



Exploring Crime Patterns in Seattle

By Tyler Ngo, Sam Mixon,
Anna Carpio, and Lavinia Bartose



CRIME SCENE DO NOT CROSS

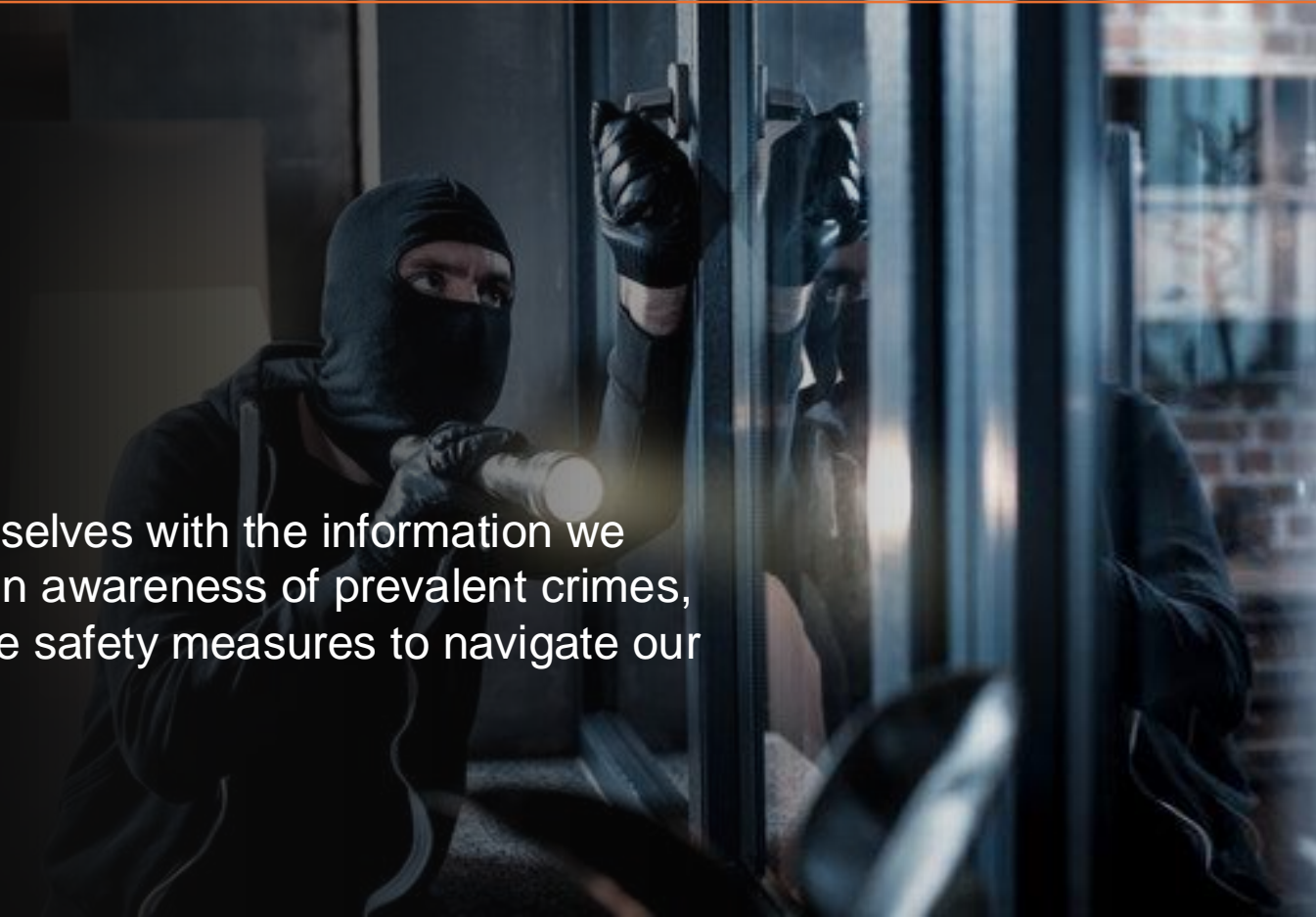
Introduction

We have conducted an analysis of crime rates in Seattle to provide valuable insights for our community.

Why?

- Students
- Faculty
- Residents
- And prospective residents

Should all be allowed to effectively equip themselves with the information we have prepared. Through our work, they will gain awareness of prevalent crimes, understand high-risk areas, and learn proactive safety measures to navigate our urban environment safely.



Project Overview

Our report aims to address and inform others on the following key questions:

- How have crime rates in Seattle fluctuated over the past decade, and what are the primary factors contributing to these changes?
- Are certain neighborhoods or areas within Seattle experiencing disproportionately high or low crime rates, and what socioeconomic factors might be influencing these patterns?
- What types of crimes are most prevalent in Seattle, and how do they compare to national trends?
- How effective have recent crime prevention and law enforcement initiatives been in Seattle, and what strategies show promise for further reducing crime rates in the future?



Data Analysis Overview

We used two datasets for our analysis, both of which are publicly available from the city. The first data set is the call data for the SPD, which is data about the calls for service received in a particular Beat, which is a geographic slice of the city used to organize police activity, as well as categorize where crimes take place or where the incident a call for service is requesting help from.

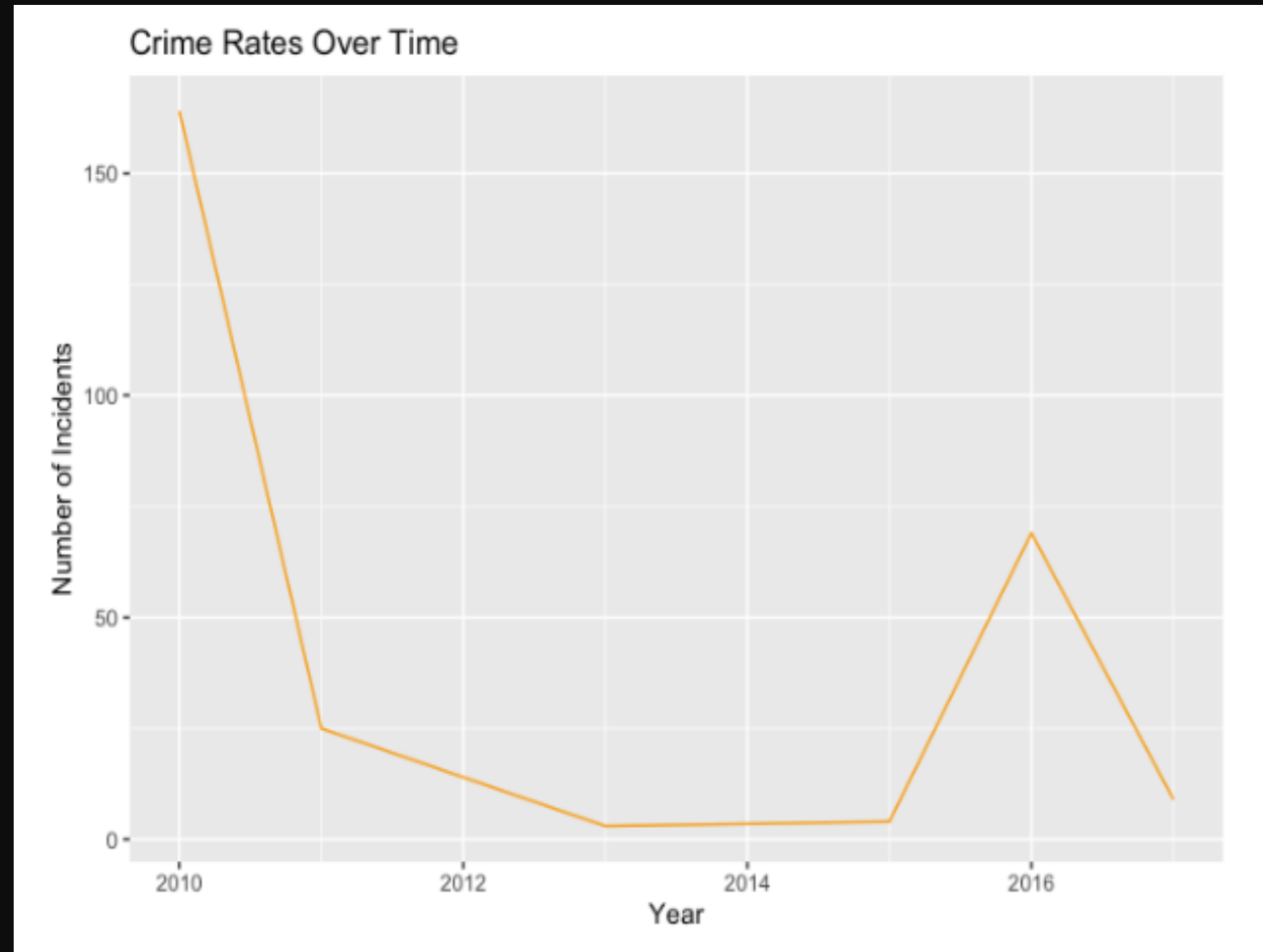
The second dataset is a record of the incident responses by the SPD, which is how and what kind of call the SPD responded to.

Seattle Crime Rates Over Time

This line plot represents the incident count recorded in both our datasets throughout the years from 2010 to 2017.

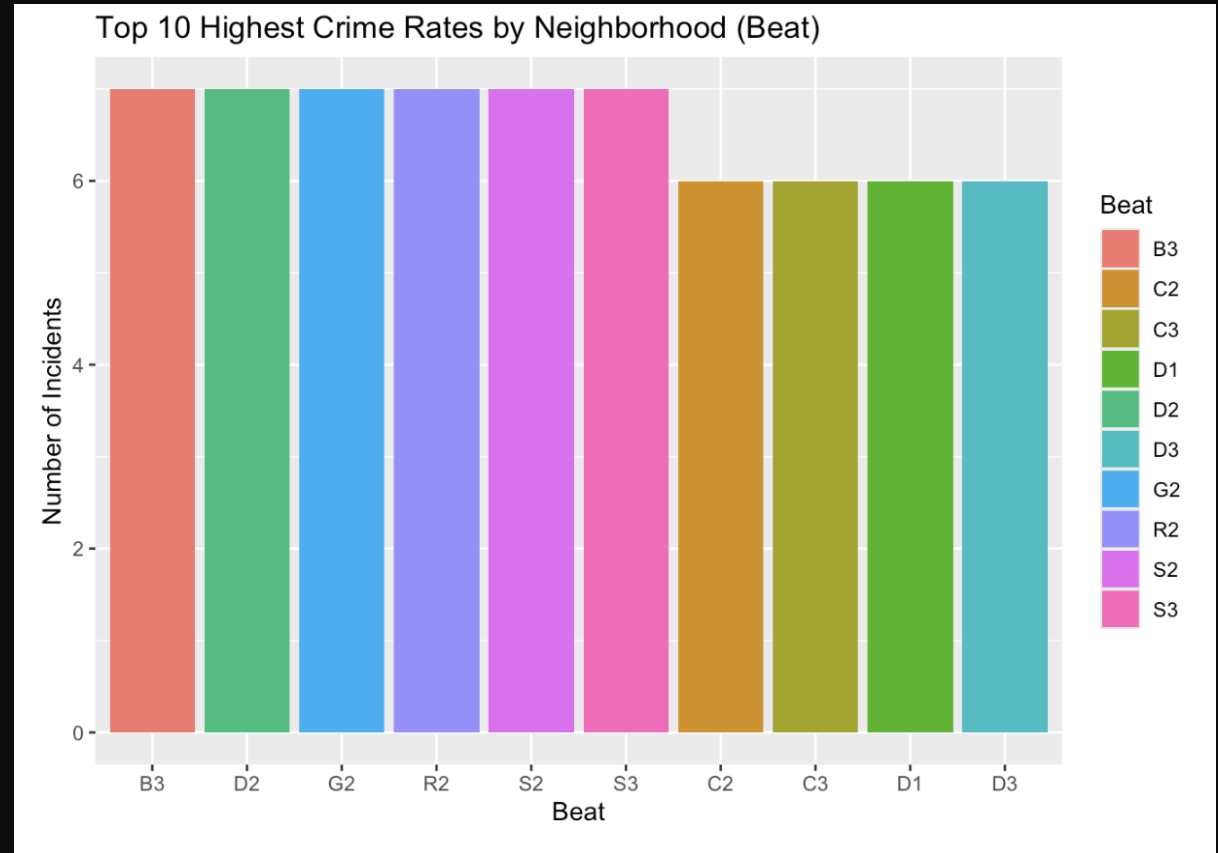
The number of incidents occurred and recorded peaked in 2010 and began declining in the following years.

However, the number of incidents would increase again approaching 2016.



Top 10 Highest Crime Rates by Seattle Neighborhoods

- These are the Beats with the highest number of incidents we found in the data.
- Highest crime neighborhoods had incidents counts of 7 or higher.

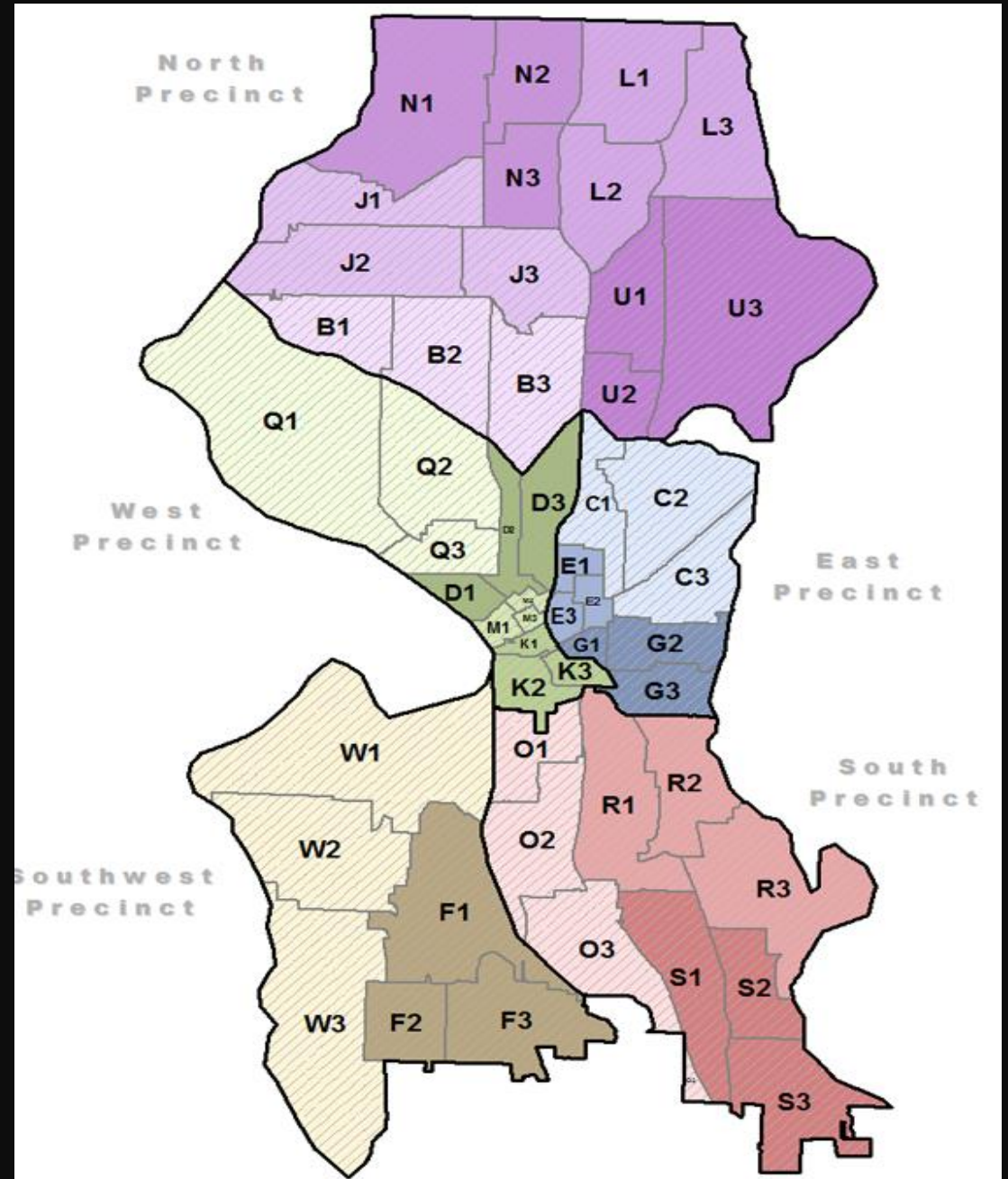


Data Mapping: Beat Map

From the previous plot, the top 5 neighborhoods with the highest crime rates were: B3, D2, G2, R2, and S2.

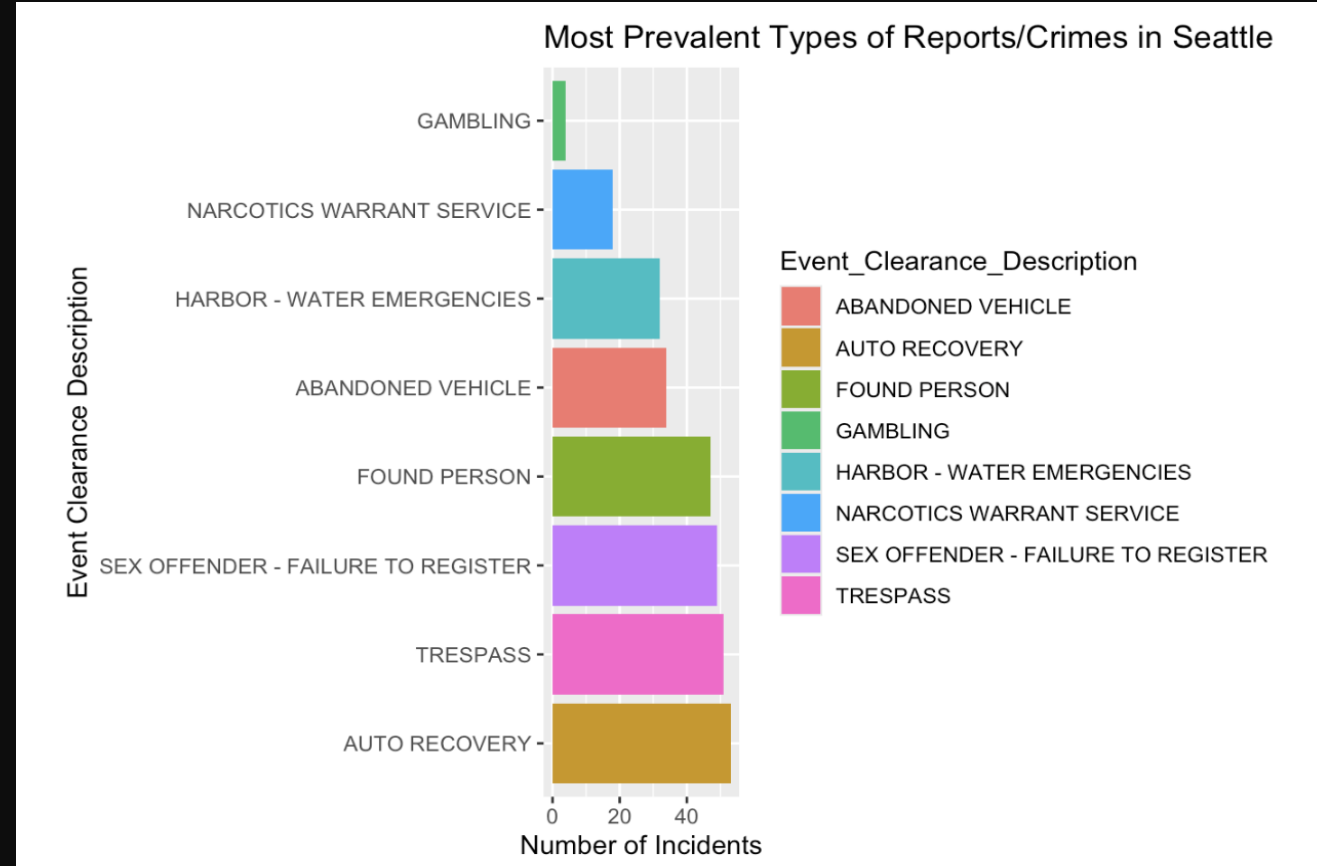
The majority of high crime areas we found are located in the central, north, and east regions of Seattle.

This could be due to higher population density and larger wealth disparities within the central and eastern regions of Seattle.



Most Prevalent Types of Reports/Crimes in Seattle

- These are the most common incident reports filed across the datasets.
- Auto recovery and trespassing were the top 2 most reported incidents which reflect the overall crime trends found online.
- Given Seattle's large homeless population, it was interesting to see how welfare checks weren't a top incident and that narcotics warrant services ranked lower on the plot.

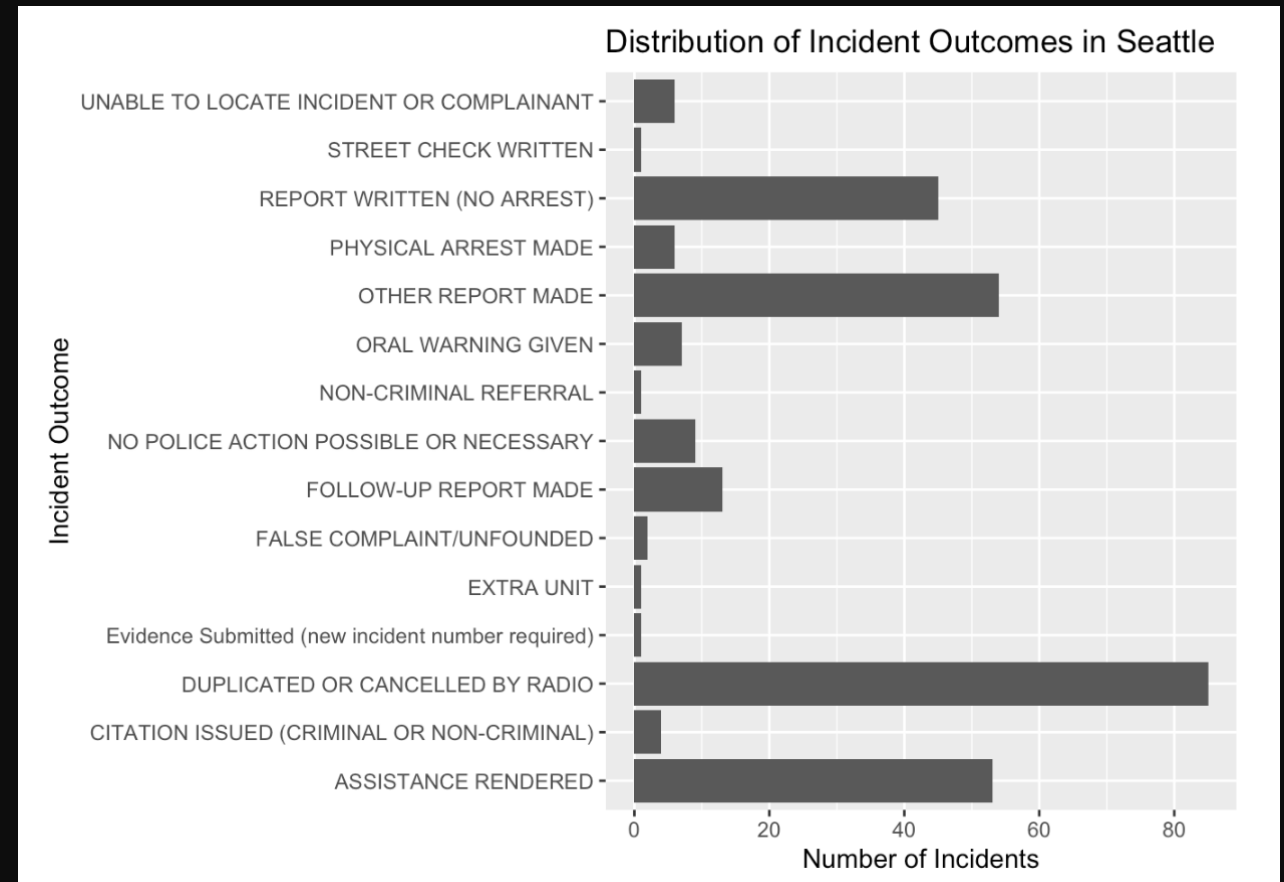


Distribution of Incident Outcomes in Seattle

This is the number of responses by the SPD to the various calls they responded to.

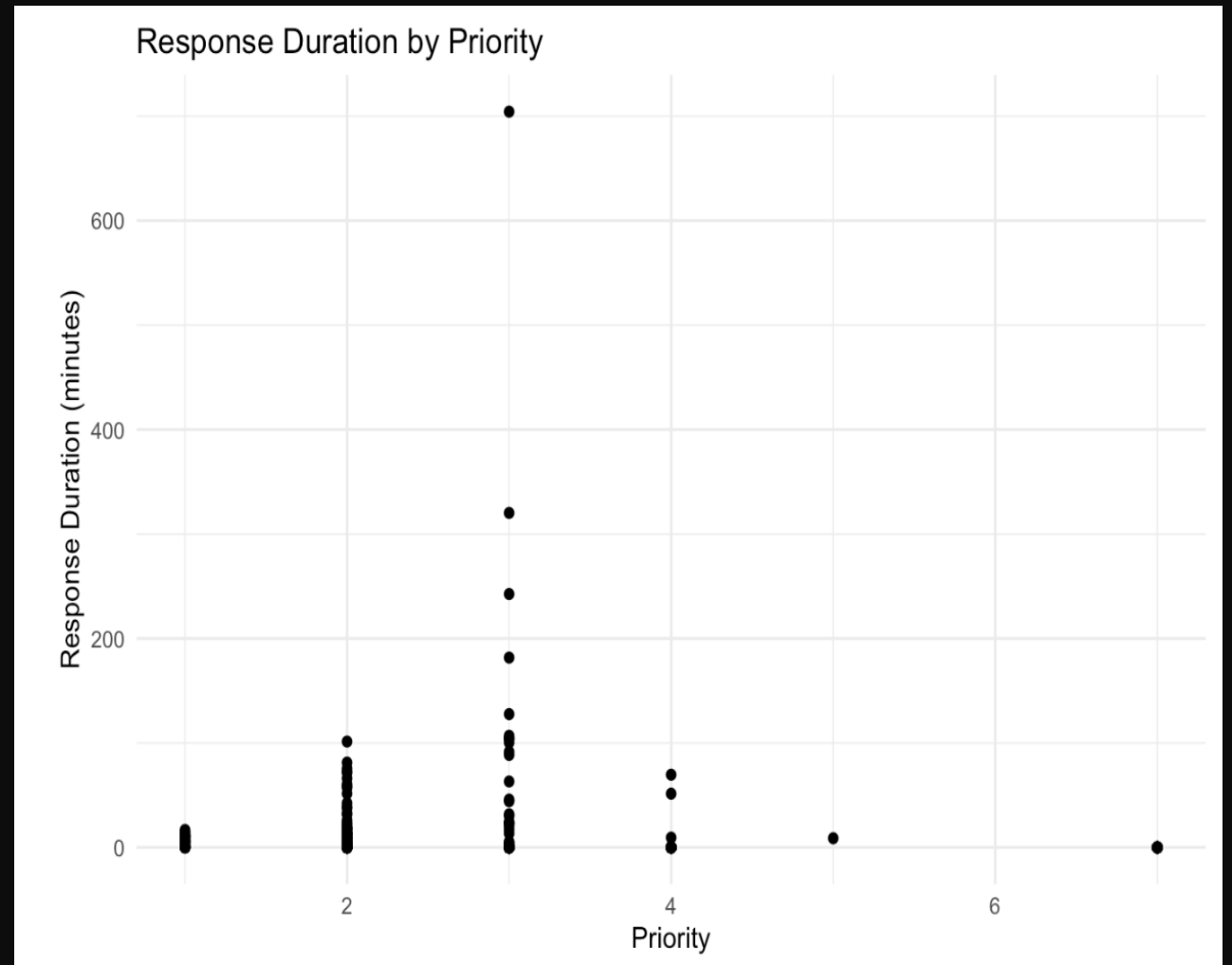
Duplicated/cancelled by radio, other report made, and assistance rendered were the most common outcomes.

This suggests that a large portion of police responses and incidents do not result in major interventions or arrests.



Seattle Police Response Duration by Priority

This is the duration of a response, or how long it took to clear an incident compared to its level of priority. The priority of a call is directly related to how serious the crime or situation is.

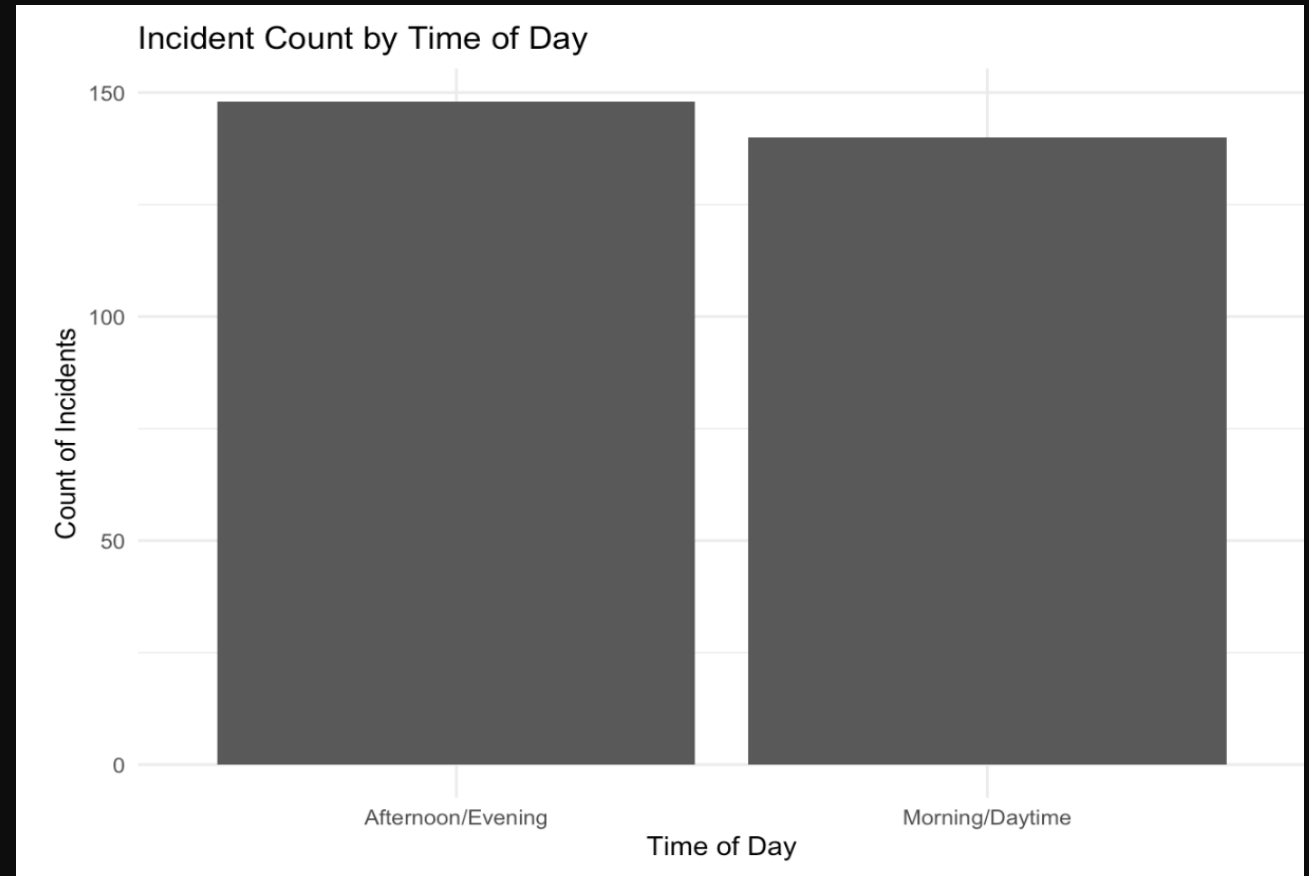


Incident Count by Time of Day

The bar graph represents the comparison in the number of crime related incidents that occur based on the time of day.

The incident count during the afternoon/evening is larger than morning/daytime, suggesting higher crime occurrence during evening hours.

This insight can help in planning police patrols to focus on these high-risk periods.



Ethical Issues

- **Privacy Concerns**

- Although the data is anonymized, it's essential to handle information responsibly to ensure that individual's privacy is not compromised.

- **Bias in Data Collection**

- The datasets reflect the calls received and responses made by the SPD, which may be influenced by reporting biases. Certain crimes might be underreported, while others could be overrepresented due to heightened awareness in specific areas.

- **Misinterpretation**

- Presenting these crime data can inadvertently stigmatize certain neighborhoods.

Data Discoveries and Conclusion

Key Findings:

- Decrease in crime-related incidents from 2010-2017.
- High crime neighborhoods in central, north, and east Seattle.
- Most common incidents: Auto recovery and trespass.
- Most common outcomes: Duplicated/cancelled by radio, other report created, and assistance rendered.
- Fastest response time for priority 1, 2, and 3.
- More crimes occur in the afternoon and night.

