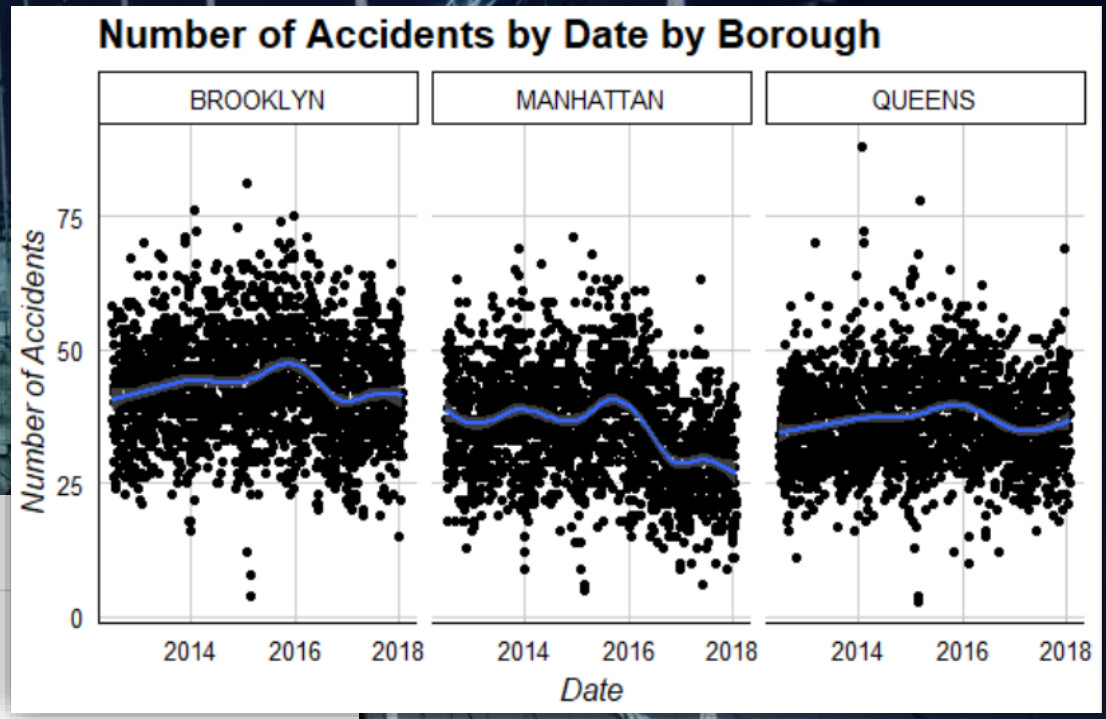
Brooklyn Plan for Accident Reduction

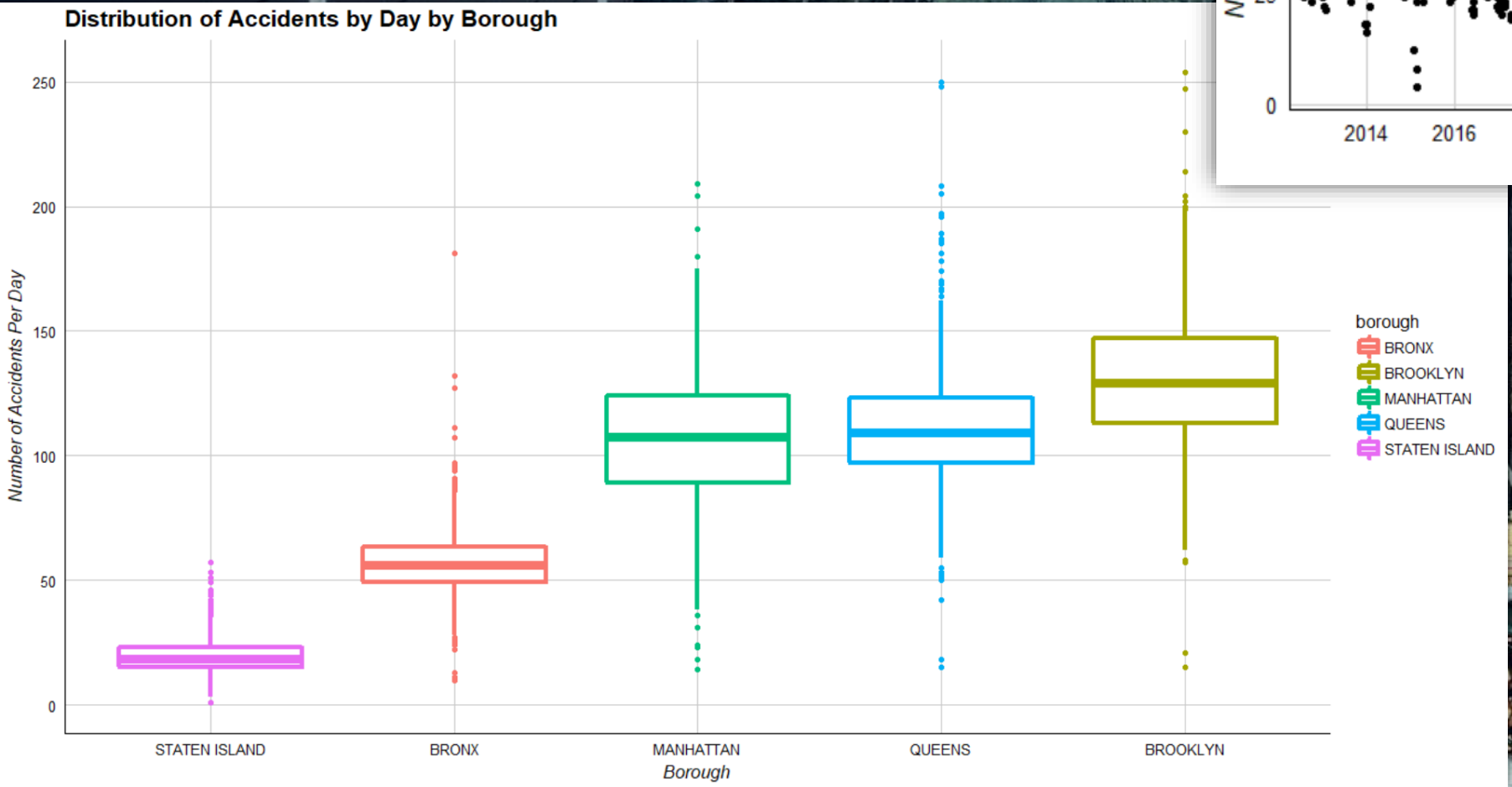
The purpose of this study is to develop a plan to reduce accidents in Brooklyn through the utilization of public data.

Below are the data points used:

Borough
Contributing Factor towards Accidents
Cross-Street Name of Accident
TimeStamp
Location
Cyclist, Motorists, and Pedestrian injuries
Cyclist, Motorists, and Pedestrians deaths
Off-Street Name of Accident
On-Street Name of Accident
Vehicle Type

Brooklyn has the highest average amount of accidents per day compared to the other 4 boroughs





A decline in accidents in Manhattan and Queens has been reported.

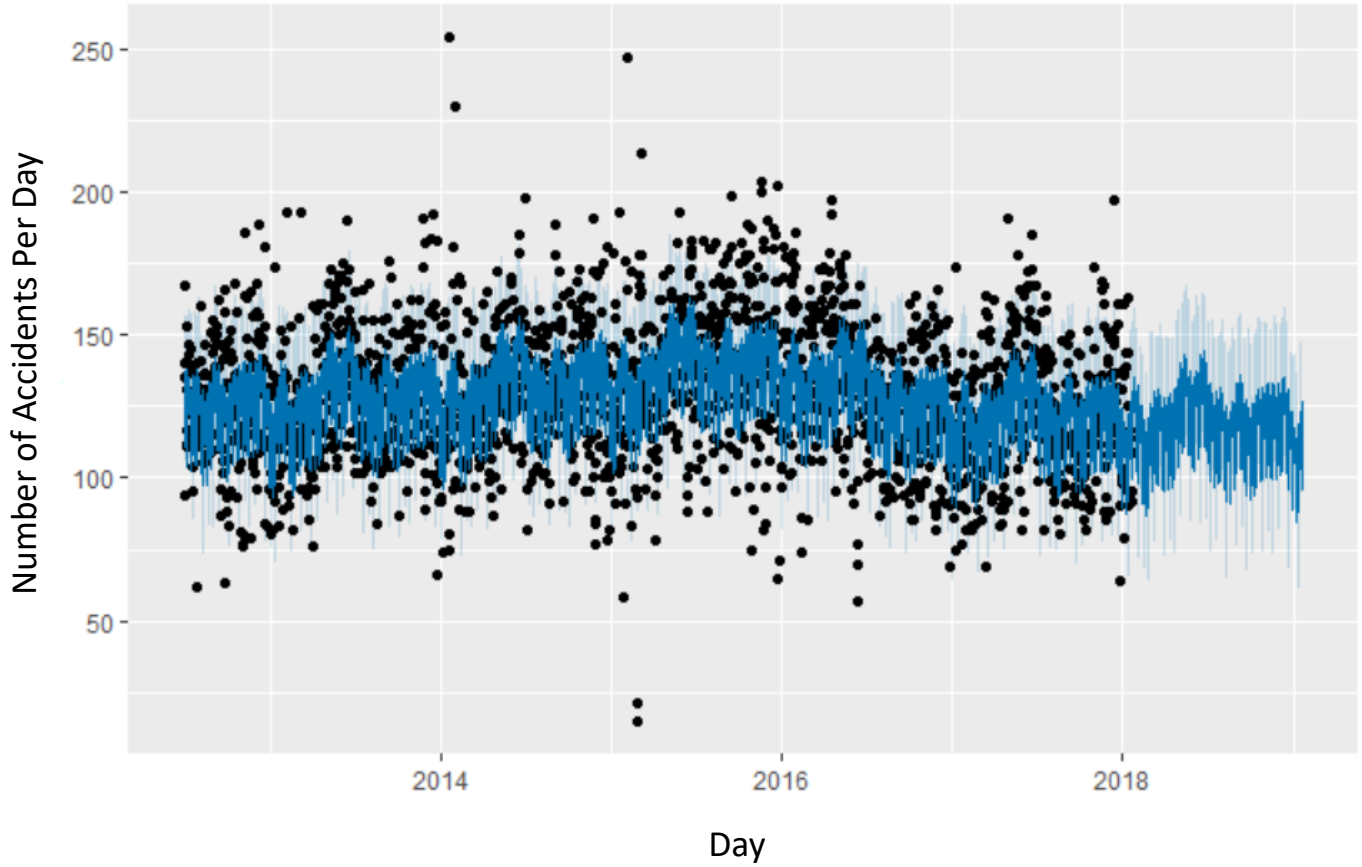
Brooklyn is the only borough that has not shown a reduction in accidents.

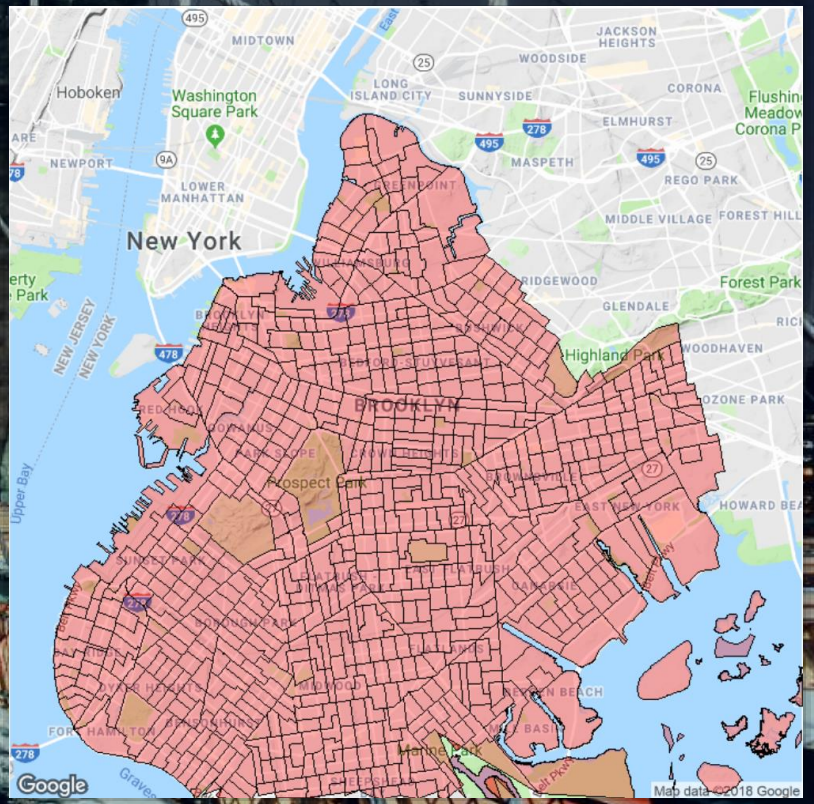
Therefore, the goal of this study is to help improve driver safety in Brooklyn, thereby improving the overall accident statistics for New York City.

There has not been a decrease in number of accidents in Brooklyn over the past 5 years and the forecast for 2018 does not show improvement.

HOW CAN WE REDUCE THESE ACCIDENTS?

Brooklyn 2018 Prediction of Accidents Per Day

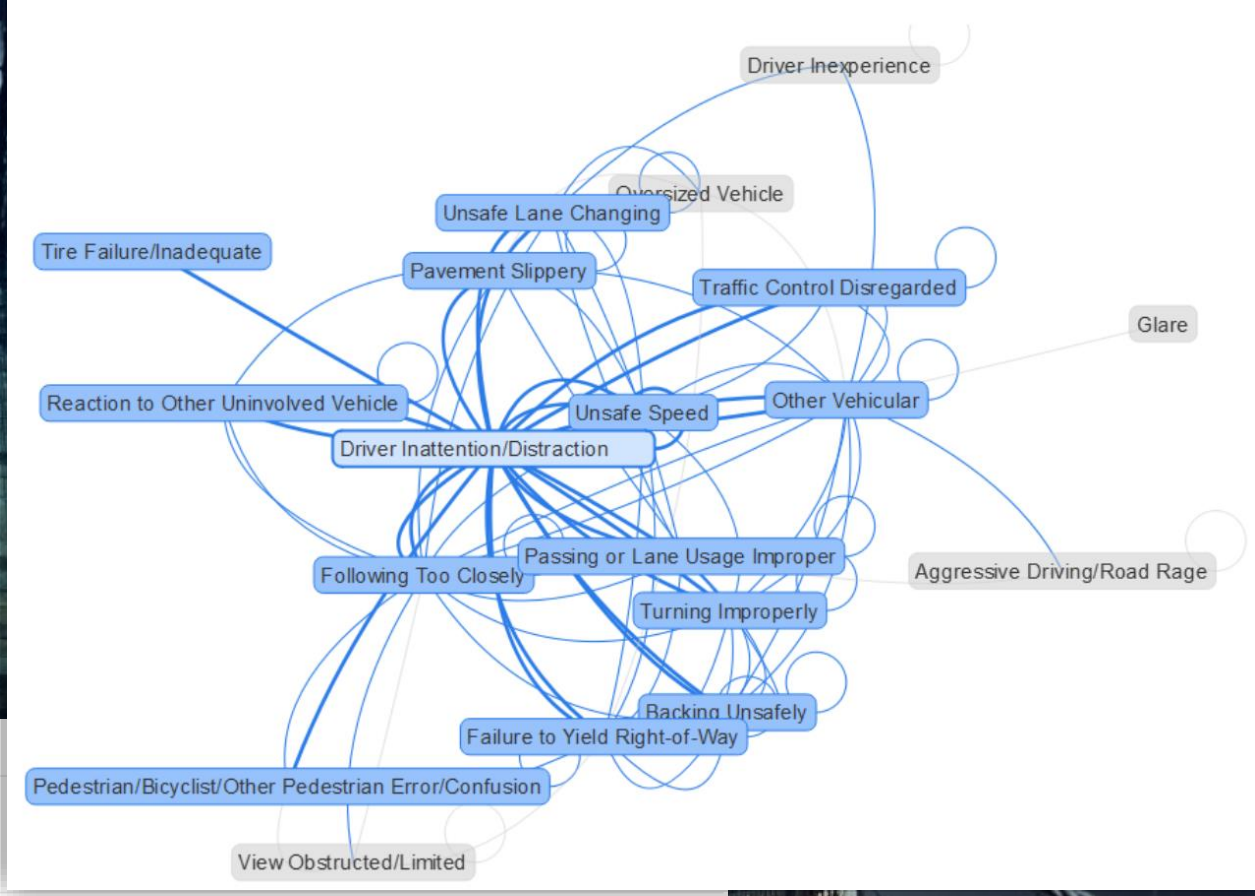


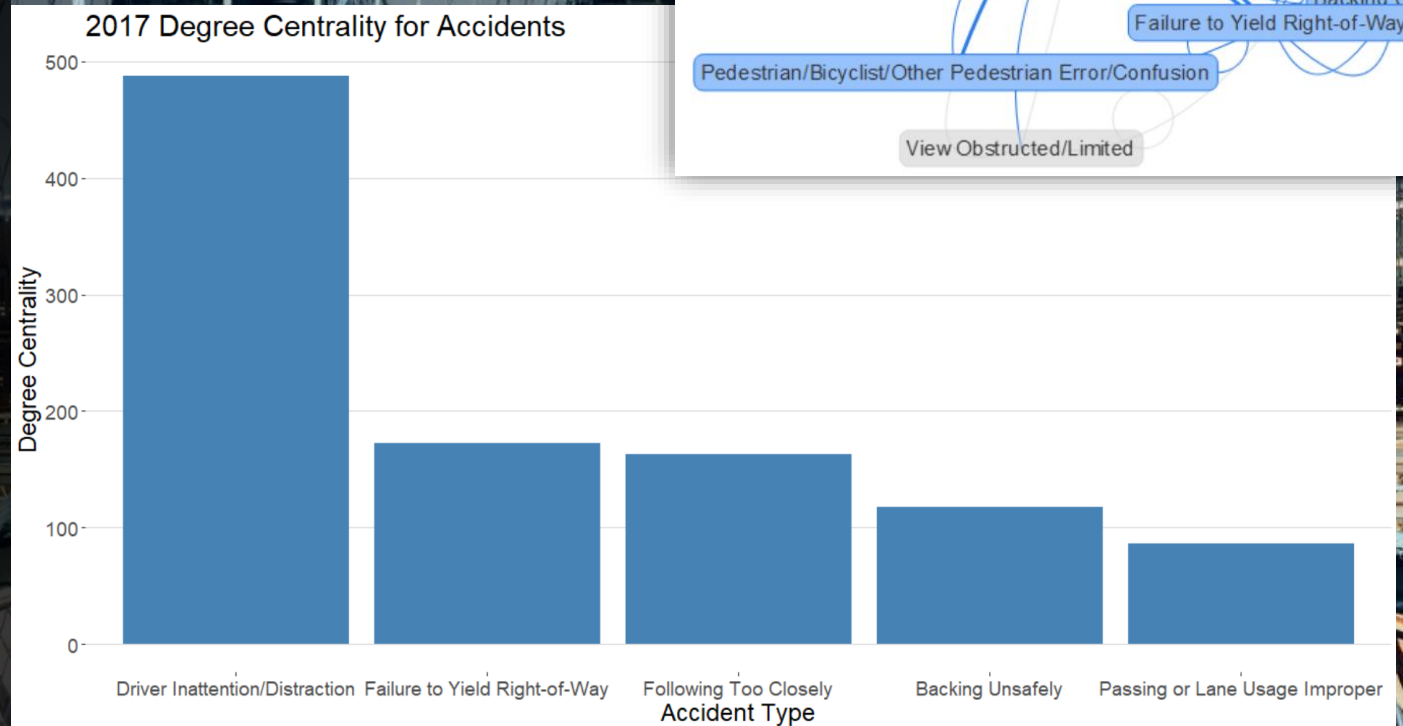


"Driver Inattention/Distraction" is the #1 cause of accidents in 2017 and 4 years prior to that.

"Driver Inattention/Distraction" had the highest degree centrality by far at 488 making it the most common type of accident that occurs standalone and with other accidents.

Degree Centrality measures the number of connections between a node and all other nodes (contributing factors towards accidents). *Reference Network graph on top right.*





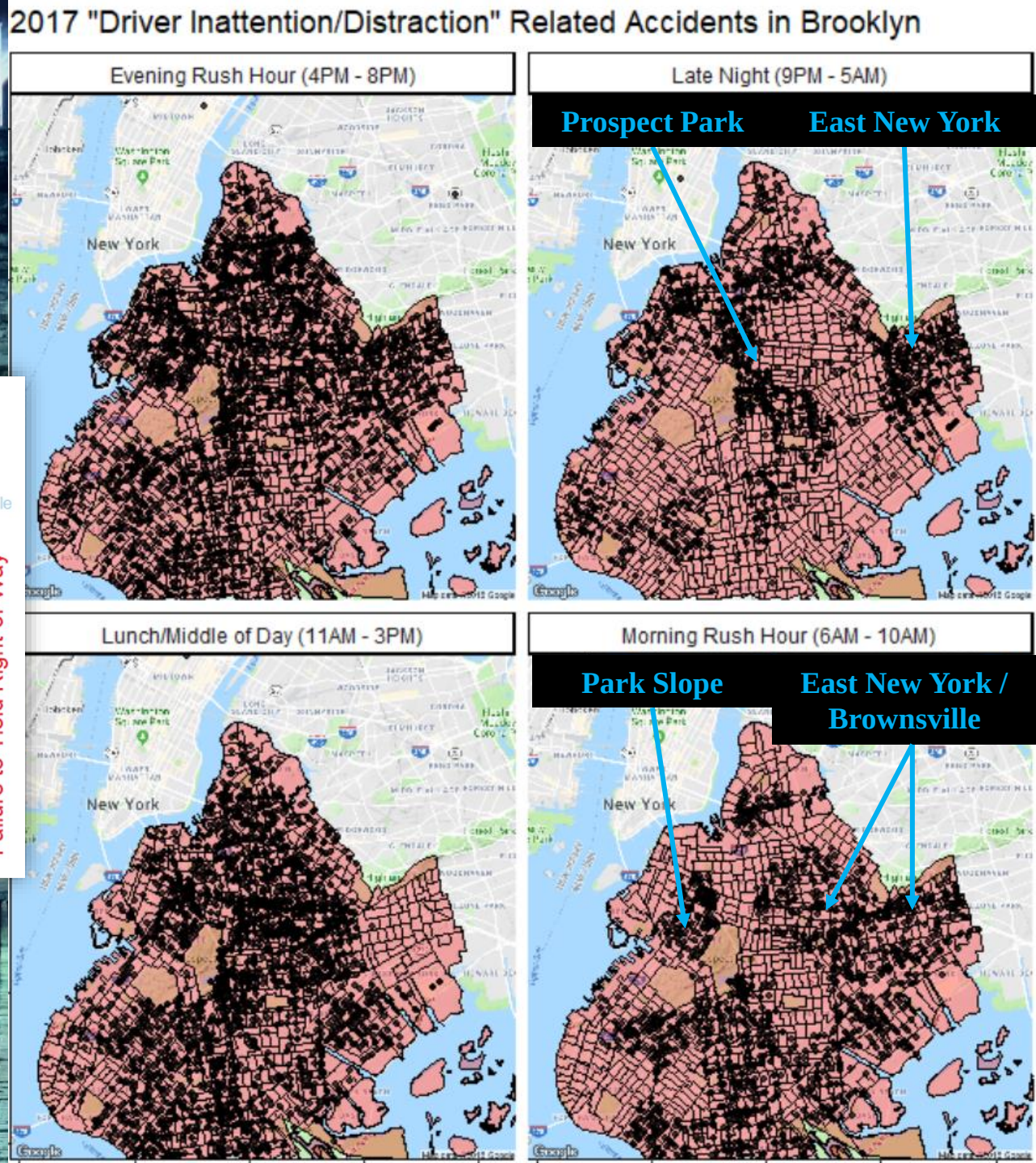
For 2017, separating “driver inattention/distraction” accidents by travel period shows that different locations tend to have accidents at similar times.

Late Night Travel has very condensed accident regions in East New York and near Prospect Park.

Most late night injuries occur on Sundays due to “driver inattention/distraction”

Morning Rush Hour has very condensed accident regions in Park Slope and East New York/ Brownsville.

Atlantic Avenue crosses through both these regions for Late Night Travel.

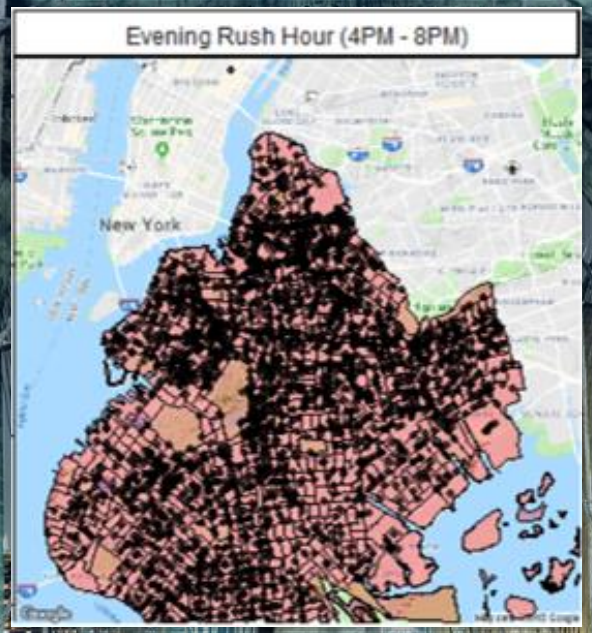


The highest amount of accidents are Lunch/Middle of Day, however the most amount of injuries occur during Evening Rush Hour.

Looking into the Evening Rush Hour, passenger vehicles cause the most injuries. The cross street that saw the most accidents under these specifications was Eastern Parkway and Buffalo Avenue.

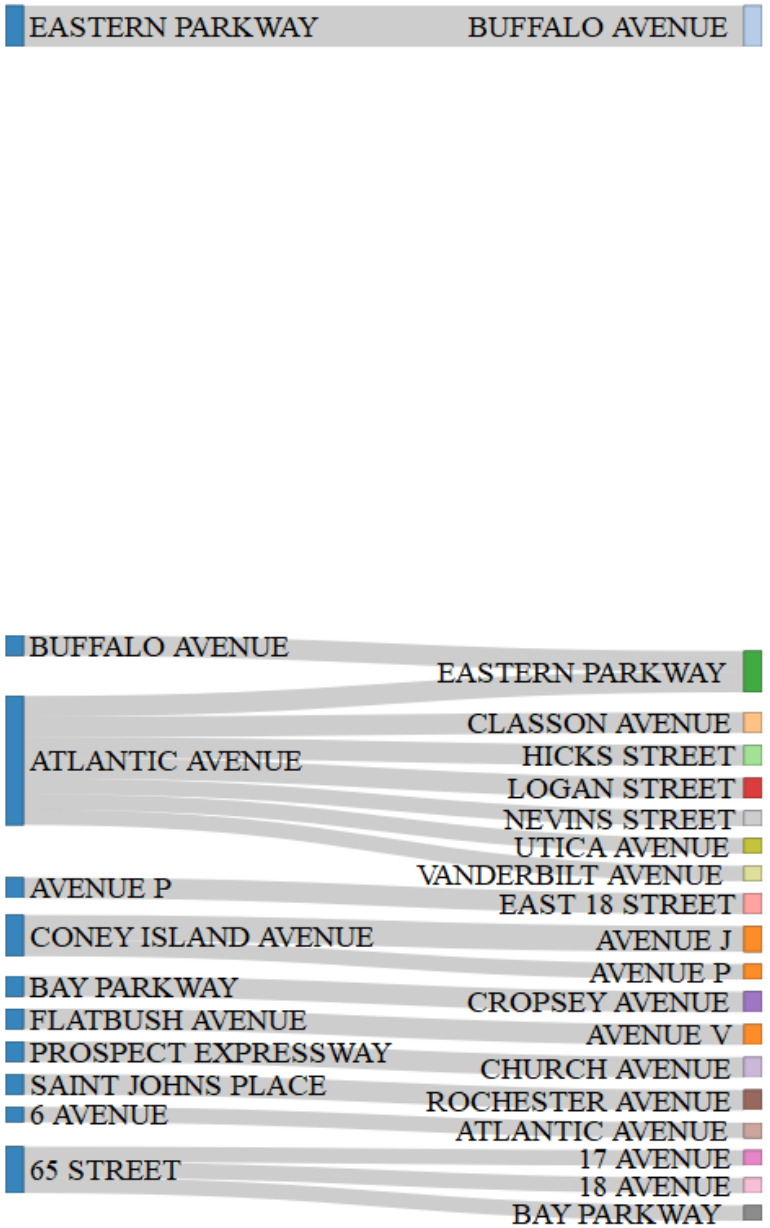
Atlantic Avenue, similar to Late Night Travel, contains the most cross streets with injuries.

The most accidents for Evening Rush Hour occurred in June. Possible reasons could be summer vacation and a high travel month.



Cross-Street Accident Distribution

(Ranked by most amount of accidents starting from top)



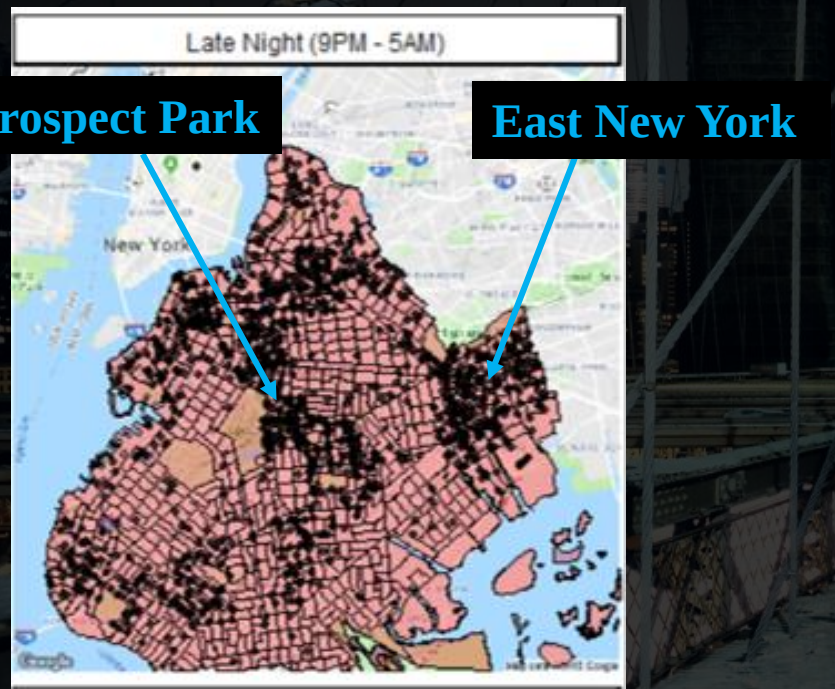
Condensed Area Recommendations:

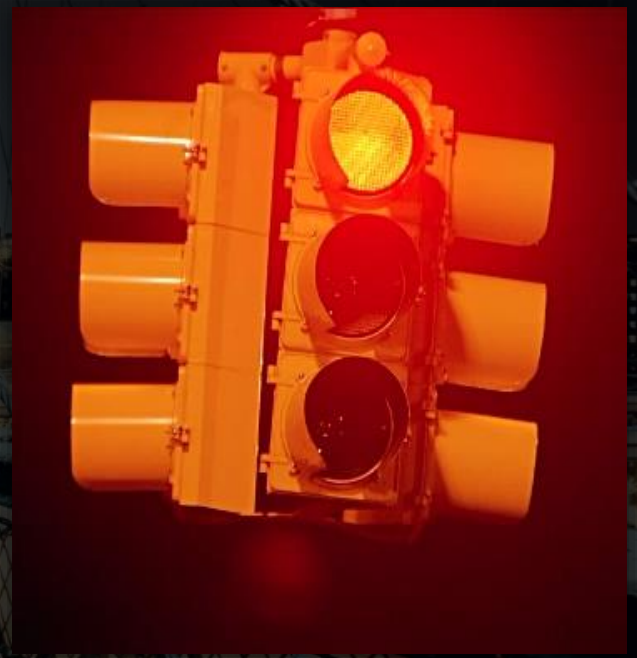
Adding more streetlights and stoplights on major streets like Atlantic Avenue could make it easier to see at night.

These lights should be installed on the corner of Atlantic Avenue and Albany Avenue which is the cross street having the highest accident rate of this kind.

Installation for these lights are recommended on Wednesdays during the Late Night Hours since this day/timeframe has the least amount of motorist injuries.

In addition, cameras at this cross street will serve as a deterrent against future moving violations.
Pull-off text stops and billboard warnings could also be helpful to reducing this type of accident rate.





Dispersed and Most Injury Prone Area Recommendations:

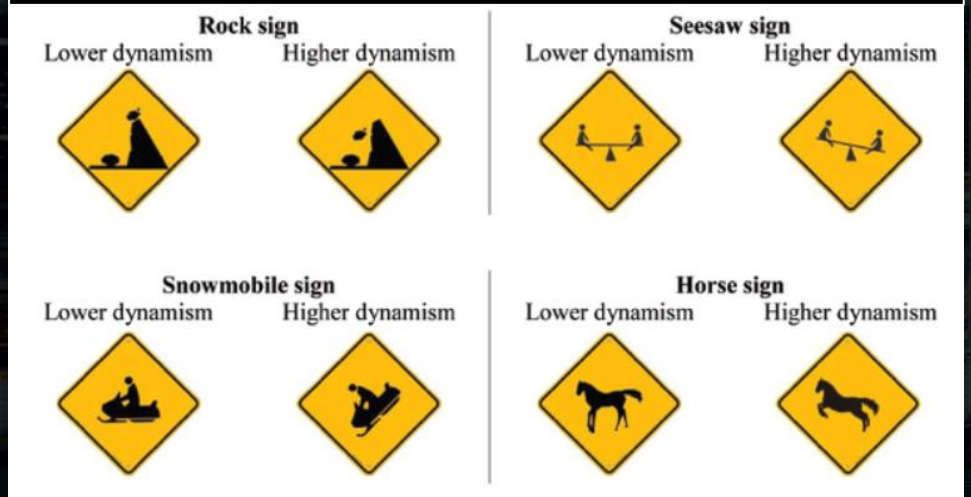
A new study showed that angled signs could help attentiveness with passenger vehicle drivers.

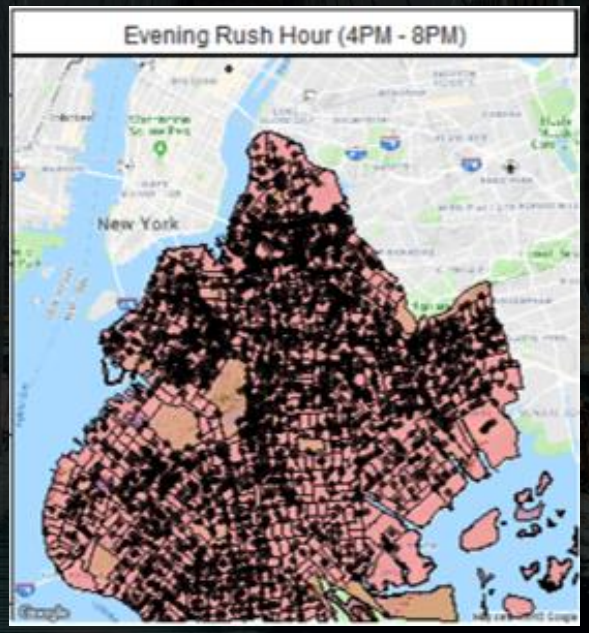
Installing these at the Eastern Parkway/Buffalo Avenue cross-street could improve attentiveness therefore lowering the accident rate for passenger drivers during Evening Rush Hour.

With Driver Inattention/Distraction being the #1 cause of accidents and Eastern Parkway/Buffalo Avenue being the highest accident rated cross-street during Evening Rush Hour, this is a solution that requires minimal funding and could still have great effectiveness.

Atlantic Avenue continues to have the most accidents during this time period and this will require investment and serious roadwork to improve this problem.

Example of Angled Signs to help with attentiveness





Eastern Parkway and Buffalo Avenue Cross Street

Current Larger Scale Government Plan

NY Governor Andrew M. Cuomo announced funding of $112MM towards supporting bicycle and pedestrian enhancements in April 2017. $5MM out of the $16MM NYC allotment is towards improving Atlantic Avenue.

This is a much larger scale project and the insights provided in this analysis support the funding on Atlantic Avenue.

The findings below support Cuomo's plan:

1) The majority of accidents are caused by passenger vehicles. Therefore bicycle and pedestrian enhancements will lower the vehicle traffic

2) For Late Night Hours, the highest amount of accidents occur on the cross street of Atlantic Avenue and Albany Ave

3) During Evening Rush Hour, Atlantic Avenue has the most cross streets with accidents

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The Recommendations for Condensed and Dispersed/Most Injury Prone Areas will have great effectiveness towards reducing accidents in Brooklyn.

DRIVE SAFELY

Source: https://www.governor.ny.gov/news/governor-cuomo-announces-1122-million-funding-support-transportation-enhancements-across-new