# Salt Lake City Violent Crime Reduction Plan: Year 1 Evaluation

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# **Executive Summary**

Beginning in late September 2022, the Salt Lake City Police Department began executing a three-part strategic plan to reduce violent crime (hereafter referred to as the "Crime Plan"). As of September 2023, the first phase of the plan – hot spots policing – has been fully implemented, and the second phase is about to begin. The Crime Plan includes a short-term hot spots policing strategy, a mid-term problem-oriented, place-based policing strategy (POPBP), and a longer-term focused deterrence strategy, which has not yet begun. These three strategies were purposely designed to work together to help reduce violent crime in the City of Salt Lake City by focusing on the relatively few places where violent crime is prevalent and the relatively few individuals responsible for committing it.

This report details the Year 1 results from the Salt Lake City Crime Plan. It summarizes the methodology and results of an independent, empirical assessment of the implementation and impact of the hot spots and POPBP strategies during the first year of the Crime Plan: October 2022 through September 2023.

Hot spot treatment locations were evaluated based on three metrics: violent crime, arrests, and calls for service. The analyses contained herein examined crime in hot spots before and during treatment and included an assessment of crime in 1,000 foot catchment areas surrounding each hot spot to evaluate potential crime displacement effects. Police hot spot treatment involved the deployment of stationary, lighted patrol cars to high crime hundred blocks for 15-minute periods during peak crime hours and peak crime days as identified by temporal analyses of crime. Hot spots were reassessed and police resources redistributed every 60 days based on reported crime. To measure the impact of the hot spots strategy on city-wide crime, linear trends and an interrupted time series analysis were used to compare crime before and after treatment began.

The initial site for the midterm strategy of the Crime Plan (POPBP) was identified by examining trends in reported violent crime, arrests, and calls for service by address over the previous year in Salt Lake City. POPBP brings together an interdisciplinary team of police, other relevant city departments, and site-specific stakeholders to analyze and address underlying conditions at persistently violent places to help reduce the propensity for violence at these locations. Based on the two-year analysis, the UTSA research team identified five persistently violent addresses for possible treatment. SLCPD leadership selected 999 S. Main Street (Palmer Court) as the initial site for POPBP implementation, which began in spring 2023.

#### **City-Wide Results**

Overall, the City of Salt Lake City experienced a 11.1% decrease in violent street crime incidents in Year 1 of the Crime Plan compared to the previous 12 months (October 2021 to September 2022). At the same time, the number of individuals victimized by violent crime in Salt

Lake City fell by a similar 11.3% compared to the previous year. An interrupted time-series analysis confirmed an 11% downturn in violent crime compared to the year before that coincided with the start of the Crime Plan. However, yearly violent crime counts remain higher in Salt Lake City than they were prior to the Covid 19 pandemic, and work remains to be done to reduce violent crime to pre-pandemic levels.

#### **Hot Spot Results**

Violent crime in treated hot spots was down about 10% compared to the previous year, and it was down 3% surrounding catchment areas, indicating that crime displacement did not occur as a result of the hot spots treatment. Additional difference-in-differences analysis showed no effect of the hot spots treatment on violent crime *during treatment* but a statistically significant 4.5% decrease in hot spot crime *two months after treatment*. The lack of a direct treatment effect at hot spots is likely the result of both low crime counts in some hot spots and continued violence at a few, high-crime hundred blocks despite persistent treatment across multiple 60-day treatment periods. Moving forward, reducing the number of treated hot spots but increasing the dosage at the ones with higher levels of violence is recommended. In addition, bringing the POPBP strategy to bear on a few persistently violent places will be key to reducing overall levels of violent crime at Salt Lake City's most violent locations.

# **Other Measures**

The impact of the Crime Plan on arrests and calls for service also was analyzed. Compared to the same months last year, total arrests were up about 18% city-wide and were up 38% in treated hot spots. Violent crime arrests also were up city-wide (8%), and they were up significantly in the treated hot spot blocks (65%). Drug, minor disorder, and gun arrests all were up both city-wide and in the treated hot spots during Year 1 of the Crime Plan compared to last year. Finally, total calls for service were down slightly city-wide and were down about 6% in treatment areas. Violence-related calls were down even more: 13.5% city-wide and 9.5% in treated hot spots. Fidelity by SLCPD officers to the hot spot treatment plan was very high and averaged more than 95% across all treatment periods.

#### **Problem-Oriented, Place-Based Policing**

After a careful analysis of crime, arrests, and calls for service in Salt Lake City during 2022, the Road Home/Palmer Court homeless housing facility located at 999 S. Main Street was selected by SLCPD leadership as the initial location to pilot the POPBP strategy outlined in the Crime Plan.

Management-facilitated improvements to Palmer Court began in March 2023, even before the official POPBP process officially got started. Palmer Court management agreed to hire security for the facility, institute new access controls, and put in place functioning cameras and door alarms to help control access by outside persons. They also agreed to work with the SLCPD to identify

problem residents and to develop tailored plans for residents who became involved in violent incidents.

While results to date are preliminary and merely descriptive, reported violent crime declined from eight incidents recorded during Apr-Sep 2022 to two incidents during Apr-Sep 2023 after security improvements were put in place at Palmer Court, which represents a 75% decrease in reported violent crime. Likewise, violence-related CFS declined by 22% after the security improvements were instituted compared to the same months in 2022, and total CFS fell by 26%. The UTSA research team will continue to monitor violence-related metrics at 999 S. Main Street and will provide a new set of recommended locations to the City by December 2023 for the second POPBP location.

### **Overview**

Beginning in late September 2022, the Salt Lake City Police Department began executing a three-part strategic plan to reduce violent crime<sup>1</sup> (hereafter referred to as the "Crime Plan"). The Crime Plan includes a short-term hot spots policing strategy, a mid-term Problem-Oriented Place-Based Policing (POPBP) strategy, and, a longer-term focused deterrence strategy. These three strategies were purposely designed to work together to help reduce violent crime in the City of Salt Lake City by focusing on the relatively few places where violent crime is prevalent (hot spots) and the relatively few individuals responsible for committing it. As of October 2023, the short-term hot spots policing strategy has been fully implemented and improvements have been made to an initial POPBP site as part of the mid-term Crime Plan strategy.

This report details the Year 1 results from the Salt Lake City Crime Plan. It summarizes the methodology and results of an independent, empirical assessment of the implementation and impact of the hot spots and POPBP strategies during the first year of the Crime Plan: October 2022 through September 2023<sup>2</sup>. Because the mid-term component of the Crime Plan just recently got underway, this report only descriptively evaluates a few outcome measures at the initial POPBP location. The mid-Year 2 report (anticipated in Spring 2024) will include a more thorough assessment of the POPBP strategy.

This report is organized into several main sections. Following this Overview, we outline our Methodology, including the data we relied upon for this report and our analytic strategies. The City-Wide Analyses section examines overall city-wide trends in violent crime since the inception of the Crime Plan by examining violent crime incidents, violent crime victims, and specific violent crime offenses. The Hot Spots section examines crime, arrests, and calls for service in and around the treated hot spots across the initial year of the Crime Plan. In this section, we also analyze hot spots treatment fidelity, or the degree to which officers were present at designated hot spots in accordance with the treatment plans. The next section provides background information on Phase 2 of the Crime Plan and preliminary descriptive analyses at the initial POPBP location. The report concludes with a summary of the Crime Plan results to date and assesses lessons learned and future directions.

<sup>&</sup>lt;sup>1</sup> Violent crime incidents are defined as those involving a homicide, robbery (of individuals or businesses), non-family violence aggravated assault, or gun-involved offense.

<sup>&</sup>lt;sup>2</sup> Note that the hot spot treatment began on September 11, 2022. The period between September 11 and September 30, 2022 is considered a pilot test of the hot spot strategy for all analyses within this report.

# Methodology

The period of analysis is October 2018, four years before the crime plan began, through September 2023, one year after implementation. To date, there have been six, 60-day hot spot treatment periods, with a seventh period underway. During each period, hot spots received a high visibility treatment, which involved placing patrol cars in high crime hundred blocks with their emergency lights illuminated during peak crime times and days of the week as identified by temporal analysis of crime patterns at each hot spot.

Hot spots treatment locations were evaluated using three outcome measures: violent crime, arrests, and calls for service in the Year 1 sections of this report. Descriptive evaluations included analyses of temporal trends in violent crime city-wide over the five-year observation period; violent crime, arrests, and calls for service across the city and in treatment locations during the treatment periods in comparison to the same months during the year prior; and an assessment of violent crime trends in catchment areas surrounding the selected hot spots<sup>3</sup> to check for potential crime displacement or diffusion of treatment benefits.

To assess the impact of crime reductions in hot spots, we also conducted a difference-indifferences analysis, which is an econometric modeling technique that compares change in crime in treated hot spots both before and after treatment to areas that were not treated. This allows for a robust, quasi-experimental evaluation of the effectiveness of the hot spots strategy at reducing crime at the treated hot spots compared to a control group of areas that did not receive treatment.

Below is a summary of the months associated with each of the six treatment periods included in the Year 1 report. As the Department transitioned from one period to the next, some locations remained in the treatment protocol while new ones were added and those that were no longer 'hot' were removed.

- Year 1: October 2022-September 2023
  - o Period 1: October 2022-November 2022
  - o Period 2: December 2022-January 2023
  - o Period 3: February 2023-March 2023
  - o Period 4: April 2023-May 2023
  - o Period 5: June 2023-July 2023
  - o Period 6: August 2023-September 2023

Appendix A further summarizes this information and also provides the comparison dates for each period.

<sup>&</sup>lt;sup>3</sup> Catchment areas are 1,000 foot buffers around each hot spot where crime could potentially migrate, or displace, during treatment.

Finally, an initial site for the midterm strategy of the Crime Plan (POPBP) was identified by examining trends in reported violent crime, arrests, and calls for service by address over the previous year in Salt Lake City. POPBP brings together an interdisciplinary team of police, other relevant city departments, and site-specific stakeholders to analyze and address underlying conditions at persistently violent places to help reduce the propensity for violence at these locations. Based on a year-long analysis, the UTSA research team identified five persistently violent addresses for possible treatment. SLCPD leadership selected 999 S. Main Street (Road Home/Palmer Court) as the initial site for POPBP implementation, which began in spring 2023.

# **City-Wide Analyses**

#### **Crime Incident Trends**

Figure 1 (below) shows the number of violent crime incidents per month in Salt Lake City beginning in October 2018 through September 2023. The graph includes five years of violent crime data. The first full month of the Crime Plan—October 2022—is delineated by the vertical blue bar. Overall, **Salt Lake City experienced a 11.1% decrease in average violent crime incidents** since the start of the Crime Plan (October 2022 – September 2023) compared to the previous year (October 2021 – September 2022).

Between October 2018 and April 2020, Salt Lake City's average number of monthly crime incidents hovered around 80. During the summer and fall months of 2020 and 2021, the city experienced an increase in violent crime that peaked in July 2020 and 2021 at about 140 incidents per month. This pattern is consistent with a seasonal trend of higher violent crime incidents in the summer and lower crime incidents in the winter. Once the Crime Plan was instituted, the seasonal pattern continued, but importantly, the higher levels of crime in the summer were lower than in previous years. In sum, while violent crime remains elevated compared to historic averages, the average number of violent crime incidents since the Crime Plan began (84) represents an 11.1% decrease from the previous year. Moreover, the past 12 months exhibited the lowest monthly average in violent crime incidents since the October 2018-September 2019 period.

Figure 1. Violent Crime Incidents: October 2018-September 2023

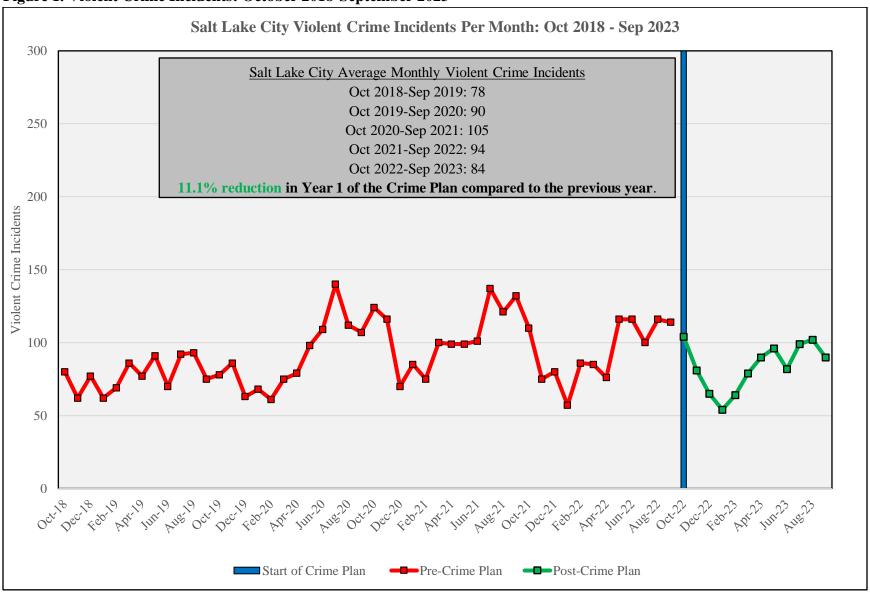


Figure 2, shown on the next page, considers the same time period as above (October 2018 – September 2023), but focuses on *victims* of violent crime rather than violent crime incidents. Similar to Figure 1, monthly counts of violent crime victims pre-Crime Plan are shown in solid red, while monthly counts of crime victims after the Crime Plan began are shown in solid green. Again, the start of the Crime Plan in Salt Lake City is marked by a vertical blue bar beginning in October 2022. Overall, **Salt Lake City experienced a 11.3% decrease in average monthly counts of violent crime victims since the start of the Crime Plan** compared to the previous year (October 2021 – September 2022).

Beginning in October 2018, the average number of violent crime victims in Salt Lake City hovered around 80 per month, and stood at approximately 120 violent crime victims in September 2022, the month before the Crime Plan started. During the pre-Crime Plan period, the highest number of victims was 143 in July 2022. By the end of Year 1, the average stood at 85 violent crime victims per month, which is high by historic standards but approximately 11% lower than the year before the Crime Plan began and noticeably lower than in previous years dating back to the summer of 2019.

Figure 2. Violent Crime Victims: October 2018-September 2023

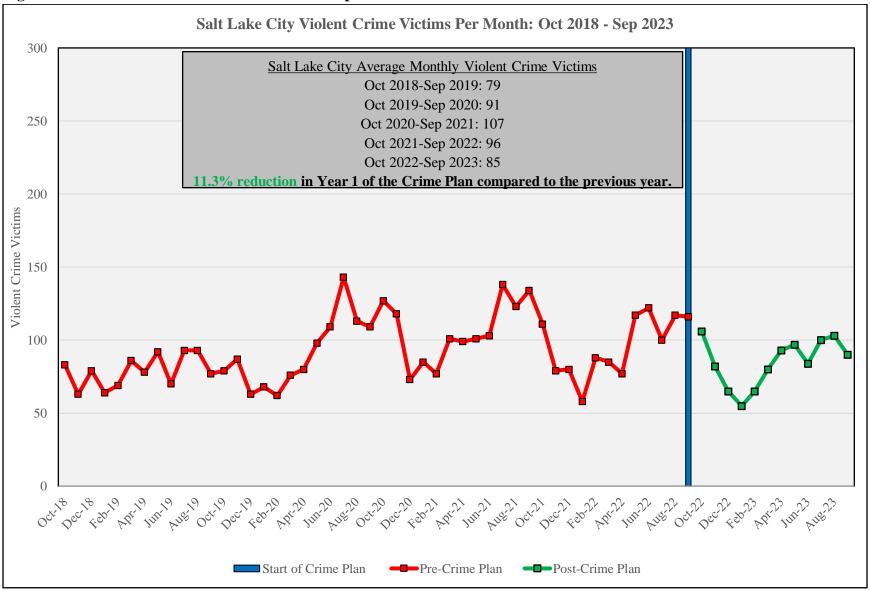


Figure 3, shown on the next page, displays the total number of violent *offenses* per month by crime type in Salt Lake City. As a reminder, multiple offenses can be subsumed under one incident. Since the first full month of the Crime Plan (October 2022) compared to the previous 12 months, homicide decreased by 16.7%, robberies of individuals dropped by 14.2%, robberies of businesses fell by 9.9%, aggravated assaults (non-family) dropped by 9.7, and gun involved offenses decreased by 22.8%.

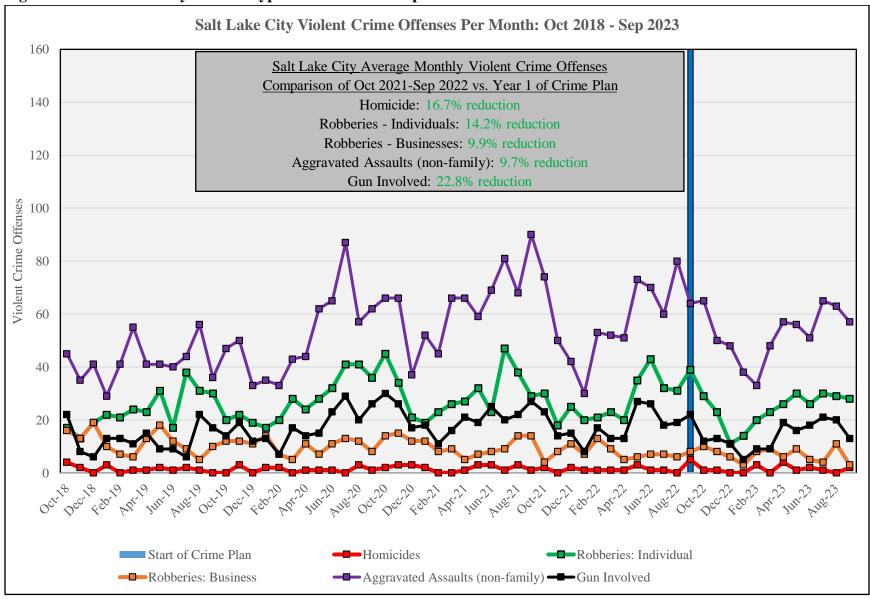
Homicides, represented by the red line, were infrequent events across the past five years, but have reduced by nearly 17% since the Crime Plan was initiated. Robberies of individuals, represented by the solid green line, show a wide range of highs and lows throughout the past five years. While individual robberies hovered in the mid-teens per month in the fall of 2018, they ended in the mid-to high-20s by September 2023. Since the Crime Plan began, they have reduced by 14% compared to the previous year.

Business robberies, represented by the orange line, varied between 10 and 20 incidents per month in the four years prior to the Crime Plan. Since September 2023, business robberies have been less common and -9.9% lower than the previous year. Over the past five years, aggravated assaults, shown in the solid purple bar, ranged from roughly 40 offenses per month in 2018 through 2020 but demonstrated a significant increase between the summer of 2020 and the start of the Crime Plan. Since September 2023, the average monthly count of aggravated assaults has decreased by 9.7% compared to the previous year.

Finally, gun involved offenses, shown in the solid black line, show a wide range of highs and lows throughout the past five years. Gun involved offenses began with about 22 offenses per month in October 2018, and as of September 2023, they stood at about 13 offenses. The recent trend also represents an average decrease of about 23% compared to the year before.

Overall, violent crime *incidents* and *victims* are down in Salt Lake City since the start of the Crime Plan compared to the year before the Crime Plan began. Additional analyses (below) further illuminate these trends, and while violent crime remains substantially elevated from historic averages in Salt Lake City, reported violent street crime has begun to trend downward with the implementation of the Crime Plan.

Figure 3. Violent Crime by Offense Types: October 2018-September 2023



### **Interrupted Time Series Analysis**

To better understand overall treatment trends before and after the crime plan began, we used an interrupted time series analysis (ITSA). ITSA is well suited for tracking and comparing data before and after treatment over long periods of time (Cook, Campbell, & Shaddish, 2002). The ITSA examined crime patterns in Salt Lake City from October 2021 through September 2023 with treatment beginning in late September 2022. Figure 4 (below) shows violent crime trends during this time period. The first full month of treatment (October 2022) is indicated by the vertical dotted red line. Additional analyses (not presented here) confirm that the intervention led to an average decrease in violent crime of about 11%, also noted in the descriptive findings from Figure 1 above. Specifically, the average number of monthly violent crime incidents dropped from 94 incidents before treatment to 84 incidents after treatment. Thus, with some monthly variation, crime was lower, on average, in Year 1 of the Crime Plan than it was the year before the crime plan went into effect.

Figure 4. Time Series Analysis of Violent Crime in Salt Lake City: Oct 2021-Sep 2023

# Year 1 Hot Spots

This section of the report examines the impact of Phase 1 of the Crime Plan – the hot spots policing strategy – by focusing on crime changes within and around the treatment grids during the first year of the Crime Plan.

### Methodology

As previously noted, Year 1 encompasses hot spot treatment Periods 1 - 6. Treatment period comparisons are two-fold. Treatment periods are compared against their averages during the same months in the previous year. For example, Period 1 covers October 2022 to November 2022, and the same months last year comparison period is October 2021 to November 2021.

#### **Repeated Locations**

Table 1 below presents the number of treated hundred-block locations per period. The "Treatment" column displays the count of treated locations per period. To date, 50 unique locations have been treated throughout the six periods of the hot spots strategy. The column titled "New" presents the number of first-time treated locations within in each treatment period. "Rollovers" shows the number of locations that were treated in consecutive periods. Thus far, two locations<sup>4</sup> have rolled over across all six periods. An additional three rolled over across the last four periods<sup>5</sup>. The 'Resumed' column indicates the number of locations that underwent a cycle of treatment, experienced a pause, and then received treatment again in the indicated period. That is, this column tracks those locations where there was at least one treatment period without any intervention between the initial treatment phase and the subsequent resumption of treatment. Finally, the last column provides the count of treated locations that were also treated in a previous period.

**Table 1. Repeated Hot Spots** 

	Treatment	New	Rollovers	Resumed	Total Previously Treated
Period 1	14	14	-	-	-
Period 2	10	7	3	-	3
Period 3	12	7	2	3	5
Period 4	15	8	5	2	7
Period 5	20	11	7	2	9
Period 6	19	3	10	5	16
Totals	90	50	27	12	40

 $^{\rm 4}$  The two locations treated in all six periods are: 900 N West Temple St., and 200 S Rio Grande St.

<sup>&</sup>lt;sup>5</sup> The three locations treated in Periods 3-6 are: 900 N West Temple St., 200 S Rio Grande St., and 200 W Paramount Ave.

#### **Comparative Hot Spot Analyses**

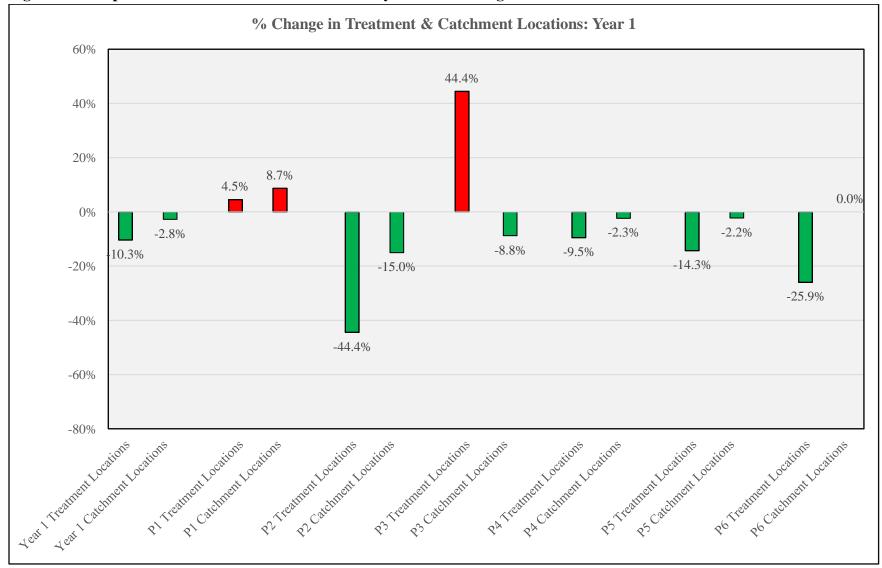
Figure 5 examines hot spot treatment effects at the treated hot spots and surrounding catchment areas across the six treatment periods. The Year 1 comparison (far left bars) covers the entire first year of the Crime Plan since inception (October 2022 - September 2023) and shows changes in hot spot crime in the same months from the previous year<sup>6</sup>.

Throughout the Crime Plan, violent crime incidents at treatment locations were 10.3% lower than the same time period in the previous year, while the catchment locations experienced a 2.8% reduction in violent crime incidents compared to the previous year. Figure 4 also displays the treatment and catchment results for each treatment period. In four of the six treatment periods, violent crime was reduced between 44.4% and 9.5% compared to the same months last year. Periods 1 and 3 demonstrated increases in violent crime incidents compared to the previous year at the same time. A similar pattern is evident for the catchment locations with five of the six periods demonstrating a reduction in catchment violent crime compared to the same months in the previous year. Collectively, these results demonstrate that violent crime was commonly, although not consistently, reduced in the treatment and catchment areas. The catchment area results show no evidence of crime displacement to areas adjacent to the treatment locations; rather, the results show consistent evidence of a diffusion of crime reduction benefits to the nearby catchment areas.

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<sup>&</sup>lt;sup>6</sup> Change in violent crime here was calculated by assessing crime in the treatment and catchment locations in all six treated periods and then summing those to the Year 1 level for comparison to the same months in the previous year.

Figure 5. Hot Spot & Catchment Area Violent Crime by Year: % Change



#### **Difference-in-Differences Analyses**

As part of the Year 1 evaluation, the UTSA research team conducted a difference-in-differences analysis that compared the change in crime levels in the <u>treated locations</u> to the change in crime levels in <u>untreated locations</u>. Difference-in-differences is a useful econometric technique for examining the change in hot spot crime following treatment relative to the change in other areas that were not treated (Goodman-Bacon, 2021; Wooldridge, 2010). Here difference-in-differences compares average violent crime in treated locations before and after treatment to average violent crime in non-treated locations during the same periods. This difference-in-differences analysis expands upon regular period-to-period analysis in two ways. First, it allows for the use of a control group (non-treated locations) within Salt Lake City against which trends in hot spot crime can be compared across the entire first year of the Crime Plan. Second, the approach controls for the regression to the mean effect that occurs when locations are selected for treatment at peak crime levels, recognizing that crime will likely return to lower levels regardless of treatment.

In selecting treatment locations within Salt Lake City, the UTSA research team analyzes all reported violent crime incidents at the hundred-block level. This methodology is a well-accepted, evidence-based approach for identifying violent crime hot spots. However, it is not suited for difference-in-differences analyses. To define the control group, which consists of non-treated locations in the city, it is necessary to account for all potential treatment locations. Here, the comparison group ideally would be made up of all non-treated hundred blocks within the city. At this point, there is no available count of all hundred blocks within Salt Lake City. As a solution, the research team used GIS to overlay a grid on the city, resulting in 35,481 300 ft. x 300 ft. grid squares. The treated hundred blocks were then mapped to their corresponding grids. Although this method introduced minor discrepancies in violent crime incident counts after the mapping, it assigned slightly more incidents to the treated locations because the grids were larger than the treated hundred blocks in some cases. Put another way, this analysis produces a more conservative estimate of change at treated hot spots because it attributes a higher count of violent crime incidents to treatment grids than might otherwise have been the case if the universe of all hundred blocks in Salt Lake City was known. It also accounts for violent crime incidents that the SLCPD records management system assigns to intersections, which otherwise would have been missed using a hundred block analysis.

As is somewhat common in hot spots policing strategies, the UTSA research team uncovered a consistent pattern of large crime spikes in treated grids 60 - 90 days prior to treatment followed by a slight reduction in crime 30 days or less before treatment began. This phenomenon is known as regression to the mean. While regression to the mean is expected based on the selection of hot spots for treatment at their peak crime levels, the regression-based, difference-in-differences technique allowed us to control for any spikes in crime that occurred within the treated locations in the 90 days before treatment began. These controls help isolate the treatment's effects over and above the regression to the mean.

In conducting the difference-in-differences analyses, we expand on previously reported period-to-period analyses. Specifically, we considered the following research questions:

- 1. Compared to the 12 months before treatment began, what was the overall average treatment effect in the treated hot spots in Year 1 relative to non-treated locations?
- 2. What was the effect of hot spots treatments in each of the two months following intervention in treated locations?

Table 2 shows the effect of the hot spot treatment on violent street crime in the treated locations compared to non-treated locations during Year 1 of the Crime Plan. Effects were measured during treatment, one-month post-treatment, and two-months post-treatment. For this analysis, the data were limited to the period of October 2021 to September 2023, which allows for a comparison to the 12 months preceding treatment. Additionally, controls were placed into the model to account for the rise in crime in the three months prior to treatment. Thus, this model provides the ability to conservatively estimate the change in crime attributed to the hot spots treatment throughout Year 1 of the Crime Plan. Finally, each location was tracked at the grid level to account for repeated treatments, thereby ensuring that no location was concurrently analyzed as pre- or post-treatment during active intervention periods.

The positive coefficient for the treatment period shown in the table (.017) is not statistically significant, with a p-value of .348, suggesting that there was no detectable change in crime in treated hot spots before and after treatment when compared to untreated grids in the city. Likewise, the negative coefficient for one-month post-treatment period (-.014) remained non-statistically significant, again signifying no detectable change in violent crime in treated areas. Two months post-treatment, however, the size of the coefficient increased, remained negative (-.046), and was statistically significant (p = .016), indicating a reduction in crime in treated hot spots by the second month after treatment ended.

Table 2. Difference-in-Differences Models: Year 1 Treatment Effect

	Coefficient	Robust Std. Err.	p
Average Effect During Treatment	.017	.018	.348
One Month Post-Treatment	013	.027	.607
Two Months Post-Treatment	045*	.019	.016

<sup>\*\*\*</sup> $p \le 0.001$ , \*\* $p \le 0.01$ , \* $p \le 0.05$ . This model controls for 3 months of pre-treatment crime.

Although previous 60-day period reports (Periods 1 - 6) consistently documented lower levels of violent crime in treated hot spots compared to the same period the year before, the difference-in-differences results suggest that the crime drop is not necessarily causally related to the hot spots treatment. Violent crime is relatively low in Salt Lake City, and a review of crime in treated hot

spots over the course of the first year shows many treatment locations with only one or two reported offenses in the two months leading up to treatment. In addition, treatment dosage at some hot spots and in some periods has been quite low, 1-3 hours per day with no treatment at all on some days. While the year-over-year crime drop in treated hot spots is encouraging, identifying a causal connection between the hot spots treatment and the observed reduction in crime during treatment is difficult when crime violent counts at hot spots are low and in some cases, treatment dosage may be insufficient to produce a measurable deterrent effect.

The difference-in-difference models did show a statistically significant 4.5% decrease in violent crime at the treated hot spots two months *after treatment ended*, which was an unexpected finding. With generally low violent crime counts at many hot spots, this post-treatment effect may indicate a delayed onset of general deterrence at some hot spots, or it may simply be a statistical artifact of low and highly variable crime counts. The lack of a direct treatment effect is likely the result of both low crime counts in some hot spots and continued violence at a few, high-crime hundred blocks despite persistent treatment across multiple 60-day treatment periods. As noted above, two hot spots (200 S. Rio Grand and 900 N West Temple) were treated in all six hot spot treatment periods, and ten were treated three or more times.

#### **Grids Contributing to City-Wide Crime**

Table 3 (below) displays the extent to which treatment and catchment locations contributed to *city-wide* violent crime before and during the Crime Plan. During the same months prior to the beginning of the Crime Plan, the Year 1 treatment locations collectively accounted for 10.3% of city-wide crime. During treatment, the percent contribution remained roughly constant at 10.3%. At the same time, the contribution of catchment locations to city-wide crime over the same months last year was 19.0% and increased slightly to 20.8% during treatment. Table 3 also includes these comparisons for each of the treatment periods. Generally speaking, findings indicate that treatment and catchment locations varied in their contribution to overall city-wide crime when comparing treatment periods to the same months in the previous year. For example, treatment locations contributions to city-wide crime were lower in Periods 2, 4, and 6 compared to the same months in the previous year, while treatment locations contributed more to overall crime in Periods 1, 3, and 5 compared to the same months in the previous year.

Coupled with the difference-in-differences results (reported above), there is limited statistical evidence that the treated hot spot locations substantively contributed to the overall reduction in city-wide violent crime incidents.

Table 3. Hot Spot & Catchment Area Contribution to City-Wide Crime: Y1 v. Last Year

	Treatment/Catchment % of City-Wide Crime (Same Months, Last Year)	Treatment/Catchment % of City-Wide Crime (during Treatment)	Absolute Difference
Year 1 Treatment Locations	10.3%	10.3%	0.1%
Year 1 Catchment Locations	19.0%	20.8%	1.8%
P1 Treatment Locations	11.9%	12.4%	0.5%
P1 Catchment Locations	12.4%	13.5%	1.1%
P2 Treatment Locations	6.6%	4.2%	-2.4%
P2 Catchment Locations	14.6%	14.3%	-0.3%
P3 Treatment Locations	5.3%	9.1%	3.8%
P3 Catchment Locations	19.9%	21.7%	1.8%
P4 Treatment Locations	10.9%	10.2%	-0.7%
P4 Catchment Locations	22.4%	22.6%	0.2%
P5 Treatment Locations	13.0%	13.3%	0.3%
P5 Catchment Locations	20.8%	24.3%	3.5%
P6 Treatment Locations	11.7%	10.4%	-1.3%
P6 Catchment Locations	21.7%	26.0%	4.3%

### **Arrests**

Figure 6, below, examines arrests during the Crime Plan compared to the same months in the previous year. Average monthly arrest counts were calculated for all arrests, violent crime<sup>7</sup> arrests, disorder<sup>8</sup> arrests, drug arrests, and gun arrests. The solid blue bars indicate percent change in arrests *city-wide*, and the hatched blue bars indicate the percent change in *treatment locations* over the one-year treatment period compared to the same months in the previous year.

Total arrests increased across the city by 17.9% and in the treatment locations by 38.2%. Violent crime arrests increased 7.9% city-wide, but increased 64.7% in the treatment locations. This may be an indication that the presence of officers in hot spots resulted in greater awareness by them of violent crime activity and as a result, officers made more on-view arrests there compared to the previous year. Disorder-related arrests increased across the city and in treatment locations by

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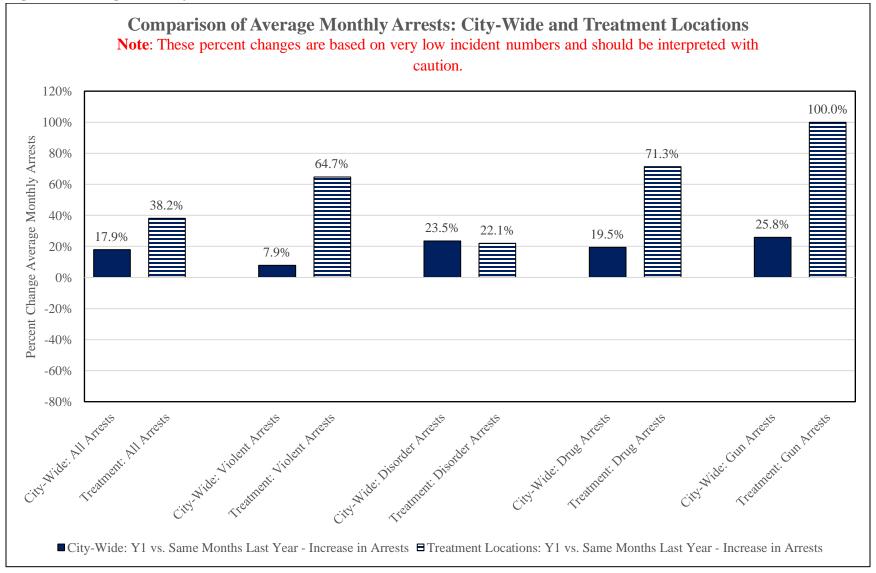
Destruction/Damage/Vandalism of property; Disorderly conduct; Liquor law violations; Public intoxication; Simple assault; Trespass on real property.

<sup>&</sup>lt;sup>7</sup> Murder; Robbery; Non-family, aggravated assault.

<sup>&</sup>lt;sup>8</sup> This category includes offenses such as: Sex crimes; Curfew/Loitering/Vagrancy violations;

23.5% and 22.1%, respectively. Drug arrests increased throughout the city by 19.5%, and by 71.3% in the treatment locations. Finally, gun arrests were up by 25.8% across the city and 100.0% in the treated locations. Again, the pattern of higher arrests in hot spots relative to city-wide changes suggests that officers were in a position to observe criminal activity occurring in high crime areas, which resulted in elevated arrests compared to the same months in the previous year. Importantly, some of the arrest categories were based on a limited number of actual arrests, and therefore, these results should be interpreted with caution.

Figure 6. Average Monthly Arrests: Y1 v. Last Year



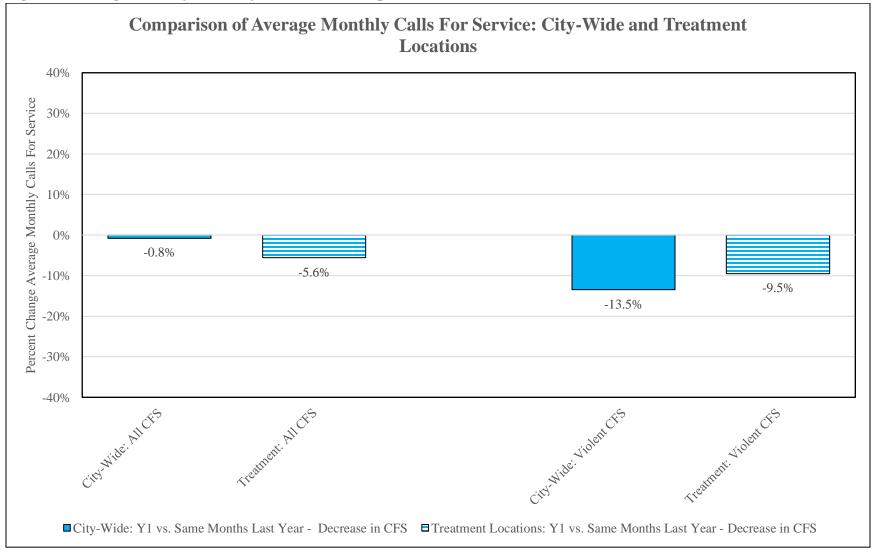
### **Calls For Service**

Figure 7, on the following page, displays the percent change in the average number of calls for service (CFS) and violence-related calls for service (V-CFS) city-wide and in the treated hot spots during Year 1 of the Crime Plan compared to the same months in the previous year. City-wide, all CFS decreased by 0.8% (solid blue bar), but they fell by 5.6% in the treated hot spots (hatched blue bar). As a subset of all calls, violence-related calls for service fell 13.5% across the city and by 9.5% in the hot spots. The decrease in all CFS and violence-related CFS in the treatment locations indicates a positive treatment effect since the start of the Crime Plan.

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<sup>&</sup>lt;sup>9</sup> This category contains calls for service such as: Armed robbery; Assault report with weapon; Death-homicide; Intimidation with weapon; Shooting-victim; Shots fired; Stabbing; Strong arm robbery; Person with weapon.

Figure 7. Average Monthly CFS City-Wide & in Hot Spots: Y1 v. Last Year



# **Fidelity**

This section of the report examines treatment plan fidelity across the previous six periods and signals the extent to which SLCPD officers were deployed to the designated treatment locations during the appropriate days and times identified by the hot spots analysis and treatment plan. Table 4 below displays the fidelity rates starting in Period 1 (91.8%) through Period 6 (97.4%). Overall, SLCPD officers exhibited a high level of fidelity to as the hot spots treatment schedule in Year 1 of the Crime Plan.

**Table 4. Fidelity Summary** 

Treatment Periods	Fidelity Rate
Period 1	91.8%
Period 2	96.9%
Period 3	97.0%
Period 4	98.2%
Period 5	98.1%
Period 6	97.4%

# **Problem-Oriented, Place-Based Policing**

The mid-term strategy from the Salt Lake City Violent Crime Reduction Plan calls for a problem-oriented, place-based policing (POPBP) solution at selected locations in Salt Lake City that have been identified as persistently violent. In preparation for implementing this mid-term phase of the Crime Plan, the UTSA research team analyzed patterns of violent crime, arrests, and calls for service during 2022 by address across Salt Lake City and identified four addresses that ranked the highest in the city across all these measures. After discussions with senior SLCPD leaders in late February 2023, the Road Home/Palmer Court homeless housing facility located at 999 S. Main Street was selected as the initial location to pilot the POPBP strategy outlined in the Crime Plan. During 2022, it ranked first in the city for violent crime incidents, second for violent crime and weapons arrests, and fourth in violence-related calls for service.

In preparation for the launch of the mid-term phase of the Crime Plan, the UTSA research team traveled to Salt Lake City in April 2023 and provided training first to city department directors whose agencies were expected to play a role in the multidisciplinary process (the POPBP Board) that underlies POPBP and then to a working group made up of mid-level managers from those same city agencies. Following the training, the working group was tasked with analyzing historical patterns of problem activity in and around 999 S. Main Street to identify underlying conditions at the property that made it conducive to violence. The POPBP process then calls for the working group to develop creative solutions to address those underlying problem conditions and to work with the UTSA research team to systematically assess the implementation and impact of those solutions once implemented. An operations plan for the site was developed that outlines the problems identified, potential solutions, responsible parties, timelines, and process and impact measures (see Appendix C). This plan was subject to approval by the POPBP Board.

As the POPBP process got underway, the POPBP working group visited the site and met with the management of Palmer Court. Trespassers instigating violence and a small number of residents contributing to violence at the location were initial problems identified by the working group. For its part, the Palmer Court management agreed to hire security for the facility, institute new access controls, and put in place functioning cameras and door alarms to help control access by outside persons. They also agreed to work with the SLCPD to identify problem residents and to develop tailored plans for residents who became involved in violent incidents. Management-facilitated improvements to Palmer Court began in March 2023, even before the official POPBP process got started.

Because of the improvements made by the Palmer Court management when initially notified that 999 S. Main was chosen as the pilot POPBP site for Salt Lake City, the location has been moved

into a "maintenance phase" and will be monitored for continued compliance with security improvements and reductions in violence on the property.

Table 5 (below) contains a summary of monthly counts of reported violent crime (VC) incidents, violence-related calls for service, and total calls for service (CFS) before and after the changes at Palmer Court went into effect. The shaded bar represents the approximate month (March 2023) when security improvements were made to the property.

Table 5. Monthly Violent Crime & Calls for Service Counts, 999 S. Main Street

Month	VC (	Count	Viole	nt CFS	Total	CFS
	2022	2023	2022	2023	2022	2023
January	0	0	1	0	106	164
February	0	2	0	3	100	103
March	2	3	3	3	96	102
April	1	1	2	2	97	53
May	2	0	3	0	101	78
June	1	1	1	3	92	69
July	1	0	1	0	86	63
August	3	0	1	0	94	82
September	0	0	1	2	102	79
Post-March Totals	8	2	9	7	572	424
		(-75%)		(-22%)		(-26%)

While these data are descriptive and preliminary, the overall trend in crime and calls for service appears to be trending downward at 999 S. Main, which is evident when comparing the post-treatment months (April-Sep 2023) to the same months in 2022. For example, reported violent crime declined from eight incidents recorded during Apr-Sep 2022 to two incidents during Apr-Sep 2023 after security improvements were put in place at Palmer Court, which represents a 75% decrease in reported violent crime. Likewise, violence-related CFS declined by 22% after the security improvements were instituted compared to the same months in 2022, and total CFS fell by 26%.

Because reported monthly violent crime and violence-related calls for service are generally low at this location and only six months have passed since security improvements were put in place, the UTSA research team is unable to definitively assess whether the apparent downward trend in violence at Palmer Court is causally related to the POPBP process, but the initial results are encouraging. The UTSA research team will continue to monitor violence-related metrics at 999 S. Main Street and will provide a new set of recommended locations to the City for the next POPBP location.

### **Conclusion**

The Salt Lake City Crime Plan began in late September 2022 and has been underway for 14 months. This report evaluates the implementation and impact of the Crime Plan during its first year – from inception through September 2023. The Crime Plan consists of three primary strategies: hot spots policing, problem-oriented, place-based policing (POPBP), and focused deterrence. These strategies were purposely chosen for their strong evidence base, and they were intentionally layered to help reduce violent crime in Salt Lake City over the short, mid, and longer terms. To date, the hot spots policing strategy has been fully implemented, and the SLCPD and other city stakeholders are monitoring site improvements made to the initial POPBP location at 999 S. Main Street. Future reports will include evaluations of these mid-term and longer-term strategies as they are implemented.

During the first year of the Salt Lake City Crime Plan, overall violent street crime incidents have dropped by about 11% compared to the year before the Crime Plan went into effect, and a similar reduction has occurred with violent victimization. Reductions by crime type include an approximate 17% reduction in murder, a 14% reduction in robberies of individuals, a 10% reduction in business robberies, a 10% reduction in non-family violence aggravated assaults, and a 23% reduction in gun crim. Interrupted time series analysis shows an average monthly reduction in volent crime of 11% after the Crime Plan began compared to the year before. While trending downward since its high point in 2020-21, violent crime remains elevated above its pre-Covid 19 pandemic levels (see Appendix B for yearly crime counts), and work remains to be done to lower violent crime to its pre-pandemic level.

Violent crime in treated hot spots was down about 10% compared to the previous year, and it was down 3% surrounding catchment areas, indicating that crime displacement did not occur as a result of the hot spots treatment. Additional difference-in-differences analysis showed no effect of the hot spots treatment on violent crime *during treatment* but a statistically significant 4.5% decrease in hot spot crime *two months after treatment*. The lack of a direct treatment effect at hot spots is likely the result of both low crime counts in some hot spots and continued violence at a few, high-crime hundred blocks despite persistent treatment across multiple 60-day treatment periods. Moving forward, reducing the number of treated hot spots but increasing the dosage at the ones with higher levels of violence is recommended. In addition, bringing the POPBP strategy to bear on a few persistently violent places will be key to reducing overall levels of violent crime at Salt Lake City's most violent locations.

The impact of the Crime Plan on arrests and calls for service also was analyzed. Compared to the same months last year, total arrests were up about 18% city-wide and were up 38% in treated hot spots. Violent crime arrests also were up city-wide (8%), and they were up significantly in the treated hot spot blocks (65%). Drug, minor disorder, and gun arrests all were up both city-wide

and in the treated hot spots during Year 1 of the Crime Plan compared to last year. Finally, total calls for service were down slightly city-wide and were down about 6% in treatment areas. Violence-related calls were down even more: 13.5% city-wide and 9.5% in treated hot spots. Fidelity by SLCPD officers to the hot spot treatment plan was very high and averaged more than 95% across all treatment periods.

In April 2023, the UTSA research team provided training to Salt Lake City leaders on the midterm phase of the Crime Plan – POPBP – which seeks to analyze the proximate causes of violent crime at persistently violent places and design creative solutions to help ameliorate the underlying conditions that make these areas conducive for crime. After discussions with senior SLCPD leaders, the Road Home/Palmer Court homeless housing facility located at 999 S. Main Street was selected as the initial location to pilot the POPBP strategy outlined in the Crime Plan.

Management-facilitated improvements to Palmer Court began in March 2023, even before the official POPBP process officially got started. Palmer Court management agreed to hire security for the facility, institute new access controls, and put in place functioning cameras and door alarms to help control access by outside persons. They also agreed to work with the SLCPD to identify problem residents and to develop tailored plans for residents who became involved in violent incidents.

While results to date are preliminary and merely descriptive, reported violent crime declined from eight incidents recorded during Apr-Sep 2022 to two incidents during Apr-Sep 2023 after security improvements were put in place at Palmer Court, which represents a 75% decrease in reported violent crime. Likewise, violence-related CFS declined by 22% after the security improvements were instituted compared to the same months in 2022, and total CFS fell by 26%. The UTSA research team will continue to monitor violence-related metrics at 999 S. Main Street and will provide a new set of recommended locations to the City by December 2023 for the second POPBP location.

# References

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# **Appendix A: Timeline of Treatment and Comparison Time Periods**

# **Treatment Time Periods (precise start and end dates appear in paratheses):**

- Year 1: October 2022-September 2023 (October 1, 2022 September 30, 2023)
  - Period 1: October 2022 (October 1, 2022) November 2022 (November 30, 2022)
    - Comparison: October 2021-November 2021
  - Period 2: December 2022 (December 1, 2022) January 2023 (January 31, 2023)
    - Comparison: December 2021- January 2022
  - Period 3: February 2023 (February 1, 2023) March 2023 (March 31, 2023)
    - Comparison: February 2022- March 2022
  - Period 4: April 2023 (April 1, 2023) May 2023 (May 31, 2023)
    - Comparison: April 2022- May 2022
  - Period 5: June 2023 (June 1, 2023) July 2023 (July 31, 2023)
    - Comparison: June 2022- July 2022
  - Period 6: August 2023 (August 1, 2023) September 2023 (September 30, 2023)
    - Comparison: August 2022- September 2022

**Appendix B: Violent Street Crime Counts by Year** 

## Violent Crime by Offense Type. Pre-Treatment: Oct 2018 - Sep 2019

	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Total
All Crime Incidents	80	62	77	62	69	86	77	91	70	92	93	75	934
Homicide	4	2	0	3	0	1	1	2	1	2	1	0	17
Robbery Ind.	17	13	19	22	21	24	23	31	17	38	31	30	286
Robbery Bus.	16	13	19	10	7	6	13	18	12	9	5	10	138
Agg. Assault	45	35	41	29	41	55	41	41	40	44	56	36	504
Gun Involved	22	8	6	13	13	11	15	9	9	6	22	17	151

Individual crime offense counts do not sum to the incident total because some incidents have multiple offenses.

## Violent Crime by Offense Type. Pre-Treatment: Oct 2019 - Sep 2020

	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Total
All Crime Incidents	78	86	63	68	61	75	79	98	109	140	112	107	1076
Homicide	0	3	0	2	2	0	1	1	1	0	3	1	14
Robbery Ind.	20	22	19	17	20	28	24	28	32	41	41	36	328
Robbery Bus.	12	12	11	14	7	5	11	7	11	13	12	8	123
Agg. Assault	47	50	33	35	33	43	44	62	65	87	57	62	618
Gun Involved	14	19	12	13	7	17	14	15	23	29	20	26	209

Individual crime offense counts do not sum to the incident total because some incidents have multiple offenses.

Violent Crime by Offense Type. Pre-Treatment: Oct 2020 - Sep 2021

	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Total
All Crime Incidents	124	116	70	85	75	100	99	99	101	137	121	132	1259
Homicide	2	3	3	2	0	0	1	3	3	1	3	1	22
Robbery Ind.	45	34	21	19	23	26	27	32	23	47	38	29	364
Robbery Bus.	14	15	12	12	8	9	5	7	8	9	14	14	127
Agg. Assault	66	66	37	52	45	66	66	59	69	81	68	90	765
Gun Involved	30	26	17	18	11	16	21	19	25	20	22	27	252

Individual crime offense counts do not sum to the incident total because some incidents have multiple offenses.

Violent Crime by Offense Type. Pre-Treatment Period: Oct 2021 - Sep 2022

	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total
All Crime Incidents	110	75	80	57	86	85	76	116	116	100	116	114	1131
Homicide	2	0	2	1	1	1	1	3	1	1	0	5	18
Robbery Ind.	30	18	25	20	21	23	20	35	43	32	31	39	337
Robbery Bus.	4	8	11	7	13	9	5	6	7	7	6	8	91
Agg. Assault	74	50	42	30	53	52	51	73	70	60	80	64	699
Gun Involved	23	14	15	8	17	13	13	27	26	18	19	22	215

Individual crime offense counts do not sum to the incident total because some incidents have multiple offenses.

Violent Crime by Offense Type. Treatment Period: Oct 2022 - Sep 2023

	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Total
All Crime Incidents	104	81	65	54	64	79	90	96	82	99	102	90	1006
Homicide	1	1	0	0	3	0	4	1	2	1	0	2	15
Robbery Ind.	29	23	11	14	20	23	26	30	26	30	29	28	289
Robbery Bus.	10	8	6	3	8	9	6	9	5	4	11	3	82
Agg. Assault	65	50	48	38	33	48	57	56	51	65	63	57	631
Gun Involved	12	13	11	5	9	9	19	16	18	21	20	13	166

Individual crime offense counts do not sum to the incident total because some incidents have multiple offenses.

# **Appendix C: Operations Plan for POPBP Site #1**

Intervention Source	Problem	Solutions	Timeline	Responsible Party	Action Steps	Process Measurement	Data Source & Party Responsible for Collecting/Reporting	Effectiveness Measurement	Data Source & Party Responsible for Collecting/Reporting
SLCPD	Trespassers instigating violence	- Visitor check-in process with wristbands - Having one main entrance/exit - Regular security walk-throughs and security presence - Functioning surveillance cameras and door alarms	Monthly	Palmer Court & SLCPD	slcpd provides monthly call and crime stats to review with Palmer Court. Together, outliers are identified to better understand what contributed to an increase or decrease. This could involve reviewing additional data like visitor logs and security footage if that's helpful.	Monthly stat report that illustrates values outside the normal range for call counts and crime counts	Palmer Court, SLCPD Crime Intel Analysis Unit, & Detective Fallows	Decrease/maintain low numbers for overall calls for service & trespassing-related calls  Decrease/maintain low violent crime counts  Increase the % of trespassing cases with arrestees	UTSA & SLCPD Crime Intel Analysis Unit

SLCPD	Certain residents involved in violence toward others	Residents involved in violent incidents or contributing to violence are identified and steps are taken toward addressing this, including up to eviction depending on the severity of the incident	Monthly	Palmer Court & SLCPD	- SLCPD generates a list of individuals involved in violence at Palmer Court each month  - Detective Fallows reviews the list with Palmer Court staff and a plan is made for each individual	- List of residents connected to calls for service and police cases generated in the previous month (violence, trespassers)  - Palmer Court staff provides copies of the plan for each individual on the list (from monitoring to eviction) and any action steps they will be taking in the coming month  - Review plan effectiveness by providing the next month's data and observing if same individuals appeared on previous lists	Palmer Court, SLCPD Crime Intel Analysis Unit, & Detective Fallows	- Decrease/maintain low violent crime counts - Individuals with plans do not have multiple repeat incidents Violent individuals are addressed right away and shouldn't have multiple incidents	UTSA & SLCPD Crime Intel Analysis Unit
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