Cincinnati Police Department
15-Minute Hotspot Policing Experiment

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Executive Summary

Hotspot policing is an intensified, intermittent patrol in specified crime clusters. This approach is not a constant, security guard-style presence, but rather approximates a crackdown-backoff approach where police are present at a hotspot for an intermittent yet brief period of time; typically fifteen minutes every two hours (see Koper, 1995 for more detail). Importantly, a sizable body of experimental research on hotspots policing led the National Research Council (NRC) *Committee to Review Research on Police Policy and Practices* (2004, p. 250) to conclude that studies of "focused police resources on crime hotspots provided the strongest collective evidence of police effectiveness that is now available."

In an effort to promote evidence based practices to address specific types of crime problems, the Cincinnati Police Department (CPD) partnered with researchers from the Institute of Crime Sciences (ICS) at the University of Cincinnati. The CPD has been using crime analysis for deployment purposes to address serious, violent, and persistent street crimes since 2007. The purpose of the CPD's *15-Minute Hotspot Patrol Experiment* was to further reduce the likelihood of victimization associated in high-risk areas throughout the city. The CPD was interested in implementing a hotspot policing experiment as a way to police more efficiently and to potentially build upon data-driven policing approaches already being used in the department (e.g., Statistical and Tactical Analytic Review for Solutions (STARS) is an oversight mechanism used to enhance strategic deployment for crime reduction). Of particular interest to CPD administrators was the ability to determine whether different types of policing practices within hotspot locations could lead to discernible differences in crime incidents.

To identify Cincinnati's crime hotspots, Uniform Crime Report (UCR) Part I crime data collected by the CPD, ranging from November 2010 – November 2012 (N=48,568) were geocoded in ArcGIS and merged with Cincinnati street segments (N=13,550). This data merger provided information regarding how many serious crimes were committed on individual street segments within the city. Recent studies have indicated that it is important to focus on crime trends at micro-units of analysis due to street-to-street variability in crime patterns (Groff, Weisburd, & Yang, 2010). As a result, the most recent hotspot experiments focus police efforts at these micro-places, including individual street segments, to address patterns in crime variability by place and focus police resources more efficiently (Telep et al., 2012). To be consistent with these most recent research developments, the Cincinnati strategy focused police attention at specific street segments.

Given the CPD's focus on reducing violence, a weighting system was designed where violent crimes were weighted proportionally more than property crimes based on their level of seriousness. Using this weighting system, crime counts for each street segment were calculated. When determining whether a street segment was considered "hot," both persistent and emerging

crime trends were identified. A *persistent* hotspot was one identified based on reported crimes over the past three years, while an *emerging* hotspot was one identified based only on reported crimes over the last 12 months (Jan 1 – Dec 31, 2012). After determining hot street segments based on the process above, CPD District Commanders were consulted to verify if the selected street segments were appropriate hotspots based on their direct experiences. Ultimately, 54 individual street segments were identified for inclusion in the experiment. Each identified hot street segment was then individually paired with another hot street segment (with a similar amount and type of crime), creating 27 matched hotspot pairs.

These 27 matched hotspot pairs were then randomly assigned to either treatment or control conditions. Note, that a street was considered a "treated street segment" if it received additional patrols. A "non-treated street segment" was a street that was matched to a treated street segment but did not receive additional patrols. Those assigned to treatment were further randomly assigned to one of three types of treatments: 1) *stationary* – sit in parked patrol car, 2) *stationary with lights* – sit in parked patrol car with emergency lights activated, or 3) *proactive* – park car and walk. Each crime hotspot selected for treatment received an additional "dose" of directed patrol seven times per day. Specifically, these treatment conditions were applied on the same streets for 15 minutes every two hours, during the hours of 12:00 pm – 2:00 am for a 5-month period. The matched control street segments were patrolled as they normally would be, absent the experiment.

In the most general terms, we determine the impact of the additional patrols in three ways. Analysis 1 compares the treated street segments directly to their non-treated matched street segments during the intervention period (Feb 1- Jun 30, 2013). Analysis 2 compares the crimes that occurred on the treated street segments during the intervention period to the average number of crimes occurring during the seasonal pre-intervention period on those same treated street segments. Then the crimes that occurred on the non-treated street segments during the intervention period are compared to the number of crimes on those same non-treated street segments during the seasonal pre-intervention period. These differences are ultimately compared to one another to determine an overall effect. Analysis 3 compares the differences within the treated street segments by the type of treatment: stationary, lights, or foot.

Analysis 1 demonstrates that by and large both treatment and control segments experienced very similar declines in criminal offenses, across both pooled offense types (i.e., violent and property), and across specific types of crime (i.e., rapes, robberies, thefts, etc.). However, the treated streets did demonstrate larger reductions, including a 5% greater reduction in violent crimes and a 6% greater reduction in property offenses in target street segments when compared with control segments.

Analysis 2 shows statistically significant declines (i.e., not due to random chance) in overall property offenses for both treatment and control segments between the pre- and intervention-periods. Thus, hotspots and control areas experienced similar rates of change over time however the effect was larger in magnitude for treatment sites than control segments (by roughly 0.7 incidents for treatment sites).

Analysis 3 shows some evidence of differential treatment effects (although small in size) across the targeted locations. The largest substantive declines in crime occurred in places where police employed standard hotspots policing approaches (i.e., on foot and stationary). There was no evidence of impact for any crime type where the experimental condition was sitting in patrol cars with emergency lighting.

In summary, we found that the additional patrols led to a reduction in property and violent crime, although the impact was not substantively large. One reason the overall impact of these patrols was smaller than those reported in previous studies is because other police agencies may not have been using crime analysis as part of their normal routine deployment efforts. In short, the CPD already engaged in hotspot deployment to some degree prior to the experiment; therefore the additional patrols, while effective, had smaller additional preventative impact. We also found that of the three types of patrolling strategies, the most effective for crime reduction was foot patrol, followed by stationary patrol without lights. The use of lights as an experimental condition did not have the desired impact for crime reduction.

The Cincinnati initiative is the first in the country to randomize the types of treatment (i.e., traditional presence, clear visual presence through use of flashing lights, walking presence) to treatment hotspots in an effort to discern whether a specific strategy (or combination of strategies) holds the most promise for reducing risk of victimization. Results from this study can help guide police, not only in terms of *where* to focus their energies, but also *what strategies* are potentially most beneficial when using hotspots policing. With this experiment, the CPD has demonstrated not only their commitment to implementing evidence-based practices, but also their willingness to add to that body of evidence through the adoption of rigorous scientific testing.

The *15-Minute Hotspot Patrol Experiment* undertaken by the Cincinnati Police Department confirms the findings from a growing body of evidence-based literature which demonstrates that focusing patrol resources on specifically identified high-crime locations can significantly reduce crime. This study also extends our knowledge in several important ways. First, it demonstrates that focusing even more discretely on individual street segments (compared to larger multi-block hotspot areas) can be a productive strategy for crime reduction. Second, it demonstrates that these types of focused patrols can impact both violent and property crime, including theft. Third, this study extends our knowledge by demonstrating that what police officers actually do during these hotspot patrols also has an influence on crime reduction efforts. Specifically, walking and stationary patrols deployed randomly for 15 minutes every two hours led to a significant reduction in property and violent crime. Stationary patrols with car lights flashing, however, did not result in the same crime reductions. Finally, this study demonstrates that police agencies (such as the CPD) that already engage in general strategic hotspot patrolling based on timely crime analyses can further enhance their crime prevention potential by focusing even more specifically on individual problematic street segments.

Cincinnati Police Department
15-Minute Hotspot Policing Experiment

Introduction

Hot spot policing tactics involve focusing time and resources into small, geographically clustered areas with high crime concentrations. These strategies gained popularity after researchers studying the variation of crime at small units of analyses – typically specific addresses, streets, or blocks – were able to systematically identify the most problematic crime locations. Hot spot policing differs greatly from previously employed policing strategies that used either randomized patrolling or a constant police presence at precise times and places. Instead, hot spot policing strategies use a crackdown-backoff approach, where police saturate an area for a limited amount of time, typically between 12-15 minutes every two hours (Koper, 1995). In theory, high dosages of police in an area not only deter would-be offenders while the police occupy the location, but also offer a short-term residual deterrent effect after police leave the location. Research on the effectiveness of hot spot strategies has been generally positive, showing modest to moderate short-term crime reductions in high crime areas, as well as a diffusion of benefits in surrounding locations (Braga et al., 2012).

In an effort to continue using evidence-based practices to address crime problems, the Cincinnati Police Department (CPD) collaborated with researchers from the Institute of Crime Science (ICS) at the University of Cincinnati. Since 2007, the CPD has routinely used crime analysis to identify problem areas and individuals, as well as to guide deployment strategies. In an effort to police more efficiently and build upon data-driven policing approaches already being used within the department, the CPD implemented the *15-Minute Hotspot Patrol Experiment* to further these efforts and reduce victimization in high-crime areas across the city. While hotspot policing strategies have been shown to reduce crime when implemented properly, the CPD was interested in discovering if different police practices within a hotspot framework would lead to noticeable differences in crime reduction. In other words, they sought to determine if the mere presence of police would deter crime in hot spots, or if some specific police practices could lead to greater crime reduction.

Initial Hotspot Identification

While the crime prevention impact of policing hotspots has been widely documented across multiple agencies, the specific tactics used are often not discussed. ICS and CPD partners identified multiple hotspots policing practices to consider. Some of these practices were widely used and readily reported in the evidence-based literature (e.g., stationary marked vehicles parked in hotspot areas, walking patrols, and other more proactive crime prevention techniques - see Braga, 2001). Other practices, however, were not reported in the scholarly literature but were known to have been implemented in other police agencies. For example, officers cited agencies that had police sit in their patrol vehicles with flashing lights within trouble locations to clearly demonstrate police presence (this approach has not been systematically evaluated, although anecdotal accounts suggested it was effective). The CPD was particularly interested in

implementing the most promising evidence-based practices (i.e., hotspots policing) while adding an additional layer to the implementation, which involved using alternative approaches to assess which hotspots policing tactics proved to be most efficient and effective.

Several decisions were made in consultation with CPD Commanders to properly identify the hotspots to receive treatment in this experiment. First, a comprehensive review of the literature was conducted. The strengths and weaknesses of previous hotspot studies were identified and considered. The purpose of the *CPD 15-Minute Hotspot Patrol Experiment* was to build upon previous evidence-based practices, while simultaneously contributing to the collective knowledge about the efficacy of this strategy when tailored specifically to address deployment and crime issues in Cincinnati.

The next consideration was to determine what information should be used to identify reoccurring problem locations, or hotspots. Some previous studies have used calls for service (CFS) data to identify hotspot locations. However, the use of CFS can be problematic, as they are often not a good measure of crime (Klinger & Bridges, 1997). The ICS research team recommended, and CPD Commanders agreed, that reported crime data were likely a better measure for identifying crime hotspots that could be impacted by the 15-minute deployment strategy. The purpose of the experiment was to determine if this deployment strategy would produce a significant reduction in violent crime, and specifically robberies. Likewise, the team was interested to determine if a15-minute deployment strategy could also impact property crimes. Therefore, reported crimes were selected as the data to be used for hotspot location identification.

Another task was to determine the relative size of crime hotspots – specifically, the research team had to identify the unit of analyses to be used to identify hotspot locations (i.e., the size of the geographic area for each hotspot). The majority of previous hotspot experiments have focused on hotspots created using geographical spatial analyses. However, recent developments in the literature have indicated that it is important to focus on crime trends at micro-units of analysis due to street-to-street variability in crime patterns (Groff, Weisburd, & Yang, 2010). More recent hotspot experiments have begun to focus police efforts at these micro-places, including individual street segments, to address patterns in crime variability by place and focus police resources more efficiently (Telep et al., 2012). To be consistent with these most recent research developments, the Cincinnati strategy focused police attention at specific street segments.

A final consideration was the length of time to run the experiment. Previous experiments typically operate within a 3-month time frame. At the beginning of the proposed CPD experiment, however, it was the winter season (January 2013) and therefore a smaller number of crimes were likely to be reported each month compared to other seasons. There was concern that there would not be enough variation in reported crimes during this 3-month time period to conduct the analyses at the street segment level. Therefore, it was decided to begin the experiment in the winter months but continue the experimental conditions for a six-month period to insure both the quantity and integrity of the data. In June, however, the experiment was discontinued early due to concerns over staffing issues. The result was a roughly 5-month implementation period (January 20, 2013 – June 30, 2013).

Data and Methods

To identify Cincinnati's crime hotspots, Uniform Crime Report (UCR) Part I crime data was used. UCR data collected by CPD from November 2010 – November 2012 (N=48,568) were geocoded in ArcGIS and merged with Cincinnati street segments (N=13,550). After the geocoding and matching process, each street segment was assigned a value that represented the number of Part I crimes reported anywhere on that street segment. Next, the street segments were sorted from largest to smallest number of reported crimes. Those street segments with less than 30 Part I crimes reported in a year were eliminated from the analysis due to their relatively low rates of risk. The ICS research team used 30 Part I crimes as the cut point based on the expectation that having more than two crimes in a month is beyond chance for an individual street segment, which in turn makes it a candidate for hot spot analysis.

Weighting Seriousness of Offenses

After determining hot street segments based on the process above, CPD District Commanders were consulted to verify if the selected street segments were appropriate hotspots based on their experiences and expert knowledge of their districts. The CPD Captains noted that even though the selected hot street segments seemed to have more Part I crimes than other streets, many streets identified only involved property crimes (particularly theft) and not violent crimes. Given CPD's focus on violent crime, ICS researchers proposed weighting by crime type to determine the appropriate hot street segments for the experiment. Specifically, reported violent crimes were weighted higher than property crimes based on a seriousness scale identified in Table 1 below. Based on this weighting process, one homicide incident was counted as the equivalent of four crime incidents; one robbery was counted as three crime incidents, rapes and felonious assaults as two crime incidents, and all the other Part crimes (burglary, theft, vehicle theft) were counted as one incident.

Table 1. Weight by Crime Type

Part I Crimes	Weight
Homicide/Murder	4
Robbery	3
Rape	2
Felonious Assault	2
Burglary	1
Theft	1
Auto theft	1

After the weighting process, 70 street segments remained as hot street segments with scores of 30 or higher for a one-year period (see complete listing in Appendix A). All street segment crimes were standardized across one year to account for new or emerging crime patterns. When determining whether a street segment is considered "hot," both persistent and emerging crime

trends were identified. A *persistent* hotspot was one identified based on reported crimes over the past three years. An *emerging* hotspot was one identified based only on reported crimes over the last year (Jan 1 – Dec 31, 2012). For this reason, the Part I crimes for all street segments were standardized to take into account the time difference (i.e., hotspots were identified using both persistent and emerging trends). The statistical analyses revealed that 14% of non-weighted and
17% of weighted Part I crimes in Cincinnati occurred on these 70 selected hot street segments.

Randomization Process of Hotspots

Matching/Pairing Process

Identified hot street segments (N=70) were sorted from largest to smallest based on their number of Part I crimes. Street segments with a similar number of crimes were manually paired with each other. The purpose of pairing was so that one of the two paired street segment could receive the treatment condition while the other served as a control. After the experiment, the number of crimes on the treated street was then compared to the number occurring on its, non-treated match.

Table 2 below documents the number of hot street segments initially identified within each CPD District. As shown, the number of hot street segments was disproportionately distributed across districts. Therefore, ICS researchers were unable to conduct a within district matching/pairing process; identified street segments may have been paired across districts.

Treatment vs. Control

The next step was to randomly assign hot street segments to treatment or control groups. As noted previously however, the number of identified hot street segments differed for each district. In addition, CPD Commanders wanted to conduct an experiment where each district would contribute based on their available manpower. For example, although Districts 3 & 4 had the most hotspots identified, due to personnel constraints, these districts could not conduct the experimental conditions on all of their identified hot street segments. To insure relatively equal selection, the randomization process (assigning hot street segments as control or treatment) was conducted within district. Based on this decision, one hotspot in the CBD, three hotspots in Districts 1, four hotspots in District 2, six hotspots in District 3, seven hotspots in District 4, and six hotspots in District 5 were randomly selected as the treatment group. The identified pairs of those selected street segments were assigned as a control group to serve in our counterfactual data analysis (i.e. the relative rate of change between treatment and control groups). Note, however, that due to manpower constraints, only 27 pairs of hot street segments (out of the 35 pairs initially identified) were selected for inclusion in the experiment. The specific streets and their matches are listed in Appendix B.

Table 2. Number of Hot Street Segments per District

District	# hot street segments initially identified	# hot street segments included in experimental condition	# hot street segments included as matched control
CBD	2	1	0
D1	5	3	2
D2	5	4	1
D3	23	6	10
D4	21	7	6
D5	14	6	8
Total	70	27	27

Each of the treatment locations was further randomized to receive one of following three specific treatments: 1) *Stationary* - standard hotspots patrol policing (park and sit in vehicle), 2) *Lights* - stationary patrol car sitting with overhead emergency lights on, and 3) *Proactive* – park vehicle and walk. These specific treatment conditions assigned for each street segment did not change across the course of the experiment. For the locations identified as stationary, officers were instructed to park somewhere within the street segment and remain in the vehicle for 15 minutes. In the locations identified as lights, officers were instructed to sit in their parked cars with the overhead emergency lights on for 15 minutes. Finally, for the locations designated as proactive, officers were instructed to park their cars within the identified street segment and walk along that street segment for 15 minutes. During this walking patrol, they were encouraged to stop into businesses, engage with citizens, write Field Interview Reports (FIR), and engage in other proactivity as appropriate.

In the control locations, CPD District Commanders were asked to simply proceed as they normally would absent the experiment. Note that the control street segments did not have a reduced level of patrol, and if needed would receive enhanced patrols as part of CPD's larger data-driven response to reduce crime. For example, if crime patterns emerged in particular areas, District Captains were expected to respond based on their best judgments, and therefore additional patrols may have occurred within the control locations as part of CPD's normal response to emerging crime patterns. No CPD officials were given the location of the matched control street segments until after the experiment concluded.

Implementation of the Experimental Design

The experiment began on January 27, 2013 and while originally scheduled for a six-month period, it was ended a month early (June) due to concerns regarding manpower. Officers were provided training materials at roll calls to explain the purpose of the experiment and the specific instructions for each treatment condition (see Appendix C). The treatment conditions were applied for 15 minutes every two hours, during the hours of 12:00 pm – 2:00 am. As a result, each hot street segment selected for treatment was scheduled to receive a "dose" of additional directed patrol seven times per day. CPD Officers capture the administration of the patrol dosage

on activity sheets (see Appendix C). These sheets were collected weekly and entered into a database maintained by ICS researchers.
As shown in Table 3 below, 21,176 dosages of at least 15 minutes of treatment were completed across the 27 treated street segments during the experiment. The number of 15-minute treatment dosages ranged from 613 to 967 across street segments. Of the treatments initiated 979 (4.4%) were not fully completed, but rather were interrupted at some point prior to 15 minutes; the reason for this interruption was often to response to calls for service. When a dosage was interrupted, officers were instructed to finish the treatment time remaining later in the shift (if possible). The number of treatment sessions that were interrupted ranged from 11 to 78 dosages across street segments.

In total, these 27 streets were administered 5,589 hours of additional patrols; the number of hours of additional patrol ranged from 157 to 255 across street segments. During these additional patrol times, 106 offenders were arrested, 115 field interrogation reports were taken, and 344 business contacts were made. The vast majority of this activity occurred on the street segments treated with foot patrol.

In some limited circumstances, officers did not adhere to the experimental conditions by either not conducting scheduled treatments, or purposefully treating other streets. These violations of the experimental condition were identified based on the weekly analyses of the activity reports, and corrected through managerial intervention and field supervisory oversight. Analyses were conducted where these violations to the experimental condition were removed. No significant differences compared to the full findings reported below were noted.

Table 3. Cincinnati Police Department Hot Spot Experiment Summaries

ID	Action	# of Arrest	# of FIRS	# of Business Contacts	# of Completed Experiments	# of Incomplete Experiments	Total Hours
1	L	0	0	0	622	15	161.35
2	L	3	5	9	883	22	233.79
3	S	2	1	3	916	16	240.48
4	F	17	30	0	911	11	237.86
5	F	9	13	108	737	35	213.31
6	S	0	0	27	843	19	248.75
7	L	0	1	10	818	20	216.07
8	L	1	0	4	762	25	199.32
9	L	1	3	10	766	21	199.43
10	S	5	3	1	750	16	200.12
11	L	8	1	4	786	18	213.51
12	S	8	3	46	778	16	204.63
13	F	9	12	1	797	17	222.27
14	F	2	3	1	735	24	195.19
15	F	14	13	67	690	67	180.11
16	L	3	2	2	669	75	175.60
17	F	6	3	1	660	70	171.80
18	S	2	1	7	677	65	173.01
19	S	0	2	1	617	62	159.09
20	L	2	2	2	613	78	156.79
21	F	1	2	36	642	72	167.95
22	L	2	1	1	967	34	254.76
23	F	2	4	1	930	33	237.86
24	S	2	0	1	890	38	225.40
25	S	2	1	0	887	37	224.31
26	S	0	2	0	949	35	247.40
27	F	5	7	1	881	38	228.40
T O T A L		**106**	**115**	**344**	**21176**	**979**	**5588.56**

Evidence of Impact

In the most general terms, we determine the impact of the additional patrols in three ways. Note, that a street is considered a "treated street segment" if it received any of the three types of additional patrols. A "non-treated street segment" refers to a street that was matched to a treated street segment but did not receive additional patrols.

(1) Analysis 1: Treated street segments are compared directly to their non-treated matched street segments during the intervention period (Feb 1- Jun 30, 2013).

(2) Analysis 2: Crimes that occurred on the treated street segments during the intervention period are compared to the average number of crimes occurring during the seasonal pre-intervention period on those same treated street segments. Crimes that occurred on the non-treated street segments during the intervention period are compared to the number of crimes on those same non-treated street segments during the seasonal pre-intervention period. These differences are then compared to one another to determine an overall effect.

(3) Analysis 3: The differences within the treated street segments by the type of treatment – stationary, lights, or proactive (foot) – are compared.

Summary of Findings

Analysis 1 demonstrates that by and large both treatment and control segments experienced very similar declines in criminal offenses, across both pooled offense types (i.e., violent and property), and across specific types of crime (i.e., rapes, robberies, thefts, etc.). However, the treated streets did demonstrate larger reductions, including a 5% greater reduction in violent crimes and a 6% greater reduction in property offenses in target street segments when compared with control segments.

Analysis 2 shows observed statistically significant declines (i.e., not due to random chance) in overall property offenses for both treatment and control segments between the pre- and intervention-periods. Thus, hotspots and control areas experienced similar rates of change over time however the effect was larger in magnitude for treatment sites than control segments (by roughly 0.7 incidents for treatment sites).

Analysis 3 shows some evidence of differential treatment effects (although small in size) across the targeted locations. The largest substantive declines in crime occurred in places where police employed standard hotspots policing approaches (i.e., on foot and stationary). There was no evidence of impact for any crime type where the experimental condition was sitting in patrol cars with emergency lighting.

In summary, we found that the additional patrols led to a reduction in property and violent crime, although the impact was not substantively large. One reason the overall impact of these patrols was smaller than those reported in previous studies is because other police agencies may not have been using crime analysis as part of their normal routine deployment efforts. In short, the CPD already engaged in hotspot deployment to some degree prior to the experiment; therefore the additional patrols, while effective, had smaller additional preventative impact. We also found that of the three types of patrolling strategies, the most effective for crime reduction was foot patrol, followed by stationary patrol without lights. The use of lights as an experimental condition did not have the desired impact for crime reduction. What follows is a more scientific description of the specific analyses and the findings summarized above.

Analytic Details

In this experiment, we measure the generalized deterrent effects of intermittent police presence on UCR Part I crime incidents, which include the following: homicides, rapes, robberies, and aggravated assaults (also pooled together to equal violent crime totals), burglaries, and thefts (also pooled together to equal property crime incidents). These specific crimes were collected from two periods: (1) *seasonal pre-intervention period* – counts of crimes prior to the start of the experiment, which are equivalent to the intervention period for each hotspot location in the preceding years – i.e., incidents that occurred between February 1 through June 30 in years 2011 and 2012 (averaged as a single point of comparison). These data were collected so that year-over-year changes could be estimated for the same time periods, and thus seasonal crime effects would be a constant for the analyses. (2) *Intervention period* – the time period during the hotspots intervention (February 1, 2013 – June 30, 2013).[1]

A series of bivariate analyses were conducted to assess the extent to which the Cincinnati Hotspots Experiment had an impact on crime incidents during the intervention period. We first provide descriptive statistics that allows us to compare changes across each of the UCR crime incidents for seasonal years 2011 and 2012 (the pre-intervention period) and 2013 (the intervention period). We also provide standard percentage differences for the pooled target locations (all hotspots combined) and pooled control locations (all control segments combined). We then move to a series of paired sample t-tests. Paired sample t-tests are used to determine whether there are significant differences between the average values (i.e., crime outcomes) for the same units across two different conditions (i.e., the pre-intervention period and the intervention period).

Paired sample t-tests include probability-based statistical significant parameters in order to more accurately appraise if the deviations in outcomes occur above and beyond a baseline expected distribution (i.e., the pre-intervention period) for both target and control sites. The standard hypothesis for these tests is that the difference between the means under the two conditions are equal to zero, while the alternative hypothesis is that the means under the two conditions are significantly different than zero. A series of paired sample t-tests are presented here: (1) Seasonal mean differences for each UCR Part I crime outcome for all pooled treatment areas and all pooled control areas for years 2011 and 2012 (averaged) with 2013. The purpose of these tests was to examine whether there was relative crime stability in both the treatment and control locations over the period of examination. (2) Seasonal mean differences for the same UCR Part I outcomes for the paired cases and controls across each treatment type (i.e., standard hotspots policing, sitting with lights-on, and walking) also for years 2011 and 2012 (averaged) with 2013. The purpose of these t-tests is to examine whether specific types of treatment corresponded with crime changes in treatment locations, and whether the paired control sites experienced similar changes during the same periods of examination.

[1] The actual dates of full implementation were January 28, 2013 through June 30, 2013. However, for data coding consistency, we treated February 1, 2013 as the point of the intervention onset. All comparison data for the pre-intervention period (2011 and 2012 pooled) were for the same period. This also allowed a one-week implementation period to get the project fully underway across the various districts.

Table 4 below displays the seasonal means and standard deviations of the UCR Part I Crime incidents for the treatment and control areas for February 1 through June 30 for three years prior to the intervention (years 2011-2012) and the intervention period (2013). Perhaps most importantly, while there are expected mean fluctuations across both treatment and control sites each year, the combined treatment and control areas seemingly follow similar patterns in terms of fluctuations in crime trends year-by-year. These results suggest broader external influences of crime trends likely impact treatment and control sites in a comparable manner, at least for the seasonal years examined here.[2]

Table 4. Measures of central tendency and dispersion for crime incidents among hotspots and control locations for years 2011, 2012, and 2013.

	Means		Standard deviations	
Variable	Treatment (n = 27)	Control (n = 27)	Treatment (n = 27)	Control (n = 27)
2011				
Violent Incidents	2.16	2.72	2.11	1.88
Homicides	0.04	0.00	0.20	0.00
Robberies	1.04	1.28	1.13	1.38
Assaults	0.80	1.12	1.15	1.20
Rapes	0.28	0.32	0.61	0.47
Property Incidents	15.84	16.20	15.84	19.58
Burglaries	3.04	3.32	4.19	4.74
Thefts	12.80	12.88	15.05	19.80
2012				
Violent Incidents	2.52	2.60	1.87	2.00
Homicides	0.04	0.00	0.20	0.00
Robberies	1.60	1.28	1.26	1.45
Assaults	0.80	0.64	1.00	0.63
Rapes	0.08	0.68	0.27	1.62
Property Incidents	14.32	15.56	22.22	22.16
Burglaries	2.60	3.44	3.20	4.99
Thefts	11.72	12.12	20.29	22.31
2013				
Violent Incidents	2.00	2.40	2.20	2.02
Homicides	0.04	0.20	0.00	0.00
Robberies	1.16	0.96	1.55	0.94
Assaults	0.76	0.84	1.31	1.38
Rapes	0.04	0.40	0.20	1.27
Property Incidents	12.00	13.56	17.12	15.19
Burglaries	2.38	2.72	2.12	2.09
Thefts	9.72	10.84	17.40	15.43

[2] The analyses presented herein were also supplemented by a dosage analysis. The experimental sites were designed to obtain roughly 2,500 minutes for each month of the intervention. Restricting the treatment to control comparisons on crime outcomes to the sites that experienced full dosage (i.e., those sites that averaged 2,500 minutes per month), the results were virtually identical to the full results presented here. Results are available upon request.

Table 5 below highlights the percentage changes across the various crime incidents for both treatment and control locations between the pre-intervention (2011/2012) and intervention period (2013). It is notable that most violent crimes declined in both treatment and control locations. More specifically, treatment sites typically experienced greater declines in violent incidents (i.e., -14.53% versus 9.77%) and property crimes (-20.00% versus -14.61%). However, raw percentage year-by-year changes are susceptible to broader variations, and the changes may fall within an expected threshold. Thus, we next use paired sample t-tests to examine whether mean differences change in treatment and control locations above and beyond what would be expected over time.

Table 5. Treatment and control site UCR Part I crime incident percentage changes

	Δ (2011/12) to 2013	
	Treatment (n = 27)	Control (n = 27)
Violent Incidents	-14.53%	-9.77%
Homicides	0.00%	0.00%
Robberies	-12.12%	-25.00%
Assaults	-5.00%	-4.54%
Rapes	-77.77%	-20.00%
Property Incidents	-20.00%	-14.61%
Burglaries	-19.15%	-19.52%
Thefts	-20.72%	-13.28%

*p < .05

Table 6 below shows treatment locations experienced a statistically significant (p < .05) reduction in overall property crimes over the six month intervention period in 2013 compared to the same periods in 2011 and 2012 (averaged). Treatment sites also experienced statistically significant reductions in rapes and thefts specifically. The control sites had a significant decline in overall property crimes as well, but did not experience similar significant reductions in specific types of property crimes (or any other offense type) during the same period of examination.

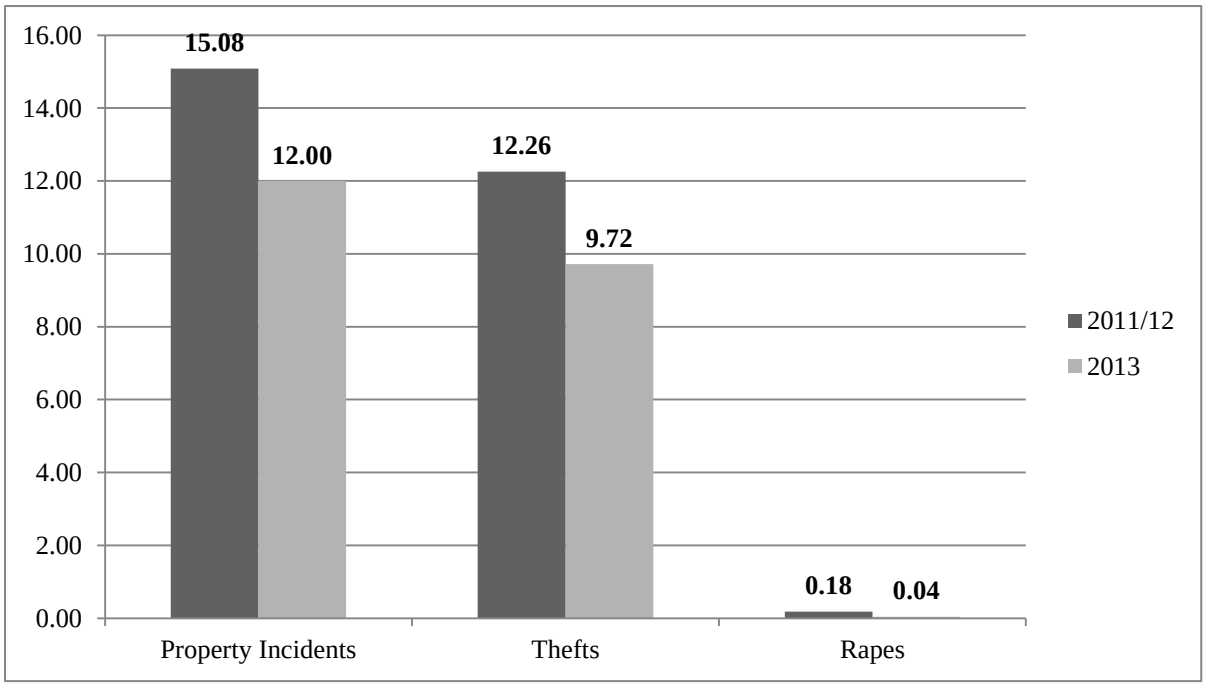
Table 6. Overall treatment and control seasonal mean differences pre/post intervention - 2012 to 2013

	Δ (2011/12) to 2013			
	Treatment (n = 27)		Control (n = 27)	
	Mean Difference	T-Ratio	Mean Difference	T-Ratio
Violent Incidents	-0.340	0.765	-0.260	0.667
Robberies	-0.160	0.510	-0.320	1.176
Assaults	-0.040	0.146	-0.040	0.140
Rapes	-1.899*	1.899	-0.100	0.667
Property Incidents	-3.080*	3.306	-2.320*	2.285
Burglaries	-0.540	0.976	-0.660	1.594
Thefts	-2.538*	3.592	-1.166	1.485

*p < .05

Figure 1 illustrates that the average number of property crimes in traditional treatment locations reduced from roughly 15.1 in 2011/12 to 12.0 in 2013, and this reduction was statistically significant (see Table 6). The reduction in property crimes was related to the change in the average number of thefts in target locations, which significantly reduced from 12.26 to 9.72 between 2011/12 and 2013.

Figure 1. Target location reductions in overall property crimes, specific theft incidents, and rapes between 2011/12 (average) and 2013



Target and Control Area Comparison Summary

The paired samples t-tests used to assess the changes in UCR Part I crime incidents in the treatment and control areas between the pre-intervention (2011 and 2012 – averaged) and the intervention period (2013) illustrate that a stable and significant overall reduction in property crimes was consistently observed in the target areas. Additionally, thefts consistently reduced in the target areas for the same period, dropping from an average of 12.26 incidents to an average of 9.72 incidents. Finally, rapes experienced a statistically significant decline, though not surprisingly the raw number of incidents was much less for this specific type of violent offense. While there was also a significant decline in property offenses in the control areas between the pre-intervention and intervention periods, there was no significant change in specific property crimes (or any other offense type) during the same period. These findings are modestly suggestive of a potential target intervention impact, but the extent to which hotspots policing may have influenced these specific violent crime incidents is less clear. The next step is to

examine whether there were specific changes in crime incidents that corresponded more or less with the different types of treatment dosages conducted within this experiment.

Relationship with Treatment Type and UCR Part I Crime Incidents

As noted earlier, three types of treatment dosages were implemented in the Cincinnati Hotspots Experiment: standard hotspots patrol policing (stationary), stationary patrol car sitting with lights on (lights), and proactive (walking). In this section, we examine whether (and to what extent) changes in the average number of UCR Part I crime incidents corresponded with the different treatment types.

Stationary

We first model changes in crime events in matched treatment and control locations for the standard (stationary) hotspots policing approach. Table 7 shows that property crimes experienced a statistically significant ($p < .05$) -3.35 reduction between 2011/12 and 2013. A significant decline was likewise observed for thefts. Violent offenses also experienced significant declines during this period of examination. There were no such reductions observed for any of the crime incidents in the matched control areas for this period.

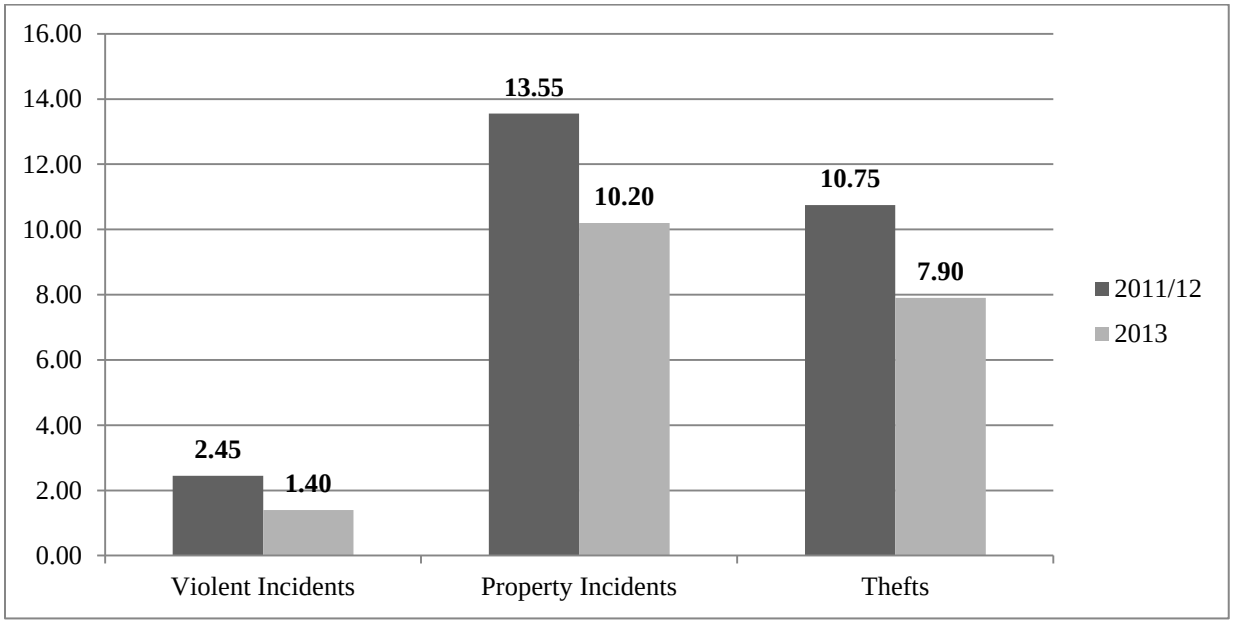
Table 7. Standard patrol treatment and paired control seasonal mean differences pre/post intervention - 2013 to 2012

	Δ (2011/12) to 2013			
	Treatment (n = 9)		Control (n = 9)	
	Mean Difference	T-Ratio	Mean Difference	T-Ratio
Violent Incidents	-1.050*	2.366	0.200	0.367
Robberies	-0.550	1.462	-0.150	0.419
Assaults	-0.450	1.862	-0.050	0.130
Rapes	0.050	1.000	0.100	1.142
Property Incidents	-3.350*	2.720	-1.950	0.278
Burglaries	-0.500	0.765	-0.850	1.662
Thefts	-2.850*	2.447	-1.100	0.620

*p < .05, +p < .10

Figure 2 shows that property crimes decreased from 13.6 to 10.2 between the pre-intervention and intervention periods for the standard hotspots policing treatment areas. More specifically, thefts significantly reduced from 10.8 to 7.9 during this period and violent offenses declined from 2.5 to 1.4.

Figure 2. Standard patrol target locations show statistically significant reductions in overall violent, property, and theft incidents between 2011/12 (average) and 2013



Stationary with Lights

Table 8 below displays the results of the hotspots strategy that centered on officers sitting stationary with their lights flashing. In these treatment areas, no incidents experienced any shifts in crimes that were beyond random chance. However, in comparison sites, the decline in property offenses reached marginal statistical significance ($p < .10$). Thus, there was no empirical (or suggestive empirical) evidence this treatment type had any influence on crime at targeted hotspots.

Table 8. Sitting with lights flashing hotspots treatment and paired control seasonal mean differences pre/post intervention - 2013 to 2011/12 (average)

	Δ (2011/12) to 2013			
	Treatment (n = 9)		Control (n = 9)	
	Mean Difference	T-Ratio	Mean Difference	T-Ratio
Violent Incidents	0.166	0.155	0.055	0.088
Robberies	-0.222	0.359	-0.166	0.301
Assaults	0.611	0.956	0.055	0.095
Rapes	-0.111	0.800	-0.055	0.316
Property Incidents	-3.388	1.546	-3.777^{+}	2.185
Burglaries	-1.111	0.907	-0.500	0.591
Thefts	-2.227	1.663	-3.327	1.647

*p < .05, +p < .10

Proactive (Walking)

Table 9 below displays the changes in proactive (walking) hotspots police strategies between 2011/2012 (averaged) and 2013. When examining the proactive hotspots patrol policing changes in treatment areas it is apparent that property crime incidents demonstrated modest significant average reductions in crime (-2.2 incidents) and a marginal significant decline in thefts particularly (average decline of -2.4 incidents). Again, no significant changes were observed in the comparison sites for the same period amongst any crime incidents, suggesting that the significant mean shift in property crimes were unique to targeted hotspot street segments.

Table 9. Proactive police patrol treatment and paired control seasonal mean differences pre/post intervention - 2011/12 (average) to 2013

	Δ (2011/12) to 2013			
	Treatment (n = 9)		Control (n = 9)	
	Mean Difference	T-Ratio	Mean Difference	T-Ratio
Violent Incidents	0.083	0.105	-1.500	1.713
Robberies	0.583	0.863	-0.833	1.533
Assaults	-0.333	0.674	-0.166	0.277
Rapes	-0.333	1.581	-0.500	1.000
Property Incidents	-2.167^{+}	2.103	-0.750	0.399
Burglaries	0.250	0.250	-0.583	0.612
Thefts	-2.416^{+}	2.062	-0.166	0.077

*p < .05, +p < .10

Treatment Type and Control Area Comparison Summary

In this section, paired samples t-tests are used to assess changes in UCR Part I crime incidents in the treatment and control areas across treatment types (i.e., standard, sitting with lights-on, and walking). When comparing the pre-intervention (2011 and 2012, averaged) and intervention periods (2013), locations with standard (stationary) hotspots patrolling and walking hotspots patrolling experienced consistent and significant declines in property offenses (and thefts specifically). However, the effects were not proportional across all treatment types, and there was little to no evidence of similar reductions that were observed in the pooled control areas.

These findings suggest the following: (1) treatment locations consistently saw reductions in property offenses; (2) control sites did not see similar shifts in any UCR related crime incidents; (3) there was no evidence that officers sitting in hotspots with their 'lights-on' corresponded with any significant reductions in UCR Part I crime incidents; (4) standard (stationary) hotspots patrolling locations experienced reductions in property crimes and thefts, with roughly 3.1 fewer average property offenses between 2011/12 and 2013; (5) similar property crime reductions were observed in treatment sites that experienced proactive police hotspot walking.

While it is impossible to causally link the various hotspots patrolling practices with crime reductions, the design employed here suggests that there was not a general regression to the mean that occurred in the control areas, particularly for property crimes. However, the majority

of the treatment sites (except those hotspots which had the patrolling with lights-on treatment) consistently experienced declines in property crimes and thefts, and had smaller decreases of other crime incidents (e.g., assaults).

Conclusion

As noted earlier, the National Research Council (2004) has argued that the effects of hotspots policing on crime prevention are stable and promising. A more recent review by Braga et al. (forthcoming) conducted an updated systematic review where 19 hotspots/problem-oriented policing evaluations were examined in order to assess the pooled effect sizes on different types of crime-related outcomes. While their study indicated a high probability of impact (i.e., crime reduction), the effects across studies were certainly not universal. Thus, additional replications of hotspots policing in alternative settings are needed to better understand the promise (as well as the limitations) of hotspots policing in alternative settings.

Also, beyond a simple addition to the evaluation literature, more efforts are needed to assess the mechanisms that lead to changes in crime, victimization, and calls for service when police are present within hotspots. The mechanisms perceived to lead to crime reduction benefits center on the rational choice theoretical perspective, where police presence is believed to increase the perceived risk of apprehension to high-risk offenders thus reducing offending patterns (Braga & Weisburd, 2010, p. 180). From this framework, the type of presence of police may also influence changes in crime in hotspots.

The Cincinnati initiative is the first in the country to randomize the types of treatment (i.e., traditional presence, clear visual presence through use of flashing lights, walking presence) to treatment hotspots in an effort to discern whether a specific strategy (or combination of strategies) holds the most promise for reducing risk of victimization. Results from this study can help guide police, not only in terms of *where* to focus their energies, but also *what strategies* are potentially most beneficial when using hotspots policing strategies. With this experiment, the CPD has demonstrated not only their commitment to implementing evidence-based practices, but also their willingness to add to that body of evidence through the adoption of rigorous scientific testing.

The findings from the *15-Minute Hotspot Patrol Experiment* undertaken by the Cincinnati Police Department confirms findings from a growing body of evidence-based literature, which demonstrates that focusing patrol resources on specifically identified high crime locations can significantly reduce crime. This study also extends our knowledge in several important ways. First, it demonstrates that focusing even more discretely on individual street segments (compared to larger multi-block hotspot areas) can be a productive strategy for crime reduction. Second, it demonstrates that these types of focused patrols can impact both violent and property crime, including theft. Third, this study extends our knowledge by demonstrating that what police officers actually do during these hotspot patrols also has an influence on crime reduction efforts. Specifically, walking and stationary patrols deployed randomly for 15 minutes every two hours led to a significant reduction in property and violent crime, while stationary patrols with emergency lights flashing did not result in the same crime reductions. Finally, this study demonstrates that police agencies (such as the CPD) that already engage in general strategic

hotspot patrolling based on weekly crime analyses can further enhance their crime prevention potential by focusing even more specifically on individual problematic street segments.

Appendix A: Identified Hot Spot List (sorted by standardized weighted crime)

S.N	DST	Street Range	Street Name	Homicide	Rape	Robbery	Felonious Assault	Burglary	Theft	Vehicle Theft	Sum of Actual Crime	Standardized Weighted Crime	Hot Spot Type
1	3	6000 - 6243	GLENWAY AVE	0	0	26	0	7	637	1	671	361.50	Persistent
2	3	2117 - 2388	FERGUSON RD	0	2	19	2	22	455	2	501	271.50	Persistent
3	2	4824 - 4825	MARBURG AVE	0	0	5	0	1	345	0	349	179.50	Persistent
4	3	3406 - 3630	WARSAW AVE	1	0	18	1	6	281	0	306	173.00	Persistent
5	3	2220 - 2444	HARRISON AVE	2	3	27	17	41	85	1	176	128.00	Persistent
6	3	2308 - 2573	NOTTINGHAM RD & 3902 PRESIDENT DR & 2463 WILLIAMSBURG DR	0	4	10	14	107	46	3	183	110.50	Persistent
7	5	4746 - 5182	HAWAIIAN TER	0	5	5	8	86	64	15	182	102.00	Persistent
8	3	1900 - 2000	WESTWOOD NORTHERN BLVD	0	3	9	15	63	38	0	128	82.00	Persistent
9	4	1810 - 1900	SEYMOUR AVE	0	0	15	1	3	96	0	115	73.00	Persistent
10	3	4301 - 4455	W 8TH ST	0	3	8	4	42	60	1	118	70.50	Persistent
11	3	2913 - 2913	BOUDINOT AVE & 3000 QUEEN CITY AVE	0	1	10	2	10	94	1	118	70.50	Persistent
12	1	1401 - 1421	VINE ST	0	0	3	2	0	123	0	128	68.00	Persistent
13	3	3207 - 3396	BOWLING GREEN CT & 3200 MOOSEWOOD AVE	0	3	10	7	48	30	4	102	66.00	Persistent
14	2	3735 - 3881	PAXTON AVE	0	0	15	1	15	132	0	106	65.00	Persistent
15	4	1 - 6	W CORRY ST	0	0	6	2	0	108	0	116	65.00	Persistent
16	5	2300 - 2392	WHEELER ST	0	0	9	3	39	52	1	104	62.50	Persistent
17	5	5342 - 5475	BAHAMA TER	0	2	9	6	30	40	6	93	59.50	Persistent
18	1	400 - 530	W 9TH ST	0	2	16	11	10	34	0	73	59.00	Persistent

S.N	DST	Street Range	Street Name	Homicide	Rape	Robbery	Felonious Assault	Burglary	Theft	Vehicle Theft	Sum of Actual Crime	Standardized Weighted Crime	Hot Spot Type
19	5	500 - 758	W MARTIN LUTHER KING JR DR	0	2	5	5	24	65	0	100	58.50	Persistent
20	3	3700 - 3788	WESTMONT DR	0	6	11	7	29	21	2	76	55.50	Persistent
21	3	1900 - 2040	MILLVALE CT	0	2	8	9	51	9	4	83	55.00	Persistent
22	3	3020 - 3244	WARSAW AVE	0	8	7	2	3	61	0	81	52.50	Persistent
23	1	1800 - 2030	CENTRAL PKWY	0	0	9	1	0	74	0	83	51.00	Persistent
24	3	2203 - 2580	QUEEN CITY AVE	0	2	6	2	15	62	0	86	51.00	Persistent
25	3	3341 - 3460	MCHENRY AVE	0	2	5	8	25	38	3	81	50.50	Persistent
26	3	1855 - 1871	QUEEN CITY AVE	0	1	10	1	2	65	0	79	50.50	Persistent
27	5	4816 - 5051	WINNESTE AVE	1	2	9	1	39	23	2	77	50.50	Persistent
28	3	2600 - 2898	HARRISON AVE	0	0	9	7	32	36	1	85	50.00	Persistent
29	1	1700 - 1789	VINE ST	3	1	15	10	6	11	0	46	48.00	Persistent
30	4	901 - 967	E MCMILLAN ST	0	0	7	7	5	53	1	73	47.00	Persistent
31	5	350 - 371	LUDLOW AVE	0	0	4	1	7	71	0	83	46.00	Persistent
32	1	1300 - 1324	WALNUT ST	0	0	20	9	3	9	0	41	45.00	Persistent
33	3	4400 - 4891	GUERLEY RD	0	0	9	0	17	42	2	70	44.00	Persistent
34	3	2671 - 2741	ERLENE DR	0	3	6	0	35	25	1	70	42.50	Persistent
35	4	4500 - 4559	READING RD	0	0	4	0	2	71	0	77	42.50	Persistent
36	5	2948 - 2988	HIGHFOREST LN	1	1	5	4	22	33	1	67	42.50	Persistent
37	5	3001 - 3056	MCMICKEN AVE	0	3	8	3	19	27	3	63	42.50	Persistent
38	4	7600 - 7666	READING RD	0	1	9	2	9	42	0	63	42.00	Persistent
39	4	6969 - 7089	GLENMEADOW LN	3	1	8	2	21	20	0	55	41.50	Persistent
40	3	2320 - 2320	BOUDINOT AVE & 5100 CROOKSHANK RD	0	0	7	0	10	51	0	68	41.00	Persistent
41	4	702 - 770	RIDGEWAY AVE	0	1	6	6	25	24	0	62	40.50	Persistent
42	5	75 - 289	CRAFT ST	0	2	6	6	32	15	0	61	40.50	Persistent
43	5	5800 - 5854	HAMILTON AVE	0	0	12	1	6	37	0	56	40.50	Persistent

44	2	4300 - 4363	KELLOGG AVE	0	0	2	1	7	65	0	75	40.00	Persistent

S.N	DST	Street Range	Street Name	Homicide	Rape	Robbery	Felonious Assault	Burglary	Theft	Vehicle Theft	Sum of Actual Crime	Standardized Weighted Crime	Hot Spot Type
45	4	3521 - 3549	READING RD	1	0	10	5	7	28	0	51	39.50	Persistent
46	2	1512 - 1590	DIXMONT AVE & 3263 GILBERT AVE	0	1	2	4	11	12	0	30	39.00	Emerging
47	4	2924 - 3030	BURNET AVE	0	0	2	1	2	66	0	71	38.00	Persistent
48	4	7000 - 7098	READING RD	0	0	5	6	15	33	0	59	37.50	Persistent
49	4	900 - 946	BURTON AVE	0	0	13	8	8	10	0	39	36.50	Persistent
50	2	2120 - 2136	BEECHMONT AVE	0	0	4	0	0	60	0	64	36.00	Persistent
51	3	1908 - 1928	WESTMONT LN	0	1	5	6	18	24	1	55	36.00	Persistent
52	4	7100 - 7166	EASTLAWN DR	0	1	10	5	14	12	3	45	35.50	Persistent
53	3	3000 - 3099	MCHENRY AVE	2	0	5	5	19	18	0	49	35.00	Persistent
54	4	4100 - 4271	READING RD	1	18	1	7	3	9	0	39	34.50	Persistent
55	3	2890 - 2984	FOUR TOWERS DR	0	0	6	1	18	29	1	55	34.00	Persistent
56	5	2300 - 2396	STRATFORD AVE	0	0	5	1	18	32	0	56	33.50	Persistent
57	1	141 - 152	W 5TH ST	0	2	3	0	3	48	2	58	33.00	Persistent
58	4	503 - 525	HALE AVE	0	0	5	4	25	16	1	51	32.50	Persistent
59	4	4860-5000	READING RD								32	32.50	Persistent
60	4	2300 - 2366	KEMPER LN	0	0	4	3	11	36	0	53	32.00	Persistent
61	4	2607 - 2631	VICTORY PKWY	0	0	11	1	9	59	0	57	32.00	Persistent
62	1	601 - 601	RACE ST	0	0	1	0	0	60	0	61	31.50	Persistent
63	4	3001 - 3048	READING RD	0	0	14	0	0	21	1	35	31.50	Persistent
64	3	4216 - 4241	GLENWAY AVE	0	0	6	1	0	41	0	48	30.50	Persistent
65	4	1828 - 1888	LOSANTIVILLE AVE	0	3	9	2	12	11	0	37	30.00	Persistent
66	4	613 - 722	GHOLSON AVE	1	0	5	3	9	23	3	44	30.00	Persistent
67	4	1722 - 1776	SEYMOUR AVE	0	0	2	2	7	43	0	54	30.00	Persistent
68	5	1400 - 1540	W NORTH BEND RD	0	1	7	2	8	24	0	42	29.50	Persistent
69	5	1703 - 1739	CASEY DR	0	0	3	4	14	27	1	49	29.50	Persistent
70	5	5295 - 5324	EASTKNOLL CT	1	2	4	1	11	24	1	44	29.00	Persistent

Appendix B: Treatment and Control Group

	Treatment Group				Control Group			
	Dist.	**Patrol***	**Street Range**	**Street Name**	**Dist.**	**Street Range**	**Street Name**
1	CBS	L	141 – 152	W 5TH ST	5	4746 – 5182	EASTKNOLL CT
2	1	L	1700 - 1789	VINE ST	3	6000 – 6243	GLENWAY AVE
3	1	S	1800 - 2030	CENTRAL PKWY	3	3406 – 3630	WARSAW AVE
4	1	F	1300 - 1324	WALNUT ST	3	2308 – 2573	NOTTINGHAM RD & PRESIDENT DR & WILLIAMSBURG DR
5	2	F	4824 - 4825	5700-6000 BRAMBLE AVE & 4400-4800 WHETSEL AVE	1	1401 – 1421	HAWAIIAN TER
6	2	S	3735 - 3881	PAXTON AVE	3	3207 – 3396	VINE ST
7	2	L	4300 - 4363	KELLOGG AVE	4	1 - 6	BOWLING GREEN CT & MOOSEWOOD AVE
8	2	L	2120 - 2136	BEECHMONT AVE	5	5342 - 5475	W CORRY ST
9	3	L	2117 - 2388	FERGUSON RD	3	3700 - 3788	BAHAMA TER
10	3	S	2220 - 2444	HARRISON AVE	3	3020 - 3244	WESTMONT DR
11	3	L	1900 - 2000	WESTWOOD NORTHERN BLVD	3	2203 - 2580	WARSAW AVE
12	3	S	2913 - 2913	BOUDINOT AVE & 3000 QUEEN CITY AVE	3	1855 - 1871	QUEEN CITY AVE
13	3	F	1900 - 2040	MILLVALE CT	1	400 - 530	QUEEN CITY AVE
14	3	F	3341 - 3460	MCHENRY AVE	5	350 - 371	W 9TH ST
15	4	F	901 - 967	E MCMILLAN ST	4	2607 - 2631	LUDLOW AVE
16	4	L	7600 - 7666	READING RD	4	4100 - 4271	VICTORY PKWY
17	4	F	702 - 770	RIDGEWAY AVE	5	3001 - 3056	READING RD
18	4	S	3521 - 3549	READING RD	5	75 - 289	E MCMICKEN AVE
19	4	S	7100 - 7166	EASTLAWN DR	5	5800 - 5854	CRAFT ST
20	4	L	4860-5000	READING RD	2	1512 - 1590	HAMILTON AVE
21	4	F	1722 - 1776	SEYMOUR AVE	4	900 - 946	DIXMONT AVE & GILBERT AVE
22	5	L	2300 - 2392	WHEELER ST	3	1908 - 1928	BURTON AVE
23	5	F	500 - 758	W MARTIN LUTHER KING JR DR	3	2890 - 2984	WESTMONT LN
24	5	S	1400 - 1540	W NORTH BEND RD	4	503 - 525	FOUR TOWERS DR
25	5	S	2948 - 2988	HIGHFOREST LN	4	4500 - 4559	HALE AVE
26	5	S	2300 - 2396	STRATFORD AVE	5	1400 - 1540	READING RD
27	5	F	1703 - 1739	CASE DR	5	5295 - 5324	W NORTH BEND RD

*** Patrols Types: Park and Flash (L), Park and Sit (S), Park and Walk (F)**

Appendix C: CPD Training Materials

HOT SPOT POLICING EXPERIMENT 2013

The University of Cincinnati has partnered with the CPD and analyzed thousands of calls for service and crime incidents. Based on this analysis, hot spots were identified throughout the City. The hot spots are places the police already go to on a daily basis.

Research indicates any dosage over 15 minutes diminishes the positive impact of police presence. However, 12 minutes minimum is required at each hotspot.

Hot spot policing is about directing officers to a location where officers would normally go, but the department is being more predictive, strategic and thus, preventative.

At the beginning of your shift, you will be assigned Hot Spot street segments to visit during your 10 hour day.

You will be assigned an order (random) to visit each Hot Spot and your assignment will include whether you "park and sit", "park and flash", or "walking patrol."

Hotspot times occur between 12pm – 2am.

Officers are supposed to visit 12-16 minutes (shoot for 15 minutes, but minimum of 12 minutes) every two hours. Each hotspot should get two hours (total) treatment per day.

- **Park and Sit** – drive to the Hot Spot, sit and park your car; leave after 15 minutes (stay at least 12). Please park near the 'midpoint' location of the hotspot.
- **Park and Flash** – drive to the Hot Spot, park your car with the overhead lights on. Your lights will remain on the entire time you are at the Hot Spot; leave after 15 minutes (stay at least 12). Please park near the midpoint location of the hotspot.
- **Walking Patrol** – drive to the Hot Spot, park your car. Get out and walk the assigned street segment, engage in proactive approaches to address problems. Stop in to any businesses on the route and FIR pedestrians; leave after 15 minutes (stay at least 12). Please park near the midpoint location of the hotspot.

For all three of these treatments, we ask officers to randomly choose which order they visit the hotspots (i.e., flip a coin) in their districts. We want CPD to visit the assigned locations at different times and in different orders each day. We will examine the order and times visited during our coding and if we see a regular pattern we will let CPD know so they can alter the pattern.

Cincinnati Police/ University of Cincinnati 15 Minute Experiment Data Collection Form

Park And Flash ☒ **Park and Sit** ☐ **CAD#** _____

Walking Patrol ☐ **Date:** _____ **Time From:** _____ **Time To:** _____

Officer Name: _____ **Badge:** _____ **Location (street segment):** **1700-1789 Vine St.**

Location #: **2** **Address Parked:** _____

Patrol Pre-empted? **Yes** ☐ **No** ☐ **Time Pre-empted:** _____ **Time Returned:** _____

Arrest	Name (Last, First)	DOB	CTL#	Charge	Incident Location/ Address

FIR/ Stop and Talk	Name (Last, First)	DOB	CTL#	Reason for Stop	Incident Location/ Address

Business Stop	Name (Last, First)	Business Name	Business Address

Directions

Park and Flash: Park the cars at the above "Address to Park", put yourself out over the radio for a "15 minute lights on directed patrol", and activate flashers. Do not activate the siren. It is acceptable to deactivate the in-car camera. Remain with the car. After 15 minutes, end the directed patrol over the air, turn off the lights and leave the area.

Park and Sit: Park the car at the above "Address to Park" and put yourself out over the radio on a "15 minute directed patrol". After 15 minutes, end the directed patrol over the air and remove the car from the area.

Walking patrol: Park the car at the above "Address to Park" and put yourself out on over the radio on a "15 minute walking directed patrol". Document any arrest or FIR made during the course of the directed patrol on this worksheet, as well as any business you stop in. After the 15 minute patrol is completed, end the directed patrol and leave the area.

At the end of your relief, turn this form in to the sergeant that originally issued it.

Note: If a directed patrol is Pre-empted due to an emergency run, "Code 0", etc,return to the directed patrol after the completion of the interrupting run in order to complete the patrol. If you have been assigned directed patrols which you will not be able to complete during your shift, you must ensure they are reassigned to other personnel for completion.

Supervisor: _____ **Badge:** _____ **EMPL ID:** _____ **Date:** _____