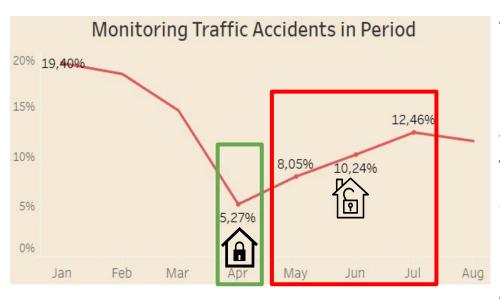




# **Background**



The number of traffic accidents in New York is fluctuated. This fluctuate graph has a connection with the incoming coronavirus (COVID-19) to United States.

Applying lockdown and social distancing rules started from March 22, 2020 affected the number of traffic accidents in New York to decrease by 14.13% from January to April.

However, <u>after lockdown has ended on April 30</u>, <u>2020</u>, that number is **increasing by 7.19%** from **April to July** since the traffic there is back to normal.

# **Project Goals**

### **Objective:**

To find the factors and attributes that led to the accident in NYC from January to August 2020 and that can be improved to reduce the accident rate as well as accidents and fatalities in future periods.

#### Scope:

The aim of this report is to **provide insights** into the **occurrences of New York** accidents between January and August 2020.

The data primarily focus on the total accident and also specific to total injury and total death (fatalities).

# **Research Questions**

- What are the major causes of traffic accidents in New York City?
- What accidents mostly happened (is it involved only one vehicle or more vehicles?)
- What is the **borough** in New York City that has the **most traffic accidents** in 2020?
- When the traffic accidents mostly happened in New York City?
- What the **impact** of most traffic accidents in New York City, especially speaking of **injured and killed people**?



# **Highlight NYC Accident in January - August 2020**

> **47K**Total Accident



**5 - 6** Accident per Day



**5** Borough



> 15K
People Injured



**68**People Killed





### What Variables Are Recorded In Our Data?

The data are collected from **January to August 2020** and more than **47.000 accidents** are recorded. The data consists of variables such as:



**Major Factor of Traffic Accidents** 



**Borough and Location (On/Off Street) of Traffic Accidents** 



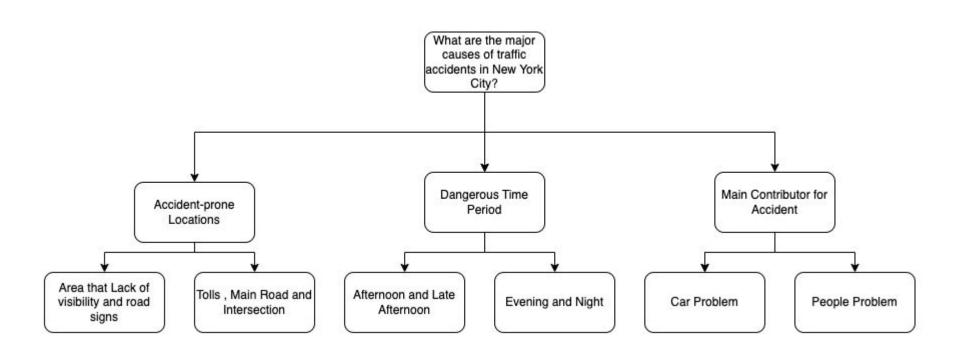
**Date and Time of Traffic Accidents** 



**Number of Injured and Killed People** 

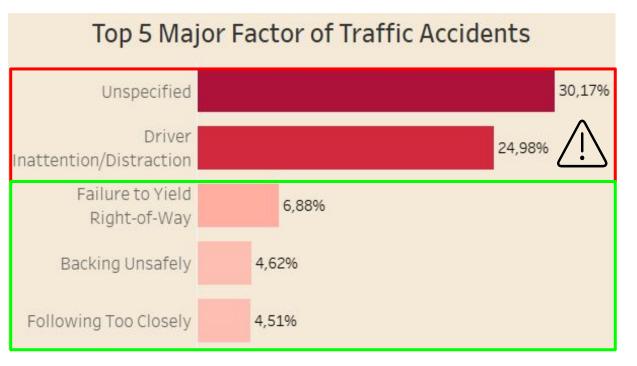


# **Root Cause Analysis (RCA)**





### Losing Focus on Driving is One of The Major Factor of Traffic Accidents!



- Two majority causes of NYC traffic accidents
- **30,17%** traffic accidents due to **unspecified reasons**
- 24,98% due to driver inattention/distraction
- Traffic accidents due to other factors amount to less than 7%
- Unspecified reasons can be discussed by data owner/data engineer.



# **Be Careful When Driving In Brooklyn!**

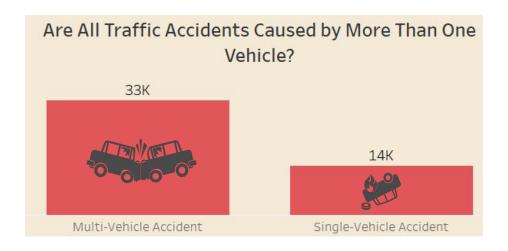


- 34,65% NYC traffic accidents occurred in Brooklyn
- Indicative of Brooklyn's high traffic volume, hence the heavy traffic
- 23.71% Brooklyn traffic accidents also caused by driver inattention

<sup>\*)</sup> Borough = a town or district that is an administrative unit



#### **Are The Most Traffic Accidents Involved More Than Vehicle?**



More than 33 thousands or 70% of traffic accidents in all boroughs of New York City involved more than one vehicle.



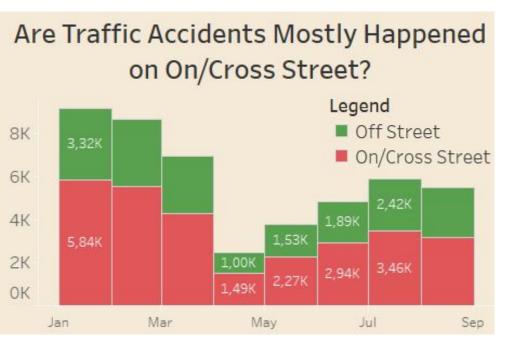
## **Do Not Drive On Friday Afternoon!**

Monitoring Traffic Accidents in a Week							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Morning	4,15%	4,19%	3,93%	4,40%	4,45%	2,96%	2,47%
Afternoon	4,58%	4,70%	4,65%	4,75%	5,14%	4,37%	3,65%
Evening	3,03%	3,32%	3,18%	3,45%	3,75%	3,14%	2,58%
Night	2,20%	2,16%	2,42%	2,42%	3,00%	3,69%	3,27%

- From Monday to Friday, the number of traffic accidents has a trend such as: the number is increasing up to 0,72% from Morning to Afternoon but decreasing up to 2,54% from Afternoon to Night.
- The trend in Sunday and Saturday is different which is fluctuated (because of heavy traffic in weekends).
- The traffic accidents mostly happened in the Friday afternoon.



## **Drivers Reported That On/Cross Street Are Dangerous!**



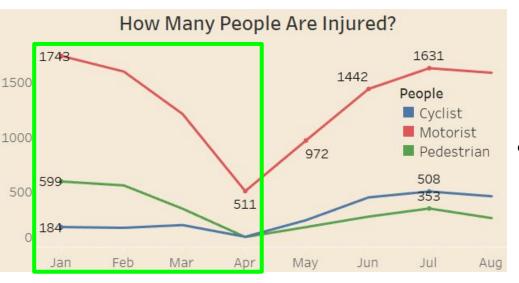
- It turns out that most traffic accidents happened on/cross street in the period January to August 2020, which is 61,64%.
- The trends of on/cross street and off street traffic accidents are same as the trend of overall traffic accidents in the same period.

Ex: on-street = toll road, main road, etc., off-street = park, sidewalk, shortcut, etc.

<sup>\*)</sup> On-street = public road, Off-street = not on a public road, Cross street = a street crossing another street.



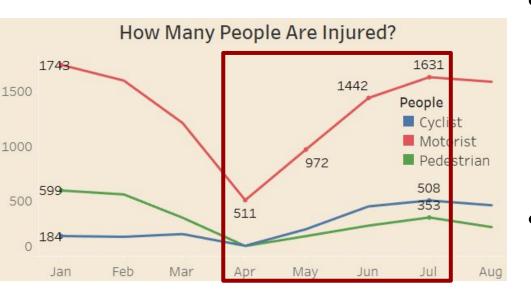
## The Number of People Injured Is Worrying!



- The trends of the number of cyclist, motorist, and pedestrian injured are actually same as the trend of overall traffic accidents from January to August 2020.
- From January to April 2020: The number of motorists injured is decreased by 70,68%. The number of pedestrians injured is decreased by 84,14%. The number of cyclists injured is decreased by 48,37%.



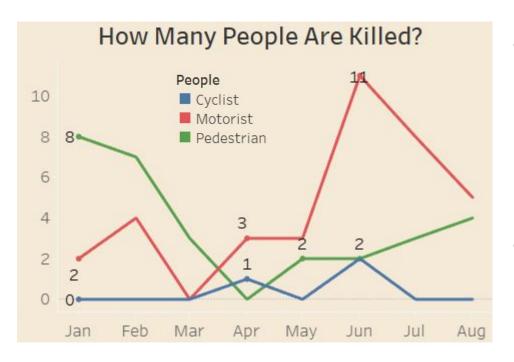
## The Number of People Injured Is Worrying!



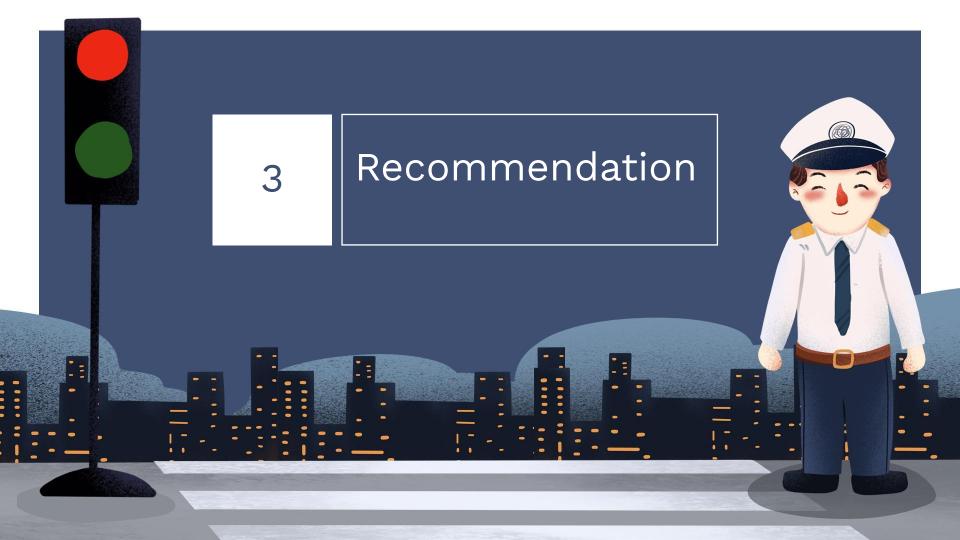
- However, from April to July 2020 The number of motorists injured is increased by 68,67%. The number of pedestrians injured is increased by 73,09%. The number of cyclists injured is increased by 81,30%.
- of cyclists injured is higher from May to August than the number of pedestrians injured.



# The Number of People Killed Is Actually Not Worrying



- The numbers of cyclist, motorist, and pedestrian killed have its unique trend and do not depend/related on the number of traffic accidents monthly or even lockdown conditions on New York City.
- In period January to August 2020, at least one month has no cyclists, motorist, or pedestrians killed.





## **Recommendations**

#### **CITIZEN & POLICE OFFICER SIDE**



INCREASE THE NUMBER OF TRAFFIC UNITS



IMPROVE THE INFRASTRUCTURE SERVICES AND FACILITIES FOR ROAD USERS



EDUCATE SAFETY DRIVING TO ROAD USERS

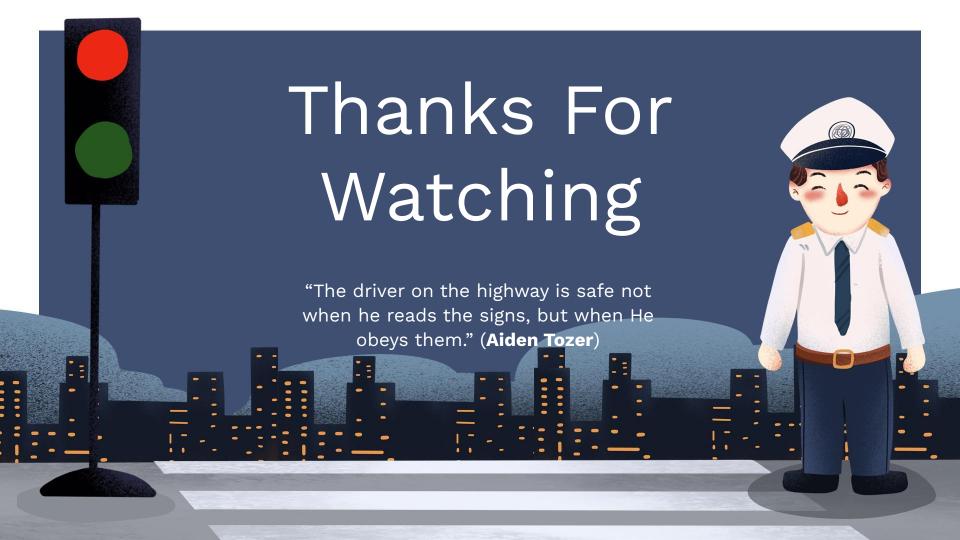
#### **POLICY**



TIGHTEN ELECTRIC TRAFFIC LAW ENFORCEMENT

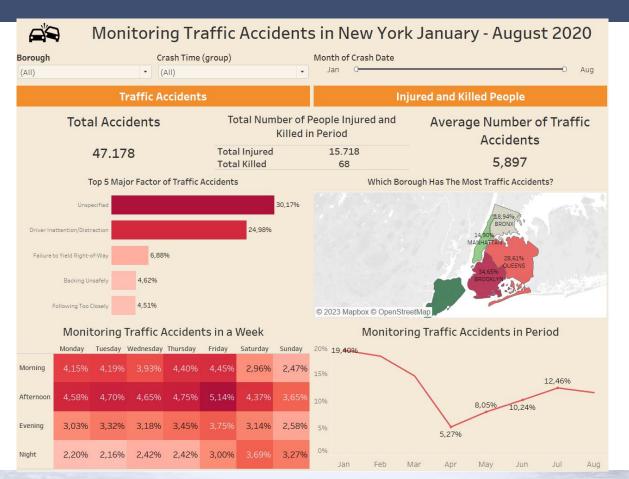


EXECUTE OF ODD AND EVEN
NUMBER OF LICENSE PLATE OF
VEHICLE TO REDUCE THE
MOBILITY OF ROAD USERS





# **Appendix**



# **Appendix**

