

Example of Application funded under the following solicitation:

FY 2009 Smart Policing: Evidence-Based Law Enforcement Initiative

Applicant: Philadelphia Police Department

## **Attachment 1: Program Abstract**

**Applicant:** Philadelphia Police Department

**Title:** Building Evidence About Police Violent Crime Reduction Efforts

**Request:** \$500,000

**Category:** Category I: Smart Policing Demonstration Initiative

The primary goal of this project is to reduce violent street crime in Philadelphia. A secondary goal is to expand the Philadelphia Police Department's (PPD) capacity to use and implement data-driven, evidence-based approaches to reducing violent street crime. A tertiary goal is to provide a head-to-head test of three different evidence-based approaches.

The PPD and Drs. Jerry Ratcliffe and Elizabeth Groff of Temple University will design, implement and test three different evidence-based approaches to combat violence in multiple small areas. The approaches are a (1) "placed-based" approach; (2) "offender-based"; and (3) "holistic" problem-solving approach addressing place, offender, and victim conditions. These three approaches will be implemented and tested in randomly selected sixty-six micro-places (with 22 control places) where chronic, violent street crime is occurring.

The major deliverables will be accomplished jointly by PPD and Temple's researchers and are:

1. Identification of micro-places with highest violent street crime and design of interventions.
2. Training of PPD personnel in understanding the approaches and details on how to implement the specific approach.
3. Implementation in 66 places with on-going data collection, analysis and feedback.
4. Post-intervention data collection, analysis, writing, and dissemination of a final report.

## Attachment 2: Program Narrative

### Statement of Problem

Philadelphia ranked second in violent crime rate among cities with over 750,000 population in 2008 (FBI, 2008). In calendar year 2008, fourteen (14) of every 1,000 residents of Philadelphia was a victim of violent crime. Philadelphia is the sixth largest city in the United States with a population of 1,441,117 served by the Philadelphia Police Department consisting of 6,500 sworn members and 700 professional staff. There were 83,355 Part I crimes in 2008, with violent crimes accounting for twenty-five percent (25%). Attachment 5 provides a report on Part I Uniform Crime in Philadelphia.

On the day of Mayor Michael Nutter's inauguration (January 7, 2008), he directed the newly appointed Police Commissioner, Charles H. Ramsey, to develop and implement a crime strategy to reduce violent crime. Commissioner Ramsey released his Crime Strategy on January 30, 2008. A guiding principle of this strategy and of the PPD is 'Smart (Intelligent) Policing'.

The Crime Strategy defines this guiding principle as:

"Our strategies, tactics and allocation of resources will be guided by information, intelligence, and nationally recognized best police practices. We will use accurate, current statistical data, along with human intelligence. We will develop innovative strategies to combat crime and disorder. We will constantly monitor the success of these strategies against ever changing trends and patterns. Adjustments will be fluid and immediate when necessary." (Ramsey & Joyce, pgs. 2-3)

This guiding principle, in addition to the principles of collaboration, prevention and continuous improvement, directed the development and implementation of PPD's Crime Strategy.

The crime strategy is having success. Murder was reduced by fifteen percent (15.3%), shooting victims by eleven percent (11.2%), and violent crime by three percent (3%) in 2008. Progress is still being made in 2009. Through June 9, 2009, homicide and rape are down thirteen percent (13%) and all violent crime is showing a decrease. Part I crime is down eleven percent

in 2009. However, continued progress is needed and decreases will become more difficult. Not only is Philadelphia facing a violent crime challenge it is also facing a \$1.5 billion deficit over the next five years. This means the PPD is working with shrinking resources. The PPD must improve and refine its ability to use evidenced-based approaches to violent crime.

### **Program Design and Implementation**

*Evidence-Based Practices.* Researchers have studied police strategies and tactics that are aimed at addressing violent crime. Lum, Koper, and Telep (2009)<sup>1</sup> examined eighty-nine rigorous police studies on reducing violent crime. They report that police can be most effective in reducing violent crime when approaches are proactive, use specific strategies, focus on small places or groups of people in small places, and develop specific solutions using careful analysis of local problems and conditions. This project proposes to use these findings to test three promising approaches.

There are a variety of studies demonstrating the effectiveness of hot spots policing in reducing crime (Braga, 2001; Braga et al., 1999; Sherman & Weisburd, 1995; Weisburd & Green, 1995). Three of these studies examined hot spots policing specifically. As a group they found the strategy of applying police patrol to small areas reduced crime in those areas. Groff and LaVigne (2002) suggest that identifying hot spots based on at least a year's worth of data may improve the effectiveness of the tactic. Crime mapping is being used by both police analysts and researchers to understand the spatial and temporal distribution of high volume crime (Ratcliffe, 2008-9; Ratcliffe and Rengert, 2008). Ratcliffe (2008-9) reports that researchers are now able to create predictive hotspot maps that identify short-term crime problems.

Offender-based approaches to reducing re-offender have been used in the field of community corrections, probation, and parole. The intent is to identify offenders who are at high

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<sup>1</sup> Full references are provided in Attachment 6.

risk of committing a new offense and then provide closer supervision in an attempt to prevent their future offending. Berk, et.al. (2009) report that using the random forests technique resulted in an eightfold increase in identifying which probationer or parolee is more likely to commit a homicidal act. However, others have found that when police target individuals there are mixed results (Lum, Koper, and Telep, 2008). Nonetheless, programs like Project Safe Neighborhood (McGarrell, et. al. 2009) and Ceasefire (Kennedy, Braga, Piehl, Waring 2001; Tita, Riley, Ridgeway, Greenwood, 2005) do focus on intervening at the individual level with success.

Braga et al. (1999) focused on testing the impact of problem-oriented policing at specific places using a randomized controlled experiment (Braga et al., 1999). They observed significant reductions in all crime types at the places which received problem-oriented policing as compared to the control places. An evaluation of a community policing initiative on reducing serious crime found that a problem-solving and collaborative approach found an abrupt and permanent decline in violent crime in the treatment area but not in the comparison area (Connel, Miggins, and McGloin, 2008). These studies suggest that problem-oriented policing can reduce violent crime.

The above studies support Telep's (2008) summary that "police tend to be particularly successful when tailor-made efforts are concentrated on specific high violence street blocks, corners, and address clusters." The above approaches are promising but have not been tested within the same jurisdiction using an experimental design.

***Design and Implementation.*** The goal of this project is to expand PPD's capacity to use a data-driven evidence-based approach to reducing violent street crime in Philadelphia. This goal will be accomplished by increasing the collection and use of data and analysis to understand violence and increase the number of new initiatives or tactics to reduce violence and resulting

cost savings. Attachment 4 provides a numerical listing of key deliverables and milestones, responsibilities, and timelines.

Specifically, the Philadelphia Police Department proposes a joint partnership with Dr. Jerry Ratcliffe and Dr. Elizabeth Groff of the Department of Criminal Justice Program at Temple University to design and test three different evidence-based approaches to combat violence in multiple neighborhoods. This project will implement and test “placed-based” approach of predicting hot spots through GIS mapping and using intelligence-led techniques; (2) “offender-based” approach using Berk and Sherman’s (2009) work on identifying high risk, violent probationers and parolees in Philadelphia; and (3) a “holistic” problem-solving approach addressing place, offender, and victim conditions.

We propose to test these three strategies using a block randomized approach. The first step in this effort is to identify chronic areas of street violence. With extensive access to Philadelphia crime data, Ratcliffe and Groff, both experts in spatial criminology, will identify the ‘hottest’ crime corners across the city using a multistep process. They will focus on violent crimes such as homicide, robbery and aggravated assault. From these crimes, they will create a weighted violent crime score for 2007-2009 for each street intersection in Philadelphia and select the top one percent of the hottest corners in Philadelphia.

Using the ‘hottest’ one percent of corners, the PPD and the research team will work together to create small areas in which to apply the intervention strategies. Close-by corners may be combined to create a slightly larger area. This strategy will be beneficial because it increases the separation between targeted areas which will allow an evaluation of displacement effects. Because research has found that police interventions undertaken at “micro places” are most effective, the target areas will be kept very small (Lum, et. al., 2009). A new weighted crime

index and crime profile will be developed for each area identified and the areas will be ranked. Sets of places will be developed which have similar crime problems and environmental characteristics. Twenty-two sets of places for each approach and control (88 in total) will be used. A power analysis found that this number will have enough power to detect a small effect.

The second step is to randomly assign the approaches to the experimental areas. The underlying assumption is that chronic violent street crime areas have the elements necessary to implement any of the three approaches. Using methodology similar to Braga et. al. (1999), the sets of places identified in the first step will be presented to PPD district captains. The test will not only be the experimental areas against the control areas but also each of the experimental approaches against the other. The outcomes of this effort will help the PPD refine its crime fighting strategy by suggesting which approach is the most effective against violent street crime.

Appropriate tactics associated with each approach will then be developed. Police personnel will receive training and coaching on the implementation of the appropriate approach. The 'place-based' treatment area will consist of tactics of hot spot enforcement, police visibility, and confidential informant development. Detailed analysis of street crime by location, crime type, day and time will be done. Increased police visibility and enforcement will occur at the right place, day and time. Visibility may occur with increased motor, bike, and foot patrols. Officers will be given current crime analysis and intelligence about recent crimes and offenders. In addition the Criminal Intelligence Unit will work to develop informants and information for officers' use in the area. Emphasis will be put on making the area too 'hot' to commit street crime.

The 'offender-based' approach will focus on identifying high risk offenders who live, frequent, or commit crimes within the treatment area. The PPD will work with Philadelphia's Parole and Probation Agency and use Berk's statistical prediction method to identify high risk probationers and parolees in the area. An approach similar to the Project Safe Neighborhood will be developed through cooperative arrangements with The Probation and Parole Agency, state and federal law enforcement agencies, the District Attorney's Office, and the U.S. Attorney's Office. In addition, appropriate service agencies will be used to address the needs of the offenders. The identified high-risk offenders will be known and monitored by PPD and other law enforcement agencies and if arrested will be given special attention by the prosecutors.

The problem-solving approach will focus on violent street crime and will use the SARA model (Eck and Spelman 1987) to analyze the characteristics of the crime location, offenders and victims in that location and structure a solution. The police officers in collaboration with appropriate employees of city agencies, and residents of the area will develop and implement a strategy to address the conditions that are contributing to street violence in the specified area.

Each approach would run for a minimum of six months. We will compare each of the areas on a variety of measures based on official data for the three years prior to the intervention and the six months after the intervention. Official measures will include, but are not limited to, reported violent crime, arrests, and acceptance of cases for prosecution. We will also develop and administer two surveys. One survey will measure the residents' level of satisfaction with police services and the other will measure the officer's satisfaction with the experience. Each survey will be administered prior to the start of the interventions and immediately after the intervention ends. Surveys will be completed for both treatment and control areas. The survey's will be developed and analyzed by the research partners and administered by the PPD.

## **Capabilities/Competencies**

*Capabilities.* This project will be managed by Nola Joyce of Philadelphia Police Department and Drs. Jerry Ratcliffe and Elizabeth Groff of Temple University. Resumes are included in Attachment 4. They will direct the project team of researchers and police practitioners. The project will support the work of graduate assistants from Temple and one crime analyst hired by PPD with funds from this grant. These positions will be mentored and directed by the project managers. This approach will help build the analytical capacity within the PPD after the project ends and produce young scholars with action research experience.

Nola Joyce has worked for the Chicago Police Department, Metropolitan Police Department, Washington, D.C., and the Philadelphia Police Department. She has led major change initiatives in all three departments. Most significantly the Chicago Alternative Policing Strategy (CAPS) and Washington's Policing for Prevention. She has three master degrees with experience and knowledge in applied research.

Dr. Ratcliffe has published over 40 research articles and four books: 'Strategic Thinking in Criminal Intelligence' (Federation Press, 2004 and 2009 edited); 'GIS and Crime Mapping' (Wiley, 2005 with Spencer Chainey) and 'Policing Illegal Drug Markets' (Criminal Justice Press, 2005, with George Rengert and Sanjoy Chakravorty). His most recent book, "Intelligence-Led Policing" (Willan Publishing) is the first book to address this emerging area of police management practice, and is requisite reading for PPD's promotional exam from Sergeant to Lieutenant

Dr. Groff has published over fifteen articles and reports on spatial analysis and its use in criminal justice research. As the GIS Coordinator, she institutionalized the use of geographic information systems (GIS) in the Charlotte-Mecklenburg Police Department. In addition to her

local law enforcement experience, she gained national exposure as a member of the Crime Mapping Research Center at the National Institute of Justice where she informed both researchers and practitioners of the value of spatial analysis. She was recently recognized for her work by both the Academy of Experimental Research who named her Young Experimental Scholar of 2008.

***Prior Partnership Work.*** Dr. Ratcliffe and other members of Temple's Department of Criminal Justice have worked with the PPD over the past eight years. They are familiar with the many sources of PPD's data and have the full confidence of the command staff. Joint endeavors include an examination of near-repeat patterns in Philadelphia shootings (Ratcliffe and Rengert, 2008), an evaluation of CCTV on crime reduction (Ratcliffe & Taniguchi, forthcoming in *Justice Quarterly*), an outcome evaluation of 'Operation Safer Streets (Ratcliffe & Breen, 2007), and an examination of the effectiveness of a footbeat program (Ratcliffe & Taniguchi, 2008). Currently this partnership is working on testing the effectiveness of a new footbeat program to combat violent crime. This effort was born out of an earlier effort last year when the PPD asked Dr. Ratcliffe to measure the effectiveness of footbeats identified by PPD command staff. The findings showed mixed results. One of the recommendations from this study was that Temple researchers be brought in from the start of 2009 footbeats experiment in order to assure a rigorous and methodologically-sound study. The PPD took that recommendation and asked Temple to help identify and design a footbeat study. Ratcliffe and Groff identified 120 of the most violent corners. The PPD then agreed to a random assignment of 60 of the corners to new footbeats and 60 kept as control. The PPD is assigning 240 new officers to these sixty beats for coverage over sixteen hours, seven days a week. These footbeats will be maintained for a period of four months. The researchers are measuring the effectiveness of this intensive manpower

initiative, both qualitatively and quantitatively in a combined process and outcome evaluation.

The above is an example of how Dr. Ratcliffe and other Temple researchers are working with the PPD to use evidence-based policing techniques.

### **Impact/Outcomes and Description of Data Collection Plan**

Following the standard procedures of an RCT design, Ratcliffe and Groff will collect and analyze violent crime data, calls-for-service, arrest and re-offending over the study period.

These data will be obtained from the PPD's automated systems and be provided to the researchers through an existing memorandum of understanding. The community and officer surveys will be designed by the researchers and distributed by the joint police-research team. Pre- and post-program differences will be measured for both the treatment and control areas. This research will occur throughout the period of this funding. The experimental results will provide a 'head-to-head' test of three high profile policing strategies. Police agencies need information about what works to inform their practice. This experiment will provide much needed information to practitioners.

In addition to this summative evaluation, an on-going assessment of each of the approaches will be conducted and be reviewed weekly with the police implementation team. The crime analysts hired under this project will be charged, with oversight by the project directors, to develop and produce a weekly report specific to each area and approach. These reports will help guide the command and officers in refining and redirecting their efforts with the constraint that any modifications must stay within the geographic boundaries and remain true to the approach being tested. In a more formal description, this is a practitioner-centered, action research project that will maintain empirical analytical integrity through a combined outcome (what was the result?) and process (how was the result obtained?) evaluation.

The weekly briefings will also provide information on implementation issues, acceptance of the approach by officers, and organizational challenges associated with each approach. Not only must the successful approach reduce violent street crime but it must also be implemented as designed and accepted by the officers and community. Therefore, a process evaluation of all three approaches will be done. This part of the evaluation will help the PPD to understand the challenges involved and develop sustainable solutions for implementing the approach in other places.

In order to put some flesh on the bones of the experiment, officers will be asked to document their activities under each of the strategies using a weekly reporting form. The results of the self-reports will be entered into a database and analyzed by the research partners. In addition, the results of the community survey and the officer survey will be analyzed and used to better understand exactly how the strategy was perceived by the community and by the officers charged with implementing it. This multi-method, multi-faceted strategy provides different windows of understanding on both the implementation and perception of three important strategies for reducing violent crime. Not only will we be able to say how well each strategy worked (or did not work) but we will also be able to say something about why.

The results of these efforts will inform the Philadelphia Police Department on which approach to reducing violent crime should be taken as a city-wide strategy. In addition the performance measures for the grant will be tracked and reported. The weekly reports created by the crime analysts will be used as a basis for department-wide reporting. The lessons learned from the process evaluation will direct the implementation efforts for the selected approach. The final results will increase the collection and use of data and analysis to understand violence in Philadelphia and increase the number of new initiatives or tactics to reduce that violence.

# Budget Detail Worksheet

**A. Personnel**

Position	Computation	Cost
[REDACTED]		

**B. Fringe Benefits**

Position	Computation	Cost
Fringe- Research and Information Analyst 1	2 x \$18,587.00	\$ 37,174.00

**C. Travel**

Purpose	Computation	Cost
Lodging- Meeting #1- Washington, DC	4 x 3 x \$233.00	\$ 2,796.00
Transportation (Train)- Meeting #1 Washington, DC	4 x \$300.00	\$ 1,200.00
Per Diem- Meeting #1- Washington, DC	4 x 4 x \$64.00	\$ 1,024.00
Lodging- Meeting#2- Washington, DC	4 x 3 x \$233.00	\$ 2,796.00
Transportation (Train)- Meeting #2- Washington, DC	4 x \$300.00	\$ 1,200.00
Per Diem- Meeting #2- Washington, DC	4 x 4 x \$64.00	\$ 1,024.00
Lodging- Meeting#3- Washington, DC	4 x 3 x \$233.00	\$ 2,796.00
Transportation (Train)- Meeting #3 Washington, DC	4 x \$300.00	\$ 1,200.00
Per Diem- Meeting #3- Washington, DC	4 x 4 x \$64.00	\$ 1,024.00

**D. Equipment**

**E. Supplies**

Item	Computation	Cost
Computer Equipment with Software	1 x \$3,000.00	\$ 3,000.00

**F. Consultants/Contracts**

Contract- [REDACTED]		\$ 354,766.00
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**G. Other Costs**

**H. Indirect Costs**

**Total \$ 500,000.00**

## Budget Summary

Budget Category	Federal Amount	Non Federal Amount
A. Personnel	\$ 90,000.00	
B. Fringe Benefits	\$ 37,174.00	
C. Travel	\$ 15,060.00	
D. Equipment	N/A	
E. Supplies	\$ 3,000.00	
F. Consultants/Contracts		
G. Other Costs	\$ 354,766.00	
Total Direct Costs	\$ 500,000.00	
H. Indirect Costs		
Total Project Costs	\$ 500,000.00	
Federal Request	\$ 500,000.00	
Non-Federal Amount		

# Budget Narrative

## A. Personnel

**Position**

**Computation**

**Cost**  
\$ 90,000.00

## B. Fringe Benefits

**Position**

**Computation**

**Cost**  
\$ 37,174.00

## C. Travel

**Purpose**

**Computation**

**Cost**

Lodging- Meeting #1- Washington, DC

4 x 3 x \$233.00 \$ 2,796.00

Transportation (Train)- Meeting #1 Washington, DC

4 x \$300.00 \$ 1,200.00

Per Diem- Meeting #1- Washington, DC

4 x 4 x \$64.00 \$ 1,024.00

Lodging- Meeting#2- Washington, DC

4 x 3 x \$233.00 \$ 2,796.00

Transportation (Train)- Meeting #2- Washington, DC

4 x \$300.00 \$ 1,200.00

Per Diem- Meeting #2- Washington, DC

4 x 4 x \$64.00 \$ 1,024.00

Lodging- Meeting#3- Washington, DC

4 x 3 x \$233.00 \$ 2,796.00

Transportation (Train)- Meeting #3 Washington, DC

4 x \$300.00 \$ 1,200.00

Per Diem- Meeting #3- Washington, DC

4 x 4 x \$64.00 \$ 1,024.00

## D. Equipment

## E. Supplies

**Item**

**Computation**

**Cost**

Computer Equipment with Software

1 x \$3,000.00 \$ 3,000.00

## F. Consultants/Contracts

\$ 354,766.00

## G. Other Costs

## H. Indirect Costs

**Total** \$ 500,000.00

