LAS VEGAS SMART POLICING INITIATIVE: IMPACT OF POLICE SATURATION

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Executive Summary

- The Las Vegas Smart Policing Initiative (SPI) examined the effectiveness of the Las Vegas Police Department's (LVMPD) Saturation Team. Over the course of the project, the Saturation Team conducted directed patrol and other proactive activities in 12 hot spots located within LVMPD's jurisdiction. This document reports on (1) the impact of the Saturation Team on calls for service in those hot spots, and (2) the impact of the Saturation Team on citizen perceptions of crime and police activity.

- The evaluation utilized an experimental design. Twenty-four hot spots of crime and disorder were identified within LVMPD's jurisdiction. Twelve of these hot spots were randomly assigned to receive the Saturation Team's intervention while the remaining 12 served as the control group. The Saturation Team operated in each hot spot of the experimental group for a period of 60 days.

- Data for this evaluation were drawn from two primary sources: official reports of police calls for service and data from surveys of residents living in the experimental and control areas. Using calls for service data, the study compares: (1) measures of crime between the experimental and control groups and (2) measures of crime before and after the Saturation Team's deployment in the experimental areas. Using survey data, the study compares respondents' opinions of crime, fear of crime, and police activity in experimental and control areas. Calls for service and survey data are also supplemented with data from observations conducted with Saturation Team officers.

- Calls for service analyses produced mixed results. Some analyses suggested that calls for disorderly offenses were lower in experimental areas, but these results were not consistent. Other analyses suggested that calls for certain types of offenses increased in experimental areas, but it is unclear whether this was due to differences in actual criminal activity or to the influence of police presence on citizens' willingness to call the police.

- Survey data indicate that residents in the experimental areas reported seeing police more often than those in the control areas. Residents in the experimental areas also reported seeing police interact with citizens more often.

- Surveys indicate that citizens in both the experimental and control areas generally had high opinions of LVMPD, with over 75% in both groups "agreeing" or "strongly agreeing" that they respect LVMPD and are supportive of LVMPD.

- Residents in the experimental areas generally perceived higher levels of crime and disorder than those living in control areas. Furthermore, although citizens in both the experimental and control areas generally had high opinions of LVMPD, those living in the experimental areas were slightly less supportive.

- That neighborhood residents in experimental areas perceived more police – but also may have perceived more crime and had a lower opinion of police – may be an indication of the "backfire" effect. Perhaps lacking context regarding officer tactics, an intense saturation of order maintenance activities by officers unfamiliar to the residents could have resulted in 1) citizens believing that crime and disorder actually increased and 2) some negativity toward police actions.

- With Saturation Team officers now assigned to local Area Commands, LVMPD can capitalize on order maintenance / directed patrol efforts that increase citizen perception of police presence. Officers and residents will be more familiar with each other now that these efforts are managed at the local level. As a result, police goals can be better communicated to citizens and the potential of the "backfire" effect can be minimized.

Targeted Problem

High-Crime Hot Spots in Las Vegas

In 2009, the FBI's Uniformed Crime Report revealed that Nevada had 702.2 violent crimes per 100,000 residents. In the same year, the Las Vegas Metropolitan Police Department (LVMPD) reported the 5th highest robbery rate, the 8th highest violent crime rate, and the 12th highest motor vehicle theft in the nation. Las Vegas is home to diverse economies and communities that present unique crime problems and challenges to the LVMPD and the community as a whole. Serious crime and disorder are challenges not only for the police but also for residents who live in areas impacted by high crime. Fear of crime caused by disorder or the perception of serious crime can also result in residents withdrawing from "informally policing" the expected norms in the community.

As is the case with other urban environments, crime in Las Vegas tends to cluster in specific locations. Calls for service data routinely demonstrate that a relatively small number of neighborhoods generate a disproportionate amount of calls to police. Historical trends of these same data also demonstrate the many of these neighborhoods have experienced crime and disorder problems over an extended period of time.

The Police and High-Crime Areas

Directed Patrol Activity

Police agencies have a long history of focusing patrol resources in areas that are at high-risk of crime and disorder. The origins of preventive police patrol in England can be traced to the need to manage problem-prone locations along the docks of the Thames River during the 18th and 19th centuries (see Critchley 1972). The American model of policing, which draws its inspiration from the British model, also placed high emphasis on directing officers to crime-prone locations. Some of the most influential police administration texts of the 20th century advocated for the deployment of car patrol to crime "hazards" – locations that were particularly at risk of criminal activity (see, for example, Wilson and McLaren 1972).

For much of the history of police, the methods of identifying problem locations were relatively imprecise by today's standards. Agencies relied primarily on the experiential knowledge of officers and "pin" maps to diagram the geography of crime. Modern technology has greatly improved the ability of police to identify problematic locations. Using mapping software, agencies can pinpoint crime "hot spots," identify the types of problems that occur at those locations, analyze the extent to which those problems are related to other community concerns, and, in some cases, predict the risk of those problems reoccurring. By identifying and understanding hot spots, agencies can better deploy resources to the locations with the greatest need.

Although the methods of identifying problem locations have improved, research on the effectiveness of police patrol is somewhat mixed. Early research on preventive patrol demonstrated that it has a limited impact on crime or perceptions of safety in neighborhoods

(Kelling, Pate, Dieckman, and Brown 1974). This research, however, may be more of a commentary on the tactics used by police while on patrol rather than an indictment of patrol itself. More recent research suggests that police patrol can be effective when resources are directed at specific locations that are at-risk of criminal activity (Braga and Weisburd 2010).

Part of the difficulty in assessing the effectiveness of directed patrol in crime hot spots is that the specific activities employed by officers at those locations is not always well known. Mapping software can identify hot spots and inform on the types of problems that occur, but these analyses do not necessarily advise police in terms of what should be done to resolve problems at those locations. Clouding the issue, academic evaluations of patrol effectiveness generally seek to measure the impact of initiatives but do not always document or describe the policy mechanisms with much clarity (Eck 2010). As a result, "what works" for police at problem locations is still a matter of discussion among academics and policy makers. Many officials agree, however, that merely directing an increased number of police to problem locations may only have a short-term impact on crime in neighborhoods. Problems may be reduced while officers are providing a presence, but agencies rarely have the resources to maintain increased patrol levels indefinitely. As a result, crime may return to hot spots when police are redeployed if officers do not take active steps to manage problems while at those locations.

Order Maintenance Policing

Several proactive police tactics associated with the community policing paradigm have emerged over the past several decades. One such tactic, order maintenance policing, is associated with the 'broken windows' hypothesis developed by Wilson and Kelling (1982). 'Broken windows' argues that minor disorders, if left unmanaged in neighborhoods, can potentially lead to more serious offenses. The policy implication of the theory is that if neighborhood residents and the authorities closely monitor minor crimes and disorderly offenses, the area may be less susceptible to (or present fewer opportunities for) serious criminal activity. Order maintenance policing therefore involves officers paying attention to minor offenses with the objective of preventing serious crime and further disorder.

Order maintenance policing received national attention during the 1990s when it was associated with crime reduction in New York City. While evaluations of order maintenance in New York and elsewhere vary in terms of its level of effectiveness, most studies of the NYPD tactic indicate that it had at least a moderate impact on criminal activity (for a review, see Baumer and Wolff 2014). Some have also argued that, regardless of its impact on crime, order maintenance has intrinsic value because it can directly prevent disorderly offenses and incivilities that can negatively impact the quality of life in neighborhoods (Thacher 2004; Wilson and Kelling 2006). Some have cautioned, however, that order maintenance practices can lead to a possible "backfire" effect (Weisburd, Hinkle, Famega, and Ready 2011). If citizens lack context regarding officer activities, an intense increase in order maintenance can potentially result in citizens believing that crime and disorder have actually increased.

When combined with directed patrol in hot spots, order maintenance tactics have the potential to significantly impact problems in neighborhoods. Braga and Bond (2008), for example, evaluated a project in Lowell, Massachusetts that involved disorder management directed in crime hot spots. The results indicated decreases in calls for service for crime and disorder with little evidence of displacement.

Community Outreach and Collaboration

Key Partners, Stakeholders, and Collaborative Efforts

The Las Vegas Metropolitan Police Department (LVMPD) and the University of Nevada Las Vegas (UNLV) were the two main contributors to this project:

The Las Vegas Metropolitan Police Department led the project. LVMPD provided data analysis and managed the project's operations with a unit of police officers (the "Saturation Team"). An LVMPD lieutenant supervised the Saturation Team. Two lieutenants assumed this role during the course of the project.

- **Director Patrick Baldwin.** Director Baldwin is the Director of Crime Analysis at the Las Vegas Metropolitan Police Department and the Deputy Director of the Southern Nevada Counter-Terrorism Center. A member of the Las Vegas Metropolitan Police Department for 12 years, his previous assignments were as a manager of the Crime Analytical Group, the gang criminal intelligence analyst, and a patrol bureau crime analyst.
- **Manager Gina Fackrell.** Manager Fackrell is the Manager of the Crime Analytical Group of the Las Vegas Metropolitan Police Department, assigned to the Southern Nevada Counter-Terrorism Center. A member of the Las Vegas Metropolitan Police Department for 7 years,

her previous assignments included Crime Analyst, where she was responsible for crime series and trends, as well as crime analytical projects and techniques.

- **Lt. Theodore Glaude.** Lt. Glaude has 16 years of experience with LVMPD. His other assignments within LVMPD have included Patrol Officer from 1998-2007 (6½ of those years as a Field Training Officer), Patrol Sergeant, Saturation Team Sergeant, Internal Affairs Sergeant, Patrol Lieutenant, and Administrative Lieutenant for LVMPD's Northeast Area Command. Lt. Glaude also has prior law enforcement experience as a State Trooper with the Nevada Highway Patrol. Lt. Glaude has a combined total of 20 years in law enforcement. Lt. Glaude supervised the Saturation Team from December of 2012 to February of 2014.
- **Crime Analyst Shannon Smith.** Ms. Smith is a Crime Analyst assigned to the Southern Nevada Counter-Terrorism Center. A member of the Las Vegas Metropolitan Police Department for 7 years, she is responsible for crime series and trends and does extensive work on the relationship between crime and terrorism.
- **Lt. Andrew Walsh.** Lt. Walsh has 15½ years of experience with LVMPD. His other assignments within LVMPD have included Field Training Officer, Academy TAC Officer, Problem Solving Unit Sergeant, Patrol Lieutenant, and Internal Affairs Lieutenant. Lt. Walsh was also assigned to LVMPD's Public Information Office and led the new officer field training and evaluation program. Lt. Walsh supervised the Saturation Team from February 2011 to December 2012.

The University of Nevada Las Vegas had two roles on the project: 1) Implementation of the SPI Residential Survey, which provided outcome measures from residents in the participating

project areas; and 2) Evaluation of the project using both official calls for service data and survey data.

- **Dr. Christie D. Batson** – Associate Professor of Sociology. Dr. Batson is the Lead Research Methodologist for the Las Vegas Metropolitan Area Social Survey (LVMASS) – the survey that served as the model for the SPI Residential Survey. She was responsible for the design and implementation of the survey questions and survey administration to residents in the project areas.
- **Dr. Robert Futrell** – Professor of Sociology. Dr. Futrell has more than a decade of grant-funded research experience, including studies of social health in Las Vegas and crime, deviance, and political extremism. He is the Lead Investigator for the Las Vegas Metropolitan Area Social Survey, and has reported on LVMASS research to the City of Las Vegas, the Southern Nevada Regional Planning Commission, and The University of Nevada, Las Vegas.
- **Mr. Steven Pace**. Mr. Pace is a doctoral student in the Department of Sociology at UNLV. Mr. Pace's master's thesis, "Assessing the Impact of Police Saturation Teams on Crime: A Quasi-Experiment" served as a starting point for the current project.
- **Dr. William Sousa** – Associate Professor of Criminal Justice. Dr. Sousa has experience analyzing crime policies and has worked on previous community research projects with LVMPD. Dr. Sousa was responsible for project design and analyses of the project crime data.
- **Dr. Andrew L. Spivak** – Assistant Professor of Sociology. Dr. Spivak studies crime and penology and has collaborated with LVMPD on previous research using police incident

reports, including geographic analysis. His primary research role was to analyze calls-for-service data, as well as person and vehicle stop data.

The Current Initiative: Strategies Employed

The Las Vegas Initiative

The Las Vegas SMART Policing Initiative focuses on the activities of the LVMPD's Mobile Crimes Saturation Team. The Saturation Team was developed in 2005 and operates as a valley wide support unit for LVMPD's eight patrol Area Commands. The team is typically deployed to crime and disorder locations in the area commands that are most in need of police service. The unit is primarily proactive – unlike other patrol units, officers on the Saturation Team are not routinely responsible for responding to calls for service. Officers on the Saturation Team, however, do operate in uniform and in marked patrol cars.

At the beginning of the operational phase of the project (March 2012), the Saturation Team consisted of 2 sergeants and 24 police officers. Due to organizational restructuring, the unit was reduced to 1 sergeant and 12 officers after the first round of implementation (March-October 2012). Using funds from SPI, the unit was able to maintain consistent coverage during the second round of implementation (November 2012-June 2013). The evaluation portion of this project (see below) focuses on the first round of implementation.

While the Saturation Team's functions are numerous, officers generally provide what could be described as proactive order maintenance. Many of the team's activities are self-

initiated and involve managing minor offenses. Over the course of the operational phase of this project (March 2012-June 2013), officers on the Saturation Team self-initiated 6,531 car stops and 5,591 person stops. Their efforts resulted in 4,021 citations, 1,824 misdemeanor arrests, 77 gross misdemeanor arrests, 647 felony arrests, and 22 firearm confiscations. Observers on ride-alongs noted that much of the self-initiated activity involved minor traffic violations (broken taillights, speeding, etc.). When officers stopped individuals on foot, the reasons were often minor social disorders such as jaywalking, loitering, or other suspicious activities that officers later articulated to the observer.

Although minor offenses are a focus of the Saturation Team, officers are encouraged to use appropriate discretion in their enforcement activities. Observations conducted during the project suggested that officers were more likely to issue verbal warnings or implement some type of informal solution rather than rely on official action. Thus, the activities of Saturation Team officers can best be described as "paying attention" to disorder rather than as "zero tolerance" of minor offenses (Sousa 2010).

Although some evidence suggests that Saturation Team efforts have had an impact in several Las Vegas neighborhoods (Pace 2010), past research on the unit's effectiveness is limited by a short duration of saturation, a primary focus on major offenses, and a lack of residential perceptions of crime and police activity. Important questions remain about the longer-term effect of place-based saturation teams on crime and disorder. This project, therefore, examines the efforts of the Saturation Team as it performs its order maintenance / directed patrol function in some of the Las Vegas Valley's most problematic locations.

Research Strategy

This project uses a mixed-methods research design to examine the effectiveness of police saturation teams in high-crime hotspots. Twenty-four hotspots were identified throughout LVMPD's jurisdiction. Twelve were randomly assigned to receive Saturation Team efforts for a 60-day deployment period while the remaining 12 served as controls. The study design uses official crime data (calls for service for weapons offenses, disorder offenses, and other serious crimes) and residential survey data to determine the impact of saturation efforts on crime, disorder, and citizen perceptions of crime and the police.

Data and Intelligence

Data Sources

During the course of SPI, LVMPD underwent an upgrade to its data management systems. As a result, however, the only consistent official measure of crime over the project's timeline was calls for service. Calls for service were therefore used to help generate the hotspots for the sample and then evaluate the impact of the Saturation Team on crime and disorder. The calls for service data were supplemented with data from surveys of citizens who resided in a number of the hot spots in the sample. These residents were asked to report on their opinions of crime and police presence.

First we describe the overall experimental design in more detail. We then discuss the calls for service data used in the project, the residential survey, and the survey administration.

Experimental Design

The design required 24 geographic areas designated as high-risk for crime and violence within LVMPD's jurisdiction. To generate this list of areas, the command staffs of each of LVMPD's eight Area Commands were asked to submit three locations within each Area Command that were historically problematic based on past mapping analyses and experiential knowledge. These 24 areas were rank ordered based on their rates of calls-for-service (CFS) during calendar year 2011. The areas were then paired off, and one from each pair was

randomly selected for the experimental treatment. The twelve in the treatment group received Saturation Team deployment while the other twelve were designated as control areas. The 24 areas are listed in Table 1 below, in descending order of 2011 CFS. The darker colors are the experimental areas – the lighter colors are the corresponding control areas.

Table 1. Geographic Areas, Prior Year CFS, and Experimental/Control Group

Area	Total Calls-for-Service 1/1/11 – 12/31/11	Location
1	4394	S Main St to S 15th St & E Bridger Av to Stewart Av
2	3135	Sierra Vista Dr to Flamingo Rd & Swenson St to Maryland Pkwy
3	1846	N Wyoming Av to W Sahara Av & Western Av to S Las Vegas Bl
4	1812	Karen Av to St Louis Av/ Maryland Pkwy to Joe W Brown
5	1581	Flamingo Rd to Twain Av & Swenson St to Paradise Rd
6	1519	E Craig Rd to Colton Av to E Gowan Av & N Lamb Bl to N Nellis Bl
7	1427	Desert Inn Rd to Twain Av/ Swenson St to Paradise Rd
8	1355	E Lake Mead Bl to Monroe Av/ N Lamb Bl to N Nellis Bl
9	1353	Bonanza Rd to Charleston Bl & Nellis Bl to Christy Lane
10	1353	E Sahara Av to Vegas Valley Dr & S Lamb Bl to S Nellis Bl
11	1316	Farm Rd to W Deer Springs Way & N Fort Apache Rd to Oso Blanca Rd
12	1283	Spring Mountain Rd to Flamingo & Arville St to Valley View Blvd
13	1201	Smoke Ranch Rd to Vegas Dr & Torrey Pines Rd to N Jones Bl
14	1157	Tropicana Av to Russell Rd & Maryland Pkwy & Spencer St
15	1145	Smoke Ranch Rd to Vegas Dr/ N Jones Bl to Michael Way
16	1084	E Tropicana Av to E Hacienda Av/Clark St/Kentucky Av & Denning St to Steptoe St
17	891	Tropicana Av to Russell Rd/ Swenson St to Maryland Pkwy
18	818	Coran La to Vegas Dr/ N Rancho Dr to N Tonopah Dr
19	673	Summerlin Pkwy to Alta Dr & Cimarron Rd to N Tenaya Way/Antelope Way
20	670	Stewart Av to Fremont St & N 21st St to N Eastern Av
21	620	Spring Mountain Rd to Flamingo Rd & Decatur Blvd to Arville St
22	501	Vegas Valley Dr to E Desert Inn Rd & S Maryland Pkwy to Sundown Dr
23	362	Silver Dollar Av to Sirius Av/ Wynn Rd to S Valley View Bl
24	141	W Flamingo Rd to W Rochelle Av & Lindell Rd to Edmond St

Wave 1 (March 1, 2012 – April 30, 2012): Blue = Treatment (6, 10, 16); Light Blue = Control (5, 9, 15)
Wave 2 (May 1, 2012 – June 30, 2012): Orange = Treatment (2, 4, 20); Light Orange = Control (1, 3, 19)
Wave 3 (July 1, 2012 – August 31, 2012): Pink = Treatment (11, 13, 18); Light Pink = Control (12, 14, 17)
Wave 4 (Sept. 1, 2012 – Oct. 31, 2012): Yellow = Treatment (7, 21, 24); Light Yellow = Control (8, 22, 23)

Table 1 also indicates the deployment periods for the project. Over the course of the study, there were four "waves" of deployment that lasted approximately two months each.

During each wave, the Saturation Team operated in three experimental areas, spending an equal amount of time in each area.

Figure 1 shows the geographic boundaries of the 24 areas before random assignment. Figure 2 shows the results of random assignment.

Figure 1: Las Vegas Map and Corresponding 24 SPI Hotspot Areas

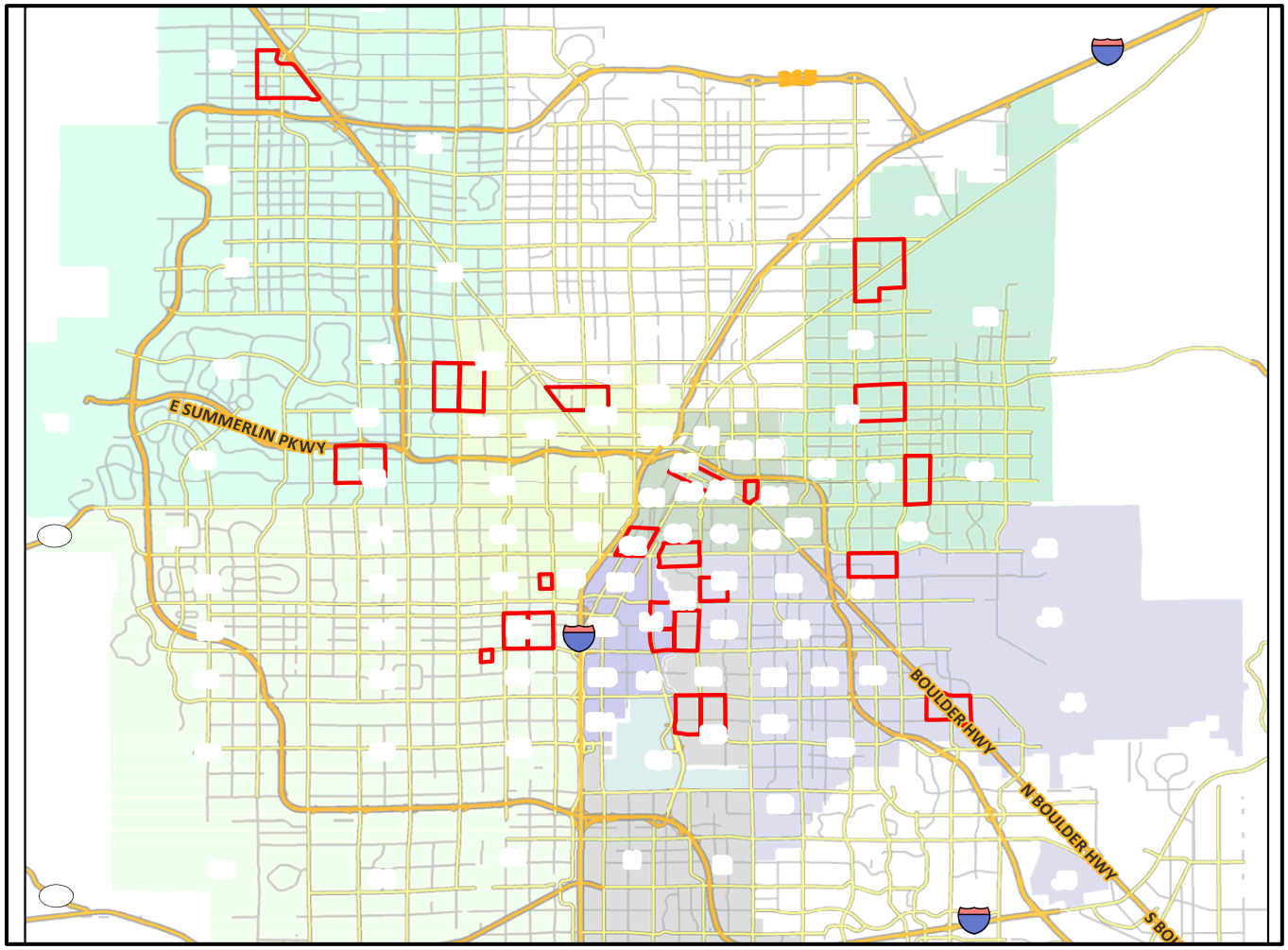
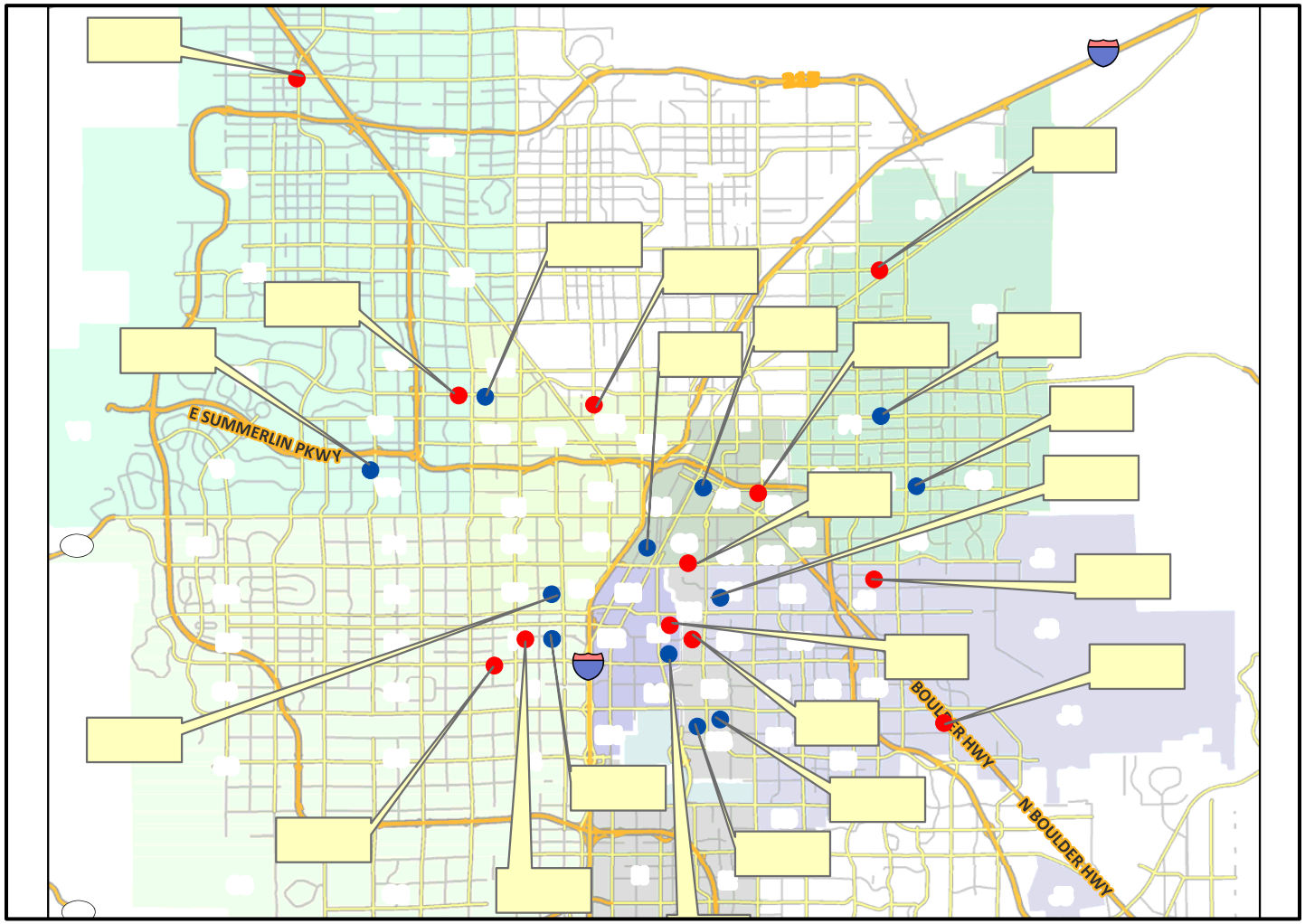


Figure 2: Geographical Distribution of Experimental and Control Area



Data and Variables

Dependent variables, reflecting LVMPD's data collection process, include calls for service (CFS) to police for reported offenses, as well as stops of persons and vehicles by police. CFS records reflect three categories. Weapons CFS include calls to the police about persons with guns or knives, as well as shootings. Disorder CFS include calls to the police about suspicious persons and situations, reckless drivers, property destruction, drugs, fights, and other disturbances. Finally "Compstat" CFS is an LVMPD designation for calls to the police about serious offenses including homicide, robbery, sexual assault, assault and battery, auto theft, and burglary.[1] Stops of persons and stops of vehicles represent incidents in which any LVMPD officer, including those in Area Command patrol and traffic bureaus (as well as Saturation Team personnel), stops a person or a vehicle.

The variable for CFS in calendar year 2011, which LVMPD and the research team used to rank the areas by crime severity (see Table 1), is a combination of weapons, disorder, and Compstat categories. We use this measure as a control variable in the multivariate analysis (see following chapter).

LVMPD compiled data for each area (treatment and control) on a weekly basis. We perform two types of analyses on the CFS. The first compares all treatment and control areas across all weeks of the study period. The second refines the analysis strategy by isolating the four waves of the Saturation Team's deployment. The analysis steps are described in more detail in the chapter that follows.

[1] "Compstat" is a term made popular by the New York City Police Department in the 1990s that describes an accountability and crime management process. LVMPD has a similar process called ACTION (Analysis of Crime Tactics to Impact Our Neighborhoods), but we use "Compstat" in this document since it is the more common term.

The Residential Survey

In addition to the official crime data being used in this project, we also use a residential survey to gather information from residents living in the hotspot areas. The SPI Residential Survey was distributed to 12 hotspot areas immediately following the 60-day saturation period. The survey provides primary outcome measures about police visibility, police effectiveness, and police opinions from residents in 6 areas that received saturation deployment and 6 areas that did not receive saturation deployment (control areas). Table 2 details the survey time periods, dates, and sample sizes.

Table 2. Residential Survey Time Period, Dates, and Sample Size

Project Time Period	Saturation Dates	Survey Dates	Sample Size
Wave 2 Saturation*	May 1 to June 30, 2012	July 1, 2012	
Neighborhood #1 Control Group			*n=82*
Neighborhood #2 Treatment Group			*n=82*
Wave 3 Saturation	July 1 to August 31, 2012	September 1, 2012	
Neighborhood #3 Control Group			*n=79*
Neighborhood #4 Treatment Group			*n=109*
Neighborhood #5 Control Group			*n=81*
Neighborhood #6 Treatment Group			*n=81*
Wave 4 Saturation	September 1 to October 31, 2012	November 2, 2012	
Neighborhood #7 Control Group			*n=81*
Neighborhood #8 Treatment Group			*n=80*
Neighborhood #9 Control Group			*n=77*
Neighborhood #10 Treatment Group			*n=77*
Neighborhood #11 Control Group			*n=77*
Neighborhood #12 Treatment Group			*n=99*

* The Wave 2 residential survey was our pilot test and some surveys took place outside the 1-week post-saturation period

The primary goal of the residential survey is to address several critical features of residential experience such as: 1) descriptions of residential attitudes about policing initiatives; 2) necessary baseline information about neighborhood composition, organization, satisfaction,

and quality of life; 3) insight into relationships among neighborhood composition, LVMPD exposure, and resident opinions about crime; 4) changing perceptions of crime and policing due to LVMPD intervention strategies.

Survey Administration

See Appendix A for the SPI Residential Survey. The survey was administered face-to-face by fully trained survey administrators working with a survey consulting firm, Organized Karma. Organized Karma has experience in strategic planning and executing multiple grassroots outreach strategies and has run state and local campaigns, issue campaigns, and candidate campaigns. Their survey employees have extensive experience in canvass operations and door-to-door surveys. The survey team was deployed to the field in the immediate days following the completion of the 60-day saturation team activity. The survey team was provided with geographic boundaries and street names within each hotspot area. They deployed a team of 4-6 survey administrators to walk among the neighborhoods and homes located within each area. They were provided a target response of 75 surveys per area. The survey was comprised of 25 questions (with 53 individual data points) and took approximately 20 minutes to complete.

Analysis and Evaluation

Analysis of Calls for Service Data

Part 1: Overall Calls for Service

We begin with a brief comparison of mean differences in calls for service between the experimental and control groups over the 36 weeks of the study period. Table 3 displays the mean calls for service per week for weapons offenses, disorder offenses, and Compstat offenses, as well as self-initiated activity.

Table 3. Means per Week, Experimental and Control Areas

	Experimental Group Mean	Control Group Mean	t-value
Disorder CFS	38.50	43.49	2.55*
Compstat CFS	4.17	4.46	1.46
Weapons CFS	0.80	0.53	-4.23***
Person Stops	21.57	27.55	0.94**
Vehicle Stops	33.35	39.24	1.27***

* < .05, ** < .01, *** < .001

Overall, calls for disorder related offenses were lower in the experimental group than in the control group over the course of the study period. Calls for weapons, while statistically higher in the experimental group, averaged less than one per week in both groups. Interestingly enough, self-initiated activity (which reflects the combined activities of the Saturation Team, patrol officers assigned to the Area Command, and patrol officers assigned to the Traffic Bureau) was less in the experimental group. This may reflect a reaction by Area Command and Traffic patrol officers to the presence of the Saturation Team during certain weeks of the study period. Knowing that the Saturation Team was operating – or will operate –

in specific areas, patrol officers assigned to the Area Command or the Traffic Bureau may have been less inclined to initiate activity in those areas. The end result is less self-initiated activity overall. We return to this point in later analyses.

For the moment, we concentrate on the difference between groups regarding calls for disorder offenses. Although the experimental group averaged fewer calls for disorder offenses overall, a closer look at the experimental areas reveals an interesting pattern. Table 4 displays the mean calls for service for disorder in each experimental area for the nine weeks during the study when the Saturation Team was present compared to the 27 weeks when the Saturation Team was not present.

Table 4. Mean Calls for Service for Disorderly Offenses per Week, Experimental Areas Only

Experimental Area	Sat. Team present (9 weeks)	Sat. Team not present (27 weeks)	t-value
Area 2	86.78	79.96	-1.35
Area 4	53.78	48.56	-1.45
Area 6	51.78	43.96	-2.19*
Area 7	68.00	52.22	-3.88***
Area 10	44.11	43.78	-0.10
Area 11	21.89	20.78	-0.47
Area 13	38.33	41.44	1.03
Area 16	36.22	38.22	0.56
Area 18	29.67	23.52	-2.71*
Area 20	18.11	18.74	0.31
Area 21	34.89	39.26	1.70
Area 24	4.78	2.74	-2.36*

* < .05, ** < .01, *** < .001

Only four experimental areas experienced a significant difference in calls for service for disorder – but in all four, the mean was *higher* when the Saturation Team was present in an area.[2] Thus, while disorder calls were less in the experimental group compared to the control, calls for disorder often increased when the Saturation Team was actually present. Although seemingly contradictory, this may be evidence of citizens reacting to the presence of the

[2] Though significant in only four, eight of the 12 experimental areas experienced a higher mean number of calls for service for disorder when the Saturation Team was present.

Saturation Team. When citizens see an increase in officers, they may be more inclined to call for police assistance with minor offenses. We return to this issue in the sections that follow. First, however, we refine the statistical methodology for a more comprehensive look at the four waves of the Saturation Team's deployment.

Part 2: Wave Analysis

While Saturation Team deployments occurred during two-month intervals, LVMPD compiled data from each area, regardless of Saturation Team deployment, on a weekly basis. Some weeks overlapped the beginning and ending dates of the four Wave periods by up to several days. In order to minimize overlap and isolate dependent variable counts as closely as possible within respective Waves, we combined weekly data into date ranges representing Wave Periods as follows:

Wave 1: March 4, 2012 – April 28, 2012 (57 days)

Wave 2: April 29, 2012 – June 30, 2012 (63 days)

Wave 3: July 1, 2012 – September 1, 2012 (62 days)

Wave 4: September 2, 2012 – October 27, 2012 (55 days)

We then standardized the values on all dependent variables to reflect adjustments for the variations in numbers of days in each period, using the multipliers 61/57, 61/63, 61/62, 61/55.

The design employs a longitudinal, repeated-measures framework in which the unit-of-analysis is "Area-Wave," such that each of N=96 observations represents one of 24 geographic areas in one of four temporal Wave periods. Thus, independent variables include both the

Group designation (experimental/treatment areas versus control areas) and a Treatment designation (twelve Saturation Team deployments to experimental areas, versus 84 non-deployments – the latter comprised of 36 non-deployments to experimental areas and 48 non-deployments to control areas).

First, we examine simple bivariate correlations to determine the extent to which experimental group designation, and/or Saturation Team operation, was associated with any of the dependent measures. Next, we consider group means for experimental and control groups, as well for areas receiving treatment and the same areas when not receiving treatment. Finally, step-wise ordinary least squares regression provides an indication of the associations between treatment and CFS outcomes when controlling for the previous year's CFS, as well as person/vehicle stop activity.

Wave Analysis: Results

First, consider the descriptive statistics in Tables 5 through 8, showing average monthly CFS in 2011, CFS figures for weapons, disorder, and Compstat, as well as numbers of person and vehicle stops in each wave for the designated experimental and control groups.

Table 5. Wave Period 1 Summary for Experimental and Control Areas (March – April 2012)

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
5	Control Area	132	5	473	47	546	808
6	*Sat. Team deployed*	*127*	*14*	*451*	*55*	*189*	*330*
9	Control Area	113	9	453	47	127	502
10	*Sat. Team deployed*	*113*	*9*	*376*	*50*	*104*	*238*
15	Control Area	95	2	270	28	83	240
16	*Sat. Team deployed*	*90*	*7*	*318*	*39*	*262*	*307*

Table 6. Wave Period 2 Summary for Experimental and Control Areas (May – June 2012)

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
1	Control Area	366	6	1279	77	1053	443
2	*Sat. Team deployed*	*261*	*9*	*756*	*66*	*659*	*689*
3	Control Area	154	5	410	33	270	405
4	*Sat. Team deployed*	*151*	*5*	*469*	*22*	*354*	*354*
19	Control Area	56	3	142	22	47	129
20	*Sat. Team deployed*	*56*	*3*	*158*	*15*	*152*	*156*

Table 7. Wave Period 3 Summary for Experimental and Control Areas (July - August 2012)

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
12	Control Area	107	4	341	66	91	334
11	*Sat. Team deployed*	*110*	*6*	*194*	*16*	*35*	*136*
14	Control Area	96	5	310	52	97	226
13	*Sat. Team deployed*	*100*	*7*	*339*	*50*	*225*	*386*
17	Control Area	74	8	294	33	79	416
18	*Sat. Team deployed*	*68*	*7*	*263*	*35*	*109*	*293*

Table 8. Wave Period 4 Summary for Experimental and Control Areas (September – October 2012)

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
8	Control Area	113	2	271	48	118	247
7	*Sat. Team deployed*	*119*	*7*	*610*	*64*	*451*	*613*
22	Control Area	42	7	136	22	32	128
21	*Sat. Team deployed*	*52*	*8*	*305*	*30*	*146*	*498*
23	Control Area	30	1	98	13	35	50
24	*Sat. Team deployed*	*12*	*0*	*39*	*1*	*10*	*82*

Calls for service do not appear to be noticeably or systematically greater or lower in areas receiving Saturation Team operation, compared with their respective control areas. Similar to the earlier analyses, person and vehicle stops, which include stops by Saturation Team personnel, do not always appear to be greater in experimental areas. As discussed above, one possibility is that when Saturation Team operations are underway in a

neighborhood, activities by Area Command and Traffic bureaus decrease. In order to further illustrate the differences in both CFS and person/vehicle stop activity across Saturation Team operations, Tables 9 through 12 show the temporal changes in the dependent measures across waves before, during, and after treatment for the experimental areas only (the first and fourth of these tables can only show subsequent and prior comparisons, respectively – waves 1 and 2; waves 3 and 4 – while the second and third tables can show both prior and subsequent comparisons – waves 1, 2, and 3; waves 2, 3, and 4).

While no clearly deterministic pattern emerges regarding either CFS or person/vehicle stops, experimental areas do appear to experience an increase in person/vehicle stop activity during periods of SAT team deployment in Waves 1 and 3. However, enough exceptions appear in Waves 2 and 4 to confirm the descriptive findings for the experimental/control comparisons above, that SAT team deployment does not show a clear, obvious association with the outcome measures. The next sections will explore inferential analyses designed to further assess possible connections.

Table 9. Wave Period 1: Treatment and Subsequent for Experimental Areas Only

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
6	*Wave1 – Sat. Team deployed*	*127*	*14*	*451*	*55*	*189*	*330*
6	During Wave 2	127	14	432	67	98	225
10	*Wave 1 - Sat. Team deployed*	*113*	*9*	*376*	*50*	*104*	*238*
10	During Wave 2	113	15	367	50	65	145
16	*Wave 1 - Sat. Team deployed*	*90*	*7*	*318*	*39*	*262*	*307*
16	During Wave 2	90	5	304	23	203	194

Table 10. Wave Period 2: Prior, Treatment, and Subsequent for Experimental Areas Only

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
2	During Wave 1	261	7	754	71	550	840
2	*Wave 2 - Sat. Team deployed*	*261*	*9*	*756*	*66*	*659*	*689*
2	During Wave 3	261	9	673	61	460	587
4	During Wave 1	151	12	405	43	353	402
4	*Wave 2 - Sat. Team deployed*	*151*	*5*	*469*	*22*	*354*	*354*
4	During Wave 3	151	5	401	34	266	274
20	During Wave 1	56	2	163	9	116	137
20	*Wave 2 - Sat. Team deployed*	*56*	*3*	*158*	*15*	*152*	*156*
20	During Wave 3	56	6	174	12	169	144

Table 11. Wave Periods 3: Prior, Treatment, and Subsequent for Experimental Areas Only

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
11	During Wave 2	110	3	184	22	11	37
11	*Wave 3 - Sat. Team deployed*	*110*	*6*	*194*	*16*	*35*	*136*
11	During Wave 4	110	3	170	23	26	55
13	During Wave 2	100	10	339	49	198	268
13	*Wave 3 - Sat. Team deployed*	*100*	*7*	*339*	*50*	*225*	*386*
13	During Wave 4	100	11	357	53	146	271
18	During Wave 2	68	2	222	29	49	152
18	*Wave 3 - Sat. Team deployed*	*68*	*7*	*263*	*35*	*109*	*293*
18	During Wave 4	68	7	211	27	49	189

Table 12. Waves Periods 4: Prior and Treatment for Experimental Areas Only

Area	Treatment	Avg. Monthly CFS in 2011	Weapons CFS	Disorder CFS	Compstat CFS	Person Stops	Vehicle Stops
7	During Wave 3	119	5	529	50	412	439
7	*Wave 4 - Sat. Team deployed*	*119*	*7*	*610*	*64*	*451*	*613*
21	During Wave 3	52	5	386	36	117	434
21	*Wave 4 - Sat. Team deployed*	*52*	*8*	*305*	*30*	*146*	*498*
24	During Wave 3	12	0	20	3	14	47
24	*Wave 4 - Sat. Team deployed*	*12*	*0*	*39*	*1*	*10*	*82*

Bivariate Analysis: Correlations

Tables 13 and 14 show bivariate Pearson correlation coefficients and indicators of significance for each of the five dependent measures, as well as variables for the average monthly calls-for-service in 2011, and two measures of treatment. In Table 13, the Group variable distinguishes the twelve experimental groups from the twelve control groups, regardless of the wave period. As the unit-of-analysis is "Area-Wave" and contains values for each of 24 areas in each of 4 waves (N=96), experimental groups are counted as such even when not receiving treatment. In contrast, the Treatment variable contains a value of 1 only when the twelve Area-Wave observations that represent the twelve areas in the waves during which SAT teams operated there. Thus, Treatment equals 1 for these twelve observations and equals 0 in the other 84 observations.

The only independent measure (Group, Treatment) to be correlated with an outcome measure was the positive association between Group and Weapons CFS. Similar to earlier analyses, experimental groups had, on average, higher calls-for-service for weapons. However, the connection between being actively under Saturation Team deployment and weapons CFS was not significant. Possibly, having had Saturation Team presence increased the likelihood of residents' making such reports after deployment periods ended.

Notably, neither being an experimental group area, nor being under active Saturation Team deployment, was related to person and vehicle stop activity. However, the level of person and vehicle stop activity was strongly related to disorder and Compstat CFS. Areas with more person and vehicle stops had more calls-for-service for disorder and serious crime. Additionally, prior year's CFS was related to both CFS and person/vehicle stops, a confirmation

of the measure's validity between the prior year (2011) and the year of experimental data collection (2012.)

Table 13. Pearson Correlation Coefficients. Twenty-four areas across four wave periods (N=96)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) CFS 2011	1.00	.31**	.94***	.73***	.87***	.55***	-.06	.03
(2) Weapons CFS		1.00	.35***	.49***	.16	.18	.29**	.11
(3) Disorder CFS			1.00	.78***	.91***	.65***	-.09	.01
(4) Compstat CFS				1.00	.62***	.67***	-.07	-.02
(5) Person Stops					1.00	.61***	-.09	.01
(6) Vehicle Stops						1.00	-.12	.05
(7) Group							1.00	.37***
(8) Treatment								1.00

* < .05, ** < .01, *** < .001

In Table 14, areas are only counted in the waves during which they either received treatment or acted as the corresponding control area for an area receiving treatment, thus reflecting only the 24 area units depicted by Tables 9 through 12 (above). In this analysis (N=24), Group and Treatment must necessarily have the same values and are thus redundant, so only Treatment is displayed.

The results are identical to the full dataset, with the exception that the connection between group (same as treatment in this model) and weapons CFS is lost.

Table 14. Pearson Correlation Coefficients. Twenty-four areas, in assigned Wave periods (N=24)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) CFS 2011	1.00	.29	.94***	.70***	.90***	.52**	.06
(2) Weapons CFS		1.00	.38†	.49*	.21	.45*	.34
(3) Disorder CFS			1.00	.77***	.93***	.63***	-.03
(4) Compstat CFS				1.00	.63**	.63**	-.09
(5) Person Stops					1.00	.66***	.02
(6) Vehicle Stops						1.00	.03
(7) Treatment							1.00

* < .05, ** < .01, *** < .001, † < .08

Comparisons of Means: All Areas in All Waves

Table 15 shows mean differences in calls-for-service, as well as person and vehicle stops, between the twelve experimental areas and the twelve control areas (twenty-four areas across four waves, N=96), with associated t-tests.

The dataset used in this analysis is the same as the used to generate the first set of Pearson correlations in Table 13, reflecting the comparison between experimental areas 6, 10, 16, 2, 4, 20, 11, 13, 18, 7, 21, 24 and control areas 5, 9, 15, 1, 3, 19, 12, 14, 17, 8, 22, 23.

In confirmation of the Pearson correlations, only weapons CFS showed a significant association with experimental group designation. No other CFS types, nor person/vehicle stops, were related to being an experimental area.

Table 15. Group Means and t-tests for Experimental and Control Areas Across all Waves (N=96)

	Experimental Areas Mean (Std.)	Control Areas Mean (Std.)	t-value
Weapons CFS	6.8 (3.9)	4.7 (3.3)	-2.93**
Disorder CFS	338.2 (175.7)	381.7 (300.9)	0.87
Compstat CFS	36.4 (20.0)	39.3 (18.9)	0.74
Person Stops	188.5 (158.7)	240.7 (348.5)	0.94
Vehicle Stops	291.6 (189.4)	342.3 (201.9)	1.27

* < .05, ** < .01, *** < .001

Comparisons of Means: Areas in Assigned Waves

Table 16 shows mean differences in calls-for-service, as well as person and vehicle stops, between the twelve experimental areas and twelve control areas, with each area counted *only* in the wave period during which it was either receiving treatment (i.e., current saturation team operations) or acting as a corresponding control area to an area receiving treatment (three experimental areas and three control areas in each wave, across four waves, N=24), with

associated t-tests. The dataset used in this analysis is the same as the used to generate the second set of Pearson correlations in Table 14 above, reflecting the comparison between experimental areas [areas 6, 10, 16 during Wave 1; areas 2, 4, 20 during Wave 2; areas 11, 13, 18 during Wave 3; areas 7, 21, 24 during Wave 4] and control areas [areas 5, 9, 15 during Wave 1; areas 1, 3, 19 during Wave 2; areas 12, 14, 17 during Wave 3; areas 8, 22, 23 during Wave 4].

Again, no dependent measure was associated with receipt of Saturation Team deployment.

Table 16. Group Means and t-tests for Experimental and Control Areas, Across Assigned Waves (N=24)

	Experimental Areas During Treatment Mean (Std.)	Assigned Control Areas Mean (Std.)	t-value
Weapons CFS	4.7 (2.5)	6.8 (3.4)	-1.71
Disorder CFS	373.1 (309.8)	356.5 (196.7)	0.16
Compstat CFS	40.7 (18.9)	36.9 (20.7)	0.46
Person Stops	214.8 (300.2)	224.7 (186.0)	-0.10
Vehicle Stops	327.3 (206.5)	340.2 (185.7)	-0.16

* < .05, ** < .01, *** < .001

Comparisons of Means: Experimental Areas, Across Treatment Wave Periods

Table 17 shows mean differences in calls-for-service, as well as person and vehicle stops, between treatment (i.e., Saturation Team operations) and non-treatment periods among the twelve experimental areas (twelve experimental areas, across four waves, N=48), with associated t-tests. This comparison is thus between the twelve experimental areas during treatment [areas 6, 10, 16 during Wave 1; areas 2, 4, 20 during Wave 2; areas 11, 13, 18 during Wave 3; areas 7, 21, 24 during Wave 4] and the same twelve experimental areas when not receiving treatment [areas 2, 4, 20, 11, 13, 18, 7, 21, 24 during Wave 1; areas 6, 10, 16, 11, 13,

18, 7, 21, 24 during Wave 2; areas 6, 10, 16, 2, 4, 20, 7, 21, 24 during Wave 3; areas 6, 10, 16, 2, 4, 20, 11, 13, 18 during Wave 4).

As with the comparison between experimental and control areas during their designated treatment/control wave periods, among experimental areas alone, Saturation Team deployment does not appear to be associated with any of the outcome measures.

Table 17. Group Means and t-tests for Experimental Areas, During and Not During Treatment (N=48)

	Experimental Areas During Treatment Mean (Std.)	Experimental Areas Not During Treatment Mean (Std.)	t-value
Weapons CFS	6.8 (4.0)	6.8 (3.4)	0.00
Disorder CFS	332.1 (170.7)	356.5 (196.7)	-.0.38
Compstat CFS	36.3 (19.9)	36.9 (20.7)	-0.10
Person Stops	176.4 (149.5)	224.7 (186.0)	-0.81
Vehicle Stops	275.5 (190.5)	340.2 (185.7)	-1.03

* < .05, ** < .01, *** < .001

Multivariate Analysis

Tables 18 through 20 display the results of step-wise ordinary least squares regression models for the dataset of all areas and wave periods (N=96). Each table considers one of the CFS variables (Weapons, Disorder, and Compstat). The main question answered by the regression is whether the lack of bivariate association between the CFS measures and either Group or Treatment variables found in the Pearson correlations and t-tests above can be explained by controlling for (1) prior variation in CFS, using the 2011 figures, and (2) differences in numbers of person stops and vehicle stops.

Table 18. Step-wise Ordinary Least Squares (OLS) Regression for Weapons Calls-for-Service (CFS). Parameter estimates (B) and significance levels.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	4.7***	2.7***	1.5	5.61***	3.84***	2.57**
Group (Experimental = 1) (Control = 0)	2.1**	2.3**	2.3**	-----	-----	-----
Treatment (Sat. Team deployed = 1) (Sat. Team not deployed = 0)	-----	-----	-----	1.22	1.32	1.45
CFS in 2011	-----	.02***	.03***	-----	.02**	.04***
Person Stops	-----	-----	-.01*	-----	-----	-.01*
Vehicle Stops	-----	-----	.00	-----	-----	.00
R^2	.08	.18	.20	.00	.09	.13
N	96	96	96	96	96	96

* < .05, ** < .01, *** < .001

The results for Weapons CFS confirms earlier findings that it is an outcome measure associated with experimental group status, and this relationship does not diminish after controlling for the prior year's CFS. The fact that treatment status (twelve "area-wave" observations as treatment versus 84 as non-treatment) was not likewise related is still puzzling, but as mentioned above regarding the findings in Table 13, having had Saturation Team presence may have increased the likelihood of residents' making such reports after deployment periods ended.

Table 19. Step-wise Ordinary Least Squares (OLS) Regression for Disorder Calls-for-Service (CFS). Parameter estimates (B) and significance levels.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	381.8***	17.9	25.9	360.5***	9.2	26.0
Group (Experimental = 1) (Control = 0)	-43.6	-12.1	.29	-----	-----	-----
Treatment (Sat. Team deployed = 1) (Sat. Team not deployed = 0)	-----	-----	-----	-3.98	14.1	.29
CFS in 2011	-----	3.2***	2.0***	-----	3.2***	2.05***
Person Stops	-----	-----	.28***	-----	-----	.27***
Vehicle Stops	-----	-----	.15***	-----	-----	.15***
R^2	.01	.89	.92	.01	.89	.93
N	96	96	96	96	96	96

* < .05, ** < .01, *** < .001

Multivariate results for disorder CFS confirm previous findings, as well. Prior year's overall CFS is strongly associated with current disorder CFS, and person/vehicle stops are likewise still associated with disorder CFS. However, controlling for the continuity in CFS rates (2011) and the level of person/vehicle stop activity does not help uncover any relationship between treatment (either experimental group status or active Saturation Team deployment) and disorder CFS.

Table 20. Step-wise Ordinary Least Squares (OLS) Regression for Compstat Calls-for-Service (CFS). Parameter estimates (B) and significance levels.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	39.3***	17.2***	6.7*	38.0***	16.62***	6.9*
Group (Experimental = 1) (Control = 0)	-2.9	-1.0	.17	-----	-----	-----
Treatment (Sat. Team deployed = 1) (Sat. Team not deployed = 0)	-----	-----	-----	-1.09	.00	-.92
CFS in 2011	-----	1.9***	.20***	-----	.19***	.19***
Person Stops	-----	-----	.02*	-----	-----	-.02*
Vehicle Stops	-----	-----	.04***	-----	-----	.04***
R^2	.01	.52	.64	.01	.52	.64
N	96	96	96	96	96	96

* < .05, ** < .01, *** < .001

Results for Compstat CFS mirror the findings for weapons and disorder. The control measures are associated with the current disorder CFS, but including them in the regression models does not help reveal any relationship between experimental treatment and CFS outcomes.

Calls for Service - Summary

Overall, analyses indicated that few measures of calls for service appeared to be related to Saturation Team activity. Initial analyses suggested fewer calls for disorderly offenses in the experimental group, but that disorder calls may have increased when the Saturation Team was actually present in an area. Furthermore, the relationship between the Saturation Team and disorder was not as evident in the wave analyses. The wave analyses did, however, confirm a modest positive association between weapons CFS and being an experimental area.

Additionally, Saturation Team activity appears generally unrelated to *overall* levels person and vehicle stops, however the wave analyses show that some waves in some areas indeed appear to have noticeably increased stop activity during deployment. The data also reveal a strong connection between person/vehicle stops and CFS activity. Neighborhoods exposed to greater numbers of person and vehicle stops also generate more calls-for-service.

That Saturation Team activities may result in more CFS may be an artifact of using calls for service data. Citizens who sense a greater level of police presence may be more inclined to call police believing that officers can respond quickly. This potential "backfire" effect complicates interpretations of calls for service data. Whether a connection between the Saturation Team and CFS is due to changes in actual crime, or to the influence of police presence on residents' willingness to report offenses, is uncertain.

Residential Survey Data

The data from the residential survey allow us to investigate the difference in residential reports of police activity among those living in treatment areas receiving Saturation Team activity and those living in control areas not receiving saturation activity.

We begin by providing descriptive statistics of police visibility by experimental and control areas. Survey data indicate that residents reported more police visibility in treatment areas, or those receiving Saturation Team activities. These questions were asked in the immediate days following the 60-day saturation period and residents were asked to recall the past 60 days when answering the questions.

Residents in treatment areas were much more likely to report seeing police officers in their neighborhood every single day compared to residents in control areas. According to Figure 3, over 58% of those living in treatment areas reported seeing police officers "every single day" compared to only 38% of those living in areas that did not receive saturation activity.

Figure 3: Residential Reports of Police Officer Visibility by Control and Treatment Areas

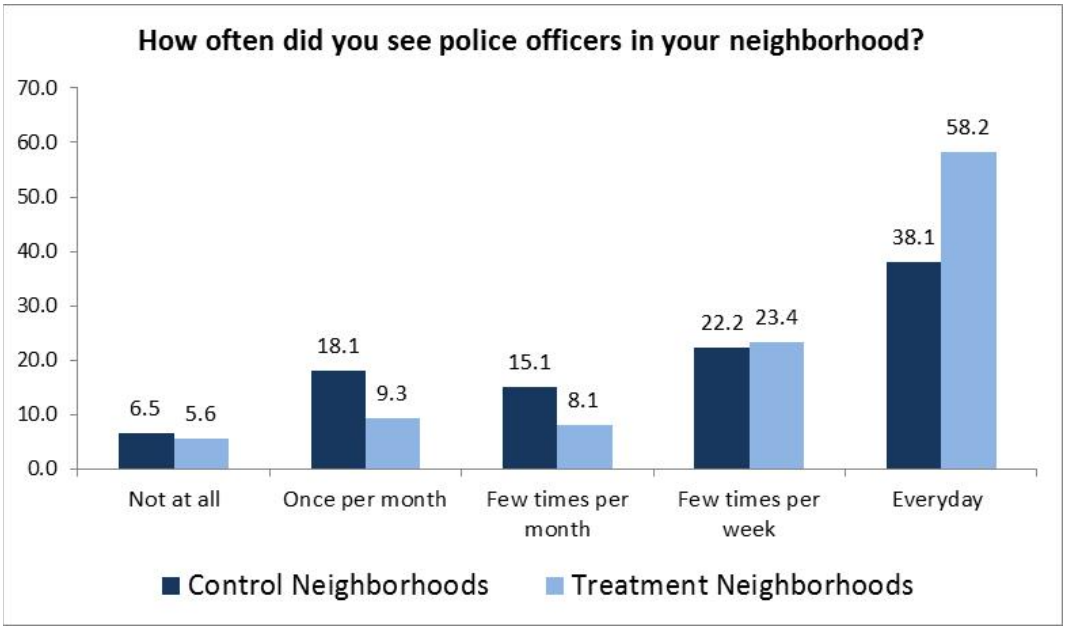


Figure 4 displays the differences between control and treatment areas on residential reports of seeing the police talking to people in the neighborhood. Slightly more than 17% of residents in treatment areas reported seeing the police talking to people every day compared to 14% of residents in control areas. Figure 5 displays the differences in residential reports of seeing police officers searching people in the neighborhood. Residents living in areas that received Saturation Team activity were more likely to report police officer searches. Over 16% of residents in treatment areas witnessed police searches in their neighborhood every day

during the saturation period, while 9% of those in control areas reported seeing police searches.

Figure 4: Residential Reports of Police Officers Talking to People in Neighborhood by Control and Treatment Areas

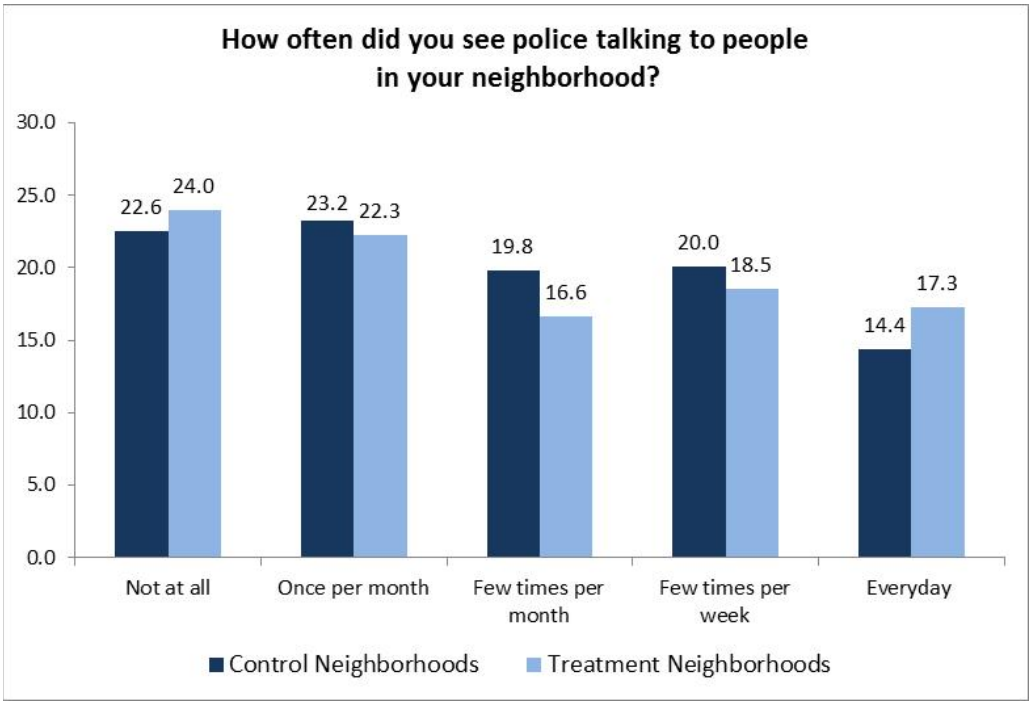


Figure 5: Residential Reports of Police Officers Searching People in Neighborhood by Control and Treatment Areas

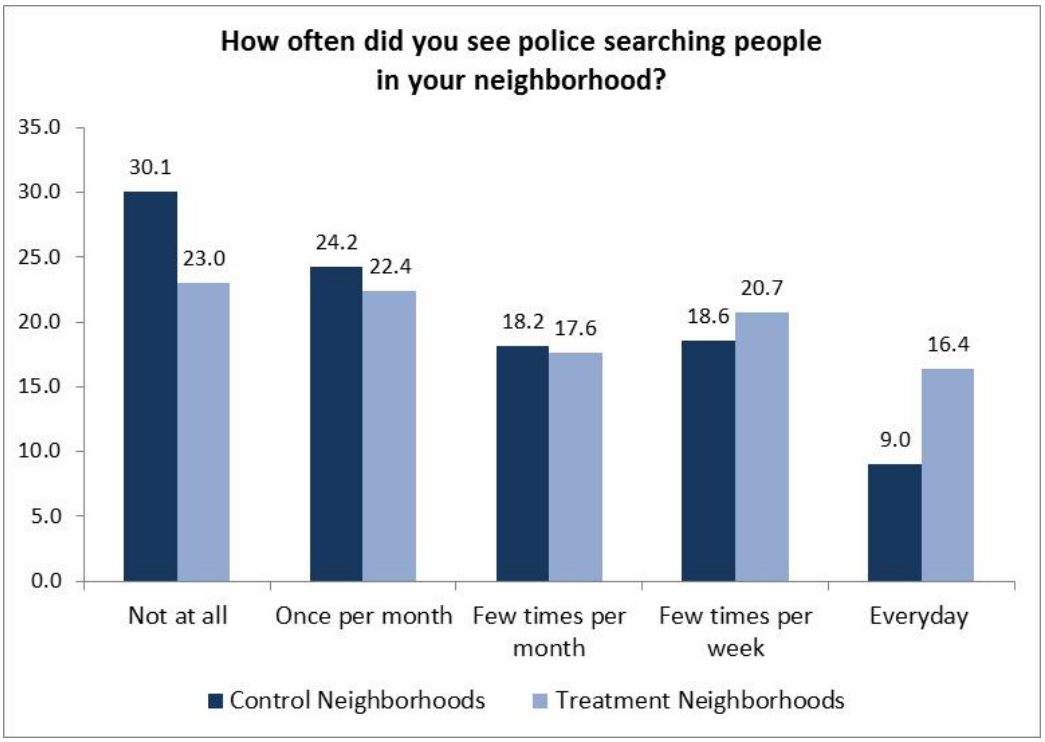
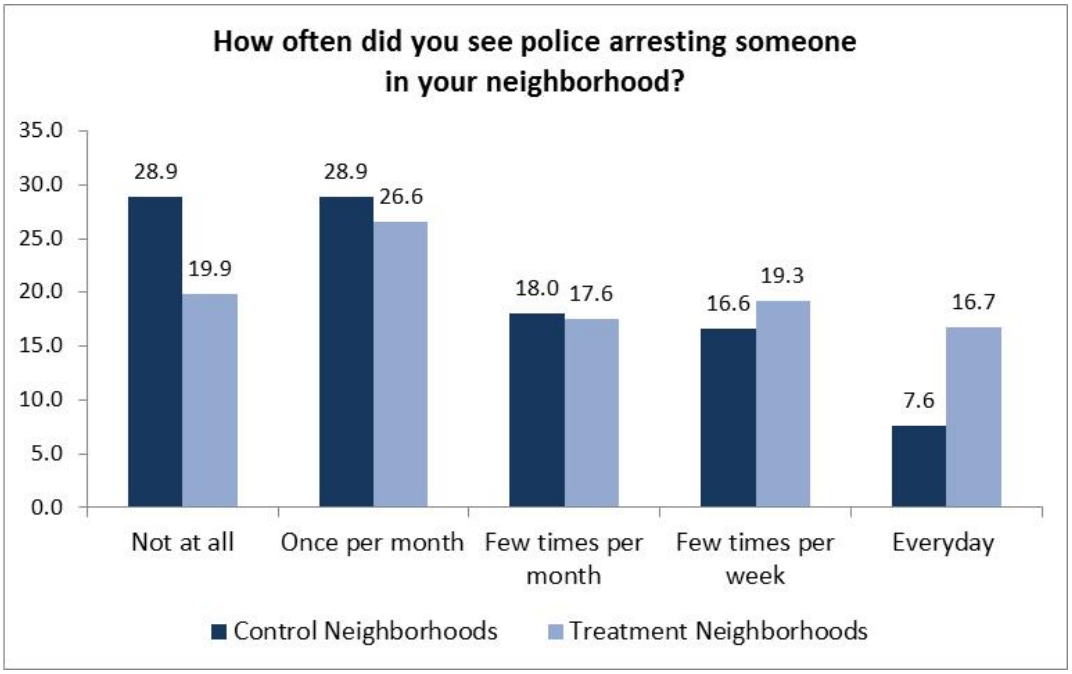


Figure 6: Residential Reports of Police Officers Arresting People in Neighborhood by Control and Treatment Areas



In line with similar descriptive results, survey data also show that residents living in neighborhoods receiving Saturation Team treatment were also more likely to report seeing the police arresting people in their neighborhood. According to Figure 6, nearly 17% of residents in treatment areas reported seeing the police arresting someone in their neighborhood every day during the 60-day saturation period compared to only 7.6% of residents in control neighborhoods.

Figure 7: Residential Reports of Calling the Police in the Past 60 Days by Control and Treatment Areas

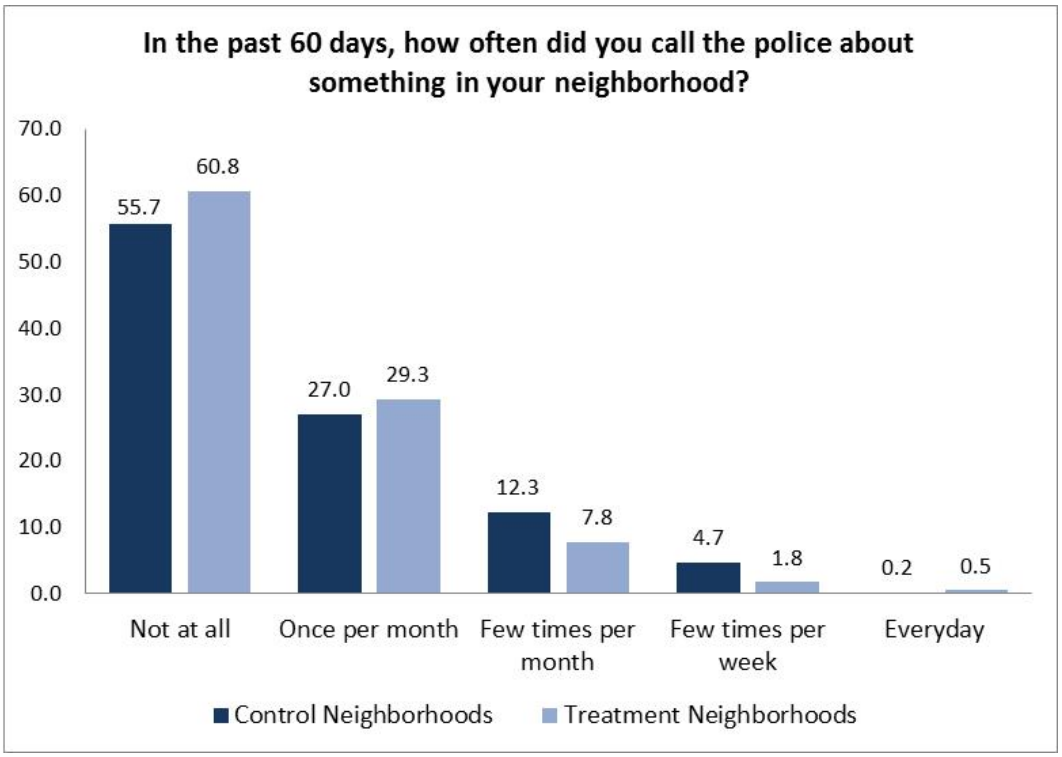


Figure 7 describes the difference in calls made to the police by control and treatments areas. According to these data, calls to the police made during the 60-day saturation period were more likely to occur in control neighborhoods than in treatment neighborhoods. We show that 17.2% of residents in control areas made a call to the police at least a few times per month (combining few times per month, few times per week, and everyday) compared to only 10.1% of residents living in areas receiving saturation treatment. This finding is somewhat contradictory to the CFS analyses reported in the above sections that showed few statistically significant differences between calls and Saturation Team activity.

Table 21 highlights residential opinions about Las Vegas Metropolitan Police by control and treatment areas. The survey asked residents a series of questions about respect, honesty, pride, support, and fairness of Metro police. The results of these questions shown in Table 21

offer an interesting pattern of opinions. Although residents in both groups were generally very positive in their opinions of police, residents living in treatment areas were less likely than those in the control areas to report the most positive sentiments about LVMPD. When asked to agree or disagree with "I have a lot of respect for Metro police," 37% of residents in control areas "strongly agreed" compared to 23% of those in treatment areas. This pattern continues with other survey items. Over 26% of residents in control areas "strongly agree" that "Metro police officers are honest" while 14% of residents in treatment areas "strongly agree." When asked about the level of pride one feels for Metro police officers, 26% of residents living in control areas "strongly agree" that the feel proud compared to 14% of those in treatments areas. Almost 32% of residents living in control areas "strongly agree" that they are "very supportive of Metro police officers" compared to 21% of those living in treatment areas. Finally, 26% of residents living in control areas "strongly agree" that Metro police officers treat people fairly, compared to 13% of those living in treatment areas. These data may provide further evidence of the "backfire" effect: an intense increase in police presence and visibility may negatively impact opinions of police.

Table 21. Residential Views on Las Vegas Metropolitan Police by Control and Treatment Areas (data represents percent of residents in agreement or disagreement for each item).

	Control	Treatment
I have a lot of respect for Metro		
Strongly Agree	37.07	22.85
Agree	47.66	54.72
Disagree	11.61	15.51
Strongly Disagree	3.67	6.92
Metro officers are honest		
Strongly Agree	26.30	14.13
Agree	46.96	57.85
Disagree	20.87	20.18
Strongly Disagree	5.87	7.85
I feel proud of Metro officers		
Strongly Agree	26.08	13.76
Agree	51.13	57.20
Disagree	17.25	21.94
Strongly Disagree	5.54	7.10
I am very supportive of Metro Officers		
Strongly Agree	31.91	21.04
Agree	50.61	58.75
Disagree	12.40	15.63
Strongly Disagree	5.08	4.58
Metro police treat people fairly		
Strongly Agree	25.74	13.54
Agree	41.35	45.41
Disagree	22.78	27.95
Strongly Disagree	10.13	13.10

Table 22 displays data on the perceived level of crime in control and treatment areas. We highlight five items of crime perception, including an overall perceived rate of crime in the neighborhood. Over 17% of residents living in control areas perceive crime to be a "very big problem" in their neighborhood, compared to 27% of residents in treatment areas. Control and treatment areas perceive similar levels of robberies in their neighborhoods with 18% perceiving robbery "very often" or "all the time" in control areas compared to 21% in treatment areas. For perceptions of drug activity, residents in treatment areas perceive much higher levels of drug activity than residents in control areas: almost 45% of residents in treatment areas perceive drug activity "very often" or "all the time" compared to 33% in control areas. Residents in treatment areas also perceive disorderly behavior to be more problematic in their neighborhoods than those living in control areas. Finally, residential perceptions of car break-ins indicate that residents in control groups perceive greater levels of car break-ins (15% either very often or all the time) compared to only 10.7% of residents in treatment areas. In summary, Table 22 demonstrates that the experimental group perceives some crimes to be a larger problem in their neighborhood. With the exception of auto break-ins, the experimental group reported higher levels of overall crime, robbery, drug activity, and disorderly behavior. As with the survey results concerning opinions of police, these data raise interesting questions about the impact of increased police presence on citizen perceptions.

Table 22. Residential Perceptions of Crime by Control and Treatment Areas (data represents percent of residential perception of each item).

	Control	Treatment
Perceived crime rate in the neighborhood		
Very Big Problem	17.43	27.33
Somewhat of a problem	41.28	38.46
Not much of a problem	24.45	24.09
No problem at all	16.83	10.12
Perceived level of robberies		
Not very often	53.74	50.52
Somehwat often	28.08	27.95
Very often	10.10	13.04
All the time	8.08	8.49
Perceived level of drug activity		
Not very often	44.74	39.29
Somehwat often	21.86	15.59
Very often	14.57	18.50
All the time	18.83	26.61
Perceived level of Disorderly behavior		
Not very often	50.92	40.90
Somehwat often	23.63	29.86
Very often	14.05	19.22
All the time	11.41	10.02
Perceived level of Car Break-Ins		
Not very often	60.04	57.86
Somehwat often	24.95	31.45
Very often	9.33	7.97
All the time	5.68	2.73

Integration and Sustainability

In February 2014, the LVMPD made an organizational decision to move the Saturation Team from a valley wide unit to the local level. As a result, officers assigned to the Saturation Team now operate within Area Commands. This decision was motivated primarily by financial concerns. LVMPD is facing staffing shortages, and the agency has been forced to reassign officers from a variety of specialized posts to help support patrol units in the Area Commands.

Although the Saturation Team no longer operates at the valley wide level, the agency recognizes the potential benefits of proactive order maintenance units. Some Area Commands have developed their own versions of the unit that are tailored to the specific needs of the community. The Downtown Area Command, for example, is considering major foot patrol program directed at disorderly locations within its boundaries. This program, which draws on some of the experiences of Saturation Team officers who have been assigned to the Area, acknowledges the potential of increased police visibility at problem-prone locations. The program also recognizes the importance of gaining community support for police tactics in specific communities. We return to this point in our concluding remarks.

Summary and Conclusions

Summary

This document reports on the activities of the LVMPD Saturation Team. The Saturation Team is a proactive unit with a function that can best be described as a combination of directed patrol and order maintenance policing. The Saturation Team's main goal is to reduce crime in at-risk neighborhoods. As such, many of the officers' activities involve managing disorder and minor offenses. During the course of the project, Saturation Team officers were extremely active, contributing 4,021 citations, 1,824 misdemeanor arrests, 77 gross misdemeanor arrests, 647 felony arrests, and 22 firearm confiscations.

An experimental design was used to study the overall impact of the Saturation Team. Twenty-four hot spots around the Las Vegas Valley were randomly assigned into treatment and control. Each of the 12 treatment group areas received a 60-day Saturation Team deployment. The evaluation first compares calls for service in the experimental and control groups. The study then uses survey data to compare experimental and control groups in terms of citizen perceptions of crime and opinions of police.

The analyses of calls for service suggested few differences between the treatment and control areas. While there are some indications that the Saturation Team may have had an impact on calls for disorderly offenses, these results were not consistent across all analyses. Furthermore, some analyses suggested that the Saturation Team was associated with increased

calls to police. The lack of consistent results may reflect the limitations of calls for service data. Although calls for service could indicate a measure of actual criminal activity, they could also indicate citizens' willingness to report criminal activity. Residents who see increased police presence may be more inclined to call the police.

Indeed, one of the more noteworthy findings of this study is that citizens in the experimental areas perceived greater police presence than citizens in the control areas. Survey results clearly demonstrate that residents in the treatment areas reported greater police visibility and were more likely to report seeing police interacting with citizens. Also important, while residents in both the treatment and the control areas generally reported high opinions of police, the opinions of residents in the treatment areas were somewhat lower than those in the control areas. Finally, citizens in the treatment areas were slightly more likely to perceive higher levels of criminal activity than their counterparts in the control areas.

Conclusions

We highlight several findings from this study of LVMPD's Saturation Team: 1) The Saturation Team appears to increase citizen perceptions of police presence; 2) In some instances, the Saturation Team's presence may increase calls for service in an area; 3) In areas where the Saturation Team operated, citizens perceived slightly elevated levels of criminal activity; 4) In areas where the Saturation Team operated, citizens reported slightly lower opinions of police.

Taken together, these findings lend some support for the "backfire" effect described by Weisburd et al. (2011). The Saturation Team clearly increased perceived police presence, but if

citizens in the experimental areas lacked context regarding their activities, the concentrated surge in order maintenance may have resulted in 1) citizens calling the police more frequently in response to police presence, or 2) citizens believing that crime and disorder had actually increased. Furthermore, even with officers exercising proper discretion, residents may develop negative perceptions of police when they are unaware of the purpose of the officers' tactics. This may be especially the case when citizens see unfamiliar officers searching and arresting their fellow residents.

That saturation efforts help to increase perceived police presence is a positive outcome of the project. New opportunities have emerged now that Saturation Team officers have been deployed to Area Commands. Officers and residents will gain more familiarity with each other, and this will allow officers to communicate the purpose of proactive tactics to citizens. With citizens more comfortable with officers and more understanding of directed patrol / order maintenance practices, the "backfire" effect should be minimized.

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Appendices

Appendix A. SPI Residential Survey.

LET ME ASK YOU SOME QUESTIONS ABOUT YOUR NEIGHBORHOOD.

[QUALITY OF LIFE / NEIGHBORHOOD]

1. Please rate the overall quality of life in your neighborhood today.
   1- Very good
   2- Fairly good
   3- Not very good
   4- Not at all good

2. If you could live where you want, would you…
   1 – Stay at your current address
   2 – Move from your current address to another Las Vegas Valley location
   3 – Move to another location in Nevada
   4 – Move outside of Nevada

[CRIME and POLICE]

3. **IN THE PAST 7 DAYS**, on how many of those days would you say that you saw police officers, in any capacity, in your neighborhood?
   1- 7 days
   2- 6 days
   3- 5 days
   4- 4 days
   5- 3 days
   6- 2 days
   7- 1 day
   8- Never

4. **IN THE PAST 7 DAYS**, how many times have you called the police to report any type of problem or crime in your neighborhood?
    1- Never
    2- 1 time
    3- 2 times
    4- 3 or more times

5. Generally speaking, how would you rate crime as a problem in your neighborhood?
    1- Very Big Problem
    2- Somewhat of a problem
    3- Not much of a problem
    4- No problem at all

6. Please indicate how much of each type of activity, as far as you can tell, seems to be taking place in your neighborhood.

	Not Very Often	Somewhat Often	Very Often	All the Time
Vandalism, such as, graffiti, slashing tires)				
Disorderly Behavior, such as rowdy, unsupervised teens.				
Car Break-ins				
Home Break-ins				
Domestic Assaults (in homes)				
Assaults outside of homes				
Gang activity				
Drug activity				
Sexual Assaults				
Robbery				

7. How safe do you feel when walking alone at night on your block?

Very safe 1

Somewhat safe.....2

Somewhat unsafe 3

Very unsafe 4

DON'T KNOW.....-8

REFUSED.....-9

8. Overall, how physically safe from crime do you feel in your neighborhood?
   1- Very safe
   2- Somewhat safe
   3- Not very safe
   4- Not safe at all

9. Ok, now I'm going to ask you some questions about the physical conditions of your block. For each question please respond with none, a few or many.

	NONE	A FEW	MANY	DON'T KNOW	REFUSED
10a. Are there any homes or buildings with broken windows on your block?	1	2	3	-8	-9
10b. Are there any homes, other buildings or other places on your block which have graffiti on them?	1	2	3	-8	-9
10c. Are there any abandoned or boarded up homes or buildings on your block?	1	2	3	-8	-9
10d. Are there any vacant lots on your block?	1	2	3	-8	-9

10e. Are there any abandoned cars on the street on your block?	1	2	3	-8	-9
10f. Are there areas on your block where litter is a problem?	1	2	3	-8	-9
10g Are there areas on your block where the street or sidewalk needs repairs?	1	2	3	-8	-9
10h. Are there areas on your block that need better lighting?	1	2	3	-8	-9

10. Ok, now I'm going to ask you some questions about the LVMPD police.
Over the past 2 months…

[**READ QUESTION, THEN RESPONSE OPTIONS:**

Once a month or less, a few times a month, a few times a week, everyday, not at all]

	ONCE A MONTH OR LESS	A FEW TIMES A MONTH	A FEW TIMES A WEEK	EVERYDAY	NOT AT ALL	**DON'T KNOW**	**REFUSED**
11a. How often have you seen [METRO] police officers on your block? [**PROBE**: DOING ANYTHING]	2	3	4	5	1	-8	-9
11b. How often have you seen the [METRO] police talking to people on your block?	2	3	4	5	1	-8	-9
11c. How often have you seen the [METRO] police searching people on your	2	3	4	5	1	-8	-9

block?							
11d. How often have you seen the [METRO] police arresting someone on your block?	2	3	4	5	1	-8	-9

12. Overall, do you think the [LAS VEGAS METRO] police are doing……

A very good job 1

A good job 2

A fair job.....3

A poor job.....4

A very poor job.....5

DON'T KNOW.....-8

REFUSED.....-9

13. Please tell me if you strongly agree, agree, disagree, or strongly disagree with the following statements about the [LAS VEGAS METRO] police.

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	**DON'T KNOW**	**REFUSED**
13a. I have a lot of respect for the [METRO] police.	1	2	3	4	-8	-9
13b. On the whole [METRO] police officers are honest.	1	2	3	4	-8	-9
13c. I feel proud of the [METRO] police.	1	2	3	4	-8	-9
13d. I am very supportive of the [METRO] police.	1	2	3	4	-8	-9
13e. The [METRO] police treat people fairly.	1	2	3	4	-8	-9

14. How likely is it that you would call the police if each of the following situations happened tomorrow: Do you think it is very likely, likely, unlikely or very unlikely.

	VERY LIKELY	LIKELY	UNLIKELY	VERY UNLIKELY	**DON'T KNOW**	**REFUSED**
14a. You have a complaint against someone causing problems on your block?	1	2	3	4	-8	-9

14b. You have an emergency situation?	1	2	3	4	-8	-9
14c. You see suspicious activity on your block?	1	2	3	4	-8	-9

The following questions are for descriptive (statistical) purposes.

15. First, in what year were you born? _____

16. How many years have you lived at your current address? If less than a year, enter the number of months; if more than a year, round up._____

17. How many years have you lived in Las Vegas, total? _____

18. Please rate the overall quality of life in the Las Vegas Valley today.

    a. Very good
    b. Fairly good
    c. Not very good
    d. Not at all good

19. What is your current marital status?

    1 – Married

    2 – Single

    3 – Divorced

    4 – Widowed

    3 – Separated
    4 Living with a partner

20. Which of the following best describes your current employment or labor force status? (CHOOSE ONLY ONE)

    1 – Work full-time

    2 – Work part-time

3 – Unemployed, looking for work

4 – Unemployed, not looking for work

5 – A full-time student

6 – A homemaker

7 – Retired

8 – Other

9 – Refuse to answer

21. What is the highest level of education you have completed?

1 – 0-11 years, no diploma

2 – High school graduate (including GED)

3 – Some college, no degree

4 – Associate Degree

5 – Bachelor's Degree

6 – Graduate or professional degree

22. Do you consider yourself to be Spanish/Hispanic/Latino?

1 – No, not Spanish/Hispanic/Latino

2 – Yes, Mexican

3 – Yes, Puerto Rican

4 – Yes, El Salvadorian

5 – Yes, other Spanish/Hispanic/Latino

23. With which racial group do you identify yourself?
[ALLOW MULTIPLE RESPONSES]

1 – White/Anglo

2 – African American

3 – Asian or Asian American

4 – American Indian or Native American

5 – Native Hawaiian or Pacific Islander

5 – Other

24. Were you born…

1 – In Las Vegas

2 – In Nevada but not in Las Vegas

3 – In the US but not in Nevada

4 – In another country outside of the U.S.

25. Are you...

1 – Male

2 – Female

26. Do you have children under the age of 18 living in your home?

1 – YES

2 – NO

27. Do you own or rent your current home?

1 – Own

2 – Rent

3 – Other

28. Have you or any member of your household been a victim of a crime in the past….

a. 60 days?

Yes…… 1

No.....0

DON'T KNOW.....-8

REFUSED.....-9

a. 6 months?

Yes…… 1

No.....0

DON'T KNOW.....-8

REFUSED.....-9

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