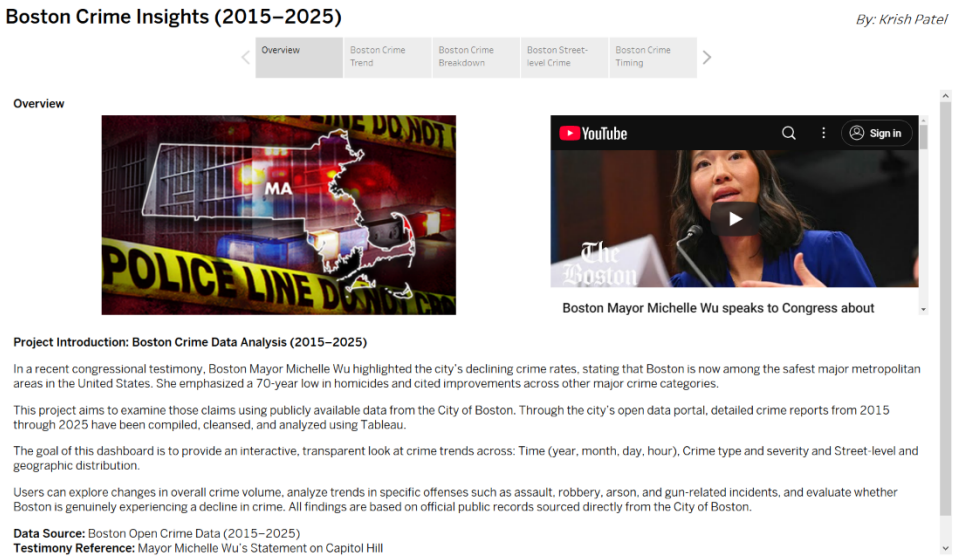
Boston Crime Insights - User Guide

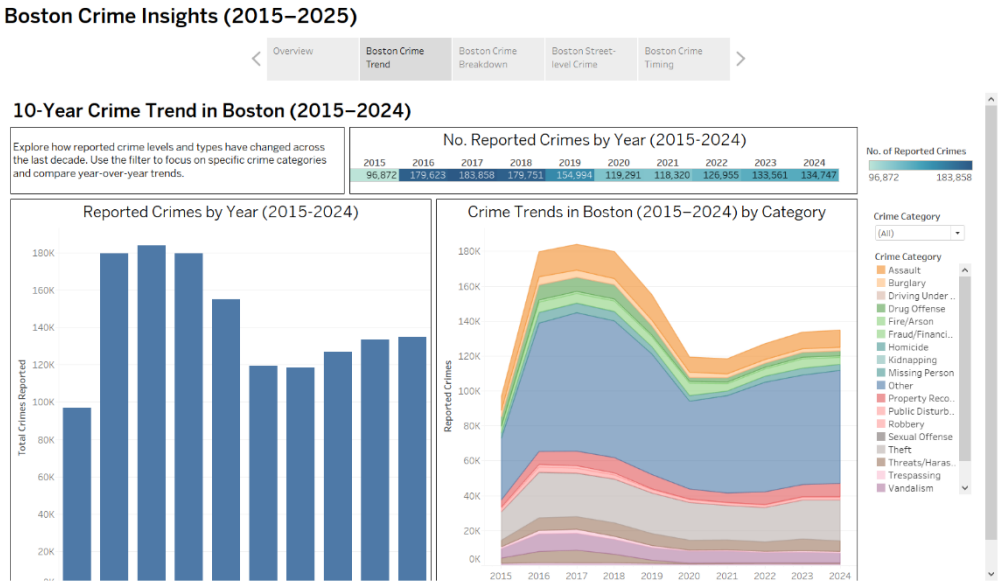
1.0 Story Point 1 - Overview



1.1 About:

This story point provides an introductory context to the project. It outlines the purpose of analyzing Boston's crime data from 2015 to 2025 in response to recent public discussions about the city's safety. By incorporating both data and a relevant public testimony from Mayor Michelle Wu, it sets the foundation for deeper analysis throughout the dashboard. The aim is to explore crime trends, validate safety claims, and encourage data-driven understanding of Boston's crime dynamics.

2.0 Story Point 2 - Dashboard 1 - 10-year trend in Boston (2015-2024)



2.1 About:

This dashboard analyzes overall crime trends in Boston from 2015 to 2024. The first chart shows the total number of reported crimes each year, helping users determine whether crime levels have declined or increased over the past decade. The second visual breaks down these trends by crime type, offering insight into which specific offenses have risen or fallen over time. This allows users to identify patterns, shifts in criminal activity, and assess the validity of public safety claims.

2.2 Method & Note:

To make the analysis more interpretable, crime categories were derived by grouping offenses based on their descriptions found in the dataset. Each crime record included a textual description of the offense, which was mapped into simplified, consistent crime categories such as Assault, Theft, Robbery, etc. This categorization allowed for streamlined aggregation and trend visualization across millions of individual records.

Note: The year 2025 has been excluded from this dashboard as only partial data (approximately three months) is currently available. Including this incomplete data could misrepresent year-over-year trends, so it has been filtered out specifically for this view to preserve accuracy.

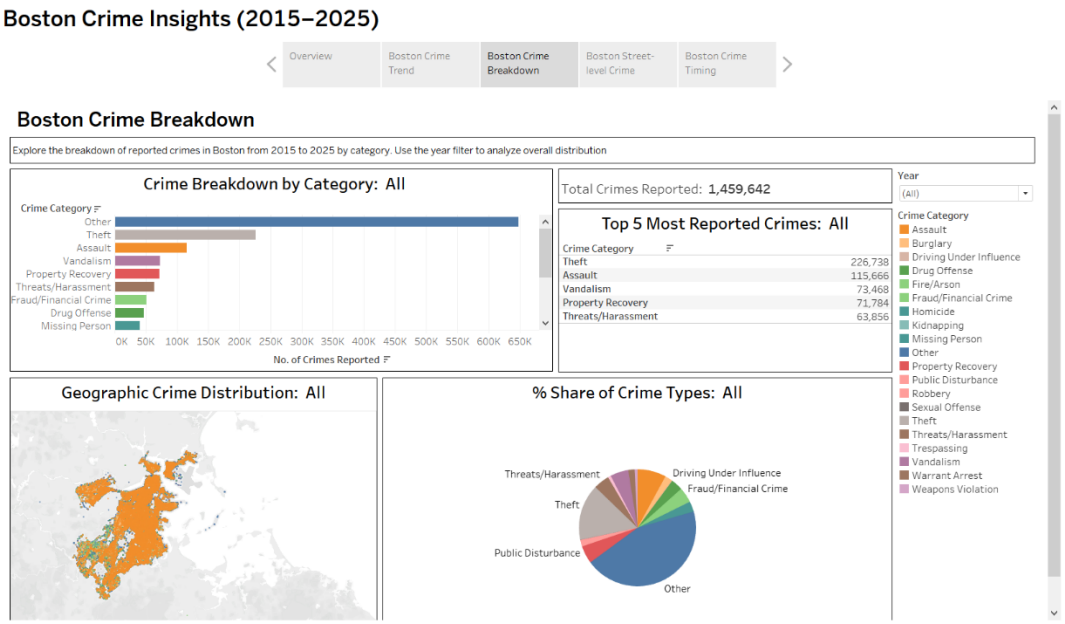
2.3 Features:

This dashboard provides users with the ability to interactively explore crime trends across a 10-year period in Boston. One of the key features is the Crime Category filter located on the right-hand side. Users can use the dropdown menu to select specific types of crimes such as theft, assault, fraud, etc.

When a category is selected:

- The visualizations dynamically update to reflect only the data relevant to the selected crime type.
- The colored summary box (highlight table) at the top automatically recalculates and displays the total number of crimes reported each year for that selected category.
- The stacked area chart and bar chart adjust to show historical changes specific to the chosen crime type.

3.0 Story Point 3 - Dashboard 2 - Boston Crime Breakdown



3.1 About:

This dashboard provides a detailed breakdown of crime types reported in Boston from 2015 to 2025. Unlike the previous dashboard that focuses on trends over time, this view dives deeper into the distribution and composition of crime by category.

Users can explore:

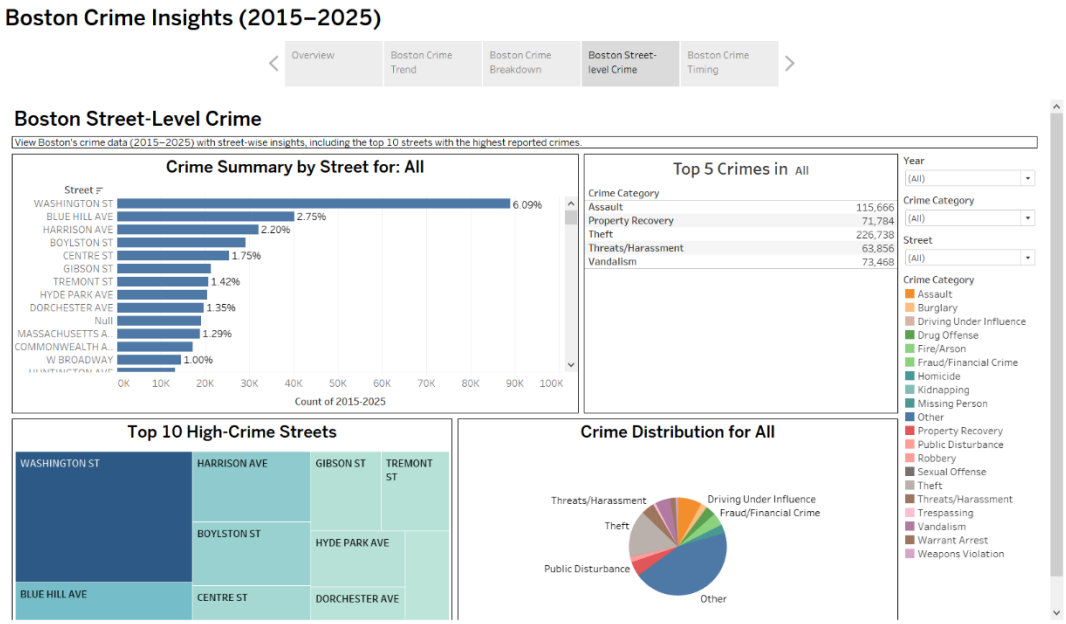
- Total crimes reported during the selected year.
- A bar chart showing the number of crimes for each crime type.
- The top 5 most reported crime categories to quickly identify the most prevalent issues.
- A geographic map pinpointing where crimes occurred, offering spatial insights.
- A pie chart that displays the overall percentage share of each crime category for visual comparison.

3.2 Features:

This dashboard features an interactive Year filter (top-right), allowing users to analyze crime statistics for a specific year or across all years (2015–2025). Selecting a year dynamically updates all visualizations in the dashboard, including:

- The bar chart displaying the number of reported crimes per category.
- The top 5 most reported crimes table, which changes based on the selected year.
- The geographic distribution map, which refreshes to reflect spatial patterns for the chosen time.

4.0 Story Point 4 - Dashboard 3 - Boston Street-Level Crime



4.1 About:

This dashboard offers a focused analysis of street-level crime trends in Boston from 2015 to 2025. Users can identify the top 10 high-crime streets and examine crime concentrations on each.

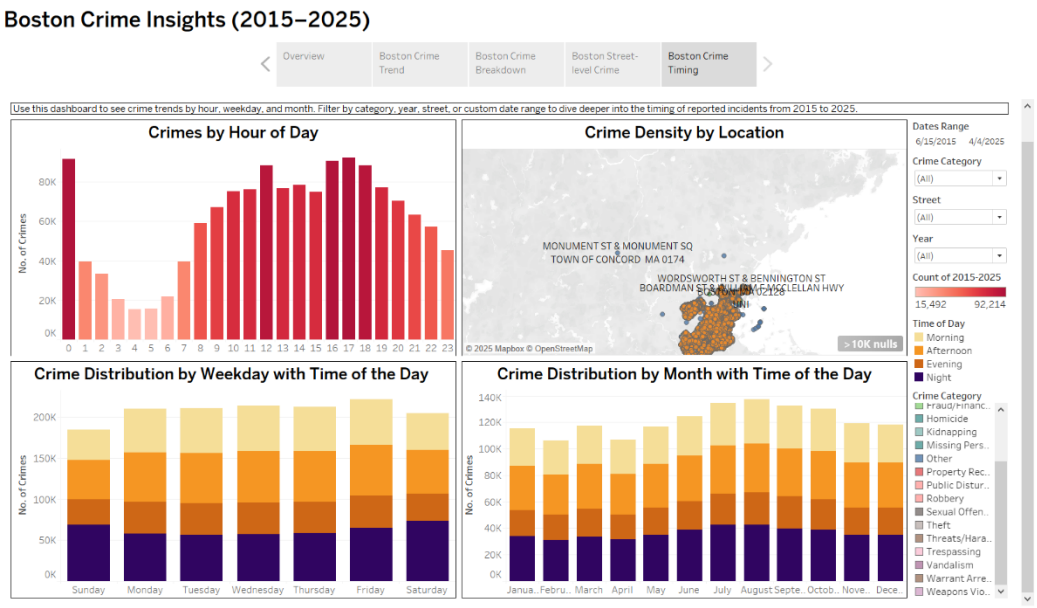
- The Crime Summary by Street bar chart displays the percentage of total crimes associated with each street, helping highlight streets with disproportionately high incident counts.
- The Top 5 Crimes table adjusts based on filters, showing the most common offenses for a selected street or across all streets.
- The Crime Distribution pie chart visualizes how different crime types are distributed on a chosen street.
- The Treemap provides a visual breakdown of the top 10 most dangerous streets by total reported incidents.

4.2: Features:

This dashboard offers a comprehensive interactive experience to explore street-level crime patterns in Boston from 2015 to 2025. Users can interact with the dashboard using dropdown filters to customize the data view.

- The “Year” filter allows users to explore which streets had the highest crime counts in specific years, updating all visuals to reflect that selected year.
- The “Street” filter enables a deep dive into individual streets, updating the pie chart and top 5 crimes table to show crime distribution and frequency for the chosen street.
- The “Crime Category” filter helps users examine a particular crime type (e.g., Theft, Assault), dynamically highlighting which streets have the most reports for that specific crime and adjusting the charts and values accordingly.
- In addition to dropdown filters, users can also click directly on a street in the Top 10 High-Crime Streets Treemap to automatically apply a filter and update the entire dashboard for that street.
- This interactive functionality provides a detailed, user-friendly way to analyze how different types of crime are distributed across various Boston neighborhoods over time.

5.0 Story Point 5 - Dashboard 4 - Boston Street-Level Crime



5.1 About:

This dashboard provides a detailed look at the temporal and locational patterns of crime in Boston from 2015 to 2025. It visualizes when crimes are most likely to occur, by hour of the day, by day of the week, and by month, helping users identify peak crime windows.

- The "Crimes by Hour of Day" chart shows trends over a 24-hour period.
- "Crime Distribution by Weekday with Time of the Day" highlights how crime patterns vary throughout the week and across different times of the day (morning, afternoon, evening, night).
- The monthly view reveals how crime volume changes across the year.
- Additionally, the crime density map allows users to see the geographic distribution of incidents in relation to the selected time period, adding a spatial layer to the timing analysis.

This story point offers insights into both the when and where of Boston's crime activity, useful for identifying patterns or anomalies across time.

5.2 Features:

This dashboard provides powerful interactive tools for users to explore crime patterns by time and location in Boston. Here's a breakdown of its features and how users can interact with the visualizations:

- Date Range Filter: Located on the right panel, this slider allows users to select a custom date range from 2015 to 2025. Adjusting this filter updates all charts and the map to reflect only the crimes that occurred within the selected time period. It's useful for focusing on specific months or years.
- Crime Category Filter: Using the dropdown menu, users can select one or more crime categories (such as Assault, Theft, or Fraud) to isolate and study those specific types. Once selected, the entire dashboard—hourly chart, weekday trends, monthly trends, and map—updates accordingly.
- Street Filter: This menu enables users to filter crimes by a specific street. It's especially helpful for local analysis, allowing users to understand when crimes are most likely to occur on a particular street and how that street's crime pattern differs from others.
- Year Filter: Selecting a specific year allows users to analyze that year's crime distribution across all time-based visualizations, helping identify any unusual spikes or trends unique to a particular year.

Beyond filter menus, this dashboard supports direct interaction through chart selections:

- Clicking on the "Crimes by Hour of Day" chart: When a user clicks on any specific hour bar (e.g., 14 for 2 PM), all other components—such as the weekday distribution, monthly breakdown, and crime density map—update to show data only for incidents that occurred at that hour across the selected timeframe. This lets users drill down into crime patterns hour by hour.
- Clicking on a weekday in the "Crime Distribution by Weekday with Time of the Day" chart: Selecting a day (e.g., Tuesday) filters all other visuals to show crime patterns specific to that day. Users will then see how crimes occurred across different months and times, but only for Tuesdays—offering highly granular analysis.
- Clicking on a month in the "Crime Distribution by Month with Time of the Day" chart: Similarly, selecting a month (e.g., August) updates all other charts to display only the crime data for

that month, across all available years. This allows users to identify recurring trends or seasonal fluctuations.

These interactive features allow for **layered filtering**, enabling deep and precise insights. Users can combine manual filter selections with chart interactions to explore crime trends in extraordinary detail, making the dashboard a versatile tool for both high-level overview and detailed analysis.