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## **Utilizing Crime Analysis to Evaluate Criminal Justice Initiatives**

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**Utilizing Crime Analysis to  
Evaluate Criminal Justice Initiatives**

by

Peter Tran

A Thesis/Dissertation Submitted in Partial Fulfillment of the  
Requirements for the Degree of Master of Science in  
Criminal Justice

School/Department of Criminal Justice  
College of Liberal Arts

Rochester Institute of Technology  
Rochester, NY  
May 08, 2015

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# Utilizing Crime Analysis to Evaluate Criminal Justice Initiatives

## Abstract

With a population of over 200,000 and an average homicide rate of 18 to 20 per 100,000, Rochester remains a focal location for determining the most effective method for combating crime. Housing, community outreach, and street corner crackdowns are examples of criminal justice initiatives used in Rochester with the goal to improve quality of life, establish community relationships, and decrease crime. The objective of this research is to identify the effectiveness of housing, community outreach, and street corner crackdowns as crime prevention tools. Strengths and weaknesses of each criminal justice initiative are evaluated through crime analysis, crime mapping, regression analysis, and other research methods.

To conduct this study, each criminal justice initiative was examined through three different networks within the community. For example, housing was examined through Flower City's Habitat for Humanity and their intervention area. Community outreach was evaluated through a nonprofit organization called Pathway to Peace and their operations. Finally, street corner crackdowns were assessed through Rochester Safe and Sound and their implementation of drug sweeps.

Crime analysis and crime mapping, geographic information systems (G.I.S.) along with other research methods were used to conduct the analysis, provide visual aids, and establish boundaries for the different approaches. Specific places, such as drug markets, rehabilitated houses, and neighborhoods where anti-violence initiatives are piloted, are joined together as tests of variation of crime over time and urban geography. The use of crime analysis and G.I.S. help determine if crime is effected by the criminal justice initiatives employed in the targeted location.

Overall, the goal is to determine if housing, community outreach, and street corner crackdowns are effective criminal justice initiatives and understand the strengths of weaknesses of each approach. The results of this analysis may lead to better policy in decreasing crime, improve community relationships, and determine which criminal justice initiative should be the focused of future efforts.

# Chapter 1: Evaluation of Criminal Justice Approaches

Criminal justice intervention and prevention initiatives are often evaluated to determine the most effective method for combating crime. In many criminal justice approaches, community members must recognize and confront the issue of crime to bring stability within their community. A unified community consisting of major key players such as law enforcement, elected officials, nonprofit organizations, and most importantly, community members, are significant to successful criminal justice approaches. "Communities are the central institution for crime prevention, the stage on which all other institutions perform. Families, schools, labor markets, retail establishments, police and corrections must all confront the consequences of community life" (Sherman, 1997, pg. 1).

This thesis evaluates some of the criminal justice initiatives used to address crime, improve community safety, and enhance quality of life in Rochester, NY. The research is aimed at determining which criminal justice approach is effective in combating crime and if the duration and extent of the impact is consistent. The analysis may lead to better policy in decreasing crime, improve community relationships, and determine which criminal justice initiative should be in the focus of future investment or exploration..

Three criminal justice approaches were evaluated through three different entities to illustrate multiple perspectives on combating crime. The first approach is through improved housing within the community by a nonprofit organization called Habitat for Humanity. While the main objective for Habitat for Humanity is not to decrease crime within a community, it is aimed to improve quality of life, and the social economic impact it has within the community may prove valuable in preventing crime. The second approach is a community-based approach in targeting juvenile delinquency and gang violence through community workers and non-profit organizations.

This prevention method is used to pick out youths that require the most attention within the community to prevent further criminal behavior as they become older and more prominent members in the community. Finally, the third approach is one of the oldest approaches in the criminal justice system; that is the use of incarceration and deterrence to prevent crime. Law enforcement will generally target a specific area with high crime and remove offenders from society through incarceration and, additionally, that action may function to deter further criminal behavior within the area.

The theme which unites these disparate approaches is geography and the use of crime analysis to evaluate each location. According to the International Association of Crime Analysts, crime analysis is a set of techniques used to help police departments “become more effective through better information” ([http://www.iaca.net/dc\\_about\\_ca.asp](http://www.iaca.net/dc_about_ca.asp)). Some of the information used in crime analysis may help solve crimes, optimize internal operations, and prioritize patrol and investigations. Crime analysis may also help develop effective strategies and tactics to prevent future crimes; improve safety and quality of life; detect and solve community problems; plan for future resource needs; enact effective policies, and most importantly, educate and inform the community. Evaluating effective criminal justice approaches such as housing, community outreach, and street corner crackdowns will provide an understanding of their respective impacts on community problems.

In the arsenal of crime analysis, crime mapping through geographical information systems (G.I.S.) is a powerful tool in evaluating the causation of intervention and the area where crime occurs. According to Boba, “A GIS is a set of computer-based tools that allows the user to modify, visualize, query, and analyze geographic and tabular data (2005, pg.37). “Crime mapping is the process of using a geographic information system to conduct spatial analysis of crime problems



and other police-related issues, (Boba, 2005, pg. 37). This study includes strategic crime analysis where crime mapping is utilized to examine the relationship between criminal activities, indicators of disorder, and proximity of intervention.

Specific places, such as drug markets, rehabilitated houses, and neighborhoods where anti-violence initiatives are piloted, are joined together as tests of variation of crime over time and urban geography. Crime mapping and G.I.S. help bound the relationship between intervention, crime, and geography which allows us to ask very similar effects about different initiatives: Did the intervention effect crime at a particular location?

### **History of Housing as a Criminal Justice Approach**

The relationship between housing and crime has been studied over many decades in the research of criminology and criminal justice. In Chicago during the 1960s and 70s, public housing emerged in large concentrations with an influx of residents occupying housing projects (Hunt, 2001, pg.96). According to Hunt (2001), Robert Taylor Homes, the largest single public housing project in the country during 1962, suffered minor issues such as excessive vandalism which escalated to unsettling violence. By 1975, living conditions and neighborhood stability in the area worsened, which eventually led to the demolition of the public housing. Robert Taylor Homes became a national symbol of public housing failure. The failure of Robert Taylor Homes and other public housing nationwide resulted in studies on the relationship between crime and housing. For example, architect and city planner Oscar Newman, focused on social control, crime prevention, and public health in relation to community design through the defensible space theory. More recent researchers such as Susan Popkins et. al. (2012), suggest that higher crime rates are associated

with greater concentrations of relocated households, whereas the neighborhoods where public housing was demolished, violent crime decreased more than 60 percent (pg. 148-151).

Theories such as Newman's defensible space and Popkin's public housing issues are applicable to some criminal justice approaches we use today. Since public housing developments suffered extreme violent crime and drug trafficking rates (Popkins et. al, 2012, pg. 154), other approaches such as single family homes created by Habitat for Humanity may prove more beneficial in neighborhood stability and crime reductions. After all, Habitat for Humanity housing operations differs widely from public housing. This thesis examines the pros and cons of Habitat for Humanity housing, the operations of Habitat for Humanity, and how it may affect the number of crimes in the nearby area. However, housing will be one of the three criminal justice approaches that will be examined.

### **History of Community Outreach as a Criminal Justice Approach**

The second criminal justice approach that will be evaluated is community outreach. Crime prevention through community outreach is often associated with a type of policing called problem oriented policing (POP). POP is a policing strategy that involves the identification and comprehension of specific crime issues and how to develop effective response strategies. This type of policing allows officers to respond to crime in a proactive approach rather than a reactive approach (Goldstein, 2001, pg. 1). A heavily evaluated program known as Operation Ceasefire is a prime example of "problem oriented policing which aimed at reducing youth homicide and youth firearms violence in Boston" (Braga et. al., 2001, pg. 195). "Boston Ceasefire was the first project documented to involve direct engagement between law enforcement and a pre-identified group of individuals at high-risk for becoming perpetrators of gun violence, (Fritsche & Cerniglia, 2010, pg. 8). "The original evaluation of the Boston Ceasefire Model, published in 2001, showed a

drastic decrease gun homicides among young people, which the authors attributed to program effects based on a quasi-experimental, non-equivalent design comparing gun violence in Boston with other regions in Massachusetts and large cities nationally (Braga et al., 2001, pg. 211-213). According to Fritsche & Cerniglia (2010), “Soon after the implementation in Boston, replication projects were established in Stockton, California, Lowell, Massachusetts and Cincinnati, Ohio, all showing similarly positive outcomes using similar evaluation designs” (pg.8).

Similar to Boston’s Ceasefire Model, Chicago Ceasefire is also a data-driven program that maintains a primary focus on the prevention of violence among a core group of high-risk individuals. The Chicago Ceasefire model departs substantially from Boston Ceasefire and Project Safe Neighborhoods in that it is primarily a public health/prevention model (Fritsche & Cerniglia, 2010, pg. 9). According to Fritsche & Cerniglia (2010), The analysis for the Chicago Ceasfire program was a quasi-experimental, matched comparison group design and documented a statistically significant decrease in shooting incidence and gun violence density in four of seven neighborhoods where Ceasefire was active (pg. 9). Because of this decrease in shooting and gun violence, Chicago Ceasefire had also inspired replication throughout the nation.

Pathways to Peace and Operation S.N.U.G., a program operating in the city of Rochester, NY, is inspired by both the models from Boston Ceasefire and Chicago Ceasefire with the objective to decrease gun homicides and shootings among youth. With a replication of the Ceasefire models in Rochester, this thesis will evaluate the effectiveness of the program and examine whether similar declines in shootings and homicides among youth have occurred.

### **History of Street Crackdowns as Criminal Justice Approach**

According to Sherman (1990), crackdowns are a law enforcement technique that uses a large amount of law enforcement resources applied to a target that was previously under-enforced;

with an intent to enhance deterrence of misconduct (pg. 2). “One of the most widespread developments in American policing in the 1980s has been the “crackdown.” After watching public behavior patterns among immigrant groups become increasingly disorderly, or at least a threat to the status position of the earlier settlers, city after city in the nineteenth century created a full-time uniformed police force (Sherman, 1990, pg. 1-2). Sherman stated that law enforcement activity by independent marshals and constables at the time proved ineffective in decreasing felony arrests; therefore, police bureaucracies developed a strategy that drastically increase the number of arrests on minor crimes such as public disorder. Some examples of police crackdowns are 1984 New York City’s Operation Pressure Point; 1985 Georgetown crackdown on public disorder; and 1986 Washington’s Operation Clean Sweep.

In 1985, the crackdown in Georgetown section of Washington D.C. focused on illegal parking and disorder. According to Sherman (1990), the police crackdown emerged to control street crime attracted by the underage drinking that increased due to the district’s low minimum age for legal beer and wine drinking (pg. 15). The police use several tactics such as publicity to announce its increased presence in the area, as well as increased vigilance with extensive arrests for public disorder. Although the effect on crime was never scientifically proven, the overall perception in the area by local residents was that the neighborhood was safer with less crime. They also believed that the crackdown was still in effect even though the crackdown decayed a month earlier (Sherman, 1990, pg. 17).

In early 1984, Operation Pressure Point was launched in New York City as a sixty-day crackdown on the Lower East Side drug markets that last at least two years. Before the deployment of Operation Pressure Point, the area was the hotbed of drug activity; offering drug bazars with heroin customers lining up around street corners (Sherman, 1990, pg. 21). According Sherman

(1990), “The initial deterrent effect on robbery was a 47 percent reduction in 1984 compared to 1983, and a 62 percent reduction (from thirty-four to thirteen) in homicides during the same period. This initial effect was maintained for at least the first eight months of 1986, with a 40 percent reduction in robbery and a 69 percent reduction in homicide compared to the first eight months of 1983” (pg. 21). While the initial deterrent effect seem effective, researchers challenge the long-term deterrence of the crackdown.

“Lastly, and perhaps the most dramatic example of a citywide police-presence drug crackdown is Washington’s Operation Clean Sweep”, (Sherman, 1990, pg. 22). The operation was implemented in 1986 where 100-200 officers were allocated to fifty nine drug markets throughout the city. Tactics such as the use of roadblocks, undercover officers, and motor vehicle seizures resulted in over 29,000 arrest in its first seventeen months (Sherman, 1990, pg. 22). While the operation of the crackdown was executed and coordinated properly, issues emerged when the drug trade resurfaced after the police departed the targeted area. The displacement of drug markets to nearby locations outside the targeted area also became post-crackdown issues; however, by 1987, the major issue was the late arrival of “crack” and drug abuse. Although the efforts were highly praised, the absence of any control group observations makes it impossible to determine how effect the operation was (Sherman, 1990, pg. 23)

Since police crackdowns became a popular tactic in combating drugs and gang violence in many cities nationwide, the Rochester Police Department is not a novice in the usage of crackdowns. This thesis will examine the strengths and weaknesses of a particular crackdown in four locations executed by Rochester Police Department in Rochester, New York.

Housing, community outreach, and law enforcement crackdowns are three significant approaches, which draw on varying conceptions of causal factors relating to crime and its control

in local communities. Since, these three approaches all have different aspects in theories relating to community improvement, addressing crime, and using community resources, each is outlined in studies in the chapters that follow, and the results are summarized and reconsidered with regard to public policy choices and future directions in chapter 5.

## Chapter 2: Housing and Habitat for Humanity

### Introduction

Housing and crime are important concepts in the macro-level study of criminal justice. Housing programs are used throughout urban neighborhoods as part of intervention programs addressing the issue of poor and unhealthy living conditions. For example, as crime becomes more noticeable, law-abiding residents may seek assistance or decide to relocate. Therefore, housing programs may improve living conditions by increasing the stability of neighborhoods. However, criminologists remain concerned about the effectiveness and efficacy of housing programs as an intervention to address crime.

This paper addresses several aspects of the relationship between housing and crime. First, the history, procedures, and organization of a housing program called Habitat for Humanity will be discussed. Second, there will be case study comparisons of private housing and public housing with crime. Next, concepts derived from theories such as routine activity and defensible space will be used to develop hypotheses regarding the relationship between Habitat for Humanity and crime. Finally, there will be an analysis that will examine the effectiveness of Habitat for Humanity as an intervention towards decreasing crime and consideration of public policy in light of the results.

### History of Habitat for Humanity

#### Objective

Habitat for Humanity (HFH) is a nonprofit global organization created to unite people from different backgrounds, races, and religions to work together with the goal of eliminating inadequate living conditions. HFH has built over 350,000 houses worldwide and have expanded up to 2,100 active affiliates in over 90 countries (Browning, 2006, p. 20; Habitat for Humanity International Website 2010: <http://www.habitat.org>). In addition to renovating and constructing homes, HFH relies on volunteer labor, donations, community support and other resources to eradicate poor living conditions.

### History

In 1968, Millard and Linda Fuller, along with Clarence Jordan developed the idea of partnership housing to address the issue of inadequate housing for the poor. Discussions about the goals, methods, and funding for HFH arise as they envision a successful project that may expand internationally. In 1973, the Fullers decided to implement HFH for developing countries such as one in Mbandaka, Zaire. By 1976, the Fullers returned to the United States and organized a meeting to expand HFH internationally. This meeting was the base for the future progress and success of Habitat for Humanity International.

### **The Levels of Organization**

There are three levels of organization for Habitat for Humanity: international regional, and local. The first level is Habitat for Humanity International (HFHI); their operational headquarters are located in Americus, Georgia. HFHI's Board of Directors consisted of 27 active community leaders and members who form policy and oversee the operations of HFH (2006, p. 23). There are also other divisions within this organization such as the advisory board and Support Service division that monitors and regulates the training, administration, communication, and development necessary in making HFH more effective (Browning, 2006, p. 23).

The second level is Habitat for Humanity Regional Centers and Area Offices that closely supervise other branches worldwide; these branches include regions in North America, Asia, Europe, Africa, Middle East, and Latin America. In the United States, HFH is divided into five areas with 2,200 local affiliates that regulate their method of operation to ensure that guidelines are met (Browning, 2006, p. 24).

The third level of HFH is the more individual affiliates known as local branches. Although their methods of operation in construction and renovation of homes varies, the main principles, goals, and guidelines still apply. For example, one local affiliate in a different area may choose to renovate the whole block or neighborhood, whereas a different local affiliate may choose to construct or renovate individual houses in different blocks or neighborhoods. Though construction methods vary across different local affiliates, the methods are regulated by the founding principles of HFH; that selling homes for profit is prohibited, as well as charging interest on home mortgages. There are limitations concerning the amount of money spent on a home and the purposes in the use of accepted government funds. All houses are built by local branches of HFH while being regulated by regional centers. The international level of HFH, however, provides the necessary guidelines and principles for all HFH branches to follow.

Flower City Habitat for Humanity (FCHH) is a prime example of a local chapter. This chapter was created for the city of Rochester and has adapted many different methods of neighborhood revitalization. These methods range from building individual houses in different blocks to building cluster of houses within one block.

### **Flower City Habitat for Humanity**

Flower City Habitat for Humanity was founded by Roger and Barbara Cross in 1984. In 1985, the first lady, Roselyn Carter dedicated the first habitat house in Rochester to one family.



This developed one of the first community services where neighbors got together to address poverty issues by rebuilding the community. Since 1984, HFH of Flower City have developed and renovated over 141 homes in Rochester in response to the poverty of a certain location known as “The Crescent”. “The Crescent” refers to a small section of Rochester known for high amounts of homicide and other violent crimes. Eleven percent of the homes that were built during 1990 to 2000 in Rochester are by Habitat for Humanity (Flower City Habitat for Humanity: Website: <http://rochesterhabitat.org/>). Flower City Habitat for Humanity (FCHH) aims to decrease poverty and revitalize troubled neighborhoods throughout the city of Rochester. This organization relies on the support of thousands of volunteers, faith-based communities, and businesses located throughout Monroe County (Flower City Habitat for Humanity: Website: <http://rochesterhabitat.org/>). FCHH targets the most troubled areas and select vacant lots to build one and two story houses. FCHH are rarely involved in foreclosure and demolitions of old or abandoned houses.

One of the most successful projects of large-scale construction by FCHH is a one-way street called Cuba Place. This project began in 1998 where HFH decided to construct eleven new homes in Cuba Place, a street that was suffering from open-air drug markets and other crimes. They also replaced or added new lights, curbs, and sidewalks in an attempt to revitalize the area while discouraging drug activity. Since then, Flower City of HFH aim their projects at impoverished and rundown areas, to revitalize the community within those areas and provide service and shelter to those suffering from poor live-quality conditions.

### **Neighborhood Selection**

For HFH, neighborhood selection is decided by the local chapters due to geographical preferences. Since FCHH cannot demolish any dilapidated homes and replace them with their new homes, they generally choose an area with the highest amount of vacant lots. However, FCHH

needs permission from the city to build on these lots (Hoffman, Sue, 2011, Personal Comm.). This is the only authorization FCHH needs to begin their construction and neighborhood revitalization process.

### **Construction Methods**

HFH emphasizes their methods of construction as ‘simple, decent, and affordable’; this is the guideline principle used to produce sufficient houses that adapt to the climate, culture, and community (Habitat for Humanity International Website 2010: <http://www.habitat.org>). The houses that are built for these low-income families are moderately sized. HFH balances the needs of the families with the cost and time needed for construction (Browning, 2006, p. 21). In the local chapter, FCHH previously built two story homes but shifted to building only one-story homes as a quick and cost efficient method. HFH also has guidelines that dictate the maximum amount of square feet that can be used; a three-bedroom house may not exceed 1,050 square feet of living space (Browning, 2006, p. 21; Habitat for Humanity International Website 2010: <http://www.habitat.org>). For families who have disabilities, HFH provide additional accessibility features without the additional cost.

### **House Payments and Resources**

HFH and FCHH rely on a unique method of house payments such ‘sweat equity’ to quicken the pace of home construction. ‘Sweat equity’ is when a Habitat homebuyer contributes about 450 hours in the construction phase of Habitat houses. The 450 hours in the construction phase consists of building yours and other HFH participant’s homes. Prior training in home construction are not required. HFH will provide the training and resources for applicants to complete their sweat equity requirement. Other contributors involve churches, professionals, and other corporations, such as Home Depot, who provide valuable tools and equipment (Browning, 2006, p. 21). No-interest

loans, low down payments, and 'sweat equity' are the unique features HFH offers for homeownership. Affiliates and their requirements for homeownership varies throughout the nation ranging from 'sweat equity' as sufficient down payment to low down payments from \$250-\$800 (Browning, 2006, p. 21). According to Browning, this allows the homebuyers to save up funds for house payments; the amount of these house payments are designed for the homeowners themselves, thus, making house payments possible (2006, pg. 21). Other affiliates require minimum closing cost payments. The payments received from the homeowners are used to cover construction costs and efforts to construct more Habitat houses, therefore, making HFH a non-profit social-service organization (Habitat for Humanity International Website, 2010: <http://www.habitat.org>).

In Flower City, Habitat for Humanity offers a variety of ways to assist residents with home payments. First, FCHH recommends people who are interested in owning homes of FCHH to attend the homeownerships information meetings held twice a month. In the meeting, they will receive basic information on FCHH and given the opportunity to fill out an application. FCHH will review these application and determine who's qualified by looking at three criteria: income, sweat equity, and monthly payments. Below is the chart of eligible income range by family size.

Income Eligibility Guidelines	
Family Size	2009 Annual household income must be less than:
1	\$27,900 annual household income
2	\$31,900
3	\$35,900
4	\$39,900
5	\$43,100
6	\$46,300
7	\$49,500

Source: Flower City Habitat for Humanity: Building Dreams Brochure

Another requirement is the applicant's ability to pay approximately \$450 per month plus utilities and no interest. FCHH claims to offer a great deal of leniency on the payments. FCHH also provides many programs that assist homeowners to pay their mortgage; one program includes the help of budgeting and financial management for FCHH residents. FCHH avoids many instances of foreclosures; they work with residents in a flexible manner to complete both sweat equity requirements and payments.

Now that the HFH and FCHH operation has been outlined, I further examine the relationship between housing and crime. Next, I will examine the difference between how homes are constructed and how it relates to crime; for example, cluster-housing vs. scattered-housing.

### **Housing and Crime**

To establish the link between housing and crime, there needs to be certain distinctions and understanding of different types of housing. This section will examine the advantages and disadvantages of public housing and private housing. Case studies of public housing in cities like

Chicago, Illinois and Denver, Colorado will show certain disadvantages of public housing while the case study of private housing in cities such as Wilmington, Delaware, will show advantages of private housing. First and foremost, public housing and private housing needs to be defined and compared to understand why these advantages and disadvantages exist.

### **Public Housing and Private Housing**

Public housing can be considered as the rental of a dwelling in a high-rise apartment complex or single family home. Public housing requires assistance from the federal, state, or local agencies. An example of public housing would be the project-based Chicago high-rise apartments consisting of multiple floors and clustering of multiple tenants. Private housing is considered as private contractors or any programs that act on its own behalf for their residents. For example, HFH would be considered as private housing because they act on their own behalf to assist their residents with local programs and services. HFH would not be considered as public housing in this study because it does not rely on any funds from any federal, state, or local agency and that they are private philanthropists. Finally, HFH are considered as private housing because they offer private solutions such as ‘sweat equity’ to residents in the neighborhood.

### **Disadvantages of Public Housing**

High-rise apartments as public housing have been the most common solution for low cost residency for many decades. Moving into the twenty-first century, many researchers have come to realize the disadvantages of public housing within the community. One of the huge disadvantages in public housing is the congregation of multiple families. The congregation of families may make them feel powerless and helpless due to the lack of space and homeownership. This feeling of helplessness from residence may form low expectations and high neglect towards the area which may allow criminal behavior to persist in the neighborhood. Also, when multiple families are

grouped together, their property is also group together; this can make the targets more appealing for property crime. With the high density of targets in one area the concentration of poverty, crime may likely to occur. This will be furthered discussed in the routine activity theory section below.

### **Case Study in Public Housing: Chicago, IL**

The study of public housing in Chicago presents many clear examples of the disadvantages of high rise public housing such as poor security, low quality housing, neglect of maintenance, and poor informal social control. According to Popkins et al. (1995), the high rise public housing in Chicago was developed as a temporary solution for the working class. The construction of these buildings was intended to be quick, cheap, and closest to the city to provide quick access from home to work. However, with the change in government policies and income limits, the working class established themselves elsewhere, leaving the poorest tenants in the area. For these poor residents, the temporary solution of a home became their long term or permanent residence. “Conditions in most public housing developments are now substantially worse than they were a decade ago. In most cities, public housing is completely racially segregated, and the residents are isolated from the surrounding community” (Popkins et al., 1995, p. 75).

One issue with public housing is how it can create racial boundaries between neighborhoods. When built in clusters, gangs and violence may also arise. According to Hagedorn and Rauch (2007), “In the 1950s, Chicago’s mayor Richard J. Daley had refused to build public housing for the Black population in integrated areas and packed public housing into the ghetto that “reinforced the city’s racial boundaries” (p. 448). Segregation and racial boundaries can lead to gangs such as Black Gangster Disciples, a pre-dominantly African American gang in Chicago. Since gangs became the solution for the sense of belonging and protection by many young adults and drugs became the source of income for many tenants, violence became the response if

aggression was needed to protect the drug offender's goods. Eventually the occupancy of gangs and use of drugs will make these public housing structures a hub for drug trafficking and other crimes (Popkins et al., 1995, p. 75). These crimes further the deterioration of the facility and the area around it. It also makes it more difficult for law enforcement to intervene and access the high rise housing for calls for service because of gang territory.

The second issue is if these clusters of public housing are demolished, gangs might be displaced into other neighborhoods and cause violence to other nearby areas. For example, in Chicago, when the Black Gangster Disciples' public housing units were demolished and their top ranking warlords were arrested, the rest of the gang turned the nearby area into a warzone because there was no other effective gang to protect that area (Hagedorn and Rauch, 2007, p. 450).

The third disadvantage of public housing is the poor structure of the facility because it limits the amount of access for law enforcement. When there are multiple floors occupied with gang members, police are often in serious danger when responding to a call for service in the building. This danger creates a fear where law enforcement would rather not enter the building or wait for reinforcements for safer entry into the building.

The fourth disadvantage in public housing is the design. According to Merry (1981), the interior of the high-rise apartments are poorly designed because the slab walls and secluded areas make it difficult to monitor all spaces. Corridors, elevators, staircases, and hallways lack visibility from the outside or appropriate lighting. Merry (1981), states that since neighbors and tenants of the apartments are more likely to encounter strangers than in smaller, lower buildings, the awful security design in high-rises make these encounters very dangerous. Even though some elevators, stairways, and hallways may be equipped with cameras, it may prove useless because it indirectly responds to the crime and only offers assistance after the crime has been committed.

### **Case Study in Public Housing: Louisville, KY**

In another study regarding public housing and crime in Louisville, Kentucky, Suresh and Vito (2009) explain how poor minorities are trapped in the inner city by real estate professionals who play as the “gatekeepers” limiting the choices of geographical inhabitation through racial character (p. 412). The residents of these public housing units are usually “the poorer, younger, and more likely to be headed by single-female heads of the household” (Popkins et al., 1995, p. 75). Furthermore, the stereotype of poor minorities living in public housing reinforces the idea for real estate professionals to choose who should reside where. This stereotype and “trapping effect” deprive minorities and low-income families the ability to move elsewhere other than the city. Efforts to revitalize public housing often fail due to the lack of acknowledging the appropriate response to social disorganization, poverty, and racial segregation in the area.

### **Case Study in Public Housing: Denver, CO**

A study by Santiago et al. (2003) determined the correlation between increase in various types of crime and the development of 38 dispersed public housing units in Denver, Colorado during 1992-1995. The combination of an econometric model and the pre/ post-test was used to evaluate the statistical relationship between dispersed housing and crime. The results from the statistical analysis shows that “dispersed public housing had no correlation with any increase in reported crime of the post-test; these crimes include violent, property, disorderly conduct, and criminal mischief” ( Santiago et. al, 2003, p. 2148) . The limits to this study include the lack of information about the occupants of units and collective efficacy of the area both before and after the Denver Housing Authority development. “Collective efficacy is defined as mutual trust and solidarity among neighbors combined with the willingness of local residents to intervene on behalf of the common good” (Kingston et al., 2009, p. 56). According to Kingston et al (2009),



“neighborhoods with weak social networks and low level of collective efficacy often lacks the resources, social support, and informal social controls that are essential for proper healthy youth development” (p. 55). Therefore, solid conclusions about causation cannot be made. Even though the results show no correlation, the information on how the study was conducted should not be ignored.

### **Housing Type: Advantages of Private Housing**

Private housing offers many amenities such as homeownership and commitment to the neighborhood that public housing lacks. The availability of lots, however, determines when private housing can be established in the neighborhood.

As opposed to public housing, some researchers may perceive private housing as disadvantageous because it requires larger amounts of available lots. While space may be valuable and costly, space and housing lots are usually not scarce in a poor community. Open lots and demolition of deteriorating homes often provide open lands for the city to develop further plans on its use. The Neighborhood Service Center in Rochester shows, “As of April 2010 there were approximately 1800 vacant lots within the Northeast Quadrant, by far more than any other area within the city of Rochester. Furthermore there are over 950 vacant buildings, 126 of which are currently on the City’s Demolition list” (Northeast Quadrant Strategic Plan of Rochester). The Northeast Quadrant in Rochester primarily comprises of zip code areas 14621 and 14605. In this case, private housing may be more beneficial because available space is being utilized effectively.

High density of impoverished areas motivate local organizations to take actions to fill vacant lots. With the increase availability of open lots, the hopes of increased private housing and homeownership will replace the open grounds filled with loitering and delinquents. Increases in

land and homeownership may decrease the density of the impoverish neighborhoods, change crime rates, and bring stability to the area.

### **Case Study in Private Housing: Wilmington, DE**

Browning (2006) conducted a study by looking at two distinct differences between the two Habitat for Humanity neighborhoods in Wilmington, Delaware; one area consisted of scattered-pattern of Habitat homes and the other with clustering of units. The question asked is if the geographical patterns of home construction within the neighborhood increase social improvements. The methods of analysis comprise a qualitative approach through interviews along with the comparison of scatter housing versus dispersed housing. Results in the study show that areas with dispersed Habitat housing have no effect in lowering crime within or beyond the neighborhood boundary. In fact, many residents of Habitat for Humanity felt that crime increased around their property. The area with compact units of Habitat homes generated minor improvements in the social aspect of the area. The minor improvements are residents' sense of safety and homeownership rates but not so much on crime. Although, the clustered placement method of homes may prove valuable when it comes to residents' perception, it showed no major improvement relating to crime beyond the neighborhood's boundary.

The limitation of this study was the small sample size. With only twenty five households used in the analysis, the sample size may have disregarded important information. Also, the amount of years Habitat homeowners lived in that area may have determined their responses in the interview. A homeowner who lived there for less than 5 years may not know the neighborhood quite as well. Also, some people choose not to answer questions about how they felt towards the Habitat for Humanity program.

In light of the literature, measuring housing type and geographical patterns are essential in determining what housing methods are more effective. In general, public housing may cost less money and space, but creates the likelihood of gangs, drugs, and violence in the dwelling due to the structure, design, and concentration of people. In addition to gangs, drugs, and violence, clustered public housing solidifies even more racial segregation and tension. Dispersed public housing, however, had no correlation with any increase in reported crime.

Private housing may cost more money and space, but depending on whether the housing units are dispersed or clustered, it may have no effect in decreasing crime or generating minor improvements in residential safety. Now that we have framed the relationship between housing and crime, I will examine theories on criminal behavior, such as routine activity theory and rational choice theory.

### **Theories**

Criminological theories provide a fundamental basis for hypotheses regarding the impact of private housing, such as Habitat for Humanity construction, on local crime patterns. Although the hypotheses developed from the theories are not always consistent, it shows that the prediction of crime prior and after HFH construction is highly dependent upon the theoretical framework.. Routine activities theory (RAT) and defensible space will be examined as the basis of the theories to determine the impact of HFH. It should be noted that there are many theories, such as social disorganization theory that can be used in this theoretical framework, however, routine activity theory will be a simpler fit and provide a more straightforward premise.

### **Routine Activity**

“The rise in crime is often attributed to the increases in those willing to break the law—a group that Cohen and Felson called “motivated offenders.”(2010, pg. 2). Cohen and Felson (2010),

stated that with the presence of a motivated offender, the availability of criminal opportunity escalates with the availability of an attractive target (e.g., something to steal, a person to rob) and the lack of guardianship over the target (e.g., a burglar alarm, a burly companion) (pg.2). Therefore, “the probability of being a victim of crime increase with the convergence in space and time of three factors, motivated offender, suitable targets, and the absence of capable guardians”, (Kennedy and Barron, 1993, p. 92 ). However, Kringen and Felson (2014) elaborates on this routine activities theory by distinguishing guardians, or handlers, who supervise motivated offenders and guardians who supervise suitable targets. Crime facilitators were also introduced in the mix such as drugs, alcohol, lock picks, and other tools that may aid criminal activity (pg.4).

### **Routine Activities of Places**

Reynald and Elffers (2009) states that “Places, just like people, have routine activities that also determine their risk of becoming crime targets. The routine activities of a place can be viewed as ‘the social organization of behavior at a particular place’, which is affected by the accessibility of the place and, in turn, affects the efficacy of guardianship therein.” “Routine activities of places, in combination with defensible space theory, share the same principle that opportunities for crime are dependent as much on the types of activities that occur in an area as on the environmental characteristics of a place”, (Reynald and Elffers, 2009, pg.16)

By examining six neighborhoods with variation of low and high-crimes in Atlanta, Georgia, Massey et al. (1989), hypothesized and concluded that the major connection between increased property crime and routine activity theory is determined by the increased appearance of affluence and decrease in defensible space of a neighborhood. He also stated that the increase in

property value and residential composition of the neighborhood can also factor in the likelihood of making a house a suitable target.

In theory, private housing such as Habitat for Humanity increases the property value for residents because they provide new housing for the neighborhood. If property value increases, it can potentially increase property crime because these new homes are suitable targets. However, we must examine the theory of defensible space because the amount of defensible space may change the direction of this theory.

### **Defensible Space**

Reynald and Elffers (2009), states that the concept of defensible space draws on accessibility, land-use patterns, and routine activity of place. They reviewed and illuminated Oscar Newman's defensible space theory by highlighting territoriality, natural surveillance, and the image/milieu of the neighborhood. The theory suggests that the increase in territoriality, natural surveillance, and better image/milieu of the neighborhood will decrease the likelihood of crime. Decrease in territoriality and natural surveillance means decrease in control and influence in that area. A good example of poor territoriality is vacant lots. Poor image/milieu of the neighborhood reflects that area as isolated, dilapidated, and neglected. These factors can lead to the increase of crime in the neighborhood.

Shu (2000) confronts Oscar Newman's theory of defensible space by addressing the issue of "the accessibility of housing layout (spatial configuration of open spaces) and the relative vulnerability of property crimes, such as burglary, vandalism, and car crimes" (pg. 1). He hypothesized that property crime increases due to "unconstitutedness, global segregation, fewer line neighbors, and cul-de-sac networks, formed by cul-de-sac carriageways because it leads to spatially broken-up areas. He asserts that "constitutedness, higher line neighbors, and cul-de-sac

networks with many front entrances of line neighbors facing each other will have a decrease in property crime” (pg. 11).

To link the defensible space theory with private housing and Habitat for Humanity, it can be theorized that private housing may increase territoriality and natural surveillance by increasing the amount of homeowners in the area. The more homeowners there are in the area, the more capable guardians are available consistent with Routine Activities Theory. Thus, the HFH environment may make Routine Activity Theory’s protective mechanism of guardianship more effective.

Private housing also improves the image/milieu of the area because the old dilapidated homes are replaced by new ones. However, if these new houses are built in cul-de-sac networks and segregated areas with low line of neighbors or broken-up area, it can potentially increase property crimes.

## **Hypothesis**

Private housing such as Habitat for Humanity increases property value; however, it also increases defensible space for the specific lots available in the area. They often build in networks and streets that have homes facing each other. Depending on if Habitat for Humanity build their new homes in a clustered method or a scattered method mentioned in the Housing and Crime section of this paper, we can hypothesize:

**H<sub>0</sub>:** There is no correlation

**H<sub>1</sub>:** Clusters of private homes increase violent, property, and disorderly offenses

The reason why this hypothesis can be stated is because of the routine activity theory. Since new homes have higher property value, a cluster of new houses can provide property offenders the “suitable target” because all the suitable targets are grouped together.

Another explanation for the increase in property crime is that, “As the number of people in a social space increases, so does the potential for competition, conflict, and disaffection, all of which may lead to crime and delinquency. This explains that deprivation causes people to be desperate and motivates them to seek fulfillment of their needs and aspirations outside the lawful order” (Wells & Weisheit, 2004, p. 4).

**H<sub>0</sub>**: There is no correlation

**H<sub>2</sub>** : Cluster of private houses decrease violent, property, and disorderly offense

The reason why this hypothesis can be stated is because of the defensible space theory. Clusters of private homes can revitalize the whole neighborhood by providing the entire area with improved territoriality, natural surveillance, and image/milieu. Because private houses are built in clusters, this eliminates the possibility of vacant lots and increases the amount of homeowners in the area. If everyone owns property, are content, and are not deprived of new housing, then there may be a decrease in crime.

**H<sub>0</sub>**: There is no correlation

**H<sub>3</sub>** : Scattered private houses increases violent, property, and disorderly offense

The reason why this hypothesis can be stated is because of defensible space theory. Although private housing improves territoriality, natural surveillance, and image/milieu, these factors only apply to that specific lot where the house was constructed because of the scattered-housing method. Old dilapidated houses and vacant lots in the same neighborhood or street will still attract crime because it has poor territoriality, natural surveillance, and image/milieu. The new property now attracts property criminals because it is a suitable target and the dilapidated areas surrounds it.

## **Analysis**

## **Variables**

The independent variable is Habitat for Humanity and dependent variable is property crime. The type of crime being used for the study are property crime and violent crime. Property crime used in this study includes robberies, burglaries, motor vehicle thefts, and grand larcenies. Violent crime includes simple assaults, aggravated assaults, homicides, and rapes. Property crime and violent crime are being used because it is highly correlated to housing through routine activity theory and defensible space.

## **Data collection**

Crime data, demographic information, and the intervention method (time of FCHH home construction) are the key elements in this study. Property crime, violent crime, and disorderly crime will be used was provided by Monroe Crime Analysis Center from the Rochester Police Department. The intervention method used in the data analysis are 2005 Flower City Habitat homes. The use of 2005 FCHH homes allow the study to examine years of crime before and after the intervention phase. This intervention period will allow the study to be flexible in examining how many years of crime should be used. Three zip code areas that contain Flower City Habitat for Humanity's (FCHH) homes will be evaluated in this study; these zip code areas are 14611, 14605, and 14609. FCHH constructed four new homes in 14611, one in 14605, and two in 14609; a total of seven new homes were constructed in 2005. The addresses of all FCHH homes are provided on the FCHH website. Areas around randomly sampled control houses will also be used in the study for comparison with areas around FCHH homes. Random sample houses are selected randomly in the same zip code area with FCHH homes.

## **Methods and Testing**



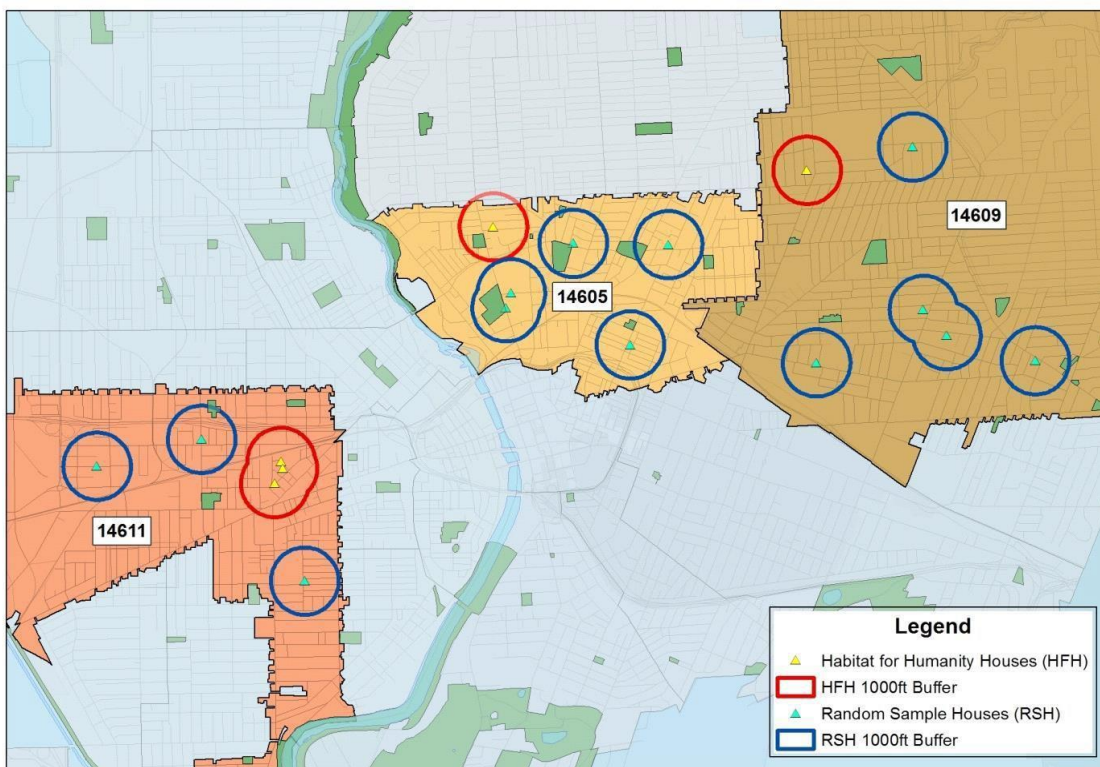
The main analysis is to compare the amount of property and violent crimes within a 1000ft buffer distance of random sample housing to Habitat homes to show if FCHH have an effect in the neighborhood. Three zip codes will be used because it is necessary to examine more than one area for an effective analysis. The unique feature in the study is the different construction methods of FCHH in the three zip code areas; 14611 contains 4 Habitat homes in a clustered pattern; 14605 contains 2 Habitat homes that are relatively dispersed, and 14609 contains only 1 Habitat home. The comparison of crime in three zip code areas may show which method of FCHH construction and housing pattern is more effective in impacting the neighborhood. The use of multiple random sample houses and Habitat houses in different locations within three different zip code areas will offer flexibility in choosing variables for comparison. The other aspect of the analysis is the use of pre-test post-test. Three years of Part 1 crime before and after the intervention period will be evaluated to see if there was any increase or decrease. Three years pre-test and three years post-test were chosen because it is adequate to show an accurate time frame of crime trends around FCHH homes due to the relative infrequent nature of crime as measured in small areas, such as this examination This will show if FCHH was successful or unsuccessful in decreasing crime.

ArcGIS was utilized to map out the addresses of crime location, HFH homes, random sample homes, census block boundaries, zip code boundaries, and buffered zones. Buffered zones are areas within a circular boundary with the target at its midpoint. In the maps, the midpoint are Habitat homes and the circular boundaries created is the 1,000ft buffers. A 1,000ft buffer is being used to measure where the impact of crime will dissipate from if a crime occurs within a close proximity of the midpoint.

Below are maps of zip code area 14605, 14609, and 14611. It presents a visual image that will more clearly illustrate the data setup. The yellow triangles represent Habitat for Humanity

houses in Rochester. The red outer circles encompassing the yellow triangles are 1000ft buffers around Habitat for Humanity homes in Rochester. The green/teal triangles in the map represents random sample homes that was randomly selected for the analysis. The blue circles around the teal triangles are 1000ft buffers around random sample houses in Rochester.

**2005 Flower City Habitat for Humanity Houses and Random Sample Houses with 1000ft Buffers**



### Intervention Period

To better illustrate the samples and targets we used in our analysis, below is a chart that shows the amount of Habitat houses (HFH) and random sample houses (RSH) used. We used the deed filing date of each HFH in each individual zip code area as the intervention date for both HFH and RSH in each of their own zip code. For example, in 14605 we used three years prior and after 10/18/2005 in our analysis to determine the crime around HFH1, RSH1, RSH2, RSH3, RSH4,

and RSH5. In 14609, we used 3/10/2006 as the intervention date and examine the pre-test post-test for HFH2, RSH1, RSH2, RSH3, RSH4, and RSH5. The same method used in the zip codes above applies to 14611.

There is one Habitat house and five random sample houses used in the zip code area of 14605. In zip code area 14609, two Habitat houses were proposed in the analysis, however, one HFH was omitted due to the late deed filing date. Since the deed filing date was used to form the intervention period, a late deed filing date would make the HFH an outlier. It was decided that omitting one HFH would not devalue the quality of our analysis; therefore, we chose to proceed with the proposed intervention period and continue with one HFH in 14609. We used five RSH in this zip code area. For 14611, there were four proposed HFH, however, we omitted one HFH due to the unavailable deed filing date. We used four RSH for this area.

14605	House Code	Addresses	Deed Filing Date
HFH1	1	40 Rauber St.	10/18/2005
RSH1	2	82 Bay St.	NA
RSH2	3	40 Kelly St.	NA
RSH3	4	580 Upper Falls Blvd.	NA
RSH4	5	450 N Clinton Ave.	NA
RSH5	6	338 Scio St.	NA

14609	House Code	Addresses	Deed Filing Date
HFH1	7	732 Bay St.	Omitted - 11/13/2008
HFH2	8	54 Arbutus St.	3/10/2006
RSH1	9	535 Parsells Ave	12/24/1975
RSH2	10	1350 E Main St.	5/7/1984-11/30/2004
RSH3	11	940 Garson Ave.	NA
RSH4	12	360 Merchants Rd.	NA
RSH5	13	904 Fernwood Park	NA

14611	House Code	Addresses	Deed Filing Date
HFH1	15	192 Silver St.	10/17/2006
HFH2	16	152 Silver St.	Omitted - NA
HFH3	17	39 Love St.	10/10/2006
HFH4	18	21 Love St.	12/19/2005
RSH1	19	50 Mcardle St.	NA
RSH2	20	1028 Maple St.	Omitted - NA
RSH3	21	500 Frost Ave.	9/15/1989-1/29/1999
RSH4	22	284 Ames St.	NA

**Area of Intervention: Flower City (Rochester, NY)**

The city of Rochester, better known as Flower City, is located in the northeastern side of New York State between the city of Syracuse and Buffalo. According to the US Census in 2000, the total population of Rochester is around 220,000 with 48.3% Caucasian, 38.5% African American, and 12.8% Hispanic. In 2006, crime per 100,000 people in Rochester averages around 20-23 homicides, 620-630 robberies, 1250-1260 burglaries, and 3500-3700 larcenies. Flower City Habitat for Humanity still remains active in locations suffering from high volume of crime and poverty.

**Flower City Zip Code Area: 14609**

According to a real estate website (<http://www.movoto.com>), 14609 comprises a total population of about 40,000 residents with 63% Caucasian and 27% African American. The education level in this area contains 49% high school graduates and 23% of residents who have an education of high school or less. Thirty one percent of residents fit the one person household under the category of household type by children presence. For income, 42% residents make less than \$30,000.

### **Flower City Zip Code Area: 14605**

According to a real estate website (<http://www.movoto.com>), 14605 comprises a total population of about 14,000 residents with 17% Caucasian and 59% African American. The education level in this area contains 41% high school graduates and 48% of residents who have an education of high school or less. Twenty eight percent of residents fit the one person household under the category of household type by children presence. For income, 74% residents make less than \$30,000.

### **Flower City Zip Code Area: 14611**

According to a real estate website (<http://www.movoto.com>), 14611 comprises a total population of about 19,000 residents with 23% Caucasian and 69% African American. The education level in this area contains 50% high school graduates and 35% of residents who have an education of high school or less. Thirty three percent of residents fit the one person household under the category of household type by children presence. For income, 64% residents make less than \$30,000.

## **Results**

### **Violent Crimes**

A standard T-test was used to determine if the increases or decreases in violent crime in each of the three zip codes are statistically significant. Shown in the chart below, the color blue with a minus symbol under "significant" shows a decrease in violent crime while the color red with the plus symbol shows an increase in violent crime. The color gray with no symbols shows no statistical significance.

The only results that show statistical significance is the decrease in violent crime in the area around one random sample house (RSH5) in 14605; the increase in violent crime in the area

around one random sample house (RSH3) in 14609; the decrease in violent crime in the area around one Habitat for Humanity house (HFH3) and two random sample houses (RSH3 and RSH4) in 14611, all of which shows significance in p-value below or around 0.05.

Because of the variations in statistical significance and the increase or decrease in violent crime in multiple zip codes, the conclusion of no correlation can be determined due to the fact that there were too many samples that show no statistical significance. There are not enough samples to reach a conclusive decision that Habitat for Humanity (HFH) increases or decreases violent crime around the area.

14605	Coefficient	T-Test Score	P-Value	Significant
HFH1	-0.393	-0.27	0.785	
RSH1	0.015	0.11	0.915	
RSH2	0.066	0.4	0.688	
RSH3	-0.272	-1.54	0.125	
RSH4	0.101	0.63	0.527	
RSH5	-0.394	-2.4	0.017	-

14609	Coefficient	T-Test Score	P-Value	Significant
HFH2	0.251	1.44	0.151	
RSH1	0.012	0.08	0.933	
RSH2	0.065	0.39	0.697	
RSH3	0.45	1.95	0.053	+
RSH4	0.328	0.68	0.497	
RSH5	-0.257	-1.22	0.223	

14611	Coefficient	T-Test Score	P-Value	Significant
HFH1	-0.174	-1.3	0.195	
HFH3	-0.383	-2.04	0.043	-
HFH4	-0.168	-1.29	0.2	
RSH1	0.326	1.26	0.209	

RSH3	-0.444	-3.71	0	-
RSH4	-0.539	-2.91	0.004	-

Legend		
Increase	No Effect/Not Significant	Decrease
+		-

### Property Crimes

For property crimes, a similar conclusion can be made compared to the violent crimes analysis above. Since only two random sample houses (RSH1 and RSH2) at 14605 shows statistical significance and all other sample sites show no statistical significance, a conclusion of no correlation can be made.

14605	Coefficient	T-Test Score	P-Value	Significant
HFH1	0.1308	0.98	0.326	
RSH1	-0.4675	-3.71	0	-
RSH2	-0.4324	-5.21	0	-
RSH3	-0.0834	-0.59	0.555	
RSH4	-0.0743	-0.53	0.595	
RSH5	0.2485	1.85	0.066	

14609	Coefficient	T-Test Score	P-Value	Significant
HFH2	0.0501	0.37	0.709	
RSH1	0.121	0.89	0.377	
RSH2	-0.0828	-0.47	0.642	
RSH3	-0.0492	-0.32	0.746	
RSH4	0.0816	0.38	0.702	
RSH5	0.1626	0.92	0.357	

14611	Coefficient	T-Test Score	P-Value	Significant
HFH1	-0.105	-1.01	0.312	
HFH3	-0.017	-0.1	0.921	

HFH4	0.013	0.11	0.909	
RSH1	-0.283	-1.5	0.134	
RSH3	-0.22	-1.62	0.108	
RSH4	0.029	0.19	0.852	

Legend		
Increase	No Effect/Not Significant	Decrease
+		-

### Conclusion

Since the impact of housing from Habitat for Humanity show no correlation in decreasing crime within the vicinity of the project area, it doesn't necessarily mean that housing is not effective in improving quality of life. It does make housing more affordable for low income families and brings economic advantages within that community. New housing may also improve the image of the area; however a new independent study should closely examine this theory and study if Habitat for Humanity (HFH) houses that were built in a clustered fashion in multiple zip codes are more effective.

One might argue that the cluster of Habitat for Humanity (HFH) houses built in 14611 decrease violent crime because there were three samples that show statistical significance. However, this is inconclusive due to the fact that there isn't another sample from another zip code that can be compared with 14611. Another study in different cities is suggested to arrive at a conclusion whether clustered-built housing is effective at decreasing violent crime.

Overall, the use of G.I.S. and crime analysis to examine the impact housing have on crime shows it's an effective tool that uses geography in evaluating the causation of intervention and the area where crime occurs. It also demonstrates the spatial factors that attribute to the effectiveness



of scattered versus clustered housing. For example, we can quickly see that 14611 have clusters of HFH houses versus 14605 and 14609 which has scattered houses.

Since Habitat for Humanity show no correlation in decreasing crime, there are other approaches such as community outreach that can be evaluated to determine its effectiveness in combating crime. Operation SNUG is one of the outreach programs in New York State designated to targeted juvenile delinquency and gang violence through the use of non-profit organizations to prevent crime

## Chapter 3: Community Outreach and Operation SNUG

### Operation SNUG

Operation S.N.U.G. (Stop, Never Use Guns) is modeled after the highly successful Cease Fire Gun Violence Prevention Model currently used in Chicago. That program directs targeted outreach and prevention efforts to “high risk” communities, and works through existing and experienced community-based organizations. Through coordinated efforts between police, counselors, and community outreach specialists, this model has helped cut violence in Chicago, and has reduced the risk of “retaliation” murders, and helped students remain in schools and find jobs as they detach from gang life. According to Skogan et al. (2008), Cease Fire’s interventions are “theory driven” and is built upon a coherent theory of behavior that emphasizes norms, risks, and choices (pg.1-1). For operations in client or community outreach, possibly the most successful elements of the program was identifying and providing counseling and services to individual clients (Skogan et al., 2008, pg. ES9). Cease Fire will serve as a voluntary advisory to Operation SNUG-qualified programs.

Operation S.N.U.G is statewide anti-violence initiative that works with local civic, religious and law enforcement officials to get illegal guns off the streets and to reduce killings and violence. Operation SNUG was born out of gun violence in Senator Malcolm A. Smith's community when, within a three-day span in May of 2008, the Far Rockaway Peninsula became a violent battleground with five men shot and two teenagers killed. Following these shootings, an initial "summit" of elected officials was held, led by Senators Smith, Eric Adams, Bill Perkins, Congressman Charles Rangel, Assemblyman Darryl Towns, and Brooklyn District Attorney Charles Hynes. Operation SNUG stands for:

**S:** Street intervention and stopping the violence

- violence interrupters and outreach to high-risk youth
- support for and coordination with police and law enforcement
- clearly communicating community values against shootings and violence
- engaging schools and educators as part of the solution

**N:** National, state and local funding support

- funding for all alternatives
- legislation to help implement solutions
- public and private support for intervention and prevention as part of the response

**U:** Use of celebrities and centers

- development of a comprehensive public relations effort, including celebrity PSAs and materials
- reopening and revitalization of existing community centers, creation of new bunkers and community "safe haven" storefronts for youth

**G: Gangs, guns, gainful employment**

- real-world gang awareness and prevention initiatives
- new efforts to stop the spread of illegal guns, including new law enforcement efforts targeting “middlemen” and gun-running
- connections to employment and economic alternatives

There are 10 Operation SNUG programs across New York State:

Operation SNUG Albany- University of Albany School of Social Welfare / Trinity  
Alliance

Operation SNUG Buffalo- Community Action Organization of Erie County

Operation SNUG Brooklyn - Man Up!

Operation SNUG Harlem - New York City Mission Society

Operation SNUG Mt. Vernon - Ujamaa Community Development Corp.

Operation SNUG Niagara Falls- People and Possibilities

Operation SNUG Queens - King of Kings Foundation

Operation SNUG Rochester: Pathways to Peace

Operation SNUG Syracuse- New Justice Services

Operation SNUG Yonkers - Yonkers YMCA.

\*Information gathered was provided by Malcolm A. Smith on

<http://www.nysenate.gov/press-release/senators-malcolm-smith-gustavo-rivera-and-rev-al-sharpton-joined-community-and-civic-l>

**Pathways to Peace – Rochester, NY**

Pathways to Peace (PTP) is street level team of outreach workers in Rochester which guides young city residents toward an array of community resources to prevent youth violence and

gang involvement. Inspired by the famous Boston's Operation Night Light, Pathways to Peace emerged into the community due to the increased numbers of youth who are resorting to violence as a means to obtain their goals. The City recognizes a critical need to provide them with nonviolent alternatives. Pathways to Peace was initiated as part of a comprehensive effort to improve public safety. The PTP team reaches out into targeted neighborhoods to assess the needs of youth, network with all available resources and link at risk youth to appropriate services. Pathways mainly focuses on various sections of the city that requires youth-related dispute mediation, intervention, gang-involvement, violence prevention. The PTP's primary goal is reducing youth related violence.

In collaboration with police, counselors, and other community organizations, Pathways to Peace was granted funding to inform awareness of illegal gun possession and protect at-risk Rochester youth from gun violence. Through the use of street-team patrols, neighborhood broadcasting, and other various methods of gun prevention awareness, Pathways to Peace and other community organizations hope that Operation SNUG will decrease youth-related gun violence through Differential Association theory.

## **Theory**

### **Differential Association**

In criminology, Differential Association theory emphasizes the connection between crime, behavior, and social interaction. Edwin Sutherland, one of the most influential criminologists and sociologists, believed that criminal behavior and motivation for crime are learned through interaction, communication, and expression of general needs (Williams & McShane, 2010). Sutherland's theory excludes certain types of interaction and communication when it comes to learning criminal behavior. He states that a relationship between agents must exist and that

criminal behavior cannot be completely accomplished through entertainment; for example, watching television or reading newspapers. However, the learning of noncriminal behavior applies in the same way. Pathways to Peace and Operation SNUG argue that techniques such as social interaction and communication will motivate juveniles and other youths to learn noncriminal behavior; therefore, leading youths away from the use of violence and firearms.

Similar to Differential Association theory, Pathways to Peace and Operation SNUG have essential components in motivating youths into noncriminal behavior. These components include outreach to high-risk youths, development of relationship with the community, and gang violence awareness. The implementation of these components hopes to build relationship with youths and create role models for these youths to look up to. As important as role models are to youths, we assume that all youths are affected by Differential Association theory. The problem is that we assume all juveniles learn criminal behavior through social interaction and communication, therefore, they are also able to learn noncriminal behavior through different sets of social interaction and communication. Another problem is the level of relationship between two agents determines the level of behavior learned. For example, a youth will learn more behavior from whoever he or she is closest to. In order for Pathways to Peace and Operation SNUG to be successful in connecting with the youths, they will have to be closely attached to the youths so that they are able to determine them as appropriate role models.

### **Analysis**

The analysis in this report will examine the rate of shootings, robberies, and homicides surrounding outreach areas, patrol service areas, and zip code areas before and after the implementation of S.N.U.G. The objective of this analysis is to determine if our actions to intervene will likely decrease gun-related crimes in the “hot” areas of Rochester. The “hot” areas

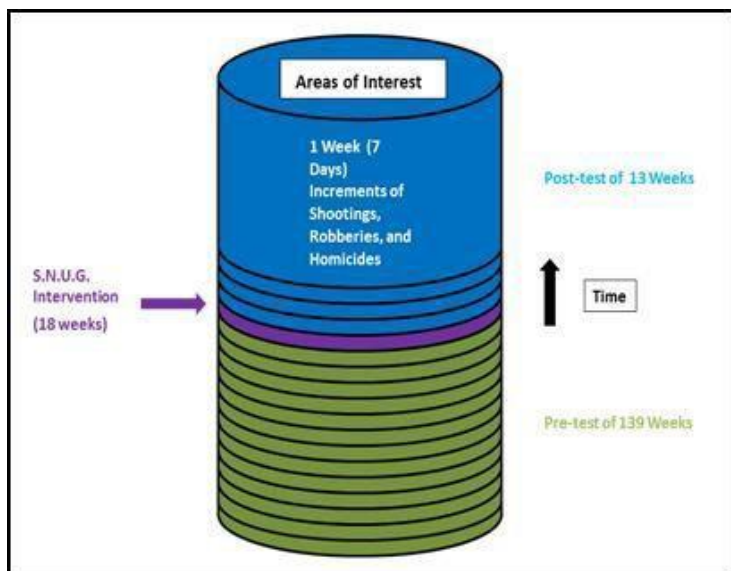
will be further discussed in the “Location” section of this chapter. The first objective was to examine the numbers of shootings, robberies, and homicides in the targeted outreach areas of SNUG. After compiling the gun-related crimes in the outreach areas, the second objective was to determine the number of gun-related offenses in the patrol service areas and zip code areas surrounding the targeted outreach areas. After determining the number of gun-related incidents in the targeted outreach areas, patrol service areas, and zip code areas, we are then able to examine the relationship between crime rates in the three types of areas.

Since the pre-test post-test method was used in the analysis, 3 years and 3 months (total of 170 weeks) was determined as the appropriate time span for analysis. Time intervals of 2 years and 8 months (139 weeks) before and 3 months (13 weeks) after the date of the intervention were used. A total of 4 months (18 weeks) was the time span of SNUG implementation. Only 13 weeks of post-test was used in the analysis because of possible diminishing effectiveness from intervention. Since time series data are being used on relatively rare events, an autoregressive Poisson model was used to correlate weekly crimes in the pretest and posttest phase of the analysis.

The autoregressive Poisson (ARPoiss) relates the probability of random or rare events, such as crime, occurring in an interval of time and the probability is dependent on the length of interval. For example, if homicides at a certain location occurs once or twice but occasionally occurs three or more times, ARPoiss will show what is the probability that homicide will occur in the next time period. The regression model takes into account that there is a trend and works to remove that trend so that we can contrast pre-intervention and post-intervention. In distinction, a normal distribution was not used because its assumptions do not fit the rare occurring crime data as well as the Poisson distribution.

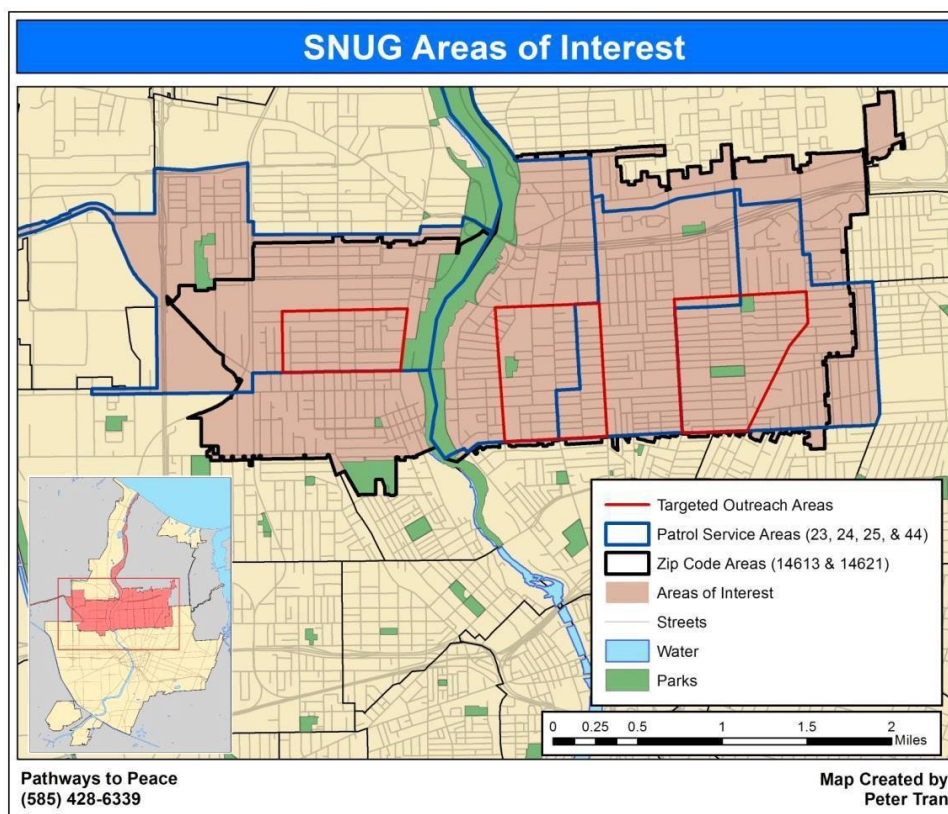
ARPois will take into account time series, such as trends and work to remove those trends so that we can control the variable of time. It divides and contrasts two segments, pre-intervention and post-intervention similar to the Box-Jenkins model for interrupted time-series analysis (McDowall, 1980, pg.10). In time series analysis, the Box-Jenkins method is a mathematical model designed to forecast data which alters time series to make it stationary by using the differences between data points (Ngo, 2003, pg.1).

To apply the ARPois model, STATA, a data analysis and statistical software was utilized. ArcGIS was also used to map crimes into location and provide a hotspot density analysis in that location. According to Garson and Vann (2001), a hotspot density map of crime shows location and clustering of crime through dots while providing a color gradient to distinguish greater cluster versus smaller cluster of dots (pg.473-474). The hotspot density crime map in this analysis indicates the most serious increase of gun-related offenses. Below is a visual model that represents how we will utilize our time series data.



### Area of Intervention

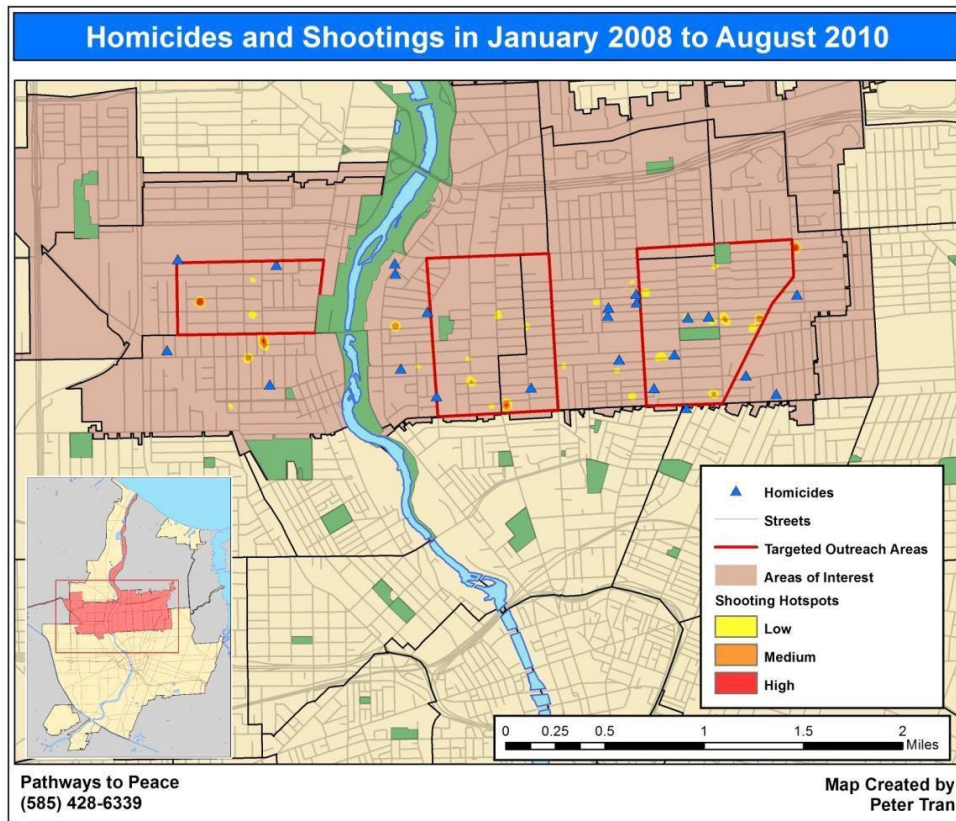
Pathways to Peace utilizes Operation SNUG in three distinct locations in the northern section of Rochester. Three outreach areas were determined as the appropriate location to implement SNUG and street-level team patrols. The targeted outreach areas are marked in the map below in red lines. The blue lines indicate patrol service areas boundaries that surrounds and contains these targeted outreach areas. The black lines indicate zip code area boundaries that surround the patrols service areas and targeted outreach areas. The areas that are light red are areas of interest in this analysis.



The second map below displays the location of homicides and shootings prior to the SNUG intervention in the northern section of Rochester. As indicated in the map, the red lines are the boundaries of targeted outreach areas and the area with light red shading is the area of interest in this analysis. The blue triangles represents homicides. There were a total of 26 homicides from January 2008 to August 2010 in the areas of interest. The areas of interest includes zip code areas

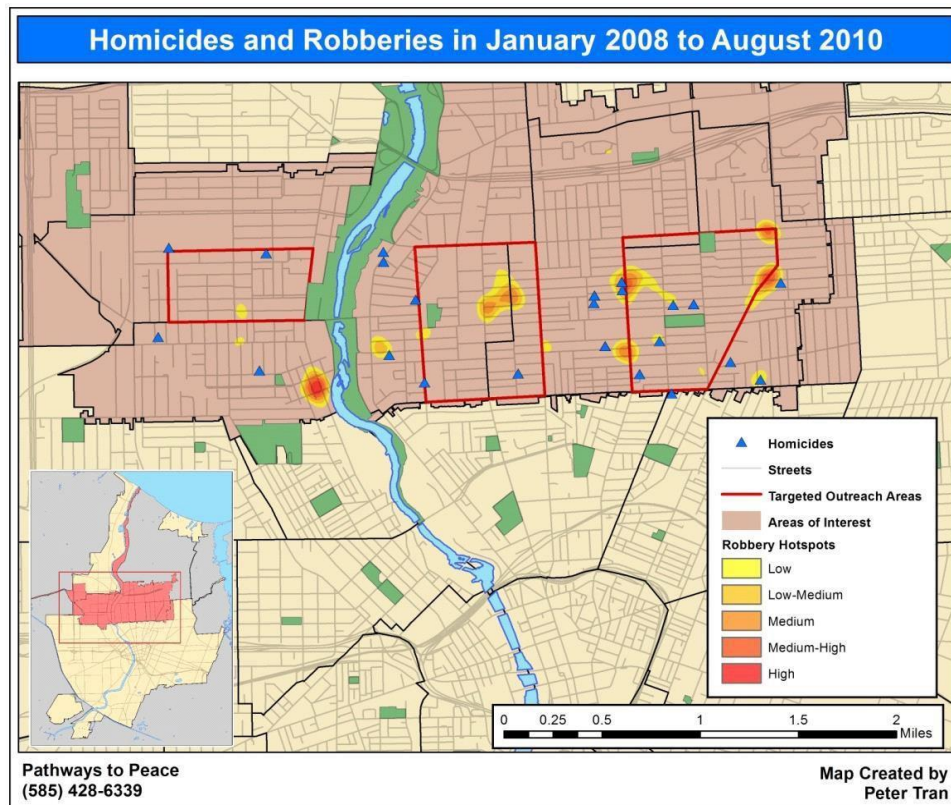


(14621 & 14613) and patrol service areas (PSA 23, 24, 25, & 44). The yellow to red color schemes represent the hotspots of shootings in the areas of interest. Yellow is color coded as low increase, orange as medium increase, and red as high increase. As you can see, the targeted outreach areas contains many shooting hotspots, therefore, these locations were selected for intervention.



The third map below displays the location of homicides and robberies prior to the SNUG intervention in the northern section of Rochester. Again, the red lines are the boundaries of targeted outreach areas and the area with light red shading is the area of interest in this analysis. The blue triangles represents homicides. The yellow to red color schemes represent the hotspots of robberies in the areas of interest. Yellow is color coded as low increase, yellow to orange is low to medium increase, orange as medium increase, orange to red as medium to high increase, and red as high increase. As can be seen, the targeted outreach areas contains many robbery hotspots. From the

previous map, we can also see that the targeted outreach areas contains many shooting hotspots. This area of interest also contains multiple homicides. Therefore, there are sufficient reasons for these locations to be selected for intervention and analysis.



## Results

Shootings in the analysis were divided and determined in each section of the studied area using ArcGIS to create spatial assignments of crime inside and outside the research areas. Regression analysis, controlling for time-series properties inherent in the data indicate that shootings in the outreach areas have a coefficient of  $-0.0387$ . Patrol service areas are  $-0.102$  and zip code areas are  $-0.238$ . What these coefficient and exponential coefficient shows is the increase or decrease effect in the area from the SNUG intervention. The increases or decreases are represented below by the color codes of red and blue; blue represents decrease and red represents increase. Although the color codes may show increase or decrease in direction of change, the

numbers below shows that SNUG had little or no effect on the shootings in the outreach areas, patrol service areas, and zip code areas. Compared to the shootings in the outreach area, the shootings in the surrounding patrol service areas and zip code areas seem to be lower than the shootings in the targeted outreach areas. However, we have to keep in mind that these figures are not statistically significant. This insignificance in variation shows us that the increase or decrease of these crime are not conclusively correlated to the SNUG intervention.

Outreach Areas	-0.038715	0.139883	0.0782945
Patrol Service Areas	-0.102631	0.047423	-0.011173
Zip Code Areas	-0.238069	-0.03125	-0.09742

Robberies in the analysis seem to have increased a bit in the outreach areas from the table above. Compared to the robberies in the outreach areas, robberies in the patrol service areas and zip code areas seem to be somewhat lowered. Again, we have to take into consideration that these figures are statistically insignificant. The increase or decrease of robberies may not be directly affected by SNUG and that there may be chances of coincidences or other variables. However, the expectation from the theory behind implementation would predict some positive (decrease in crime) effect from SNUG if the program, as implemented, had the theoretical expected effect.

Compared to the shootings and robberies data, homicides in the analysis were intriguing. From the first observation, we believed that SNUG had a huge impact on decreasing homicides due to the fact that in the 4 months of the SNUG intervention, we found out that there were no homicides in the outreach areas. This observation led us to examine the number of homicides in the areas around the targeted outreach areas such as patrol service areas and zip code areas. We found out that there were also no homicides in the patrol service areas and zip code areas surrounding the outreach areas during the 4 months of SNUG intervention. Since the comparison

between targeted outreach areas, patrol service areas, and zip code areas may lead us to believe that SNUG was effective in decreasing homicide, we had to take in to consideration the frequency of homicides. Although homicides are the most prominent crime because of its nature, it does not happen often. The pretest phase of approximately 2 and a half years in the analysis shows that there were only 8 homicides in the targeted outreach areas. With the low frequency of homicides, we determined that it was necessary to examine the number of weeks in a row without homicides prior to the SNUG intervention. After examining the number of weeks in a row without homicides prior SNUG, we found out that there were similar time spans that also had no homicides. Prior to SNUG, we found that there were some time spans of 20-37 weeks that had no homicides in the outreach areas. The SNUG operation consisted of 18 weeks without homicides in the outreach areas. Therefore, it is safe to say that SNUG is unlikely to be a measureable direct cause of decrease in homicide, but a general decrease due to chance or “homicides at its lows”. It is with appropriate caution to argue that homicides are so low in frequency that we are unable to definitively analyze the 18 week impact.

In total, we see that the targeted outreach areas faced a higher amount of total crimes compared to the surrounding patrol service areas and zip code areas, mainly because of the increase in robberies. However, it is inconclusive that SNUG had a direct impact on the increase or decrease in shootings, robberies, and homicides. What can be concluded is the ability to reexamine the possible strategies of the SNUG intervention.

### **Conclusion**

The possible strategies to improve the SNUG intervention may involve increasing the duration of intervention, increasing the size of the targeted outreach areas, or consider other approaches that may have a more direct impact to the community. Another factor to establish is

the implementation of SNUG should not be different from the proposed plan. If the implementation process is divergent from the proposed plan, effectiveness of the SNUG may be questionable. For example, if the plan was to implement SNUG for 18 months, but only 2 months of the original plan was undertaken, then the program may not yield any measureable impact. More precisely, implementation of a dosage at very low levels may explain the lack of impact.

As important as it is to have strong communications with the community and form positive social interactions with the youths, we have to consider additional approaches to improve the intervention. Social interaction is an important aspect in influencing noncriminal behavior; however, we need to look at other influences that affect criminal behavior and not just improper social interaction as the cause. This analysis does not conclude that we should neglect Differential Association theory, but to consider other theories that may be valuable and contributive for a more successful intervention. In theory we hope that SNUG is effective in decreasing crime through gang awareness, outreach to high-risk offenders, and other approaches; however, it is difficult to measure its impact because the techniques are so abstract. Since the techniques are so abstract, programs such as SNUG may face implementation failure such as inconsistent training of community workers. However, in no way should we neglect these methods; yet, we should embrace these techniques by including more definition, specification, and concrete approaches. Operation SNUG focuses on so many different approaches that it seems to be overwhelming. With the focus of gang prevention, gun prevention, employment assistance, and other methods, SNUG needs a substantial resource base to implement and complete its tasks. The amount of resources required for SNUG is the collaboration of the entire community and not just law enforcement, outreach specialists, or individual agents. Clear definition, specification, and concrete approaches

will prove valuable in improving the program and lead it one step towards a more successful direction.

Since the community outreach program, Operation SNUG, shows no direct cause in the decrease of homicides in the studied area, it is nevertheless important as it shows a unity of multiple community entities with one specific goal in mind; to recognize and address the violent crime within the city.

The use of GIS and crime analysis in this section shows that it is an effective tool at comparing geography size between outreach areas, police service areas, and zip codes; and indicating the distance between robbery hotspots, shooting hotspots, and homicides to outreach areas. As illustrated the intended outreach areas coincide with the location of homicides, robbery hotspots, and shooting hotspots. However, the issue remains on how much of the targeted outreach area was actually covered since the area is several blocks wide and in multiple zip codes.

The third and last criminal justice approach is one of the oldest form of criminal justice prevention and intervention method used to address crime. The use of drug raids and crackdowns are often used to incarcerate and deter criminal behavior within an area. In the next chapter, drug raids and crackdowns by law enforcement in Rochester, New York will be assessed to determine if these approaches are effective in addressing crime.

## Chapter 4: Rochester Street Corner Crackdown

### Introduction

Crackdowns are defined as “abrupt escalations in law enforcement activities that are intended to increase the perceived or actual threat of apprehension for certain offenses occurring in certain situations or locations” (Davis and Lurigio, 1996, pg.86). During crackdowns, police operations are typically highly visible and involve a large number of uniformed and/or

undercover officers (Scott, 2002). These operations are often carried out in either zero-tolerance approach versus sweeps (Gaines and Kappeler, 2011, pg.226). Zero-tolerance is a tactic in which law enforcement use to enforce all laws to bring stability in the area. Unlike zero-tolerance, sweeps are conducted by deploying large amount of police officers to make large numbers of arrests (Gaines and Kappeler, 2011, pg.226). Sweeps generally lasts around a day or two whereas zero-tolerance may last up to weeks or months (Gaines and Kappeler, 2011, pg.226). In this report, the effectiveness of the sweep approach in Rochester known as the Rochester Street Corner Crackdown will be evaluated.

### **Rochester Safe and Sound**

Rochester Safe and Sound (RSS) is an anti-gang initiative from Rochester Police Department (RPD) designed to address incidents relating to early juvenile crime and gang activity. RPD's analysis of the local gang problem indicated that gangs form primarily for the purpose of street level narcotics sales at the neighborhood-level. During the past three years RPD has taken a two-pronged approach to deal with the most violent drug markets and gangs. Special Investigations Sections (SIS) were formed to create long-term covert investigations and short-term approach of gang suppression. SIS teams were modeled after the successful Street Corner Conspiracy (SCC) teams utilized by the Chicago Police Department. The SIS teams were split into Eastside Narcotic Team and Westside Narcotics Team. They are significant in providing accurate Street Corner Market details. The objectives of these teams were to target well-established gangs and local drug markets, saturate the area, build connections, and assemble cases for a simultaneous execution of multiple search warrants and large-scale roundup of suspects. The New York State Police assigned five (5) investigators and one (1) senior investigator to assist with this initiative. During the past

three years, RPD has targeted a number of these drug markets. This research will focus on an analysis of four (4) separate drug markets.

\* Data obtained from Monroe Crime Analysis Center.

### **Theory**

Since drug raids are the main intervention techniques used in the Street Corner Market Initiatives, the theory behind the intervention rely heavily on the purpose on incapacitation and deterrence. Incapacitation and deterrence theory stems from the utilitarian philosophers, Jeremy Bentham and Cesare Beccaria in the Classical School of criminology. The main concept behind incapacitation is to prevent crime or disorder in an area by incarcerating targeted individuals for long periods of time. There are two concepts behind deterrence theory; specific and general deterrence. Similar to the concept of incapacitation, specific deterrence hopes to prevent crime and disorder from the targeted individual by influencing their behavior to not recidivate. General deterrence, however, encourages the behavior of the general population to not recidivate by making an example of a targeted individual. This usually means longer incarceration period or harsher punishment for the targeted individual. The model behind this analysis is to examine the effectiveness of incapacitation and deterrence theory.

The use of drug raids as an incarceration and deterrence theory may seem quite simple, yet, there needs to be an establishment on if these drug raids are actually crackdowns or takedowns. Police crackdowns is defined as “a sudden change in activity which is usually proactive, although, it can include increased likelihood of arrest during encounters initiated by citizens, and intended drastically to increase either the communicated threat or actual certainty of apprehension for a specific type or types of offense that have been highly visible or widely committed in certain identifiable places or situations”, (Sherman, 1990, pg.8). According to Sherman (1990),

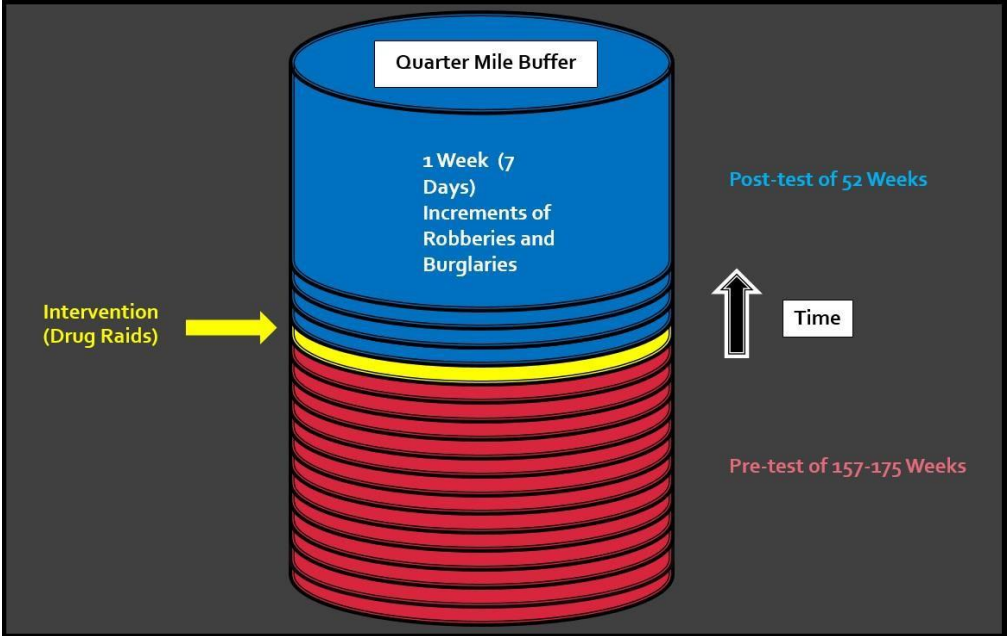


crackdowns consists the elements of presence, sanctions, and media threats (pg.8). Presence is the increase of law enforcement in a particular location or situation. Sanctions is the action in which law enforcement imply to intervene or disrupt a certain event; for example, roadblock checkpoints, issuing warnings, and making arrests. Media threats are “announced intentions to increase sanctioning certainty and are reported to the public such as TV, radio, and billboards”, (Sherman, 1990, pg.8). According to Scott (2004), crackdowns need to be sufficiently strong and long (strong enough doses of police intervention for long enough periods) in order for it be effective (pg.7). This “strong and long” factor may hinder the effectiveness of the Rochester Street Corner Crackdowns since the intervention was a quick sweep.

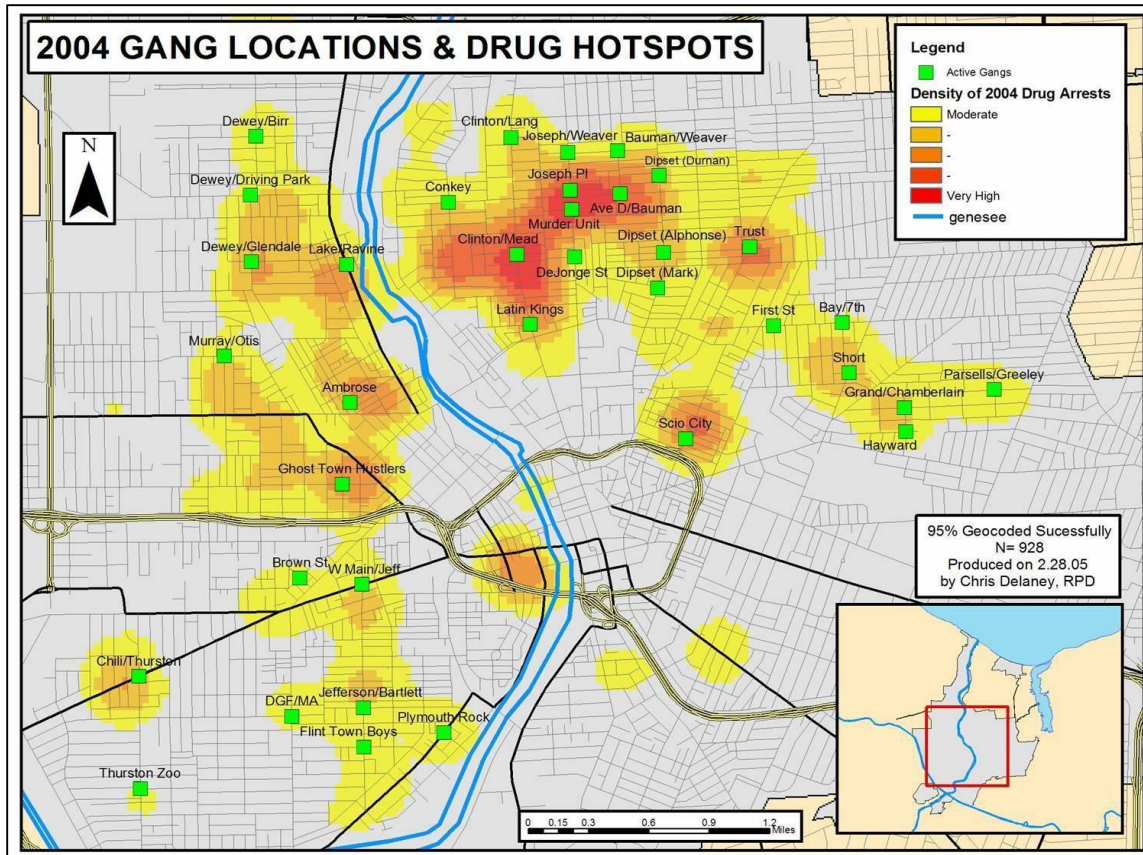
### **Analysis**

Instead of examining all crime types, the analysis in this paper will examine the rate of burglaries and robberies surrounding four specific areas before and after a drug/gang intervention. The objective of this analysis is to determine if the actions to intervene will likely decrease serious crime incidents in the “hot” areas of Rochester. Burglaries and robberies were specifically chosen because these crimes are heavily linked to gang crimes and drug offenses. Unlike the previous report, this report will revisit the Street Corner Market Initiative project by examining crime within the time span of 4 years instead of 6 months. Time intervals of approximately 3 years (157-175 weeks) before and 1 year (52 weeks) after the date of the drug intervention were used. This wider range of time period allows us to gather more valuable results and higher accuracy of crime patterns. Since time series data are being used on data with crime counts, an autoregressive Poisson model was used to correlate weekly robberies and burglaries in the pretest and posttest phase of the analysis. To apply the autoregressive Poisson model STATA, a data analysis and statistical software package was utilized. Buffer distance of a quarter mile was used to provide an appropriate

boundary in our analysis. ArcGIS was used to provide crime maps that displays hotspots indicating the most serious increase of robberies and burglaries. Below, is a visual model that represents how we will utilize our time series data.



**Area of Intervention**



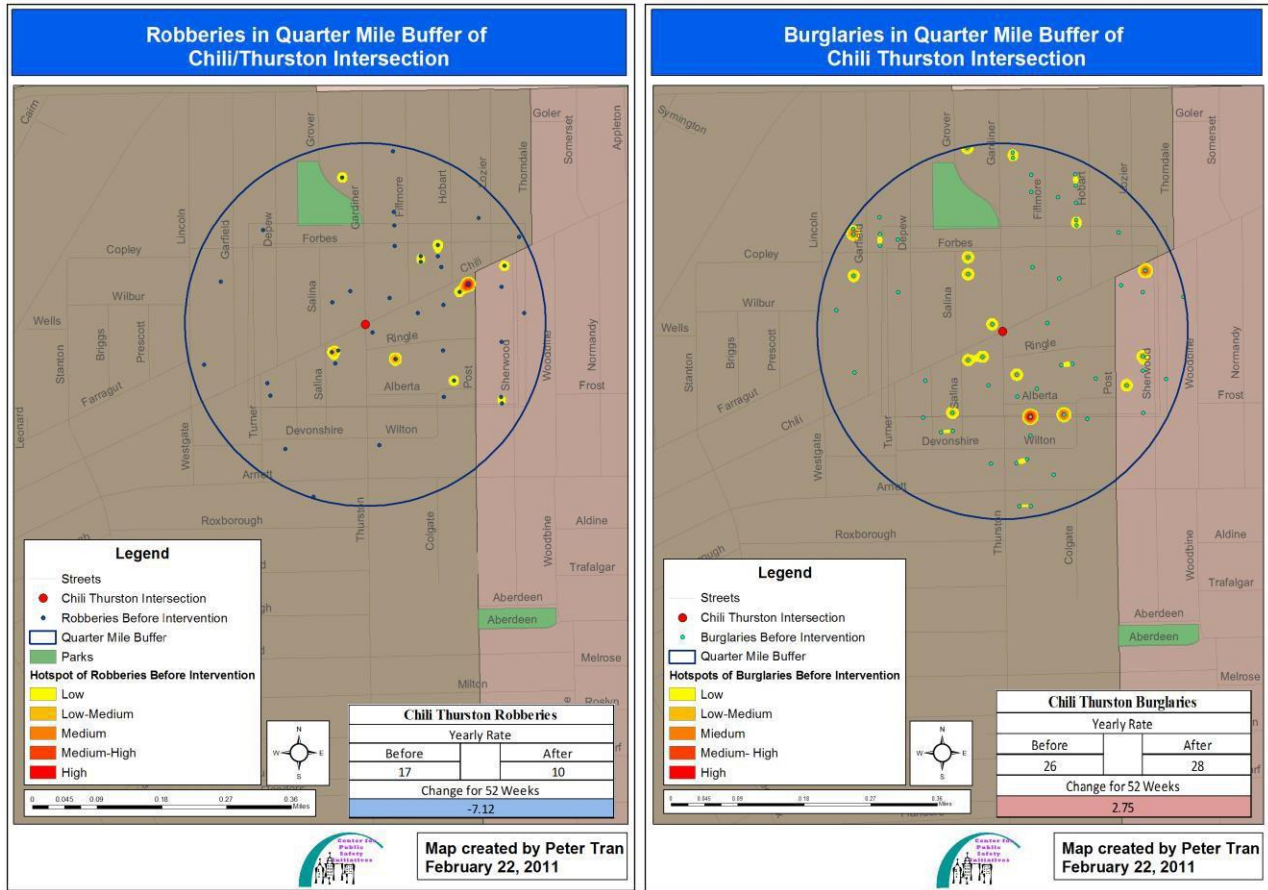
The map above represents one of the many sources used by RPD to determine specific areas for SIS teams to target. This map also shows the intensity of frequent drug arrests and active gang locations. The yellow to dark red scale represents moderate to very high frequency of drug arrests of an area. The green squares represent the area with active gangs. The dark blue circles represent quarter mile buffers around the target location. In this case, on the upper northeast side of the city, we have two (2) areas of interest; Bauman/Avenue D and North Clinton/ Scrantom. On the lower southwest side of the city, we have another two (2) areas of interest; York/Danforth and Chili/Thurston. As shown in the illustration, these four (4) areas are occupied with active gangs and frequent drug arrests.

Location #1: Chili/Thurston

The investigation of this intersection occurred from December 10, 2007 until February 7, 2008. The drug intervention occurred on February 7, 2008. The analysis of crimes was from January 2, 2005 – February 3, 2008 (Approx. 3 years before) and February 14, 2008 – February 14, 2009 (1 year after). Information below are the results of the drug intervention provided by RPD.

Search Warrants Executed	16
Individual Arrested	24
Cash Seized	\$7,789
Cracked Seized	54.2 grams
Heroin Seized	N/A
Marijuana Seized	163.7 grams
Weapons Seized	1 (shotgun)
Vehicle Seized	3

The two crime maps below displays the hotspots of robberies (left) and burglaries (right) in the Chili/Thurston area. The scale of yellow to red represents low to high intensity of crime. The dark blue circle represents the quarter mile buffer used as our boundary in the analysis. The chart on the lower right side of the maps represent the results from the Autoregressive Poisson analysis. It shows that robberies has decreased (light blue) by 7 in the 1 year post-test phase. The other map shows that burglaries had slightly increase (light red). This slight increase may show no value because the increase was only by 2 incidents. Two burglaries of change doesn't say much about the effectiveness of the intervention.



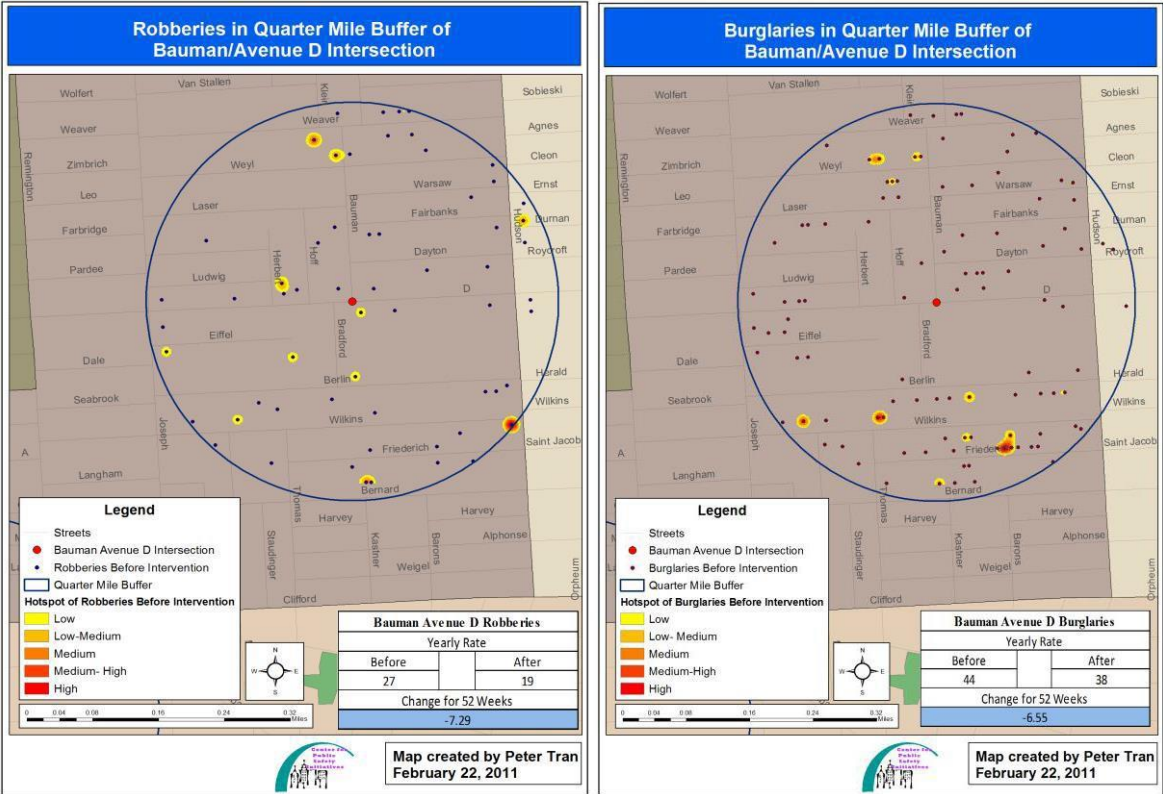
**Location #2: Bauman/Avenue D.**

The investigation of this intersection occurred from November 24, 2007 until January 14, 2008. The drug intervention occurred on January 14, 2008. The analysis of crimes was from January 2, 2005 – January 11, 2008 (Approx. 3 years before) and January 18, 2008 – January 18, 2009 (1 year after). Information below are the results of the drug intervention provided by RPD.

Search Warrants Executed	8 (6 residences, 2 vehicles)
Individual Arrested	7
Cash Seized	\$24,313
Cracked Seized	N/A
Heroin Seized	3 grams
Marijuana Seized	30 grams
Weapons Seized	2 (handguns)

Vehicle Seized	N/A
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The two crime maps below displays the hotspots of robberies (left) and burglaries (right) in the Bauman/Avenue D area. It shows that robberies had decreased (blue) by 7 in the 1 year post-test phase. The second map shows that burglaries had also decreased by 7 (blue).



**Location# 3: North Clinton/Scrantom**

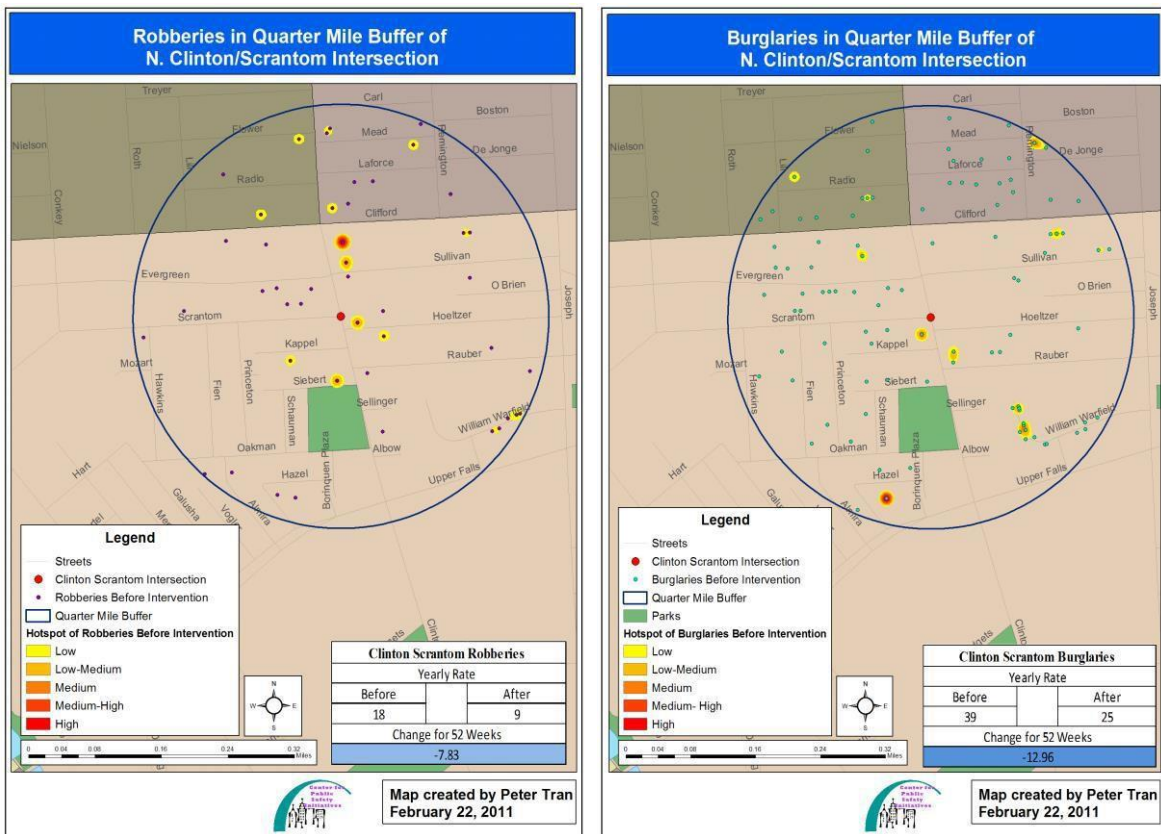
The investigation of this area occurred from March 14, 2008 until May 21, 2008. The drug intervention occurred on May 20, 2008. The analysis of crimes was from January 2, 2005 – May 17, 2008 (Approx. 3 years before) and May 26, 2008 – May 26, 2008 (1 year after). Information below is the results of the drug intervention provided by RPD.

Search Warrants Executed	9
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Individual Arrested	23
Cash Seized	\$6,674
Cracked Seized	233.8 grams
Heroin Seized	26 grams
Marijuana Seized	295 grams
Weapons Seized	2 (handguns)
Vehicle Seized	1

The two crime maps below displays the hotspots of robberies (left) and burglaries (right) in the N. Clinton/ Scrantom area. It shows that robberies had decreased (blue) by 7 in the 1 year post-test phase. The second map shows that burglaries had also decreased significantly by 13 incidents (dark blue).



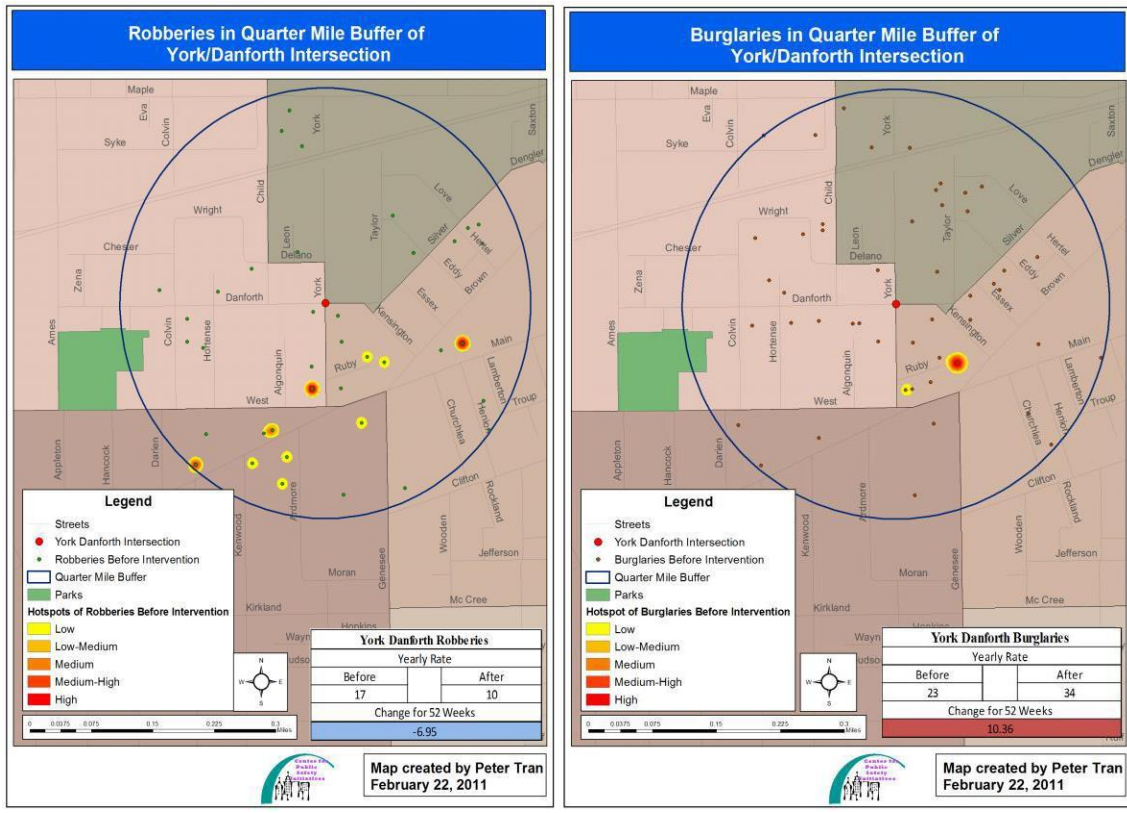
Location #4: York St. / Danforth

The investigation of this area occurred from March 20, 2008 until April 24, 2008. The drug intervention occurred on April 24, 2008. The analysis of crimes was from January 2, 2005 – April 20, 2008 (Approx. 3 years before) and April 27, 2008 – April 27, 2009 (1 year after). Information below is the results of the drug intervention provided by RPD.

Search Warrants Executed	8
Individual Arrested	18
Cash Seized	\$5,022
Cracked Seized	45.2 grams
Heroin Seized	N/A
Marijuana Seized	171.4 grams
Weapons Seized	3 ( 1 rifle, 1 shotgun, 1 stun gun)
Vehicle Seized	N/A

The two crime maps below display the hotspots of robberies (left) and burglaries (right) in the York/Danforth area. It shows that robberies had decreased (blue) by 7 in the 1 year post-test phase. The second map shows that burglaries had increased significantly by 10 incidents (dark red).





## Results

<b>York/Danforth</b>	<b>-6.95</b>	<b>10.36</b>
<b>N. Clinton/Scrantom</b>	<b>-7.83</b>	<b>-12.96</b>
<b>Chili/Thurston</b>	<b>-7.12</b>	<b>2.75</b>
<b>Bauman/Avenue D.</b>	<b>-7.29</b>	<b>-6.55</b>
<b>Total</b>	<b>-29.19</b>	<b>-6.4</b>

After reviewing the results that were generated from the STATA analysis, estimates of robbery and burglary changes in the year follow-up in each of the locations were assembled above. The results indicate that all four areas examined had experienced a consistent pattern of decrease in robberies. On the other hand, the different results from each area shows that the increase or decrease of burglaries are inconsistent. One area, York/Danforth, experienced a high increase of 10 burglaries in the 52 week post-test. North Clinton/Scrantom, however, experienced the opposite

effect. N. Clinton/Scrantom experienced a high decrease of 13 burglaries in the 52 week post-test. The next area, Chili/Thurston remained relatively the same. The slight increase of 2-3 burglaries shows little or minimal results from the intervention. The 2-3 increase burglaries may be due to other factors, such as a bad month. The last intersection, Bauman/Avenue D. experienced somewhat of a moderate to high decrease in burglaries; a decrease of 7 burglaries within the 52 week post-test. Overall, a total of around 29-30 robberies were estimated to have been prevented from the intervention in the 1 year post-test. Burglaries show no signs of consistency, therefore may be unaffected by the intervention.

### **Conclusion**

The results from the analysis on street corner crackdowns indicate many factors that requires consideration for future studies. Two of the factors are the incarceration period and criminal history of targeted individuals. The effectiveness of the intervention may depend on the length of the incarceration period for the targeted individuals. Recidivism and criminal history also play a significant role in determining the effectiveness of the intervention. The effectiveness of the drug raids may be dependent on the numbers of arrests and convictions of the targeted individual. The more arrests and convictions in the individual's history, the higher the likelihood that the individual will face harsher punishment and lengthier incarceration time. This lengthier incarceration period will keep the individual from being in the targeted neighborhoods, therefore, will likely decrease the chances of crime. However, not every arrested or convicted individual will face lengthy incarceration periods. Individuals that plea bargain into a less harsh punishment will most likely be released back into the neighborhood. Individuals that are arrested but are not convicted will also be released back into the area. Other individuals that are arrested or convicted may recidivate. These are some factors that may make the results of our analysis inconsistent.

Therefore, we have to keep in mind the time period we used for our analysis and ask ourselves if a one year (52 weeks) post-test is too lengthy for this analysis. Would using one year worth of post-intervention data too extensive since the effectiveness of intervention diminishes over time?

## Chapter 5: Overall Results on Best Criminal Justice Practices

Three criminal justice approach were evaluated through three different approaches to show the multiple perspectives on combating crime by using official crime data and the power of GIS to organize and assess the effects of intervention efforts. Housing, community outreach, and law enforcement crackdowns are the approaches in the criminal justice system that all have different aspects in theories relating to community improvement, addressing crime, and using community resources. However, they are united by the expectation that they would reduce crime in certain places. In each of the three cases the innovation, program, or effort was tested in terms of its impact on geographic and temporal distributions of crime.

	Habitat for Humanity	Operation SNUG	Street Corner Crackdown
<b>Theory</b>	RAT/Defensible Space	Differential Association	Incapacitation/Deterrence
<b>Fit/Approach</b>	Housing/Preventive	Outreach/Preventive	Arrests/Reactive
<b>Association</b>	Indirect Association	Direct and Indirect Association	Direct Association
<b>Measure</b>	Violent and Property Crime	Shootings and Robberies	Robberies and Burglaries
<b>Dosage</b>	5 HFH, 14 Random Samples	N/A-Dosage not measurable	Raids on 4 target areas
<b>Design</b>	Control Group/Pre/Post-Test	Quasi-Experiment/Pre/Post-Test	Quasi-Experiment/ Pre Post-Test
<b>Pre/Post-Test</b>	157 weeks/157 weeks	139 weeks/ 13 weeks	157-175 weeks/ 52 weeks
<b>GeoUnit</b>	1,000ft buffers of samples	Outreach Area/PSA/ Zip Code	Quarter Mile Buffers of Raids
<b>Decay/Weakness</b>	Crime may displace/unaffected	Program objectives are vague	Arrestees may be released

### Conclusion: Housing as a Criminal Justice Approach

#### Theory

To address crime, new affordable housing operates under the routine activities (RAT) and defensible space theory. This approach examines crime through environmental factors and the

opportunity for criminal behavior; establishing a relationship that housing provides suitable guardians and ownership property that deter criminal activity in the vicinity. However, there may be many factors that are assumed in this routine activities theory. For example, there may be an assumption that all new home owners are responsible and will report all criminal activity in the area. There may be an assumption that the distance in which new housing has an effect on crime may extend several blocks within the community as compared to one block. These factors should be evaluated to address the limitation of housing and its effect on crime

### **Fit/ Approach Type**

The use of housing to address crime within an area is a preventive measure; a technique used to prevent crime from occurring instead of implementing an action plan to address current crime issues. In other words, the independent variable is housing and dependent variable is crime.

### **Association with Crime**

Based on RAT and defensible space, housing is considered an indirect association with crime due to the fact that it falls heavily on available guardians and suitable targets. In other words, housing effects those who are willing to deter or respond to criminal behavior (suitable guardians); therefore effecting the outcome of crime. The association with housing and crime is determined by the outcome of the third party; the environment, suitable guardians and available targets.

### **Measure and Dosage**

Since housing is a general criminal justice approach that does not target any specific crime, but effects all crime types, violent and property crimes were used as measurements in the analysis. The use of violent crimes and property crimes as a measurement did not become an issue; however, the comparison between Habitat for Humanity houses (HFH) and random sample houses (RSH) did become troublesome. Since some Habitat for Humanity houses (HFH) were constructed and

completed in different time frames, HFH houses that had a deed filing date distant from 2005, the intervention date, had to be omitted. To remain consistent in the usage of measurements, random sample houses (RSH) with an unavailable deed filing date was also omitted. Because of the omission of certain HFH and RSH, limited number of samples may be the cause of the inconclusive results. I think here you might also contrast density of HFH – standalone vs. cluster, no? Might this be a place where more research is needed?

### **Design/ Pre-Tests Post-Tests**

Out of the three criminal justice approaches analyzed, housing with Habitat for Humanity had the strongest design. Besides the pre-test post-test, the areas surrounding Habitat for Humanity houses were control groups or treated areas that were compared to random samples without any treatment. Unlike the community outreach and street corner crackdowns analysis, the random samples in comparison to the control group allows us to see if housing, specifically Habitat for Humanity, had any effect on crime. With both the pre-test post-test analysis and the control group experiment, we can factor each criteria such as time, area, and dosage of intervention.

A pre-test post-test of 157 weeks before and 157 weeks after the intervention date was used because it allows us to collect more crime data in the area for the analysis and that housing is considered as a long-term crime prevention due to the enormous amount of effort in construction these homes. Another criteria to take into consideration is the fact that these homes are constructed through a long time frame and requires massive amount of contribution which takes time. Since the HFH houses were not constructed all at the same time, nor were they completed all at the same time, 3 years before and 3 years after allows us greater flexibility to include HFH houses completed in the beginning or end of 2005. It also allow us to use a greater number of crime data or sample observations so that we can better determine the correlation of specific low occurring crimes to

housing; for example, there are many weeks that homicides remain zeroes. Because of homicides are uncommon occurrences, we still would like to include homicides as part of the violent crimes data that was analyzed in the study. Determining the timeframe for the pre-test post-test analysis was one of the most challenging tasks in the study. The reason is because we just could not determine whether or when the effects of housing dissipate. The question is does the effect of housing on crime begin to dissipate 1, 2, 3 or more years from the intervention date?

### **Geographic Unit**

The second the most challenging task in analyzing all three criminal justice approaches was to determine the appropriate distance or proximity in which housing and its effect on crime will dissipate. Since there is no clear boundary of when the crime prevention effects begin to decay, a theoretical judgment was determined by asserting that the areas closest to the Habitat for Humanity (HFH) houses will experience the peak effectiveness of the intervention. As the location becomes farther from the HFH houses, we assume that the effectiveness dissipate gradually. To set a boundary, we determined that 1,000 ft., which is about 3 blocks away from the HFH houses, is the best measurement used to determine where crime prevention effectiveness begins to decay. The assumption is that a boundary under 1,000 ft. from the HFH houses will neglect crime beyond that boundary which may be effected from housing; anything over 1,000 ft. may not be potentially effected by housing. Now this does not factor in other criteria such as vacated lots surrounding HFH houses, which may negate the effectiveness of housing. For clustered housing or multiple HFH houses constructed adjacent to each other, the theory is that buffers or boundaries of crime prevention effectiveness from HFH houses may overlap each other, which may produce greater effects.

### **Decay/ Weakness**

Criminal justice approaches often have a time period of dissipation where the effects from the intervention gradually decreases. As explained in the previous sections, the question remains when (how long was the intervention effective) and where (how far does the intervention begin to not effect crime). These issues generate certain weaknesses in the study. One of weaknesses is that, in the study, GIS neglects to include special geographical conditions that may negate the impact of housing and contradict the idea that closer proximity to the intervention area will show more effect on crime. For example, a drug market across the street or around the block from a HFH house may negate the effectiveness of housing. Another issue with some of these areas are that there are many vacant lots that surround HFH houses that generate escape routes or loitering areas for criminals. Gangs and gang violence also reside in these areas which may make HFH houses ineffective.

Another weakness in the study is the limited number of HFH houses available to compare with random samples. More HFH houses would allow us to examine more intervention groups that may show some significance in the study. Lastly, this analysis does not examine the displacement of crime from HFH houses. Question remains that if criminals are driven out from the nearby location because the environment is altered, if not arrested, where are they being displaced?

Overall, Habitat for Humanity plays a huge role improving the city and despite the weaknesses of this study, it can be concluded that the use of private housing is not the best tool in combating crime. It is the best tool to combat poor living conditions; however, if we examine and modify the way housing is being implemented, it has the potential to be aligned with theories indicating they may have a role in addressing crime.

### **Conclusion: Community Outreach as a Criminal Justice Approach**

#### **Theory**

Community outreach and Operation SNUG operates under the differential association theory; which is emphasizes the importance of proper social interaction and role modeling for community members, especially youth. The issue with this theory is that it is assuming that the target or youth remains interested in having a role model and wishes to connect with someone. It also assumes that the youth acknowledges the problems and consequences that follow criminal behavior. However, youths who joined gangs because of their family member's association with a gang is a prime example of what differential association theory tries to define.

### **Fit/ Approach Type**

The use of community outreach to address crime can be a preventive and reactive approach depending on the goal and intent of the program; however, most of the time, it can be considered as more of preventive approach. Preventive approaches constitute techniques used to prevent crime from occurring whereas reactive approaches are used to address current and active crime issues. Because of unclear goals of Operation SNUG, it can be both preventive and reactive because it was created to address the current issue of gang violence and juvenile delinquency through street intervention within the area, as well as to prevent further violent crimes in the future. Depending on the actions implemented in Operation S.N.U.G., actions such as street intervention and responding to juveniles referrals from police are more reactive approaches. The approach is reactive because crime needs to be present, or at least likely in the near term, in order to conduct street intervention or respond to juvenile referrals. However, actions such as teaching gang awareness through classroom presentations or using celebrities as role models should be classified as preventive approaches because crime is not required for the teachings to be implemented. This preventive approach is similar to a program called Drug Abuse Resistance Education (D.A.R.E) which was deployed countrywide to educate children about the harmful effects of drugs and to



teach them good decision-making skills. Some of the targeted audience has never heard or experienced drugs since they are only young children.

### **Association with Crime**

Operation SNUG may be regarded as a direct association with crime because unlike Habitat for Humanity, its first objective is to decrease criminal behavior amongst youths and lower crime in the neighborhood. For example, an individual who was arrested but referred to Pathways to Peace to assist in examining social issues that causes criminal behavior would be a direct association. Unlike housing which requires a third party to effect crime, community outreach and Operation SNUG is directly addressing the issue by intervening with delinquent youth.

### **Measure and Dosage**

One of the most challenging aspects of this study is the dosage of community outreach by Operation SNUG and Pathways to Peace. While it is not difficult to determine what crimes will be focused on by community outreach, measuring dosage of intervention requires the agency staff to keep track of specific details on program activities. For example, daily patrols by street workers to prevent youth from skipping schools or frequent meetings with parents to better monitor youth's involvement in delinquent activities should be recorded. Not only should these activities be documented but the numbers of kids skipping school that were brought back to school by street workers or the qualitative assessment on why parents do not have time to monitor their kids should be recorded. These are prime examples that can be valuable data in determining if the program is truly effective. The issue is that many of these programs and operations do not document their activities because there is no clear approach or guidelines to systematically capture the dosage and nature of interventions.

A second example would be the use of gang and guns awareness presentation by community outreach workers to provide youths an insight on the consequences of joining a gang or carrying an illegal firearm. If this awareness presentation was not measured for success, how will it be determined if the task is effective or not? A simple recommendation would be to develop and administer a survey for the presentation attendees and gather their insight on what was being presented. Was it helpful? Was it not? It can be assumed that if a youth from the presentation attendance list did get arrested for gang crimes, that the presentation was not effective toward that individual.

Finally, the establishment of concrete and definitive approaches with extensive training for all community outreach personnel are key factors in the success of the program. In collaboration with specific approaches and extensive training, law enforcement and the entire community will need to be involved in a combined effort to address crime. Thus the limits of GIS as a tool is limited to the extent one does not measure the dosage of policy change or program implementation explicitly (Blumstein, 2013, pg.3). For example, the complexity of policy and programs shift with the shape and movement of demographics, drug markets, gun control, education, and other factors that limit the analysis; this is something GIS cannot measure or calculate. Crime analysis and GIS are also heavily dependent on financial resources on the department, work time, and training (Boba, 2005, pg.54).

### **Design/ Pre-Tests Post-Tests**

Another challenge to this study is establishing what research method would be appropriate to determine the effectiveness of Operation SNUG. A quasi-experimental design was chosen for this study because the dosage and origin of intervention were not entirely recorded. A quasi-

experimental design allows us to compare the crimes within the targeted outreach area, police service area surrounding the targeted outreach area, and the zip codes area that surrounds the police service area. This allows us to look at several things; the distance in which the targeted outreach area or intervention may have an impact on the surrounding neighborhood and if the effects extends beyond the boundaries of areas such as police service area and zip code area. It also shows how the targeted outreach areas are doing in terms of shootings and robberies in comparison to the overall police service area and zip code area. If the crimes decreased in the targeted outreach area but have stayed the same or increased in the police service area or zip code area, then we can determine that the program may have some effectiveness in achieving its objective.

Similar to the Habitat for Humanity and housing analysis, a pre-test post-test was done so we can take into account time series and examine the longevity of the program's effectiveness. The difference between the community outreach analysis versus the housing analysis is that the community outreach analysis used a pre-test of 139 weeks and a post-test of 13 weeks. The reason for 139 weeks is so that we can collect enough crime data for the area to execute an effective time series analysis. Thirteen weeks was chosen precisely because the program's execution seems to be abstract and unclear which may prove to be a more of a short-term effect even though the intention of the program is long-term the impact is likely to quickly decay unlike the habitat houses, which at least have structural longevity.

### **Geographical Unit**

Similar to the effects of housing, community outreach has no clear boundaries on where the effects end. With just an estimated location of where the patrol routes used by community outreach workers, measuring and comparing community outreach proves difficult. Examining

shootings and robberies between outreach area, patrol service area, and zip code area may solve this issue by showing the increase or decrease of crime as the examined area expands.

### **Decay/ Weakness**

Similar to housing, there are many factors that may determine the inconclusive impact that community outreach programs such as Operation SNUG, have on crime. One factor is the abstract techniques in community intervention program. Without consistent outreach methods used between outreach workers, it is difficult to measure what method works and what does not. Decay of effectiveness may also occur rapidly if youths do not associate or connect themselves with outreach workers. How many youths can connect with these role models or outreach workers? If they connect with them, what are they thinking? Would this outreach program deemed as a failure if a youth recidivates 5 years later as oppose to 2 years. These are the attributes that are not accounted for in this study.

## **Conclusion: Crackdowns as a Criminal Justice Approach**

### **Theory**

Crackdowns which operates on an incapacitation and deterrence theory aims to decrease crime through targeting individuals who disrupt neighborhood stability by incarceration. Incarceration has been the oldest technique in preventing crime and bringing those accountable responsible for their actions. By removing the delinquent individual or individuals, two effects are assumed: 1) If the criminal element caused by the targeted individual is removed from the area, then crime will decrease or be terminated; 2) The targeted individual being incarcerated serves as an example to other individuals that the repercussions of non-law abiding behavior exists and will be enforced. There are some limitations to incapacitation and deterrence theory. The theories do

not take into account certain circumstances such as gang affiliation. For example, if a group of gang members in a specific location were targeted, arrested, and incarcerated, other gangs may try to claim that territory. In this case, the incarceration and deterrence theory had no effect because other gangs will just replace the incarcerated gang and the criminal activity persists. Because there are no entity or gangs in control of the targeted area due to arrests, rival gangs may wreak havoc and cause violence to claim the now available territory, eliminating any gains in crime reduction.

### **Fit/ Approach Type**

Although the intent of crackdowns is to prevent further criminal activity, the methods in which crackdowns are deployed are reactive. Crackdowns can only be deployed when there are current and active criminal activities in the location otherwise there would be no one to arrest. Unlike crackdowns, housing is a preventive approach because houses can be constructed without the presence of crime. Crackdowns however, require an individual who conducts criminal activities so that an arrest can be made, incarceration can be implemented, and an entity to impose punishment on so that deterrence can yield an effect.

### **Association with Crime**

Unlike housing, crackdowns are directly associated with crime because it personally targets the individuals responsible for criminal activity in the intervention area without depending on any third party. Housing doesn't guarantee that homeowners will respond to criminal behavior whereas law enforcement are required to do so in crackdowns. Focusing on, arresting, and incarcerating an individual while imposing a direct statement to other possible criminals that criminal behavior will not be tolerated is surely a direct association with crime. Similar to community outreach, the primary goal of crackdowns is also decrease crime whereas housing's primary goal is to improve living conditions.

## **Measure and Dosage**

Measurement and dosage for crackdowns requires police data on number of officers present at the crackdown, numbers of arrest, and most importantly the duration of officers' presence in the intervention area. Since crackdowns are generally quick sweeps, duration of police presence is often short. This often cause challenges in this study because police presence is not accounted for and there is an assumption that police presence dissipated in an unknown time frame.

## **Design/ Pre-Tests Post-Tests**

Another challenge for the pre-test post-test design in this crackdown study is determining the appropriate timeframe for analysis. Since crackdowns are quick sweeps where arrests generally take place within the same week, 3 years pre-test and 1 year post-test seems to be the most appropriate timeframe for analysis. Three years of pre-test data gives us a large enough dataset to examine and determine any pattern or correlation between the intervention and the area. One year post-test is determined as the appropriate timeframe for a follow-up to see if crime decreased. The theory behind using the one year post-test is that police presence may dissipate in the area within one year after the intervention date.

## **Geographical Unit**

Similar to the effects of housing and community outreach, crackdowns have no clear boundaries on where the effects end. Because of the nature of quick sweeps and the consolidation of police presence in one precise location, there is an assumption that the effects of intervention will not extend beyond a quarter mile buffer.

There may be other factors that may affect the results of this study that cannot be avoided. For example, police patrols in police service areas, or PSAs, may increase after the intervention

date. In this scenario, the decrease in crime in the intervention area may be attributed to the police patrol presence after the intervention and not during the crackdown.

### **Decay/ Weakness**

Since law enforcement is one of the key players in the community, incarceration and deterrence through drug raids and crackdowns are one of the main tasks operated by local law enforcement. Although the general idea of removing criminal behavior from the community through imprisonment is logical, there are some disadvantages and inconsistencies. One issue of the crackdown and drug raid approach is that it relies heavily on number of arrests and lengthy sentences to keep non law-abiding citizens from reentering the community. This all depends on the criminal history of the arrestee and their likelihood to recidivate prior to their release from imprisonment. However, the downfall of this deterrence through incapacitation theory is the plea bargaining process where arrestees are able to plea for a lesser punishment; thus, reentering the community in an earlier time frame. Individuals that are arrested but are not convicted will also be released back into the area. Other individuals that are arrested or convicted may recidivate. Nevertheless, drug enforcement is a substantial element in the police's arsenal in combating crime.

### **Conclusion**

In spite of all the disadvantages to housing, community outreach, and drug crackdowns, these approaches are nevertheless significant criminal justice approaches that should not be neglected. One common goal that these three criminal justice approaches provide is the unification of the community as a whole to recognize and address the issue of crime. Without unification of the community and recognizing that there is a crime problem, the stability and safety of the community would be in jeopardy. Community unification with the combined efforts of all three criminal justice approaches implemented at the same time may prove a lot more effective in

combating crime. However, further research should be conducted to establish the relative effectiveness of the combined efforts of all three criminal justice approach.

As noted in the discussions above, the proximity of interventions to crime appears to have some relationship to the immediate and detectable impacts. More precisely, the police led effort involving crackdowns did appear to have an immediate and modest impact, whereas the more distant interventions in SNUG and HFH did not have clearly detectable impacts. This could be related to their tangential or indirect relationship to crime or perhaps with the longer time horizon needed for community and personal intervention efforts such as housing improvements. Alternatively, the theoretical linkages in both SNUG and HFH could be made more explicit and aligned with criminological theory if both aim to have direct impacts on community safety and crime.



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