Planning for Crime: 
Crime Prevention Through Environmental Design 
in Muncie’s Old West End Neighborhood

A creative project submitted to the Graduate School in partial fulfillment 
of the requirements for the degree 

Master of Urban and Regional Planning 

by 

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To Mom, Dad, Dr. Kelly, Sangita S., the Urban Planning Faculty, and to all the friends I made at Ball State University,

Thank you.
Table of Content

Acknowledgement

Table of Contents

Introduction 1

Theories of Crime and Methods of Control 8

The Nature of Crime Data 20

Step One: Target Area Selection 28

Step Two: Data Collection and Mapping 30

Step Three: Data Analysis and Target Area Selection 41

Step Four: Diagnose Environmental Problems 50

Step Five: Recommendations 63

Conclusion 79

Bibliography 80

Appendix 81
Introduction

This creative project studies the occurrence of crime in Muncie’s Old West End neighborhood. It reviews and recommends planning-related concepts from Crime Prevention Through Environmental Design (CPTED) and other fields of crime prevention study such as Environmental Security Planning, Defensible Space, and Routine Activity Theory. The project uses data from a range of sources including the CPTED literature, Delaware County, IN, the U.S. Census, a grant application, an interview, and a past study of the neighborhood. GIS is used to conduct spatial analysis to identify three areas that have experienced a dense concentration of selected crimes against persons and property over a three-year period (2003-2006). These areas are then analyzed according to CPTED and related principles to determine how the areas can be modified for improved safety.

Statement of Creative Project

The idea for this project occurred after I discovered crime hotspot maps on the Delaware County GIS server. At the time I was searching for a viable project topic. After discovering the maps, I decided to research the topic of cities and crime. Initially I wanted to do a study on crime’s effect on Muncie’s property values. This was not feasible because of the difficulty in obtaining recent property values and crime information. Further research led me to “Crime Prevention Through Environmental
Design” (CPTED). Because of the physical nature of CPTED, I felt it necessary to select an area in which to apply the principles of CPTED.

Location

A residential neighborhood to the immediate west of downtown Muncie was chosen for this study. The reason it was selected is because of its location. There may be potential for improvement because it is located between downtown Muncie and Ball State University. The neighborhood was once a highly desirable place to live.¹ After major manufacturing left Muncie, the area experienced decline. Today, there is a high percentage of rental housing in the neighborhood. This has made it difficult to establish a strong neighborhood social network.² The cumulative effect has placed the area in a difficult position economically, and socially.

Value and Need

The Old West End Neighborhood is of historic character. This historic neighborhood should be livable if it is to be worth preserving. It has been included within the Muncie Weed and Seed Program’s boundaries due to the level and nature of crime that it has experienced in recent years. High crime neighborhoods are generally undesirable places to live because residents do not feel secure. Efforts to reduce crime levels in this neighborhood are already underway and shall be detailed later in this study. This application of CPTED in the Old West End Neighborhood is meant to serve as a reference for officials and residents who seek a better understanding of how and where CPTED principles could be applied to the Old West End Neighborhood. One stark indication that the area experiences high crime is the extreme measures of

¹Old West End Neighborhood Survey (online student project)
²Interview with Greg Maynard of Muncie Weed and Seed (date)
protection residents have taken to protect themselves from real or perceived danger. The following images show cases of the “fortressing” of homes in the Old West End neighborhood. “Fortressing” is a target hardening measure to prevent unwanted entry. Also shown are an apartment complex and a convenience store that employ a method of mechanical crime deterrence, video cameras. Another method of mechanical deterrence is a home security system; there are numerous signs posted on the exteriors of houses displaying a home security system logo. There is also a bus stop with night lighting for the security of M.I.T.S. riders.
The following pictures are examples of citizen reactions to crime of the perception of crime in their neighborhood. All photos were taken within the core area of the Old West End Neighborhood. At some point, the home in the first picture had its entire front porch enclosed in an iron cage system. The side lot of this home is separated from public space by a 8’ ft. privacy fence. The second picture is of the Kimberly Apartments. The security camera is one of several focused on the apartment grounds. This building was observed to have a high number of visitors. The last picture is of a duplex in the northern area of the site that also has used “fortressing” to increase its security.
Additionally, the importance of the crime issue in the Old West End has been documented. In 1997, an urban planning studio at Ball State University conducted a survey of the Old West End. This survey asked questions about the strengths and weaknesses in the neighborhood. It also asked residents what they felt the most critical issue facing the neighborhood was. Both the responses to the question about critical issues and the biggest weakness of the neighborhood were answered with “crime,” at 14 percent and 17 percent of respondents respectively.³ The Ball State studio’s study will be cited as “studio study” hereafter.

Explanation of Project

This project generates recommendations for the prevention of crime through Environmental Design targeted areas of the Old West End Neighborhood. The recommendations are made according to analysis of crime data in conjunction with demographic data, and information on the physical/spatial environment within the neighborhood from observations, and consultation of the literature. CPTED principles are introduced and examined in the literature review, and are applied in the following chapters. The focus of the recommendations is crime hotspots identified through GIS analysis of crime data collected by the city of Muncie over a period of three years from 2003 to 2006. Recommendations also include related strategies from other theories related to CPTED, such as Defensible Space and Environmental Security. The project follows steps that are recommended in Gardiner’s Design for Safe Neighborhoods. The procedure has been adjusted to fit the time line and scope of this study. Additionally, a literature review precedes these steps because a solid background in crime, and Crime Prevention Through Environmental Design is needed before beginning such study.

Step 1: Literature Review

A review of crime analysis and crime prevention literature is first necessary to develop and understanding of principles and strategies and how they have been used in the past.

Step 2: Target Area Selection

Step two includes describing the boundaries, significant features, and characteristics of the area and its people.
Step 3: Data Collection and Mapping

Step three requires various kinds of data about the area including crime information, land use information, and a territoriality analysis. The territoriality analysis gives a general reference when considering spatial influences.

Step 4: Data Analysis, Target Area Selection

Crime hotspots are identified, and their immediate areas are be analyzed according to CPTED principles. Analysis is also be conducted at the neighborhood scale with specific focus on access and egress to the neighborhood. This step will include a user analysis and a physical environment analysis of target areas.

Step 5: Diagnose Environmental Problems

An evaluation of each target area based on the environment and how it may contribute to the presence of crime.

Step 6: Develop CPTED Strategies in Target Areas

Select CPTED strategies are developed based on the environmental features of the target areas.
Theories of Crime and Methods of Control

Crime has been a problem for urban residents since the development of urban environments and laws. What is considered criminal varies from one state to the next, and even between municipalities. Dr. W. Steve Albrecht found that "30% of the public will steal or be dishonest on a regular basis. 30% of the public will steal or be dishonest depending on the situation (and risk) and 40% of the public will never steal or be dishonest, regardless of the situation." There is potential for Crime Prevention Through Environmental Design practices to reduce the level of crimes against property and people. All crimes are defined according to the laws of the municipality, state, or nation in which they occur and these definitions often vary. A United Nations study of crimes committed in 64 countries found that 72% of crime was committed against property and 20% against people. The punishments for the crimes also vary between municipalities. There are many theories as to what causes crime, how crime can be reduced, and what punishments are the most effective at re-introducing criminals into mainstream society, but this study is focused on what planners can do to reduce or prevent crime. In the planning and architecture fields, Jane Jacobs, Oscar Newmann, and C. Ray Jeffery are among the most influential theorists on crime and the built environment. The theories of each, along with theories from other experts such as Marcus Felson and Lawrence Cohen will be ...

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6 Crowe, 15.
examined. Each of these experts is responsible for different theories on the topic of crime in cities. Jeffery and Newmann take an approach that considers the physical environment and how it can be altered to reduce the opportunities for crimes to take place. Jacobs is well known for her theory of "eyes on the street," and observations of the social fabric of sidewalks, neighborhoods, and cities. Felson and Cohen take an approach of analyzing people’s daily activities and how those activities affect the likelihood of becoming a victim of crime. Most of these approaches toward addressing crime issues were conceived during the 1960’s and 1970's during a period when crime was increasing. The discussions that began in the 1960’s and 1970’s were an extension of a long history of residents protecting their property.7 Today’s urban environment requires the same measures of security that were used in ancient cities, but also demands that new technologies be utilized for crime prevention.

Eyes on the Street and the Uses of Sidewalks

In 1961, Jane Jacobs published her classic *The Death and Life of Great American Cities*. She wrote “The bedrock attribute of a successful city district is that a person must feel personally safe and secure on the street among all these strangers.”8 In the first few chapters, she discusses sidewalks and the various purposes that they serve in the urban environment. According to her observations, one of the uses of sidewalks is safety. On the issue of security in the urban environment, Jacobs extends the discussion of neighborhood or urban security beyond the scope of the contribution of sidewalks to physical and psychological security. Jacobs focuses on the ......................

7 Crowe, 65-91.
the activities and social relationships that form the intricate web that is urban life. Her term “eyes on the street” is synonymous with human activities that bring a street to life and increase natural surveillance of public space. The opposite of a safe lively street is a deserted, dead street where no one is likely to intervene in the event of a crime against person or property. Jacobs also refers to the need for a clear demarcation of private and public space.9 This concept was used later by Oscar Newmann, and included in all subsequent literature. Jacobs criticizes single-use, “nine-to-five” areas of cities, claiming that such areas leave a void of “no man’s land” after the workday ends at five-o’clock. The void is then filled with undesirable users of space.

Defensible Space

Newman’s *Defensible Space* is a work that focuses on how the concept of territoriality. Newman defines “defensible space” as a model that inhibits crime by creating the physical expression of a social fabric that defends itself. All the different elements which combine to make a defensible space have a common goal—an environment in which latent territoriality and a sense of community in the inhabitants can be translated into ensuring a safe, productive, and well-maintained living space.10

The key to territoriality is the need for people to feel responsible for an area, as if it were their own. Much of Newman’s research was conducted on large public housing developments such as the high-crime Pruitt-Igoe development in St. Louis. This is also one of the weaknesses of the theory, as the primary study of the theory was not done

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9Jacobs, 52.
on a comprehensive range of housing types and neighborhood compositions.\textsuperscript{11} The theory states that if people can identify a space as their own they become more likely to intervene directly, or at least notify the authorities in the event that disorder or illegal behavior is occurring. Newman states that differentiation between realms of space is necessary. He discusses public, semi-private and private space. Defensible Space seeks to arrange the built environment in a manner that increases the ability of residents and passersby to observe others in the course of their daily lives; this is the idea of natural surveillance. Figure 1.0 diagrams different areas of influence. If one were to imagine the different feelings one has as they move from the street into the courtyard, and then up to a front door, one might observe increasing levels of surveillance. One goal of Defensible space is to design the built environment and arrange activities to maximize the feeling that the their surroundings without making an effort to know what is going on outside.

There are four general tenets that frame the theory of defensible space. First is “the capacity for the physical environment to create perceived zones of territorial influence”\textsuperscript{12} and to encourage residents to consider these areas as their own. This is known as the concept of “territoraility” and holds the most relevance to the topic of this study. Second, the physical design of an area should be fashioned to “casually


\textsuperscript{12}Newmann, 50.
and continually survey the non-private areas of their living environment, indoor [sic] and out.” This is known as “natural surveillance” and is also critical to this study because the existing built environment can be modified to encourage natural surveillance for relatively little cost. Third, the minimization of opportunities to stigmatize public housing projects will reduce “the image of isolation, and the apparent vulnerability of inhabitants.” The final tenet concerns the location of public housing and is beyond this study’s scope. There are no easily identifiable public housing projects in the Old West End Neighborhood, although the senior living mid-rise building located near the center of the Old West End is public housing.

**Environmental Security Planning and Design**

Environmental Security Planning, also known as “E/S” planning is similar in concept to all of the other types of crime prevention planning that have been and will be discussed in this section. The goal of E/S planning is to increase the amount of territoriality generated by the stakeholders of a given area. The E/S approach considers three factors to be used in the “Component Theory” when developing a plan. The first factor is the Urban Support Systems that are in place in the area. These systems are comprised of the land use pattern, the scale of the site, and the type and location of crime opportunity generators. The Predominant Land Use of the area is the second factor. User needs and preferences, secondary land uses, and the intended user must be considered (i.e. a residential family vs. the elderly). Territoriality is the third component of the Component Theory. Resident use, stranger recognition,

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13Newmann, 50.
14Newmann, 50.
15Gardiner, 33.
16Gardiner, 33.
and the built environment should be considered. This feature of E/S is similar to Defensible Space and CPTED.

**Crime Prevention Through Environmental Design**

Crime Prevention Through Environmental Design (henceforth referred to as CPTED) is an approach that considers how the structure of urban space affects the occurrence of crime and thus, quality of life. The primary thesis of CPTED is the following: “The proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and to an improved quality of life.”

CPTED is related to many other crime prevention movements. They include: Defensible Space, Environmental Security, Security by Design, Situational Crime Prevention, and Natural Crime Prevention. These paradigms overlap. Defensible space has been discussed previously. Environmental Security considers many strategies for defeating crimes. The major difference between CPTED and Environmental Security is that the later approach considers two additional components - social management and coordination with law enforcement. An example of a social management component in an Environmental Security plan is the inclusion of and close collaboration with neighborhood associations in order to achieve the “buy-in” of local residents as well as to garner their insights into their own neighborhood. Security by Design takes a more micro-level approach by looking at how physical security improvements (i.e. locks, bars, and mirrors for blind-corners) can be used to make a location safer. Natural Crime Prevention shares the concept that human behavior can be influenced through designing the physical environment in such a way that it is likely to discourage certain behaviors. Situational Crime Prevention is a place-specific strategy for reducing crime.

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17Crowe, 1.
It may often take a location of high crime, and consider a broad range of strategies for reducing crime in that area including policing strategies in addition to CPTED principles.

CPTED is a crime reduction strategy that can be applied to a range of spatial environments from the interior of convenience stores, to environments such as neighborhoods. Three major strategies that make up a CPTED program. They are Natural Access Control, Natural Surveillance, and Territorial Reinforcement. "Access control is a design concept directed primarily at decreasing crime opportunity."18 According to Crowe, the method of decreasing opportunities employed by CPTED is to create layers of "space," much like those mentioned in Defensible Space theory. Creating a gradient of spaces, each with a stronger level of controlled access, will presents the potential offender with an ever-increasing sense that his or her activities will be met by a challenge from the legitimate users of that space. Natural Surveillance is related to the theories of Jane Jacobs. The goal of this strategy is to increase the amount of surveillance in a given area through harmoniously designing spaces, uses of space, and peoples' daily lives. Crowe provides an example of moving safe activities to unsafe places in order to present a legitimate challenge to the illegitimate users of the space. This is applicable from the site level to the city level. The third strategy, territorial reinforcement, is almost identical to the concept of Defensible Space. Territorial reinforcement is a combination of both Access Control and Natural Surveillance, The concept is to design layers of access control in a way that will prompt legitimate users of space to respond to an illegitimate user instead of ignoring the illegitimate activity as "someone else's problem." If a crime occurs in the neighborhood and no one reports it, did it ever happen? In theory, this is what territorial reinforcement seeks to remedy.

18Crowe, 36.
To make good choices when designing a CPTED program, Crowe recommends five sources of information be used: Crime data, demographic data, land use data, observations, and resident interviews.\textsuperscript{19} These five sources of information are used in this study, although an older survey is used in the absence of a current survey.

Crowe also outlines nine considerations that all CPTED programs should consider, and provides additional recommendations specifically for residential areas. Consequently, in this study when hot spot areas are identified, the hot spot areas are analyzed under whichever of these considerations is appropriate given the character and form of the built environment.

**A Routine Activity Theory Approach**

Marcus Felson and Lawrence Cohen developed routine Activity Theory in 1980. Its major concept is that crime is a temporal and physical event that occurs at a specific location and time that coincides with the daily activities of people. Felson and Cohen describe targets as having four characteristics that make them suitable for an offence: value, visibility, access, and inertia.\textsuperscript{20} The value of a target is its property of desirability to the offender. Visibility refers to the ability of a potential offender to gain knowledge of an object or person’s location. For example, if a potential burglar sees an expensive television set through a picture window, the television set has high visibility.

\textsuperscript{19}Crowe, 43.
visibility. Access is a characteristic of a target that allows offenders to judge how easy or risky it is to victimize the target. Inertia is a characteristic that describes the object or victim. If a target has a high inertia it is difficult to transport; in the case of a human, inertia relates to the difficulty that the offender would have in perpetrating his or her offense due to the victim’s resistance. People are characterized in three ways for the purpose of Routine Activity Theory. They function as the offender, guardian, or potential victim. The idea that people act as guardians of their own property aligns with Newmann’s theories about natural surveillance and territoriality. Activity Theory states that offenders commit crimes in the absence of guardians; therefore the number of offenses will be greater at times and places where there are no guardians. A simple but illustrative example given in this article relates the rise in sporting event attendance and the rise in single-member households to the skyrocketing levels of crime the United States experienced from 1950 to 1972. When homes are empty they are not defended. One key concept to this theory is “the tempo of primary group activities within households varies inversely with the tempo of direct contact predatory violations in the community.” Felson and Cohen also note that widespread use of the automobile and other improvements in technology have reduced some of the difficulty criminals have moving through the urban environment.

The Muncie Weed and Seed Program

The Old West End neighborhood is located just to the west of downtown Muncie. The Muncie Weed and Seed Program is a federally funded project intended to reduce crime and rehabilitate offenders. The project area

\[\text{In the case of hired security personnel such as doormen or security guards acting in the role of guardians, it is true that they are not defending their own space.}\]

\[\text{Felson, Cohen, 396.}\]
incorporates all of the downtown area as well as parts of adjacent neighborhoods such as the Old West End. While the facts and figures enumerated in this section may not exclusively portray the levels of crime and demographic conditions of the Old West End, the Old West End is affected by its location relative to the downtown Muncie area. Two primary sources will be used in this section; they are the Muncie Weed and Seed grant application, which was successful in obtaining funding, and an interview with the director of the Weed and Seed program, Greg Maynard.

The Weed and Seed program has two facets. First the “weeding” of criminals is done through traditional police efforts such as patrols, drug task forces, and arrests. The “seeding” side of the program is targeted at preventing criminals from reoffending as well as providing youth alternatives, activities, and opportunities to prevent them from turning to crime. This is important because the executive summary of the grant application notes 66 percent of offenders commit additional offenses within three years (nationally). The Weed and Seed program tracks the number of offenders who are released into the target area and works with partners to increase the likelihood of successful re-entry into society. Mentoring programs, job placement, and supported housing are a few of the strategies used by the Weed and Seed program and its partners within the community. This program is highly integrated into the community. Numerous partner organizations range from churches and the Boys and Girls Club, to the local center for the arts.

The executive summary of the Weed and Seed grant application lists a few of the major concerns about crime and conditions in the Weed and Seed target area. The following are significant statistics included in the executive summary:
DEMOGRAPHICS

- Delaware county has a low median income, 88th of 92 in the state.
- The median income of the Weed and Seed area is $19,423.
- Poverty was rising in Muncie between ’05 and ’06 (23% to 32.6%).
- 30% of people in the Weed and Seed area live in poverty.
- 21.6% of housing units in the Weed and Seed area are vacant.
- 60% of housing units are occupied by renters.
- Education levels are low, with 26.2% of residents having less than a high school education.23

CRIME

- Homicide occurs at four times the county rate within the Weed and Seed area.
- Rape was 1.5 times higher in the Weed and Seed area than in the county.
- Robbery was twice the county rate in the Weed and Seed area.
- Aggravated assault was nearly four times the county rate.
- Violent crime was 2.5 times the county rate.
- Overall crime in the Weed and Seed area was double the rate of the county.
- Violent Crime was 2.5 times the county rate.
- Larceny was twice the county rate.
- Vehicle theft was three times the county rate.
- Simple assault was nearly three times the county rate.
- Total crime has declined from ’04 to ’06.
- There were at least 805 gang members in the county, in six gangs.24

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23 Weed and Seed Grant Application, 2.
24 Weed and Seed Grant Application, 3-4.
The Weed and Seed Plan, 2008

The Muncie Weed and Seed Program contains an outline of a multi-year strategy for solving four major problems:

**Problem 1:** High rate of drug dealing and drug related crime.

**Problem 2:** Re-entering offenders are at high risk of re-offending.

**Problem 3:** Residents do not interact positively enough with police and other justice system officials; need to improve/build community-police trust/perceptions.

**Problem 4:** Substandard housing and blight (abandoned buildings, unsafe house and slumlords) increase the “opportunity for crime.”

Each of these problems is followed by a number of action points falling into two categories, weed actions and seed actions. Weed actions focus on law enforcement activity, with emphasis on apprehension of criminals. The seed actions focus on preventing recidivism through a range of programs and promoting the community’s efforts at reducing crime. Weed strategies do not involve any CPTED concepts as they are mostly focused on law enforcement activities such as prostitution stings, undercover investigations, and improving resident-law enforcement relations. The Seed strategies do involve some concepts that are part of CPTED such as neighborhood clean-ups that involve clearing lots, and continuation of code enforcement.

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25Weed and Seed Grant Application, 26.
The Nature of Crime Data

This study considers some of the major forms of crime that occur in the Old West End neighborhood of Muncie, Indiana. There are two factors about crime that are important to this study. The first issue that is addressed is the type of crime data used to conduct the analysis. Each method of recording crime data has its strengths and weaknesses. The second issue is the types of crimes that are studied. There is a plethora of ways to break the law, but not all are significant to the social fabric of a neighborhood, and some crimes are not reported to the police as readily as others. Because of the personal nature of crime, often times a significant amount of crime goes unreported. This study will utilize both FBI Uniform Crime Report data, and 911 Calls for Service data. The following chapter discusses the strengths and weaknesses of both types, as well as the strengths and weaknesses of National Crime Victimization Survey data, which is not utilized in this study. This chapter also discusses major forms of crime that occur within the Old West End Neighborhood of Muncie, Indiana.

FBI Uniform Crime Report Data

The first kind of crime data is FBI Uniform Crime Report data. This type of data is information about a vast range of crimes that occur within a city that is collected by local police departments and reported to the FBI. This type of data was used by the GIS Department of Delaware County to generate the Hot Spot analysis.
maps that are included in the appendix of this study. UCR data is widely used because it has been collected since 1930. This type of crime data is favored for analysis because it is easy to draw comparisons across time and between cities. However, it has many drawbacks as well. Lersch outlines four major concerns with the ability of FBI URC data to reflect the reality of crime in cities. The first issue she raises is that the data is based on citizen responses, and therefore is subject to under reporting (known as the “Dark Figure of Crime”). Another issue with FBI UCR data is the rigidity of the crime definitions. When designing the UCR project, the FBI’s goal was to have a uniform set of data, and therefore it organized a set of explicit definitions for each of the various kinds of crime data it wanted to collect. The definition of various kinds of crime will vary across America. In one state, rape is defined only as between a man and a woman, whereas in another, rape victims can be male or female. Regardless, information that the FBI collects will have to be somewhat arbitrarily reconciled with local crime definitions to yield a “best fit.” Third, Lersch writes that police departments sometimes manipulate their reports for their own purposes, as it does not reflect well on a community if a report lists it as the murder capital of the United States. Lersch also raises questions about the FBI’s requirements for reporting crimes. One rule of the FBI’s UCR program is that municipalities are required to report the most serious offense of any report, regardless if there are multiple crimes committed as part of the same incident. One can regardless if there are multiple crimes committed as part of the same incident. This might lead to under reporting of less serious forms of crime. Lersch’s final critique of UCR data is that UCR data is collected according to a timeline, and thus, for any number of reasons, a municipality may not meet the deadlines. Standard procedure is for the FBI to report whatever data it receives from municipalities, complete or incomplete.

26Lersch, 17.
27Lersch, 18.
**911 Calls for Service**

The second type of data is 911 Calls for Service data. This kind of data is information that is collected about every call that comes into the 911 emergency service operators. It even includes hang-up calls. Delaware County GIS has made available georeferenced 911 Calls for Service information, and it will be used later in this study to examine the density and types of different kinds of crime that have been reported within the Old West End neighborhood. Lersch also critiques this form of data. She believes it can be misleading in many ways. First, she writes that 911 Calls for Service data is can be misleading. She explains that computer aided dispatch systems automatically record information about the call, such as time, location, and nature of the incident. The Delaware County GIS system has hundreds of thousands of Calls for Service that span a time period of over five years. This is useful because the analyst can compile data about the location, quantity, and nature of the Calls for Service. However, there are drawbacks to this form of data. One drawback is that the system relies on citizens to call in, and because the “dark figure of crime” often interferes with those crimes that are reported, there is the likelihood that some crimes will be reported more often than others. Another drawback of using this data is that even though a citizen does call in a crime, there is no guarantee that a crime actually happened. The number of crimes automatically logged may not perfectly reflect the criminal activity of the area. For the purpose of this study, 911 Calls for Service data provide sufficient information because this study seeks only to identify the type and intensity of crime in the Old West End neighborhood, and then to recommend policies for reduction of this crime.
National Crime Victimization Survey

The third type of data available to criminologists and crime researchers is National Crime Victimization Survey data. The survey’s methodology is as stated in the Bureau of Justice Statistics’ 2009 bulletin *Criminal Victimization*:

The National Crime Victimization Survey (NCVS) is an annual data collection conducted by the U.S. Census Bureau for the Bureau of Justice Statistics (BJS). The NCVS collects information on nonfatal crimes, reported and not reported to the police, against persons age 12 or older from a nationally representative sample of U.S. households. Violent crimes measured by the NCVS include rape or sexual assault, robbery, aggravated assault, and simple assault. Property crimes include household burglary, motor vehicle theft, and theft. Survey results are based on the data gathered from residents living throughout the United States, including persons living in group quarters, such as dormitories, rooming houses, and religious group dwellings. The scope of the survey excluded Armed Forces personnel living in military barracks and persons living in an institutional setting, such as a correctional facility.²⁹

According to Lersch, this is the most trusted source of data on the occurrence of crime. The survey’s detailed methodology is the reason behind why analysts trust its results. Over 50,000 households are surveyed in person, twice a year.³⁰ Strengths of this survey are the level of detailed information it collects, as well as its ability to shed some light on the “dark figure of crime.”³¹ Even though this source of information is probably the best and most accurate available for study, unfortunately it does not serve the focus of this study because the data is not geographically targeted, and therefore it is impossible to get detailed information about a specific area of a city.

²⁹http://bjs.ojp.usdoj.gov/content/pub/pdf/cv08.pdf retrieved 5/18/10
³⁰Lersch, 22.
³¹Lersch, 22.
The survey is good for making generalizations about an area of a city, but it cannot be used to provide hard data about a neighborhood such as the Old West End.

This study utilizes 911 Calls for Service and FBI UCR crime data. The rationale for choosing 911 Calls for Service data is because it is highly geographic in nature and provides ample amounts of information about the Old West End Neighborhood. The 911 Calls for Service data also allows trends to be identified because of the sheer volume of data collected. FBI UCR data was used in recently conducted Hot Spot analysis done by the Delaware County Geographical Information Systems department.

Types of Crime Studied by the Delaware County GIS Department

The definitions of the following crimes are the same used by the FBI UCR. All crimes listed are defined as UCR Index crimes except for Assault, which is a Part II crime.32

**Motor Vehicle Theft:** “The theft or attempted theft of a motor vehicle. A motor vehicle is self-propelled and runs on the surface and not on rails. Specially excluded from this category are motorboats, construction equipment, airplanes, and farming equipment.”

**Larceny-Theft:** “The unlawful taking, carrying, leading, or riding away of property from the possession or constructive possession of another.”

**Burglary:** “The unlawful entry of a structure to commit a felony or a theft. Attempted forcible entry is included.”

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32 Lersch, 16-18.
**Assault:** “An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm. Simple assaults are excluded.” Simple Assault is listed as a UCR Type II crime.

**Robbery:** “The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.”

**Forcible Rape:** “The carnal knowledge of a female forcible and against her will. Included are rapes by force and attempts or assaults to rape. Statutory offenses (no force used -victim under age of consent) are excluded.”

**Types of Crime Data Analysis**

Lersch defines two types of crime analysis, tactical analysis and strategic analysis. These two types of analysis are not the only strategies used to study crime but they are the most pertinent to this study because these deal directly with the geographic location and nature of crime. Figures 2.0 through 2.5 are crime density maps that show the distribution of specific types of crime within a defined geographic area over a given period of time. These maps also qualify as Hot-Spot maps because they show “the concentration or cluster of crimes in space.” The figures are the result of a crime analysis conducted by the Delaware County GIS department. Each map represents a different type of UCR crime. The red boundary indicates the Muncie Weed and Seed program’s focus area. The blue-to-red color gradient shows the areas of intense crime (red areas) in relation to areas of less crime (blue/white area).

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33Lersch, 12.
34Lersch, 190.
However the maps do not tell the map-reader how many crimes occurred in the area; they only serve as a relative comparison. This review represents a preliminary study of crime “hotspots” that will be used to determine target areas within the Old West End neighborhood later in the study. These maps can be found in the appendix.

**Figure 2.0 Motor Vehicle Theft Density**

The area along the north edge of the Old West End Neighborhood experienced the highest concentration of motor vehicle thefts in Muncie from 2003-2006. The South Central and Industry Neighborhoods also experienced a high rate of auto thefts during this period.35

**Figure 2.1 - Larceny Density**

The Old West End experienced a high density of larcenies from 2003 to 2006. Unfortunately, the neighborhood is not alone. Larcenies occurred at high density across downtown, and into neighborhoods on the south and east sides. There was also an area of high density in the northeast commercial area of Muncie.

**Figure 2.2 - Burglary Density**

The Old West End neighborhood experienced the highest density of burglaries in Muncie from 2003-2006.

**Figure 2.3 - Assault Density**

The Old West End neighborhood experienced the second highest density of assaults in Muncie from 2003-2006. The highest density of assaults occurred in the residential area to the immediate south of downtown Muncie.

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35Map provided by the Delaware County GIS Department.
Figure 2.4 - Robbery Density

The Old West End neighborhood experienced the second highest density of robberies in the city from 2003 to 2006. The majority of robberies occurred in the residential area immediately south of downtown Muncie.

Figure 2.5 Forcible Rape Density

The Old West End neighborhood experienced a moderate level of forcible rape from 2003-2006. This map appears inconsistent. The downtown area of Muncie has many more “UCR2 Forcible Rape” symbols and displays them in an area of “high” density, whereas an area on the southwestern edge of Muncie appears to have four of the same symbol, yet the area of “high” density is larger than that of downtown. This could be a problem with the value attributes that the “UCR 2 Forcible Rape” symbols represent in the GIS.

Figure 2.6 Violent Crime Density

The violent crime density map was generated using data from January of 1999 through November of 2007. Violent crime data was collected on battery, stabbing, shots fire, and armed robbery and used to make this map. The Old West End neighborhood area experienced a high level of these four types of crime together, however it is not possible to tell in what proportion the crimes occurred. It is possible that one or two types of crime were committed significantly more often, and therefore raised the average level of violent crime into the “high” category.
Step One: Target Area Selection

The Old West End neighborhood area was selected in large part due to an interview conducted with Greg Maynard, director of the Muncie Weed and Seed Program. Hot Spot analysis maps generated by the Delaware County GIS Department have identified the Old West End area as one of two major areas of crime in the greater Muncie area. The other area of crime extends from downtown to the residential areas immediately south of downtown. The Old West End neighborhood was also selected because part of the neighborhood has been identified as one of Muncie’s historic districts. Muncie’s historic districts should be desirable places of pride rather than places that are avoided. The Old West End is located to the immediate west of downtown; therefore it is both an influence on downtown and vice versa. Finally, it is partially contained within the Muncie Weed and Seed Program’s target area. This means that the crime issue in the area has already been publicly acknowledged and efforts are being made toward the reduction of crime. The following map places the Old West End neighborhood within the context of Muncie.
The Old West End neighborhood boundary contains a significant portion of downtown Muncie. The downtown area has been left out of the main study because it is of a substantially different character than the residential core of the Old West End. Additionally, the northern area of the neighborhood boundary is being ignored because it is occupied entirely by the campus of Muncie Central High School. The southwestern border is also omitted because it is occupied by a large cemetery and the campus of Ontario Systems.
Step Two: Data Collection and Mapping

This study of census demographics and crime data uses tract-level data from the year 2000 census and compare it to historical data collected by Plan 302 Studio, instructed by Dr. Linda Keys and Mr. Jeff Bergman (this information will be cited as “studio study”. The crime data was obtained from the Delaware County GIS Department, and covers a range of crimes, their location, and their quantity from the year 2003 to 2006. The team members who conducted the studio’s studies, surveys, and analysis were Julie Young, Nicholas Grams, and Kelly Wright. These authors will simply be referred to as “the studio.” The studio course conducted a survey of housing condition, analyzed the provision of city services to the neighborhood, and conducted an opinion survey on various topics ranging from the strengths and weaknesses of the neighborhood, to critical issues the neighborhood faced. All data and surveys were conducted in the year 1999, and provide a rich source of information about the neighborhood and its residents at that time. The study was part of a larger series of studies done on the neighborhoods of Muncie Indiana. The series of studies won Department of Housing and Urban Development Best Practices award. An important note about this study is that it does not include all of the geographical area defined by the Old West End Neighborhood boundary. The study only uses information from Census tract 180350006. This study will follow the use of the singular tract 180350006 for the sake of comparison, but it should be noted that 180350001 and 180350002 also contain portions of the Old West End.
Neighborhood. Henceforth, all tracts will be referred to by their last digit (e.g. 1, 2, 6). Tract 2 does not contain any significant residences that are considered part of the Old West End as this area is occupied by Muncie Central High School. Tract 1 does contain residences but they are in a much different, more urban environment than those in tract 6. The following figure shows the various boundaries.

![Figure 3.0 The Old West End is one of many neighborhoods in Muncie](image)

The Old West End neighborhood is highlighted in yellow, within tracts 1, 2, and 6 outlined in black.\(^{36}\)

All GIS data used in this section of the study was obtained from either the Delaware County GIS department or IndianaMap.org. This data should be considered with caution because of its narrow focus and the effects of time. At the time this study was done, the most recent tract-level and block group level data provided by the Census was ten years old at the time this study was conducted in early 2010.\(^{36}\)

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\(^{36}\)Data provided by Delaware County and IndianaMap.org.
The city has made the following findings during its own study of its neighborhoods.

Tract 6 (Old West End neighborhood) is dominated by renter households, much of which found in single-family houses. Among owned housing, foreclosure risk is rated at 10, high cost loans account for more than 55%, predicted foreclosure rate at 16%, and more than 22% paying over 30% of income to housing. Housing vacancy is estimated at nearly 27%. Very low income households account for nearly 35% of all Tract 6 households.

The population in the Old West End has declined over the three-year period from 1997 to 2000. There was little total change in population from 1990 to 2000. The long-term trend shows a decline of about 1,100 residents over thirty years. A simple linear historical projection based on the above data indicates the 2010 population for the tract will be 1,140. The 2010 projection of 1,140 people will be used for considerations made in this study. GIS analysis of population distribution shows no significant population variation between block groups. Refer to the appendix’ demographic section for maps. Age-breakdowns by block group for the standard census age cohorts can also be found in the demographic appendix.
The 2000 Census indicated that census tract 6 of Muncie was composed of 86 percent White Alone, 10 percent African American Alone, and 4 percent Other Races. For the purposes of this study, “Other” accounts for all races neither White Alone nor Black Alone. The studio’s data indicated tract 6 was composed of 90 percent White Alone, 8 percent African American Alone, and 1.5 percent Other Races. This represents a 2 percent decline in the White Alone population and 2 percent growth in the African American Alone population. Other Races have experienced the most growth at 2.5 percent over three years. Over the ten-year period between 1990 and 2000, the population of White Alone dropped from 89 to 86 percent. The African American Alone population grew from slightly under 8 to 10 percent. The Other Races present in the study area grew by 0.5 percent.
Figures 3.4 and 3.5 reflect one aspect of family structure in the Old West End Neighborhood. Household size in the Old West End is predominantly two-person (46 percent). This represents an approximate 20 percent increase in two-person households from 1997’s projection. Three and four-person households also increased by approximately 10 percent respectively. When average household size is mapped in GIS, the results show that there is one block group in the south-central area of the neighborhood that has a higher average household size than the rest (2-3 residents). The rest of the block groups in the neighborhood show an average of one to two residents. Refer to the appendix’ demographics section for a map of the household...
Educational attainment in the Old West End Neighborhood appeared equally split between those with no high school diploma, those with a high school diploma, and those with some college experience. The categories were aggregated in this fashion to facilitate easy comparison with the studio’s study of the neighborhood. Over all, the neighborhood has become more educated over time. The percentage of those with some college experience, whether they were degree holders or college dropouts, has risen over the last 40 years from approximately 10 percent to over 34 percent. The percentage of those without a high school diploma has dropped by half since 1970. The percentage of residents who graduate high school but do not continue to college has remained nearly constant over the last 40 years.
In the year 2000, 71 percent of the neighborhood work-aged population earned $29,999 or less. The remaining categories of $30,000 to $59,999 and $60,000+ composed 24 percent and 5 percent of the neighborhood population respectively. Analysis of the studio’s data shows that household income has been rising in the neighborhood since 1980. There was a large decrease (24 percent) in the number of people earning less than $10,000 annually over the period between 1980 and 2000. The studio’s chart is included only as reference, as the income cohorts do not align beyond the $10,000 or less category.
The poverty rate in the Old West End was 61 percent. This continues to represent economic and social challenges for the neighborhood.

Figure 3.11 above displays the percentage of children living in the Old West End who lived in poverty. Figures 3.10 and 3.11 show that about 20 percent of the population living in poverty did not have children.
Housing occupancy in the Old West End was at 78 percent in 2000. The city's own study estimated a higher percentage of vacant housing (27 percent) when compared to the study conducted by the studio class, it is apparent that the vacancy rate in the Old West End had risen by 2 percent in 2000.
The most striking issue found in this demographic study is the percentage of renter occupied housing in the neighborhood. Generally, this is not an area of the city where students from Ball State University rent housing. In 2000, renters occupied 77 percent of all occupied housing units. This is a problem mentioned in the city’s analysis of the neighborhood. During an interview with Greg Maynard, coordinator of the Muncie Weed and Seed program, this issue was also mentioned as one of the biggest challenges to reducing crime in the neighborhood. When compared to the studio’s analysis, the 2000 census numbers show little change in the number of renters in the area. Refer to the appendix for a GIS density map of renters by block group.

37Interview with Greg Maynard. (May, 2010.)
Half the vacant housing in the Old West End was in good enough condition to be rented. Eight percent of the housing was up for sale only, and 32 percent of vacant housing was considered “other.” Other status is given to housing units that are vacant at the time of census interview. The definition of “other vacant” is “units held for settlement of an estate, units held for occupancy by a caretaker or janitor, and units held for personal reasons of the owner.” The appendix to this study contains geographical representations of Census 2000 data according to block group. Of particular interest are the maps displaying average family size, and vacant housing units.

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Step Three: Data Analysis and Target Area Selection

Methodology:

Crimes Studied:

<table>
<thead>
<tr>
<th>Crimes against People</th>
<th>Crimes against Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assault</td>
<td>Theft</td>
</tr>
<tr>
<td>Harassment</td>
<td>Breaking and Entering</td>
</tr>
<tr>
<td>Battery with Injury</td>
<td>Auto Breaking and Entering</td>
</tr>
</tbody>
</table>

Simple Assault: This category is defined by the absence of a weapon used in an assault and the lack of serious physical harm caused to the victim. Aggravated assaults differ in that a weapon is involved or serious harm has been inflicted on the victim. The FBI categorizes simple assault as a less serious offence, and therefore classifies it as a UCR Part II offense; however, the FBI combines simple assault data with aggravated assault data for the purpose of studying total criminal violence.\(^{39}\) This study does not make a distinction between aggravated and simple assault.

Harassment: The UCR Handbook does not mention Harassment as either a Part I or Part II offense. This offense is used to provide data on personal crimes.

Battery with Injury: According to the FBI’s UCR Handbook, data on battery with injury should be compiled under the category of simple assault although the available

data from Delaware County represent separate occurrences of each. This study has analyzed the two crimes separately due to the nature of available data.

**Theft:** Described by the URC as Larceny-Theft, this type of crime is the unlawful taking or leading away of property. It is a Part I offense.

**Breaking or Entering:** The UCR definition of this type of crime is entry with the intent to commit larceny or felony. It is a Part I offense.

**Auto Breaking and Entering:** This type of offense is categorized differently than motor vehicle theft and Larceny/burglary. Each of the related crimes just mentioned is a Part I offense, and therefore Auto breaking and entering is a significant form of crime.

This study analyzes the occurrence of all crimes in specific areas within the Old West End neighborhood, rather than the places where specific crimes most often occur. This method was chosen for a number of reasons. First, the study seeks to apply CPTED principles to areas in which crime affects both people and property. If the study’s objective were only to reduce burglary (a crime against property) in the Old West End, the location of burglaries and a study of the homes burglarized would be of highest importance. Additionally, a specific range of countermeasures for defeating burglaries could be employed. However when multiple types of crime of inherently different nature are studied in the same location, a broader environmentally focused strategy can be applied to the study of the area in hopes identifying structural issues associated with crime.

The methodology used to identify the crime hot spots within the Old West End neighborhood is simple and intended only to justify the further study of the selected
areas. The crimes chosen were chosen exclusively because information about them is available, accurate, and they affect both people and property.

The first step was to select the crimes, and develop a method of identifying areas in which the most crimes occurred. The method used for this step was improvised due to a lack a software license to use ESRI’s advanced toolkit in ArcMap 9.3.

- Points were placed at each intersection in the main residential core of the Old West End using a GIS.

- A buffer of 150 feet was placed around each point, intended to cover one-half block at which point the next intersection’s point buffer would gather crimes to that location.

- Assault, Breaking and Entering, Harassment, Auto Breaking and Entering, Theft, and Battery with Injury point data was displayed within the Old West End Neighborhood.

- A selection of crime points was done, based on their location within any of the 150ft. buffer areas.

- These points were counted and attributed to the nearest intersection.

- Four areas stood out as having experienced significantly more crimes than the rest. Area 4, Area 20, Area 21, and Area 27. Areas 20 and 21 will be combined for the remainder of the study.

- The following graph and maps were generated to visually convey the data and physical nature of the areas.
Data:

The following two charts represent the frequency of calls for service and the frequency of calls for service in specific locations within the Old West End neighborhood. The two most common forms of crime were Assault and Theft. The four most crime intense areas were areas 4, 20, 21, and 27. Areas 20-21 will be considered as one area because areas 20-21 are adjacent to one another.
Hot Spot Analysis

Legend
- Old West End - Assault
- Old West End - Auto B&E
- Old West End - Battery w/ Injury
- Old West End - Breaking and Entering
- Old West End - Harrassment
- Old West End - Theft

Miles

0 0.02 0.04 0.08 0.12 0.16

N
Area 20 Hot Spot Analysis

Legend
- Old West End - Assault
- Old West End - Auto B&E
- Old West End - Battery w/ Injury
- Old West End - Breaking and Entering
- Old West End - Harrassment
- Old West End - Theft
Area 21 Hot Spot Analysis

Legend

- Old West End - Assault
- Old West End - Auto B&E
- Old West End - Battery w/ Injury
- Old West End - Breaking and Entering
- Old West End - Harrassment
- Old West End - Theft
Area 27 Hot Spot Analysis

Legend
- Old West End - Assault
- Old West End - Auto B&E
- Old West End - Battery w/ Injury
- Old West End - Breaking and Entering
- Old West End - Harrassment
- Old West End - Theft
Step Four: Diagnose Environmental Problems

Problems at the Neighborhood Level:

The following crime related problems have been identified in an interview with Greg Maynard, director of the Muncie Weed and Seed Program. Problems were also identified through site evaluation on the concepts of CPTED:

Social:
- Lack of strong neighborhood Group / Association
- High percentage of rental housing
- Residents away from home often (working many jobs to pay rent).\(^\text{40}\)

Environmental:
- Lack of code enforcement, for both property and structures
- Street Network
- Substandard housing and blight (abandoned buildings, unsafe house and slumlords) increase the “opportunity” for crime.”\(^\text{41}\)
- No gathering places

\(^{40}\) Interview with Greg Maynard
\(^{41}\) Weed and Seed Grant Application. 26.
Examples of deteriorating housing stock in the Old West End neighborhood.
Site Level Territoriality Analysis:

The maps below have four categories: Public, Semi-Public, Semi-Private, and Private. The area least controlled by residents or local stakeholders is the public area. Public areas are unregulated, or stakeholders expect regulation to be conducted by a public authority such as the police. In the case of the Old West End, all streets were designated as Public Areas. There is precedent for privatizing a public street, as neighborhoods in the first-ringsuburbs of Saint Louis have shown. A closer examination of Muncie’s municipal code would be required to determine the feasibility of an effort to privatize a Muncie street in the Old West End, but it is possible if residents organize and spend enough time and effort on such a change. The map on page 68 estimates levels of social control through one factor: proximity to a private dwelling. Public streets are ruled as “public.” Sidewalks, public yet closer to private dwellings, and often maintained by private residents, were ruled as “semi-public.” “Semi-Private” areas include yards. “Private” areas are considered exclusively as the areas inside structures.

I took the two photos above in Saint Louis, Missouri during the summer of 2010. They are an example of a modified street network for crime reduction purposes.
A high percentage of rental housing also affects the ability of neighborhood residents to determine who has legitimate business in the neighborhood and who does not. See the Appendix for a map of rental unit density. The built environment of the Old West End has many examples such as the one pictured below. Here it is seen that a large multi-family apartment building is almost within arm’s reach of a single-family home.
Core Area Territoriality Analysis: Neighborhood Level

Legend
- Private Space
- Semi-Private Space
- Semi-Public Space
- Public Space

0 0.05 0.1 0.2 Miles
Core Neighborhood Area

General Description:

The site is largely residential, with industrial and commercial near the south and northeast of the site respectively. It is located to the west of downtown, in central Muncie. The neighborhood is a gateway for people traveling downtown from the west.

Land Use:

The core neighborhood’s built environment area has commercial, multi-family residential, single-family residential, and industrial land uses. The single family and multi-family homes are packed close together, with access to garages mostly off an alley in the back of the home. There are many vacant parcels in the neighborhood. A conservative estimate finds 325 vacant units in the neighborhood; the high estimate is 650 vacant units.42 The densest concentration of vacant units is in the comparatively small census block group in the south-central area of the neighborhood.

Access/egress:

The northern part of the neighborhood is crossed by Jackson and Main Street, both heavily traveled with about 24,000 ADT’s combined (Main St. runs one-way West, while Jackson heads into downtown, the opposite direction). Two other major streets bind the site to the East and West. Kilgore to the West carries about 9,400 ADT’s, and Liberty to the East carries around 4,000 to 6,000 ADT’s. These streets could potentially carry traffic around the core of the

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42Low and high estimates are from 2000 Census data, see "Vacant Housing Units" in the appendix.
neighborhood. These streets, along with the railroad tracks to the south, form the perceptible boundaries of the neighborhood. The White River forms physical the northern and western boundaries of the neighborhood. Parking lots and commercial buildings define the eastern edge, where the neighborhood ends and downtown begins. The neighborhood is well connected to downtown by sidewalk. Numerous alleyways penetrate the interior of the neighborhood.

The pattern of one-way streets in the neighborhood speeds the flow of traffic through the area. It also detracts from the neighborhood’s identity because of the sheer number of people that move through the neighborhood each day.43

**Target Area 4: Charles at Proud Street**

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assault</td>
<td>7</td>
</tr>
<tr>
<td>Harassment</td>
<td>1</td>
</tr>
<tr>
<td>Battery with Injury</td>
<td>2</td>
</tr>
<tr>
<td>Auto Breaking and Entering</td>
<td>2</td>
</tr>
<tr>
<td>Theft</td>
<td>3</td>
</tr>
<tr>
<td>Breaking and Entering</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**General Description:**

Area Four is located on the west-central edge of the neighborhood. It is proximal to Kilgore Avenue to the west and some commercial uses to the north. There is a significant number of empty storefronts in the commercial development to the north.

**Land Use:**

Area Four is largely residential in character consisting of large single-family homes. The one commercial use, a funeral parlor, is located immediately north of the

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43For a map of complete traffic counts for arterials in the Old West End and Muncie’s downtown, see the map titled “Arterial Traffic Counts” in the appendix.
intersection. The funeral home is well maintained and has ample lighting. It has two large parking lots that are used in the event of a funeral.

**Access/Egress:**

Charles Street is a one-way (east) two-lane street that links Kilgore Ave. to Downtown. There are five alleys in the area. Kilgore Avenue is an arterial street used by more than 9,000 cars per day.

**Territoriality Analysis:**

Homes, represented in light green coloring on the map, are densely concentrated in this area. The vast majority of this area is considered semi-private space, which holds some hope for a high level of resident control over the activities in this area. However, photographs of the area show overgrown bushes and landscaping that obstructs a clear view of the sidewalk and street. This reduces the natural surveillance capacity of the homes, and thus the semi-public/semi-private areas near the homes are not as controlled and create less of a feeling that one’s activity is observed.

![View of the street is obstructed by trees on one half of the street looking south in Area 4.](image1)

![A large area of vacant, un-used land to the south of the site is an uncontrolled area, “public” by all means.](image2)
Area 4 Territoriality Spatial Analysis
Target Area 20-21

Crime Profile:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assault</td>
<td>14</td>
</tr>
<tr>
<td>Harassment</td>
<td>5</td>
</tr>
<tr>
<td>Battery with Injury</td>
<td>2</td>
</tr>
<tr>
<td>Auto Breaking and Entering</td>
<td>4</td>
</tr>
<tr>
<td>Theft</td>
<td>4</td>
</tr>
<tr>
<td>Breaking and Entering</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
</tr>
</tbody>
</table>

General Description:

Two factors significantly impact the activity in this area. There is a 24-hour convenience store at the heart of Area 20. The other major impact on the area is the effect of two thoroughfares Jackson Street, and West Main Street. Jackson is a two-lane one-way arterial leading into downtown and West Main is a two-lane one-way leading out of downtown. The two streets merge into a two-lane two-way street at the west end of the neighborhood, near the Jackson Street Bridge. The convenience store is a draw for a range of people from outside and inside the neighborhood because it is the only such store for blocks and is located on a major arterial.

Land Use:

The land use in the area is single-family and multifamily residential, “exempt” (church), and commercial (convenience store).

Access/Egress:

Neighborhood traffic reaches the center of this area easily by foot, bicycle, or car. The only public parking lot that experiences heavy turnover is at the convenience store (5-9 spaces). The site is easily accessed from outside the neighborhood via Main and Jackson Streets, both of which act as “movement generators.” According to E/S theory, these streets create a situation where anyone in the city can easily enter the neighborhood and victimize its residents.44

44Gardiner, 37.
Territoriality Spatial Analysis:

This study interprets the convenience store on the southwestern corner of Area 20 to be an entirely semi-public area because people are encouraged to enter and exit the establishment, however it remains under the surveillance of the store staff (and video cameras). It is worth noting that the convenience store acts as a “service generator,” thereby attracting potential victims and offenders. Residents in the area see many people entering and exiting the area, and would have a more difficult time discerning familiar people from strangers. There are apartment buildings in the northern and southern areas of the site. The presence of apartment buildings increases the possible “eyes on the street.” The condition of the apartment building in the northern area of the site is worrisome, as the second floor has experienced a fire during the duration of this study and has not been repaired (pictured below).

Vacancy is a problem in the area

The northern part of Area 21 is particularly challenged by the presence of housing decline.

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45Gardiner, 37.
Area 20 Territoriality Spatial Analysis

Legend
- Private Space
- Semi-Private Space
- Semi-Public Space
- Public Space

0 0.005 0.01 0.02 Miles

N
Area 21 Territoriality Spatial Analysis

Legend
- Private Space
- Semi-Private Space
- Semi-Public Space
- Public Space

0 0.005 0.01 0.02 Miles

N
Step Five: Recommendations

The following pages lay out initial steps, as well as some long term objectives, that can add to the security of the Old West End by changing the environment to enhance natural surveillance, territorialty, access control, and physical security. Some of the steps are simple and can be done with minimal budget and time. Other long-term objectives may take a significant investment of time and money. An example short term recommendation is to increase visibility of areas used at night through improved lighting and visibility from neighboring homes. A long term recommendation would be to locate a small park on one of the neighborhood’s vacant parcels. Each makes positive changes to the neighborhood, but the amount of time needed to plan and execute the activities involves different amounts of time and investment. Each Target Area which has been previously identified through this study’s methods has a number of long term and short term objectives.
Views of the street are obstructed in this area. Small street trees and overgrown front lawns combine with the slope of the front yards on the right to make it nearly impossible to see who is outside of the homes. Removing the trees in the median and trimming the trees that are nearer to the houses would open the area to more natural observation from the homes. The house on the left of the picture has a good view of this street. An added streetlight on the telephone pole near the intersection would enhance nighttime security on the street, but only if the vegetation issue is addressed.
Front yards in and around Area 4 should be better maintained. The picture above shows knee-high grass in the median between the sidewalk and the street. Further down the street high shrubs, overgrown grass, and short trees block clear view of the street. Tenants and the City should pressure landlords to maintain the properties in the area.
A vacant lot at the corner of Elliott and Howard St. with near 100% sunlight exposure would make an excellent place for a community garden. This would establish a community gathering point that would bring legitimate foot traffic to the area. This is possible though a partnership with the City of Muncie, but only if lot ownership can be obtained or negotiated in such a way as to allow a community use for free or nominal fee. Territoriality would grow over the garden because it is something that its users put labor into. It is located to the south of Area 4. Depending on the success of the garden, a fence could be erected later. The lot pictured above has decreased in value over the last four years from $5,000 to $3,900 and it is currently in private ownership but classified as vacant, according to Delaware County’s 2010 assessment history.
Target Area 20-21 Recommendations:

- NEAR TERM: Add night lighting to rear areas and shrouded parking lots to improve natural surveillance.
- NEAR TERM: Add fence to separate convenience store lot from nearby housing.
- NEAR TERM: Trim lower branches of mature trees to provide clearer view of street from windows.
- LONG TERM: Neighborhood residents/association should seek shortened hours for the convenience store.
This unlit parking lot in the southeastern portion of Area 20-21 would have improved security if it were illuminated at night. This would take advantage of the occupied house on the left and its three windows directly facing the lot. People cannot report what they cannot see. Reducing the amount of vegetation surrounding the parking, especially that which is growing between the street and the lot, would also add to the natural surveillance of the lot. The picture below shows the lot is obscured from view by vegetation facing the street.
This photo depicts the west side of the convenience store in the center of Area 20-21 on Jackson at South Council St. There is no on-site lighting for this area during night. Fencing could be installed around the parking lot behind the green house on the left. This would buffer the house from alley traffic and it would also create a barrier between the house and the convenience store. This would give illegitimate users the feeling they are in someone else’s territory, no matter which side of the fence they are on.
This image shows the rear wall of the convenience store on Jackson at Council St. This is an example of an area that could potentially be dangerous for someone at night. It is not in clear view of any windows. The house to the right has windows that do not provide a line of sight to what is happening in the alley. While this might prevent access to the house through a low window, it also increases the risk for those using the alley. During a nighttime observation of this site, a group of young males was seen in the rear of the store. This group was an illegitimate user of the space, but it controlled the area due to a lack of natural surveillance. A floodlight mounted on the rear wall of the convenience store may decrease the appeal of the area to illegitimate users. Alternatively, the landlord or homeowner could install lighting. Another location night lighting could be placed is on the telephone pole pictured at the front corner of the white house. A city-owned light source would provide a solution if private owners were unwilling to foot the bill for the improvement.
Dense vegetation shields the fronts of homes from traffic noise, but also prevents a clear view of those entering and leaving the area. Although the trees in the grass median between the sidewalk and street are well maintained, shrubs grow right up against the houses.
This apartment complex is an example of strong delineation between public and private areas. It is located to the southeast of Area 20-21. A wrought-iron fence separates the sidewalk from the parking lot, and the parking lot is under clear observation from many windows in the building even though in-window air conditioning units obstruct some view. An improvement that could be made to this area is night lighting for the parking lot. Another improvement would be the removal of the large pine tree in the “elbow” of the building. This space could be converted into a plaza or small park-like area where legitimate users of the building could have cookouts and enjoy the outdoors, while presenting a deterring presence for illegitimate users.
The rear parking lot of this apartment building is also under a good level of natural surveillance due to the number of windows directly facing it. The area is also illuminated at night by the light on the telephone pole pictured above. The rear of the Bethel Temple borders the large apartment building to the north. This building is also well kept. The floodlighting on the rear corner of the building aids the ability of those in the apartments to observe the parking lot at night.
This alley in the north target Area 20-21 is a potential access/egress location for those wishing to enter or leave the area without being detected. It is not observed or claimed by anyone, as demonstrated by the overgrowth on both sides. A recent fire and a vacated home do not contribute to the safety of the area as well. This is a potential site for a long-term housing reconstruction of two to three units depending on whether or not the red brick apartments will be renovated or abandoned.
Target Area 27 Recommendations:

- NEAR TERM: Reduce vegetation that screens homes, and creates blind corners such as the one on the northwest corner of Liberty and Howard.
- NEAR TERM: Increase security and access control of the vast parking lots to the east of the site.
- LONG TERM: Reuse vacant lots in the Area for either recreational, educational, or light agricultural purposes (community garden)
- LONG TERM: Land bank vacant properties that cannot be reused in any of the above ways and subdivide with intention to sell the lots as side-lots to existing properties.

In Area 27, some homes have been converted into multi-family dwellings. This is challenging at the micro-level as well as the area-scale. The individual buildings draw many people from outside the neighborhood making it hard for people living in the building to know who has legitimate business in the building and who does not. Likewise, the neighbors outside the building face the same challenge.
The vast area of parking to the south and east of Area 27 connect it to Muncie's commercial core. There is no clear ownership of this lot and access is unrestricted at all hours of the day. The lot is located between the neighborhood and Muncie's convention center/children's museum. Mechanical security devices such as gating at entry/egress points and security cameras could reduce the number of people who enter the area after permissible times and also serve to lead investigators to a suspect after view of the tapes. Another change that could be made on this lot is to install a planting buffer that would create a visual barrier between the parking spots that face Liberty Street and the rest of the lot. This would subtract four spaces total. It would serve as a semi-permeable vegetative fencing where people on either side would have very different impressions of where they are. On the Liberty St. side, users would feel as if they were in the Old West End, on the side closer to downtown, users would feel as if they were in a downtown parking lot.
Area 27 has a core of attractive, well maintained housing stock, however, it also has access control concerns that may contribute to the relatively high level of crime experienced in this area. Control of the vacant lots in the red boxes in the Google aerial image shown above would help to limit unhindered access to the area from the west. Strategies for this action will be elaborated on in the following paragraphs. The other action that could be taken is to narrow the entrance to Howard Street (east-west) at the eastern edge of the residential portion.
These lots are located near the heart of Area 27. It is a location where legitimate activities could occupy unoccupied space in the neighborhood. A possible use for the space could be a community garden. Another possible solution for this area is for the City of Muncie Land Bank to purchase and then subdivide the lot and sell the pieces to the neighboring homeowners for an attractive price. This practice has been successful in cities such as Flint, Michigan, and has led to a decrease in unmaintained lots in neighborhoods. Another option once the City has acquired the lots is to convert them into one of many recreational opportunities for a neighborhood that is otherwise parkless. Opportunities for reuse of these lots for recreational purposes are a small baseball sandlot, a small soccer field, or a small playground for kids. The City could also donate the property to Habitat for Humanity for infill single-family housing purposes. There is a total of four lots in the pictures. Two of the lots are identified as owned by the Old West End Neighborhood Economic Development entity. The other two are valued at $2,700 a piece.
Conclusion

Overall, there exist many opportunities to address the crime-related environmental concerns of the Old West End. Unfortunately, the existence of so many opportunities to improve the environment create as many opportunities for crime to persist if these issues are not addressed. As stated before, the Old West End neighborhood occupies an important area of Muncie, between downtown and Ball State University. The neighborhood is a historic one, featuring many carefully maintained homes that are sources of pride and positive change in the neighborhood. As identified in the Ball State University Urban Planning Studio’s study of the Old West End in the late 1990’s, crime was one of the issues neighborhood residents were most concerned about. Later evidence used to include the area as a Weed and Seed target area has shown area crime persists at higher levels than almost anywhere else in Muncie. The issues identified within this study cover only a small portion of the entire neighborhood. If residents wish to address more than the three areas studied herein, they should be able to find the methods and ideas in this study helpful to them in the process.


Interview with Greg Maynard. (May, 2010.)


http://bjs.ojp.usdoj.gov/content/pub/pdf/cv08.pdf retrieved 5/18/10


Muncie Weed and Seed Grand Application, 2008.

Old West End Neighborhood
Figure 2.1 Larceny-Theft Density
Figure 2.2 Burglary Density
Figure 2.3 Assault Density
Figure 2.4 Robbery Density
Figure 2.5 Forcible Rape Density
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Old West End Neighborhood

All Crimes 2003 - 2006
Old West End Neighborhood
Assaults 2003 - 2006
Old West End Neighborhood

Auto Breaking and Entering 2003 - 2006
Old West End Neighborhood

Battery and Battery w/ Injury 2003 - 2006
Old West End Neighborhood

Breaking and Entering 2003 - 2006
Old West End Neighborhood
Harassment 2003 - 2006
Old West End Neighborhood

Thefts 2003 - 2006
Old West End Population Density
Block Group Level, 2000
Old West End Population Density
Block Group Level, 2000
Old West End Population Density
Block Group Level, 2000
Old West End Population Density
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Old West End Population Density
Block Group Level, 2000
Old West End Average Family Size
Block Group Level, 2000
Old West End Households
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Old West End Number of Housing Units
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Old West End Owner Occupied Housing Units
Block Group Level, 2000
Old West End Rental Occupied Housing Units
Block Group Level, 2000
Old West End Population Density
Block Group Level, 2000
Old West End Vacant Housing Units
Block Group Level, 2000
Arterial Traffic Counts, 2000

Legend

- The Old West End
- Traffic_Counts_INDOTMODEL_N
- White River
Muncie Streets

Old West End Connectivity, May 2007
Area Land Uses

Old West End Neighborhood
Neighborhood Core Land Uses
Old West End Neighborhood