AGAINST TRAFFIC	10	5	5	17	15

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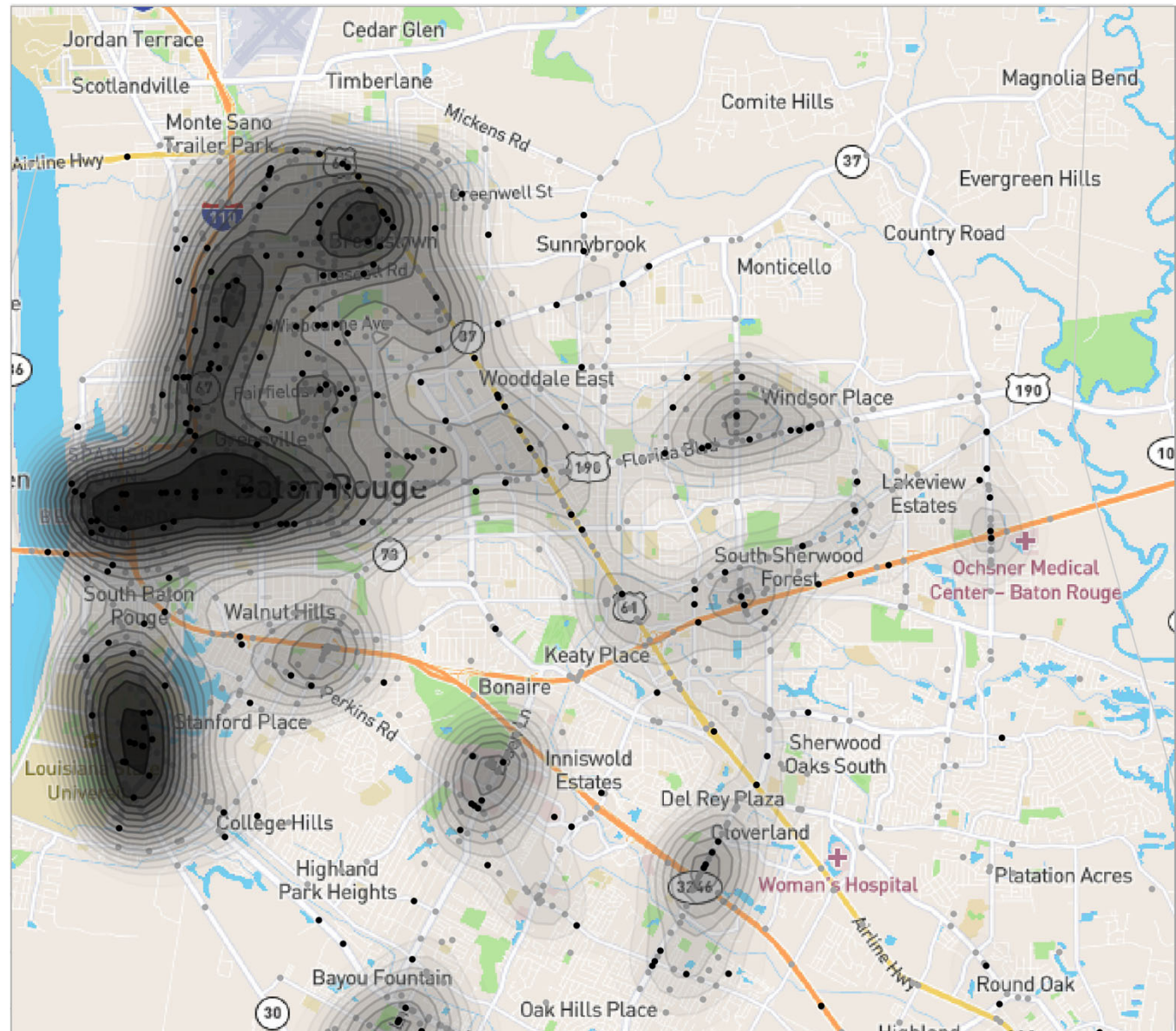


2021 Pedestrian Fatalities by Parish



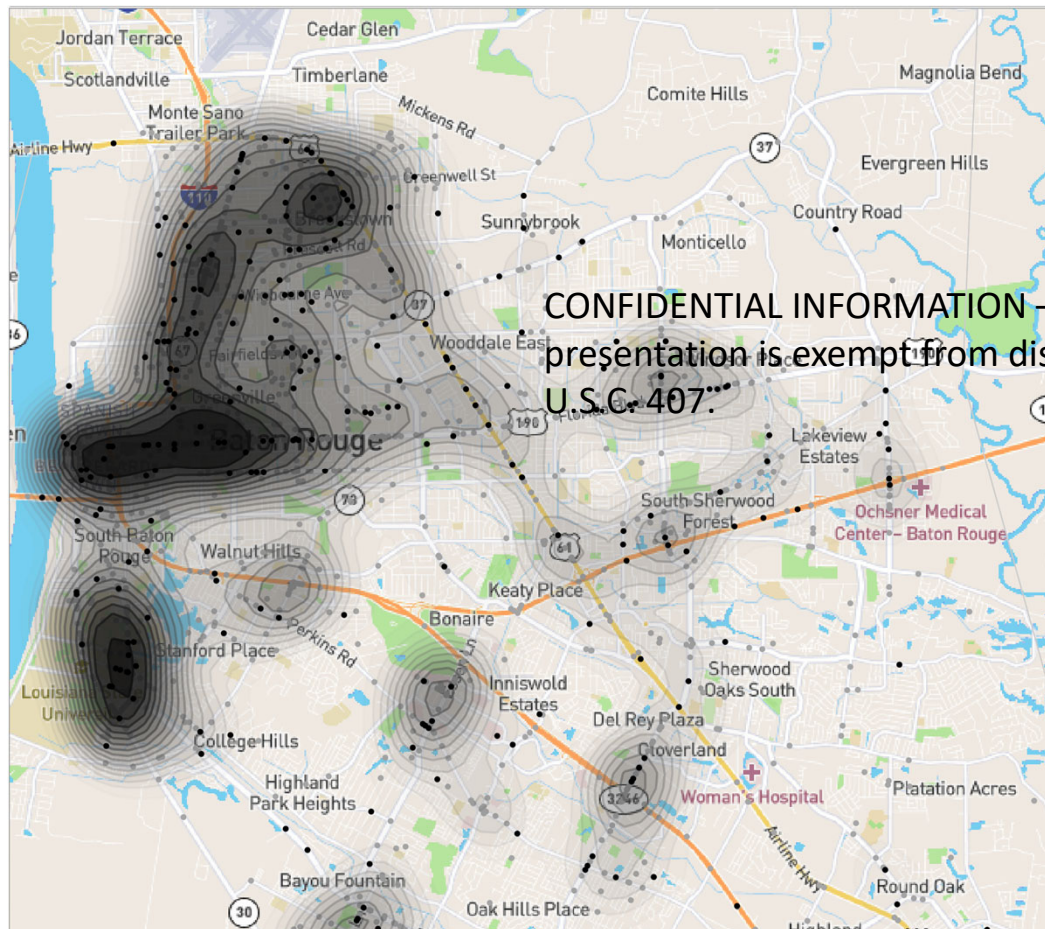
Contour Plot of 2021 Pedestrian Injuries in EBR

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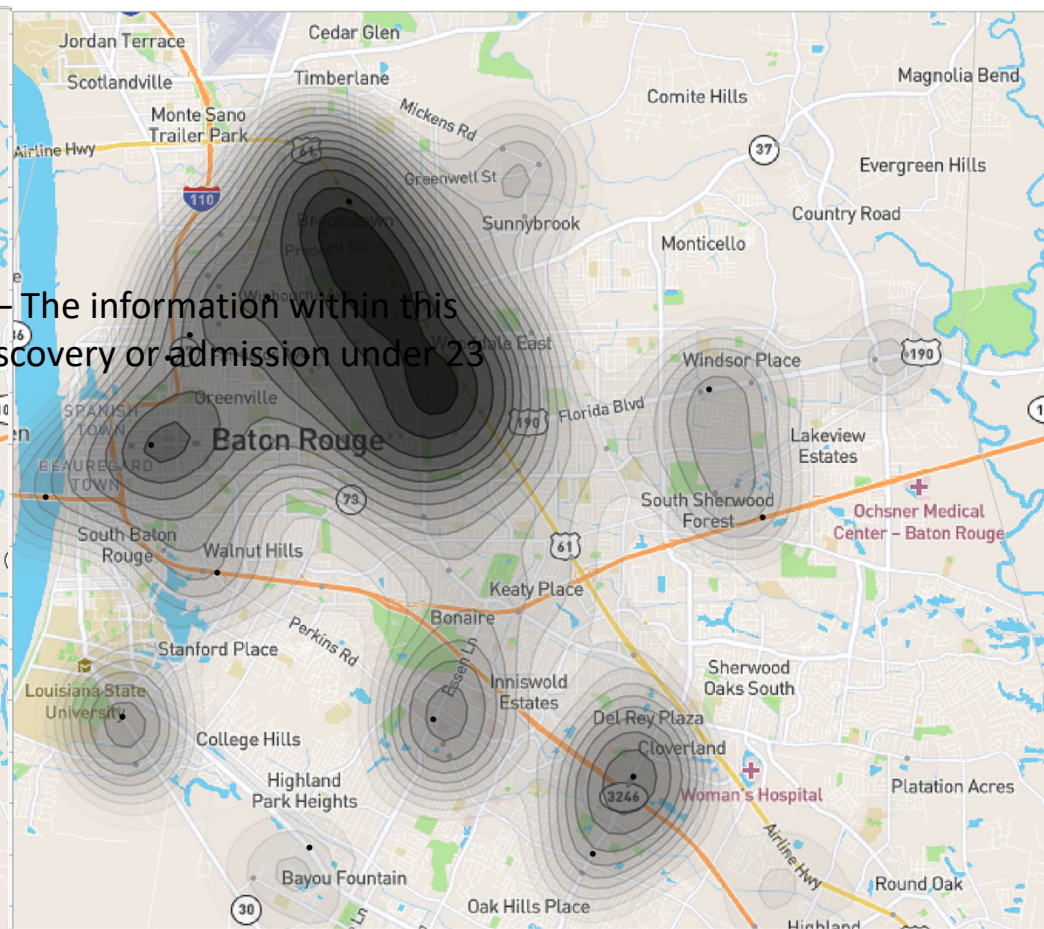


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Pedestrian Injuries in EBR

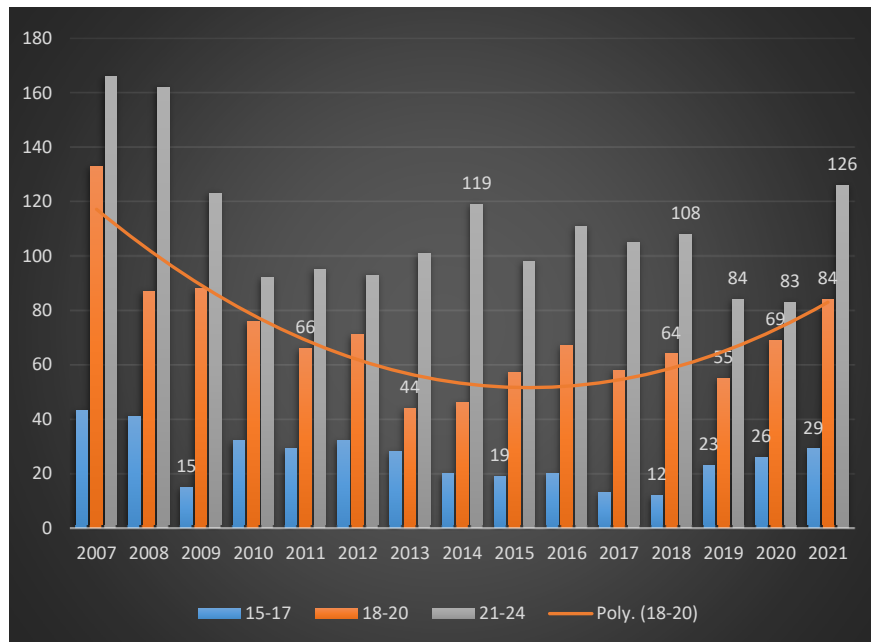


Pedestrian Night-Time Fatalities in EBR

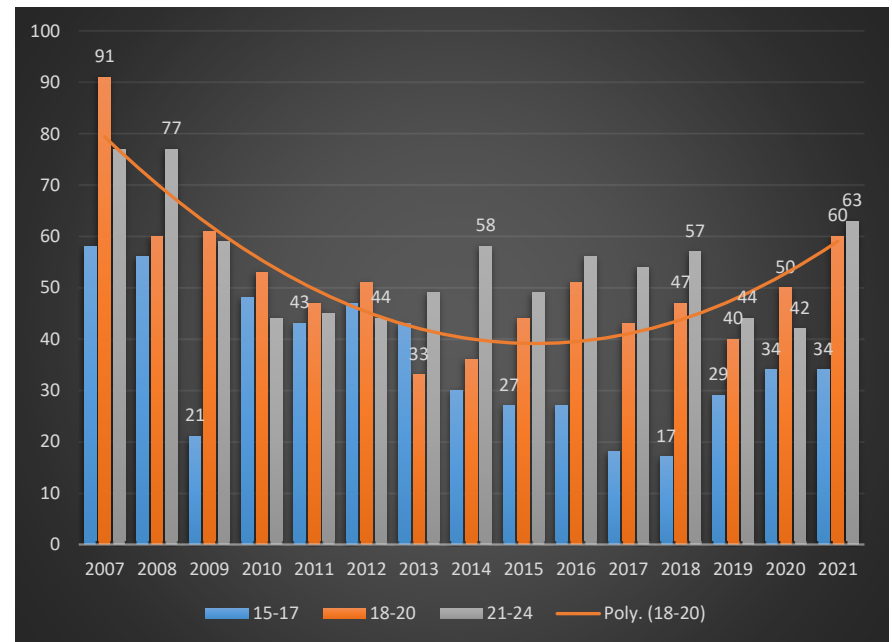


Young Drivers in Fatal Crashes

Drivers involved in Fatal Crashes



Fatal Crash Rates Per 100,000 licensed Drivers



Slide 20

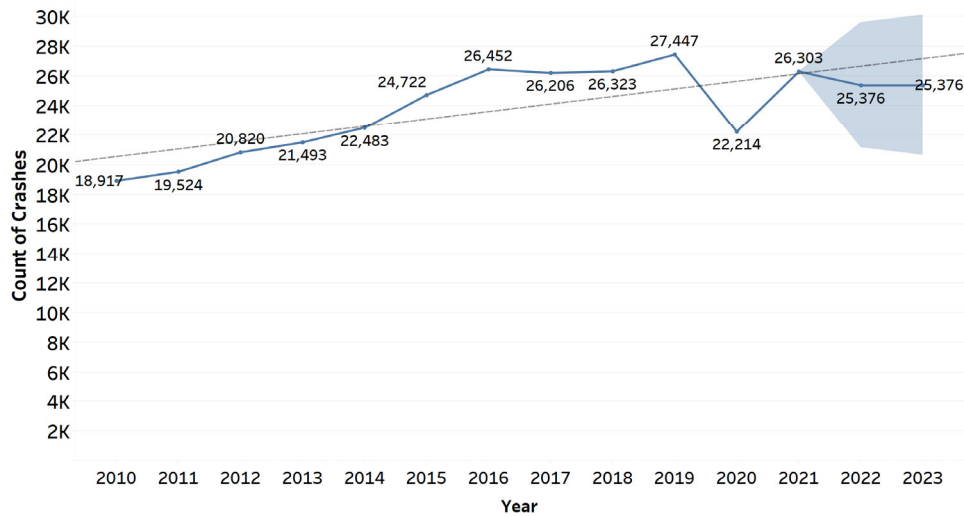
HS3

Bar graphs are better for this.

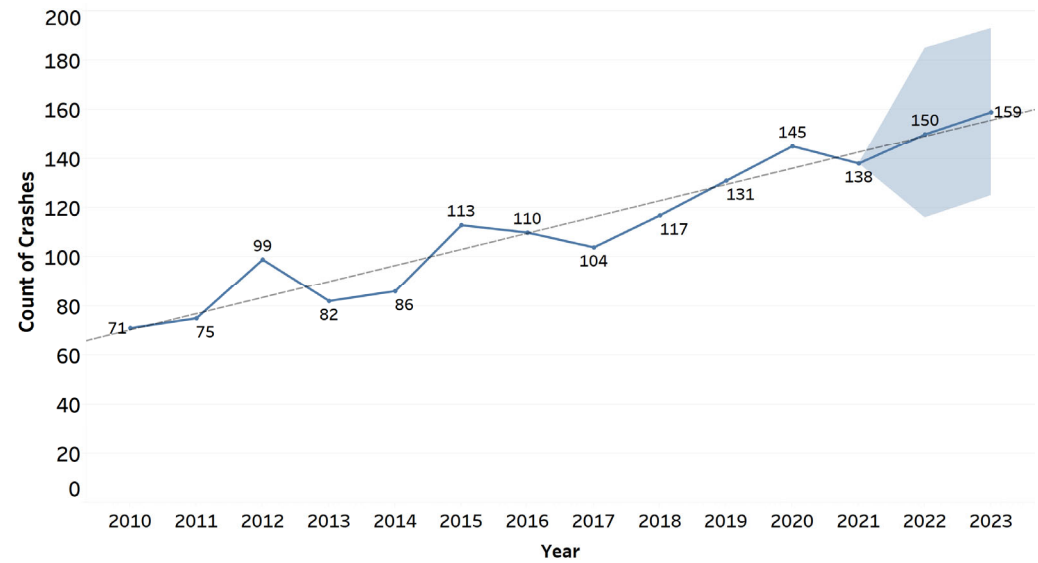
Helmut Schneider, 6/5/2017

Model for Louisiana – Seniors

All Senior Crashes- 39% increase 2010 to 2021



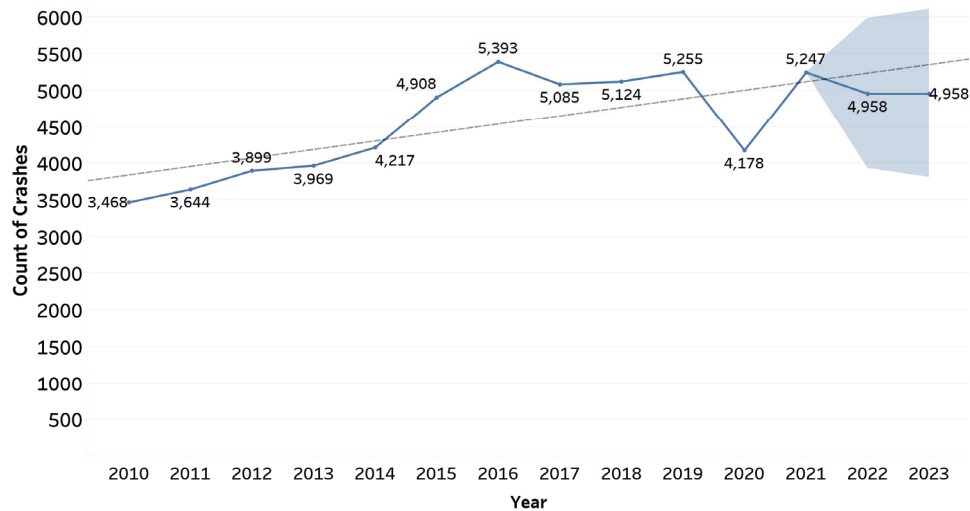
Fatal Senior Crashes-94% increase from 2010 to 2021



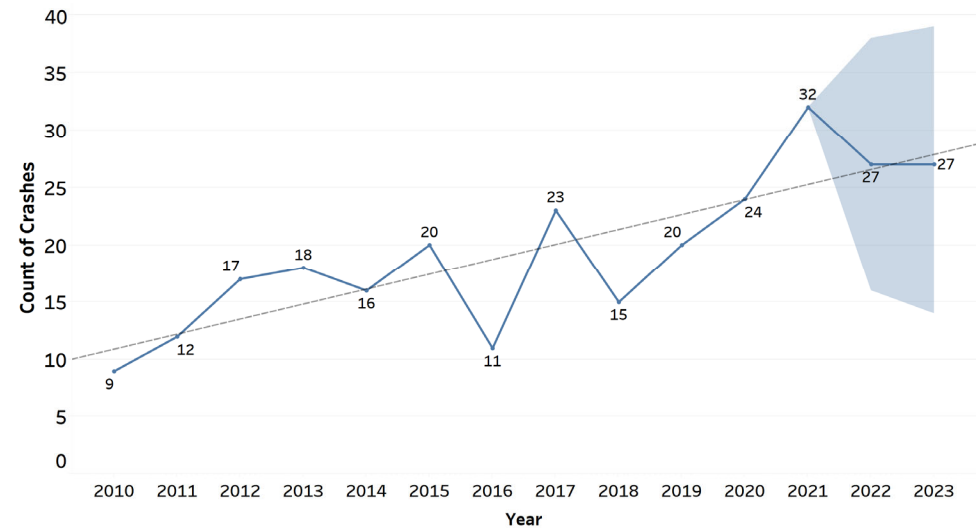
Troops and regions—medium size of data—medium size error

Model for Troop A – Seniors

All Senior Crashes- 51% increase 2010 to 2021



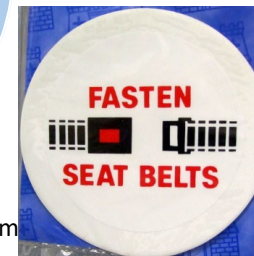
Fatal Senior Crashes-350% increase from 2010 to 2021



The four Major Contributing Factors



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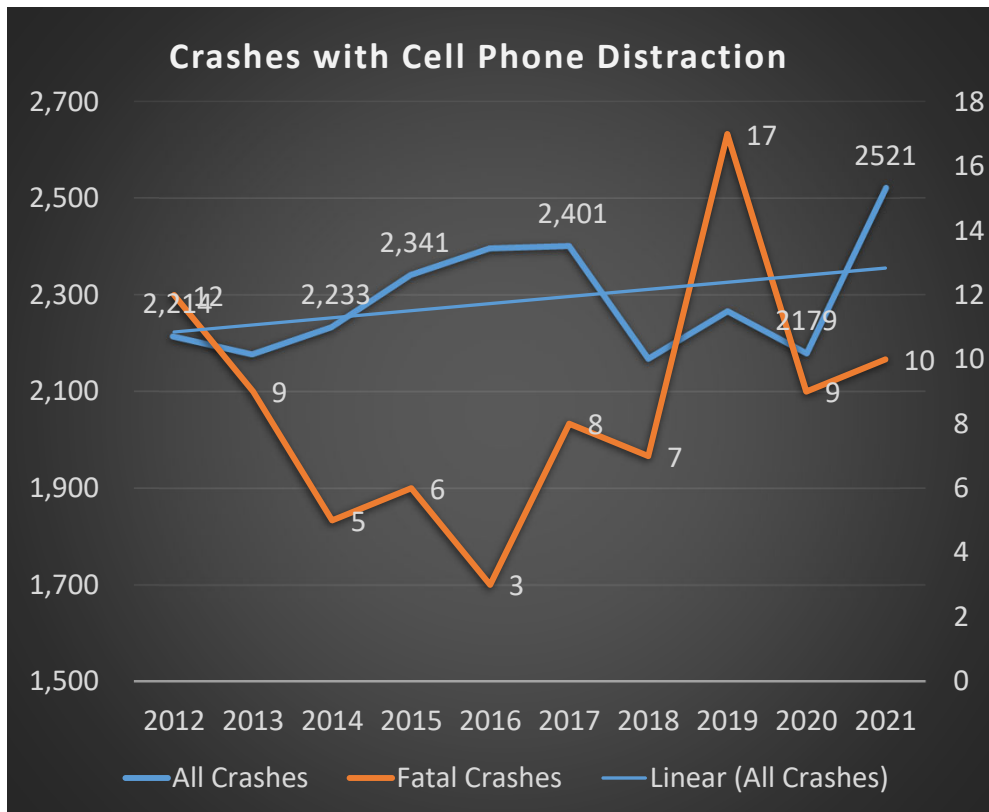


The 5-year average is
78% of fatal crashes involves
one of the four factors.

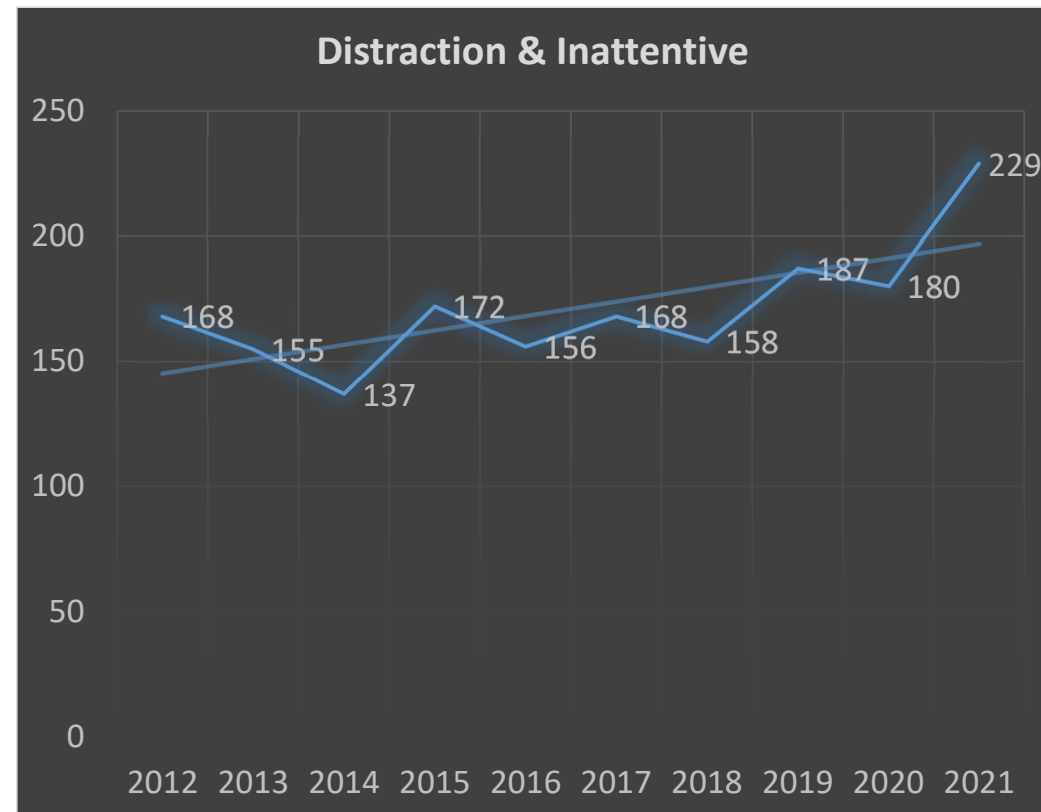
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Cell Phone Distraction



Distracted & Inattentive Fatalities



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Aggressive Driving

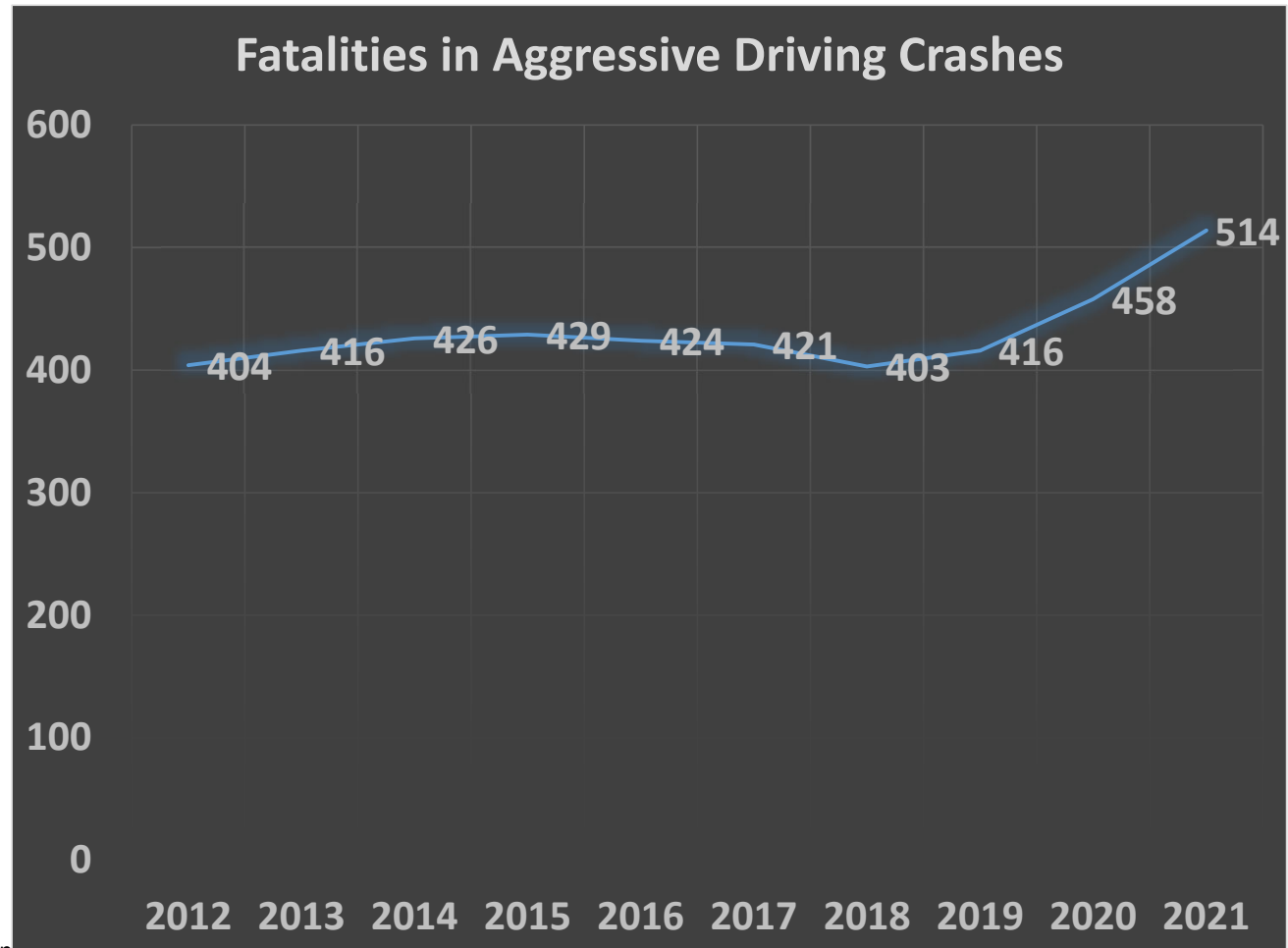
Aggressive Driving is defined as either

- Exceeding stated speed limit
- Exceeding safe speed limit
- Failure to Yield
- Following too closely
- Improper passing
- Disregarded traffic control
- Careless operation



Fatalities & Aggressive Driving Violations

Aggressive driving violations in fatal crashes have been between about 400 and 430 between 2011 and 2019 but increased to 458 in 2020 and 514 in 2021.



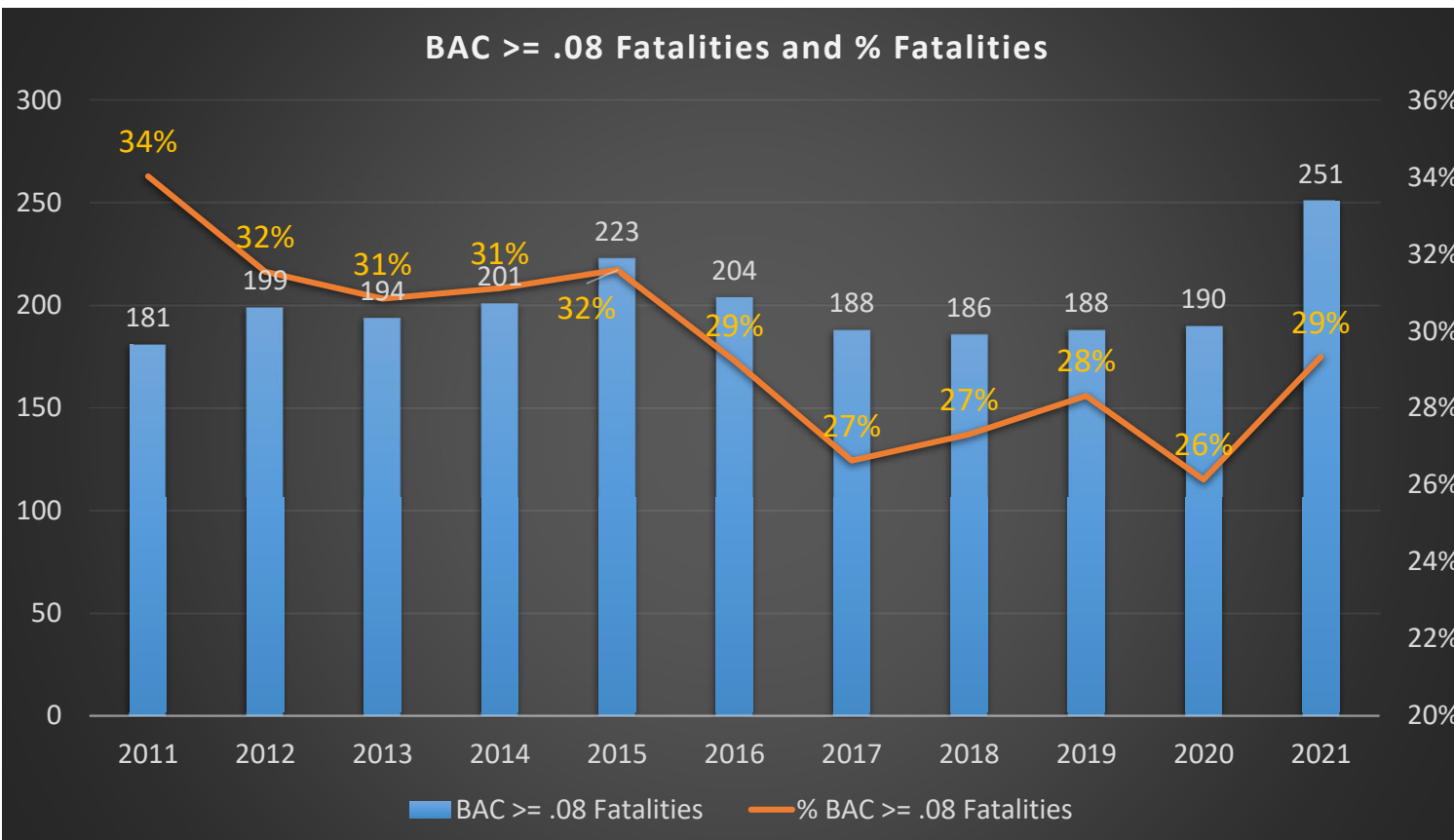
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Drinking and Driving



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Fatalities in Crashes with BAC \geq 0.08

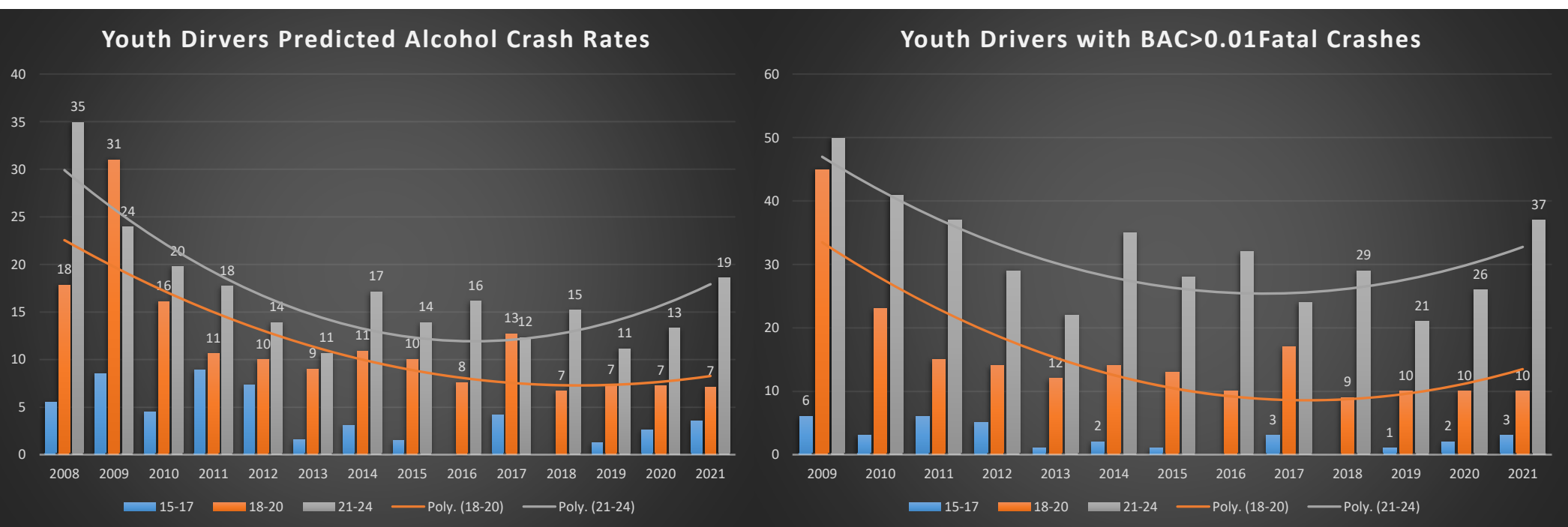


Percentage is based only on crashes with known BAC for all drivers.

32% increase from 2020 to 2021.

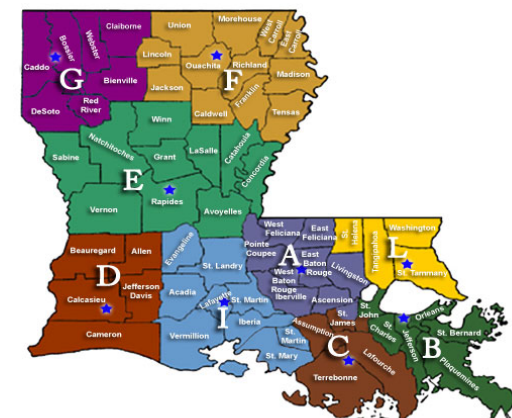
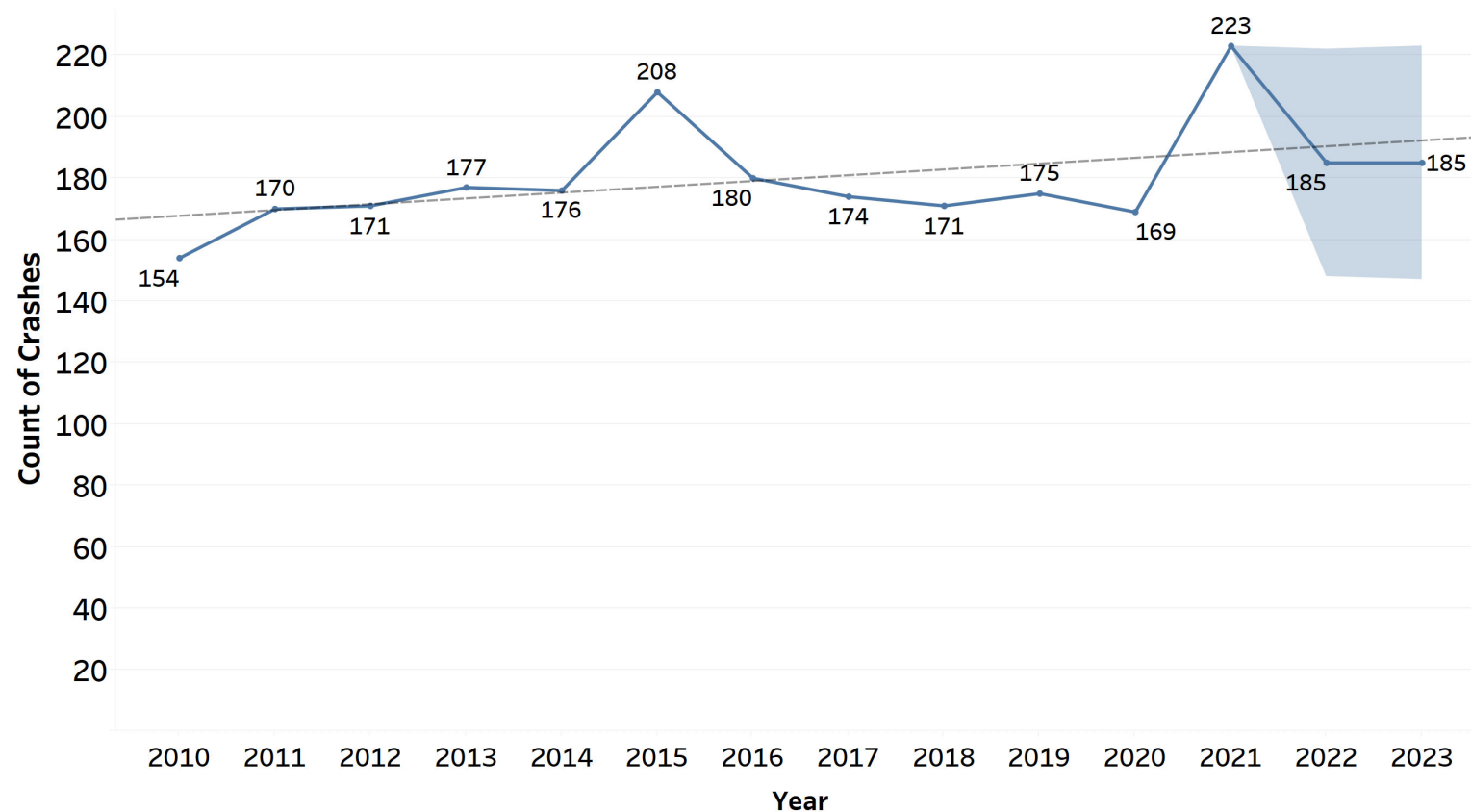
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Rate (per 100,000 lic. Drivers) Youth Drivers and Alcohol Involvement in Fatal Crashes



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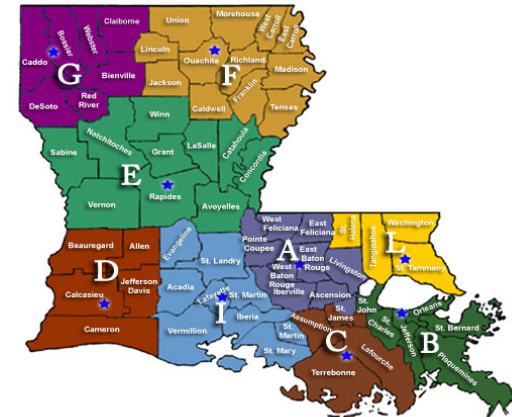
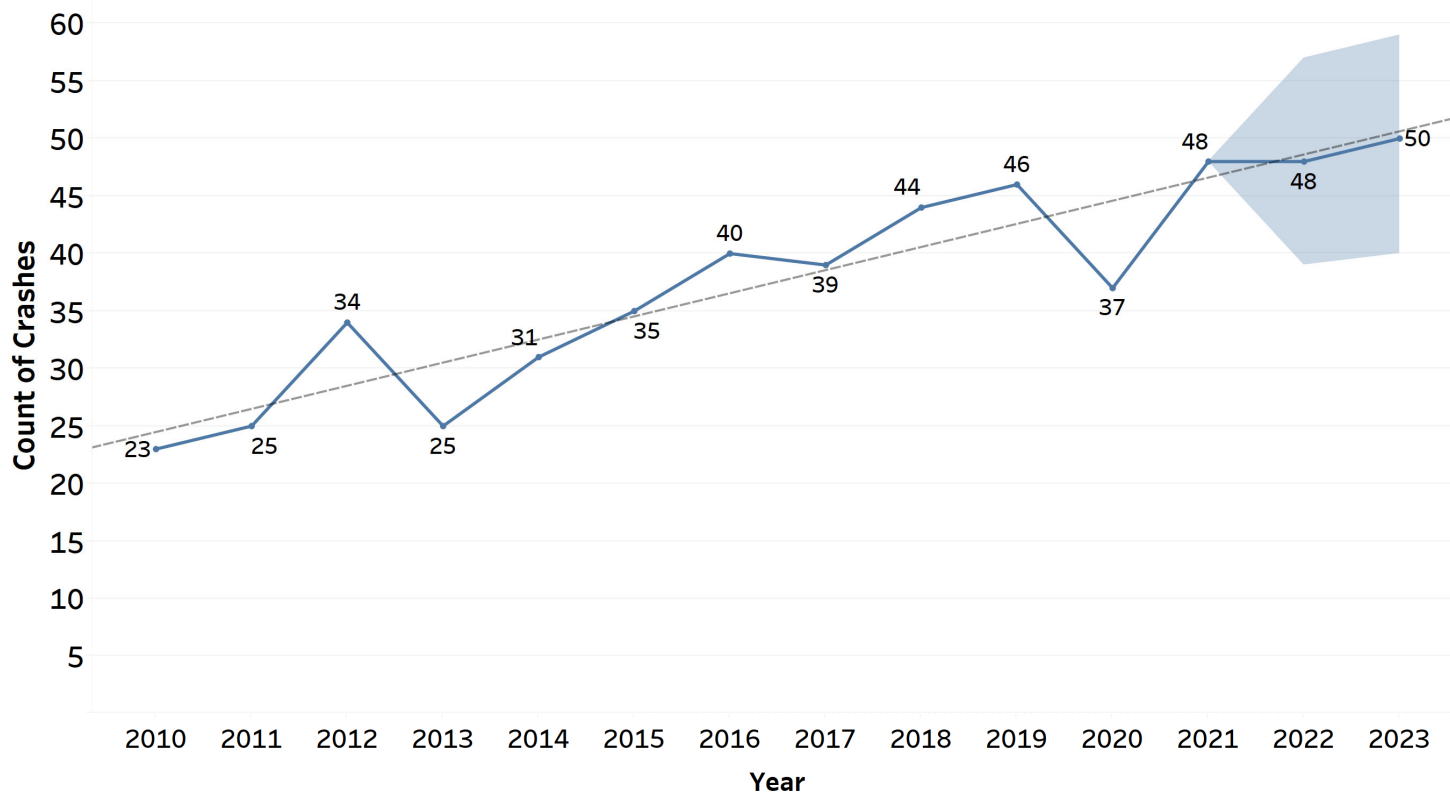
DWI (BAC \geq 0.08) Fatal Crashes with forecast for 2022-2023 and 95% Confidence Interval



32% increase
in DWI Fatalities from
2020 to 2021.

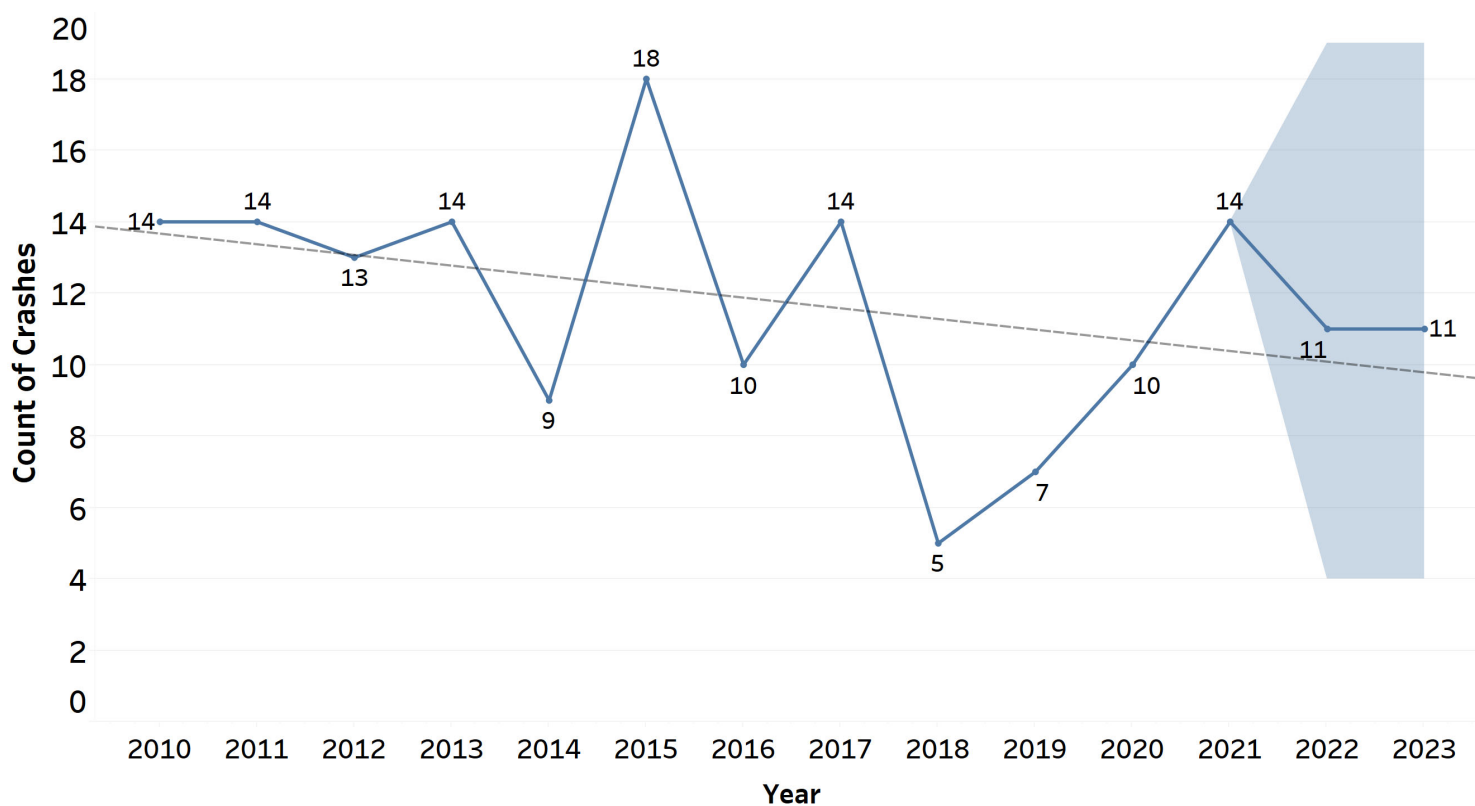
n under 23 U.S.C. 407.

DWI (BAC \geq 0.08) Fatal Crashes in Troop A with forecast for 2022-2023 and 95% Confidence Interval



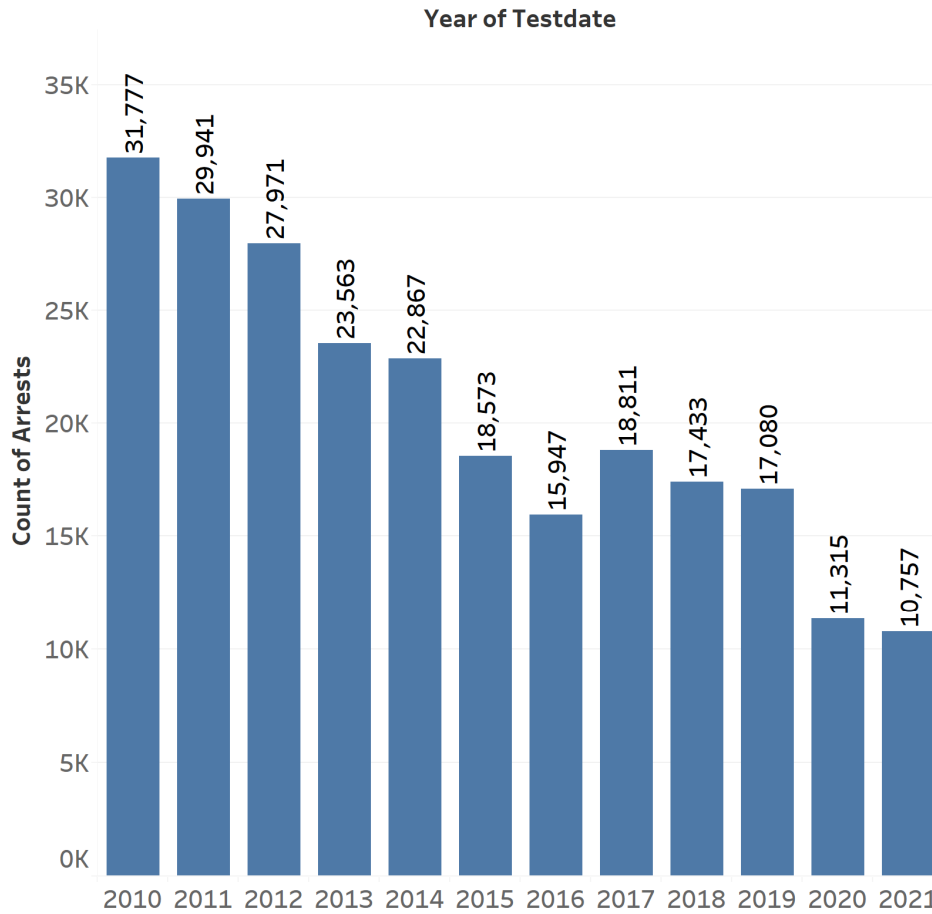
DWI Fatal Crashes
In the Troop A area
Over the past 10 years.
They are predicted to
continue at the upward
Trend to result in 48
fatalities in 2022 and
50 in 2023.

DWI (BAC \geq 0.08) Fatal Crashes in Troop C with forecast for 2022-2023 and 95% Confidence Interval



Troop C has seen a slight decline in DWI fatal crashes.

DWI Arrests from COBRA



Rule of Thumb:

**For every 1,000 hours
Saturation Patrol 4 fewer fatalities.**

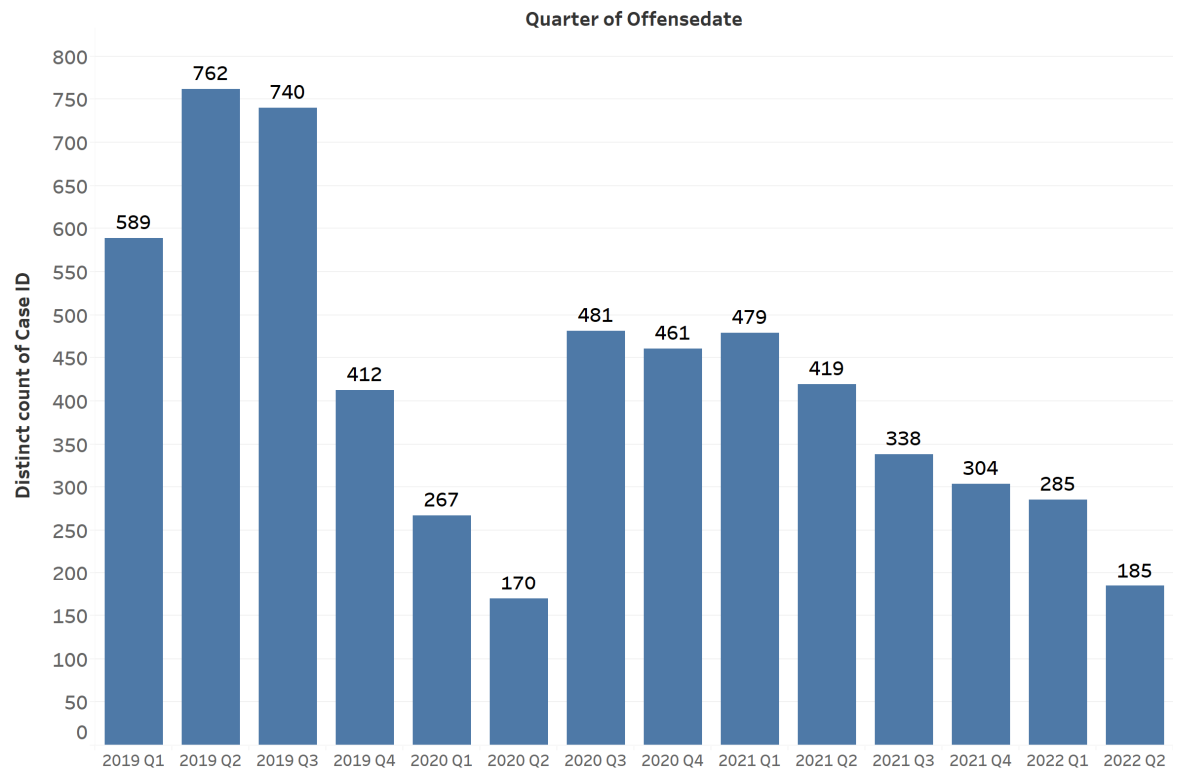
**For every SFST conducted
3 fewer fatalities.**

Source: Target of Opportunity Report.

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All Drugs (Crime Lab Data)

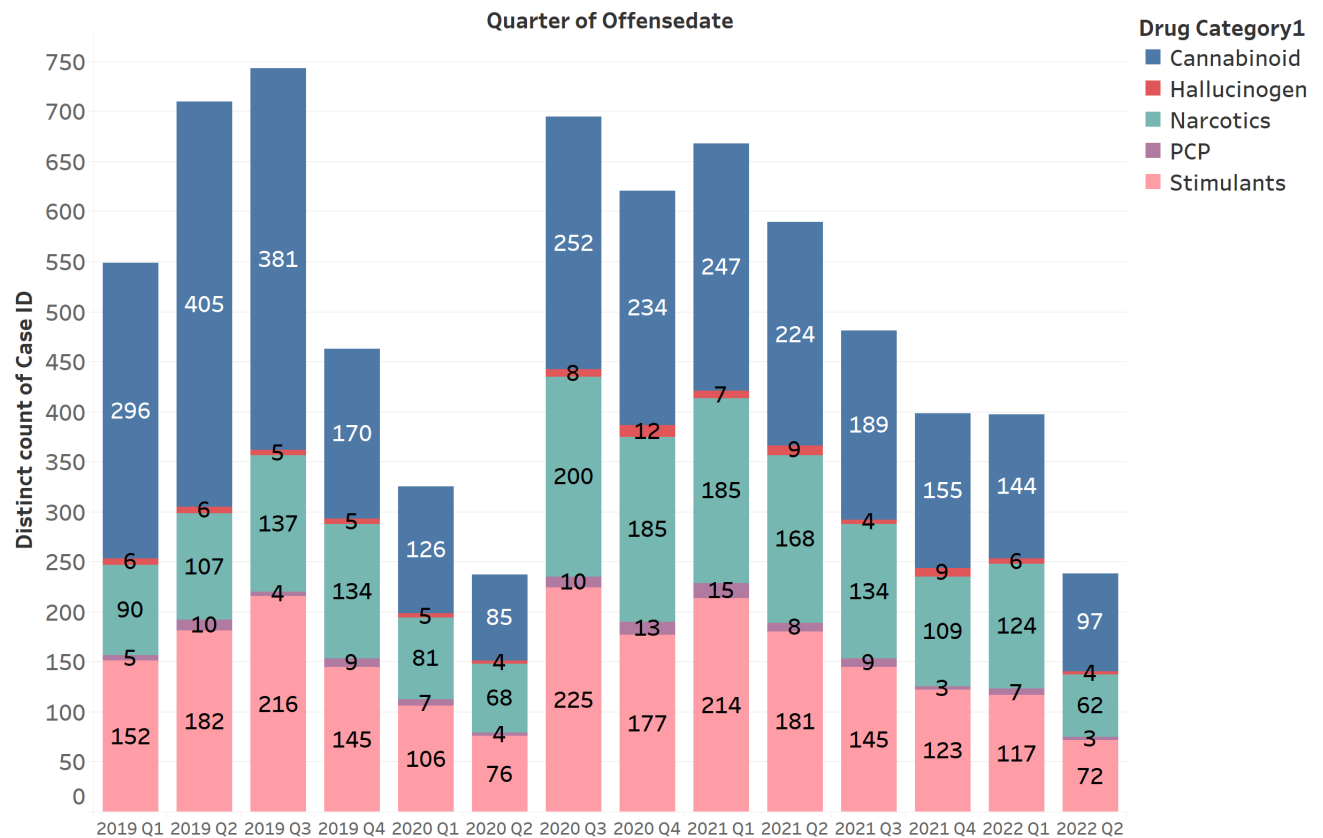
In Crashes and Traffic Violations.



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All Drugs (Crime Lab Data)

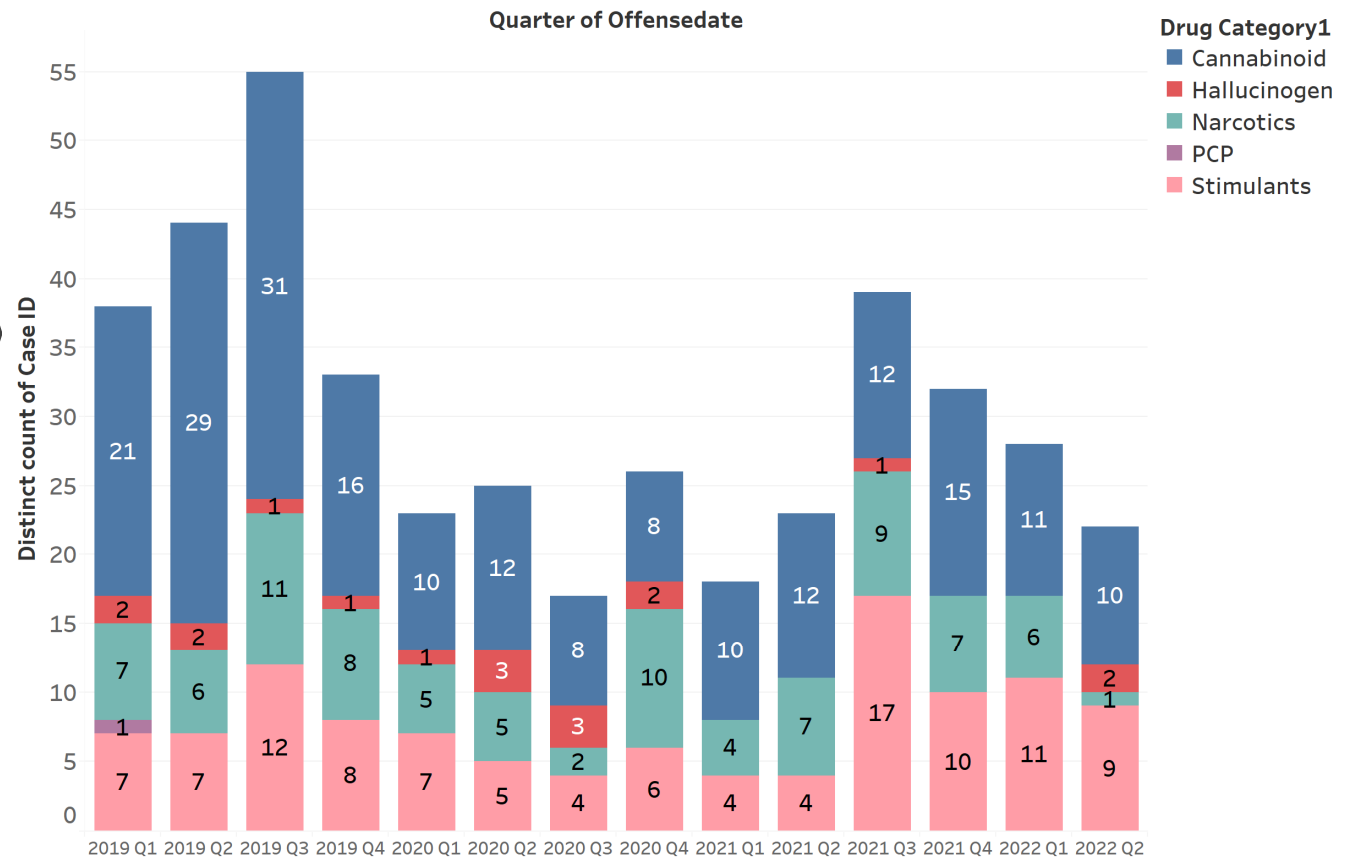
Includes multiple drugs.
In Crashes and Traffic Violations.



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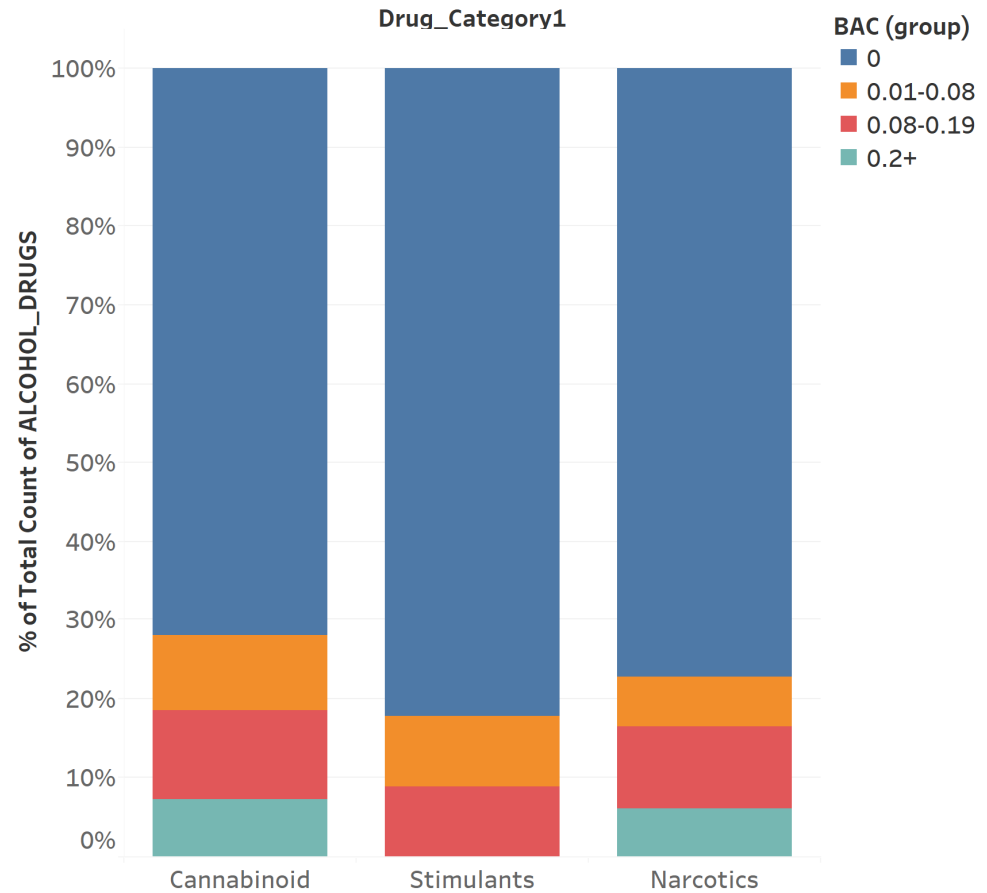
Drugs in Fatal Crashes (Crime Lab Data)

Includes multiple drugs.



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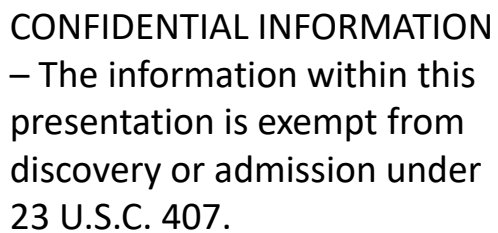
Drugs & Alcohol (Crime Lab Data)



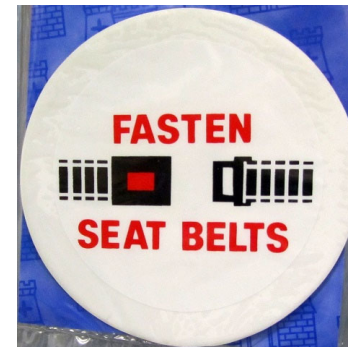
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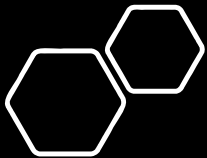
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Occupant Protection

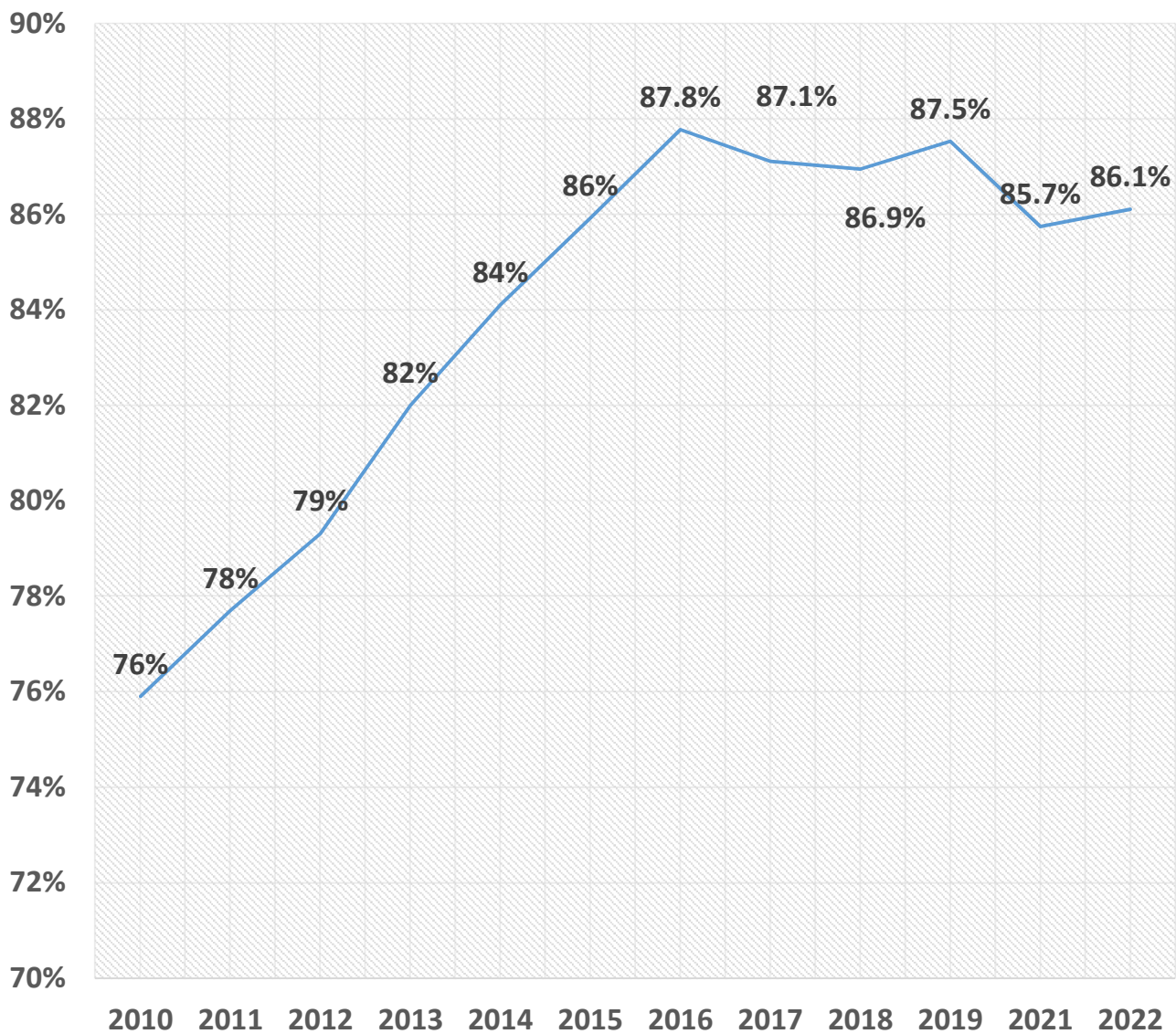


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Seat Belt Usage (1999-2022)

No Survey in 2020

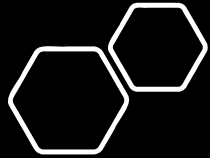


Slide 40

HS5

add 2016 as 87.8 or rounded 89%.

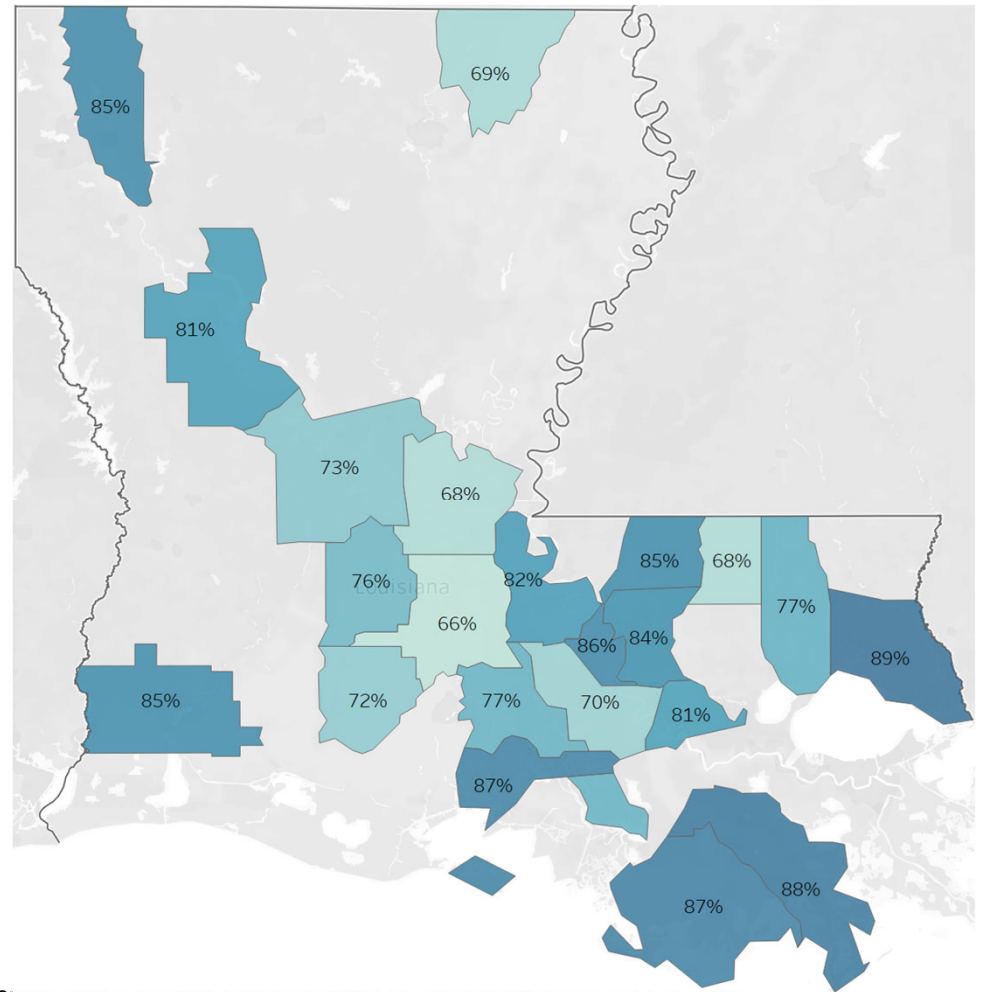
Helmut Schneider, 6/5/2017



Seat Belt Use by Region 2022

Region	Estimate	STD Error	LCL	UCL	Diff
1-New Orleans	88.3%	1.0%	86.4%	90.2%	0.2%
2-Baton Rouge	82.4%	1.0%	80.3%	84.5%	-0.8%
3-Houma	86.5%	0.8%	85.0%	88.0%	-1.0%
4-Lafayette	84.5%	1.1%	82.2%	86.8%	-2.1%
5-Lake Charles	85.7%	4.1%	77.5%	93.8%	-1.4%
6-Alexandria	73.7%	1.9%	70.0%	77.4%	-5.2%
7-Shreveport	87.8%	1.4%	84.9%	90.7%	3.2%
8-Monroe	88.3%	1.3%	85.7%	90.8%	-0.9%
LA total	86.1%	0.5%	85.2%	87.0%	0.4%

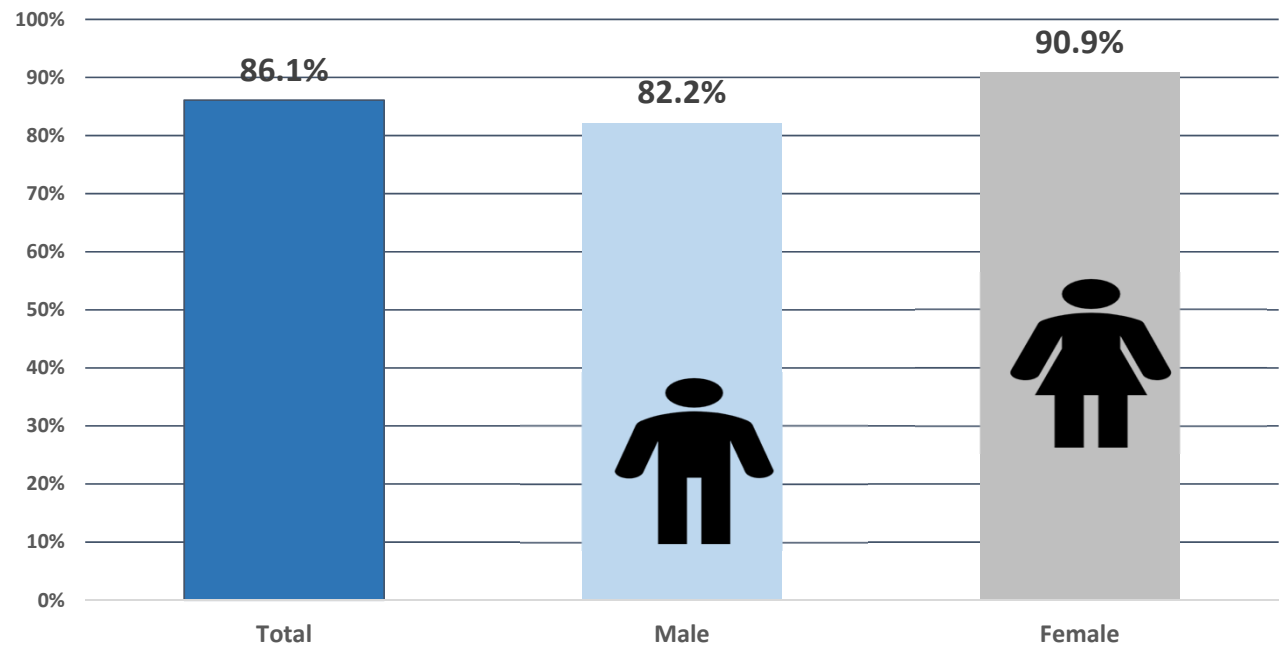
Seat Belt Use by Parish 2022



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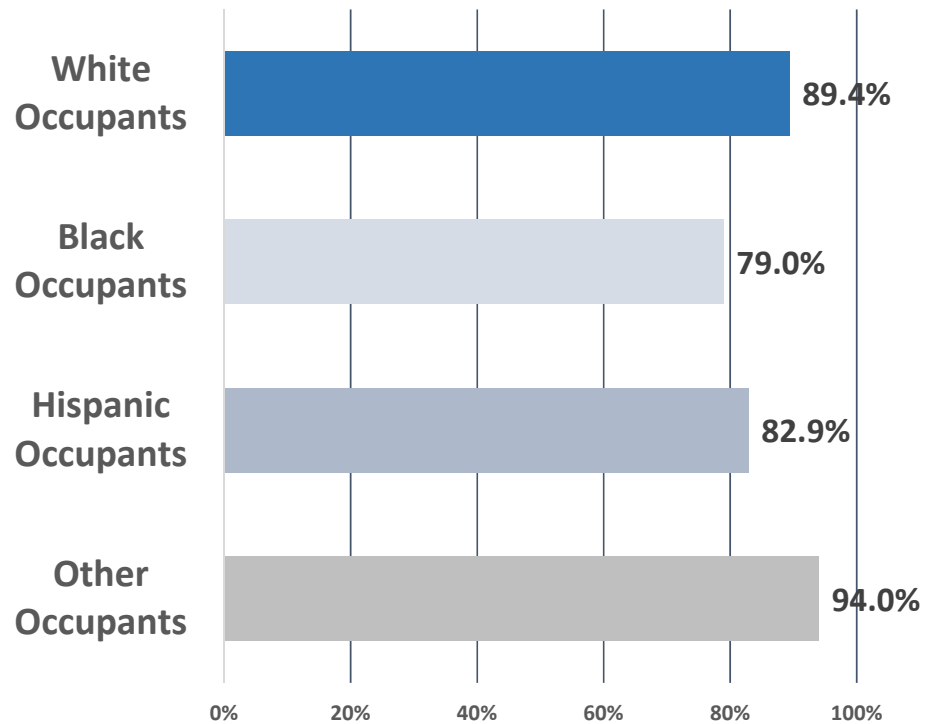
Seat Belt Use by Sex 2022

- Belt use among male front-seat occupants was 8.7 percentage point lower than that of females in 2022.



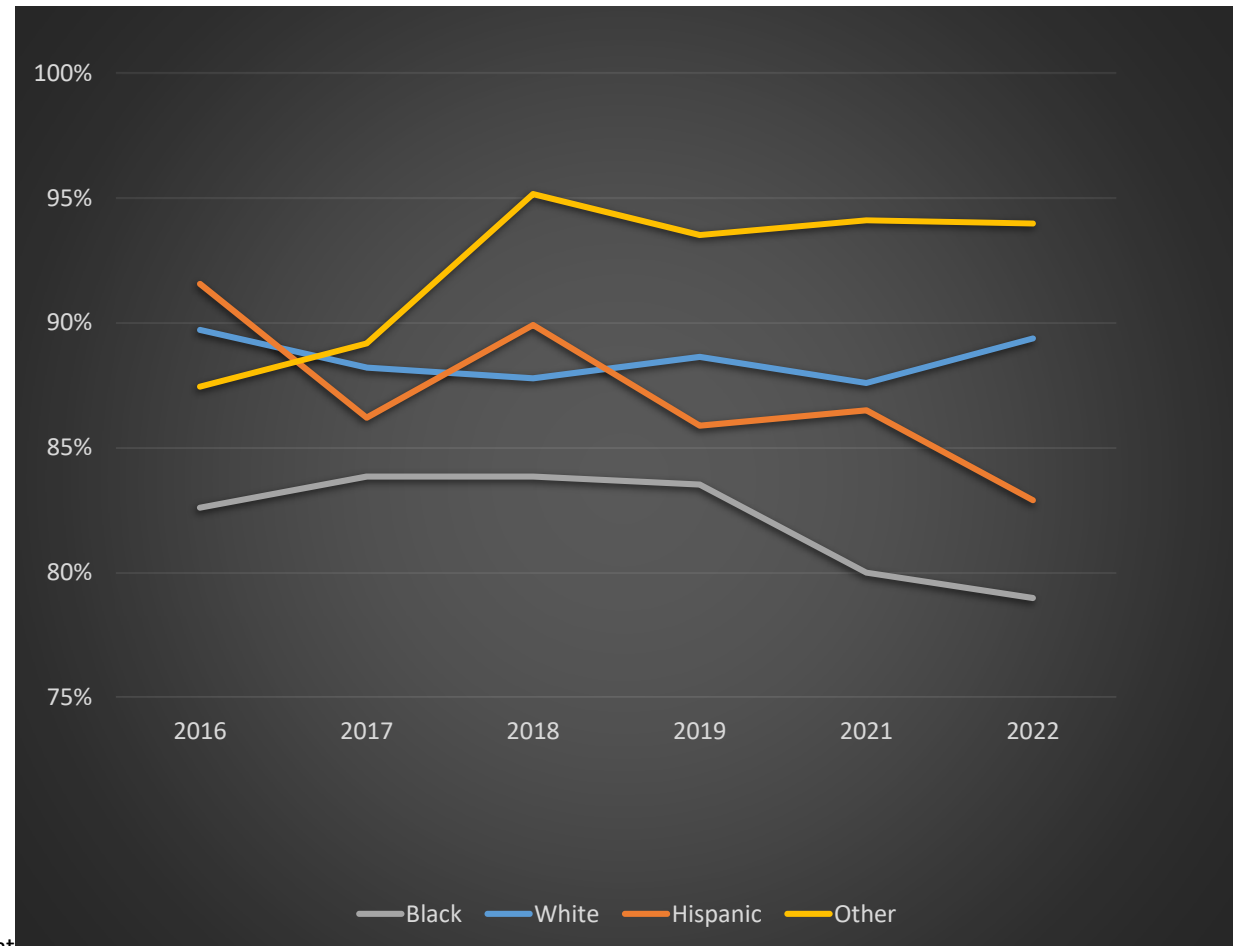
Seat Belt Use by Race 2022

- Seat-belt use by black occupants fell below 80% in 2022.
- The gap between seat-belt use of black and white occupants which had declined to 5.1% in 2019 is now back to 10.4%, not seen since 2015.



Seat Belt Use by Race 2022

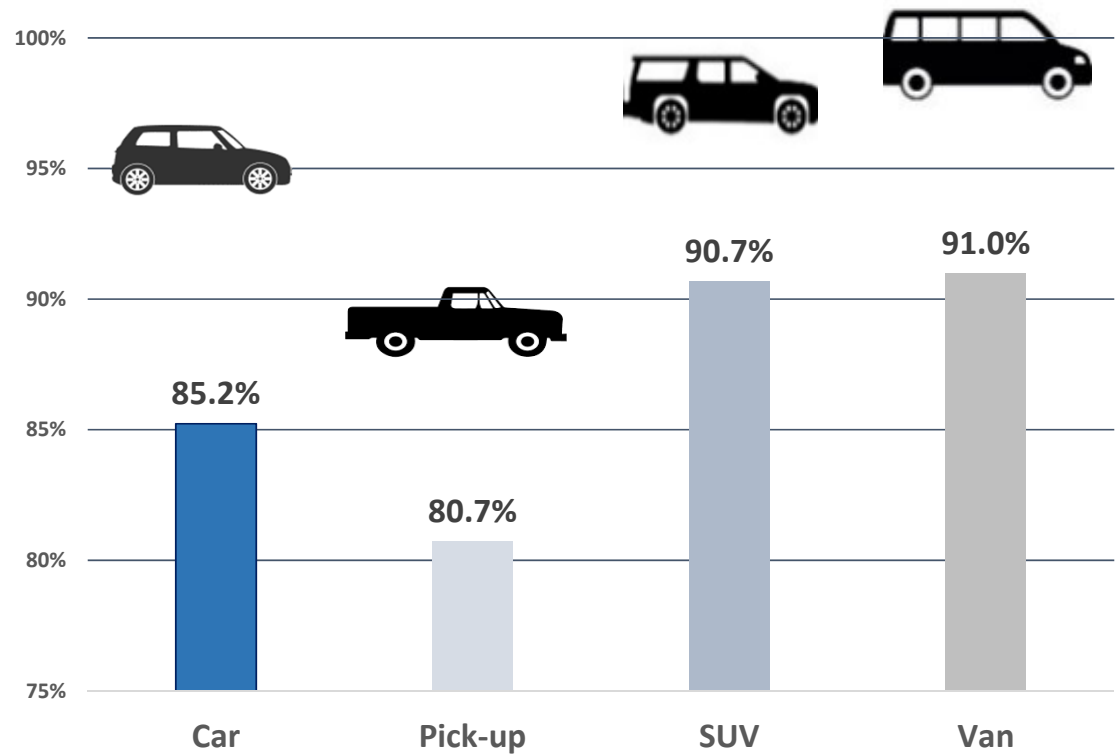
Seat-belt use of Black and Hispanic occupants has declined over the past year, while belt use of white occupants has slightly increased in 2022.



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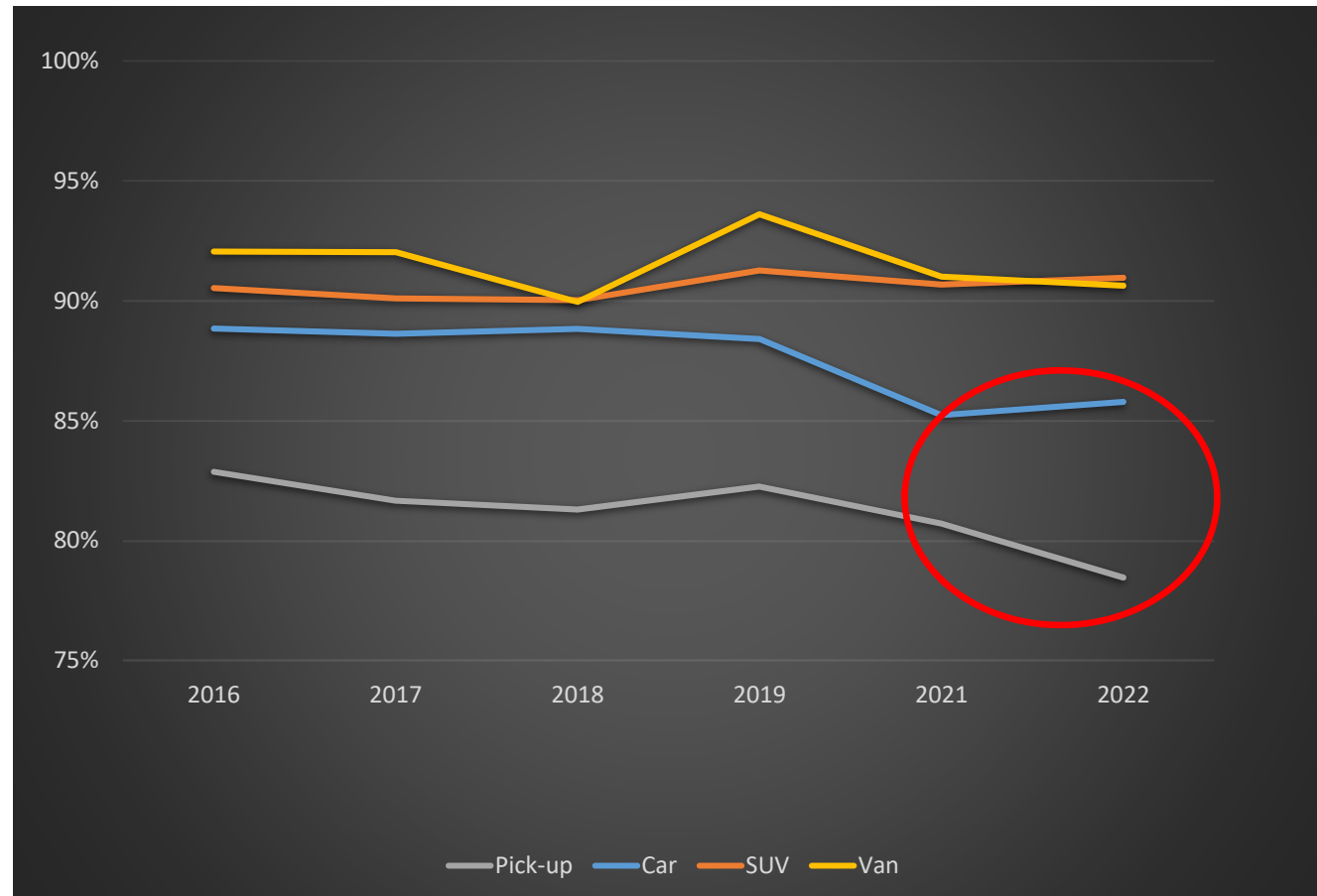
Seat Belt Use by Vehicle Type 2022

Seat belt use of occupants of pick-up trucks was 10 percentage points lower than that of occupants of SUVs and Vans and 4.5 percentage points lower than that of occupants of cars in 2022.



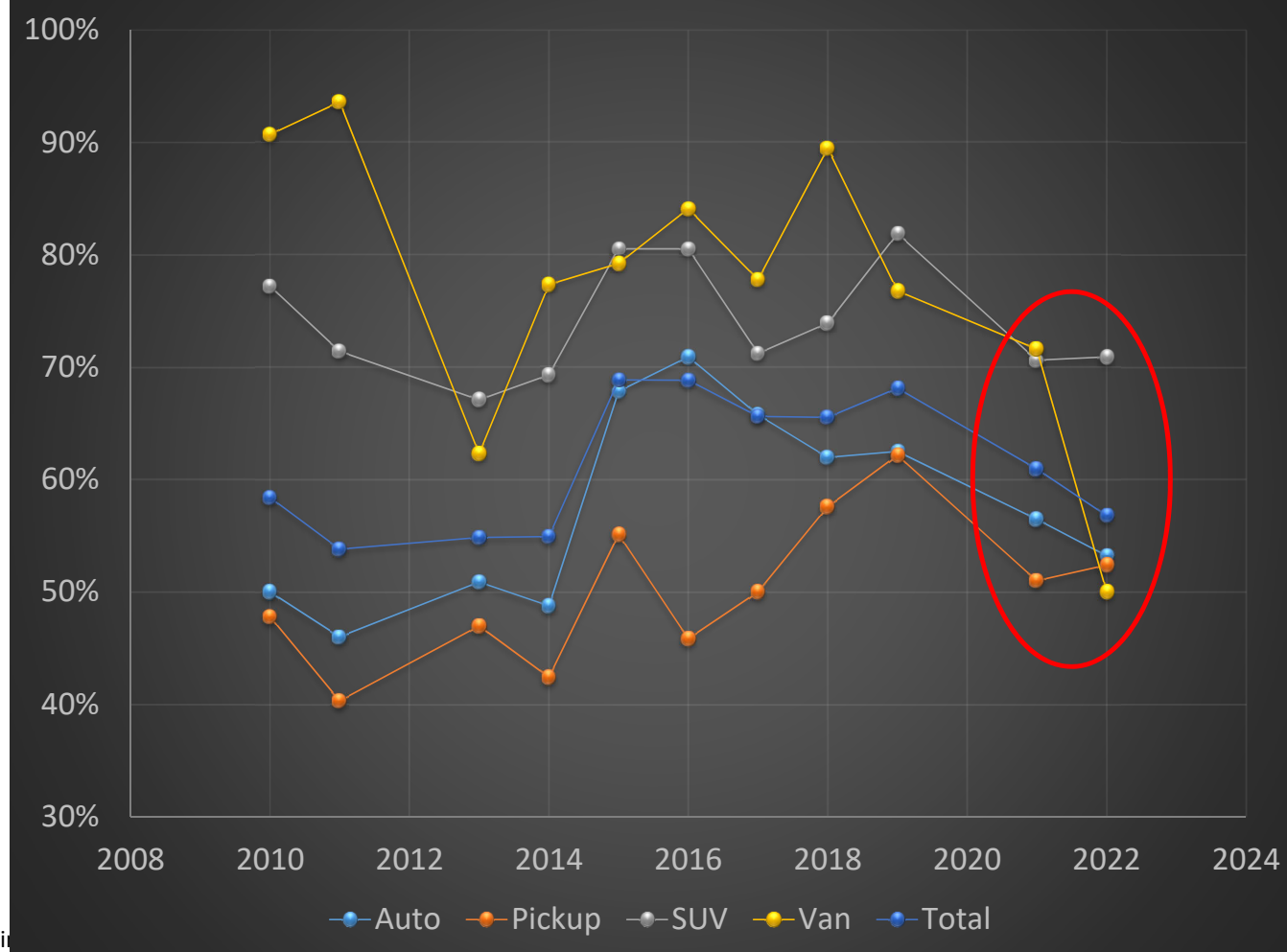
Seat Belt Use by vehicle Type 2022

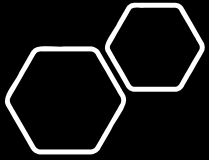
- Seat-belt use of occupants of pickup trucks and cars was lower in 2021 & 2022 compared to 2016 to 2019, while seat belt use of occupants of SUVs and Vans remained high.



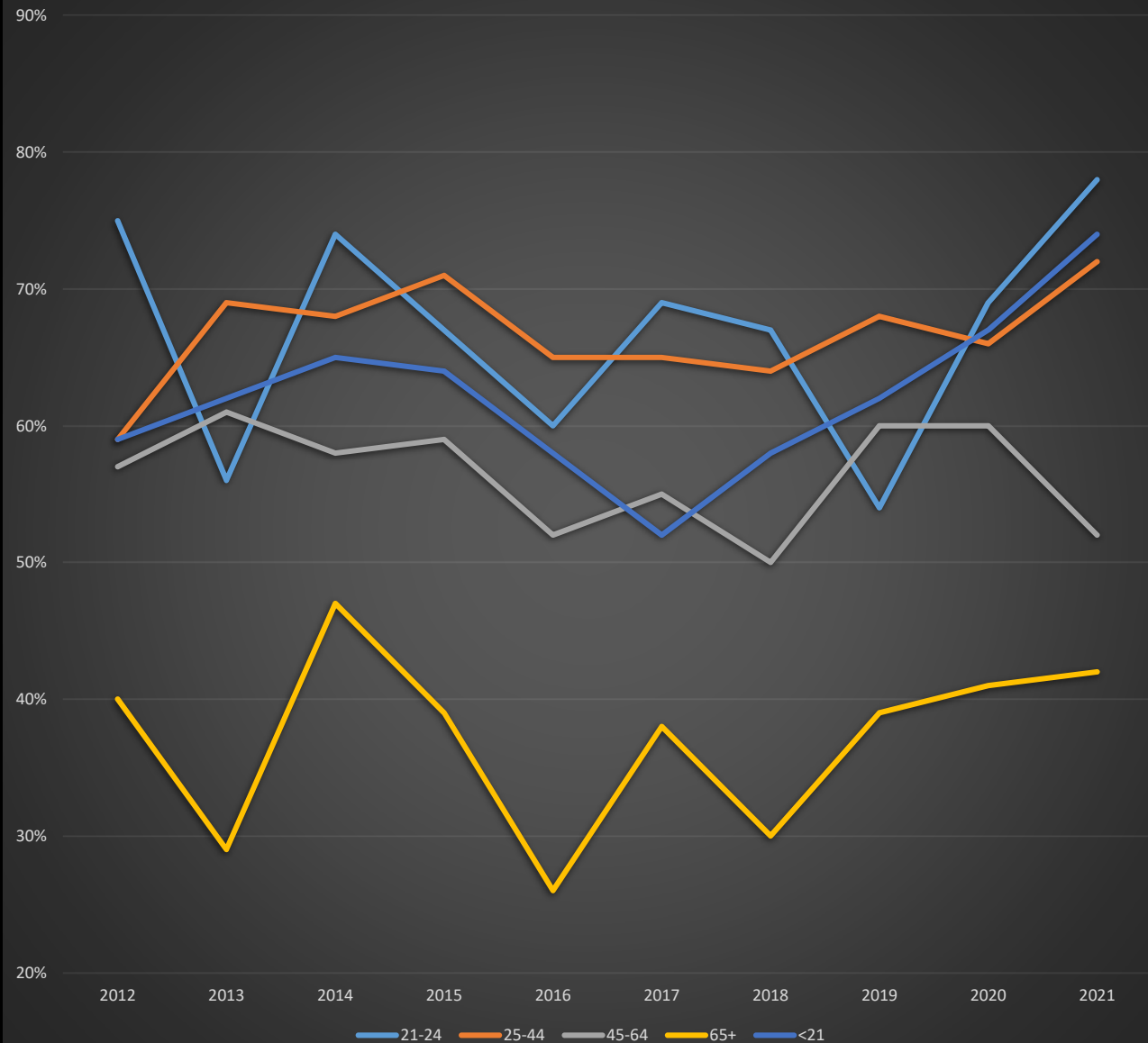
Rear Seat Belt Use by vehicle Type 2022

Seat-belt use of passengers in the rear seats of passenger vehicles has declined over the past two years for all vehicles.





Percentage of occupants killed in passenger cars not wearing a seat belt increased 2020-2021 for drivers ages 15-44.



Crashes result in economic cost to all drivers, but also affect the quality of life for those directly affected.



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Cost of Crashes

The Economic and Societal Impact Of Motor Vehicle Crashes, 2010, page 12, unit cost are adjusted by CPI.

Type	Average Cost per Person	Injuries	Total Cost by Injury Category in Billion Dollars	Total Cost by Injury Category in Billions Including Loss of Quality of Life
Fatal Injuries	\$1,748,645	972	\$1.7	\$10.6
Severe Injuries	\$447,275	1,674	\$0.7	\$3.1
Moderate Injuries	\$131,218	12,527	\$1.6	\$6.6
Complaint Injuries	\$28,474	61,711	\$1.8	\$3.4
Occupants with No Injury	\$5,475	352,247	\$1.9	\$1.8
Property Damage	\$7,595	308,895	\$2.3	\$2.2
Grand Total Cost		738,026	\$10.1	\$27.7
Cost per licensed Driver			\$3,269	\$8,957
Percent Increase from 2020 in 2021 \$			17.2%	11.0%
Percent Increase from 2019 in 2021 \$			7.8%	10.6%

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Cost per Crashes

Highest Severity	Economic Unit Crash Costs in million \$ per Crash	Quality & Life Unit Crash Costs in Million of \$ Per Crash
Fatal	2.04	12.24
Severe Injuries	0.58	2.27
Moderate Injuries	0.20	0.70
Complaint Injuries	0.07	0.11
No Injury	0.03	0.03

The Economic and Societal Impact Of Motor Vehicle Crashes,
2010, page 12, unit cost are adjusted by CPI.

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Cost of Impaired Driving

Type	Average Cost per Person	Injuries	Total Cost by Injury Category in Billion Dollars	Total Cost by Injury Category in Billions Including Loss of Quality of Life
Fatal Injuries	\$10,883,738	251	\$0.44	\$2.73
Severe Injuries	\$1,829,013	88	\$0.04	\$0.16
Moderate Injuries	\$530,557	337	\$0.04	\$0.18
Complaint Injuries	\$54,764	1,137	\$0.03	\$0.06
Occupants with No Injury	\$5,212	3,179	\$0.02	\$0.02
Property Damage	\$7,230	3,717	\$0.03	\$0.03
Grand Total Cost		8,709	\$0.60	\$3.18
Cost per licensed Driver			\$194	\$1,026
Percent Increase from 2020 in 2021 \$			29.3%	
Percent Increase from 2019 in 2021 \$			32.1%	

Cost for Not using Seat Belt in Crashes

Type	Average Cost per Person	Injuries	Total Cost by Injury Category in Billions Including Loss of Quality of Life	Column1
Fatal Injuries	\$1,748,645	368	\$0.64	\$4.01
Severe Injuries	\$447,275	378	\$0.17	\$0.69
Moderate Injuries	\$131,218	1,517	\$0.20	\$0.80
Complaint Injuries	\$28,474	2,704	\$0.08	\$0.15
Occupants with No Injury				
Property Damage				
Grand Total Cost		4,967	\$1.09	\$5.65
Cost per licensed Driver			\$352	
Percent Increase from 2020 in 2021 \$			27.9%	
Percent Increase from 2019 in 2021 \$			35.5%	

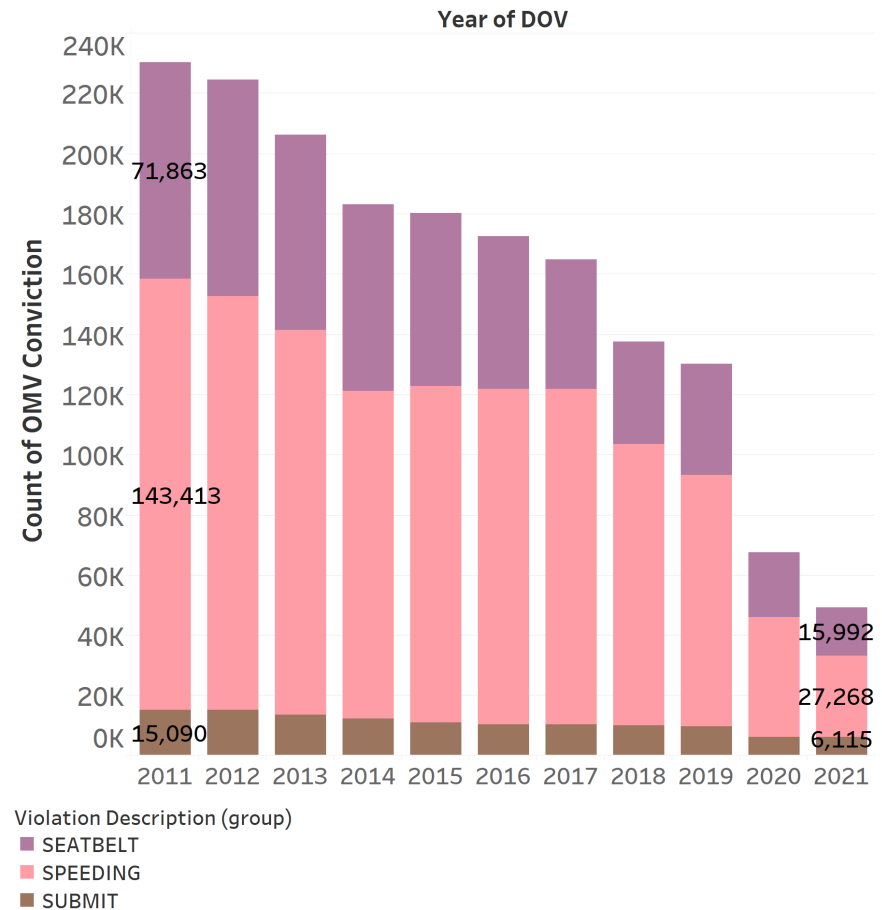
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Summary & Conclusion

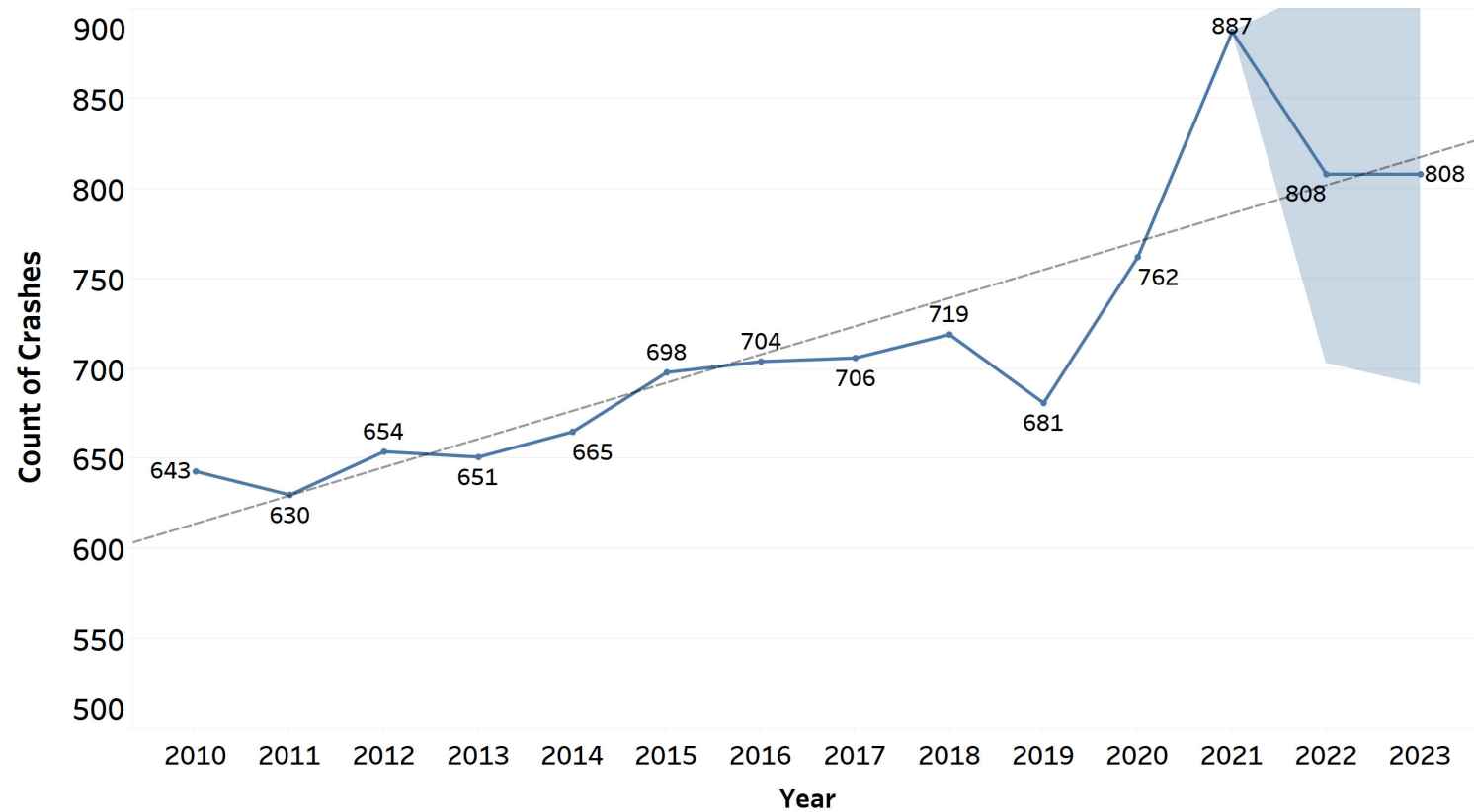
2020 - 2019 Comparison

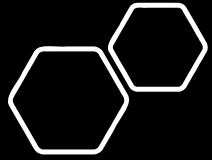
Changes 2019-2021

- Aggressive driving fatalities up 24%.
- Distracted driving fatalities up 22%.
- Impaired driving fatalities up 34%.
- Fatalities not wearing seat belt up 49%.
- Total cost of crashes up 7.8%.
- Cost for DWI crashes up 32.1%.
- Cost for injuries of occupants not wearing a seat belt up 35.5%.



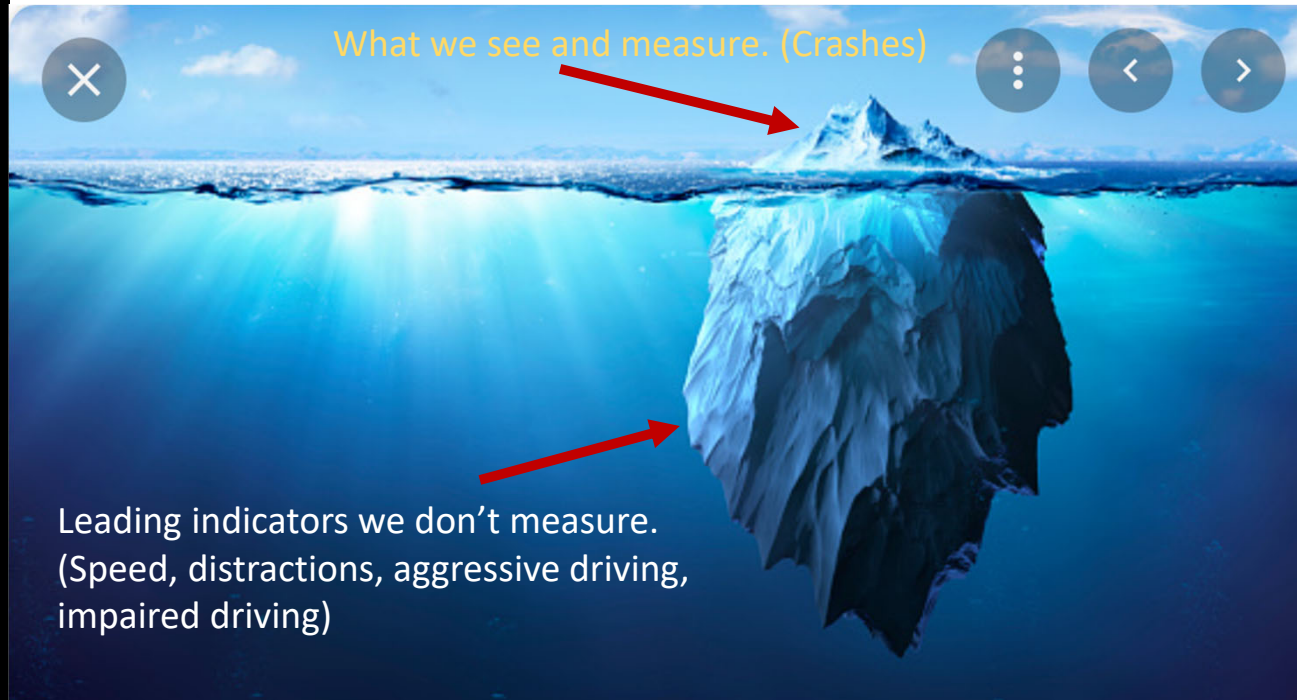
Fatality Trend 2022 and beyond





Predictions

**Use Predictions to
Work smarter not harder.
But to make reliable predictions
we need leading indicators.**



Q & A

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