



SafetyNet Analytics Group

# Crime Analysis in San Francisco

# Team

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# Executive Summary

## Objectives

Our primary objectives were to conduct a thorough analysis of geospatial data related to criminal activities in San Francisco, encompassing the evaluation of current and potential future residences. The specific goals included:

1. Identification of Neighborhood Safety Levels: Utilizing data-driven insights to identify neighborhoods with both the highest and lowest crime occurrences.
2. Temporal Analysis: Unveiling crime-related trends over a five-year period, segmented into specific timeframes for a nuanced understanding.

## Project Scope and Data Sources

Our initiative was prompted by an article by Jessica Stone on Upgraded Homes, identifying 15 San Francisco neighborhoods as the safest. The article served as a foundation for our exploration, and we utilized the dataset available in DataSF's "Police Department Incident Reports: 2018 to Present." The dataset, consisting of approximately 800,000 raw data entries, comprises incident reports filed with the SF Police Department.

- [Link to Upgraded Homes Article](#)
- [Link to DataSF Dataset](#)

# Data Analysis and Refinement

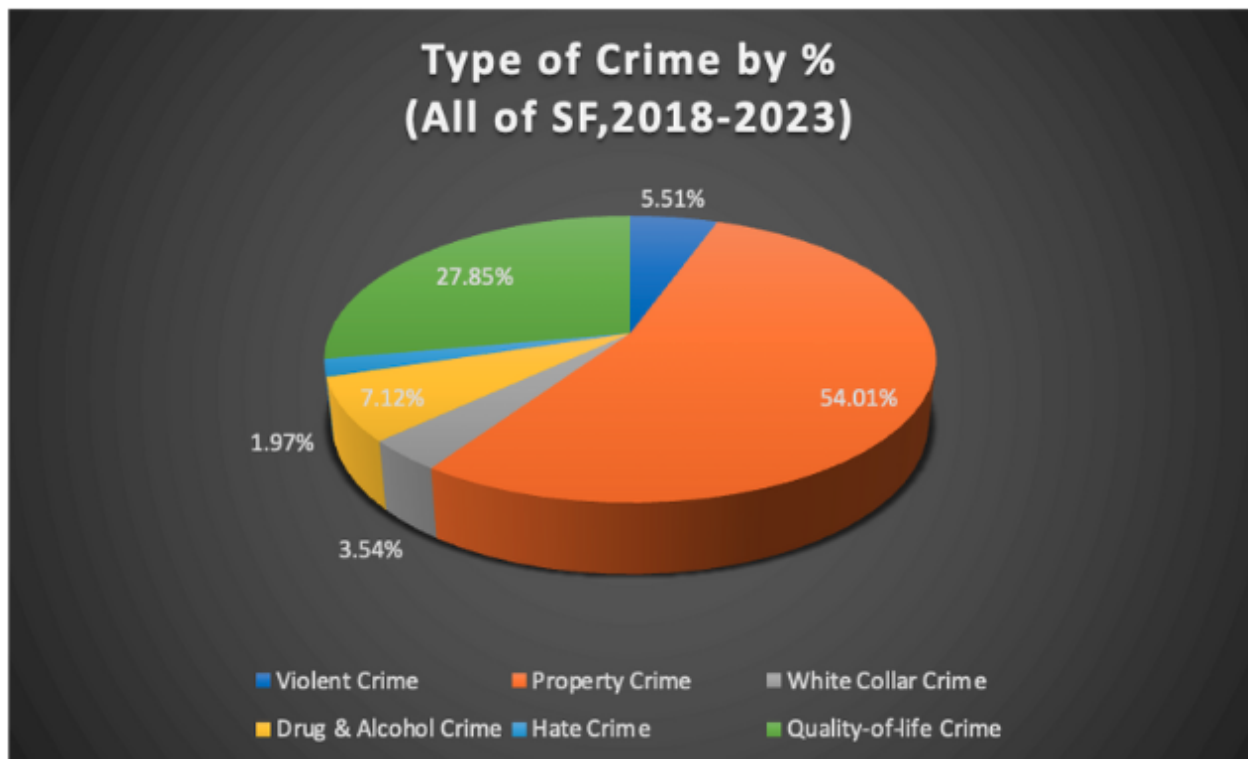
Commencing with a dataset featuring a substantial 840 unique crime categories and 728,837 reported cases, the analysis faced challenges due to the vast array of categories. Our data refinement process was meticulous, involving:

- Data Cleaning: Eliminating inaccuracies by addressing inconsistencies and rectifying missing data.
- Categorization Strategy: Conducting careful research to intelligently group crimes into logical categories, resulting in six broad classifications:
  - Violent Crimes:
    - Homicide, murder, assault, rape, etc.
  - Property Crimes:
    - Theft, robbery, carjacking, arson, etc.
  - White Collar Crimes:
    - Fraud, embezzlement, counterfeiting, cryptocurrency crime, etc.
  - Drug & Alcohol Crimes:
    - Use/possession/trafficking of illegal drugs, controlled substance abuse, DUI, etc.
  - Hate Crimes:
    - Crimes based on race, religion, sex, and other protected entities.
  - Quality of Life Crimes:
    - Public disturbance, traffic offenses, vandalism, trespassing, etc.

## Analysis

This pie chart below provides a snapshot of the proportion of each crime category in San Francisco over the past five years.

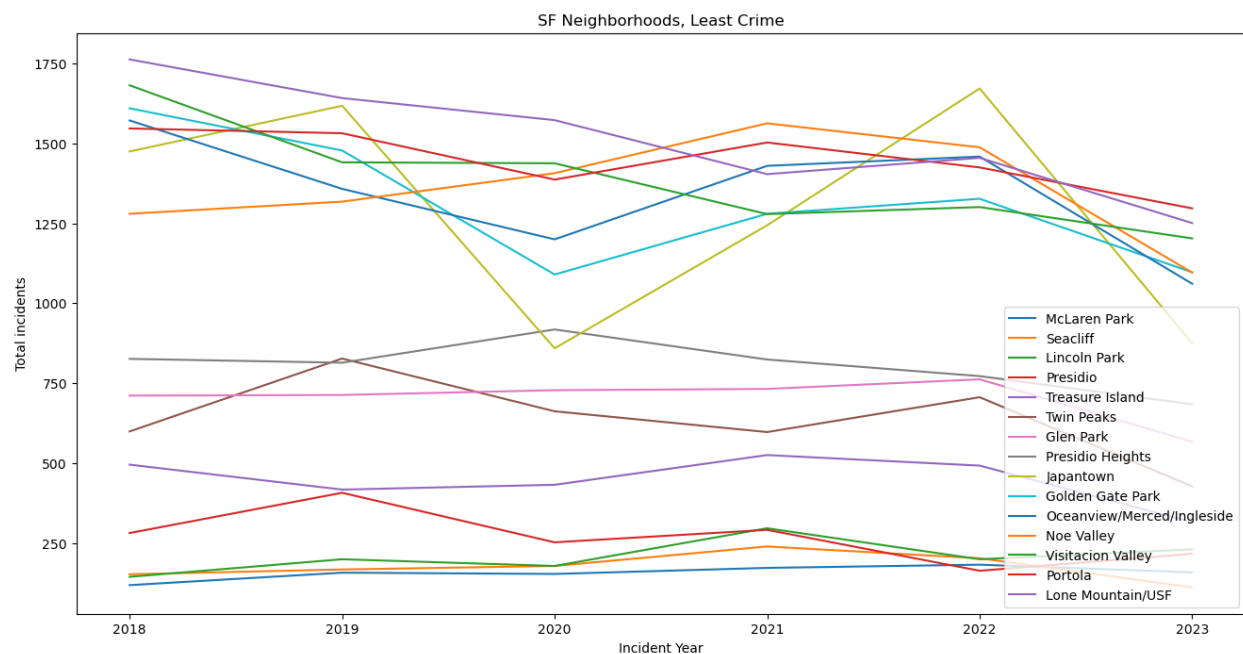
- Property Crime is the majority at 54.01%, showing a high occurrence of thefts and burglaries.
- Quality of Life Crime follows, making up 27.85%, which includes vandalism and public disturbance.
- Drug & Alcohol Crime comes in as third at 7.12%
- Violent Crime, which often grabs headlines, constitutes 5.51%.
- White Collar Crime and Hate Crime appear at the lower end of the chart.



## Neighborhood Safety Rankings: Upgraded Home vs. SafetyNet Analysis

This comparative analysis is shown in the table and line graph below the neighborhood rankings presented in the Upgraded Home article with the results derived from SafetyNet's comprehensive analysis. Contrary to the author's classification of certain neighborhoods as the "safest," our analysis identified them as among the least safest. This discrepancy underscores the importance of a thorough and data-driven approach on the nuanced nature of safety assessments.

Ranking	Top - Per Article	Top - Per SafetyNet	Worst - Per SafetyNet
1	Outer Sunset	McLaren Park	Mission
2	McLaren Park	Seacliff	Tenderloin
3	Inner Sunset	Lincoln Park	South of Market
4	Ocean View	Presidio	Financial District/South Beach
5	Noe Valley	Treasure Island	Bayview Hunters Point
6	Outer Richmond	Twin Peaks	North Beach
7	Seacliff	Glen Park	Western Addition
8	Excelsior	Presidio Heights	Sunset/Parkside
9	Pacific Heights	Japantown	Castro/Upper Market
10	Lower Nob Hill	Golden Gate Park	Nob Hill
11	Marina	Oceanview/Merced/Inglesid	Marina
12	Financial District	Noe Valley	Hayes Valley
13	North Beach	Vistacion Valley	Russian Hill
14	Chinatown	Portola	Outer Richmond



Trends of crime types per top safest neighborhoods vs least safest.

Trending helps us predict whether these neighborhoods will stay safe or are becoming safer.

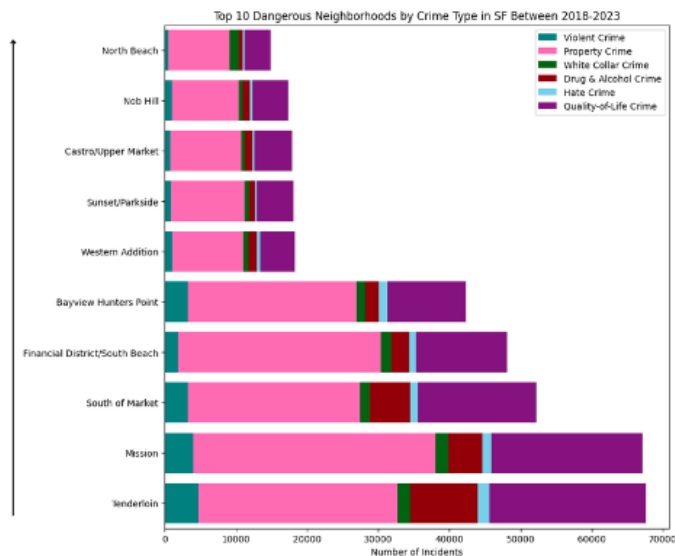
These are important aspects to consider when moving. For example, FiDi is seemingly improving in terms of crime rates, which may be a reason why the author has it included on their list.



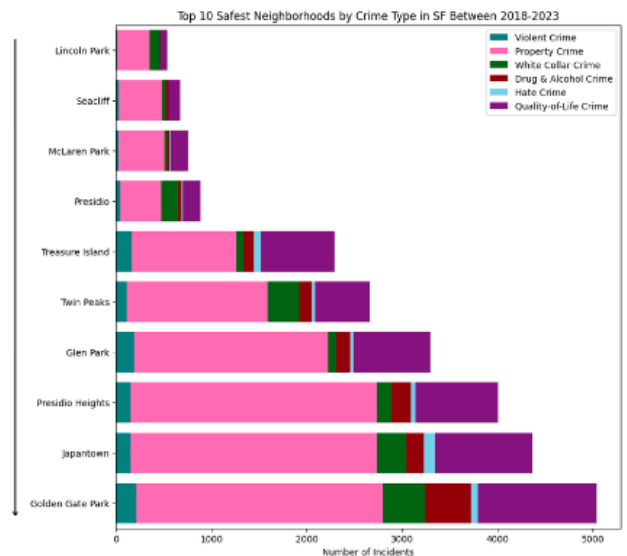
This pair of graphs below provides a comprehensive overview of neighborhood safety in San Francisco based on the count of crime occurrences over the past five years. The left graph highlights the top 10 most dangerous neighborhoods, with Tenderloin, Mission, and SoMa (South of Market) emerging as the areas with the highest incidences of crime, as indicated at the bottom of the graph. Conversely, the right graph focuses on the top 10 safest neighborhoods, featuring Lincoln Park, Seacliff, and McLaren Park at the top.

These visual representations offer a clear and informative comparison of neighborhood safety rankings, aiding stakeholders in making informed decisions related to residence and community well-being

## Top 10 Dangerous by Crime Type



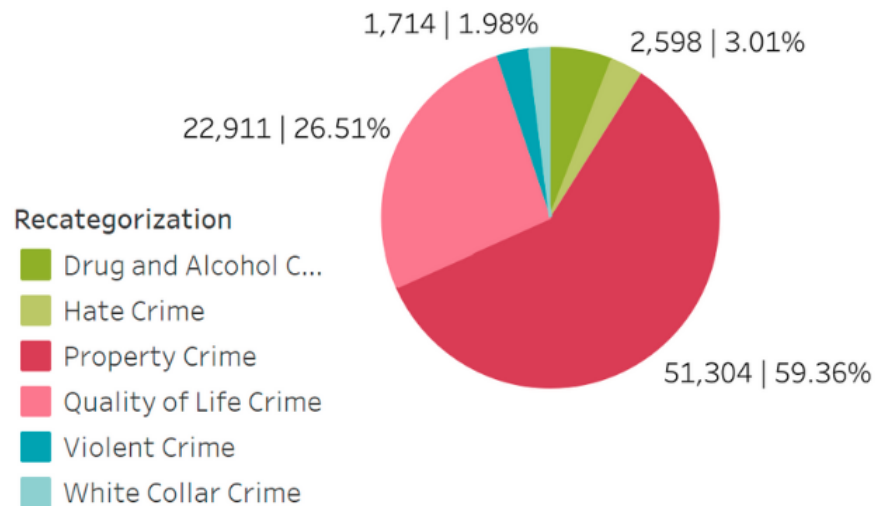
## Top 10 Safest by Crime Type





Taking a look at the six category types defined earlier in this report, the most prominent crime type was Property Crime, accounting for 59% of the data, followed by Quality of Life Crime at 26%. Evaluating the data for the entire time period from 2018 to present, this seems to be a consistent trend with Property Crime being the highest followed by Quality of Life Crime. However, property crime has been at an all time high in 2022.

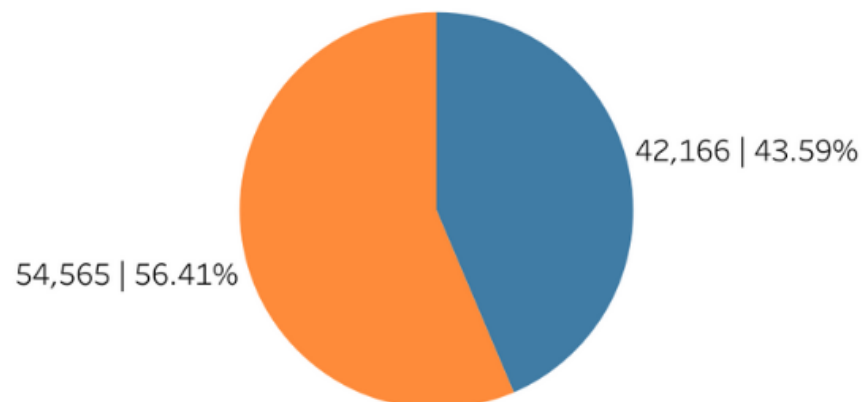
### Total Incidents by Category in 2023



The general consensus is the rate of crime increases at night, this is a trend that is prevalent throughout the entire time frame and consistent in 2023.

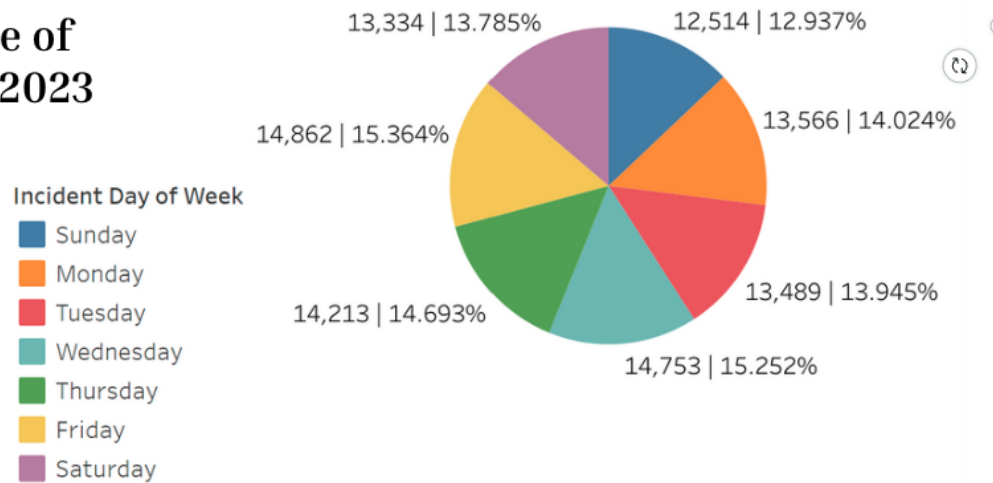
### Time of Day

- Morning
- Night

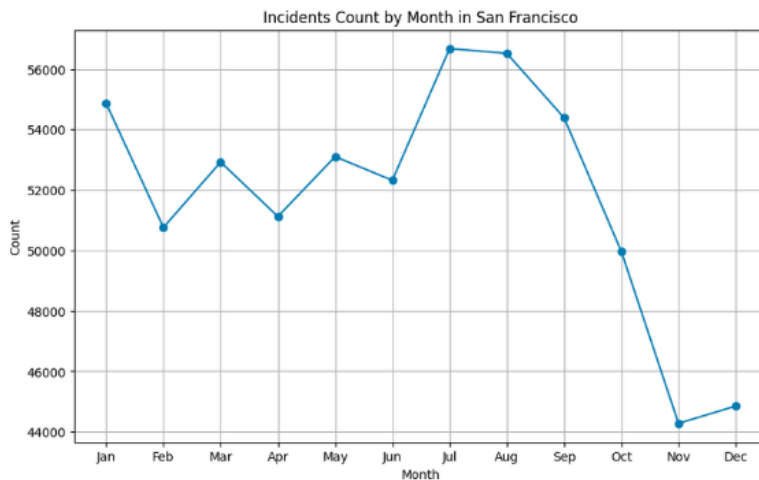


For 2023, Friday was the most frequent day of the week and this was the consistent trend for 2018-2023.

## Total Incidents by Time of Day in 2023



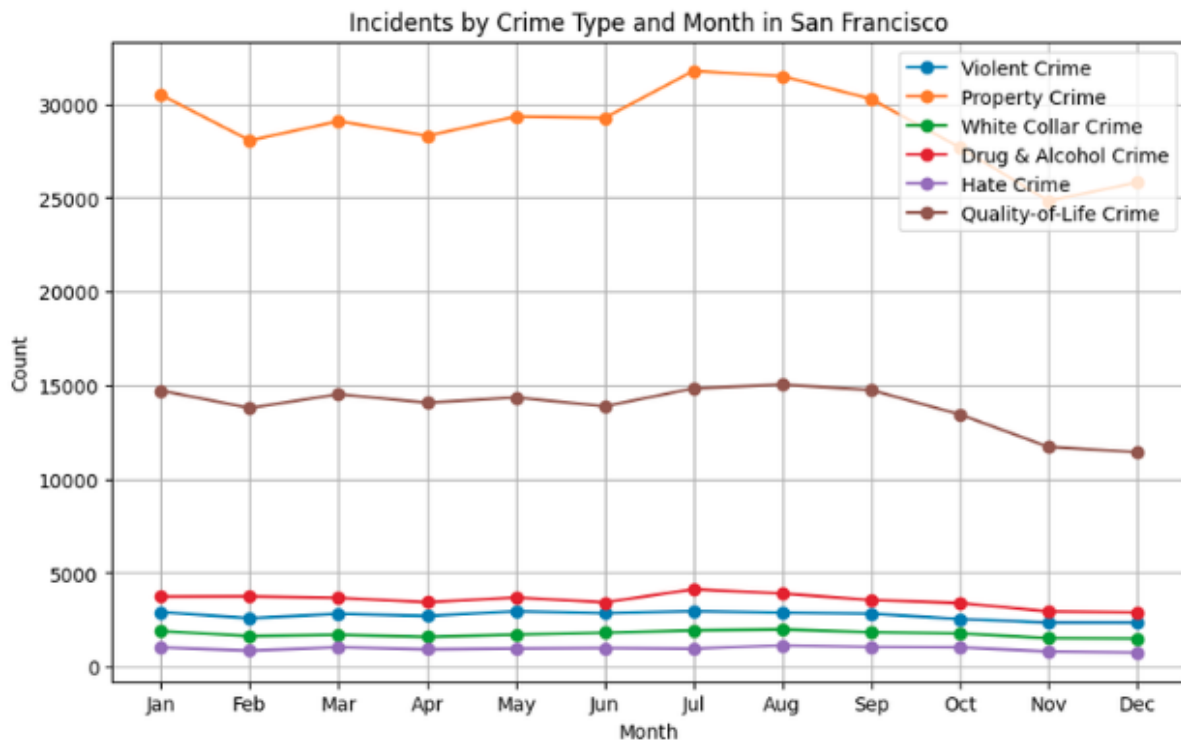
The graph below reveals an uptick in crime rates during the summer months, while the holiday season experiences a notable decline in criminal incidents. It's important to note that the data for October, November, and December in 2023 is currently underrepresented as the year has not concluded.



## Total Incidents by Month & Crime Type

The preceding graph provided a broad, macroscopic perspective, enabling us to discern trends over a 12-month span. The incident counts are dissected based on various crime types. SafetyNet's analysis indicates that property crime stands out as the most prevalent, with quality-of-life crime following closely in occurrence.

## Total Incidents by Month & Crime Type

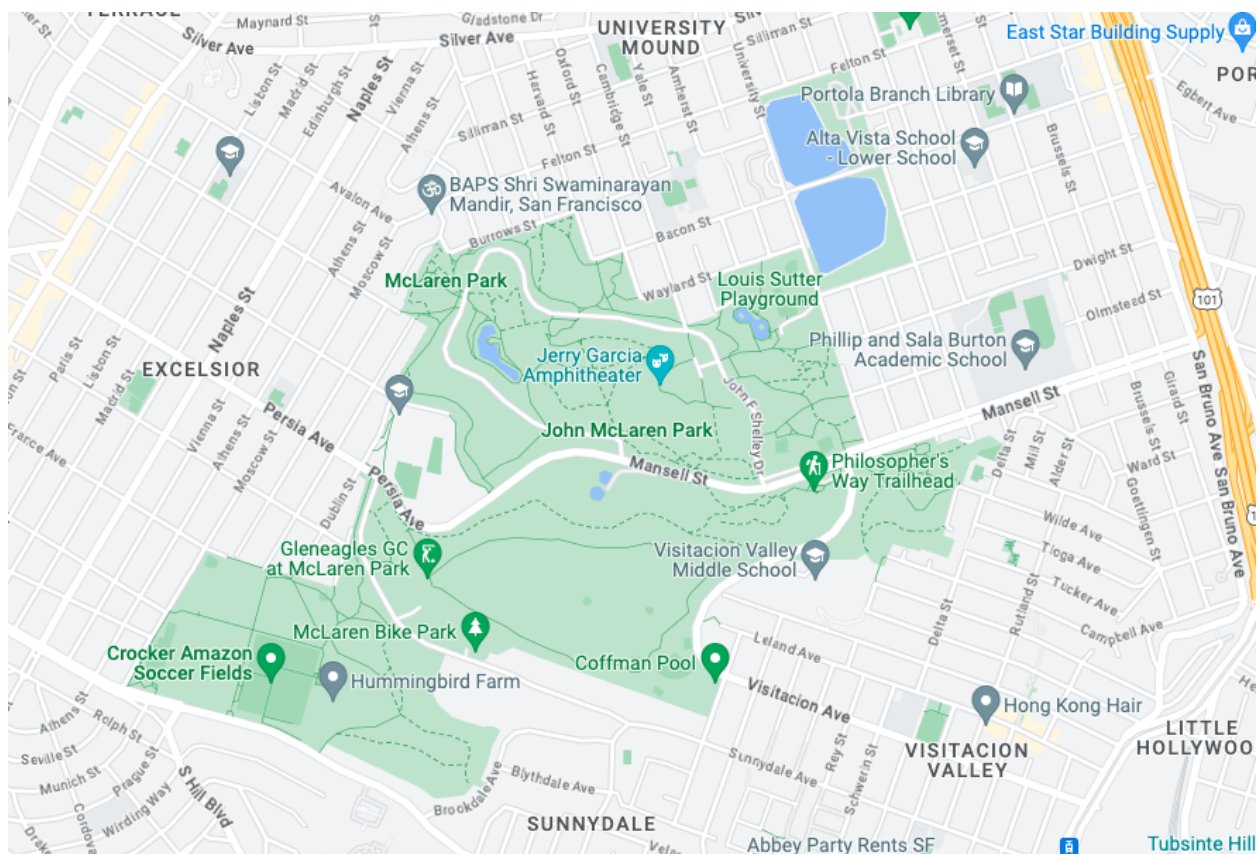


## A Closer Look at one of San Francisco's Safest Neighborhood

In the heart of the neighborhood, Crocker-Amazon, lies McLaren Park, a sprawling public area covering 312 acres of land. McLaren Park had encountered challenges in the past. In 1981, the San Francisco Examiner highlighted alarming crime statistics, including two murders, six sexual assaults, and 18 car thefts in the previous year. This unfavorable portrayal created a lasting perception, with some long-time residents still associating the park with safety concerns.

In the year 2020, Crocker-Amazon reported a mere 133 crimes, all of which were categorized as property crimes, with zero incidents falling under the violent crimes category. In contrast, the Mission District had a staggering 9093 reported crimes in the same year. Notably, 689 of these were classified as "violent crimes," highlighting a stark difference in safety profiles.

As per Jessica Stone's 2022 article, Crocker-Amazon holds the distinction of being the second safest neighborhood in San Francisco, following the Outer Sunset. However, an in-depth examination of crime data suggests that Crocker-Amazon may, in fact, be safer than the Outer Sunset, challenging anecdotal impressions.



## Limitations of Data

- SafetyNet's conclusions around SF neighborhood safety are based on crime. However, there are other variables such as security/police presence, city planning, etc. that should be considered before drawing conclusions.
- The team acknowledges that 2023 isn't over yet. The number of crimes recorded by the end of the year could increase by ~15% - 20% based on when the data was pulled.
- SafetyNet's categorization of crime did not include all reported incidents and may differ from other sources. The conclusions in this presentation are based on the team's assessment and definition of safety.
- The geographical boundaries and names of neighborhoods in SF can be fluid and may have changed over the course of the 5 years included in SafetyNet's analysis

## Next Steps

### Broaden the Scope of Analysis:

- Expand the examination beyond crime data to encompass various living conditions such as population demographics, income levels, access to public amenities, geographical factors, etc.

### Implement Hypothesis Testing:

- Engage in hypothesis testing on datasets to either affirm or dismiss the influence of identified variables. For instance, explore correlations between population ethnicity and income to unveil deeper insights.

### Correlate Trends with Significant Events:

- Conduct an in-depth analysis correlating identified trends with major events such as the COVID-19 pandemic, market crashes, and other significant occurrences. This approach aims to pinpoint potential causes of safety disruptions and enhance our understanding of their impact.