



311 NYC NON EMERGENCY DATA



About the Dataset

NYC 311 Socrate

311 is New York City's main source of government information and non-emergency services. Whether you're a resident, business owner, or visitor, help is just a click, text, or call away.

About the Dataset

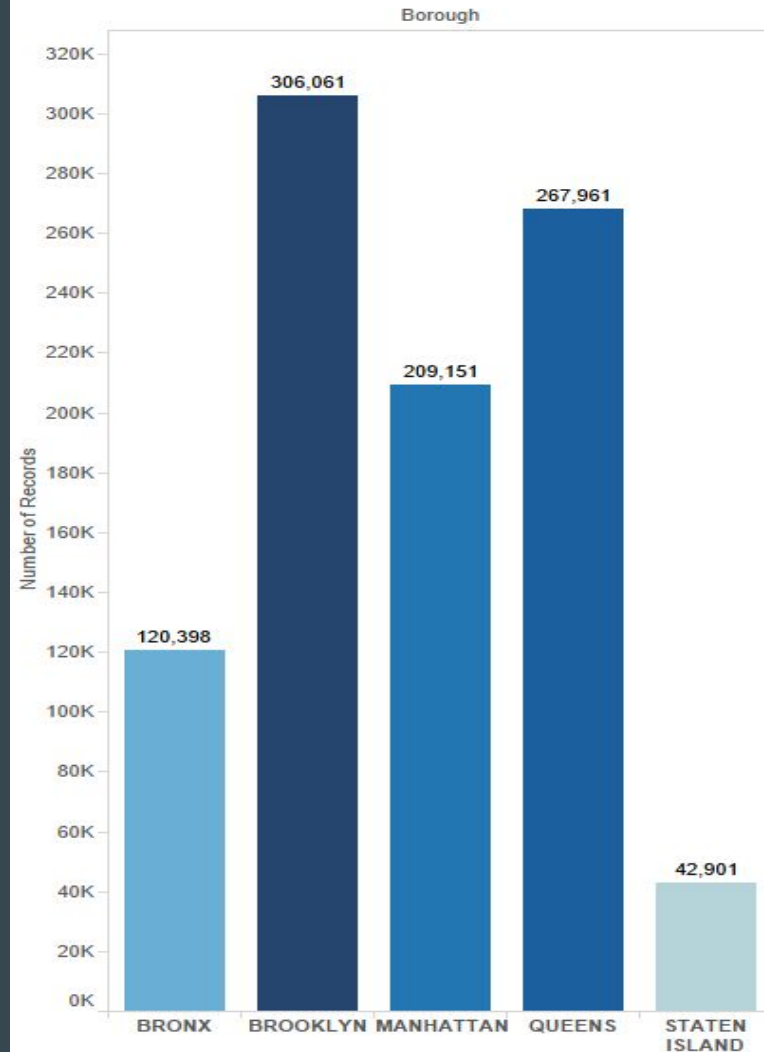
- **Analysis of the complaints received by New York City Police Department (NYPD) in the past five years from 2010 to 2014.**
- **Dataset acquired from NYC 311 website.**
- **The dataset contains information like the type of complaint received by the department by each borough in NYC, the time and location of the registered complaint, the action taken by the department, the time taken to resolve each complaint.**

Problem Statement

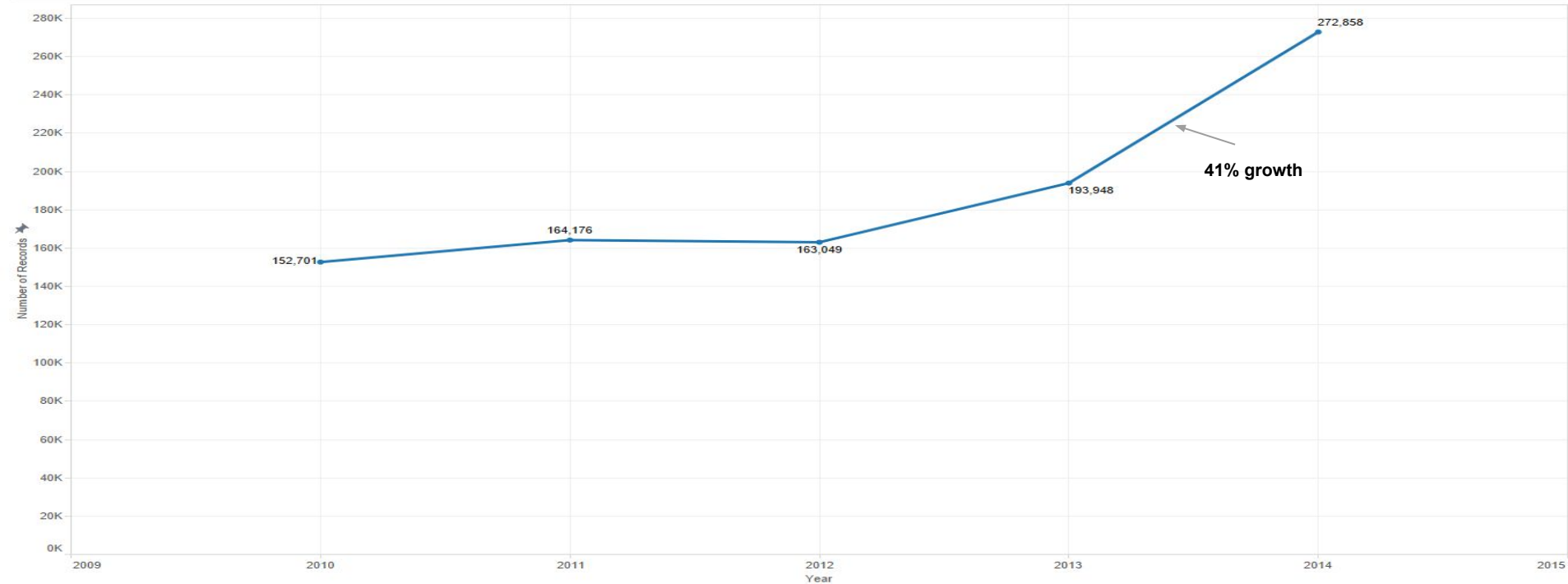
Analyze the complaints received by NYPD on 311 Request Database to find optimal solution in prioritizing complaints and minimizing resolution time using descriptive as well as predictive analysis.

Analysis of the Dataset

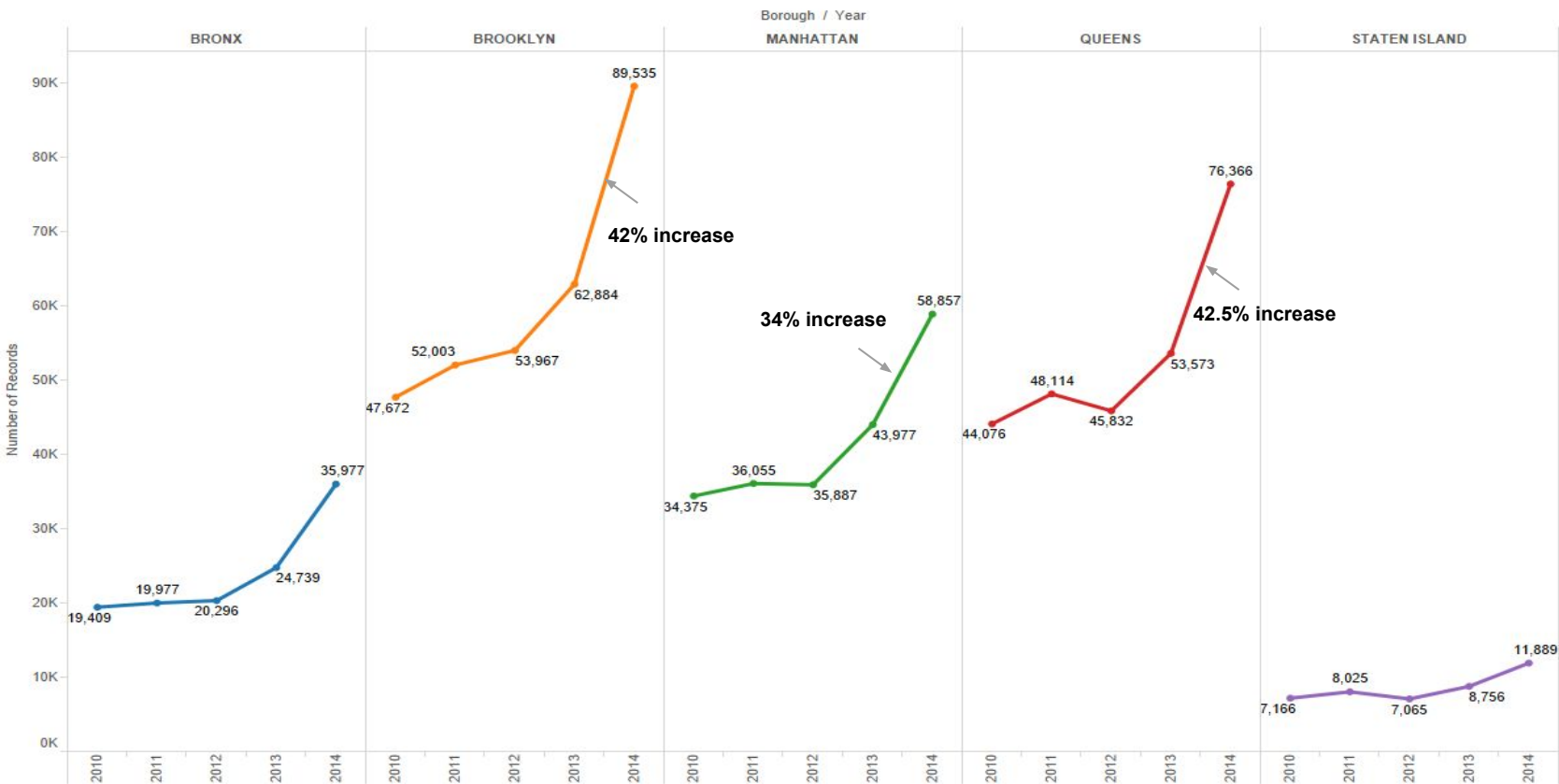
- Total Number of Complaints- 946,732
- Brooklyn has the highest number of complaints (306,061) followed by Queens (267,961).



Total Complaints Year over Year (YOY)

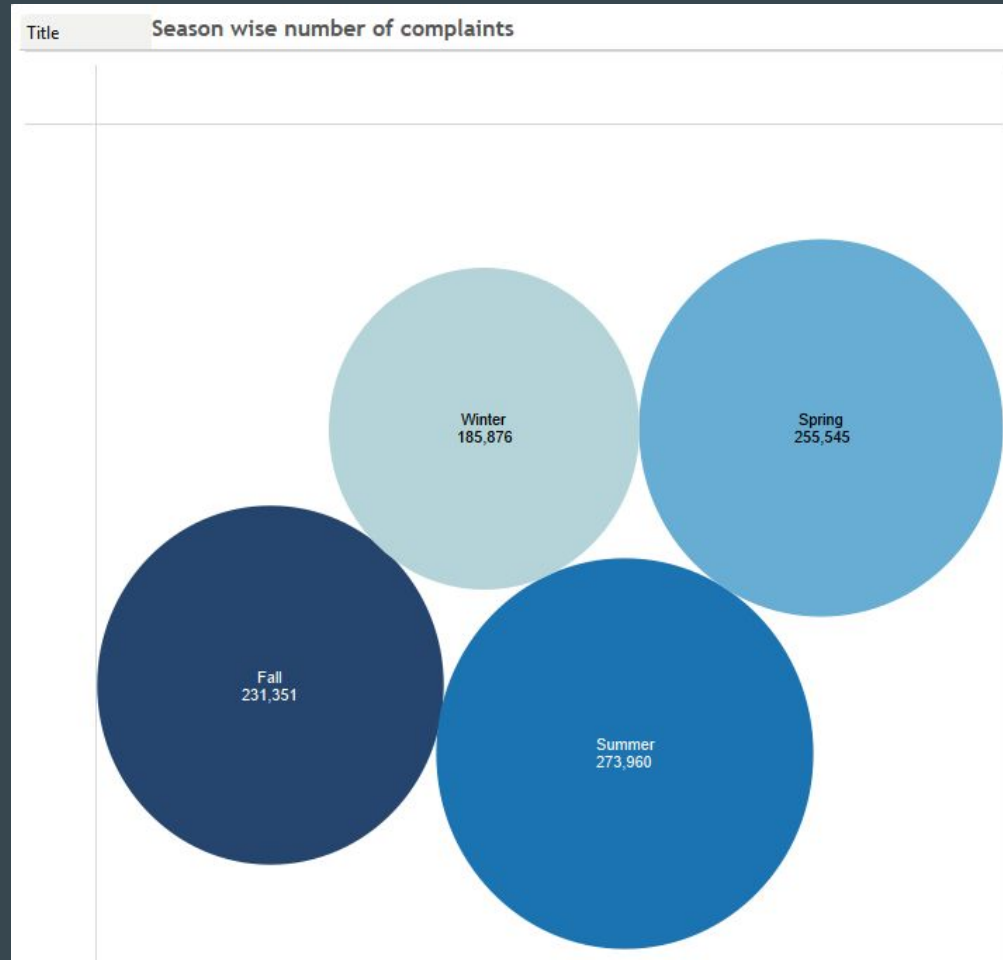


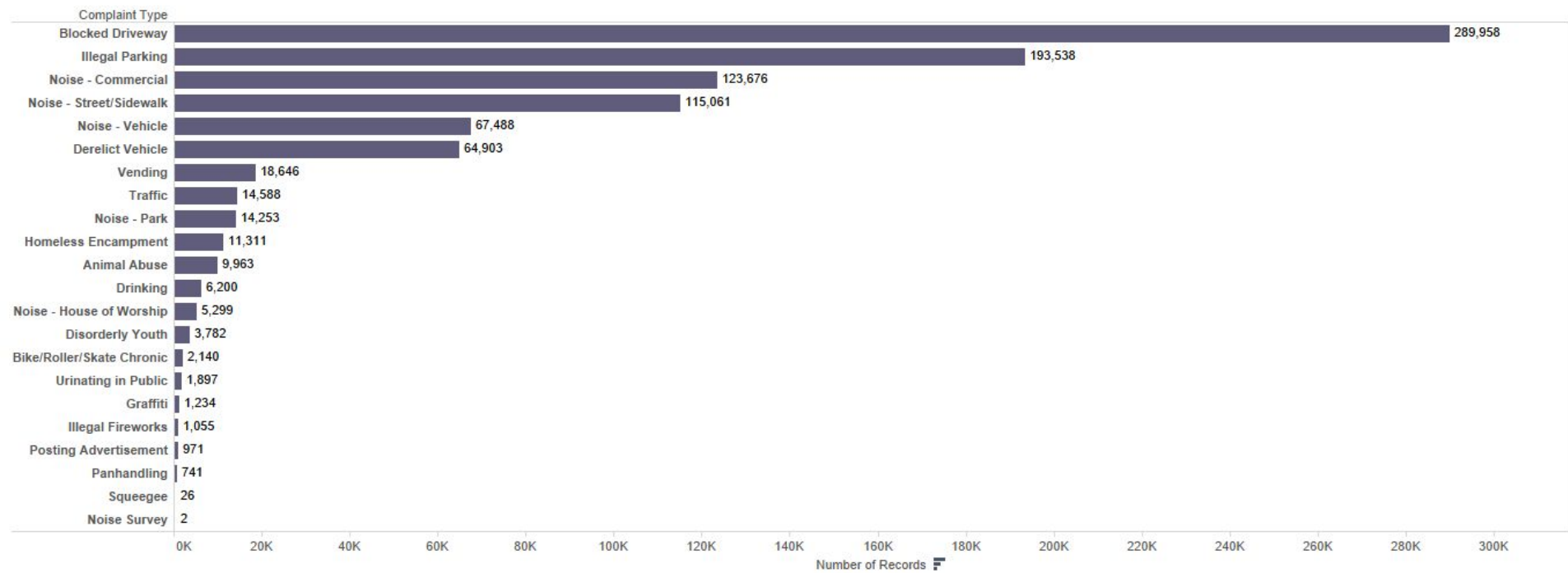
- There has been a rise of 79% in the number of complaints registered over the past five years.
- Last year alone has seen a rise of 41% in the total number of complaints.



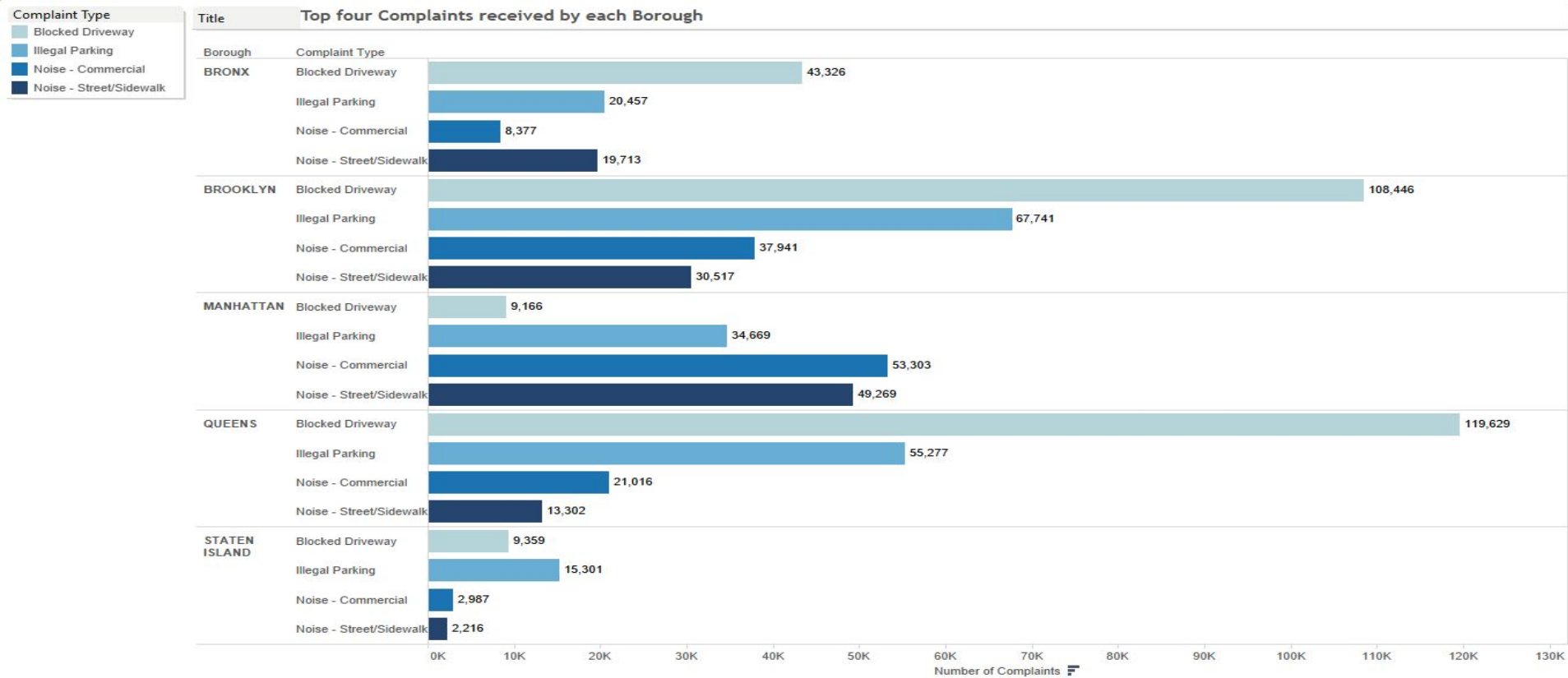
Brooklyn has seen a rise of 88% in the number of complaints registered over the past five years, while the last year alone has seen a surge of 42% in the number of complaints. Manhattan has seen a rise of 62% over past five years while last year alone has seen a rise of 34%.

Winter season has the lowest number of complaints registered with 185,876 complaints while summer season has the highest number of complaints registered with 273,960 complaints.



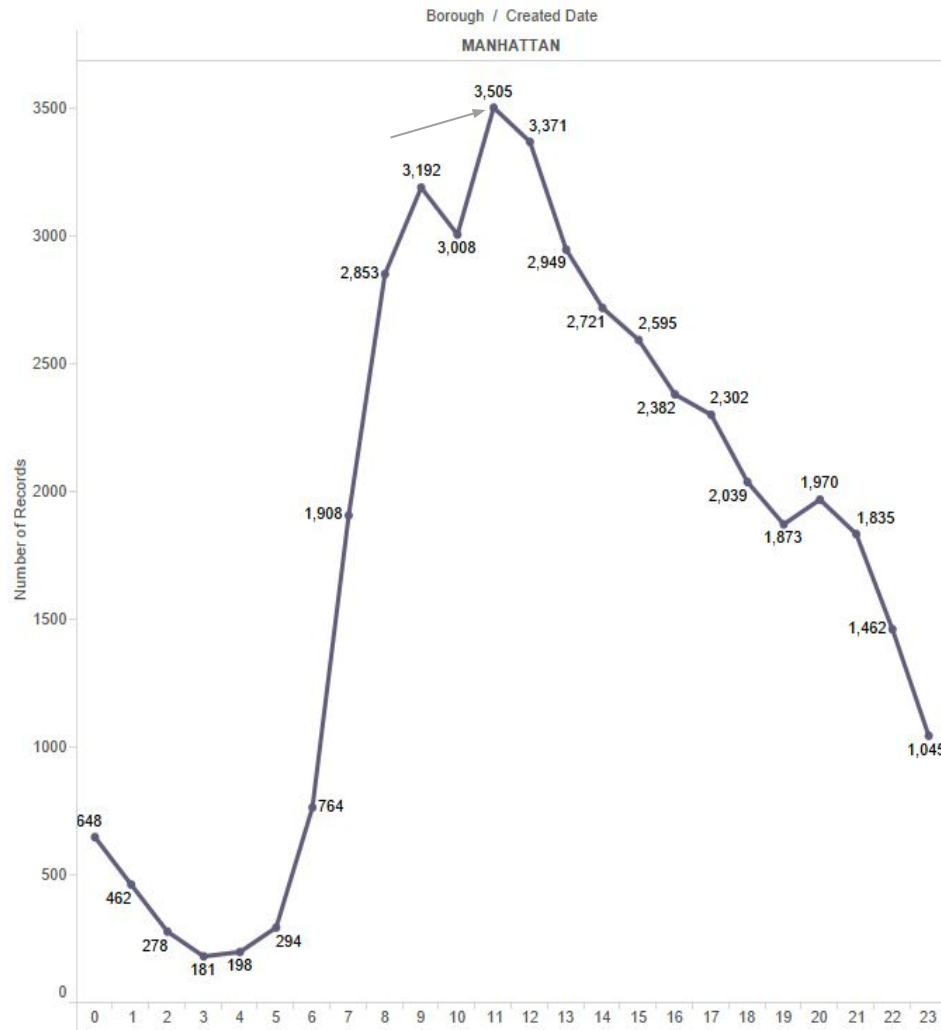


- Over half of the complaints i.e. 51% have been received for Blocked Driveway and Illegal parking.
- 25% complaint have been received for Commercial and Street/Sidewalk noises.
- These four complaints combined account for 76% of the total complaints received.

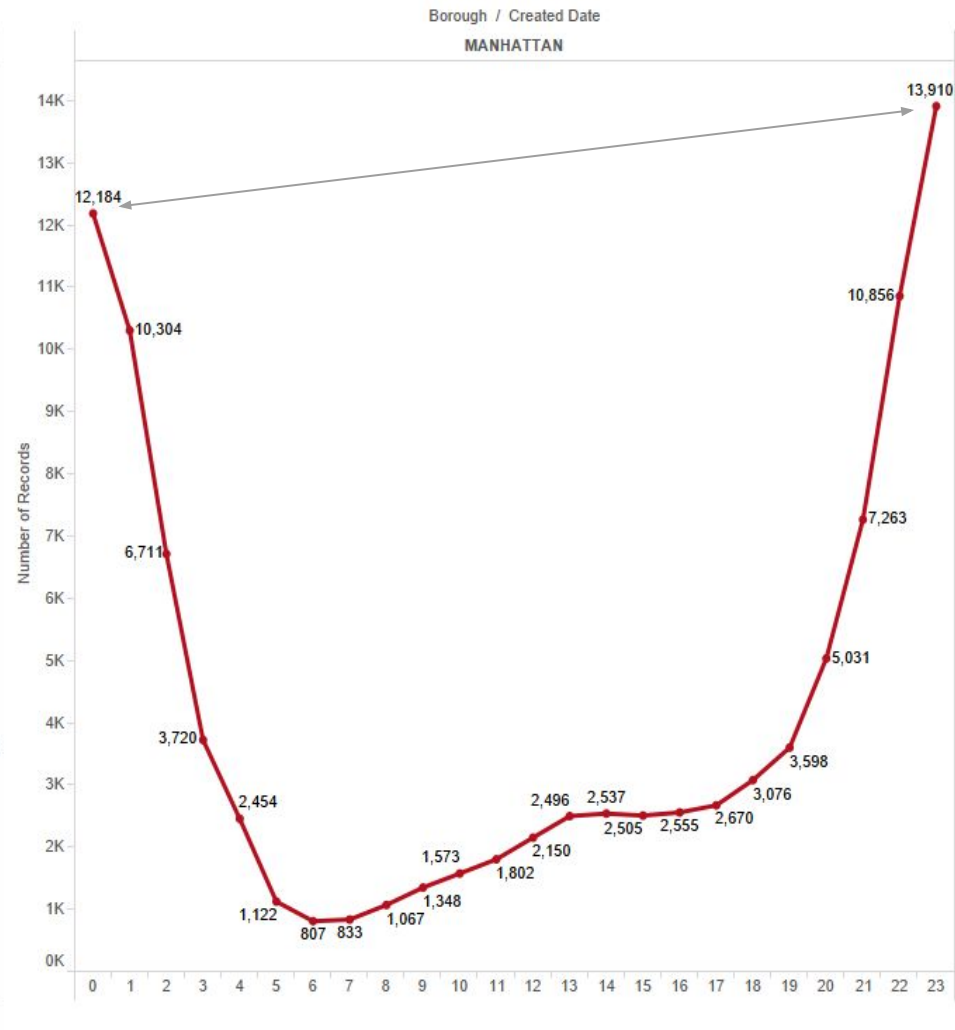


All boroughs except Manhattan have received most complaints regarding Blocked Driveway and Illegal Parking while Manhattan has received most number of complaints regarding Commercial and Street/Sidewalk noise.

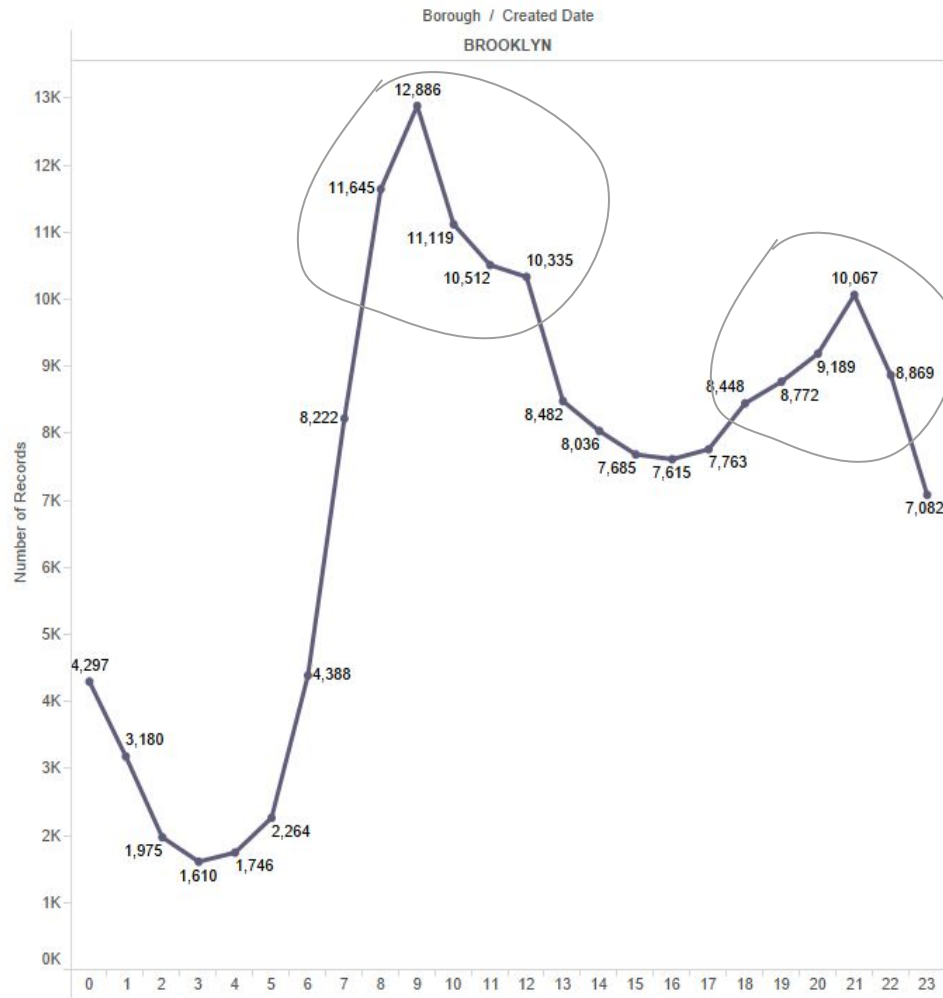
Vehicle complaints by every hour in Manhattan



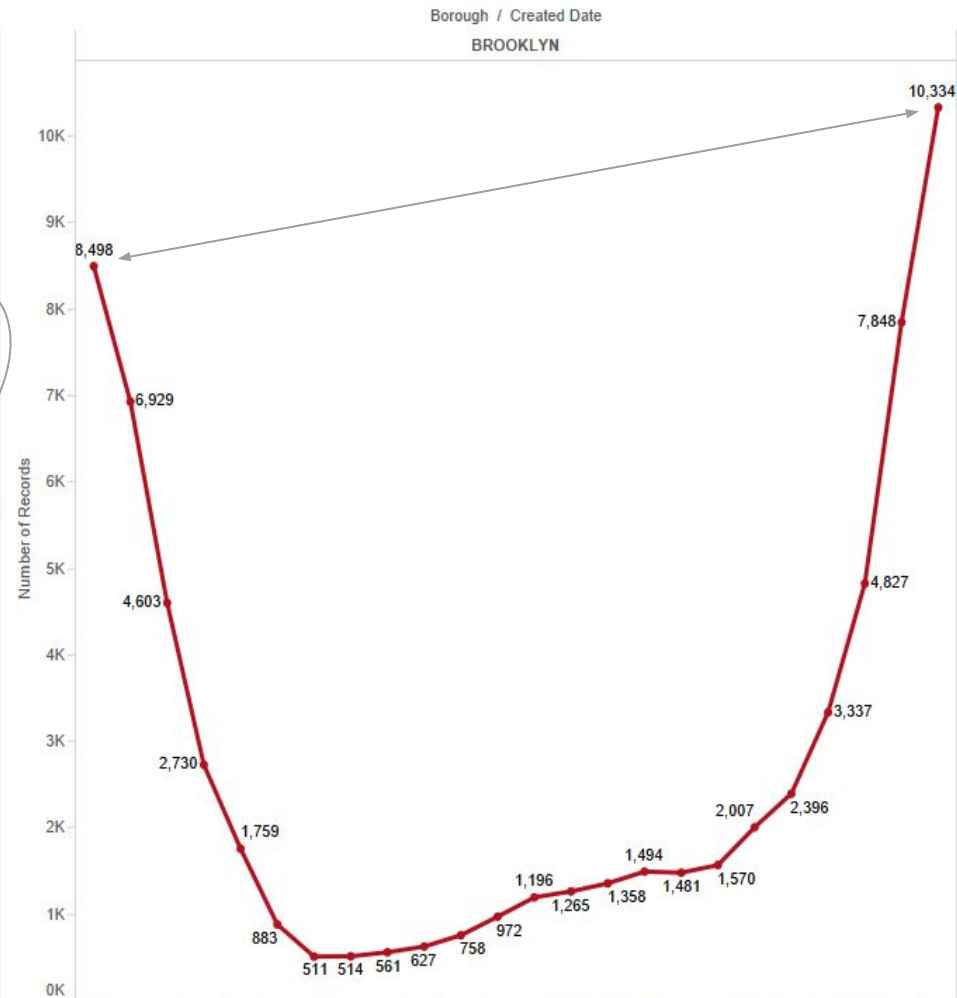
Noise complaints by every hour in Manhattan



Vehicle complaints by every hour in Brooklyn



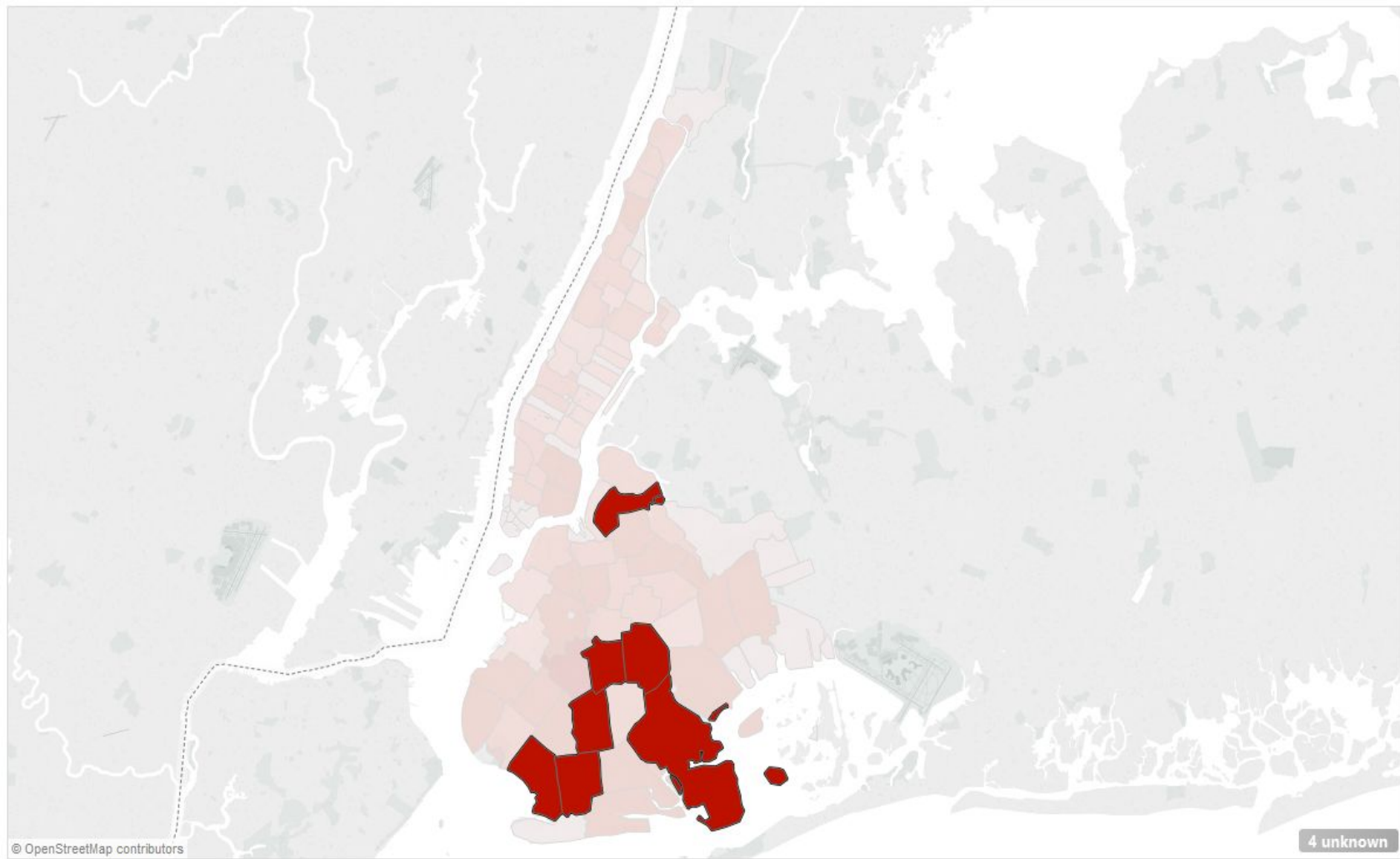
Noise complaints by every hour in Brooklyn



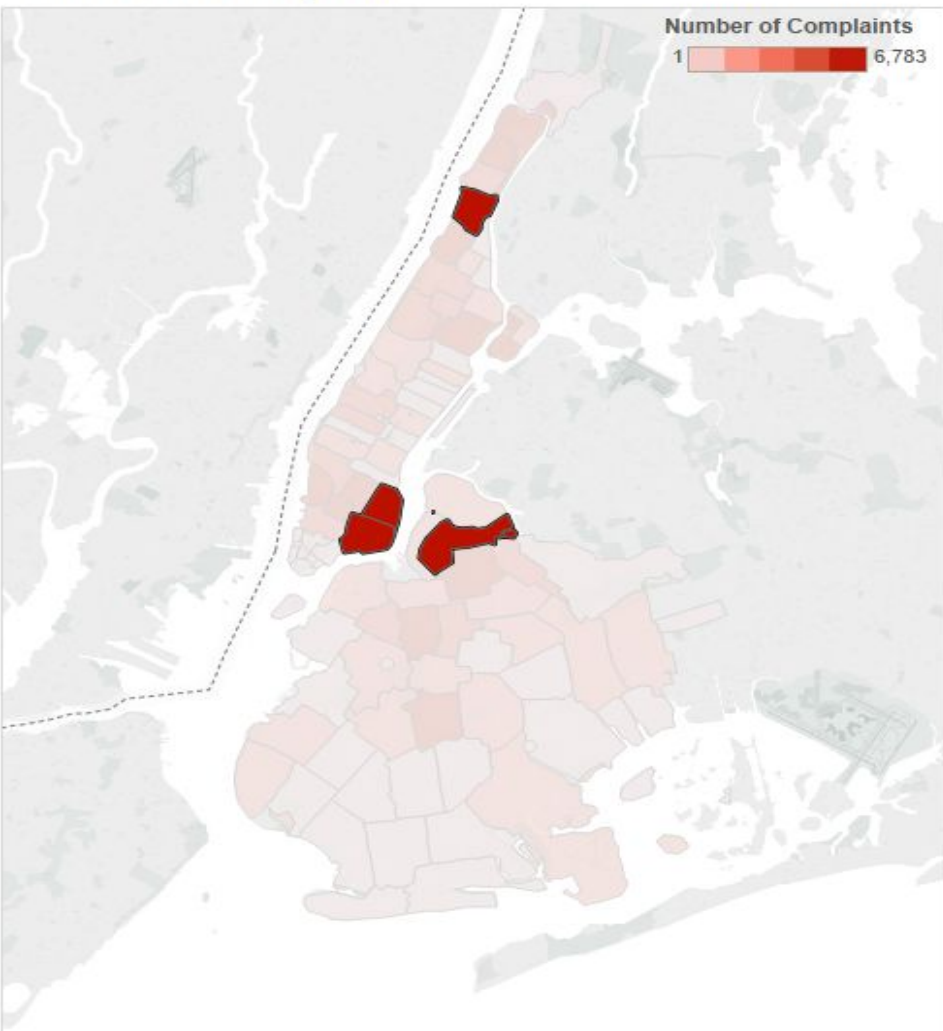
What It Means

- For Manhattan, peak timings for parking related complaints is ***10am to 1pm***, when most people reach their work places.
- Even though there is a peak period for complaints related to parking in Manhattan, the number of complaints is not very high in comparison with Brooklyn.
- The peak timings for parking related complaints in Brooklyn is ***8am to 12pm***, when most of the people leave for work and during ***6pm to 10pm*** when people return from work.
- The peak timings for noise related complaints in both Manhattan and Brooklyn is ***9pm to 3am***.
- The commercial noise in Manhattan and Williamsburg in Brooklyn can be attributed to the fact that there are many pubs, bars and restaurants in the complaint regions.

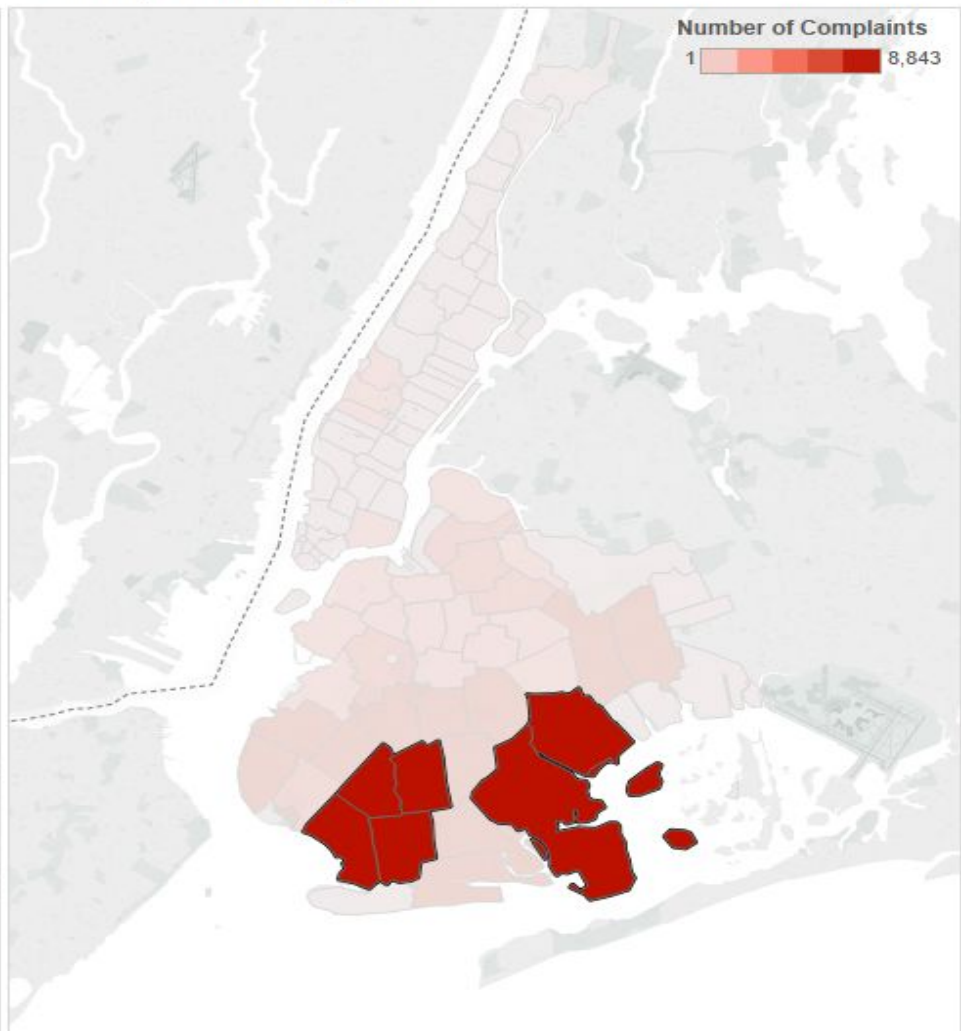
Title Parking and Noise related Complaints by Zip code for Manhattan and Brooklyn



Noise related complaints



Parking related complaints



Concentration Areas

- **General Complaint Concentration:**

- Brooklyn: Flatbush (11203, 11226), Borough Park (11218, 11230), Southern & Southwest Brooklyn(11223,11214), Williamsburg (11211)
- Manhattan: Washington Heights (10032)

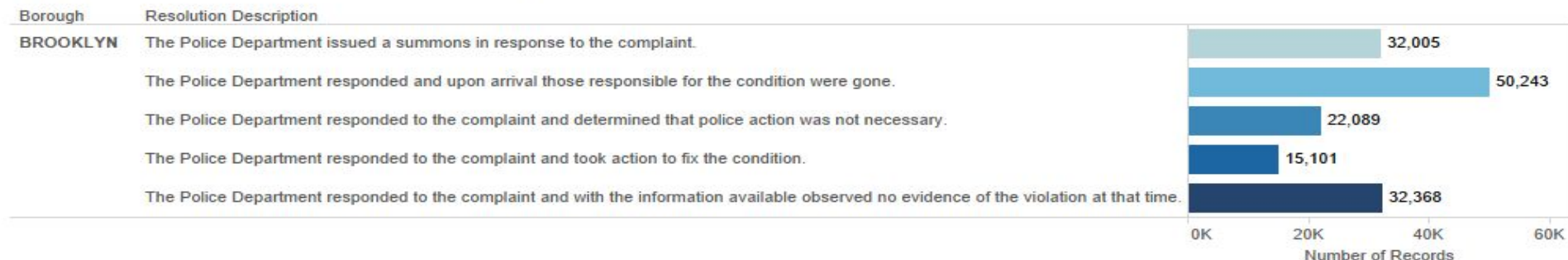
- **Noise Complaint Concentration:**

- Brooklyn: Williamsburg (11211)
- Manhattan: Washington Heights (10032), Lower East Side (10002, 10009)

- **Parking Complaint Concentration:**

- Brooklyn: Flatlands (11234, 11236), Borough Park (11204, 11230), Southern & Southwest Brooklyn (11223,11214)

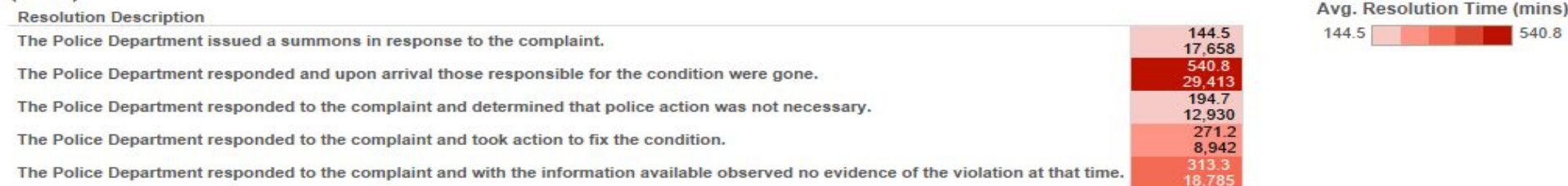
Top 5 police actions for complaints in Brooklyn



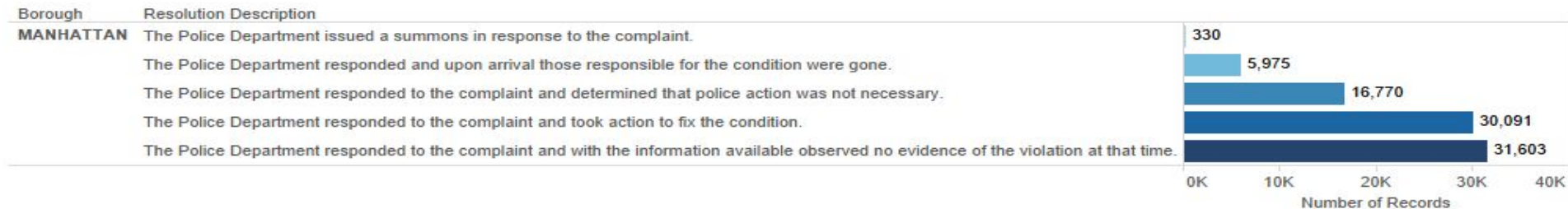
Average resolution time for parking complaints in Brooklyn between 12pm to 6pm and 11pm to 8am. (Non Peak)



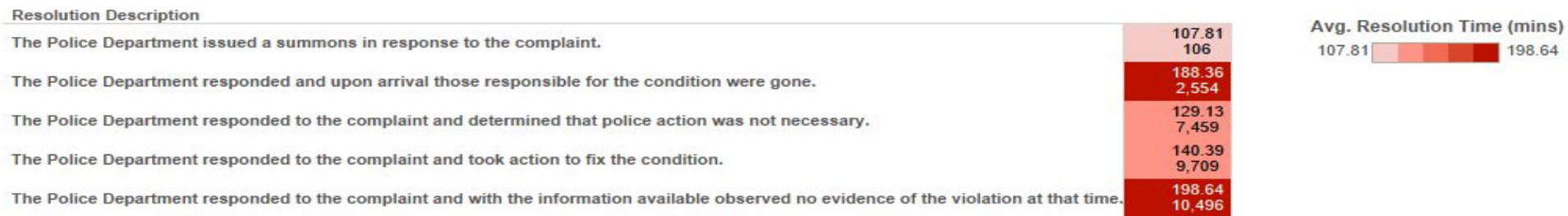
Average resolution time for parking complaints in Brooklyn between 8am to 12pm and 6pm to 10pm. (Peak)



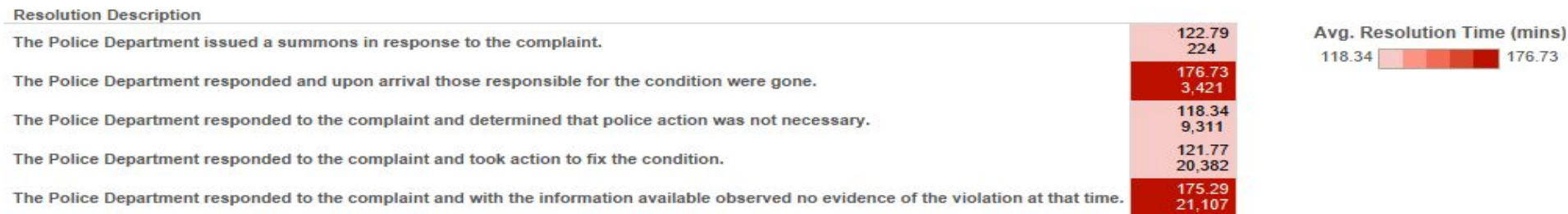
Top 5 police actions for complaints in Manhattan



Average resolution time for Noise complaints in Manhattan from 3am to 9pm.(Non Peak)



Average resolution time for Noise complaints in Manhattan from 9pm to 3am.(Peak)



BUSINESS SOLUTION

Assumptions and Available Data

Year	2010	2012	2013	2014*
Number of complaints	152,701	163,049	193,948	272,858
Employees on patrol (Full time/ Part time)	21200/800	30900/1100*	30500/1000*	31800/1200
Complaints/Employee	6.94	5.09	6.15	8.26

*Assumed Values

Recommendations

- As number of complaints have increased per year, the burden of complaint resolution has increased, subsequently increasing the resolution time as well as complaints per employee.
- To control the resolution time, there needs to be a better allocation of resources (employees in this case) based on concentration areas and concentration time.
- To do that, NYPD can hire more part-time employees and deploy them in areas that have received highest complaints in the peak complaint periods.
- The part-time employment will not only help control the NYPD budget, but will also help in decreasing the average resolution time by having more employees during high demand periods.

THANK YOU!