Crime Density and Hotspot Analysis: Seattle's Little Saigon
Prepared for: Friends of Little Saigon

Subject- Crime Mapping
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INTRODUCTION

This project analyzes crime density and hotspot patterns in Little Saigon (2020–2025), focusing on the five most frequent categories - Gun Disturbance, Suspicious Activity, Traffic Violations, Assault, and Prowler/Trespass. These incident types most strongly affect daily safety, especially around businesses and transit areas. Friends of Little Saigon (FLS) requested this analysis to better understand how crime shapes community perception and to explore CPTED-based improvements. Our goal is to identify spatial and temporal crime trends and provide actionable insights that can guide safety planning, place activation, and business engagement efforts.

METHODOLOGY

To understand crime patterns in Little Saigon from January 2020 to September 2025, we combined Seattle Police Department incident data with business, transit, and neighborhood datasets in ArcGIS Pro. Our aim was to locate high-impact crime clusters, understand how they relate to movement patterns and the built environment, and support FLS in identifying safety priorities.

We collected SPD 911 call data (2020–2025) along with contextual layers such as King County light rail stations, Seattle business license points, transit corridors, major streets, and the official Little Saigon boundary. These additional datasets made it possible to link crime patterns with business activity, pedestrian flow, and transportation infrastructure.

After data collection, we cleaned and standardized all fields, removed duplicates, and kept only incidents inside or adjacent to Little Saigon. All layers were projected to NAD83 HARN State Plane Washington North for consistency. From the SPD dataset, we filtered crime incidents specifically within the Little Saigon boundary.

Crime was categorized using the "Final Call" field, focusing on the five most common types: Gun Disturbance (3,577), Suspicious Circumstances (2,755), Traffic Incidents (2,274), Assault (1,887), and Prowler/Trespass (1,624). These represent the major safety concerns in the area, especially around businesses and transit corridors.

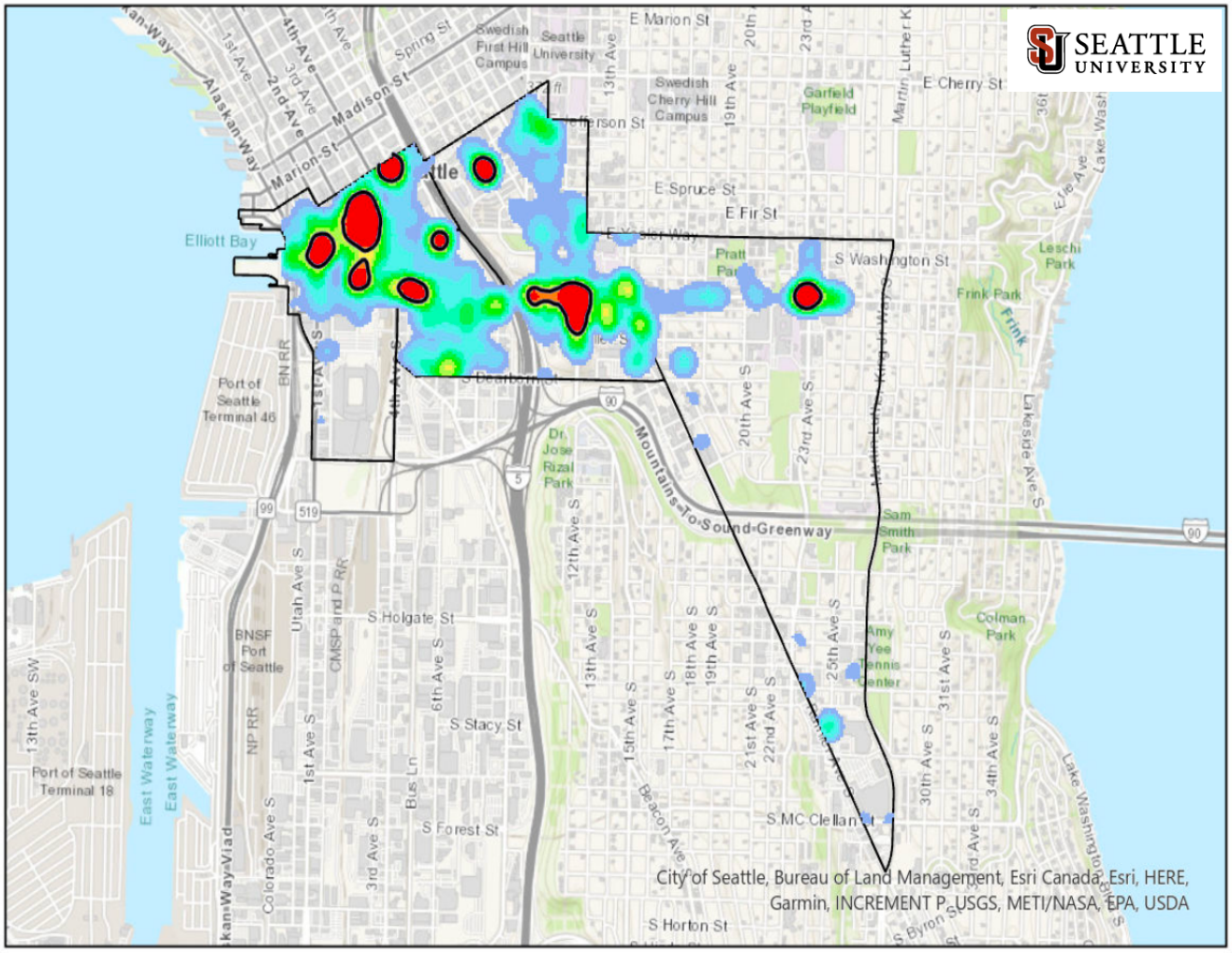
Spatial mapping in ArcGIS Pro included individual crime categories, business locations, transit stops, neighborhood zones, and key built-environment features. This allowed for block-level visualization of patterns and repeated hotspot locations. We also analyzed temporal patterns by examining quarterly trends (Q1–Q3) to identify seasonal variations.

Two spatial statistics were used to measure clustering. The Average Nearest Neighbor test showed extreme clustering (NNR = 0.023; z = –205.64; $p < 0.000001$). Global Moran's I showed no significant clustering at the neighborhood level (I = –0.5608; p = 0.3478), meaning crimes cluster at small block scales rather than across large zones. Finally, Centro graphic and density analysis helped describe the "shape" of crime. The mean center fell in the northwest commercial zone, the standard distance indicated a compact crime area, and the directional ellipse showed an east–west pattern aligning with the main commercial and transit corridor.

Interpretation of Results:

The Kernel Density and hotspot contouring analysis revealed that crime in Little Saigon is highly concentrated in the northwest commercial core, particularly along the S Jackson St corridor, 12th Ave S, and adjacent high-traffic transit areas. The KDE surface shows persistent block-level hotspots across all top five crime types, while hotspot contouring isolates small but critical micro-hotspots that reinforce the need for targeted environmental interventions. These findings align with the results of the ANN, Moran's I, and Centro graphic analysis, all of which indicate that crime is not neighborhood-wide but intensely localized along commercial and transit pathways. Together, these maps provide a strong evidence base for Friends of Little Saigon to prioritize CPTED improvements, business engagement, and transit-route safety enhancements in the highest-risk zones.

Crime Density and Hotspot in Little Saigon



0 0.5 1 2 Miles

N

Legend

Hotspot

Crime Density

VALUE

- 0.001 - 2,506.757
- 2,506.758 - 6,227.3
- 6,227.301 - 9,947.843
- 9,947.844 - 13,668.385
- 13,668.386 - 17,388.928
- 17,388.929 - 21,109.471
- 21,109.472 - 24,830.014
- 24,830.015 - 28,550.556
- 28,550.557 - 32,271.099
- 32,271.1 - 35,991.642
- 35,991.643 - 39,712.185
- 39,712.186 - 82,101.477

Neighborhood_Map

OBJECTID

- 58
- 59 - 61
- 62 - 64
- 65

Map Made by Nikhil, Jeevitha, Zanella

ASSAULT HOTSPOTS AROUND TRANSIT CORRIDORS AND BUSINESS LOCATIONS

Between 2020 and 2025, analysis of 911 calls indicated that high call volumes primarily came from busy areas like S Jackson St., 12th Ave S, and Rainier Ave S, reinforcing the link between population density and crime opportunities. Notably, Little Saigon experienced a high number of disorder-related calls, particularly for Suspicious Activity and Gun Disturbance, highlighting how high foot traffic contributes to crime. Property crimes were prevalent in the northwestern commercial zone, with Theft, Burglary, and Automobile crimes being reported frequently, while narcotics activity added to street disorder. Although the southeastern area had fewer incidents overall, it still experienced clusters of harassment and threats, pointing to clear local hotspots despite a lack of significant overall crime trends.

TOP 5 CRIME TYPES – SPATIAL INTERPRETATION

In Little Saigon, the top five crime categories, based on incident counts, include Gun Disturbance (3,577 incidents), Suspicious Activity (2,755), Traffic Incidents (2,274), Assault (1,887), and Prowler/Trespass (1,624). These incidents predominantly cluster in the northwest commercial core, highlighting it as the primary crime hotspot. The overlap of Suspicious, Assault, and Weapon incidents indicates a persistent environment of disorder and elevated risk, while Traffic incidents are aligned with congested routes. Prowler/Trespass cases typically occur at neighborhood edges, suggesting these boundary areas serve as opportunity zones for property crime. Additionally, the north-south transit corridor emerges as a linear hotspot, illustrating how movement pathways contribute to various types of offending.

TEMPORAL ANALYSIS - QUARTER-BY-QUARTER CRIME MAPS (Q1–Q3)

An analysis of crime trends reveals that the top offenses primarily occur between January and July, with notable variations across quarters. In the first quarter, the northwestern area, or black zone, experiences a spike in traffic-related incidents despite winter indoor activities. By the second quarter, crime balances across zones, with an increase in noise disturbances and trespassing as warmer weather encourages outdoor activities. July marks a peak in various offenses, especially in the northwestern area, which remains a hotspot throughout the year. The central zone sees a rise in activity during the second quarter, while the southeastern zone generally has lower levels but features some significant micro-hotspots worth monitoring.

AVERAGE NEAREST NEIGHBOR (ANN) AND GLOBAL MORAN'S I – NEIGHBORHOOD SPATIAL JOIN

The Average Nearest Neighbor analysis shows that the top five crimes in Little Saigon tend to occur close together, often in the same busy commercial and transit areas. However, when looking at the Global Moran's I results, it appears that crime can seem random on a neighborhood level, masking the presence of specific hotspots. This combination reveals that safety concerns in Little Saigon are very localized, pointing to the need for focused improvements through Crime Prevention Through Environmental Design (CPTED). This is especially true in the northwest commercial core, where the highest concentration of incidents impacts residents, workers, and businesses the most.

CENTROGRAPHIC ANALYSIS INTERPRETATION – TOP 5 CRIMES IN LITTLE SAIGON

The Centro graphic analysis of crime in Little Saigon reveals that the northwest region is a primary hotspot, marked by a green point representing the Mean Center of incidents. This area includes the western commercial core and busy transit routes, where crimes cluster rather than spread evenly across the neighborhood. A purple circle indicates this concentration around key activity centers, while a directional ellipse shows that crime often follows major transportation routes, highlighting the interconnectedness of offenders, victims, and opportunities along these pathways.

CRIME DENSITY AND HOTSPOT ANALYSIS USING KERNEL DENSITY

The Kernel Density Analysis reveals notable trends in crime incidents throughout Little Saigon, particularly highlighting that the northern and northwestern areas, closer to downtown and the International District, experience the highest concentrations of crime. Areas near major transit corridors like S Jackson St and Rainier Ave S, as well as busy commercial hubs, are particularly affected. In contrast, the southern parts of Little Saigon show fewer and more dispersed crime incidents. A significant pattern is the concentration of activity near light rail stations and busy intersections, likely due to increased foot traffic. Overall, the analysis underscores the uneven distribution of crime in the neighborhood and identifies key areas for prioritizing safety measures.

COMMUNITY RELEVANCE AND CEPTED RECOMMENDATIONS

Based on clustering patterns, environmental features, and hotspot locations, we recommend practical, community-centered CPTED strategies focusing on visibility, design, and activation, and can support FLS in planning practical, place-based solutions that improve community safety without increasing policing.

Based on CPTED principles, we recommend:

1. **Improve Natural Surveillance (Visibility)**
    - Install or upgrade lighting along Jackson St., 12th Ave S, and the NW commercial zone.
    - Trim vegetation obstructing storefront windows and sidewalks.
    - Encourage businesses to maintain clear lines of sight between interiors and street space.
2. **Strengthen Territoriality and Wayfinding**
    - Expand FLS-branded street banners, cultural signage, and visual markers.
    - Activate unused or poorly lit spaces with community art, short-term pop-ups, or vendor activity.
    - Host community events to increase positive foot traffic.
3. **Manage Problematic Edges and Transition Areas**
    - Support FLS and businesses in identifying and improving building edges, parking lots, and alleyways where prowler incidents cluster.
    - Add CPTED-compliant fencing, controlled access gates, and improved lighting.
    - Encourage property owners to install transparency features (glass, open lines of sight).
4. **Support Safe Transit Movement**

Because crime clusters along transit corridors, FLS could collaborate with SDOT, Metro, and Sound Transit to:

- Improve lighting at bus stops
- Increase seating visibility
- Add community murals to reduce tagging
- Clear signage and paths
- Apply CPTED lens to station entrances

5. **Partner with Businesses on Safety Audits**

Since businesses are centrally located in the hotspot zone, FLS can support merchants with:

- Storefront safety audits
- Recommendations for window visibility, camera placement, and signage
- Shared camera networks or voluntary communication groups for reporting repeated disorder

6. **Prioritize High-Impact Blocks**

FLS should focus on improving the environment in areas with the highest crime rates. By making these areas safer and more welcoming, we can help everyone feel better. The key areas to prioritize include:

- The NW commercial district (the most affected area)
- The east-west commercial and transit route
- Specific block faces with frequent reports of suspicious activity, gun disturbances, and prowlers

RFERENCES

Seattle Police Department crime data - https://www.seattle.gov/police/information-and-data/crime-dashboard
Seattle GeoData Portal - https://data-seattlecitygis.opendata.arcgis.com/
King County GIS center - https://kingcounty.gov/services/gis/GISData.aspx
Light Rail Stations
City of Seattle - Transit Connection Corridors
Active Business License Tax Certificate | City of Seattle Open Data portal