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A Municipal Exigency: An Exploration of the Correlation of Physical and Social Incivilities on the Decline of Residential Property Values in Richmond, VA

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A MUNICIPAL EXIGENCY:
AN EXPLORATION OF THE CORRELATION OF PHYSICAL AND SOCIAL INCIVILITIES ON THE DECLINE OF RESIDENTIAL PROPERTY VALUES IN RICHMOND, VA

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

By

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The triumph and exhilaration of accomplishing a goal can be gratifying. However, the attainment of a long term, educational objective can be momentous and liberating. Any person who has successfully fulfilled the dissertation requirements recognizes that the extent of time devoted to the expansion of one's personal knowledge as well as to the general body of knowledge on a subject matter can be daunting, frustrating, and exhaustive. Yet, it is worth it!

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Abstract

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This dissertation examines the correlation between incivilities, indicators of urban blight, and single-family residential property values in the City of Richmond, Virginia. Through the utilization of a mixed methods research methodology, this dissertation assesses whether specific incivilities, structural characteristics of properties, or community demographics have an adverse influence on property values. Three separate methodologies were utilized in this research including a time series assessment, focus group and individual interviews, and a cross sectional design.

The findings from the time series analysis indicate that property values increased every year over a five year period and that there were variances in property values throughout the City. The qualitative interviews suggested that the location of a property and features of the area heavily influence its value. Higher quality of life amenities tend to have a positive influence on property

values and lower quality of life amenities tend to have a negative influence on property values. Incivilities, poverty, and crime were considered attributes of an area that adversely influence property values.

The cross sectional analysis suggested that the socio-economics of the area tended to have a stronger correlation to property values than incivilities. Indicators of a high socio-economic status generally had a strong, positive correlation to property values and indicators of a low socio-economic status tended to have a strong, negative correlation to property values. Incivilities, in general, tended to have a moderately weak, negative correlation to property values.

The research argues to not overlook but to assess multiple structural and neighborhood factors when examining community conditions. Such an assessment should be conducted at an intimate geographic level rather than a broad, city wide level. From an academic perspective this dissertation fills a hollowness in the empirical literature on the correlation of incivilities to property values. From a practical standpoint, the research provides a renewed lens in which to conceptualize and assess urban conditions and its impressions on communities. Together, this dissertation aids in assessing incivilities and other socio economic conditions to one of the most pervasive challenges facing municipalities in the 21st century - the economic stagnation and decline of residential property values.

Understanding the linkages of undesirable urban outcomes and then altering the conditions that lead to them is our tasks as social scientists, citizens, and public administrators (Abu-Lughod, 1991).

Chapter I.

Introduction and Statement of the Problem

Overview of the Problem

Throughout the course of human civilization, the American municipality has symbolized human technological, social, cultural, political, and economic achievement. More so than its suburban counterpart, the municipality has, over the years, undoubtedly become a center stone for domestic and international commerce, a conglomerate of entertainment and athletic venues, and is typically an extensive reservoir of political and cultural diversity. Cities are icons of labor markets and are the byproducts of educational, financial, and architectural magnificence. They are the homes of many of the nation's and world's most prosperous businesses, are often viewed as influential political bases because of their socio-economic and racially diverse citizenry and numerous non-profit and civic organizations, are popular tourist destinations because of their cultural, historical, and dining amenities, and boast some of the most architecturally stunning buildings and neighborhoods.

Just as the municipality is an icon of human accomplishment and "splendor; it is also placated with squalor and can be dismal, devoid of urbanity and reproachfully odious to man" (Breger, 1967, p. 369). Breger (1967) noted that although, cities are magnificent spectacles of human attainment and represent "unmatched magnificence among the works of human endeavor, they are also the sites of appalling human misery, disorder, and decay" (p. 369). Today, many cities are plagued with high crime, strained by the continual and visceral threat of poverty and homelessness, vociferously scolded for their perceived failing public educational systems and dilapidated facilities, are virtually unmatched in their infant mortality and pupil dropout rates, and are faced with the physical and social degeneration of once vibrant neighborhoods, among a list of other bludgeoning challenges.

These urban challenges are amplified by the sluggish growth in municipal revenues and the exorbitant surges in both unpredictable and fixed costs such as utilities and employee healthcare and retirement expenses. This surge in expenditures, for some municipalities, has consistently outpaced the growth in local revenues over the past few years. To add to these constraints, constituents are demanding more and improved public services while offering very little, if any, additional or new tax revenue; all while requiring municipal officials to be more transparent and fiscally accountable. These fiscal constraints, in addition to the existence of the aforementioned municipal challenges, have forced public administrators to devise and implement innovative policies that seek to reverse the physical and economic maladies facing their urban communities.

Not all of these local government challenges exist in all communities. Nor do these problems affect each community to the same extent. There is, however, one municipal challenge that has appeared on the legislative agendas for policy action and debate in many cities. One of the most multifarious urban challenges that can repress man, degenerate one's quality of life, and pose significant structural, socio-psychological, ecological, and economic threats to the metropolis is the phenomenon known as urban blight.

Urban blight is a problem that many municipalities, particularly older communities, are struggling to comprehend and mitigate. Accordino and Johnson (2000) noted that the problems associated with blight are increasingly being recognized by local governments as a "significant barrier to the revitalization of central cities" (p. 301). Although, blight can be found in rural and suburban areas, cities, primarily because of its structural layout, housing and commercial density, and older housing stock and infrastructure are more prone to succumbing to blight and its deleterious impacts.

Setterfield (1997) suggested that urban blight is most commonly associated "with a variety of problems that are connected with the ongoing decay of American inner cities" (¶11). Although not all-inclusive, urban blight can include:

- Property that promotes unsanitary and unsafe living conditions;
- Dilapidated and deteriorated infrastructure;
- Property that breeds pests and rodents;
- Rundown buildings with broken and/or boarded windows, etc.

It is also indicative of less tangible, social features such as:

- Loitering youth;
- Public drinking
- Public drug use/abuse;
- Loud noise (music), etc. (Taylor, 2005).

Urban blight has been empirically and anecdotally linked to numerous physical, social, psychological, environmental, and economic challenges for municipalities. They include:

Structural/Physical Impacts

- Public safety/health hazard of blighted structures (Setterfield, 1997), (Accordino & Johnson, 2000);
- Blighted sites prone to arson (Skarbek, 1989);
- Increased vagrancy and vandalism in and around blighted structures (Spelman, 1993);
- Blighted sites are havens for criminals and transients (Gose, 1995), (Spelman, 1993);
- Increased blight (physical/social incivilities) around blighted structures (Wilson & Kelling, 1982), (Ross & Mirowsky, 1999).

Social and Psychological Impacts

- Breakdown of (informal) social control (Ross & Mirowsky, 1999), (Ross, 2000), (Skogan, 1990), (Geis & Ross, 1998);
- Increased resident fear, anger, isolation, anxiety, depression, mistrust (Garofalo & Laub 1978), (Ross & Mirowsky, 1999);
- Perceived sense of powerlessness (Geis & Ross, 1998).

Environmental Impacts

- Increased crime in or around blighted areas (Skogan, 1990), (Kraut, 1999);
- Migration of residents from community (Skogan, 1990), (Newman, 1996);
- Overall neighborhood decline (Skogan, 1990).

Economic Impacts

- Decline in property values of residential and commercial structures (Newman, 1996), (NVPC, 2005);
- Deter new (urban) development and growth (Greenberg, Popper & West, 1990);
- Undermines stability of the housing market (Skogan, 1990);
- Decline in value of neighboring structures (Newman, 1996), (Svetlik, 2007);
- Decreased municipal tax revenue (Accordino & Johnson, 2000);
- Increased likelihood of market failure (reluctance of private sector intervention) (Skogan, 1990), (Accordino & Johnson, 2000).

Each of these impacts can have tremendous implications on local governments. Yet, the economic impacts can be one of the most profound and ominous to localities. From an economic perspective, urban blight can result more narrowly in:

Wasted resources and lost tax (municipal) revenues (Setterfield, 1997), (NVPC, 2005)

- Physical incivilities (Physical indicators of disorder/blight) (particularly housing abandonment) produces lost tax revenues in that the structures are usually tax delinquent; This lowers a locality's tax base (Griswold, 2006);
- Housing abandonment results in wasted resources particularly when there is a scarcity of affordable housing (Setterfield, 1997);
- (Excessive) Blight can thwart or scare off private investment that would spur economic development and generate market activity (Skogan, 1990), (Greenberg et al. 1990).

Reduction in property values (Setterfield, 1997), (Skogan, 1990), (Greenberg et al. 1990), (NVPC, 2005)

- Properties in blighted communities tend to have lower property values than homes not located in blighted communities (Gose, 1995), (NVPC, 2005);
- TOADs (Temporarily Obsolete Abandoned Derelict Sites) are considered "a tax loss to the community in which they are located (Greenberg et al. 1990, p. 436),
- Properties located next to or near blighted property (vacant property) have lower property values than properties that are located further away from blighted structures (Greenberg, Popper, Schnieder & West, 1993), (Accordino & Johnson, 2000).
- Blighted properties, particularly those that are vacant "depress property values across an entire neighborhood" (NVPC, 2005, p. 7).

Undermines stability of housing markets (Skogan, 1990)

- Neighborhood housing prices would decrease relative to other urban neighborhoods resulting from blight (incivilities) and property disinvestment;
- Blight and other forms of physical disinvestment may cause other property owners to disregard and not take care of their property thus resulting in further housing instability, neighborhood decline, and the stagnation or reduction in property values;
- Imposes externality costs on neighboring properties by lowering market values thus making the sale of properties challenging (Accordino & Johnson, 2000);
- Incivilities and neighborhood disorder may influence the migration of individuals from neighborhoods. Indicators of disorder are strongly related to residential dissatisfaction and intentions to move from the neighborhood (Hope & Hough, 1988), (Skogan, 1990). The decline in population consequently impacts the local tax base;

- "Mounting levels of disorder and crime (which have been found to be related) negatively impact the housing market" (Skogan, 1990, p. 80).

Although there are many influences of incivilities on urban communities, one of the most discussed in academia and political settings and the focus of this research, are the economic impacts incivilities are believed to have on residential property values. Although there are numerous factors that could have an adverse influence on property values, features of incivilities have routinely been suggested as a significant contributor to that reduction (NVPC, 2005; Setterfield, 1997; Skogan, 1990: Greenberg et al. 1990). The literature on incivilities has tended to overlook the possibility of other neighborhood and structural characteristics that may also play a role in adversely influencing property values. Such neighborhood and structural characteristics can include: neighborhood demographics such as poverty, income and educational levels, crime, as well as the square footage, lot size, and age of the property, which are also believed to play a role in property valuation, albeit not as strong as incivilities. The extensive suggestion within the literature and the intuitive notion that incivilities play a major role in property devaluation, as well as the relative lack of discussion on the influence of other factors to reduced property values, suggests that incivilities may indeed have a very strong influence on property values.

Conceptually, physical incivilities (structural indicators of blight), as they are located on the property, are believed to be the strongest contributors to the decline in residential property values. Social incivilities (social indicators of blight), as they are not considered in assessments, are not believed to contribute as strongly to depressed property values as physical incivilities. Nevertheless, their influence is still believed to be stronger than area demographics and the physical attributes of the property. Other attributes, such as the proximity of the property to the central business district, public housing units, and public primary schools, are believed to have minimal influences on property values.

Below is a conceptual model highlighting the impact of incivilities on communities. This model outlines the major, categorical influences of incivilities to localities, while expanding on one of those influences, the economic consequences, in more detail. The model then illustrates all of the contributors to the decline in property value, by outlining each factors' extent of influence.

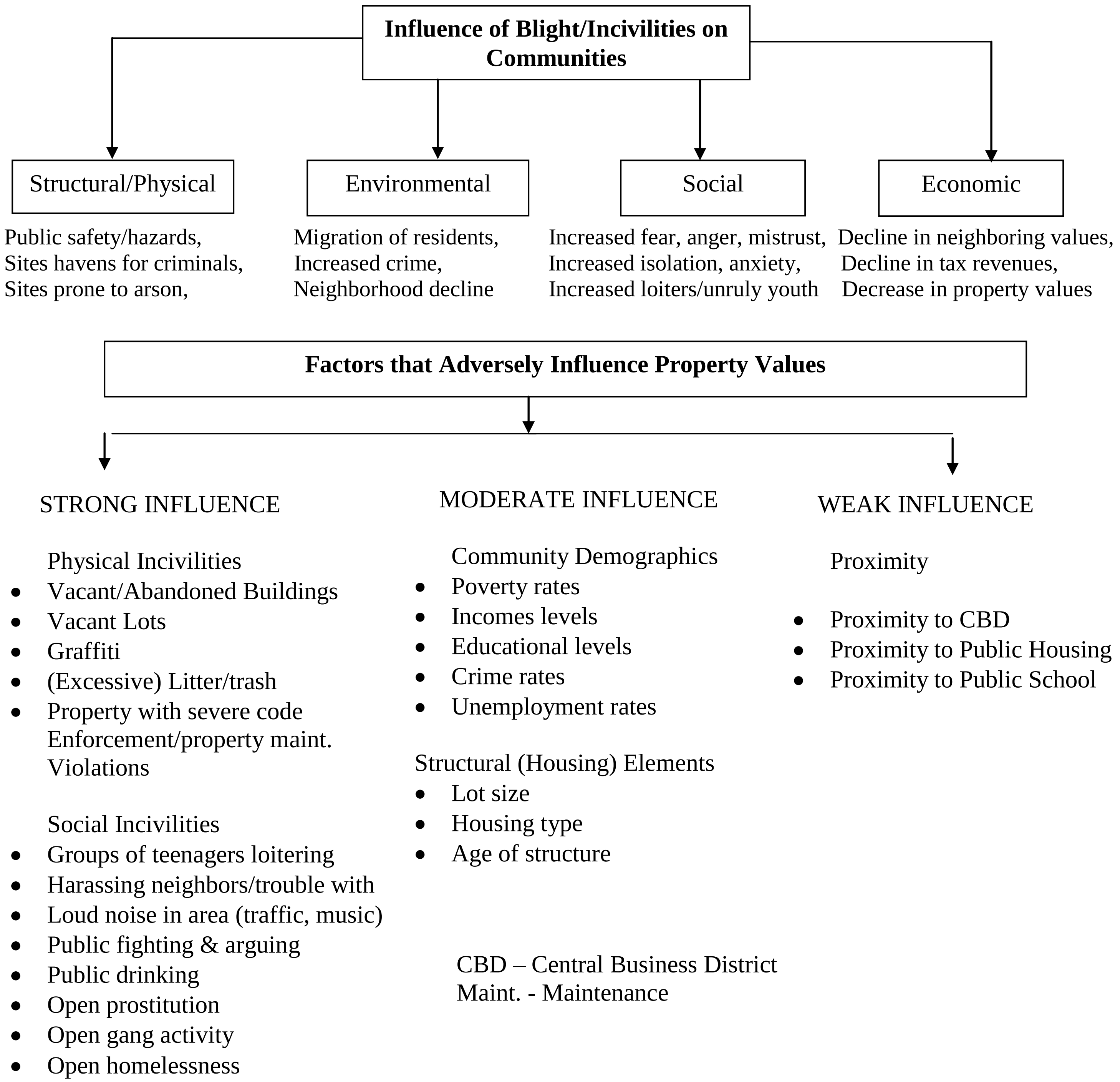


Figure 1: Influence of Blight/Incivilities on Communities - Conceptual Model

It is suggested that blight is not simply a structural or socio-psychological menace but that it also poses significant economic costs to governments (Accordino & Johnson, 2000; Skogan, 1990; NVPC, 2005; Setterfield, 1997; Griswold, 2006; Greenberg et al. 1990). The loss of tax revenue from blighted properties makes it difficult for localities to fund public services. The migration of economically stable families from urban neighborhoods, resulting from their dissatisfaction with the state of the environment, reduces the tax base and strains the local housing market. Administratively and politically, the loss of revenue can impair a locality's fiscal health and may force governments to impose higher taxes or cut critical public services (Accordino & Johnson, 2000). The loss of revenue, suggestively induced by blight, has the potential to impact all who reside in the municipality and all recipients of urban public services.

Overview of Dissertation

This research offers a macro level analysis of incivilities (blight) and its influence on communities within a theoretical framework and a micro level analysis on the influence of incivilities on single-family residential property values through the collection and analysis of data from numerous sources. This chapter provides an introduction to the issue of blight and its challenges on urban communities. Chapter two reviews the literature and theoretical perspectives associated with incivilities and its influences on communities. Chapter three outlines the research methodologies utilized to determine the influence of blight on property values. Chapter four discusses the results of the data analysis. Finally, chapter five outlines the implications of the study and data analysis on future research and public policy.

Literature and Theoretical Frameworks

Chapter two reviews the literature and theoretical frameworks pertinent to this research. The goal of this chapter is to provide a broad, contextual understanding of blight as well as its contemporary influences within urban communities. Prior to reviewing the empirical literature on the influences of incivilities on communities, a brief overview of the conceptualization of blight and its historical origins is provided. The reader will learn that several factors, including federal policies of the 1930s and 1940s, inadvertently instigated the structural, social, and economic decline of urban areas. The concept of “blight” came out of the federal government’s response to improving upon the deteriorating conditions of urban areas, most notably through urban renewal campaigns. This is followed by a discussion on the role such urban renewal policies played in further provoking, rather than placating, the problems associated with blight that is currently afflicting urban communities to this day.

Next, the chapter reviews literature on the impacts of incivilities to several individual and ecological outcomes. Those outcomes include increased individual fear and isolation, increased crime and criminal outcomes, the decline in property values, and overall neighborhood decline. The reader will learn that the literature abounds with numerous empirical examples of the positive correlation between incivilities and increased individual feelings of fear. Although there is an abundance of literature on the correlation between incivilities and crime there are, however, not as many empirical examples between the two. Often, such empirical examples are based on the link between a specific incivility to crime and criminal outcomes rather than the influence of incivilities in general to crime. There are even less empirical examples on the correlation between incivilities and the decline in property values, although there are scores of examples within the literature that cite such a link, yet without empirical validation. This is followed by a discussion on assessments of urban revitalization programs and its influences on communities. Such programs often longitudinally assess changes in property values before and after program implementation. These programs typically cite the link between incivilities and property devaluation as one impetus for developing and implementing such strategies.

Prior to reviewing the theoretical perspective, the chapter will outline specific limitations within the presented literature. These limitations include the lack of empirical assessments between incivilities and property values, the lack of empirical longitudinal assessments between incivilities and broader ecological outcomes, including changes in property values, the absence of theory from these assessments, and the exclusion of rival variables from the analysis that may also have an influence on outcomes.

The final segment of this chapter is dedicated to reviewing the applicable theoretical framework of this research. This chapter begins by laying the foundation for review of the Incivilities Thesis, the theoretical framework that guides this study, by first assessing the literature that provides a general overview of the concept of incivilities and its dual and distinct nuances. Once this distinction is made, a thorough overview of the Incivilities Thesis as well as its historical origins is provided. It is noted that since the mid 1970s public administrators, urban planners, criminologists, community development professionals, and social scientists have developed theories and conceptual models to explain the concept of blight and how it impacts communities. One of these theoretical perspectives is the Incivilities Thesis. The Incivilities Thesis is a group of theories that predict the impacts of simple incivilities, signs/indicators of disorder, on resident perception of neighborhood stability and satisfaction, resident fear, as well as future ecological/neighborhood decline.

Included in this segment of the chapter is a chronological review of the literature on several sub variants of the Incivilities Thesis. Each variant of the Incivilities Thesis focuses on one or several individual or ecological outcomes resulting from the alleged influence of incivilities. This includes the impact of incivilities on individuals' perceptions of safety and neighborhood stability, resident fear of crime and community withdrawal, and how these incivility indicators eventually contribute to overall neighborhood disorder and decay (Garofalo & Laub, 1978), (Wilson & Kelling, 1982), (Skogan, 1990).

The limitations of each variant are provided. Finally, general limitations and critiques of the Incivilities Thesis are discussed. Concerns range from the lack of discussion and questionable role of demographics on influencing outcomes and the practical usage of such a perspective that includes several, unique variants.

Purpose of the Research

The primary purpose of this research is to determine if incivilities, indicators of blight, are correlated to single-family residential property values in an urban locality. Additionally, this research also seeks to determine the extent in which incivilities are correlated to property values. Specifically, this research seeks to reveal if incivilities have a strong, negative correlation to property values as the literature suggests.

Research Plan

The literature suggests that incivilities have an adverse influence on residential property values. This research's aim is to assess this premise by: reviewing the literature on the incivilities thesis as well as literature on the influences of incivilities to overall individual and neighborhood problems and by empirically examining the correlation between incivilities and single-family residential property values in a municipality. An empirical correlation will be determined by assessing the influence of specific incivilities, amongst other neighborhood characteristics and structural traits of properties, to single-family residential property values. The inclusion of multiple variables in the analysis will aid in determining which specific variables have the strongest, positive or negative correlation to property values.

This research will utilize a mixed method research methodology that employs quantitative and qualitative methods of data collection and data analysis, to assess the correlation between incivilities and property values. The data sources, both primary and secondary, are explained in detailed followed by a review on how each variable is measured. This study's research question is:

- What are the influences of physical and social incivilities to single-family residential property values at an individual and a collective property level of analysis?

Other ancillary questions that this research seeks to answer are:

- What is the extent, if any, in which incivilities correlate to property values?
- If there is a significant correlation between incivilities and property values, do these same relationships exist in different areas of Richmond?
- Are there other, non-incivility features that have an influence property values?

A mixed methods research design that incorporates three separate research designs, a longitudinal time series assessment, focus group and individual interviews, and a cross sectional, multivariate analysis will be performed to shed insight into and to answer these questions. Limitations of the research's design, data sources, and data collection methods will also be provided.

<u>Overview of Key Findings</u>

The time series assessment revealed that property values in the City of Richmond increased every year over a five-year period. However, one major finding was that different areas of Richmond had extreme differences in property values. Qualitative assessments provided a response for this phenomenon through the suggestion that quality of life amenities or the lack thereof within an area plays an instrumental role in property value variations in different areas of Richmond. It was noted that incivilities, poverty, crime, and the lack of retail, grocery, and commercial outlets in close proximity to properties were all indicators of a lower quality of life that adversely influence property values. These lower quality of life features were suggested to be influential factors that play a role in specific areas of the locality having lower property values than other areas.

The final quantitative analysis indicated that incivilities were correlated to property values in the City of Richmond. In general, most physical incivilities tended to have a negative correlation to property values. Social incivilities had either a negative or a positive correlation to property values. The determination on whether social incivilities had a positive or a negative influence on property values was dependent on the area in which the property was located. The relative extent or strength of the influence of incivilities to property values was generally moderate or weak. Area demographics however, tended to have a very strong correlation to property values in the City of Richmond. Areas where individuals tended to have a higher quality of life such as higher incomes and higher educational attainment tended to have higher property values. Areas where individuals tended to have a lower quality of life such as living in poverty, low incomes, and low educational attainment tended to have lower property values. In general, the socio-economics of the community tended to have a stronger and more consistent correlation to property values than incivilities.

Summary

This research attempts to corroborate the widely held belief that incivilities have a negative influence on property values. This is to be accomplished by examining the literature on incivilities, employing a multi method research design in which to collect and analyze data on incivility and non incivility variables from multiple sources, and by interpreting and analyzing this data from a qualitative and a quantitative approach. Although there are some limitations in the data and data collection process, by empirically evaluating the influence of incivilities on property values, this research will inherently contribute to an already sparse literature on the empirical validation of incivilities to property values. This research will also determine which features of a property or characteristics of the neighborhood have the strongest, most adverse correlation to property values. Such findings will not only provide a model for other localities to utilize while assessing their community's most influential factors afflicting property values but it will also aid local government officials in developing public policies that strategically target the features that have the most significant, negative influence on property values within defined areas.

CHAPTER II.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Overview of Chapter

Prior to discussing specific academic research on blight and incivilities and its influences on communities, it is essential to briefly provide a historical context in which the term "blight" was first conceptualized. It is expedient to outline the social and political settings of the United States as well as the development of federal policies that aided in the conceptualization of blight and its instigation of urban problems in metropolitan communities. This examination aids in contextualizing the issue of blight and in understanding how blight has come to be recognized at the federal level as an issue for localities.

Next, the chapter will then move into the empirical research on the influence and impacts of incivilities on localities. This is delineated between the influences of incivilities to individual and ecological outcomes. Additionally, the limitations of this empirical research will be discussed. The chapter will then turn toward the theoretical framework that is relevant to this research and in understanding incivilities and its influences within communities. A thorough discussion of the Incivilities Thesis and its historical development, as well as its several sub variants, its modern day application, and limitations are provided. Specifically, the limitations of the theoretical premises explaining the linkages between incivilities and communal problems are provided.

Conceptually, the definition of blight as well as its influences on urban communities revolves around several distinct themes and ideas. The interplay of these themes assists in developing a conceptual and historical understanding of blight and its adverse influence on communities, most notably neighborhood decline. As discussed more thoroughly in the literature review, the concept of urban blight grew out of an era in American history when cities were undergoing widespread civil unrest as a result of governmental policies that advertently or indirectly caused communities to experience high levels of unemployment, poor housing conditions, crime, and poverty. The result of such policies eventually led to deteriorated social, economic, and physical conditions in urban communities. Such conditions resulted in the area waning into a state of physical, social, and economic turmoil and disarray.

Blighted physical conditions, which include abandoned/vacant property and vehicles, excessive trash and/or vegetation, graffiti covered building facades, boarded doors and windows, etc. also identified as physical incivilities, are tangible features that afflict the visual and physical appeal of the area. Conversely, blighted social conditions, which includes public drinking, large groups of loitering teens, public drug use/selling, open prostitution and pan handling, etc. also coined social incivilities, are the social behaviors of people that also play a role in distressing the tranquility and stability of the community. Naturally, the presence of physical incivilities is tied to tangible, indicators of physical disorder, or structural indicators of physical neglect, degradation, etc. Similarly, the presence of social incivilities is linked to the concept of social disorder, or the social behaviors of people that tend to contradict society's norms of appropriate behavior, which also aids in making the area appear to be uncontrolled and unsafe. Areas within a community afflicted by these incivilities are associated with the appearance of the area being in a state of disorder (Ross and Mirowsky, 1999; Geis and Ross, 1998). Alternatively, areas or neighborhoods that lack indicators of incivilities, in which social norms are enforced, social deviations and physical disorders are quickly abated, are characterized as being in a state or order (Ross and Mirowsky, 1999).

Incivilities, which are linked to the appearance of an area being in a state of disorder, if left unabated, contribute to the deterioration of informal social control. This breakdown in informal social control, or the informal norms of what is acceptable within a community, is the catalyst towards overall neighborhood decline. Some of the features of neighborhood decline are: an unstable housing market, the migration of individuals from the community, increased crime rates, and depressed property values. Below is a conceptual model of urban blight, outlining the linkages and interplay of the concept of incivilities to the concept of disorder and overall neighborhood decline, all of which are discussed in more detail.

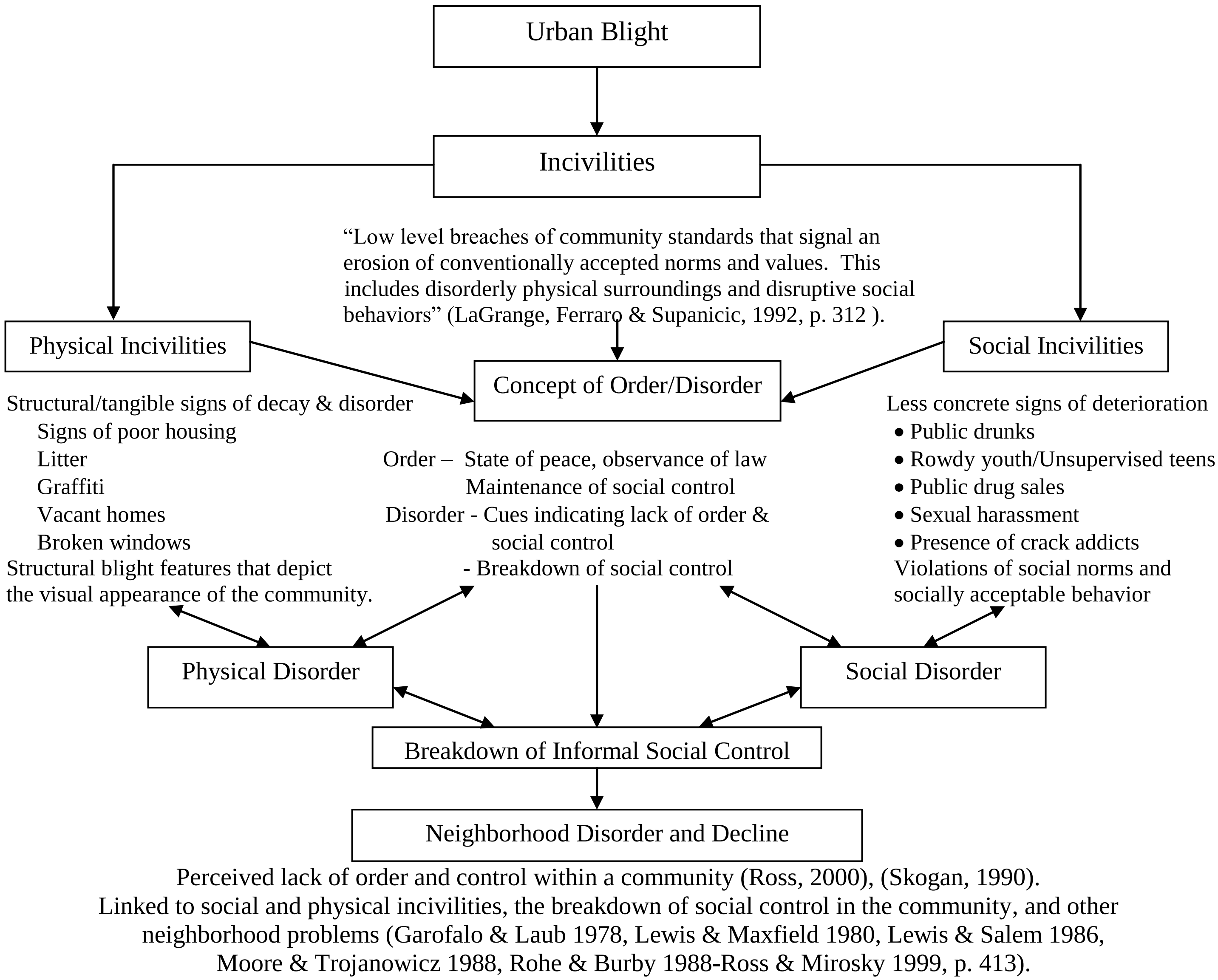


Figure 2: Urban Blight Conceptual Model

It has been suggested that if incivilities are not abated it may blanket the entire community and result in further neighborhood deterioration and neighborhood decline (Wilson and Kelling, 1982, Skogan, 1990).

Indicators of neighborhood decline are:

- The reluctance of the private sector to relocate into a community (economic),
- Residents willingness to leave the community (social and economic), and
- Reductions in property values (socio-economic-political). (Skogan, 1990)

Indicators of deteriorated physical conditions and an unruly social climate contribute to community decline, in three ways:

- Crime rates should increase faster there,
- Residents would migrate faster (leading to structural decline and further communal economic depression), and
- Residents' fear or concern should go up faster. (Skogan, 1990)

<u>Conceptualization of Urban Blight</u>

To understand the concept of urban blight it is useful to briefly discuss the historical development of the term. The subjective question "what is blight" and the term "blight" has been identified, defined, redefined, and left open for interpretation throughout years of governmental urban redevelopment policy. According to Gordon (2004) nearly a half "century of federal and state urban renewal policy and more recently with local economic development policies" focused on this question (p. 305). The primary "legal and political justification of these policies leaned heavily on an overarching public purpose: the elimination or prevention of blight" (Gordon, 2004, p. 305). Such policies provide a context for understanding the concept of blight.

Urban blight is probably most commonly associated with urban renewal policies and programs, which was the national thrust to improve deteriorated physical conditions of urban localities by offering cities funds to clear areas that were deemed "slum or blighted". According to Stein (2003), "in almost every major American city, urban renewal became a tool for reviving a decaying central core" (p.153). This controversial concept and program was preceded by several national policies that were intended to improve the living conditions of people residing in central cities. Unfortunately, many of these revitalization programs unintentionally and often resulted in: the destruction or division of urban neighborhoods, the creation of massive and numerous public housing complexes, the development of an intricate labyrinth of congested transportation systems, and disjointed urban sprawl. Although purported and designed to improve upon the living conditions of and housing conditions for people as well as aid in the revitalization of urban areas, such policies tended to facilitate the pervasiveness of blight that continues to stale and erode municipalities today.

Industrialization and Urbanization 1920s - 1940s

The concept of blight and its distinction was conceived during a period in American history when municipalities were experiencing rapid growth in industrialization and urbanization. During the industrial revolution, municipalities witnessed a surge of people migrating from rural areas and foreign countries to the cities in search for employment opportunities in the manufacturing industry. The rise of the industrial manufacturing industry and the resulting externalities of pollution, poor employment conditions, and the low wages that followed, in addition to the inability of municipalities to adapt to the burgeoning population in the late 19^{th} and first part of the 20^{th} century, instigated a poverty stricken, unhealthy urban environment. Gordon (2004) noted that "lamentable urban conditions such as encroachments of commercial or industrial properties on residential neighborhoods, the inadequacy of basic public services, and the threat of moral decay, fire, and disease posed by tenement housing of urban working families" festered and flourished in many cities (p. 308). Additionally, many cities experienced a proliferation of crime within neighborhoods. To compound the state of urban conditions even further, the availability of housing in cities was scarce and severely inadequate not only for existing residents, but also for the influx of immigrants and minorities as well as the many soldiers returning from World War II.

Suburbanization and Housing Policy

By the end of World War II, there was a national concern about the state of urban conditions in the United States. According to Judd and Swanstrom (2006) the "neglect of basic infrastructure brought about by the Great Depression and then by the war was observed in the decay of business districts, the dilapidation of the older housing stock, and the tattered state of roads, bridges, parks, and urban sites" (p. 131). This, coupled with massive unemployment and a shortage of housing in central cities, aggravated the deplorable living conditions in urban areas. As a result, the federal government implemented several new programs to counter the challenges of inadequate, unsafe, and the shortage of housing.

In 1934, the federal government crafted several programs that had tremendous implications on the growth of suburbs and the decline of cities. Such policies not only aided in the development of much needed incipient housing for the bloating population in the cities but it also posed tumultuous repercussions on the future condition of municipalities (Kleinberg, 1995). "The first of these policies was the Federal Housing Administration (FHA) and Veterans Administration (VA) mortgage loan programs which, in the years following World War II, provided low-cost mortgages for more than 11 million new homes" (Etienne, 2006, p. 34). Both programs were designed to assist the thousands of individuals who could not afford a home. FHA's objective was to regulate the interest rates and the conditions of its issued mortgages. By doing so, it assisted individuals who could not afford a down payment on a house and monthly mortgage payments. This substantially increased the size of the market for single-family homes (Garvin, 2002). According to Duany, Plater-Zyberk, and Speck (2000), although the initial problem of inadequate housing was focused in the cities, the resulting low cost mortgages, which typically cost less per month than paying rent, were primarily directed at new single-family construction in order to expand home ownership in the suburbs rather than in the cities. Subsequently, FHA's practices indirectly precipitated the decline of many cities by aiding and subsidizing the departure of the upper and middle class to the suburbs and by refusing to give nearly as many loans for rental units, which would likely have been for low income and minority persons.

The FHA and the VA programs also perpetuated racial segregation within urban areas. The FHA required cities to target specific areas or neighborhoods for different racial groups by mandating that mortgages be issued in "racially homogenous neighborhoods" (Etienne, 2006, p. 35). The FHA even issued maps that redlined specific areas, often predominately minority that were virtually off-limits for mortgage loans, whereas no such redlining was applied to any location in the emerging and non-diversified suburbs (Rusk, 1999). This practice of redlining dictated that minorities could only secure mortgages in specific areas of the locality. This practice resulted in residential segregation in cities throughout the entire country. Such racially charged and discriminatory practices helped create reservoirs of densely populated, poor, and minority packed urban neighborhoods that overtime became breeding grounds for crime and blight and assisted in furthering the dire living conditions in core urban neighborhoods for the next half century. Likewise, the exodus of the upper-middle class to the suburbs as a result of federal housing programs and the dramatic increases in municipal problems such as crime, poor housing conditions, etc. perpetuated urban decline and fueled the prevalence of blight in cities even further.

Another federal policy that stimulated suburbanization and the decline of urban areas were the direct subsidies given to localities to construct corpulent public housing complexes. These policies, as designed, provided much needed housing in cities, particularly for the poor. However, it indirectly concentrated the poor, mostly minorities, within segregated developments within specific areas of the municipality. The corralling of minorities into large public housing complexes was primarily the result of inherent racial discrimination that was built into the rules and bureaucracy of housing eligibility guidelines (Abu-Lughod, 1991; Etienne, 2006). "Massive projects, that were predominantly funded by federal subsidies to construct much needed housing, such as Robert Taylor Homes and Cabrini-Green in Chicago, Baltimore's Lexington Terrace and Lafayette Courts, and Blackwell Redevelopment in Richmond were eventually predominately occupied by African Americans, became depositories of high crime and poverty that expelled, rather than attracted, middle-class households within gravitational range" (Etienne, 2006, p. 36; Rusk, 1999, p. 90).

The federal government also encouraged builders to use mass production technology in order to more efficiently facilitate the development of single-family homes. "During and after WWII, builders such as Levitt and Sons received financial support from the federal government to experiment with and introduce mass-production building (techniques) into the private market as a stimulus to home ownership and to the economy" (Etienne, 2006, p. 35-36). This new means of construction, at times, resulted in the creation of new subdivisions. Often, the suburbs were the only areas that had the available land necessary to facilitate the development of new subdivisions. The development of entire communities, resulting from the use of mass production technology, was another unintentional instigator of suburbanization that attracted mobile and capable individuals from the cities into the suburbs.

The recipe of federal homeownership programs, particularly the mortgage programs, created an environment where the "growth of the suburbs flourished at the expense of the central cities. These programs divided metropolitan areas by race and income and also discouraged the renovation of the existing housing stock while turning their backs on the construction of row houses, mixed use buildings, and other urban (housing) types in central cities" (Etienne, 2006, p. 36). Although designed to improve living conditions for individuals, it implicitly left the urban housing stock within central cities to slowly putrefy and decay. Additionally, the migration of people from the cities to new and improved housing, particularly in the crime free and racially homogenous suburban areas, pushed urban neighborhoods that were already physically and socially deteriorating, poverty stricken, and crime infested into further decline. The absence of economically stable families meant that basic institutional structures of strong schools and local businesses in many urban neighborhoods could not be sustained during long periods (Wilson, 1987). The migrating population to the suburbs consequently left cities with a reduced tax base. This left municipalities with less revenue to fully support and revitalize their urban communities. As a result, urban communities had less public funds to address the issues that were now slowly eroding the community.

Gordon (2004) indicated that the political response too many of these municipal problems included "urban beautification campaigns, the "model tenement" movement, the "managerial" reform of urban governance, all of which were early efforts at urban planning and zoning" (p. 308). Yet, one of the most politically acclaimed and most abysmal and ecologically damaging programs, which was designed to address and resolve many of these issues plaguing central cities in the 1920s, 1930s, and 1940s, was urban renewal.

The Federal Housing Act of 1949

In response to the ills associated with industrialization, urbanization, housing shortages, and population proliferation within central cities, the federal government attempted to instigate the revitalization of municipalities by implementing new policies that focused on improving both housing and living conditions in America. The federal government, through the passage of Title I of the Housing Act of 1949, provided funding to localities that cleared "slum" or "blighted", deteriorated, or deteriorating areas in order to revitalize such areas within cities. It was at this point in history when the concept of blight was first introduced and was associated with deteriorating conditions. This "program helped municipal authorities condemn blighted land near downtown districts, subsidized governmental authorities to purchase large parcels of land in prime locations at highly inflated "market value prices," and then helped cities pay to clear the land of its old and deteriorated structures. After the land was cleared, the subsidies allowed cities to sell the land to private developers at times for below market prices. In return for the subsidy and other tax reductions, developers agreed to "redevelop" the land for "higher" uses (commercial or middle-class housing) (Abu-Lughod, 1991; Etienne, 2006, p. 36-37; Fullilove, 2004).

Title I of the Federal Housing Act of 1949 effectively gave localities leverage to utilize their powers of eminent domain to lawfully strip away "blighted" property from private ownership and put it in the hands of government. According to Caro (1974) Title I "extended the power of eminent domain, traditionally used in America for government-built projects so drastically that governments could now condemn land and turn it over to individuals" (p. 777).

Unfortunately, the long term repercussion of Title I of the Federal Housing Act of 1949 tended to intensify the many problems facing local governments during this era and still today.

Although the Federal Housing Act of 1949 resulted in the extensive clearance of slum and blighted areas, it also managed to evict thousands of people from old city neighborhoods, tear down more homes than it built, uproot small businesses, all of which fueled the decline in municipal tax revenues (Etienne, 2006), (Rusk, 1999). In nearly every major city that utilized federal funds under this program, there were citizens who were displaced by the program's primary thrust of clearing out blighted areas. According to Herbert Gans (1982), this process disproportionately affected African Americans. Approximately, "80 percent of the relocatees were poor blacks" (Gans, 1982, p. 380). This program was unremittingly and unabashedly coined "Negro removal," mocking the government jargon phrase "urban renewal" because often entire African American communities or businesses were wiped out (Gans, 1982, p. 380; Fullilove, 2004). The displaced, often poor minorities, were crowded into existing or newly created insufferable areas or into segregated, high-rise public housing facilities. "In the long run, the replacement homes of many displaced residents were worse: massive public housing complexes were often erected or were located in isolated sections of the city. In many communities, the federal urban renewal program created dull, lifeless downtown areas that failed to pull suburbanites back into the city. Instead, high-poverty, high-crime public housing complexes pushed households into the suburbs even faster" (Etienne, 2006, p. 37; Rusk, 1993). This process fueled the decline of the municipality and left in its place deteriorated enclaves of urban neighborhoods.

While urban renewal funds were used to clear neighborhoods and displace residents and while public housing projects became segregated ghettos, other federal programs were devoting even larger sources of funds to the building of suburban housing tracts and highways that aided the exodus of upper and middle-class families away from the cities (Judd and Swanstrom, 2006). Accordingly, Title I of the Federal Housing Act did virtually nothing to stem the postwar tide of suburban growth; if anything, the bulldozing of downtown tracts damaged cities irreparably, converting them into less desirable places to live (Nivola, 1999).

The Federal-Aid Highway Act of 1956

During the middle of the 20th century, cities were falling deeper into a state of despair and disorder. Increased crime, poverty, and the urban challenges associated with the decline of neighborhoods were synonymous to the municipality. However, there were other programs that enticed capable urban residents to exit the central cities for the suburbs thus fueling the decline of cities further. During the 1950s and 1960s the growing population placed heavy demands on the existing transportation infrastructure. The federal government, through the passage of the National Interstate and Defense Highway System Act of 1956 or the Federal-Aid Highway Act of 1956, funded a massive national interstate artery system that connected neighboring states and municipalities, their labor markets, as well as their communities. "This highway system linked every major city and rural area within all 48 contiguous states with connections to other roads" (Etienne, 2006, p. 38; Kleniewski, 2002, p. 102). The creation and placement of such an arrangement of highway systems drained cities economically and ultimately of their population even further.

The advent of the federal highway system provided affluent, urban residents the capability and opportunity to abandon the central city to search for new housing or better neighborhoods, particularly in the now thriving, crime free, and relatively racially homogenous suburbs. Additionally, the Federal-Aid Highway Act not only predominately funded a national highway system but it also subsidized suburban road infrastructure. This effectively made the commute distance and time between the city and the suburbs much quicker. No longer dependent on and tied to locations near existing streetcar routes or railroad lines, residents and businesses were now freed from the pattern of urban-centered locations (Kleinberg, 1995). The subsequent population shift left a huge economic void in central cities and aided the decline of central cities even further.

From a structural standpoint, these newly created highways were often routed directly through vibrant urban neighborhoods, which either isolated or destroyed many of them. As wealthier residents abandoned inner-city neighborhoods they tended to leave behind the poor, whose neighborhoods eventually deteriorated. Residential segregation increased as communities were displaced and many indigent minorities were left with no other option than to move into public housing. The explosion of the poor population, socio-economically deprived neighborhoods, coupled with the outflow of the upper-middle class, resulted in a greater tax burden for the locality (Lee, 2000), (Etienne, 2006). The reduced tax based fueled the inability or difficulty of cities to financially combat these challenges. As a result, municipal problems such as crime and blight flourished.

This artery of highway infrastructure later revealed other ancillary economic and social consequences for municipalities. This manifestation is evident in the development of strip malls, suburban retail and employment centers, and very low-density housing developments surrounding urban areas. Not only were cities seeing a reduction in their residential population and tax base, but they also witnessed the migration of businesses following the footsteps of their fleeting consumer base. Many businesses soon left urban areas, leaving behind a larger declining tax base for local governments.

The national political decisions between 1920 and 1960 pinched the financial resources from cities in favor of providing transportation and housing infrastructure that supported the rise of the suburbs. Federal programs, particularly the mortgage guarantee program and the federal highway program, indirectly aided the prosperity of the suburbs at the detriment, however, to central cities (Etienne, 2006). Such policies, although designed to improve living and housing conditions in cities, fortuitously resulted in the concentration of poverty, sweltering crime rates, and severe blight in communities. Such outcomes often thrived in the very areas that the federal programs were intended to enrich. Between 1950 and 1990 cities lost nearly a quarter to a half of their populations to the suburbs (Rusk, 1993). The migration of people, particularly upper and middle class stable families, both Caucasian and African American, from the cities to the suburbs played a significant role in perpetuating the problems in urban communities even further. Additionally, the exodus of such a key economic tax base to the suburbs, left cities with not just a transient tax base and a copious, indigent population but also with deteriorating neighborhoods that were often crowded or bloated with crime, poverty, and blight. Consequently, once vibrant urban neighborhoods fell in a state of decline and disorder.

Summary of Conceptualization of Blight

The concept and distinction of urban blight has been developed over many years of American federal public policy aimed at improving the housing and living conditions in cities. These policies tended to incentivize municipalities to identify and remove "blighted" or deteriorated, structural conditions afflicting urban areas. Thus the term blight was conceived with an inherent subjectivity pertaining to the disorder, decay, and disfigurement afflicting urban areas. Unfortunately, municipalities tended to suffer more harshly than their suburban counterparts from the indirect side effects of these federal policies. Often the problems in which these federal policies sought to abate only further aggravated blight and deterioration in central cities.

With a clearer understanding of the historical conceptualization of blight and its relationship to the creation of federal policies that aided in the explosion of blight in local communities, the focus now shifts to examining the literature on the influence of blight to individual and ecological outcomes. The next section outlines literature that empirically links incivilities to increased fear and crime. Other linkages, such as reductions in property values and overall neighborhood decline, which were prevalent within the literature but not from an empirical standpoint, are also discussed.

Overview of Literature Review

Although, the conceptualization of urban blight was not until the mid 20th century, it was not until the 1980s that research began to examine the influences of blight on communities. Since that time, several researchers have concentrated on linking incivilities or the presence of disorders to individual outcomes (Garofalo & Laub, 1978; Ross and Mirowsky, 1999; Geis & Ross, 1998; Wilson, 1975; Hunter, 1978; Wilson and Kelling, 1982; Ross and Jang, 2000; Baumer, 1978; Covington & Taylor, 1991; Hope and Hough, 1988; Fisher, 1991; LaGrange, et al. 1992; Lewis & Maxfield, 1980; Perkins, Florian, Rich, Wandersman, & Chavis, 1990; Rohe & Burby, 1988; Taylor & Covington, 1993; Yin, 1985). Only a few have progressively linked blight to broader ecological outcomes (Wilson and Kelling, 1982; Skogan, 1990; Accordino and Johnson (2000); Taylor, 1999b). Prior to discussing appropriate theoretical frameworks for the current research, this chapter will review the findings of previous literature relating to the influence of incivilities (indicators of blight) to distinct individual and ecological outcomes in communities. However, many factors should be considered when assessing the influence of incivilities at a broad, community level. A review of the literature finds that there are possibly numerous internal, contextual factors, which are inherently a part of the community that could play a role in influencing neighborhood outcomes.

Influence of Incivilities

The National Vacant Properties Campaign (NVPC) indicated that there are measured "costs (although not necessarily easily measured) of living in an area with (vacant property/ies) incivilities. These costs are both fiscal and psychological" (NVPC, 2005, p. 11). Accordingly, numerous studies have linked incivilities to a multitude of challenges facing municipalities (physical, psychological, social, and economic) (Baumer, 1978; Covington & Taylor, 1991; Hope & Hough, 1988; Fisher, 1991; LaGrange, et al. 1992; Lewis & Maxfield, 1980; Perkins, Florian, Rich, Wandersman, & Chavis, 1990; Rohe & Burby, 1988; Taylor & Covington, 1993; Yin, 1985, Skogan & Maxfield, 1981, Spelman, 1993, Skogan, 1990, Newman, 1996, Newman and Franck, 1980, 1982, Gose, 1995, NVPC, 2005, Taylor, 1999b). Such studies have attempted to determine the relationship between incivilities and a specific outcome, for example, resident fear or willingness to leave the neighborhood, crime outcomes, as well as the impact of incivilities on overall neighborhood conditions over time. These studies primarily focused on either an individual (typically cross sectional) or an outcome based ecological (typically longitudinal) assessment of the impacts of incivilities. Other studies, often program evaluations, attempted to determine the degree in which municipal programs reversed the impacts of incivilities and neighborhood decline within a defined community (Galster, Temkin, Walker, & Sawyer, 2004, Galster, Tatian, Accordino, 2006). Although, unlike the studies that empirically test the direct influence of incivilities on outcomes, these types of studies, take a reverse approach and stress proving the effectiveness of targeted programs in reversing attributes of neighborhood decline (Baumer, 1978; Covington & Taylor, 1991; Hope and Hough, 1988; Fisher, 1991; LaGrange, et al. 1992; Lewis & Maxfield, 1980; Perkins, Florian, Rich, Wandersman, & Chavis, 1990; Rohe & Burby, 1988; Taylor & Covington, 1993; Yin, 1985; Spelman, 1993; Skogan, 1990; Newman, 1996).

Resident Fear/Fear of Crime

One of the most pervasive and stigmatizing influences of incivilities has been on individual fear or feelings of safety within a community. The literature provides clear and compelling empirical evidence of the link between incivilities or an individual's perception of incivilities and fear. Several researchers have linked incivilities to increased levels of fear and other psychological outcomes (Garofalo & Laub, 1978; Ross and Mirowsky, 1999; Geis & Ross, 1998; Wilson, 1975; Hunter, 1978; Wilson and Kelling, 1982; Ross and Jang, 2000). Wilson (1975) noted that what really made people afraid in cities and concerned about their welfare was not only the crimes they saw and heard about but also the physical and social signs they saw around them that indicated a breakdown in society. Ross and Jang (2000) indicated that "living in a neighborhood with a large amount of perceived disorder significantly affects a sense of mistrust and the fear of victimization" among individuals (p. 401). Hunter (1978) suggested that incivilities in an urban area "lead people to make inferences about an area, and more specifically the type of people who inhabit it, or use it" (p. 5). "Incivilities (often) warn residents that he or she is at risk of victimization, thus causing them to become more fearful of their environment" (Covington & Taylor, 1991, p. 232). Essentially, "those who are more afraid than their neighbors (are more likely to) see more local problems than their neighbors" (Taylor, 1999a, p. 72). According to Skogan (1986) very few residents are directly victimized, but people see these fear inducing cues of disorder each time they walk past a group of teenage boys hanging out on the street, a boarded-up building or vacant lot, or drunks or panhandlers. These indicators of disorder are suggested to cause increased feelings of fear among individuals even more than actually witnessing a crime.

Numerous studies link incivilities or signs of disorder to increased fear levels (Skogan and Maxfield, 1981; Baumer, 1978; Covington & Taylor, 1991; Hope and Hough, 1988; Fisher, 1991; LaGrange, et al. 1992; Lewis & Maxfield, 1980; Perkins, Florian, Rich, Wandersman, & Chavis, 1990; Rohe & Burby, 1988; Roundtree and Land, 1996; Taylor & Covington, 1993; Yin, 1985), (Ross and Jang, 2000, p. 4). These studies routinely conclude that individuals that perceive more incivilities in their environment are more likely to experience higher levels of fear or be more fearful. Skogan and Maxfield (1981) conducted one of the first studies linking incivilities to feelings of fear. In their assessment of neighborhood conditions and fear levels in a survey of residents in three large cities, they determined that "fear of crime was higher in places where neighborhood trends point in the wrong direction and that people who perceived that their communities were in decline were more fearful" (Skogan & Maxfield, 1981, p. 121). The researchers indicated that respondents' perceptions of disorder had a significant relationship with measures of fear. Hope and Hough (1988) in their study of determining neighborhood level connections between perceived incivilities and fear also found a significant relationship between the two measures. Lewis and Maxfield (1980) surveyed residents in several Chicago neighborhoods to evaluate the relationship between fear of crime and crime rates. They determined that "citizens' perceptions of crime were primarily shaped not so much by the neighborhood conditions reflected in crime statistics, but rather by the level of incivility in their communities" (Lewis & Maxfield, 1980, p. 160). Their analysis suggested that perceptions of neighborhood indicators of disorder were related to one's concern for safety (Taylor, 1999a, p.

72). Perkins et al. (1990), in their study of the social and physical environment and participation in civic associations, found that a relationship exists between independent observations of incivilities and fear. Maxfield (1987), in his comparative analysis of fear and incivilities in the US and the UK, determined that non-subjective measures of incivilities were related to increased fear levels in both countries. Taylor, Schumaker, and Gottfredson (1985), determined that the relationship between neighborhoods and objectively rated incivilities is conditional. "They concluded that social and physical incivilities had a moderate impact on fear, after controlling for socioeconomic factors, and were operative only in neighborhoods whose future course was uncertain" (Perkins et al, 1992, p. 22; Taylor, Schumaker, & Gottfredson, 1985). Still, there is overwhelming evidence that fear of crime and increased fear in general is instigated by a range of visible signs of disorder.

Covington and Taylor (1991) studied the ecological impacts of class and race on fear in order to test the concept of ecological vulnerability while assessing the impacts of surrounding incivilities within the neighborhood on fear. The results of their regression analysis concluded that out of all of the socio-demographic characteristics utilized in the statistical equation, "neighborhoods with more objectively observed physical and social incivilities had higher fear levels. Those seeing more local disarray than their neighbors, or interpreting local disarray as more troublesome, were more fearful" (Covington & Taylor, 1991, p. 241).

Perkins, Meeks and Taylor conducted a study in Baltimore, Maryland to test whether "physical incivilities erode resident's confidence in their neighborhood" (Perkins et al, 1992, p. 21). They concluded that "the presence of independently rated physical incivilities correlates consistently with greater perceptions of various social incivilities and criminal activity" (Perkins et al, 1992, p. 28-29). Their study validated the premise that "physical incivilities were independently linked to perceptions of social and crime-related problems" (Perkins et al, 1992, p. 21).

Roundtree and Land determined that perceived incivilities in a neighborhood and the neighborhood's burglary rate make independent contributions to fear of crime, particularly burglary type crimes, and to an individual's perceived crime risk (Roundtree & Land, 1996a; Roundtree & Land, 1996b). Similarly, Ross and Jang (2000) concluded in their survey of a probability sampling of Illinois residents, that individuals that perceive disorder in their neighborhoods have "significantly higher levels of both fear (fear of victimization) and mistrust than those who live in neighborhoods characterized by social control and order" (p. 6-7).

The literature also suggests that physical and social incivilities radiate the sense to residents that local officials do not care about the community and that some neighbors do not care about the visual aesthetics of their environment (Hunter, 1978). Additionally, feelings of "fear and mistrust of others represents profound forms of alienation that have progressed from a sense of disconnection to one of persecution" (Ross & Jang, 2000, p. 402; Mirowsky & Ross, 1989). From this perspective, incivilities may cause residents to shun away from engaging in socially controlling the environment, become more distrusting of their neighbors, and to stay inside their homes more. Likewise, due to weak social ties with neighbors often found in neighborhoods considered as disordered, many individuals subsequently feel a greater sense of powerlessness and alienation (Geis & Ross, 1998). Hunter (1978) suggested that "even with no personal encounters, these signs adequately communicate an image of "disorder" and specifically the loss of a civil society" (p. 7).

Incivilities and Crime

Incivilities have already been heavily cited as having profound psychological influences on individuals within a community. However, not only do incivilities infer to some that no one cares for the community but it also deduces to some that it is a ripe environment for additional incivilities to flourish and for crime to occur (Wilson and Kelling, 1982). Ralph Taylor emphasized the importance of the state of the environment in influencing the behaviors of criminals. From a rationalist perspective, criminals often "select sites that offer: the least effort to conduct their offense, the highest benefit, and least risks of getting caught" (Taylor, 2002, p. 416-417). Crimes are most likely to occur when potential offenders come into contact with "suitable crime targets where the chances of detection by others are thought to be low or the criminal, if detected, will be able to exit without being identified or apprehended" (Taylor & Harrell, 1996, p. 2). The physical features of blighted property can "play an important role in shaping those risks and benefits (Taylor, 2002, p. 417). Incivilities, particularly abandoned property and excessive vegetation, often provide such sanctuary from apprehension or detection. Specifically, physical incivilities can provide cover for criminals, offer criminals a location to conduct illegal activities, and offer sites to stash stolen or illegal items. The state of the physical environment, particularly an environment that is not well maintained, has poor lighting, is flamboyant with abandoned buildings, and where the perception of the community's informal social control is weak, can influence the decision of an offender to conduct his/her criminal activities.

Several researchers have suggested the link between incivilities to crime and criminal outcomes (Wilson and Kelling, 1982; Skogan, 1990). Wilson and Kelling (1982) suggested that incivilities, if not quickly abated will lead to increased crime within a community. Skogan

(1990) noted that the presence of neighborhood disorders, including incivilities, can lead to crime in and around blighted areas. Others have suggested the influence of specific incivilities, particularly abandoned property, to crime (Kraut, 1999; Gose, 1995; Skarbek, 1989; Spelman, 1993; Setterfield, 1997; Arsen, 1992). In his study of property tax assessment rates and residential abandonment, Arsen (1992) revealed that the "widespread abandonment of residential buildings is linked to the rise of urban homelessness and the explosion of drug houses and crime" (p. 361). Setterfield (1997) noted that abandoned buildings cause a variety of municipal challenges, such as crime and public health and safety hazards. Vacant property in economically distressed neighborhoods has been suggested to be hangouts for thieves, drug dealers, thrill seeking kids, and prostitutes (Spelman, 1993; Skarbek, 1989). They can breed crime - from rape and murder to drug dealing and bullet-spraying gunfights (Gose, 1995). Empirical support for the theoretical association between incivilities and crime is moderately prevalent within the literature.

Several studies have attempted to empirically assess the correlation of incivilities, particularly abandoned property, to crime (Spelman, 1993, Skogan, 1990, Newman, 1996). Research in this area typically offers an empirical, while some provide a simple, analytical insight into the connection between incivilities and crime. William Spelman (1993) found that property, drug, and violent crimes were more prevalent on blocks in poor residential neighborhoods with abandoned buildings than on blocks in the same residential neighborhood without abandoned buildings. Additionally, unsecured abandoned buildings had a higher rate of criminal activity than secured abandoned buildings (Spelman, 1993). Skogan (1990) assessed the relationship between disorder and crime by assessing robbery rates and neighborhood disorder. He found that "levels of crime were strongly related to levels of disorder in the areas for which robbery was measured" (Skogan, 1990, p. 73). Even while holding poverty, neighborhood instability, and race constant, there was still a relatively strong, positive relationship between disorder and crime. He concluded that although, neighborhood instability, poverty, and racial composition of neighborhoods are linked to crime, "a substantial portion of that linkage is through disorder" (Skogan, 1990, p. 75).

Other researchers have linked the physical layout and condition of the environment to crime and crime outcomes. Defensible Space theorist, Oscar Newman (1996) found a correlation between the physical design or layout of an environment and the occurrence of crime and other signs of social and physical incivility. His study of two separate socially and economically similar housing developments revealed that the specific design layout of a particular community or environment in which residents feel ownership, through either the control or maintenance of a particular location, likely results in a safer and cleaner environment. Conversely, specific design layouts of a community in which features of the environment are shared amongst a large group of people are likely to result in an environment riddled with incivilities and other disorders and ultimately lead to crimes and other incivilities.

There are other studies that, taken from a defensible space approach, suggest that altering the physical design/layout, often in areas with incivilities, reduce crime. Newman and Franck determined that buildings with fewer apartments per entryway, fewer stories, and better views of the outside, have residents with lower levels of fear and rates of victimization (Newman and Franck, 1980, 1982). According to Weisel, Gouvis, and Harrell (1994), Seattle's Adopt-a-Park program removed excessive vegetation and increased lighting in neighborhood parks in order to deter drug dealing, vandalism, and the presence of transients.

In an attempt to reduce the crime rate in the community, the Newport News, Virginia local police department partnered with citizens to clean the incivilities within the community, including litter, the removal of abandoned vehicles, and improving the condition of the neighborhood's streets. However, none of these actions had an impact on the neighborhood burglary rate until the "housing management company boarded up the 100 - odd apartments that were vacant and irreparable. The burglary rate dropped by 35 percent as a result of the management company's abatement strategy" (Spelman, 1993, p. 483). The local police department in Newport News noted that the boarding of abandoned property reduced the "opportunities for crime" in that neighborhood (Spelman, 1993, p. 483). The installation of another physical incivility (controlling mechanism) to thwart criminal activity within a physical incivility resulted in reduced criminal activities. Such a study suggested that specific incivilities were instrumental in influencing crime in the immediate area.

The relationship between incivilities and crime has primarily been assessed from a cross sectional perspective. Longitudinal assessments of the relationship between blight and crime are not, however, as prevalent within the literature. The premise that the prolonged existence of incivilities within the community will lead to increased crime has not been validated by many authors. Yet, much of the literature suggests a correlation between incivilities and its influence on crime or vice versa. This tends to be viewed from two perspectives 1) incivilities not only cause higher fear levels but it may also infer and embolden individuals to engage in criminal acts due to the environment appearing to be uncontrolled or 2) incivilities offer opportunities for crime by providing criminals cover from detection and apprehension.

Economic Loss

There is a widespread belief that incivilities have an adverse influence on property values (Newman, 1996; Skogan, 1990; Svetlik, 2007; Accordino and Johnson, 2000, Griswold, 2006, Gose, 1995, NVPC, 2005, Greenberg, Popper, Schneider, West, 1993). The literature on the negative correlation of incivilities to property values tends to suggest that properties located in blighted areas typically have lower property values than properties that are not located in blighted areas (Gose, 1995; NVPC, 2005; Skogan, 1990). Often, specific incivilities are identified as having a negative influence on property values within such communities. To illustrate, many authors have linked the physical incivility vacant property to reduced property values. For example, Accordino and Johnson (2000) claimed that vacant and abandoned buildings, "impose a significant externality (cost) on neighboring property owners by lowering the market value of their properties, which reduces their equity and thus, their wealth and makes resale of their property very difficult" (p. 303). Newman (1996) and Svetlik (2007) noted that incivilities lead to the decline in property values of residential and commercial structures as well as neighboring structures. Greenberg et al. (1990) suggested that blighted structures, particularly TOADs (Temporarily Obsolete and Derelict Sites) have economic consequences in that such structures are "often located on valuable inner-city land and constitute a waste of scarce resources. Such physical incivilities are typically a property tax loss to the community in which they are located. They frequently deter new development as well as undermine a community, lower the property values, and encourage further abandonment" (Greenberg et al. 1990, p. 436). The National Vacant Properties Campaign (NVPC) described the seriousness of the economic consequences of incivilities, particularly abandoned housing, by suggesting that "vacant properties reduce city tax revenues in three ways: they are often delinquent, their low values mean they generate little in (real estate) taxes, and they depress property values in an entire neighborhood. According to Frank Alexander, Interim Dean at Emory University Law School and expert in housing issues, the

> failures of cities to collect even two to four percent of property taxes because of delinquencies and abandonment translates to $3 billion to $6 billion in lost revenues to local governments and school districts annually. Property taxes remain the single largest source of tax revenue under local control, so this loss of income is substantial (NVPC, 2005, p. 9).

This quote suggests the potential influence that incivilities, particularly vacant property, can have on municipal revenues and the funding of public services.

From an ecological perspective, incivilities have been suggested to adversely influence property values of entire neighborhoods and communities. Skogan (1990) and Accordino and Johnson (2000) suggested that incivilities undermine the stability of the housing market and results in the increased likelihood of market failure. "Criminal activity resulting from abandon property undermines the neighborhood's economic value and raises the costs of homeowners' and business' insurance" or possibly result in insurance cancellation (Accordino & Johnson, 2000, p. 303; NVPC, 2005). From a housing market perspective, Skogan (1990) suggested that home prices in blighted neighborhoods would decrease compared to homes in other non blighted neighborhoods.

The NVPC (2005) indicated that housing abandonment can result in a lower quality of life, which can translate into economic hardships for homeowners within the community. Decreased property values can "devastate a family's financial security. When neighborhood population declines and properties become vacant (over time), a smaller number of residents bear a greater proportion of the locality's tax burden. This is particularly relevant in lower-income neighborhoods and among residents without the resources or the desire to leave their neighborhood" (NVPC, 2005, p. 11). The City of Pawtucket, Rhode Island indicated that the presence of abandoned property "owned by absentee landlords devalued property and adversely impacted the local business economy, making it increasingly difficult to recruit new businesses to the areas surrounded by abandoned and vacant homes" (City of Pawtucket, 2000, ¶6). All of the aforementioned consequences in addition to the reluctance of the private sector to intervene and engage in market activity in areas that are perceived as being in a state of disorder can result in dire fiscal implications for local governments, particularly in the form of reduced tax revenues for localities (Accordino & Johnson, 2000). This suggests that incivilities can have broad, geographic influences on property values.

The economic impacts of incivilities can be one of the most profound and ominous to localities. Yet, empirical studies linking the cross sectional and the longitudinal impacts of blight to property devaluation are extremely rare. There are numerous anecdotal reports and municipal program/policy evaluations that attempt to link blight with neighborhood instability as well as to reduced property values in environments with incivilities. For example, a longitudinal study conducted in Kansas City, Missouri noted that properties located on blocks with blighted buildings showed an average increase of $1,600 over the past 10 years. Just a few blocks to the south and west, property valuations increased an average of nearly $20,000 over the same time period (Gose, 1995). From a cross sectional perspective, the NVPC indicated that Philadelphia homes that were within "150 feet of a vacant property experienced a net loss of value of approximately $7,627. Those within 150-300 feet experienced a loss in value of approximately $6,819 and those within 300 to 450 feet of such a property depreciated by $3,542" (NVPC, 2005,

p. 9). The researchers concluded that "houses on blocks with abandonment sold for $6,715 less than houses on blocks with no abandonment" (NVPC, 2005, p. 9). These reports, like others of its nature, are typically not empirically driven. The methods of analysis are often never mentioned and the validity of the results is questionable.

Setterfield (1997) indicated that the common belief that incivilities in general adversely impact property values is testament to the numerous studies and research that "have been devoted to the economics of rehabilitating buildings so as to increase the value of rents and property selling prices" (Setterfield, 1997, ¶17; Nash & Colean, 1959). The perspective of revitalizing communities in order to increase market values of properties in an area that is perceived as depressed or in a state of disorder is not a new approach nor is it a new municipal strategy. This perspective has been expanded to also include improving living conditions of residents, decreasing poverty, and reducing crime. All of these aspects, fit within the family of overall community neighborhood revitalization, particularly the sustainability of viable and healthy neighborhoods.

Local governments all across the country have delved into the issue of neighborhood and community revitalization, particularly in areas that are viewed by the public and government as blighted. Localities have organized community groups, tasked social scientists, and implemented numerous policies and programs that focused on improving the condition of their urban neighborhoods. One such example is the Neighborhood in Blooms (NIB) program in Richmond, Virginia and the several program evaluations of that project. Although the NIB program has several programmatic outcomes, one of the thrusts of the program was to improve the overall viability and health of specific neighborhoods by utilizing and targeting public and private investments into the abatement of explicit problem properties. One of several measures of a neighborhood's health in the NIB target areas was the change in or increase in property values of homes compared to property values prior to program implementation. By longitudinally evaluating metrics of neighborhood health, such as the rise or decline in: property values and sales prices of properties, reported crime, poverty rates, etc. one can determine if the targeted neighborhood/area improved as a result of the investment. This example illustrates the focus of the City to not only improve living conditions of City residents and to revitalize a historic neighborhood but to also increase market values of homes and rents in an area impacted by incivilities, disinvestment, and other social ills, which were touted as a leading instigator of depressed property values in those areas.

Although there are not many empirical cross sectional and longitudinal studies linking incivilities to property devaluation, there are, however, longitudinal studies that have assessed the impacts of anti-blight policies on property values. Galster, Tatian, and Accordino (2006) collected data across multiple years to empirically assess the economic impacts of an investment program through property value increases over time. They determined that certain levels of investment in targeted areas not only increased property values (as compared to property values prior to program implementation) but from their qualitative analysis found that people also felt that the program increased property values and reduced the amount of physical and social disorders in some areas. Their study suggests that such neighborhoods targeted for investment, often had, prior to program implementation, high crime rates, high levels of abandoned properties and other physical and social incivilities, amid a host of other social, physical, and economic problems, which likely played a major role in depressing property values.

Galster, Temkin, Walker, and Sawyer (2004) assessed the impacts of site specific community development investment programs in three municipalities by empirically comparing single-family home sales prices, before and after program implementation. The authors noted that prior to program implementation and likely the reason for the targeting of particular sites within identified neighborhoods was that these areas contained excessive levels of physical and social incivilities. The identified site in Boston, "served as a haven for drug dealing and violent crime and contained a large concentration of vacant lots that attracted undesirable activity" (Galster et al. 2004, p. 526). Another site in Denver witnessed massive loss in the population in the latter half of the 20th century. The resulting population migration from this community "left the neighborhood marred by abandoned buildings; vacant land, active open-air drug markets; and a massive housing project" (Galster et al. 2004, p. 523). The final site in Portland contained vacant buildings, which attracted drug dealers and "further discouraged the active patronage of neighborhood businesses" (Galster et al. 2004, p. 520). According to the authors, all of these sites contained lower property values than the city average and/or were at or below the average for all low income housing areas within that community prior to program intervention. After program intervention, all but one of the sites witnessed increased property values.

Although these types of studies were more of an assessment of community redevelopment policies on housing values, which is considered a significant indicator of neighborhood quality of life (Grieson & White 1989; Palmquist 1992; Polinsky & Shavell 1976), it does suggest the ecological problems associated with incivilities in these communities, particularly from an economic perspective. Often, areas or neighborhoods targeted for redevelopment contain multiple physical and social incivilities. As the studies suggest, property values in these areas were lower than other areas of the locality. Although not conclusive, many community redevelopment initiatives claimed that by eliminating or reducing the amount of physical and social incivilities in these areas, property values in general, increased.

Ultimately, the potential economic impacts of incivilities can pose disastrous consequences for governments. The reduction in a locality's value of real property potentially reduces the amount of real estate taxes local governments collect, may force public administrators to raise tax rates to offset the decline in property values, or may cause governments to cut public services in order to fund services that can be supported by the existing taxes generated from the reduced value of real property. Thus, the fiscal implications of incivilities on local governments can have tremendous administrative and political consequences. However, the relationship between incivilities and the variation in property values has yet to be supported empirically. The literature on this topic abounds with examples that physical incivilities, such as vacant property, are linked to property devaluation. Yet, many of these analyses do not empirically prove that assertion nor does it test for other variables that may also adversely influence property values. An empirical assessment of incivilities and its impacts on property values would anchor the existing body of literature on incivilities and its impacts on communities. Likewise, the empirical determination on the specific type of incivility (physical or social) that has the strongest adverse influence on property values would serve as a valuable tool to law enforcement, community development practitioners, and to those studying neighborhood and community development revitalization.

Impact Over Time

Wilson and Kelling (1982) as well as Skogan (1990) suggest that incivilities can have long term impacts on communities. Specifically, these longitudinal implications are increased crime and lower property values, both of which are indicative of overall neighborhood decline. Yet, the literature is almost devoid of empirical, longitudinal assessments of influence of incivilities over time. There is however, a study that was conducted that looked at the longitudinal impacts of incivilities over time to overall neighborhood outcomes. Ralph Taylor (1999b) utilized a longitudinal methodological approach to assess the impacts of social and physical incivilities over time. His study attempted to determine whether "incivilities contribute independently to changing fear, neighborhood crime, or neighborhood decline" in Baltimore neighborhoods over a thirteen year time period (Taylor, 1999b, p. 2).

Taylor conducted several levels of analysis on the sampled neighborhoods. The first level of analysis indicated that graffiti had increased, the number of vacant/boarded up property increased, and that a majority of the increased decline occurred in inner city neighborhoods between 1981 and 1994. Of critical importance were the findings resulting from the comparison of the qualitative surveys from 1981 and 1994. Taylor noted that there were no "significant increases in reports of physical or social incivilities. Compared with the 1982 interviewees, residents in 1994 did not see their neighborhood as markedly more problem ridden" (Taylor, 1999b, p. 3). Even more compelling was that residents interviewed in 1994 were not any more fearful than those interviewed in 1982. "Residents of the 1990s were no more likely to see widely recognized dangerous locations nearby than were residents from the same neighborhoods in the 1980s" (Taylor, 1999b, p. 3).

Taylor also attempted to determine if incivilities predict future neighborhood crime changes. By focusing on whether crime had increased or decreased between the early 1980's and the 1990's in relationship to other neighborhoods in Baltimore, Taylor looked at "the impacts of both assessed conditions at the beginning of the period and residents' perceptions of those conditions. He ensured that the impacts of incivilities over time were independent by controlling for neighborhood structure" (Taylor, 1999b, p. 3). Taylor found that overall none of the incivility indicators were significant. Specifically, the assessed incivilities did not have a significant influence in determining later neighborhood crime changes. There were, however, four "significant impacts of partialled incivilities. (Taylor, 1999b, p. 5).

> "When controlling for community makeup in neighborhoods where residents perceived more social problems in 1982, there were increases in rape relative to other neighborhoods that were more likely in the following decade. In neighborhoods where residents perceived more physical problems in 1982, relative increases in aggravated assault, burglary, and motor vehicle theft were more likely over the following decade. Robbery, however, was not shaped by earlier perceived social or physical incivilities" (Taylor, 1999b, p. 5).

The study determined that some early indicators of (perceived) incivilities had an independent impact on shifts in crime. However, there was no consistent pattern "across crimes, across type of indicator, or across type of incivility" (Taylor, 1999b, p. 5).

Taylor also looked at whether incivilities impact future neighborhood decline. The study examined several indicators of neighborhood decline including: changes in housing values, occupancy rates, percentage of single unit structures, education levels, poverty rates, and vacancy rates. The researcher categorized the neighborhood decline indicators into three categories. They were: ***stability***, which is indicative of changes in homeownership and single unit structures, ***disadvantage***, which is indicative of changes in vacancy and poverty rates, and ***status***, which is indicative of changes in high school graduates and home values. By utilizing the 1981 assessed indictors and controlling for neighborhood makeup, Taylor was able to determine the impact of incivilities on future changes in neighborhood decline.

Taylor noted that the determination of the link between "earlier incivilities and later neighborhood decline appeared to be dependent on the type of incivility indicator used and the dimension of decline that was examined" (Taylor, 1999b, p. 6). Taylor found that "disadvantage increased more in neighborhoods where incivilities were initially higher. However, relying on residents' perceptions of incivilities in 1982, there was no relationship for this aspect of decline or the other two change pathways, after controlling for 1980 neighborhood makeup" (Taylor, 1999b, p. 5). Rather, Taylor determined that particular neighborhood characteristics are likely to be if not more related to neighborhood decline and crime (Taylor, 1999b). "Assault and rape rates were more likely to increase in neighborhoods with lower house values, more renters, and more blacks in 1980. Likewise, initial racial composition and status connected similarly to later homicide increases" (Taylor, 1999b, p. 6). Also, Taylor noted that particular property crimes were impacted by specific neighborhood features. "Burglary rates were less likely to increase in more stable and higher status neighborhoods. However, higher status neighborhoods experienced increases in grand theft auto" (Taylor, 1999b, p. 6). Taylor also found that "increased status was more likely in neighborhoods that started with a higher status and less likely in neighborhoods with a higher proportion of blacks at the beginning of the period. Increased disadvantage was less likely in neighborhoods that were more stable at the beginning of the period" (Taylor, 1999b, p. 6).

Taylor posed the thought that neighborhood demographics could have more of an impact in predicting future neighborhood decline and crime rates than the presence of social and physical incivilities. "The dynamics that explain these connections are extremely complex. Neighborhood "basics" were at least as important as, and perhaps more important than, incivilities and changes in incivilities" (Taylor, 1999b, p. 6). This appears to coincide with one of the study's conclusion that adverse changes in home values could not be statistically validated to the existence of earlier incivilities.

Finally, Taylor attempted to determine if the presence of physical and social incivilities impacted individuals' reactions to crime and neighborhood commitment. Taylor found that the presence of early incivilities had a large and significant impact on determining residents' intentions of leaving the neighborhood. "The only other significant impact of earlier incivilities was on night time fear on the block, which increased more in neighborhoods where graffiti was more prevalent in 1981" (Taylor, 1999b, p. 7). These were the only two outcomes in which the presence of early neighborhood incivilities had a significant impact. Just as the prior research suggests, from a cross sectional standpoint, there is a strong relationship between perceived incivilities and fear levels. Taylor found that "those who perceived more social or physical problems in their neighborhoods than their neighbors did in 1994 were more fearful, less committed to staying within the community, and more likely to see nearby danger" (Taylor, 1999b, p. 7).

Taylor's study is unique in its methodological approach in that it seeks to not specifically answer a research question at one point in time, but rather to piece data over an extended period to determine the broader longitudinal outcomes. Taylor's triangulation approach of collecting data helps increase the internal validity of his study. Likewise, Taylor's use of random selection helps increase the study's generalizablility. Also, Taylor's longitudinal approach is more consistent with the premise that incivilities eventually leads to neighborhood decline. However, Taylor's study did not generate results that were indicative of this premise. Taylor's suggestion that neighborhood conditions/demographics may play an instrumental role in predicting neighborhood decline, including property devaluation, suggests that incivilities may not have as much of a powerful influence in predicting neighborhood decline, by itself. What Taylor's study has indicated is that neighborhood features/demographics are just as important, perhaps even more so, in shaping the future of communities. What is apparent is that although the longitudinal assessment of predicting the impacts of incivilities on neighborhood decline may be dependent on a range of other factors, incivilities do, however, play a role, at least in the interim, in predicting certain relationships.

The literature offers compelling insight on incivilities, its many features, as well as empirical and anecdotal evidence of its influences on individuals and communities. Out of all of the suggested influences of incivilities, the impact on individuals' levels of fear and crime are the most discussed and empirically validated by the literature. The influences of incivilities on property values and on ecological outcomes are not as apparent and not often empirically assessed in the literature. Additionally, research that seeks to longitudinally assess the impacts of incivilities on resident fear, crime, reductions in property values, all of which are indicators of neighborhood decline is not prevalent in the literature. Overall, the impacts of social and physical incivilities over time did not generate specific and conclusive evidence that incivilities exclusively leads to decreased property values in an entire neighborhood.

Limitations of Prior Research

There are several limitations within the literature that include: 1) exclusion of additional neighborhood factors from the analysis that may also have a role in influencing outcomes, 2) the relative lack of empirical assessments on the economic influences of incivilities and the over abundance of rhetorical and anecdotal reports on the economic influences of incivilities to property values, 3) the minimal use of a theoretical perspective that guides the research, and 4) a lack of a longitudinal assessments of the influence of incivilities on communities. The studies conducted on the impacts of incivilities on fear of crime and other psychological outcomes, to date, are the most powerful validations of the influence of incivilities on communities. These studies routinely find extremely strong correlations between perceived incivilities and higher levels of fear among individuals. Even after control for neighborhood crime rates and neighborhood structure, these findings remain.

Existing literature on the economic and longitudinal impacts of incivilities are limited in that it does not provide sufficient empirical evidence on relationships to outcomes. Rather, there is a dearth of anecdotal reports claiming the influences of incivilities on outcomes, particularly to the decline in property values and to broader, ecological outcomes. A lack of empirical assessments on the correlation of incivilities to ecological outcomes and to property values severely limits the legitimacy of the existing body of literature on the subject matter.

Overview of Relevant Theoretical Framework

There are several theoretical explanations on incivilities and its influences on communities. The primary theoretical framework of this research pertains to a grouping or set of sub theories or perspectives, all considered a part of one larger framework. The objective of this section is to provide an overview of this perspective and is several sub variants as well as explain their overall theoretical causal influences to individual as well as broader ecological outcomes. Limitations of this perspective and its sub variants are provided.

Definitional Concepts

For purposes of this research, the term incivilities are synonymous with or will be used to operationalize the concept of blight. This is a critical assumption as incivilities are the foci of the Incivilities Thesis, the theoretical perspective of this research. Prior to elaborating on the evolution and development of the Incivilities Thesis and its theoretical influences, it is expedient to first discuss the concept of incivilities and the distinct delineation between structural, tangible features of incivilities versus socio-behavioral incivilities.

Incivilities

Many researchers have looked at the concept of incivilities over the past several decades (e.g., Hunter, 1978; LaGrange et al, 1992; Skogan, 1990; Ciappi & Panseri, 2000; Laraia et al., 2006; Taylor, 1999b; Ross & Mirowsky, 1999; Taylor, 2005, Herbert, 1993). Early and modern researchers primarily viewed the concept of incivilities from a concept of disorder and the breakdown of informal social control. As an example, Hunter (1978) likened incivilities to "an image of disorder and the loss of a civil society" (p. 5). Lewis and Maxfield (1980) noted that incivilities are conditions that indicate that social control in a community is weak. LaGrange et al (1992) noted that incivilities are "low level breaches of community standards that signal an erosion of conventionally accepted norms and values" (p. 312). These early representations of incivilities associate the concept to general conditions of the broader area that signal that the order of the community has eroded and/or that community norms have been violated.

As time progressed, researchers then began to narrowly define and associate incivilities with distinct physical and social elements found within communities. For example, Herbert (1993) suggested that "incivilities may take forms such as litter, graffiti, and signs of vandalism and can serve as indicators of "disorder" or a declining quality of life within urban neighborhoods" (p. 45) According to LaGrange et al (1992), incivilities are characterized by disorderly physical surroundings and disruptive social behaviors" (p. 312). Accordingly, these incivilities are visual, tangible and non-tangible indicators of blight or "signs of disorder" (Skogan, 1990). "Incivilities can be active or deliberate, such as vandalism, graffiti, etc. or passive and involuntary, like the neglected buildings or street rubbish not collected" (Ciappi & Panseri, 2000, p. 4). As the delineation of incivilities became more apparent, research then turned towards separating the concept of incivilities into two distinct groupings.

Physical Incivilities

Physical incivilities are structural features of disorder and decay. They are blight related features that depict the visual appearance of the community that are indicative of tangible features of deterioration and are visible signs of disorder. Hunter (1978) noted that the physical environment of cities present individuals with numerous signs that may be considered physical "residues" of the actions of others. The "erosions" and "accretions" within the physical environment, (include) the burned-out buildings or the litter and garbage in the streets" (p. 5). According to Laraia et al. (2006), signs of physical incivilities constitute "a combination of physical disorder and poor housing conditions. This includes the condition of housing, yards, commercial and public spaces, vacant or burned property, litter and graffiti" (p. 5). Perkins et al (1992) suggested that physical incivilities pertain to "environmental stimuli such as litter, vandalism, vacant or dilapidated housing, abandoned cars and unkempt lots" (21). Taylor (1999b) noted that physical incivilities include: "abandoned buildings, graffiti, litter, vacant and trash-filled lots, unkempt yards and housing exteriors, abandoned cars, and - since the mid-1980s - the conversion of houses and apartments to drug-selling locations" (p. 1). These tangible indicators of disorder are "long lasting aspects of the living environment to include: abandoned or neglected buildings, graffiti, damaged telephone boxes, broken street lamps, dirty roads, etc" (Ciappi & Panseri, 2000, p. 4).

Areas that show massive signs of physical incivilities are often viewed as being in a state of disorder. According to Skogan, vacant/boarded up property, graffiti covered buildings, trash filled lots, and broken windows are all signs or indicators of a "state of disorder" (Skogan, 1990). "Places with high levels of physical disorder are noisy, dirty, and run down; many buildings are in disrepair or abandoned; and vandalism and graffiti are common" in areas with high levels of incivilities (Ross & Mirowsky, 1999, p. 413). As such, environments that contain high levels of physical incivilities contribute to the perception of the area being in a state of disorder.

Although, the physical aspects of blight can be the most visual, there are other aspects of incivilities that, although not necessarily physical or structural in nature, may still play a role in individuals' perception of safety and their fears as well as a community's instability. Social incivilities, like physical incivilities, are also contributors to the breakdown of informal social control and aid in the overall decline of communities.

Social Incivilities

Social incivilities are less concrete, non-tangible signs of deterioration and disorder. They are typically more indicative of the behaviors of individuals. Social incivilities can include: "public drunkenness or drinking, rowdy or unsupervised teen groups (some stipulating that the teens are loud as well as unruly), sexual harassment on the street, arguing or fighting among neighbors, open prostitution, and-since the mid 1980s-public drug sales, drug use, and the presence of crack addicts, "hey honey" hassles, public urination, panhandling, etc." (Taylor, 2005, p. 31). Perkins et al (1992) noted that social incivilities include problems as loitering youths, prostitutes or homeless people, rowdy behavior, drug dealing and public drunkenness" (p. 21). According to Ciappi and Panseri (2000), social incivilities are ultimately "connected to events or specific activities such as the behaviors of different categories of people: pushers and customers, prostitutes, beggars, etc." on the street (p. 4).

Social incivilities, like physical incivilities, are indicators of perceived neighborhood disorder and deterioration. According to Taylor (1999b), social incivilities or "street behaviors" are social indicators that also depict the impression of an area being in a state of disorder. Ross & Mirowsky (1999) noted that social incivilities are "signs indicating a lack of social control that involves people" (p. 413). Although social incivilities are not a tangible feature of blight, the literature suggests that they also play a role in the deterioration of informal social control and are factors in influencing individual fear levels and withdrawal from a community.

Both physical and social incivilities are visible indicators of disorder and aid in the breakdown of social control in the area. However, not all incivility indicators are criminal. "Many of the criminal activities that are indicative of incivilities are minor and without specific victims-crimes such as graffiti and public drinking" (Ross & Jang, 2000, p. 403), (Skogan, 1986). These incivilities may violate social norms without violating the law (Bursik & Grasmick, 1993). Yet, the literature suggests that the violation of social norms and socially acceptable behavior in a particular environment, such as loitering, public drinking, pan handling, etc. contributes to the breakdown of social control in a community. Although these specific social incivilities may not be a violation of the law, it does however, have the potential to erode conventionally acceptable values of a community as well as increase levels of fear among residents. This erosion of community values, as a result of the existence and pervasiveness of incivilities, emanates signals that the community's ability to control the environment is weak or has dissipated. The weakening of a community's informal social control is another consequence of the presence of incivilities that ultimately plays a critical role in the decline of communities.

The Incivilities Thesis

One of the most relevant theories regarding the subject of blight and its impact on communities is the Incivilities Thesis. The Incivilities Thesis "refers to a family of closely-related heuristics about the roles played by misdemeanors, uncivil and rowdy behaviors, some delinquent acts, and lack of property and facilities maintenance in urban communities" (Taylor, 2005, p. 30; Taylor, 1999a; Taylor, 2001). The thesis suggests that physical deterioration and disorderly, social conduct contribute independently to fear, crime, and neighborhood decline (Taylor, 2005), (Wilson & Kelling, 1982), (Skogan 1980).

Within the past several decades the Incivilities Thesis has evolved from a focus on simple incivilities or signs of disorder at the individual level to broader ecological outcomes such as changes in neighborhood stability and overall neighborhood decline. The literature suggests that the idea or concept of incivility was first viewed primarily from a physical perspective in the early stages of the thesis' development (Hunter, 1978). This perspective included "both physical features of a neighborhood and features of street life" (Taylor, 2005, p. 31). Physical features of the neighborhood included the visible condition of homes, yards, streets, and alleys. Street life features include petty crimes such as graffiti, vandalism, and other minor property crimes. These petty crimes left visible marks on the physical amenities within a community. Later versions of the Thesis then began to address the potential impacts of social disorders and how these indicators of disorder play an influential role in fear of crime. Soon thereafter, the thesis began to focus on the influence of incivilities or indicators of disorder to larger, longitudinal ecological problems for an entire community including increased crime and lower property values.

Origins and Development

The origins of the Incivilities Thesis can be traced back to a period in America when the country was engulfed in significant civil unrest and urban civil disorder. During this period of the 1960s, many people engaged in political protest and other forms of civil disobedience in response and opposition to the rife dissatisfaction of the Vietnam War and the concurrent civil rights movement or Southern Freedom Movement, which was the political and social force aimed at eliminating racial discrimination against African Americans and the restoring of voting rights in the South. Likewise, a general frustration and despise of the prevalent racial inequity found in nearly every fabric of American social, economic, and political life, including: widespread police brutality, racial disparities in housing, poverty, education, and massive unemployment amplified the state of civil unrest in the country.

Given the state of the social landscape in the country at the time, many people expressed their dissatisfaction through various forms of political civil disobedience, all of which were almost always and purposefully deployed in urban areas. One of the most violent and symbolic forms of civil disobedience employed during this time period were riots. The most notable riots, which were often racially instigated, were the riots of Detroit, Michigan, Watts, California, and Newark, New Jersey.

During the 1960s, race riots and direct acts of violence on the people were unbridled in metropolitan areas. Although, the angst and anger of the citizenry was aimed at the government, often innocent persons and property owners were the direct victims of the violence, crime, and property destruction from the riots. The resulting violence against people and property, which were broadcasted in the local media across the country and the world, created crisis situations between activists and the government. The federal government often relinquished the responsibility to address and absolve municipal riots to local and state law enforcement agencies. Activists and local or state law enforcement entities clashed, often in a visually barbaric and occasionally deadly manner. It was only during times in which local and state law enforcement organizations could not quickly quell the civil unrest that the federal government interceded. Such violence in America's cities resulted in hundreds of deaths and millions of dollars in property damages.

In the aftermath of this tumultuous era grew a national concern for "citizen safety and law enforcement in major cities. These concerns, which were reflected in the Kerner

Commission report of 1968, gave rise to the Crime Control Act and the Law Enforcement Assistance Administration, a precursor of the current National Institute of Justice" (Taylor, 2005, p. 30). This new and more focused awareness on urban areas resulting from the riots and acts of violence on people resulted in the development of numerous recommendations aimed at understanding the reasoning behind and solutions to prevent such instances from reoccurring and plaguing cities again. One of the recommendations of the Kerner Commission was to conduct a crime/victimization assessment on the national population in order to gauge frequency of victimization as well as the attributes and attitudes towards victimization, particularly in urban areas (Taylor, 2005).

Ironically, the analysis of the national surveys indicated that the number of those most fearful of crime surpassed the number of crime victims (Cook & Skogan, 1984; DuBow, McCabe, & Kaplan, 1979). Specifically, the survey results indicated that "those most fearful of crime lived in urban areas and that the elderly, (who were the most fearful) were the least victimized and that young males, who were the least fearful, were more likely to be victimized" (Taylor, 2005, p. 31). The survey results raised a fundamental new set of issues and questions into: the causes of and extent of fear (levels of fear) and understanding why people were so fearful in urban areas, particularly if they were not victimized. Taylor (1999a) suggested that this unique attention to urban areas led to the development of new perspectives that attempted to fully "explain the discrepancy" between the results of the analysis and conventional thinking on the causes of high levels of fear at the time (p. 66). The Incivilities Thesis "emerged in the wake of the first analyses of the surveys" (Taylor, 1999a, p. 66).

The first researcher to introduce and answer the question behind the victimization surveys regarding the causes of fear of crime in urban areas was James Q. Wilson. Wilson (1975) believed that individuals were more fearful of disorder rather than crime alone. Wilson suggested that "it was the signs of disorder that were much more ubiquitous than crime itself, which caused (such) high fear levels" (Taylor, 2005, p. 31; Wilson, 1975). Wilson's premise on the role played by disorderly environmental conditions to fear gave root to the emergence and development of the Incivilities Thesis.

Wilson and Garofalo & Laub's Variant - Incivilities and Individual Outcomes

Wilson (1975) and Garofalo and Laub (1978) were the first to introduce the linkages of incivilities to individual fear, the first variant of the thesis. Wilson (1975) believed that individuals were more afraid of the concept of disorder rather than crime by itself. More specifically, he suggested that it was the "daily hassles that people were confronted with on the street - street people, panhandlers, rowdy youths, or "hey honey" hassles - and the deteriorated conditions that surround them – trash strewn alleys and vacant lots, graffiti, and deteriorated or abandoned housing - that inspired concern" (Taylor, 1999a, p. 66; Wilson, 1975). According to Wilson, it was the existence of physical and social incivilities, signs of disorder, and not necessarily crime, that lead to high fear levels for residents.

Similar to Wilson, Garofalo and Laub (1978) noted that the fear of crime is more indicative of an uncomfortableness with the urbanity of the environment rather than a specific concern about a crime. Specifically, urban residents tend to find disorderly social and physical conditions more troublesome than a concern for a specific crime. They suggested that:

> "there is no doubt that the occurrence of a particularly heinous murder or sex crime will heighten fears in a community at least temporarily. However, such crimes are relatively rare and do not account for the ongoing anxiety. It appears that the fear of direct predatory criminal attack is intimately connected with concern about a whole range of

"misbehaviors". That is, the same factor seems to be at least partially responsible for, as an example, the elderly woman's concern about having her purse snatched and her concern about having to walk past a group of noisy adolescents drinking beer on a street corner" (Garofalo & Laub, 1978, p. 248)

Garofalo & Laub's inferences on the influence of the state of the physical and social environment "lead to the dictum that "fear of crime" was more than "fear" of "crime". The key idea is that urban conditions, not just crime, are troublesome and inspire residents' concern for safety" (Taylor, 1999a, p. 66), (Garofalo & Laub, 1978).

Limitations of Wilson's and Garofalo and Laub's Incivilities Thesis

Wilson and Garofalo and Laub focused exclusively on the outcome, the fear of crime, from an individualistic perspective. They do not discuss the strength of the linkages between the presence of incivilities/disorders and subsequent fear levels nor on actual crime or victimization. Taylor (1999a) indicated that "there is no explicit specification of the relationship between the conditions inspiring concern and local crime, except to note that the conditions are far more prevalent than crime incidents" (p. 66-67). There is also very little discussion on why these conditions cause such great concern, more so than crime, for urban residents, particularly if residents were not the victims of a specific crime. Similarly, there is limited dialogue on how residents conceptualize the dynamics between incivilities and their fears.

Answers to these missing elements would aid in explaining how residents internalize the condition of their living environment and how this conceptualization influences their perception of that environment. Empirical studies that seek to address these missing elements would strengthen Wilson and Garofalo and Lab's variant of the Incivilities Thesis. The next variation and subsequent evolution of the thesis attempted to address these shortcomings.

Hunter's Variant – Incivilities, Fear, and Crime

Al Hunter was one of the first authors to formalize the development of the Incivilities Thesis. Hunter (1978), still focused on the outcome of fear of crime, goes further than Wilson and Garofalo and Laub. When faced with the question on what causes residents to be fearful, despite the likelihood of being victimized, rather than focusing on the psychological determinants of individuals that cause one to be fearful, Hunter instead focused on how people interpret incivilities. Hunter (1978), claimed there are "situated factors or external phenomena in an individual's experimental environment that produce variations in fear" levels (p. 2) From this perspective, Hunter, in his variant of the Incivilities Thesis, asserts and specifies three additional premises to the thesis, as initially developed by Wilson and Garofalo and Laub.

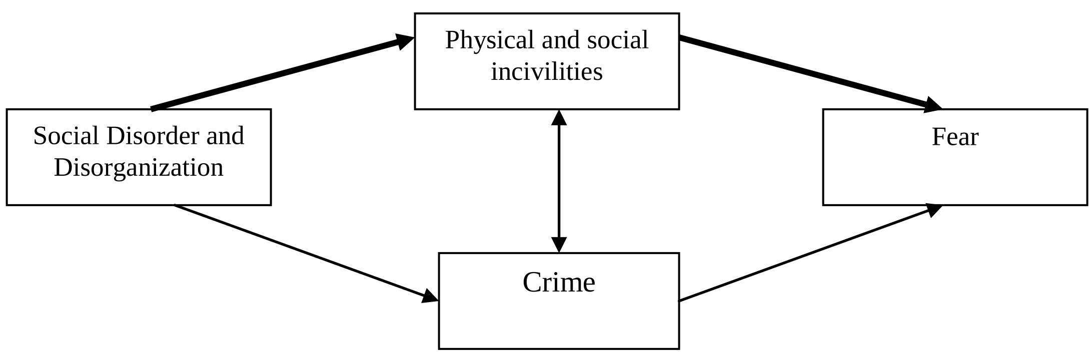
Hunter advances the development of the Incivilities Thesis by first assessing how residents perceive of and come to understand incivilities in general. Specifically, residents view social and physical indicators of disorder as two factors that are both internal and external to the community. Residents perceive and interpret that signs of disorder are the result of the community's inability to maintain order (their immediate surroundings) and that external entities, particularly government/law enforcement officials are unable or reluctant to maintain or enforce that order (Hunter, 1978), (Taylor, 1999a). Hunter's premise is "important in that it suggests that the causal attributions residents make - their conclusions on why incivilities occur and persist - shape their fear. It is not just the presence of incivilities that is threatening to them, it is also the meaning (that resident's consciously develop and articulate) attached to them" (Taylor, 1999a, p. 67). Consequently, the belief that internal and external actors are unable to address the issues within the community influences how one feels about the community and ultimately shapes their fears of the issues afflicting that community.

Second, Hunter suggests that there is a connection between crime and signs of disorder/incivility. Accordingly, both crime and signs of incivilities cause one another. Yet, there is no order in which one follows, dictates, or precedes the other. "This view suggests that extensive incivilities will be found in high crime neighborhoods and high crime will be found in neighborhoods with extensive deterioration" (Taylor, 1999a, p. 67). This linkage was a critical turning point in the evolution of the Incivilities Thesis in that this was the first time in which incivilities in an area were theoretically linked to crime and vice versa.

Finally, Hunter linked crime and incivilities to a single outlying exogenous cause: neighborhood disorder (Hunter, 1978), (Taylor, 1999a). Essentially neighborhood disorder is a key predictor of the presence of future incivilities and crime. This contextual approach to incivilities is essentially based on three premises: 1) areas or communities with higher crime rates are likely to have more incivilities than other areas, 2) high crime and high levels of incivilities in communities share similar structural foundations, such as instability, low status, and a predominant minority population, and 3) crime and incivilities are essentially correlated to on another (Taylor, 2001).

Hunter's variant of the Incivilities Thesis provides a deeper understanding of the relationship between incivilities and fear of crime, more so than Wilson and Garofalo and Laub. His suggestion that residents' own causal linkages between incivilities in the greater environment and the meditated meanings attributed to such features mold their fears is one of the first steps in understanding why residents have such high levels of fear and how residents' process and conceptualize the conditions within their environment. By providing an explanation on how residents develop their potential fear of incivilities, Hunter is essentially setting the stage for further inquiry into the psychological impacts of incivilities on individuals. Additionally, Hunter's theoretical correlation between incivilities and crime, without articulating which variable precedes the other, effectively set the course for further research on the relationship between the state of the physical environment and crime and ultimately the influence of both on a community.

According to Taylor, "Hunter's elaboration of the thesis leads to specific empirical predictions: Communities with higher crime rates should contain extensive incivilities; high levels of community crime rates and extensive incivilities share common structural origins, such as instability, low status, and more extensive minority populations. Even after putting these common origins aside, crime and incivilities will still feed one another" (Taylor, 1999a, p. 68). Although Hunter did not provide a statistical evaluation of his linkages, his perspective as well as his suggestions on how residents' causal determinants shape their fears helps to expand the Incivilities Thesis while kneading it towards a path of proving these connections empirically. Provided below is a conceptual model of Hunter's version of the Incivilities Thesis.



The heavy arrows suggest the most common pathway. This model is taken from Ralph Taylor's "The Incivilities Thesis: Theory, Measurement, and Policy" 1999a, which reproduced Hunter's model. Hunter's paper, "Symbols of Incivility" was presented at the annual meeting of the American Society of Criminology, Dallas, TX, November 1978. The original model can be found in Hunter's "Symbols of Incivility", 1978.

Figure 3: Hunter's Incivilities Thesis Conceptual Model

Limitations of Hunter's Variant

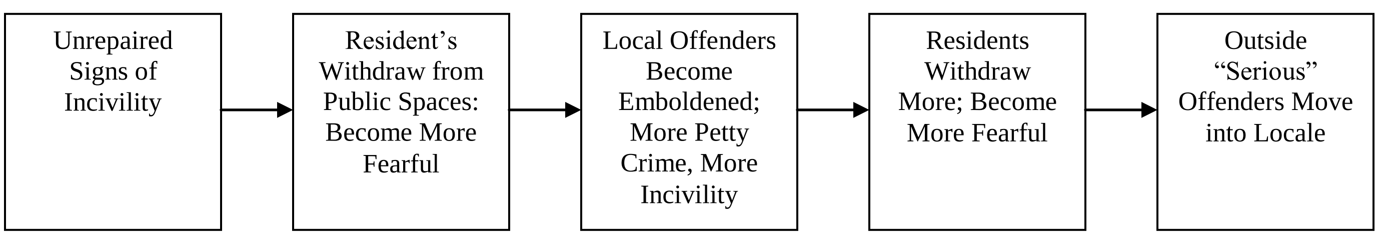
Although studies assessing the relationship between incivilities and fear have confirmed the first variant of the Incivility Thesis, these studies do not however, articulate which category of incivility, physical or social, contribute more to increased fear. Hunter does not offer this distinction. Future research that attempt to delineate the contribution of the two categories of incivilities (physical and social) to fear could shed additional insight into the psychological impacts of specific incivilities on individuals and may be able to assist policy makers in identifying and targeting those features of incivilities that incite greater concerns for safety and victimization. The reduction in resident fear levels may spawn positive indirect or ancillary effects on communities such as increased social ties and possibly increased commitment to the well-being of the community.

Hunter also does not define the concept of neighborhood disorder nor does he thoroughly explain in detail how overall neighborhood ecological processes leads to incivilities and crime. Taylor (1999b) noted that "it is not clear if Hunter's distinction of neighborhood disorder refers to social disorganization - the inability of a community to regulate itself and work toward common goals (Bursik, 1988) - or the community characteristics more generally associated with high offense or high offender rates (Baldwin and Bottoms, 1976; Harries, 1980)" (p. 67). This is a severe limitation in his variant of the thesis.

Hunter also does not indicate the role of the influence of incivilities in potentially furthering neighborhood decline. Rather, Hunter simply offers a suggestion that crime and incivilities are linked to the larger ecological outcome of neighborhood disorder and that residents' perception of the locality's inability to address the problems associated with incivilities assists in shaping their fears of the environment. Hunter's omission leaves many unanswered questions on the influences of incivilities to neighborhood decline over time.

Wilson and Kelling's Variant – Broken Windows

The next iteration, and perhaps one of the most influential variants of the Incivilities Thesis' heuristics, has had tremendous academic and practical implications. This variant of the Incivilities Thesis sequences the connections of incivilities to: increased delinquency, decreased resident informal control, and increased major crimes. Developed by James Q. Wilson and George Kelling (1982), the broken windows theory "socially psychologized the Incivilities Thesis, made it longitudinal, and focused on seemingly banal and trivial physical features (i.e. the condition of windows) of a locale" (Taylor, 2005, p. 31). Wilson and Kelling outlined and noted a direct and causal process in which the presence of prolonged physical and social incivilities will result in the existence of additional incivilities and ultimately increased crime rates (Wilson & Kelling, 1982). According to Schilling (2002) the Broken Windows variant provides a clear illustration that links "disorder and crime to the (state of the) physical environment at the community level" (p. 5). Provided below is a conceptual model of Wilson and Kelling's Broken Windows variant, another sub theory of the Incivilities Thesis.



(Taylor, 1999a, p. 69)

Figure 4: Wilson and Kelling's Broken Windows Conceptual Model

In their model, Wilson and Kelling's imply that the first step in this process is the existence of or the appearance of just a few (random) incivilities. The problem, however, is not the presence of a few broken windows, abandoned buildings, or other incivilities. Rather, the issue lies in the duration or timeframe in which these conditions persist to exist or remain unabated.

> "If the condition is not repaired in a relatively short time, then residents will infer that resident-based informal control on the street is weak and that other residents do not care about what is happening in their neighborhood; they will likely presume that the neighborhood is socially disorganized" (Taylor, 1999a, p. 68; Wilson & Kelling, 1982).

It is at this point in the process in which incivilities have dire consequences for a community. The unattended signs of disorder "encourage teens to continue to partake in further acts of mischief" (Taylor, 2005, p. 31). Consequently, residents fear levels increase, they begin to withdraw from public areas, shy away from intervening in abating incivilities, particularly the social incivilities that may be occurring. Soon there will be fewer eyes on the street (Jacobs, 1961). When this occurs, Wilson and Kelling conclude that "such an area is vulnerable to criminal invasion" (Wilson & Kelling, 1982, p. 31). As the cycle persists and incivilities continue to remain unabated, "motivated "heavy duty" offenders from outside the neighborhood become aware of: the conditions within the area, the opportunities to victimize others, and the lower risks of detection or apprehension associated with offending in that locale" (Taylor, 1999a, p. 68). Therefore, the persistence of physical and/or social incivilities, if left unaddressed, can eventually lead to increased incivilities and overall higher neighborhood crime rates.

The Broken Windows variant of the Incivilities Thesis makes two important outcome based claims. The first is that future petty crimes and low-level anti-social behaviors can be deterred/prevented if a timely intervention strategy is implemented. The second claim, like the first, is that major crime can consequently be prevented if that cycle of decline (beginning in the first stage in the conceptual model) is interrupted.

Unlike Garofalo and Laub and Hunter, Wilson and Kelling describe the importance of local authorities' role in interrupting incivilities' potential, long term impacts on communities. Community policing, problem oriented policing, order maintenance policing methods are proclaimed by Wilson and Kelling as tactics that can aid in repairing the broken windows cycle. Law enforcement should "tackle these matters before they became a trend and before they result in more serious criminal elements. Officers might badger a lazy landlord to fix his or her property, roust rowdy teens from corners, push panhandlers away from bus transit stops, or contact a city agency to get trash-filled lots cleaned out and fenced or an abandoned car towed. Ideally, officers would address these problems before they become a trend and before it results in more serious criminal elements from moving in" (Taylor, 2005, p. 31). The role of local law enforcement in the disruption of the broken windows process of decline is critical, not only in reducing the fears of residents and in maintaining the community's informal social control, but also helping to ensure neighborhood stability, the maintenance of order, and in preventing future neighborhood deterioration.

One of the most significant benefits of the broken windows variant is its usefulness to public safety practitioners. Such a theory provides public safety practitioners a framework to understand the potential causes of crime and neighborhood disorder. It also provides a context for understanding the impacts of incivilities on individuals and on the future of the community. Understanding the roles in which incivilities play in causing fear and in furthering community decline, ultimately through increased crime rates, can assist in the development of solutions to curb this process. By focusing resources in targeted areas that are experiencing the early symptoms of incivilities, public administrators and public safety officials may be able to thwart its side effects and stop the long term impacts of incivilities from materializing.

Unlike Hunter and Garofalo and Laub, Wilson and Kelling focused on a wider range of outcomes in their iteration of the Incivilities Thesis. The "fear of crime" is not the primary focus of Wilson and Kelling. Rather there is an interrelated mix of unique outcomes. "The authors move beyond fear per se, to also include resident-based informal social control on the street, the vitality of street life itself, and, perhaps most importantly, increasing neighborhood crime rates" (Taylor, 1999a, p. 69). More importantly, Wilson and Kelling have expanded the scope of the Incivilities Thesis by "shifting from the individual and group behaviors to that of environmental/ecological features" (Taylor, 1999a, p. 68-69). The focus on increased crime rates over time suggests that the viability of neighborhoods is contingent upon incivility related intervention strategies.

Limitations of Wilson and Kelling's Variant

There are several critiques of the Broken Windows variant of the Incivilities Thesis. Wilson and Kelling do not offer an empirical relationship between the prolonged existence of incivilities and changes in resident attitudes nor for structural/neighborhood physical conditions over time. "In short Wilson and Kelling temporally sequence the connections between physical deterioration, increased delinquency, decreased resident-based control, and increased serious crime" (Taylor, 1999a, p. 68). There is also no discussion on the length of the broken windows process. Do all neighborhoods experience decline at the same rate when the same or different incivilities remain unabated? Also are there specific types of incivilities, which if not abated, will push the neighborhood into decline faster than others? An empirical assessment on these questions would add tremendous insight to Wilson and Kelling's variant of the Incivilities Thesis as well as aid in the development of effective anti incivility policies.

Wilson and Kelling also do not thoroughly discuss the importance of other variables that may also have an impact on fear of crime and increased crime over time. Are there other ecological variables that influence increased crime rates in a community other than these signs of disorders? Answers to these questions can help validate or refute the causal linkages proclaimed by the broken windows variant. Additionally, and although it is subtly mentioned, Wilson and Kelling do not thoroughly discuss the importance of neighborhood demographic features such as poverty, unemployment, and income levels to increased crime rates and neighborhood decline. A thorough discussion of the impacts of the community's demographics will help delineate the differences among the contributions of incivilities and socio-economic characteristics of the community to area crime rates.

Wilson and Kelling's suggestion that local police officials should engage in order maintenance activities to assist in identifying and disrupting the broken windows process, inherently raises logistical questions. Which neighborhoods should be targeted for policing activities first? Taylor indicates that those neighborhoods that are on the verge of falling into a state of disorder, where incivilities are present should be analyzed by police planners (Taylor, 2005, p. 5). Wilson and Kelling note that order and disorder are subjective terms and may vary across neighborhoods and will vary according to the discretionary judgment of each law enforcement investigator. Another question logically follows, which order is to be "maintained and which disorder should be suppressed? What police might be encouraged to aggressively patrol against in one neighborhood, those same officers might tolerate in the community next door" (Taylor, 2005, p. 32). Ideally and from an equity standpoint, local law enforcement officials would apply the same standards across all communities. However, Wilson and Kelling suggested that applying the same interpretation of order and disorder standards equitably can be problematic and not practical. Wilson and Kelling did not offer solutions to this concern.

The theory that the prolonged existence of unmanaged, unmaintained, uncared for elements will lead to continued community degradation is a powerful political and administrative motivator for local government urban blight initiatives. Specifically, petty crimes, such as vandalism, graffiti and littering and other physical incivilities cause an area to appear to be uncontrolled and if not promptly abated, further incivilities will occur and anyone can invade it to carry out unlawful acts without being punished. Most local governments utilize the broken windows variant of the Incivilities Thesis to justify the use of eminent domain and other private property transfer methods in order to revitalize or redevelop blighted areas. Additionally, this theory is also used to implement law enforcement strategies that focus more on tackling issues prior to it becoming more of a challenging problem for the neighborhood and ultimately the locality. As Taylor (2001) noted, there is still much needed evidence to suggest an empirical link between incivilities and crime. As an example, there are other social, cultural, and surrounding contextual features that may adversely or favorably impact deviant behavior and future ecological outcomes (Taylor, 2001). An assessment into the influence of these factors could aid in confirming or refuting the causal relationship between incivilities and future outcomes as suggested by the Broken Windows variant.

Skogan's Variant - Neighborhood Disorder and Decline

The final iteration of the Incivilities Thesis shifts the focus on the impacts of incivilities to the neighborhood level. While Wilson and Kelling focused on the impacts of incivilities on individuals and on the street block level, Skogan attempted to make a connection between incivilities and its impact on fear and crime at the neighborhood level (Skogan, 1986, 1990). With this variant of the Incivilities Thesis, the interest lies in "outcomes such as neighborhood fear, neighborhood economic decline, increased neighborhood instability, and neighborhood out-migration" (Taylor, 2002, p. 422). Now, the Incivilities Thesis' theoretical outcomes have shifted, to where it was solely in the context of an individual perspective to now a context focused on an entire community/neighborhood. Skogan "completely ecologized the Incivilities Thesis; he devoted additional attention to the process of neighborhood decline by suggesting that disorder could make independent contributions to neighborhood decline" (Taylor, 2005, p. 32).

Skogan was one of the first authors who labeled incivilities as signs of disorders (Skogan, 1990). To Skogan, disorders are defined as the incapability of communities to effectively address communal problems. These manifestations are essentially brought about by social disorganization internal to the community as well as the relative social and economic inequalities resulting from contextual factors external to the community. This is an important distinction because Skogan associates disorders as factors that influence the conditions (incivilities) within communities.

Skogan noted that cues of disorder play a critical role in sparking urban decline (Skogan, 1986). "Incivilities spur neighborhood decline because they influence a range of psychological, social psychological, and behavioral outcomes such as, respectively, fear, (breakdown of) informal social control, and offender immigration and resident out-migration" (Taylor, 1999a, p. 70). Skogan suggests that this process of decline has the capability "to envelope entire communities" (Skogan, 1990; Taylor, 2005, p. 32). According to Skogan, relevant indicators of a neighborhood in decline are:

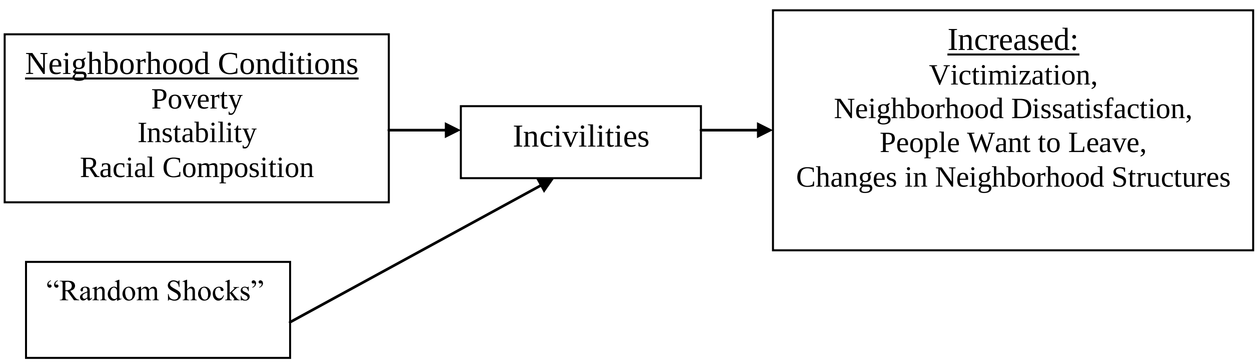
- "Businesses less willing to move into the community;

- Stable residents are more willing to move from the community;
- The decline in market values of homes in the community" (Skogan, 1990; Taylor, 2005, p. 32).

Skogan suggests that the "consequences of disorders on urban neighborhoods are:

- The undermining of mechanisms by which communities exercise control over local affairs;
- Sparks concern about neighborhood safety and perhaps even cause crime itself;
- The undermining of the stability of the housing market" (Skogan, 1990, p. 65).

Skogan's process of neighborhood disorder and decline is provided below.



(Taylor, 1999a, p. 71)

Figure 5: Skogan's Decline and Disorder Conceptual Model

Skogan "explicitly acknowledges in his decline and disorder model that structural conditions give rise to signs of incivility. He indicates that poverty, instability, racial composition, and random shocks (arising from factors outside the neighborhood i.e.) contribute to signs of and the expansion of incivilities and crime (Skogan, 1990 & 1986; Taylor, 1999a, p. 71). Skogan's suggestion that neighborhood conditions contribute to the presence of incivilities is an important acknowledgement of his variant of the Incivilities Thesis because no prior variant has touched on this aspect with any clarity or thoroughness. Areas in which poverty rates are high, where there has been a migration of residents over several years from the neighborhood, and where minorities heavily populate the area, are suggested as having higher levels of incivilities. The acknowledgement of the roles played by neighborhood conditions presents a significant shift from the early variants of the thesis.

Unlike the previous variants of the Incivilities Thesis, Skogan's model focuses explicitly on the role of incivilities/disorders to neighborhood decline. Additionally, this perspective elaborates on the potential causes or reasons for the presence of disorders within communities. The prior variants did not offer detailed explanations behind the emergence of incivilities in communities. This perspective also provides a distinct conceptualization of neighborhood decline, something that was not explicitly discussed in prior variants.

"According to Skogan, physical and social incivilities engender a range of consequences that ultimately result in neighborhood decline" (Taylor, 1999a, p. 70). Skogan lays out the indicators of neighborhood decline that result from the extended presence of incivilities. Neighborhood decline is characterized by: the reluctance of private enterprises to move into the community, the willingness of capable residents to move out of the community, and the decline in market values of properties (Skogan, 1990). Even more important, the presence of indicators of deteriorated physical conditions and an unruly social climate, could contribute to community decline in three different ways: crime rates should increase faster there, residents would migrate faster, leading to structural decline, and residents' fear or concern should go up faster (Skogan, 1990). Even more specifically, Skogan outlines the consequences of disorders on neighborhoods in that it is evident by the breakdown of informal social control, increased fear and possibly increased crime, as well as the instability of the area housing market.

Similar to the Broken Windows variant, Skogan suggests that incivilities adversely impacts informal social control. Signs of disorder “foster social withdrawal, inhibits cooperation between neighbors, and discourages people from taking efforts to protect themselves and their community” (Skogan, 1990, p. 65). The presence of both physical and social incivilities breaks down informal social control to the point where deviant and socially unacceptable behavior weakens the community’s relatively stable social order. As a result, deviant and socially unacceptable behaviors intrude on the neighborhood and develop a sustaining presence within that community. Finally, this breakdown of informal social control clears the path for the erection of a new implicit social control, one in which physical and social incivilities become the explicit status quo. As such, deviant behavior becomes socially “acceptable” and further incivilities are likely to erode the community.

Similar to Wilson and Kelling, Garofalo and Laub, and Hunter, Skogan points out that incivilities “spark concern about neighborhood safety, and perhaps even causes crime itself, which further undermines community morale and can give the area a bad reputation in the city” (Skogan, 1990, p. 65). The undermining of community morale can cause community residents to experience growing rates of fear. Community fear can cause residents and private enterprises to withdraw socially, psychologically, and physically from the community. Physical and psychological withdrawal from the community may cause deviants and criminals to begin to penetrate the community, thus instigating crime and furthering incivilities.

Finally, Skogan suggests that incivilities “undermine the housing market” (Skogan, 1990, p. 65). This economic impact means that a neighborhood’s housing prices would decrease relative to other urban neighborhoods” (Skogan, 1990; Taylor, 1999a, p. 70). This element of Skogan’s perspective suggests community and property disinvestment and the reduction in property values results from the presence and continued existence of incivilities. Skogan noted that disorders "undercut residential satisfaction, leads people to fear for their safety of their children, and encourages area residents to move away. Fewer people will want to move into the area. Additionally, the stigmatizing effect of disorder discourages outside investors and makes it more difficult for local businesses to attract customers from outside. This erodes the value of real estate in disorderly communities, contributing to the further deterioration of and the abandonment of residential and commercial buildings within the community" (Skogan, 1990, p. 65).

Limitations of Skogan's Variant

Although Skogan acknowledges that neighborhood conditions have a connection to the presence of incivilities, there is no discussion on the degree in which these ecological conditions impact incivilities nor the relationship, if any, of these neighborhood variables on the decline on communities. Rather, Skogan suggests that incivilities are typically found in areas that are characterized by specific structural and social conditions. It is not clear from Skogan's model if these structural and social conditions, which lead to incivilities, are the primary instigators of neighborhood decline, play a strong role in the breakdown of informal social control, increase fear and crime, and lead to the instability of the housing market or if the presence of incivilities have the stronger influence on these outcomes.

Skogan's articulation and expansion of the Incivilities Thesis and the influential role of incivilities on neighborhood decline represents a dramatic shift in the previous literature on the Incivilities Thesis. In Skogan's articulation of the Thesis, "neighborhood change, in the form of overall decline, is the ultimate outcome of interest to residents and policymakers alike" (Taylor, 1999a, p. 70). Unlike previous literature that simply focused on the impacts of incivilities on fear and crime, Skogan on the other hand, focused on four additional impacts of incivilities as it pertains to neighborhood decline. Those impacts were: residents' intentions to move, neighborhood satisfaction (Skogan, 1990, p. 88), community solidarity (Skogan, 1990, p. 70), and crime prevention. "Other authors (Kirschenbaum, 1983) have argued that perceptions of neighborhood deterioration act "as a major catalyst in providing a move," or contribute independently to neighborhood decline (Fisher, 1991; Taylor, 1999a, p. 70-71). This shift of focus from the individual perspective to a broader neighborhood context is a significant step in explaining the decline of entire communities.

"Skogan's model shifted from a focus solely on psychological outcomes represented by Wilson, Garofalo, and Laub, to a focus solely on ecological outcomes, leading Skogan to test his thesis using only neighborhood-level information" (Taylor, 1999a, p. 70). As noted, the current literature is limited in empirically assessing the influence of incivilities to overall neighborhood decline longitudinally. The very few studies that have assessed this relationship did not find significant relationships between incivilities and future decline. Instead, other socio-economic factors were identified as possibly having more of a contributory influence than incivilities to this outcome. Skogan acknowledges this by suggesting and questioning the role of neighborhood structural conditions in aiding the prevalence of incivilities in communities and in neighborhood decline.

Summary of Theoretical Limitations

There are several limitations and critiques of each of the sub variants of the incivilities thesis, particularly for its use in this research. First, is the issue of the role of other variables, particularly neighborhood demographics, to neighborhood decline and other ecological outcomes. The Incivilities Thesis, in general, does not thoroughly take into consideration the role or influence of other variables, inherent to the environment, to individual and community outcomes. There could be other social and cultural variables intrinsic to the community that should be considered when determining a correlation between the environment and crime. Taylor (2002) questions whether social and/or cultural setting conditions enable crime prevention changes, fear changes, or resident behavioral changes to emerge from shifts in the physical environment. Essentially, other social variables such as area demographics may also play a critical role in determining how and why some communities fall into disorder and decay more so than others.

The second limitation is that the Incivilities Thesis is essentially and practically longitudinal in nature in that it tends to provide an explanation on future neighborhood decline (Taylor 2005). Most empirical studies that assess the influence of incivilities utilized a cross sectional approach. The few studies that attempted to provide a longitudinal assessment of the influence on incivilities did not generate results that definitively validated the longitudinal presuppositions of Skogan's and Wilson and Kelling's variants of the thesis. Additionally, the thesis does not outline the relative time frame in which incivilities lead to such negative outcomes (Taylor, 2005). There is no delineation of a "tipping point" of when a certain level of incivilities begins to: cause concern and increase fear levels in people, result in the first crime or an unacceptable level of crime, or leads to neighborhood decline. Therefore it's practical that incivilities can have different influences, cross sectionally and longitudinally, in different communities.

Third, there are several variants of the Incivilities Thesis. Although, the more modern variants of the thesis tend to build upon the previous variants, in general it can be relatively challenging to grasp onto and utilize a single variant when practically each focuses on a different outcome. Additionally, each of the variants of the Incivilities Thesis has distinct differences. Most of these differences are, however, progressive in nature. The more modern variants are typically more thorough and explain more of the outcome of interest than earlier variants.

Finally, policing strategies, based off of the conceptual premises of the Incivilities Thesis have received acclaim for reducing crime in several urban areas throughout the 1990s (Taylor, 2001). Ironically, the Incivilities Thesis has received much criticism as a result of its widespread, conceptual use in policing initiatives (Taylor, 2005). This concern focuses on the "sociopolitical, or the social construction of disorder and the dichotomizing of the orderly versus disorderly" (Taylor, 2005, p. 33). As Wilson and Kelling (1982) suggested, the thesis does not answer the question nor provides an answer for the notion on whether different individuals, particularly law enforcement officials, will view, interpret, and ultimately respond to incivilities in the same manner. "The definitions of order and disorder, or who is orderly and who is disorderly, depend on who does the defining" (Taylor, 2005, p. 33). This can result in extreme differences and potentially inequitable policing practices, within the same jurisdiction and in other localities. Taylor (2005) suggested that this "creates a gaping gulf between the law abiders and the law breakers" (p. 33).

Conclusion

The Incivilities Thesis is an amorphous theoretical perspective. However its contemporary disposition focuses more on the impacts of disorder/incivilities on neighborhood outcomes. The thesis' prediction of neighborhood decline is not just from a physical, psychological and social perspective but also from an economic context as well. The prediction, particularly Skogan's variant, that indicators of disorders impact an individual's willingness to move and has an adverse influence on the housing market, suggest that the economic impacts of incivilities are likely to be just as damaging to the community as increased resident fear and crime levels. However, in order to validate the Incivilities Thesis, there must be empirical support for its cross sectional and longitudinal outcomes.

The literature abounds with empirical evaluations of the influence of incivilities on individual and specific ecological outcomes. There has been significant confirmation of the early variants of the thesis regarding the correlation of incivilities to increased individual fear levels. However, some of the most widely touted influences of incivilities on communities, such as increased crime and the decline in property values are not as prevalent within the empirical literature. An empirical assessment of these specific premises of the Incivilities Thesis will add further confirmation to this theory and will only heighten its practicality in explaining urban problems today.

CHAPTER III:

DATA AND METHODOLOGY

Introduction

This research seeks to generate empirical results into the influence of incivilities in urban areas. Specifically, the primary goal of this research is to determine if and the extent in which incivilities are negatively correlated to property values in a municipality. The determination of a negative relationship between incivilities and property values aids in validating the premise that incivilities are linked to the reduction in property values. This is a common theme in the literature and one of several outcomes of the Incivilities Thesis.

Additionally, this study also assesses several non-incivility elements to determine if such features also have an influence on property values. The inclusion of additional non-incivility features will determine if a spurious relationship exists among the study's variables thus altering the study's hypothesized relationships. Additionally, the goal of this research is to develop an approach that municipalities can use to assess the features of their communities that have the most adverse influence on property values. This will allow for the development of strategic public policy aimed at targeting the specific variables that are statistically having the most significant, negative influence to residential property values, the largest source of municipal general fund revenue.

This research employs a mixed method research methodology that incorporates two separate quantitative designs and one qualitative design. Data for the quantitative and qualitative designs were collected by means of primary and secondary methods. Data was obtained from multiple data sources.

This chapter includes the following sections: research and ancillary questions, hypothesis, research design, data collection and levels of measurement, sampling design, levels of analysis and units of analysis, and study variables. A brief discussion of each section is provided. This chapter concludes with a review on the limitations of the data, data collection, and design.

Research and Ancillary Questions

This dissertation explores one facet of the influence of incivilities on communities; the premise that incivilities adversely influence property values. The primary research question that will be addressed is:

> What are the influences of physical and social incivilities to single-family residential property values at an individual and a collective property level of analysis?

There are other ancillary questions that this dissertation seeks to answer.

- What is the extent, if any, in which incivilities correlate to property values?
- If there is a correlation between incivilities and property values, do these same relationships exist in different areas of Richmond?
- Are there other, non-incivility features that have an influence on property values?

By addressing the following research and ancillary questions, local government leaders will be able to determine and assess the structural and socio-economic factors that have the most adverse influence on property values. More importantly, localities will be able to develop strategic policies that target the features that are identified as having the most significant influence on property values within distinct areas of the locality.

Hypothesis

The hypothesis for this research focuses on the influence of incivilities on single-family residential property values. The primary research hypothesis for this study is:

> **H1: Physical incivilities are more likely to have a greater influence on single-family residential property values than social incivilities and other non-incivility features.**

All of the study's independent variables, in the final cross sectional quantitative analysis, have hypotheses. Provided below are the hypotheses for each variable used within this study. The categories of variables were physical incivilities, social incivilities, neighborhood/demographic characteristics, housing structural characteristics, and locational proximity to urban sites. The non-incivility variables were assessed to determine if they have an influence on the hypothesized relationship.

Physical Incivilities
Distinction: Structural/physical signs of disorder found on residential properties

Physical blight/incivility hypotheses
H2. Property abandonment (vacancy properties) will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H3. Boarded doors and/or windows on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H4. Graffiti on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H5. Trash/litter on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H6. Overgrown vegetation on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

Social Incivilities
Distinction: Social/street behaviors identified by the local police department on street blocks.

Social blight/incivility hypotheses
H7. Police calls for loitering will have a greater influence on single-family residential property values than non-incivility features.

H8. Police calls for loud noise will have a greater influence on single-family residential property values than non-incivility features.

H9. Police calls for public drinking will have a greater influence on single-family residential property values than non-incivility features.

H10. Police calls for vice/prostitution will have a greater influence on single-family residential property values than non-incivility features.

H11. Police calls for public fighting/arguing will have a greater influence on single-family residential property values than non-incivility features.

(Non-incivility Variables): Neighborhood/Demographic Features
Distinction: Demographic data that is representative of the population in the block group

Demographic Variables
H12. Poverty rates will have a weaker influence on single-family residential property values than physical and social incivilities.

H13. Income levels will have a weaker influence on single-family residential property values than physical and social incivilities.

H14. Educational levels will have a weaker influence on single-family residential property values than physical and social incivilities.

H15. Unemployment rates will have a weaker influence on single-family residential property values than physical and social incivilities.

(Non-incivility Variable) Structural Characteristics of Residential Properties
Distinction: Structural layout and features of the unit

Housing characteristic
H16. The square footage of a structure will have a weaker influence on single-family residential property values than physical and social incivilities.

H17. The age of the structure will have a weaker influence on single-family residential property values than physical and social incivilities.

H18. The lot size of a structure will have a weaker influence on single-family residential property values than physical and social incivilities.

(Non-incivility Variable) Locational/Proximity
Distinction: Proximity (in miles) to urban sites

Locational/Proximity
H19. The proximity/distance of a structure to a public housing complex will have a weaker influence on single-family property values than physical and social incivilities.

H20. The proximity/distance of a structure to the central business district will have a weaker influence on single-family residential property values than physical and social incivilities.

H21. The proximity/distance of a structure to a public school will have a weaker influence on single-family residential property values than physical and social incivilities.

Research Design – Mixed Methods Methodology

This research utilized a mixed method research design. In a mixed method research design, both quantitative and qualitative data are collected and assessed at different or separate stages of the research. According to Johnson and Onwuegbuzie (2004) some of the advantages of the mixed research approach are: the utilization of the strengths of both quantitative and qualitative research methods, it "can answer a broader and more complete range of research questions because the researcher is not confined to a single method or approach, words, pictures, and narrative can be used to add meaning to numbers, numbers can be used to add precision to words, pictures, and narratives, a researcher can use the strengths of an additional method to overcome the weaknesses in another method by utilizing both, it can provide stronger evidence for a conclusion through convergence and corroboration of findings, can add insights and understanding that might be missed when only a single method is used, can be used to increase the generalizability of the results, and qualitative and quantitative research used together (can) produce more complete knowledge necessary to inform theory and practice" (p. 21). Additionally, the triangulation approach of collecting data from multiple data sources also aids in minimizing threats to the validity of the study's results. The identified strengths of the mixed research approach justify its use in this research.

In this research, three separate designs were conducted in three separate stages. The first research design quantitatively assessed trends in single-family residential property values over a five year period (between 2004 and 2008) in Richmond. For this first segment of the research design, data was collected exclusively by means of secondary methods from data collected and tracked by the City of Richmond Assessor's Office. The second research design obtained a qualitative context of the housing market and of the nature of property values in Richmond. Qualitative data for this segment of the research design was collected through the use of primary methods, specifically personal interviews and a focus group panel discussion. The third and final research design quantitatively assessed the correlation of incivility and non incivility variables to single-family residential property values in the City of Richmond. Data was collected by both primary and secondary methods for this phase of the mixed methods design. Specifically, the researcher utilized primary methods to collect (primary) data on several variables by performing visual observation on the existence of several of the study's incivilities. Other incivility and non incivility variables were collected by means of secondary methods through the existence of source documents from the City of Richmond, the U.S. Census Bureau and an online mapping software program. Each of the separate research designs within the overall mixed methods approach and the resulting analysis generated significant insight into the nature of incivilities as well as its influences on property values. A more detailed description of each individual research method within the overall mixed methods research design is provided.

Quantitative Research Design - Longitudinal Time Series Assessment

A time series assessment, a specific type of longitudinal research design, was utilized in the first phase of the analysis. Specifically, this design assessed trends in assessed values of all single-family residential properties in Richmond between 2004 and 2008. By conducting a time series assessment of property values within the City of Richmond, this study was able to: identify trends in assessed values of single-family properties, describe those changes in assessed values in specific areas over time, predict future trends in assessed values, and provide an overall assessment of Richmond's housing market, particularly from a property value perspective.

Justification of Longitudinal Research Design

Longitudinal designs seek to collect information on specific variables across multiple time periods. In such a design, the same cases are analyzed in each time interval, repeatedly, over the course of a specified time frame. Consequently, longitudinal studies measure changes in data over time, track trends, and aid in predicting future trends. Additionally, longitudinal studies, particularly time series assessments, are used in "forecasting or in evaluating the effectiveness of policy (O'Sullivan, Rassel, Berner, 2003, p. 35).

The primary justification for utilizing the longitudinal research design lies in the method's ability to assess changes in the dependent variables, assessed values, over time. For this research, a time series analysis was conducted on the total assessed values of all single-family residential properties by census area for each calendar year for a five year period. [1]

The results of the trend analysis were used to gain a greater contextual perspective of the nature of property values in Richmond. Subsequently, this broad contextual characterization of Richmond's property values opened the door for further discussion and elaboration on the nature and forces that shape the resulting portrayal of property values within the City. The resulting analysis and suppositions that can be generated from a longitudinal design as well as the new questions raised from the analysis justified the use of this particular methodology in this first phase of the mixed methods research design.

[1] In this research, a census area consisted of all like numbered census tracts. All census tracts that had the same unit number were grouped together to create a census area.

Data Collection

Data for the longitudinal assessment was collected from secondary data sources by means of secondary methods. Specifically, the secondary data used for this segment of the research design was obtained from the City of Richmond Assessor's Office. The Assessor's Office provided a database containing all single-family residential properties (excluding condos) by address along with each property's associated assessed value for multiple calendar years. Additional census information was provided in this database that was used to separate the properties into distinct, census tracts. The data was then manipulated via queries to be analyzed. A more detailed chart outlining the data summarization and data collection process for the time series assessment is provided in Appendix C.

<u>Qualitative Research Design - Focus Group and Individual Interviews</u>

To supplement the results from the time series assessment and prior to quantitatively determining the correlation between incivilities and property values, a broad contextual qualitative assessment of the peculiarities, challenges, and culture, of the City's housing market was conducted. This assessment focused on obtaining a qualitative perspective of Richmond's: housing styles, property values, neighborhoods, preferences of buyers and sellers, and overall stimulants and depressants of the local housing market. Additionally, a qualitative perspective of the influence of incivilities to Richmond single-family property values, as well as the identification of the areas in which incivilities were believed to be located, was obtained. The information gleaned from the qualitative analysis not only placed the overall research and longitudinal analysis in context, but also served as a critical element of the study's analysis on the correlation of incivilities to property values.

A focus group panel discussion and individual interviews were conducted in order to qualitatively assess Richmond's housing market. This methodology specifically used group and individual interviews to obtain qualitative data on the topic of interest (O'Sullivan et al. 2003). A group of professionals who were occupationally versed in Richmond's housing market were solicited for participation in the research. The participants ranged from real estate professionals, community development and non-profit administrators, local government community development practitioners, and municipal appraisers. Each of the participants had extensive knowledge of or experience in Richmond's housing market. As a group, the participants offered a variety of perspectives and contexts. The goal of this aspect of the data collection process was to pool such perspectives together in order to shed additional insight into Richmond's housing market that could not be answered from the longitudinal assessment as well as to confirm or refute the literature on incivilities.

Justification of Qualitative Research Design

David Morgan (1997) noted that focus groups are a qualitative research method that can be can be used for multiple purposes. It can be used:

> "as exploratory research on a new topic area, (to) generate hypotheses to guide the development of structured questionnaires or other research methods, (to) discover perspectives and feelings of various groups, (to) aid in understanding the reasons for behaviors or attitudes, and to interpret previously obtained quantitative data" (O'Sullivan et al. 2003, p. 43). Specifically, the focus group research method has particular defining characteristics that distinguish it from other qualitative research approaches. "Focus groups rely on the strengths of qualitative methods, including exploration and discovery;

understanding things in depth and in context; and interpreting why things are the way they are and how they got that way" (O'Sullivan, et al. 2003, p. 42).

These primary strengths and defining characteristics of the focus group methodology were utilized in this research to enhance the study's quantitative findings. Additionally, the qualitative design was used to assist in delving beyond the analysis and results of the time series assessment. The results of the longitudinal assessment were discussed and examined further in the focus group and individual interviews.

Data Collection

Qualitative data comes from the investigators ability to assemble individuals or "focus groups to obtain in-depth information and reactions to a few topics. The hallmark of (the) focus group is the interaction and dialogue between group participants" (O'Sullivan et al. 2003, p. 193). Subsequently, data for the second phase of this research was collected by means of primary methods through a focus group and individual interviews with key housing professionals in the City of Richmond.

O'Sullivan et al. (2003) noted that a single focus group does not represent a particular population. Instead, a more reliable manner to obtain qualitative data that is more representative of the population is to conduct several focus group or individual sessions with a different set of participants. "The best evidence of external validity is replication, which is achieving similar results under somewhat varying conditions. Similarly, if several focus groups (or individuals) express similar attitudes or experiences, the investigators may persuasively argue that the groups represent the opinions and experiences of a larger population" (O'Sullivan et al. 2003, p. 193). In order to minimize the threat of external validity of this qualitative approach and its results, this research conducted separate interviews with individuals that could not attend the focus group discussion.

This research conducted one focus group discussion in which the participants were interviewed in a group setting and several one on one interviews with different participants who could not attend the panel discussion. For the focus group meeting a series of questions relating to Richmond's housing market were developed and read to the participants. Responses to such questions were recorded manually on paper and via tape recorder. This assisted in data collection and analysis and ensured that notes taken during the focus group discussion were transcribed accurately. The same questions asked during the focus group meeting were asked of those who participated in the individual phone interviews. Responses to each question asked of the individual interviews were recorded manually on paper and analyzed in concert with as well as separately from the focus group responses.

According to O'Sullivan et al. (2003) data analysis of qualitative data generated from the focus group research method should be "systematic and verifiable" (p. 196). Each question was first examined exclusively. The responses to the questions were then summarized. During the summarization process, the responses were examined based on the context within which they were made as well as what evoked such comments to be generated. (O'Sullivan et al. 2003).

Second, overall trends and patterns that emerged from the responses of the discussion were noted. From this, topics, themes, and/or phrases were identified, decoded, and grouped together. Diversity of the information was also noted and grouped together. Finally, after all of the information had been recorded and summarized, the data was then interpreted and reported. Throughout the process of summarizing and interpreting the qualitative data, the responses were additionally assessed based on the primary objectives of the third and final phase of the research

– the determination of whether incivilities have a negative relationship to single-family residential property values. A more detailed chart outlining the data and data collection process for the qualitative design is provided in Appendix C.

Quantitative Research Design – Cross Sectional Assessment

The goal of the final research design is to determine if, and the degree in which, incivilities are adversely correlated to property values. This stage of the research required the use of a cross sectional methodology to best address this objective, particularly since the dependent variable, assessed values, was being measured at one point in time. Specifically, a cross sectional research design examined the relationships between assessed incivilities and other non-incivility variables to residential property values. Data was collected on key variables one time/or within a short time frame from a variety of primary and secondary data sources.

Justification of Cross Sectional Research Design

The primary justification for the utilization of the cross sectional research design rests with the methodology's primary function and strength. That strength lies in the methodology's ability to uncover relationships between the study's variables. By determining if a relationship exists between the study's variables, it is believed that a deeper understanding of the dynamics of the features and categories of incivilities and non-incivilities on property values will be more apparent. Likewise, the cross sectional approach, in concert with the appropriate statistical techniques, can also determine the strengths or weaknesses of the relationships between the independent variables (incivility and non-incivility features) and the dependent variable (property values). The determination of whether a relationship exists and the assessment of such relationships amongst the study's variables are a key component and a critical evaluation element of this research.

Secondly, a cross sectional research design is appropriate for studies that involve the collection of data on "many variables from a large group of subjects that are dispersed geographically" (O'Sullivan et.al, 2003, p. 26-27). This study seeks to utilize numerous independent variables to determine their influence on property values within Richmond. Likewise, the units of analyses are plentiful and are spread out across an entire city. The multiple variables posed to be collected across multiple subjects amid an extensive geographic boundary suggest that the cross sectional research design is fitting and appropriate.

Finally, the cross sectional methodology is best suited for studies that focus on exploratory research, such is the case with this study. This study seeks to explore one aspect of the Incivilities Thesis by empirically assessing relationships between variables. Additionally, exploratory research can assist in the development of hypotheses for future research. The results of this study's cross sectional analysis can assist future researchers in validating or reassessing relationships between incivilities and non incivilities to property values in other urban areas as well as aid in the testing of the Incivilities Thesis, particularly the longitudinal assessments of the influence of incivilities on single-family property values and on the overall decline of urban communities. Such a methodological approach can encourage future exploratory research on the correlation of incivilities and non incivilities to neighborhood problems.

<u>Study Variables and Data Collection</u>

Data for the cross sectional methodology was collected by means of both primary and secondary methods. Specifically, detailed primary and secondary data on single-family residential properties was collected. Public housing and multi-family dwellings (apartment or condominiums) were excluded from the analysis. A brief synopsis of the variables for this segment of the mixed methods design as well as the levels of measurement for each variable is provided. Additionally, a more comprehensive summary on the data sources as well as each data's relevance to the research is also provided in Appendix D.

The cross sectional portion of the mixed methods design required the collection of numerous variables from a variety of data sources. Many of the variables identified below were selected based on their usage or mention within the literature on incivilities and the general ease in which to obtain the data. Additionally, all of the variables in which data was collected were discussed in the literature on incivilities or in the focus group or interviews. A more detailed data summarization and collection plan for all of the variables collected in this stage of the research as well as the SPSS acronyms for the below variables are provided in Appendix C.

Independent Variables

Physical Incivilities

Distinction: Structural/tangible indicators of blight identified by physical assessments of properties

The incivility independent variables were indicative of features that were believed, and suggested by the literature, to have a negative influence on property values. These variables included both physical and social incivilities. Descriptions of each incivility variable are provided. Nearly all of the physical incivility data was collected by primary methods through physical walkthroughs of the sampled properties and visually verifying the presence of incivilities on properties. All of the social incivilities and one physical incivility were collected through secondary methods.

- IV- Graffiti (graffiti visually present on the structure),
  - Data on graffiti was collected by primary methods or physical observation of the property.
    - Level of measurement is nominal

- IV - Litter/trash accumulation on the property,

- Data on trash/litter on the property was collected by primary methods or physical observation of the property.
  - Level of measurement is nominal

- IV - Vegetation (excessive) on the property,
  - Data on overgrown vegetation on the property was collected by primary methods or physical observation of the property.
    - Level of measurement is nominal

- IV - Boarded doors and/or windows on the property,
  - Data on boarded doors and/or windows on the property were collected by primary methods or physical observations of the property.
    - Level of measurement is ordinal

- IV - Abandoned (vacant) structure.
  - Data on abandoned/vacant residential structures was collected from secondary methods.
    - Data was collected from the City of Richmond's Department of Community Development vacant property registry.
      - Level of measurement is nominal

Social Incivilities

Distinction: Social/street behaviors identified by the local police department on street blocks of residential property.

- IV – Police calls for loitering/suspicious person/s,
  - Data on calls for loitering was collected from secondary methods
    - Data was collected from the City of Richmond Police Department
      - Level of measurement is ratio

- IV – Police calls for loud noises in area (traffic, music),
  - Data on calls for noise was collected from secondary methods
    - Level of measurement is ratio

- IV – Police calls for prostitution/vice,
  - Data on calls for prostitution/vice was collected from secondary methods
    - Level of measurement is ratio

- IV – Police calls for public drinking,
  - Data on calls for public drinking was collected from secondary methods
    - Level of measurement is ratio

- IV – Police calls for public fighting.
  - Data on calls for public fighting/arguing was collected from secondary methods

- Level of measurement is ratio

Non-Incivility Variables

Several non-incivility variables were collected and tested to determine whether a spurious relationship existed between the research's hypothesized relationships.

<u>Neighborhood Census/Demographic Features</u>

Distinction: Demographic data that is representative of the population living within block groups

Data on neighborhood demographics was collected by secondary methods from existing source documentation. Specifically, data was obtained from the U.S. 2000 census. Data was collected at the block group level. They included:

Poverty Rates

- IV - The number of people in poverty by block group
  - Level of measurement was ratio

Income Levels

- IV - The number of people by block group with incomes below $24,999,
- IV - The number of people by block group with incomes between $25,000 and $49,999,
- IV - The number of people by block group with incomes between $50,000 and $74,999,
- IV - The number of people by block group with incomes greater than $75,000
  - Level of measurement was ratio

Educational Levels

- IV - The number of people by block group without a high school diploma,
- IV - The number of people by block group with only a high school diploma,
- IV - The number of people by block group with a degree (college or associate),
- IV - The number of people by block group with an advanced degree
  - Level of measurement was ratio

Unemployment Rates

- IV - The number of people unemployed by block group
    - Level of measurement was ratio

Structural Traits/Property Characteristics

Distinction: Structural layout and features of the unit

Data on the structural characteristics of single-family residential properties was collected by secondary methods. This information was collected from the City of Richmond Assessor's land book records on all real property in the locality. Data collected on the structural characteristics of the property was collected at the individual property level.

- IV - Lot size of the structure,
    - Level of measurement was ratio

- IV - Age of the structure/year structure built,
    - Level of measurement was ratio

- IV - Square footage of the structure
    - Level of measurement was ratio

Locational data

Distinction: Proximity (in miles) of structure to urban sites

Data was obtained on the exact distance (in mileage) the identified property was from a particular urban site. This information was generated by GIS (Geographic Information Systems) data provided by means of an online GIS mapping tool. Data on the proximity of a structure to an urban site was collected at the individual property level.

- IV - Proximity/distance of the structure to the central business district,
    - Level of measurement is ratio

- IV - Proximity/distance of the structure to the nearest public housing complex,
    - Level of measurement is ratio

- IV - Proximity/distance of the structure to the nearest public school.
    - Level of measurement is ratio

Dependent Variable

The dependent variable in this study was assessed values. Data on assessed property values was obtained by secondary methods. Specifically, data on the assessed values of residential properties was collected from the City of Richmond Assessor's Office. Data collected on the assessed values was collected at the individual property level. The level of measurement is ratio.

Although sales prices are a preferred measure of true market value, there were however, not a sufficient number of properties that sold in the 2009 calendar year that were included in the sample. Several studies utilizing hedonic models have determined, however, that assessed values are a sufficient measure of market values when sales data is unavailable or limited (Schuler, 1990; Kim & Goldsmith, 2005; Janssen & Soderberg, 1999; Rush & Bruggink, 2000; Clapp & Giaccotto, 1992; Leigh & Coffin, 2005).

Levels of Measurement and Unit of Analysis

Due to the nature of the type of data that is sought for this segment of the research design and the scope of the research and ancillary questions, this study performed three levels of analysis on the data. Each level of analysis focused on a distinct unit of analysis. The primary reason for the three levels of analysis was that not all of the study's variables were collected at the same level. For example, some independent variables were collected at the block group level, (i.e. census data); other independent variables were collected at the individual property level, for example, physical incivilities, housing characteristics, etc. Social incivilities, were collected at the street block level. It was essential that the study variables utilized for data analysis were comparable in terms of the manner in which they are analyzed.

The first level of analysis focused on data collected at the individual property level. At this level of analysis, the unit of analysis and sample units was individual single-family residential properties. The second level of analysis focused on data collected at the block group level. At this level of analysis, the unit of analysis was the block group. The final level of analysis focused on data collected at the individual property, averaged to the block group level, but categorized and grouped within respective area neighborhoods. At this level of analysis, the area neighborhood was the unit of analysis. A description of each level of analysis is provided below.

Unit of Analysis – Individual Property Level

The first level of analysis was conducted at the individual property level. Only data collected at the individual property level was utilized for this segment of the analysis. Subsequently, the census/demographic data, since it was collected at the block group level, was not included in this assessment and was excluded from this level of analysis. All of the other variables in the study, physical incivilities, housing structural characteristics, and locational data were collected at the individual property level and were thus utilized within this level of analysis. Social incivilities were collected at the street block level. They were included in this level of analysis since the street block is a close approximation of the location of the individual properties.

Data analysis at the individual property level only focused on the contributions of physical incivilities, social incivilities, housing structural features, and locational proximity to urban sites to single-family residential property values. The raw variable scores for each randomly selected property was analyzed via SPSS. The identification of this level of analysis' relevant sampling elements is provided.

Sampling Design: Random sampling

Population: All single-family residential properties within the City of Richmond

Sampling Frame: A listing of all single-family residential properties within the City of Richmond

Sampling Units: Single-family residential properties

Unit of Analysis: Single-family residential properties

Unit of Analysis - Block Group Level

The second level of analysis focused on the block group. The City of Richmond is currently divided into census tracts. Within each census tract is another sub division identified as block groups. A block group is a cluster of (municipal) blocks within a census tract. Multiple residential properties were located on street blocks within these block groups. Thus, the block group represents a collection of residential properties. Prior to the data analysis at the block group level, the raw data need to be modified in order to be reflective and representative of municipal block groups.

With the block group as the unit of analysis, it was important that all of the study's variables were representative of the block group. Currently, only the demographic variables were collected at the block group level. The other variables (physical incivilities, structural characteristics, and assessed values) were collected at the individual property level and social incivilities were collected at the street block level. In order to make accurate associations between the study's variables for this level of analysis, the randomly selected properties were aggregated within their respective block groups. Next, the scores of the variables collected at the individual property level and the street block level were averaged to obtain an average block group score for each variable for each randomly selected property. This made the variables comparable to the demographic data which was originally collected at the block group level. Afterwards, each block group had a single score for each of the study's variables. (Due to the nature of the variable, the locational independent variables could only be assessed at the individual property level and were excluded from this level of analysis). The total number of block groups represented the total number of cases for this level of analysis.

The aggregation (grouping of properties within block groups) and averaging (mean of scores) of the independent and the dependent variables to the block group level for every block group allowed for the comparability of data amongst all block groups in Richmond. Additionally, the use of the block group as the unit of analysis provided suitable city wide coverage for the analysis of single-family residential properties throughout Richmond. Consequently, statistical analysis of the data at the block group level reflected the contribution of incivility and non-incivility variables to the prediction of property values within block groups in the City. The averaged scores of the block groups were then analyzed via SPSS. The identification of this level of analysis' relevant sampling elements is provided below.

Sampling Design: Random sampling (as sampled at the individual property level)

Population: All single-family residential properties within block groups in the City of Richmond

Sampling Frame: A listing of all single-family properties by block group within the City of Richmond

Sampling Units: Single-family residential properties (aggregated to the block group level)

Unit of Analysis: Block groups

Unit of Analysis – Neighborhood Level

The third and final level of analysis focused on Richmond's area neighborhoods. At a broad level, Richmond has defined boundaries in which homes were classified within distinct area neighborhoods. These area neighborhoods included a collection of smaller neighborhoods within specific geographic boundaries. For this level of analysis, the residential properties randomly selected for this study at the individual property level were grouped within their specific area neighborhood. The focus for this level of analysis was to determine the role of incivilities in influencing property values by area neighborhoods, the role of other non-incivility features in influencing property values by area neighborhoods, and to assess geographic differences in the contribution of the study's independent variables to residential property values.

At this level of analysis, scores on all of the variables at the block group level of analysis were aggregated within their respective area neighborhood. Each of the area neighborhoods were then analyzed separately via SPSS. The identification of this level of analysis' relevant sampling elements is provided below.

Sampling Design: Random sampling (as sampled at the individual property level)

Population: All single-family residential properties within area neighborhoods in the City of Richmond

Sampling Frame: A listing of all single-family residential properties in area neighborhoods within the City of Richmond

Sampling Units: Single-family residential properties (independent and dependent variable scores of randomly selected properties aggregated to the block group level but grouped within their respective area neighborhood)

Unit of Analysis: Area neighborhood

Sampling Design

In order to obtain generalizeable study results, ideally one would perform a population study. However, a complete population study on all single-family residential properties would be too expensive and time consuming for one researcher to conduct. Instead, a sample was drawn from the larger population of all single-family residential properties in order to successfully: conduct the research with a manageable amount of sample units and to conduct the research within a reasonable time frame. This study utilized a simple random sampling methodology to select the individual properties for analysis.

Sampling Procedures

Step 1. The researcher obtained a listing of all single-family residential properties from the City Assessor's Office.

Step 2. The researcher categorized the properties by respective block groups.

A listing of all selected block groups was developed.

Step 3. The researcher randomly selected single-family residential properties from within each block group on a proportional basis.

Block groups with more properties than others typically had more properties randomly selected from within that block group than other block groups with a smaller number of single-family residential properties. At a minimum, each block group had at least one property selected from within its block group.

A listing of all randomly selected single-family residential properties was developed.

Step 4. The researcher collected data on each randomly selected single-family residential property.

Justification for the Sample Design

The use of the probability sampling design ensured that each property within the population had an equal chance of being selected in the sample. Likewise, the use of a random sample approach within every block group is fitting for a large sample size, which was the case in this study, as there were over 49,000 identified single-family residential properties in Richmond. Even more importantly, when used in conjunction with the appropriate statistical methods, this sampling approach allows researchers to make generalizations from the sample to the overall population (O'Sullivan, et al. 2003).

Secondly, the approach of randomly selecting properties within each block group of Richmond attempted to incorporate potential variation in incivilities and property values throughout the municipality. This research avoided arbitrarily selecting areas within Richmond that may contain heavy cases that were plagued with or lacked incivilities, such as the case would be if a multi-stage cluster sampling approach was utilized. Additionally, this research wanted to avoid the possibility of randomly selecting properties in one or a few areas of the locality. Such a selection could artificially bias the sample and subsequently produce inaccurate statistics of the population. A random selection of properties within each block group of the municipality ensured the probability of having a variety of properties from all over the locality with different levels of incivilities and property values. Subsequently, this procedure will help ensure the variation in the independent and dependent variables, thus minimizing the potential of sampling bias.

Finally the random selection approach is typically cheaper to conduct than an entire population study. Additionally, administrative and travel costs should be reasonable. Finally, the random selection of residential properties from the broader population aids in conducting the research with a manageable amount of sample units and within a reasonable time frame.

Sample Design Limitations

A primary weakness of the random sampling approach was that it can be time consuming, particularly with a large population, as is the case with this study. The extremely large amount of single-family residential properties within the City of Richmond would make this an incredible undertaking if a large number of properties were randomly selected. However, a manageable number of properties were randomly selected to ensure that this research was conducted: within a reasonable amount of time, within the availability of resources, and within a 95 percent confidence level threshold.

<u>Research Design and Data Limitations</u>

This research utilized a mixed method research design. As previously noted, the primary justification for utilizing a mixed method approach lies in the design's ability to incorporate the strengths of both quantitative and qualitative methods, which, when used together in a single design, minimizes the weaknesses of the other method when utilized exclusively. Therefore, the limitations of exclusively utilizing a quantitative or qualitative design are not discussed since the relative weakness of each individual approach tends to counteract the other. However, there were several limitations with the use of the cross sectional method, particularly, limitations inherent to the design itself, the data utilized for that phase of the analysis, and the data collection, all of which potentially posed threats to the study and the validity of the study's results. Each limitation and the manner in which they were addressed are noted below.

Cross Sectional Design

Although there were numerous strengths of the cross sectional methodology, there were also several limitations to the approach as well. However, it is believed that the primary application of the cross sectional methodology in general justify its incorporation in this research. Additionally, the use of other quantitative and qualitative methods in tandem with this approach, outweigh the cross sectional design's limitations.

Cross sectional research designs are limited in what they can determine about the study's variables. This study, as is typical of most cross sectional designs, is limited almost exclusively to unearthing and determining relationships, if any, among the study's variables. A critical element of this study is that the subsequent data analysis will depict relationships as they appear at one point it time. Unlike longitudinal studies, cross sectional research designs will be unable to determine changes over time. Although a longitudinal research design would be ideal, particularly as a measure of Wilson and Kelling's and Skogan's variants of the Incivilities Thesis, relevant data from two points in time were difficult to reliably obtain. This study will not be able to determine how much property values have changed or if property values are increasing or decreasing over time as a result of being influenced by incivilities.

A cross-sectional research design will also not be able to determine causality between the independent variables and the dependent variables. This is a standard limitation of the cross sectional research methodology. The aim of this study was not necessarily to determine causality but rather to determine if a correlation, particularly an adverse correlation, exists between incivilities and property values and to unearth relationships that can assist researchers in conducting future studies that may better determine the likelihood of causality (O'Sullivan et al. 2003).

Another limitation with the utilization of the cross sectional methodology is that rival or alternative hypotheses will be extremely difficult to refute. To counter this limitation, this study attempted to limit the number of rival hypothesis by incorporating into the analysis several non-incivility variables that could also have a negative influence on property values. The incorporation of these non-incivility variables will determine whether a spurious relationship exists between the study's hypothesized relationships. Although, not all-inclusive, it is believed that the inclusion of these "rival variables" will either confirm or refute the significance of rival hypotheses.

Cross Sectional Data

The primary limitation of some of the secondary data was that it was not all collected during the same time frame in which some of the other data was collected. Data from several sources may have been collected at different times throughout the year or across multiple years. This may pose a threat to the study in that the data may not be comparable from the standpoint that it was not all collected at one particular point in time. Ideally, the data should all be collected at or around the same time. However, the time frame in which secondary data was collected was beyond the control of the researcher. The only source of data in which this would pose a significant challenge would be data obtained from the U.S. 2000 Census.

Census Data

This study utilized data from the 2000 Census to be assessed with other independent variables that were collected in 2009. At the time of data collection, there were no other reliable and recent demographic data sources that could be probed for data in place of the 2000 Census, particularly data collected at the block group level, which was utilized for this study. This initially presented a potential problem in that the 2000 Census data may not be accurately representative of the 2009 population for this segment of the analysis. Additionally, it is possible that there could have been significant demographic changes in the locality between 2000 and 2009.

To minimize the potency that this limitation imposes on this research, a brief review of Richmond's major demographic categories; poverty, income, education, and unemployment were researched in more recent years and assessed to determine how different those rates may be from the 2000 Census. More recent demographic data was obtained from the U.S. Census and the Virginia Employment Commission. As a result, there were primarily marginal differences between Richmond's demographics in 2000 as compared to demographics in more recent years.

According to the American Community Survey (ACS), (a U.S. Census Bureau sponsored, developed, and advertized product), a national rolling sample survey of individuals surveyed between January 1, 2005 and December 31, 2009 that assessed the country's social, economic, housing, and demographic statistics for every locality, estimated Richmond's poverty rate at 22.1 percent (U.S. Census Bureau, 2010). The U.S. Census Bureau Summary statistics estimated Richmond's poverty rate at 23.3 percent in 2009 (U.S. Census Bureau, 2011). Both estimates are very similar to the 21.4 percent poverty rate recorded by the 2000 U.S. Census (City of Richmond, 2002a).

The ACS also indicated that the percentage of people 25 years and older that had a diploma or the equivalency of a diploma was 80 percent versus 75.2 percent in 2000. Additionally, the ACS indicated that 32.5 percent of the people over 25 years old completed a bachelor's degree versus 29.5 percent in 2000 (U.S. Census Bureau, 2010), (City of Richmond, 2002b). Accordingly, there were not extreme differences between both sources.

In 2009 the Virginia Employment Commission estimated Richmond's unemployment rate at 7.5 percent (Virginia Business, 2010). According to the 2000 Census, the unemployment rate for Richmond was 8 percent (City of Richmond, 2002c). Just as before, there were not significant differences between unemployment rates from both years.

Finally, in 2000, Richmond's median household income was $31,121 (City of Richmond, 2002c). Based on 2009 figures, the U.S. Census Bureau estimated Richmond's median household income at $37,115, slightly higher than the 2000 estimates (U.S. Census Bureau, 2011). Although there was a modest difference between both sources, it is not believed that such a difference is substantial.

The use of the ACS, U.S. Census Bureau Summary statistics, and VEC data is not a completely accurate representation of demographics for Richmond in 2009. The probability of modest fluctuations in block group and census tract demographic rates between 2000 and 2009 is sensible. Additionally, the ACS does not take into consideration population migrations between block groups. However, the demographic estimates provided by the ACS, U.S. Census Bureau, and the VEC suggest that there may not have been significant fluctuations in Richmond's overall poverty, income, educational, and unemployment rates between 2000 and 2009. The lack of extreme fluctuations between the recent demographic population estimates and the 2000 Census suggests that the use of the 2000 Census data was a fairly reasonable representation of Richmond's overall social and economic conditions in 2009. Although, this approach and justification is not without concern or flaw, it is believed that the use of the 2000 Census data provided reasonable assurance of its applicability in the 2009 calendar year. Below is a chart summarizing and comparing the census statistics from 2000 to 2009.

Table 1: City of Richmond, VA Census Summary Comparison Statistics

City of Richmond, VA Census Summary Comparison Statistics		
Year	2000	2009
Total Population*	197,790	198,202
Poverty Rate	21.40%	23.30%
Unemployment Rate	8.00%	7.50%
Median Household Income	$31,121	$37,115
% of population with a diploma**	75.20%	80.10%
% of population without a diploma**	24.80%	19.90%
% of population with an advanced degree**	10.82%	13.40%

*Data Source is the University of Virginia Weldon Cooper Center for Public Service
**Denotes 2005 Estimates as provided by the U.S. Census County and City Data Book: 2007

Social Incivility Data

Another limitation is with the data tracked by the local police department. This study utilized calls for service by street block as a measure of social incivilities. Although calls for service are deemed as an appropriate measure of social incivilities, it possibly does not fully reflect the "true" number of incidents that may have occurred on that block. There is no delineation between false alarms nor for unreported instances of incivility. This is an inherent weakness with this source of data. However, it is likely that a majority of the calls for service were placed with merit, were legitimate, and were indicative of the social incivilities that residents witnessed or perceived in the area. From this perspective, these calls for service were indicative of people's perception of the problems within the areas in which they live or frequent.

Accuracy of Assessed Value Data

This study utilized 2009 assessed values as a measure of single-family residential property values in Richmond. Although, sales prices were a more accurate indicator of true market value, there were however, not enough sales price data to conduct a study of this magnitude. One concern is the accuracy of Richmond's property assessments. Inaccurate assessments, in that the sales prices of properties significantly varied from its assigned assessed value, could pose severe validity challenges in the data analysis and skew the results of the study. Accurate indicators of property values were imperative to the legitimacy of this study's results, to the expansion of the literature on urban blight and incivilities, and to public policy development that results from the data analysis of this study. To justify the use of assessed values as an accurate indicator of market prices, a measure of Richmond's accuracy in assessing single-family properties was solicited.

An excellent measure of the accuracy and competency of any assessor is the relationship between assessed values of properties that sold and the actual sales price of that property. This calculation is called the sales to assessment ratio. The state of Virginia publishes an annual report that recounts every locality's median sales assessment ratio for every calendar year. Virginia law requires local assessors to assess properties at 100 percent of fair market value. Accordingly, property assessments are to be representative of the true price buyers are willing to pay for properties.

For the 2009 calendar year, the City of Richmond's sales assessment ratio for single-family residential properties was 98.27 percent. This suggests that the final selling prices of all of the single-family residential properties that sold in 2009 matched the assessed value developed by the Assessor's Office 98 percent of the time. The City's exceptionally high sales assessment ratio for single-family residential properties in 2009 indicates that the use of assessed values as a dependent variable in this study was suitable in that it was a highly accurate measure of market values.

Cross Sectional Primary Data Collection Limitations

Physical Assessments of Properties

Prior research has often utilized trained raters/observers to assess the presence of incivilities on properties. These trained raters typically compared incivility assessments on each property in order to ensure inter rater reliability or the homogeneity of the study's data collection instruments and ratings. Additionally, studies utilizing trained raters were often able to collect data of higher levels of measurement, either at the interval or ratio level. From a data analysis perspective it is desirable to have higher levels of measurement. Typically, the greater/higher the level of measurement, the more insight on the hypothesized relationship one will be able to garner from the statistical analysis. With lower levels of measurements, the assumptions of the data analysis and the actual analysis itself tend to be less restrictive and less sensitive.

In this study the utilization of trained raters was not only costly but time consuming. Additionally, the researcher did not have the technical proficiency to reliably and professionally determine the extent in which incivilities were present at a particular location. Instead, this study focused exclusively on the determination of the actual presence of physical incivilities on the property. The researcher was able to confidently and reliably determine whether incivilities were present on the property by visual confirmation. Therefore, this study primarily collected nominal and ordinal levels of measurements on physical incivilities. Finally, although this approach did not generate the levels of measurement to produce extensive and detailed statistical analysis, it was viewed as appropriate to determine whether relationships existed between the research independent and dependent variables. This was the overall goal of the research.

Physical Assessments of Properties vs. Property Valuation

Another limitation is the timeframe in which data on physical incivilities were collected versus the time frame in which property assessments were conducted by the City Assessors' Office. Data on physical incivilities were collected in the early summer of 2009. The City Assessors' Office conducted property assessments for the 2009 calendar year in the early to late winter of 2008-2009. There was no way of knowing for certain if the physical incivilities that were monitored on the properties during the data collection process were present on the property at the time in which the property assessments were conducted by the Assessor's Office or vice versa.

To counter this limitation it is worth noting the time frame in which incivilities on specific residential properties is recognized and addressed by the City. First, the bureaucratic process of identifying incivilities on private property i.e. confirming the condition of the incivility and ensuring that it violates local ordinances and notifying the property owners, can be very time consuming. Often, blighted residential property is brought to the locality's attention by concerned homeowners in the neighborhood. If the blighted property is not brought to the City of Richmond's attention, then that property typically continues to remain in that condition until the locality is made aware. This accounts for some of the delay.

Once the property is brought to the City's attention, there is an administrative process of recording the complaint, assessing the problem, and then validating the condition of the property to determine if it violates local ordinances. Due to a shortage of resources and the often high case load of local staff, the process of determining violations against local code enforcement or blight ordinances can also be extensive. This also adds to the time frame in which properties can be assessed and abated.

Additionally, the time frame in which specific physical incivilities are abated, particularly abandoned property, boarded doors and windows, and graffiti on private property is also very time consuming due to local and judicial policies on private property owners. Often, local ordinances, as is the case in the City of Richmond, give property owners significant time to correct problems associated with incivilities found on their property. This process often lasts several months. After that time, City resources, if available, are used to address the problem. However, not all blighted properties are abated at once. Often, some of the most severe blight issues are addressed first leaving the countless other properties afflicted by incivilities to remain untouched.

The above examples suggest that the time frame in which blight on residential property is abated can be very time consuming. Therefore, the likelihood of residential properties containing physical incivilities during the assessment process that would have also been present to some degree during the data collection process a few months later is somewhat plausible but certainly not infallible. It is worth noting that the City of Richmond is currently implementing a tool to better identify and faster resolve incivilities throughout the entire locality, in which the exclusive purpose is to more promptly respond to such issues.

Conclusion

This chapter provides the methodology of this research. The following chapter will discuss the results of the data analysis from each of the quantitative designs, including a discussion of the results from each of the three levels of analysis in the cross sectional design. Additionally, the results from the focus group and individual interviews will also be presented and summarized. The final chapter provides a discussion of this research's implications for public policy.

Chapter IV:

Data Analysis and Results

Overview

This chapter provides a discussion of the data analysis resulting from the research methodology. First, the chapter presents the findings from the longitudinal analysis. This is followed by a discussion on the findings from the focus group and individual interviews. The chapter then discuss the sample size and confidence levels that were utilized in the cross sectional, quantitative analysis. This is followed by a discussion of the results of that analysis. Results for each level of analysis, the individual property level, the block group level, and the neighborhood level of analysis, are provided. Multiple regression models were utilized and interpreted for all levels of the cross sectional quantitative analysis. Additionally, principal component analysis was also utilized at the block group and neighborhood levels of analysis as a supplement to the regression models. The statistical results of each area neighborhood are also provided. Finally, the statistical results of an additional incivility assessment are provided and interpreted in the context of this research. Specifically, the incivility vacant lots were also incorporated in the analysis to determine its influence on property values. This chapter concludes by answering the research and ancillary questions as well as the study's hypotheses.

Longitudinal Assessment

The first analysis assessed and identified longitudinally the areas of the municipality that experienced unusual or unique trends in property values. This was performed by gauging changes in assessed values over time. A time series assessment was conducted in order to analyze variations in the assessed values of all single-family residential properties in Richmond over a period of five years (between 2004 – 2008). For this segment of the analysis, the individual properties were queried by calendar year and by their respective census tracks (each of the census tracts were grouped by their designated census numbers/areas). This allowed for the assessment of trends in property values for each designated census area. (For the purposes of this research, each census tract with the same first digit number were grouped together to develop a "census area". Each census area included a listing of all like numbered census tracts. For example, the assessed values of all single-family residential properties within census tracts 102, 103, 104, etc. was added together to get a total assessed valuation of all single-family residential properties within census area 100. Census tracts 201, 202, 203 etc. were grouped together to form census area 200. Each census area represented a specific region of Richmond since all of the census tracts with the same first numbers were located next to one another. There were 7 census areas in this study.) Below is a GIS (Geographic Information Systems) map of the City of Richmond identifying all of the associated census areas for this segment of the analysis.

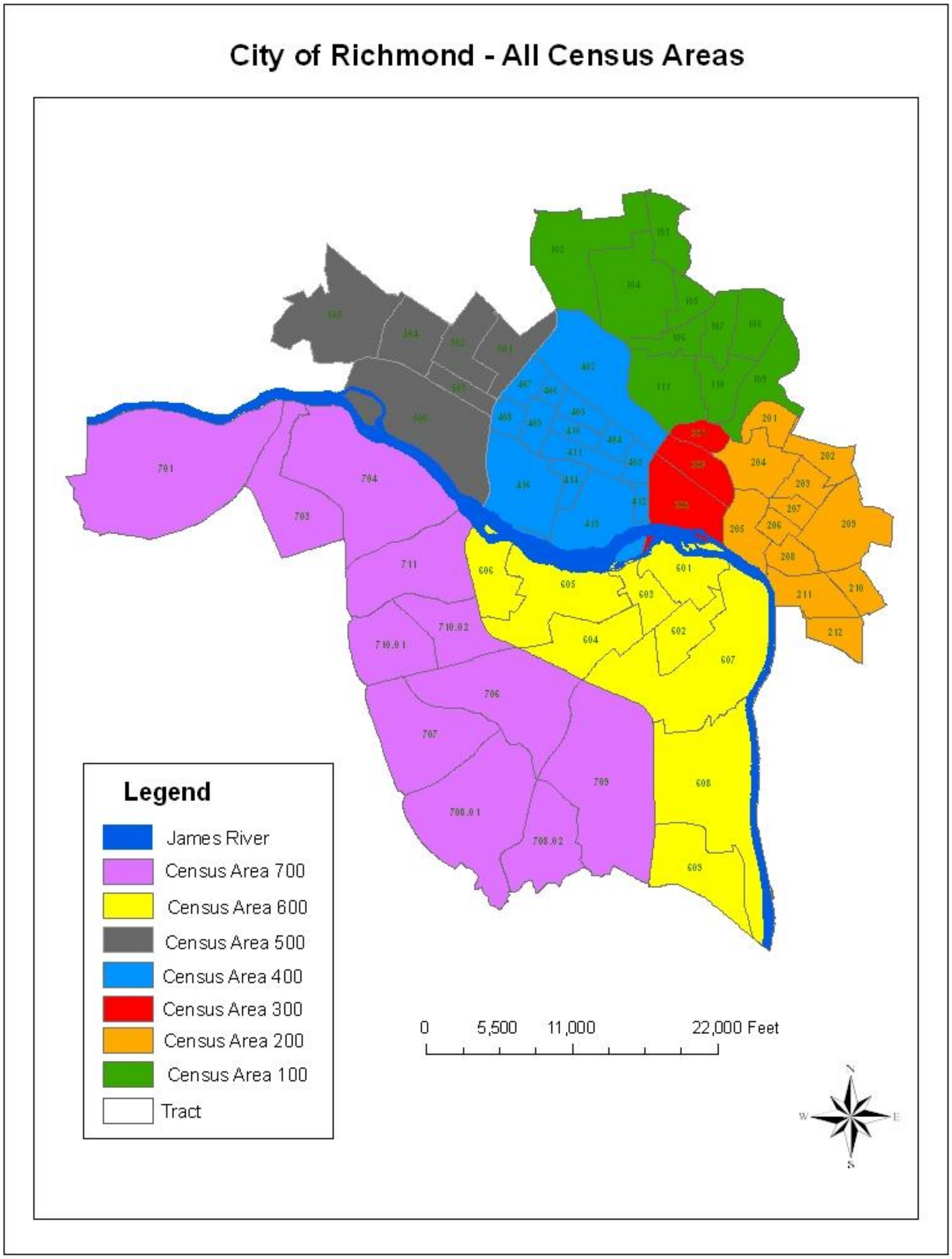


Figure 6: Geographic Information System Map - City of Richmond - All Census Areas

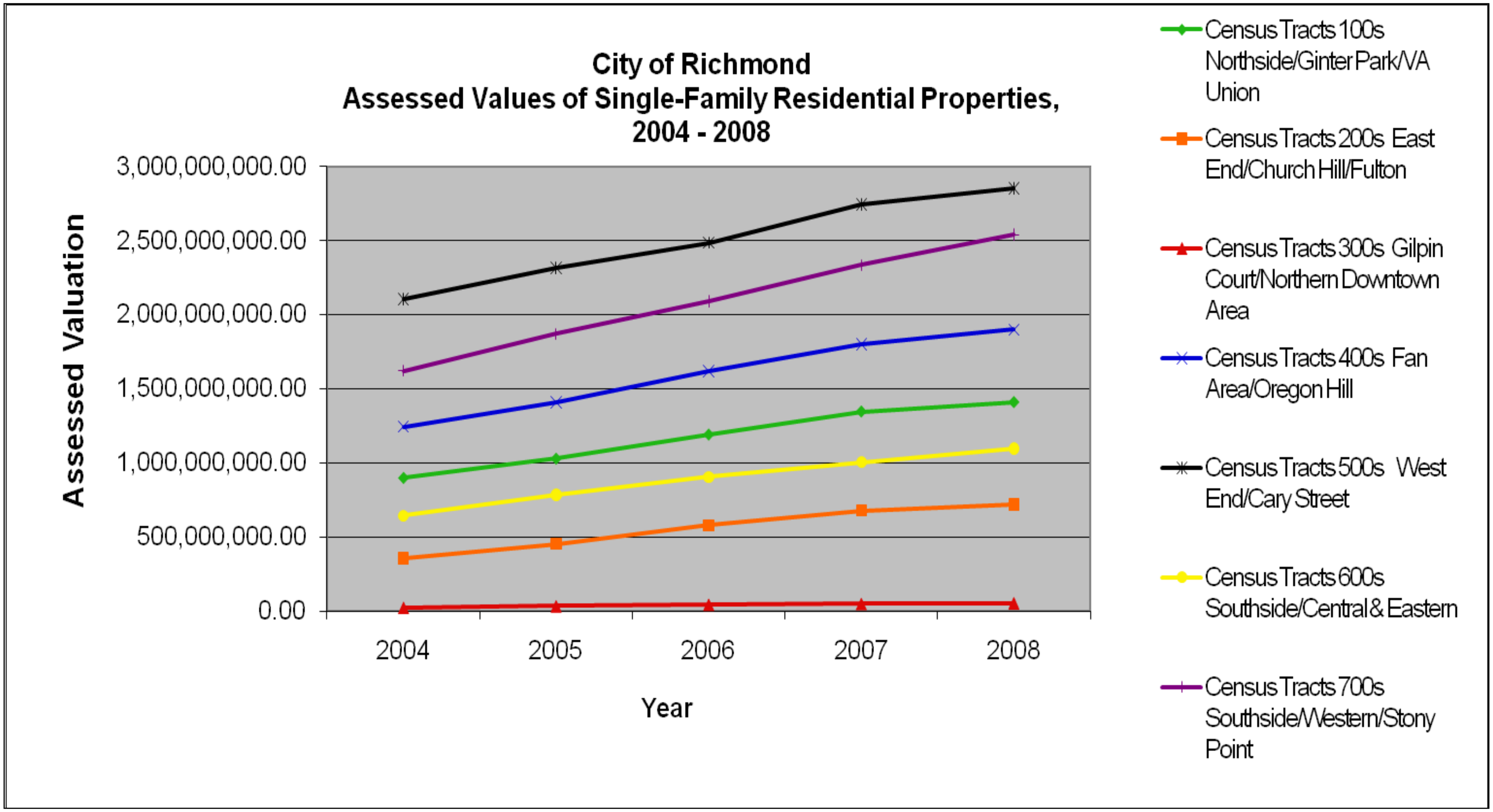
One consistent long term trend of the time series assessment was that single-family residential property values increased every year in Richmond. This was evident within each census area across the five year time period. Accordingly, there were no decreases in assessed values across the time period within any of the census areas.

Another consistent trend throughout each of the census areas, although not long term, was the rate of growth in values from 2007 to 2008. From 2007 and 2008, each census area witnessed the smallest rate of growth in valuation. The rate of growth in values between 2007 and 2008 was the smallest during this one year period more than any of the other years in the longitudinal analysis. Each census area witnessed a decline in the rate of growth in values during that one year time period. No census area was immune from this phenomena. Specifically, from 2007 to 2008 the growth in values averaged between **4 percent and 9 percent** across all census areas while in other years, growth in values was in the double digits. From 2004 to 2005 there was a **13 – 41 percent** increase in values across the census areas. From 2005 to 2006 there was a **7 – 30 percent** increase in values across the census areas. From 2006 to 2007 there was a **10 – 17 percent** increase in values across the census areas. The largest growth in values was from 2004 to 2005 and the smallest growth in values was from 2007 to 2008.

The decline in the rate of growth in assessment values from 2007 to 2008 is possibly attributed to the slowing economy and the associated housing crisis in late 2007/early 2008 time frame. This was likely an irregular fluctuation in a natural trend of increasing values of residential properties, not only in Richmond, but also in many other urban and suburban areas throughout the country. Although, the average values of properties did not grow as much during this one year time period as compared to other years, there was still an increase in overall property values over time.

Although each of the census areas witnessed growth in values of single-family residential properties between 2004 and 2008, three census areas had substantially lower property values than the other four areas. Specifically, single-family residential properties in census area 300, 200 and 600 had the lowest values across all five years. Census area 300 had the lowest values out of all census areas across all five years. Yet, census area 300 had the least amount of single-family residential properties out of all seven census areas (N=319 out of 49,768 total in 2008). This suggests that the limited number of single-family properties in this area could have experienced factors that influenced the values of properties within that area to remain below that of values in neighboring census areas. Additionally, this census area may be populated with numerous multi-family dwellings (such as apartments, public housing, etc), commercial, and industrial properties. The chart below provides a visual representation of the trends in values across the five year period for each census area while clearly depicting the areas of the City of Richmond that have the highest and lowest values for single-family residential properties.

Table 2: City of Richmond Assessed Values of Single-Family Residential Properties, 2004 - 2008



Single-family residential properties within census area 300 averaged between $23 and $53 million in total value between the five year period. Properties in census area 200 averaged between $355 and $719 million in total value and properties in census area 600 averaged between $643 million and $1.1 billion in total value during that same time frame. On the other hand, census areas 500, 700, 400, and 100 had the highest values for single-family residential properties across all years. Properties in census area 500 averaged between $2 and $2.8 billion in total value over five years. Properties in census area 700 averaged between $1.6 billion and $2.5 billion in total value. Properties in census area 400 averaged between $1.4 and $1.9 billion in total value. Finally, properties in census area 100 averaged between $899 million and $1.4 billion.

Interestingly and although census areas 300, 200, and 600 had the lowest values for single-family residential properties in Richmond for each calendar year, those same areas experienced the largest rate of growth in value over the five year time period. In census area 200, property values increased 102 percent over the five year analysis period. In census areas 300, property values increased 124 percent. Census area 600 witnessed an increase of 70 percent.

The other census areas observed between a quarter to one half the rate of growth during the same period. Property values in census area 100 increased 56.6 percent. In census area 400, property values increased 52.8 percent. In census area 500, property values increased 35.6 percent. Property values increase 56.6 percent in census area 700. This assessment naturally leads to additional questions into why some areas (census areas 300, 200, and 600) had lower property values than other areas (census areas 500, 700, 400, 100), what factors were attributing to the single-family residential properties having lower values in specific areas of the locality versus others, and why some areas that had the lowest property values experienced such large increases in values over a five year time period.

Summary and Conclusion

Overall, the time series analysis clearly indicated that assessed values of single-family homes have increased in the City of Richmond over time. Across a five year time period, all census areas witnessed an increase in the value of single-family residential properties. Yet, there were specific areas of Richmond in which property values were more likely to be lower than in other areas. Census areas 300, 200, and 600, which included portions of the downtown, eastern, and south side of Richmond, contained properties with the lowest values. Conversely, there were areas in Richmond in which property values were higher. Census tracts in the 500s, 700s, 400s, and the 100s, which included portions of northern, western, central and south west areas of the City, contained single-family properties with higher values. Census tracts 500 and 700, in the West and South West parts of Richmond, had properties with the highest values. Despite census area 300, 200, and 600s' substantial increase in values across five years, the values of single-family properties in these census areas still lag considerably below those of census areas 500, 700, 400, and 100. What is attributing to census area 300, 200, and 600s low values? Do these areas contain high or low levels of incivilities? If so, what are the influences of these incivilities on property values? Conversely, are incivilities absent or simply do not have an influence on property values in the areas in which property values are higher? What are the social, demographic, and economic characteristics of those areas in which property values are high and low? Are there other features of the environment that are influencing property values? Answers to these questions will aid in developing a clearer context of Richmond's housing market as well as understanding the factors that are influencing single-family residential property values citywide and within specific areas of the locality.

Qualitative Assessment

The second level of analysis qualitatively assessed Richmond's housing market. This analysis relied upon a focus group panel discussion and one on one interviews with professionals versed in multiple aspects of Richmond's housing market and neighborhoods. Those individuals included:

- Richmond area realtors,
- Municipal community development professionals,
- Non-profit housing administrators, and
- Richmond area real estate loan officers.

The purpose of this segment of the analysis was to obtain a qualitative assessment of Richmond's housing market by: gaining insight into the different types and styles of homes in the City of Richmond, understanding the complexities of and the factors that influence property values, outlining the specific features that adversely influence property values, and pinpointing areas in Richmond that may be influenced by such factors.

The researcher conducted the focus group session in November of 2008 at the Varina Public Library. There were a total of five participants at the focus group panel discussion. The individual interviews were conducted via telephone in December of 2008. Five individuals were interviewed by telephone. The topics covered included a wide range of specific and general attributes of Richmond's housing market as well as the influence of incivilities on property values. The specific topics covered included: home/housing styles, attitudes and preferences of investors and homeowners, trends in property values, culture of city neighborhoods, and stimulants and depressants of Richmond's housing market. Interview questions were developed based on each of these topics. The focus group discussion lasted approximately one and a half hours.

The qualitative analysis focused on the identification of specific trends and themes in the responses and on each topic covered. Overall trends and themes are provided below as well as a brief summarization and analysis of that theme. Where appropriate, specific quotes are provided as supplements to the analysis. Delineation between the responses of the focus group and the individual interviews are also provided where applicable.

Topic: Style/Types of Homes in Richmond

Theme: There is a wide range of different styles of homes in Richmond and these styles of homes are not particularly homogenous to a particular area or region of the locality.

All participants in the individual interviews and the focus group expressed that there are many different and unique styles of homes in the City. The focus group panel suggested that the development of similar styled homes in the locality is primarily dependent upon the time frame or era in which the home was built. Similar styled homes in Richmond were typically developed during the same historical era. Yet, these same styled homes can be located within the same area (neighborhood) or can be located in completely different regions of the municipality. One interviewee indicated that homes within the same neighborhoods typically have the same architectural style, as well as similar internal amenities as other homes within the immediate area.

Theme: The value of homes in Richmond, based on style, is primarily determined by larger economic principles. However, the area in which the property is located tends to be a driver of its value.

It was clear from the focus group and the interviews that market conditions and market activity is a driver in the diversity in values of different styles of homes. Specifically, the price that individuals are willing to pay for a particular style of home dictates its value. This was evident by one focus group participant that indicated that "the demand that individuals place on a particular style of home typically dictates its value" (Focus Group Participant, November 2008). However, both the focus group and interviewees indicated that it is difficult to gauge the value of a home based exclusively on its style. Indeed, the demand for a particular style of home is reflected and shaped by the prices sellers are willing to offer and in which buyers are willing to pay. However, the demand for a particular style of home is often dwarfed by the keen interest in the location or area in which the property is located. The area in which the property is located plays a monumental role, more so than the style of the home, in the demand for a property. More explicitly, the amenities within an area can play a tremendous role in the demand and value of a property. Such features, can impact positively or negatively the value of that particular style of home within that area. Thus, the location or area in which the property is situated can play a stronger role rather than its style (exclusively) in influencing its value.

Topic: Investor and Homeowner Attitudes and Preferences

Theme: Investors and Homeowners prefer for their property to be in an area in which the quality of life is considered high.

Both the focus group participants and the individuals interviewed suggested that there were not many differences between the preferences of both investors and homeowners when considering the location of a desired property. There were very strong and consistent sentiments between the focus group participants regarding the preferences of investors and homeowners of the area in which they seek to invest/purchase a property. It was clear that prospective homeowners and property investors prefer for their property to be in an area with amenities that are indicative of a high quality of life. Specifically, both homeowners and investors, particularly homeowners, prefer to own a home in an area in which the quality of life is high or where there will be no real or perceived threats to their property and their quality of life. This includes an environment that illicit feelings of safety for themselves and their families, where the neighborhood is stable, has good performing and safe schools, where crime is minimal or non-existent, that has very little or no blight, and that lacks vacant structures. Both investors and homeowners also seek other commercial quality of life amenities such as the availability of and close proximity to amenities such as restaurants, grocery stores, and the downtown/employment sector. The proximity of these amenities in areas in which the property is located is a significant preference of buyers and investors and was suggested to positively impact the demand for such properties. Also, properties that are in close proximity to parks and waterways (rivers) were another amenity of the area that attracts people to an area to buy/invest in a property.

Both the focus group and the individual interviews suggested that buyers prefer to live in an area in which turnover is low or where there are not a significant number of short term renters. Investors, on the other hand, may prefer areas in which there are a large number of renters. Short-term tenants are the primary clientele for many residential property investors. Still, an environment that is perceived as safe, relatively stable, contains thriving commercial and retail outlets, and where dining amenities and the downtown employment center are in close proximity to their properties are key preferences of buyers and investors that manifest itself to more stable and potentially higher property values.

Theme: Investors and Homeowners typically do not prefer for their property to be in an area in which the quality of life is considered to be low.

Both investors and homeowners share similar views regarding the features of an environment that tend to repel them from an area. Such features included: the unavailability of commercial, retail, or grocery outlets, excessive levels of poverty, the presence of public housing, the perception of poor performing and unsafe schools, abandoned buildings, blight, crime or the perception of crime in an area, and other demographic stereotypes and stigmas of the area.

It was evident from the focus group and the individual interviews that the condition of the properties within an area in general, and the overall condition (social and physical) of the larger environment, also plays a role in whether an investor or a homeowner decides to purchase or invest in a property in that area. It is not necessarily the condition of a single property (exclusively) in the community that adversely sways buyers and investors from an area. Rather, it is the condition of the overall, larger environment in which the property is located that tends to attract or repel homeowners and some investors. It was very obvious that the location of and the condition of the general area in which the desired property is located is a critical determinant of property values and is very likely to be one of the most important decision points for homeowners and property investors.

Theme: High levels of blight within an area tend to deter buyers and investors from that area.

There was unanimous consensus between the focus group and the individual interviews regarding the perceptions of prospective homeowners and investors on blight. It was noted that some investors may view a small amount of blight as an opportunity to purchase properties at below market rates and then redevelop that property for a profit. Yet, both investors and buyers tend to view excessive levels of blight as a threat to their safety and to the value of their investment (property). One interviewee suggested that "excessive disinvestment within an area tends to scare buyers and investors" (Interviewee, December 2008). One member of the focus group noted that high levels of blight contribute to the "perception of all of the problems within an area" (Focus Group Participant, November 2008).

It was suggested that high levels of blight discourages homeowners and investors from investing in a particular area. Additionally, blight has a psychological connotation in that it suggests that crime is prevalent in the area. This psychological assessment of blighted conditions often adversely impacts demand for homes in that particular area. This low demand for property in an area was suggested to directly impact the value of properties in general within that immediate area.

Another participant indicated:

> "If someone puts graffiti on a building and no one cleans it up then it is a signal that no one cares about that area and a signal that anyone can get away with it. If someone attacks one of our [non-profit developed] properties, the maintenance guys know that it must be gone within 24 hours so that it doesn't, even if it's very expensive, give off the signal that no one cares. Just as an employee represents an entire company, one house represents an entire neighborhood. If you have one house that is not repaired or a couple guys hanging on the front porch or someone spray painting a stop sign, any of those can contribute to that feeling that the neighborhood is out of control and that contributes to/leads to the fear that residents feel" (Focus Group Panel Participant, November 2008).

Blight was viewed by everyone as a detriment to an area. Additionally, the likelihood of blight causing severe issues for the neighborhood is when it (blight) remains unabated and persists and expands in an area. One trend in the responses among the focus group and the interviews was that even trivial amounts of blight must be abated promptly or it will spark further blight and other problems for the community. One such problem is not only increased fear levels and community withdrawal, but also crime, as areas that are littered with blight are viewed by prospective homeowners and investors as also having problems with crime.

Topic: Property Values in Richmond

Theme: A property's value is primarily determined by economic forces.

There was general consensus among the focus group that the demand for a property will dictate its value. Low demand for homes in an area typically manifests itself by low property values. Conversely, high demand for a home in an area typically manifests itself through higher property values. Features that inhibit the quality of life of an area adversely influence demand for homes in that area and consequently have a negative influence on property values within that community.

Theme: Blight tends to be prevalent in areas in which property values are low.

The focus group participants and the individual interviewees felt that blight has a negative influence on property values and contributes to reduced property values in the City of Richmond. The focus group panel expressed that physical blight is often confined to particular areas of the City. Subsequently, most of the interviewees and the focus group panel suggested that blight tends to be ubiquitous in areas in which property values are lower. It was noted that blight does not appear to exist in areas in which property values are higher.

Although there was unanimous consensus that blight is a significant contributor to the decline in property values, there were consistent expressions of caution that there were other factors that have a negative influence on property values. In the City of Richmond, there are other elements that also play a role in the destabilizing the housing market within specific areas of the City.

Theme: The areas in the City of Richmond in which property values are low, typically contain a variety of features that play a role in keeping values down. There is not a single, exclusive factor that adversely impacts property values.

It was evident from the interviews and the focus group discussion that single-family residential property values in the City of Richmond are very diverse. Some areas of Richmond contain homes with higher values than other areas. Similarly, there are distinct areas in the City in which property values are lower than in other areas. The focus group and the interviewees confirmed from the time series analysis that single-family residential property values in census areas 200 and 300 were lower than in other areas of the City, despite the likelihood that some homes in both areas share very similar styles (year built, similar build, etc.). The reason for property values being lower in these areas versus others was suggested as being attributed to several factors that were inherent within those areas. These factors include: crime, poverty, blight, and specific neighborhood demographics such as low incomes and low educational attainment among area residents. These same features were considered to be relatively non-existent or to exist in a very small degree (have no significant influence on property values) in areas of Richmond in which property values were high such as Census Areas 500 and 700.

Topic: Urban Neighborhoods and Stimulants and Depressants of the Housing Market

Theme: There are several challenges to Richmond neighborhoods in terms of viability, vibrancy, and health. Such challenges are often a combination of structural and social conditions that tend to envelope communities in Richmond.

There were modest differences between the focus group participants and the interviewees regarding the factors that have an adverse influence on the local housing market. The focus group discussion held in November of 2008 identified the role of the aging housing stock and its upkeep as a barrier to the revitalization of urban neighborhoods. This was directly related to the condition and upkeep of properties. An older housing stock requires significantly more maintenance than newer construction. This is particularly prevalent in Richmond, an older City, where many homes were built in the early 20th and late 19th century.

Additionally, there was discussion in the focus group regarding the turnover of older homeowners as well as the socio-economic conditions of several of the City's poorest communities. The passing of older homeowners, typically residents that have lived in the neighborhood for several decades, was considered a severe impediment to the revitalization of urban neighborhoods as such properties tend to quickly degenerate. Often, no next of kin is able to be found or is close enough to maintain and upkeep the property. Tax delinquent sales of such properties can last many years due to the legal ramifications of title and deed transfers and other laws designed to protect individual property rights. Additionally, key socio-economic conditions of the neighborhood were also identified as a depressant of the urban housing market. Areas in Richmond, where: poverty is high, there are multiple public housing complexes, and there are elevated high school drop-out rates were also elements of the community that were suggested to depress the housing market within those specific areas in the city.

Both the aging housing stock and the turnover of older urban residents was not specifically identified by any one of the interviewees. However, every interviewee and focus group participants felt that crime, poverty, and blight were depressants of Richmond's and most other urban housing markets. Each participant suggested that portions of Richmond's East End, Downtown, and Southside areas have problems with each of these socio-economic issues. Property values, as a result, are lower in these areas.

Theme: The term blight is subjective and is typically associated with the overall appearance of the larger environment.

One trend in responses among the focus group and the individual interviews was that there is not a single, distinct or specific definition of blight. It was clear, however, that the concept of blight is relative and incredulously subjective. Generally, it was believed that the concept of blight is most commonly associated with the visual appearance of the larger area. This was evident by one suggestion in the focus group that blight is characterized as "a neighborhood out of control" (Focus Group participant, November 2008).

Blight is not necessarily recognized as an exclusive attribute. For example, one broken window, one vacant building, or one teen hanging on a corner, is not necessarily associated with the concept of blight. However, several broken and boarded windows, multiple vacant properties, and groups of youth loitering are more commonly associated with the concept of blight as it is more indicative of the broader ecology.

There was also general consensus that an environment riddled with blight is also connected to the impression of an area having problems associated with crime. Blight was highly regarded as also being associated with the perception of an area having high levels of crime. Areas in Richmond that are considered as high crime areas were viewed as having higher levels of blight. Similarly, areas that are perceived to have excessive levels of blight were viewed as having problems with crime. There appears to be a concomitant relationship between crime and blight. Both conditions were viewed as having a negative influence on property values within an area and both were suggested to exist simultaneously.

Topic: Correlation of Blight to the Reduction in Property Values

The qualitative interviews suggest that one of the most critical determinants of property values is the location or area in which the property is located. Specifically, the quality of life features or lack thereof of quality of life features that exist within the area in which the property is located are influential factors of a property's value and the values of properties within the immediate area. Areas that are rich in poverty, blight, crime, that lack or do not have in close proximity viable commercial industries, such as retail and grocery outlets, that are perceived to be unsafe and/or have poor performing public schools, are more likely to have properties with lower property values as compared to homes in other areas in which the schools are perceived as safe, crime is low, poverty and blight are non-existent, and where there are viable commercial and retail outlets in close proximity. Areas that boast these higher quality of life features will likely have properties with higher values. Such areas are typically in high demand. The assessed values of such properties reflect that demand by being higher. Therefore, the condition of the overall area in which the property is located, the actual condition of the properties within the area, and the amenities or lack thereof within such an area are key determinants of residential property values.

Areas of the City in which incivilities are higher tend to have lower property values than areas of Richmond that do not have incivilities. This suggests that incivilities have an adverse influence on property values in the City of Richmond. Property values in an area with incivilities are likely to be lower and were suggested to not appreciate as much as property values in other areas that do not have incivilities.

Excessive levels of physical and social incivilities, such as abandoned property, trash, graffiti, vice, loitering, etc. were viewed more as a deterrent rather than a magnet of an area.

Such incivilities tend to act as a repellant to neighborhood growth, stability, and to informal social control. Additionally, areas in which incivilities are higher tend to have issues associated with property and personal crimes. From a psychological perspective blight also communicates that crime in the area is pervasive. The existence of blight, not only suggests that the area is "out of control", but ultimately exudes feelings that the area is unsafe (Focus Group participant, November 2008). These psychological connotations of blight have a direct, adverse influence on the demand of properties within that area. Thus, the housing market within those areas will reflect that demand by being unstable and by having properties with lower values.

Summary and Conclusion

Both the participants in the panel discussion and the individual interviews shared similar responses to nearly all of the questions. The lack of extreme differences in the responses of participants lends validity to the results of the qualitative analysis. What was clear from the professionals interviewed were that incivilities were recognized as a factor in the decline of communities from a psychological and an economic standpoint. Specifically, incivilities can have an adverse impact on a community by having a negative influence on property values and on individual feelings of safety. This affirmation aids in supporting the premises of the Incivilities Thesis that incivilities are linked to increased levels of fear and can result in the instability of the local housing market.

However, the extent and strength of the influence of incivilities to lower property values appears to be predicated upon the influence of other characteristics inherent within the community. There are other demographic and structural features or characteristics of a community that were viewed as contributing to properties in an area having lower values as well. Poverty, the presence of public housing, poor (perception of) performing schools, crime (perception of), etc. are other elements of an area that were also viewed by the participants as having an adverse influence on property values also.

Additionally, the focus group and interviewees further elaborated on and validated the results of the time series assessment by suggesting why certain areas of Richmond had lower property values than other areas. Areas in the City of Richmond that have lower property values than other areas are likely afflicted by: excessive levels of incivilities, have moderate to high levels of poverty, have high incidents of violent and property crimes, have public housing complexes, and/or have a significant proportion of the population in the area with lower income and lower education levels, as compared to other areas. Although there was a general consensus that there are many factors including incivilities that have an adverse influence on property values, it was not explicit which of these neighborhood factors has the most powerful, negative influence on property values.

The questionable nature of the extent of the influence of incivilities on property values is primarily attributed to role of other variables that are also likely to be prevalent in areas with high levels of incivilities. Such factors are also viewed as playing a role, albeit potentially strong, in adversely influencing property values in urban neighborhoods. An additional quantitative analysis was conducted in order to determine the degree in which incivilities and other socio-demographic variables have an adverse influence on residential property values in the City of Richmond.

Quantitative Assessment

The qualitative analysis suggested that incivilities play a role in reducing property values in the City of Richmond. However, the qualitative analysis also indicated that there were other influential factors that negatively influence property values. The third and final level of analysis was to conduct a quantitative assessment on the correlation of incivilities and other variables to single-family residential property values in Richmond. Specifically, this segment of the study focused on determining the extent in which, structural characteristics of the property, incivilities, community demographics, and proximity measures influenced urban property values. The outcome of this analysis will aid in supporting or refuting the literature on incivilities and its adverse influences on residential property values. Prior to discussing the data results of the final quantitative analysis, a brief overview of the sample drawn and confidence levels of the sample is provided.

Sample Size and Confidence Level

The primary purpose of generating a sample and determining a sample statistic is to determine or make accurate estimates of the greater population from which the sample was drawn. The preciseness, however, of the sample/sample statistic in accurately estimating the population parameters is a concern. To address that concern, a suitable sample size was selected that would produce a 95 percent confidence level. Additionally, confidence intervals, or ranges of values which likely contain the population parameter, were generated.

A fairly large, yet reasonable number of sample units were randomly selected for this study. Typically, the greater the sample size, the more likely that the sample will reflect the population from which it was drawn. As previously indicated, Richmond has over 49,000 single-family residential properties within its geographic boundaries. A sample of 314 sample units was randomly selected in order to estimate the population parameters on single-family residential property values within the locality. For the 2009 calendar year, the mean of the 314 randomly selected sample units assessed values was $212,981.53. The 95 percent confidence interval generated a lower confidence interval/limit of $205,238.87 and an upper confidence interval/limit of $220,724.19 for the population in 2009. Both the confidence level and the confidence intervals indicate with 95 percent certainty that the true mean of the study's population (the mean of the assessed values for all single-family residential properties in Richmond for the 2009 calendar year) should fall within the above ranges. At the 95 percent confidence level, 314 sample units were deemed appropriate and suitable for this type of analysis. A GIS map of the 314 randomly selected properties in the City of Richmond is provided below. This map shows the spread of the selection of single-family residential properties throughout the entire municipality.

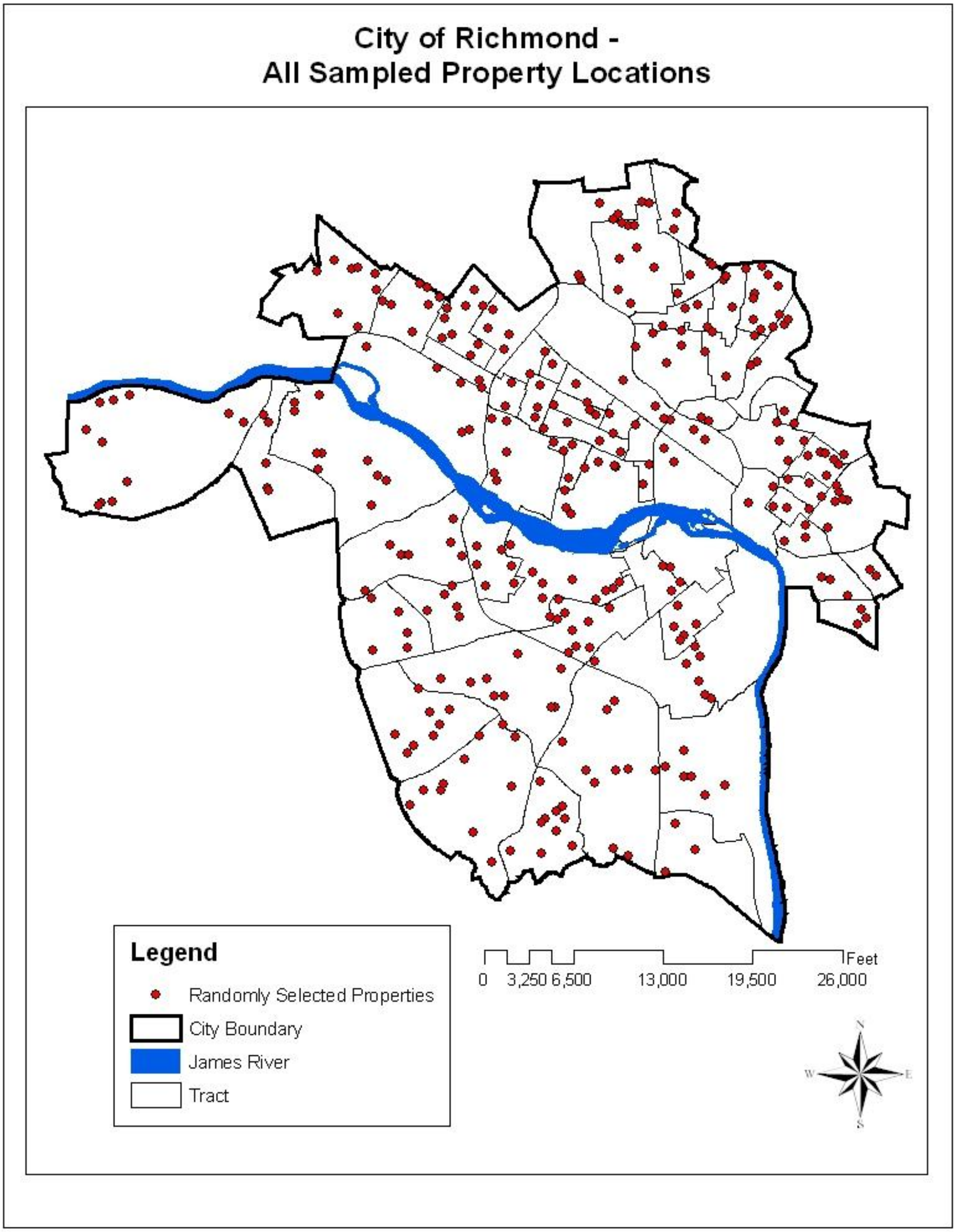


Figure 7: Geographic Information System Map - City of Richmond – Location of All Sampled Properties

Individual Property Level of Analysis

The first level of analysis assessed the influence of the study's independent variables to property values at an individual property level of analysis. Specifically, a multiple regression analysis, utilizing all of the study's independent variables with the exception of the socio-economic/census data, was performed to determine the correlation of the independent variables to the dependent variable. All of the data that was collected at the individual property level was utilized for this analysis. For this level of analysis, the variable 2009 property (assessed) value was utilized as the dependent variable.

Prior to performing a multiple regression analysis, a multicollinearity analysis was performed to determine if any of the independent variables were related to one another and thus needed to be removed from the analysis. A collinearity diagnostic was performed and generated a condition index of 16.47. Additionally, variance proportion scores of .77 and .86 for the independent variables distance to public housing and distance to the central business district were generated. A multicollinearity problem exists when the condition index is typically greater than 30 and the variance proportion is high (.80 or .90 +). According to the coefficients table, the variables with the lowest coefficient scores were distance to public housing with a tolerance score of .184 and distance to the central business district with a tolerance score of .153. A tolerance score of near 0 indicates a potential multicollinearity problem. A tolerance near 1 indicates independence. The coefficient scores of both independent variables were relatively close to 0 which suggested a potential for a multicollinearity problem to exist. However, before deciding whether to exclude or retain either of the two independent variables in question, a correlation analysis was performed. The correlations analysis indicated, via the correlations table, that the independent variable distance to public housing complex and distance to the central business district had a correlation score of .177 and .104, respectively, against the dependent variable. Since the correlation scores were low and the condition index was lower than 30, all of the independent variables for the regression analysis were retained in the analysis. The multicollinearity statistics and corresponding tables are provided in Appendix E. The individual property level analysis descriptive statistics are provided below.

Table 3: Descriptive Statistics Summary Table – Individual Property Level of Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Sqft	314	664	19366	1671.0573	1312.24597
Yblt	314	1805	2007	1943.621	27.16556
Lotsize	314	906	146797	11311.2484	13365.09741
Vacancy	314	0	1	0.0701	0.25566
Graffiti	314	0	1	0.0064	0.07968
Trash	314	0	1	0.0096	0.09743
BDW	314	0	2	0.086	0.36926
Vegetation	314	0	1	0.051	0.22026
Vice	314	0	3	0.0223	0.23198
Intox	314	0	6	0.1401	0.54166
Noise	313	0	35	0.492	2.18989
Fight	314	0	9	0.2229	0.86167
Loiters	314	0	8	0.8599	1.1908
Disph	314	0.08	6.9	1.7701	1.44801
Dissch	314	0.03	3.26	0.5101	0.31667
Discbd	314	0.56	8.52	3.3821	1.66525
AV2009	314	11500	3555800	212981.5287	2.55E+05
Valid N (listwise)	314				

Assessment Including the Independent Variable Square Footage

Next a stepwise multiple regression analysis was performed utilizing all of the independent variables. The regression analysis generated four significant models. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix F.

Table 4: Multiple Regression Model Summary Table – Individual Property Level of Analysis – Including Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891[a]	.794	.793	1.16E+05
2	.898[b]	.807	.806	1.12E+05
3	.903[c]	.816	.814	1.10E+05
4	.905[d]	.820	.817	1.09E+05
a. Predictors: (Constant), Sqft				
b. Predictors: (Constant), Sqft, Lotsize				
c. Predictors: (Constant), Sqft, Lotsize, BDW				
d. Predictors: (Constant), Sqft, Lotsize, BDW, Dissch				

Model 1 used only the independent variable square footage and had a very high R score of .891. The R score of .891 suggests that the strength of the relationship between the variable square footage and property values was very strong and positive. Also, Model 1's R square score of .794 indicated that the model explained, a high percentage, 79.4 percent, of the proportion of variance in a property's 2009 assessed value. Overall, the independent variable square footage does an excellent job in predicting a property's 2009 assessed value. Model 1 was significant at the .000 level. The variable square footage had a standardized beta weight of .891 which indicated that this independent variable made a very strong, positive contribution to property values. In Model 1, the independent variable square footage was significant at the .000 level.

Model 2 utilized the variables square footage and lot size. Model 2 had a very high R score of .898 and a high R square score of .807. Model 2 was significant at the .000 level. Model 2's R score revealed a very strong, positive relationship between the two independent variables and property values. The R square score of .807 indicated that the two independent variables explained a very high percentage, 80.7 percent, of the variation in a property's 2009 assessed value. The independent variables in Model 2, square footage and lot size, had standardized beta weight scores of .862 and .118 respectively. The standardized beta weight scores indicated that both independent variables made a positive contribution to property values. However, the independent variable lot size did not have as strong of an influence on the prediction of property values as the independent variable square footage. The independent variable square footage was the more important variable (in relation to its contribution to the dependent variable) since it had the higher standardized beta weight score. Both independent variables were significant at the .000 level.

Model 3 used the independent variables square footage, lot size, and the physical incivility boarded doors and windows. Model 3 had a very high R score of .903 and a high R square score of .816. Model 3 suggested the existence of a very strong relationship between the three independent variables and property values. Additionally, according to the R square score, Model 3 explained a large amount, 81.6 percent, of the variation in the dependent variable. Accordingly, Model 3 was significant at the .000 level. The independent variables square footage, lot size, and boarded doors and windows had standardized beta weight scores of .861, .109, and -.093 respectively. Both square footage and lot size continued to make positive contributions to the prediction of property values, even though square footage still had a much stronger contributory influence on the dependent variable than a property's lot size. The presence of board doors and windows, a physical incivility, had a weak but negative contribution to the prediction to a property values. In Model 3, the independent variable board doors and windows was significant at the .000 level.

Model 4 used the independent variables square footage, lot size, boarded doors and windows and distance to the nearest public school. Model 4 had a very high R score of .905 and a high R square score of .820. Model 4's R score also indicated a strong relationship between the model's four independent variables and the prediction of property values. The R square score indicated that Model 4 explained a very high percentage, 82 percent, of the variation in property values. Model 4 was also significant at the .000 level.

In Model 4, the independent variables square footage, lot size, board doors and windows, and distance to the nearest public school had standardized beta weight scores of .861, .098, -.090, and .063 respectively. These scores indicated that the independent variables square footage and lot size continued to make positive contributions to the prediction of property values. The independent variable square footage continued to have the strongest contribution amongst all of the independent variables utilized in the models. The presence of boarded doors and windows still had a weak, yet negative and significant influence on property values. However, the independent variable proximity to the nearest public school had a very weak but positive contribution to property values. The independent variable distance to the nearest public school was significant at the .011 level.

The analysis of the independent variables influence on the prediction of property values yielded compelling results. The independent variable square footage had an exceptionally strong and significant influence on single-family residential property values in the City of Richmond. The relative strength and influence of the independent variable square footage, compared to the other independent variables utilized in the stepwise regression, was considerable. None of the other independent variables had as much of an influence on property values as the independent variable square footage. This resulting statistical analysis and conclusion that a property's square footage played such a very large and significant role in its value is in line with many real estate professionals, including the City of Richmond Assessor's Office prescription that square footage is one of a few primary factors that influences property values.

The resulting regression analysis suggests that the independent variable square footage, a structural characteristic of the property, had an extremely strong and positive influence on property values. According to the qualitative analysis, square footage is one of the dominant features of a property that positively influences its value. None of the study's other independent variables had as much of an influence on property values as the independent variable square footage. Consequently, the extremely powerful importance of square footage likely overpowered the influence of the other independent variables to the prediction of property values.

Similar to the independent variable square footage, in terms of its physical relationship with the actual structure, the independent variable lot size also had a positive influence on a property's value. In the analysis, the independent variable lot size had the second most influential impact on the prediction of property values within the models. Yet, the relative strength of the influence of lot size was relatively weak. The perspective that a property's lot size has a positive, although not as strong, of an influence on a property's value is consistent with the peculiarities of the housing marking in Richmond and possibly in other urban areas. For example, many urban homes in Richmond, particularly those near or in the downtown area are located on small lots compared to homes in the suburbs that may be situated on larger lots.

Many homes in cities are built in dense areas in which the availability of land is relatively scarce and the parcel sizes are very compact. Therefore, homes in cities can have large square footage amounts due to the depth and height of the physical structure, but smaller lot sizes due to the actual space (parcel area) in which the structure actually rests. Still, at the individual property level, the two most influential variables to the prediction of a property's value were its square footage and lot size.

The other independent variables calculated in the models were the physical incivility boarded doors and windows and the proximity variable distance to the nearest public school. The presence of boarded doors and windows was the only incivility variable utilized within the models that was statistical significant. The multiple regression analysis has validated the notion that, at least one feature of blight, the presence of boarded doors and windows, has a negative influence on property values in the 2009 calendar year. However, the analysis also indicated that the extent of the influence of this physical incivility to property values was very weak. Ultimately, at the individual property level, the physical incivility boarded doors and windows did not have a strong, negative influence on property values.

The independent variable distance to the nearest public school had a very weak, but positive influence on property values. The focus group discussions shed some insight on understanding why this variable could have a positive influence on property values. The focus group dialogue revealed that many people consider the proximity of public schools to their homes when considering living in urban neighborhoods. Accordingly, urban homes that are closer to urban schools were suggested as being a positive consideration by many moving families in deciding where to live. This notion, along with the SPSS output that the proximity to public schools is positively correlated to a property's value warrants further examination.

However, the contribution of this independent variable on property values pales in comparison to the influence of the other independent variables utilized with the regression analysis.

The regression analysis at the individual property level suggests that square footage had an incredibly powerful influence on property values. The relative strength of the influence of the variable square footage was so extensive that it likely overpowered the potential influence of the other study variables, particularly the only physical incivility measure utilized within the models. With an independent variable as powerful as square footage, it is difficult to determine the role the other independent variables may have had in influencing property values. Square footage made such a powerful contribution to the dependent variables, that the relative ability to determine the influence of the other independent variables utilized within this study was severely diminished. As a result of this realization, a second regression analysis at the individual property level was conducted that excluded the variable square footage from the analysis.

A second regression analysis was performed without the independent variable square footage while retaining the other independent variables. Additionally, several independent variables that were features of the structure were modified in order to more accurately reflect the characteristics of the property. For the next regression analysis, the independent variable year built, was converted to "age" or the actual age of the property versus the year in which the structure was built. Additionally, two other variables were manipulated. The independent variables structural cost per square foot (calculated by dividing the assessed value of the structure by the square footage of the property) and lot cost per square foot (calculated by dividing the assessed value of the land in which the property is located by the lot size) were added to this second analysis. These independent variables were indicative of the assessed value per square foot of the actual structure and lot size of each individual property. The manipulation and addition of these independent variables along with the exclusion of the variable square footage was analyzed in order to determine the influence of the other independent variables to property values.

Assessment Excluding the Independent Variable Square Footage

Prior to the regression analysis, another multicollinearity analysis was performed in order to determine if any of the independent variables were related to one another. Independent variables that are strongly correlated with one another need to be assessed and determined if they can be discarded from the analysis. A series of collinearity diagnostics were performed in SPSS. The first output, a collinearity diagnostic assessment, was the first step in assessing the presence of multicollinearity. A multicollinearity problem exists when the condition index, found in the collinearly diagnostic table, is greater than 30 and variance proportion is high (.80 or .90 +). According to the collinearly diagnostics table (See Appendix G), a maximum condition index score of 21.60 was generated. When looking at the 18th dimension, the independent variable distance to public housing complex and distance to the central business district had fairly high variance proportions (.50 and .77), which could indicate a multicollinearity problem. But since the condition index was at 21.60 (under 30) then a multicollinearity problem likely does not exist. However, further analysis was performed in order to make a final determination on whether to keep or discard one of these two variables.

Another measure of whether any of the independent variables were related to one another was by analyzing the tolerance levels within the coefficients table. According to the Coefficients Table (See Appendix G) a tolerance level of near 0 indicates a potential multicollinear problem in which the independent variables are likely related to one another. A tolerance level of near 1 indicates relative independence between the independent variables. According to the coefficient table, the lowest coefficients are distance to central business district with a score of .154 and distance to public housing with a score of .180. The coefficient scores were close to 0 which suggested a potential multicollinear problem between these two independent variables. However, further analysis was conducted to determine if any of these two independent variables should be excluded from the analysis.

A final analysis was performed on the independent variables distance to the central business district and distance to the nearest public housing complex to determine their correlation to the dependent variable. If either of these two independent variables were closely related to the dependent variable, then the appropriate outcome would be to drop the independent variable that did not have the strongest correlation to the dependent variable. A correlation analysis was performed in order to determine which of the two independent variables in question had the strongest correlation to the dependent variable. According to the correlations table (See Appendix G) the independent variable distance to public housing had a correlation score of .177 and the independent variable distance to the central business district had a correlation score of .104 against the dependent variable. This suggested that neither of the two independent variables were strongly correlated to the dependent variable. Therefore, the likelihood that a multicollinearity problem existed was remote. As a result of the mulitcollinearity analysis, all independent variables in the multiple regression analysis were retained in order to determine their contributions to the prediction of the dependent variable. The descriptive statistics of the variables for this segment of the quantitative analysis are provided below.

Table 5: Descriptive Statistics - Individual Property Level of Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Age	314	2	204	65.379	27.16556
Lotsize	314	906	146797	11311.25	13365.1
Vacancy	314	0	1	0.0701	0.25566
Graffiti	314	0	1	0.0064	0.07968
Trash	314	0	1	0.0096	0.09743
BDW	314	0	2	0.086	0.36926
Vegetation	314	0	1	0.051	0.22026
Vice	314	0	3	0.0223	0.23198
Intox	314	0	6	0.1401	0.54166
Noise	314	0	35	0.4904	2.18656
Fight	314	0	9	0.2229	0.86167
Loiters	314	0	8	0.8599	1.1908
Disph	314	0.08	6.9	1.7701	1.44801
Disedu	314	0.03	3.26	0.5101	0.31667
Discbd	314	0.56	8.52	3.3821	1.66525
Lotcpsqft	314	0.5	51.03	7.3434	8.49533
Strucpsqft	314	0	202.96	90.3073	37.0833
AV2009	314	11500	3555800	212981.5	255387.3
Valid N (listwise)	314				

A stepwise multiple regression analysis was performed and resulted in six significant models. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix H.

Table 6: Multiple Regression Model Summary Table – Individual Property Level of Analysis – Excluding Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.464[a]	.215	.213	2.27E+05
2	.558[b]	.311	.307	2.13E+05
3	.638[c]	.407	.401	1.98E+05
4	.646[d]	.418	.410	1.96E+05
5	.653[e]	.426	.417	1.95E+05
6	.659[f]	.434	.423	1.94E+05
a. Predictors: (Constant), Strucpsqft				
b. Predictors: (Constant), Strucpsqft, Lotsize				
c. Predictors: (Constant), Strucpsqft, Lotsize, Lotcpsqft				
d. Predictors: (Constant), Strucpsqft, Lotsize, Lotcpsqft, Intox				
e. Predictors: (Constant), Strucpsqft, Lotsize, Lotcpsqft, Intox, Discbd				
f. Predictors: (Constant), Strucpsqft, Lotsize, Lotcpsqft, Intox, Discbd, Disedu				

Model 1 utilized the independent variable structural cost per square foot. Model 1's R score of .464 indicated that the strength of the relationship between the dependent variable property values and the property's structural cost per square foot was modest. The R square score of .215 indicated that the explanatory power of the model is fairly weak, at only 21.5 percent. Model 1 was significant at the .000 level. Structural cost per square foot had a standardized beta weight score of .464. This score suggests that this independent variable has a positive influence on a property's 2009 value. Structural cost per square foot, by itself, does not perform strongly in predicting variations in a property's 2009 assessed value. The variable structural cost per square foot was significant at the .000 level.

Model 2 utilized the independent variables structural cost per square foot and lot size. Model 2 had a slightly higher R score of .558 and a fairly low R square score of .311. Model 2's R score suggested that there was a moderately strong relationship between the two independent variables and the dependent variable. According to the R square score, the independent variables in Model 2 explained only 31.1 percent of the variation in the dependent variable. The two independent variables in Model 2 do a below average job in explaining the variation in a property's value. Model 2 was significant at the .000 level

The independent variables structural cost per square foot and lot size had standardized beta weight scores of .449 and .311 respectively. Both independent variables were significant at the .000 level. Structural cost per square foot had a stronger influence on property values than lot size due to it having the higher standardized beta weight score. Both independent variables did not make strong contributions to the prediction of the dependent variable. Yet their influences on the dependent variable were positive.

Model 3 utilized the independent variables structural cost per square foot, lot size, and lot cost per square foot. Model 3 had a fairly high R score of .638 and a modest R square score of .407. Model 3 was significant at the .000 level. The independent variables utilized in Model 3, structural cost per square foot, lot size, lot cost per square foot had standardized beta weight scores of .325, .403, and .343 respectively. All of the independent variables made positive contributions to the dependent variable. Yet in Model 3 the predicative importance of the independent variable lot size was greater than the independent variables structural cost per square foot and lot cost per square foot. Additionally, when these three independent variables were utilized in Model 3, a property's lot cost per square foot had a greater influence on property values than the structureal cost per square foot, although the difference between the two independent variables was very small. In Model 3, lot size was the more important of the independent variables since it carried the higher standardized beta weight. All independent variables were significant at the .000 level.

Model 4, which used the independent variables structural cost per square foot, lot size, lot cost per square foot, and calls for public drinking, had a fairly high R score of .646 and a moderate R square score of .418. Model 4's R score indicated the strength of the relationship between the four independent variables and the dependent variable was fairly strong at .646. According to the R square, the independent variables explained approximately 41.8 percent of the variation in property values. The independent variables utilized in Model 4, structural cost per square foot, lot size, lot cost per square foot, and calls for public drinking had standardized beta weight scores of .333, .407, .336, and .106 respectively. In Model 4, lot size had the higher standardized beta weight and therefore had the strongest influence on the dependent variable amongst the four independent variables within the model. Lot cost per square foot had the second strongest influence, followed by structural cost per square footage. The independent variable calls for public drinking had the weakest influence on the dependent variable out of all four of the independent variables in Model 4. All of the independent variables in Model 4 had a positive influence on the dependent variable and were each significant at the .000 level with the exception of calls for public drinking which was significant at the .015 level.

Model 5 utilized the independent variables structural cost per square foot, lot size, lot cost per square foot, calls for public drinking, and distance to the central business district. Model 5 had a fairly high R score of .653 and a moderate R square score of .426. In Model 5, the independent variable lot size had the higher standardized beta weight score of .464. This was followed by structural cost per square foot with a score of .365, lot cost per square foot with a score of .301, and calls for public drinking with a score of .098. The independent variable distance to the central business district had a standardized beta weight score of -.120. Although the relative influence of the independent variable distance to the central business district was very small, it had a negative influence on property values. The independent variables structural cost per square foot, lot size, lot cost per square foot, calls for public drinking, and distance to the central business district were significant at the .000, .000, .000, .025, and the .037 level respectively.

Finally, Model 6 utilized the independent variables structural cost per square foot, lot size, lot cost per square foot, calls for public drinking, distance to the central business district, and distance to the nearest public school. This model had a fairly high R score of .659 and a moderate R square score of .434. The fairly high R score of .659 indicated that Model 6 had a relatively strong relationship between the six independent variables and the dependent variable. The R square score suggested that Model 6 explained 43.4 percent of the variation in the dependent variable. Model 6 was significant at the .000 level. The independent variables in Model 6, structural cost per square foot, lot size, lot cost per square foot, calls for public drinking, distance to the central business district, and distance to the nearest public school had standardized beta weight scores of .349, .460, .318, .097, -.134, .093 respectively. Due to its high standardized beta weight score, the independent variable lot size continued to have the strongest influence on the dependent variable. The next most influential independent variables were structural cost per square foot, lot cost per square foot, distance to the central business district, calls for public drinking, and finally distance to the nearest public school. As before, the independent variable distance to the central business district had a very weak but negative influence on property values. The variable distance to the nearest public school had a very weak but positive influence on property values. The independent variables structural cost per square foot, lot size, lot cost per square foot, calls for public drinking, distance to the central business district, and distance to the nearest school had significant levels of .000, .000, .000, .025, .020, and .042 respectively.

The inclusion or exclusion of the variable square footage produced interesting results at the individual property level of analysis. First, the regression analysis that included square footage generated only four significant models. The regression analysis that excluded square footage produced six significant models. The generation of two additional models in the analysis that excluded square footage was the direct result of the absence of the powerful contribution of the independent variable square footage. The regression analysis that included square footage generated more powerful models with stronger R and R square scores than the regression analysis that excluded square footage. Therefore, when factoring square footage in the equation, the relationships between the variables in the model and property values tended to be stronger and consequently explained more of the variance in the dependent variable than the models in the regression analysis that excluded square footage.

According to the model summary and standardized beta weight table, the independent variable square footage had an incredibly powerful, positive correlation to property values. The standardized beta weight score of the variable square footage was substantially higher than any of the independent variables in the first analysis. Square footage, based on its standardized beta weight score, clearly overpowered all of the other independent variables influence on the dependent variable. In the regression analysis that excluded square footage, the standardized beta weight scores of several of independent variables were not substantially different from one another. This suggested that without the square footage factored in the analysis, the other most influential independent variables in the analysis did not have substantial differences on their influences on the dependent variable. This observation is evident within both models. Therefore, the inclusion of the independent variable square footage appeared to have caused the overall model's predicative power and correlation strength to sharply increase. The predicative power and the strength of the correlation within the models dropped substantially when the variable square footage was excluded from the analysis.

Although, the regression analysis that included square footage produced fewer models, the strength of those models clearly overpowered the models within the regression analysis that excluded square footage. Without square footage, the remaining variables did not have the same level of influence. Thus, the resulting models in the analysis that excluded square footage were not as strong in their relationship with and in explaining the variance in the dependent variable. Additionally, the exclusion of square footage weakens the overall predicative power of the remaining variables on property values.

The regression analysis that included square footage and excluded the variables age, structural cost per square foot, and lot cost per square foot, resulted in one physical incivility having a significant influence on the dependent variable. The incivility boarded doors and windows had a weak but negative correlation to a property's 2009 value. The regression analysis that did not include square footage did not result in any of the physical incivilities being included in any of the models. Instead, only one of the social incivilities was incorporated in one of the six regression models in the analysis that excluded square footage. Calls for public drinking had a very weak but positive influence on property values.

At the individual property level, it is evident from the analysis that a property's square footage had a very powerful, positive influence on property values in Richmond. Additionally, a property's lot size had a relatively moderate but positive influence on property values as well. These two structural characteristics of a property were also very influential factors in determining a property's value, as suggested by the focus group and individual interviews. Of particular importance in this analysis is that the variable, boarded doors and windows, a critical feature of blight, had a negative influence on property values. The influence of this physical incivility was only witnessed when the independent variable square footage was included within the same analysis. Although the extent of the influence of boarded doors and windows was fairly weak, it has been validated as being negatively correlated to property values at the individual property level.

In the analysis that excluded the variable square footage, the independent variable police calls for public drinking, had a very weak, but positive influence on property values. Although this independent variable was significant at the .025 level, which was much higher than the suitable significance level, the positive influence of this variable on property values was unique. Additionally, this outcome was in direct opposition with the premise in the literature that this social incivility has a negative influence on property values.

A second level of analysis was conducted at the block group level to determine the influence of this study's variables to single-family residential property values, but at a slightly more defined level of analysis. This level of analysis focused on determining the influence of the study's variables at the block group level. At the block group level, the demographic data was included in the analysis in order to determine its influence on property values in relationship with the other independent variables utilized at the individual property level of analysis. The inclusion of Richmond's demographics will aid in determining its influence, if any, on property values at the block group level.

Block Group Level of Analysis

The second level of analysis assessed the influence of the independent variables on property values at the block group level. A GIS map depicting the location of the study's randomly selected single-family properties within the City's municipal block groups is provided below. As before, the random selection of properties within each block group allowed for complete coverage of single-family residential properties throughout the entire City.

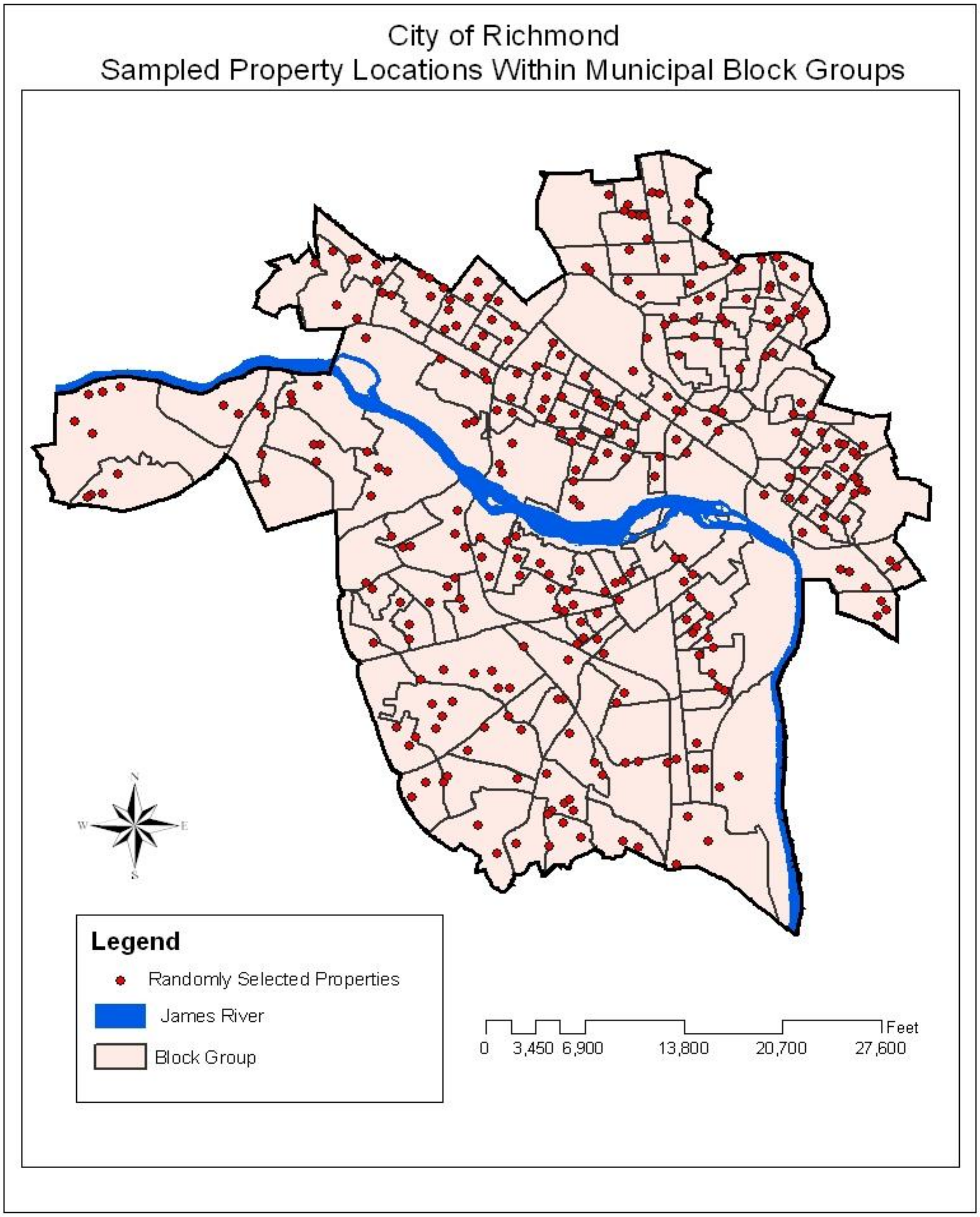


Figure 8: Geographic Information System Map - City of Richmond Sampled Property Locations within Municipal Block Groups

Two sets of analyses were conducted at the block group level similar to the analysis conducted at the individual property level. As determined at the individual property level of analysis, the variable square footage had an overbearing influence on this study's dependent variable. In anticipating this same influence, the resulting block group analysis was conducted first with the inclusion of square footage and second by excluding square footage. Differences between the statistical outputs were assessed.

Assessment Including the Independent Variable Square Footage

In order to successfully make representative inferences on the contribution of the independent variables to the prediction of property values at the block group level, the data had to be aggregated to the block group level. Several of the independent variables in this research were collected at the individual property level rather than the block group level. In order to determine the contribution of these independent variables to property values at the block group level, the scores of the independent variables that were collected at the individual property level were first aggregated and then averaged to be representative of its respective block group. The variables that were collected at the individual property level were: physical incivilities, social incivilities, structural characteristics of the property, and property values. Census data, in its original format, was already collected at the block group level and therefore did not need to be modified. Proximity data, due to the nature of the data's content and format, was excluded from this level of analysis.

For the block group level of analysis census data was included in the assessment as an independent variable. Census data was utilized as a proxy for the socio-economic conditions of residents living within block groups. Census data were assessed in tandem with incivilities and non incivilities to determine if they too were correlated to property values. A brief overview of the City of Richmond's socio-economic conditions is provided in the table below.

Table 7: City of Richmond, VA 2000 Census Summary Statistics

City of Richmond, VA 2000 Census Summary Statistics	
General Citywide Statistics	
Total population	197,790
Percentage of population African American	57.2%
Percentage of population Caucasian	38.3%
Percentage of population Asian/Pacific Islander	1.2%
Percentage of population Hispanic	2.6%
Percentage of population Other	1.8%
Percentage of population 2 or more Races	1.5%
Total households	84,549
Average household size	2.21
Average family size	2.95
Total housing units	92,282
Poverty Statistics	
Total number of persons in poverty (Citywide)	40,185
Percentage of persons in Poverty (Citywide)	21.40%
Percentage of persons in poverty who are African Americans	74.40%
Percentage of persons in poverty who are Caucasians	19.20%
Percentage of persons in poverty who are Asian/Pacific Islander	1.70%
Percentage of persons in poverty classified as Other	2.70%
Percentage of persons in poverty classified as 2 or more Races	1.80%
Unemployment Statistics	
Percentage of civilian labor force unemployed (Ages 16 and older) Citywide	8.00%
Educational Attainment Statistics	
Percentage of population without high school diploma	24.80%
Percentage of population with a diploma (only)	23.58%
Percentage of population with a degree	21.93%
Percentage of population with an advanced degree	10.82%
Income Statistics	
Median household income	31,121
Median family income	38,348
Per capita income	20,337

Data provided by the U.S. Census and the City of Richmond Department of Community Development

For this level of analysis, the total number of block groups represented the total number of cases. There were a total of 163 cases. Each of the randomly selected properties from the individual property level of analysis was grouped within their associated block group number. The scores of each of the independent variables for each property were then averaged within their block group representation. This resulted in new, averaged independent variable scores for each individual case (block group) for this level of analysis.

Due to the large number of variables utilized for this study a second data analysis technique was also used, in addition to multiple regression. Principal Component Analysis (PCA) is a statistical method that allows the researcher to reduce the number of independent variables from a larger set of independent variables into distinct components prior to additional statistical analysis. This reduced set of independent variables, categorized into components, accounted for a majority of the variance found within the original set of independent variables.

The strength of the PCA technique is that it: assists in developing patterns of relationships among the independent variables, allows the researcher to reduce the number of variables from a given set in order to be used for further analysis, assists the researcher in operationally defining related groups of independent variables, and allows the researcher to test potential research theories or hypotheses resulting from the components. For the block group level of analysis, PCA was conducted prior to the multiple regression analysis. By doing so, it was believed that statistically related independent variables would be grouped together into components. Independent variables that were loaded strongly on a particular component could be "labeled" and then supported or refuted by existing theory. For example, it would be practical to assume that the variables that are related to a higher individual socio-economic status (wealth indicators such as incomes $50,000 and greater, high educational attainment, etc.) would be grouped together under one component as a single independent variable. Conversely, variables that appear to be associated with a lower socio-economic status (poverty, incomes below $24,999, and little or no educational attainment) would also likely be grouped together on one component. Likewise, as the literature suggests, physical incivilities and/or social incivilities would likely be found together in urban neighborhoods and could thus be grouped together on a physical incivility or a social incivility component. The grouping of incivilities on one component allows for the development or creation of a "blight" or "incivility" index which could then be analyzed via multiple regression as a "blight" or "incivility" independent variable. Rather than having several incivility variables, by statistically combining the variables on one component, one can develop a single conglomerate independent variable that can be assessed exclusively with the other components. For purposes of this analysis, only the variables with component scores greater than .300 were selected to be included in a component.

For the 2009 calendar year, using the independent variable square footage within the analysis, the PCA generated seven components. See Appendix I for the PCA statistical output tables at the block group level of analysis. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components was relatively high at 68.23 percent.

The variables with the largest loadings on Component 1 were: the number of people with incomes between $50,000 and $74,999, the number of people with incomes above $75,000, the number of people with a degree, the number of people with advanced degrees, and a property's structural cost per square foot. This component appeared to be an indicator of a high socio-economic status. The variables with the largest loadings on Component 2 were the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people without a diploma, and the number of people with a diploma only. This component appeared to be indicative of a lower socio-economic status.

The variables with the largest loadings on Component 3 were: Age of the structure and the property's lot cost per square foot. This component was indicative of the property's structural characteristics. The variables with the largest loadings on Component 4 were three physical incivilities. They included: Trash, boarded doors and windows, and excessive vegetation. Component 5 included the variables: square footage, calls for public drinking, and the number of people unemployed. Component 6 included the physical incivilities: vacancy and graffiti. Finally, Component 7 included the social incivilities: Calls for prostitution, calls for loud noise, calls for fights, and calls for loiters.

The resulting PCA confirmed the notion that physical and social incivilities are typically grouped or are found together. All of this study's physical incivilities had the largest loadings on two components. Additionally, the variables pertaining to having a higher socio-economic status loaded together. Similarly, the variables pertaining to having a lower socio-economic status loaded together on one component. The following multiple regression analysis statistically determined which of these components had a positive or negative correlation to property values.

A multiple regression analysis was conducted using the resulting component scores of each individual component generated during the initial PCA. According to the regression analysis, only three significant models were generated. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix J.

Table 8: Multiple Regression Model Summary Table – Block Group Level Analysis – Including Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.626[a]	.392	.389	2.41E+05
2	.783[b]	.613	.608	1.93E+05
3	.804[c]	.647	.640	1.85E+05

a. Predictors: (Constant), REGR factor score 5 for analysis 1

b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1

c. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 2 for analysis 1

Model 1 had a moderately high R score of .626 and a fairly low R square score of .392. The R score suggested that the strength of the relationship between Component 5, the only component selected in Model 1, and property values was fairly strong. However, the R square score suggests that Model 1 explained a small percentage, only 39.2 percent, of the variation in the dependent variable. Component 5's standardized beta weight score was .626 and was significant at the .000 level.

Model 2 had a high R score of .783 and a fairly high R square score of .613. According to the R score, there was a strong relationship between the two components utilized within Model 2, Components 5 and 1, and a property's 2009 assessed value. Likewise, the explanatory power of Model 2 was much higher at 61.3 percent, according to the R square score. Components 5 and 1 had standardized beta weight scores of .626 and .469 respectively. Component 5 was the more influential of the two independent variables and thus contributed more to the prediction of property values than Component 1 due to its higher standardized beta weight score. Both components had a positive influence on the dependent variable and were significant at the .000 level.

Finally, Model 3 had a very high R score of .804 and a fairly high R square score of .647. The R score suggested a strong relationship between the three components utilized within Model 3, which were Components 5, 1, and 2. Likewise, Model 3 explained a relatively large percentage, approximately 64.7 percent, of the variation in the dependent variable. Components 5, 1, and 2 have standardized beta weight scores of .626, .469, -.185 respectively. Each of the component's standardized beta weight scores were significant at the .000 level with Component 2 having the weakest and most adverse influence on property values due to its low and negative standardized beta weight score.

The independent variables with the largest loadings on Component 5 were square footage, calls for public drinking, and the number of people unemployed. This component had the strongest correlation to property values at the block group level. Component 5 included the very powerful square footage variable. The variable square footage had the largest loading amongst the three independent variables within Component 5. Square footage's high loading on Component 5 was further evidence that this variable continued to have a powerful, positive influence on the dependent variable even at the block group level of analysis. The remaining independent variables that loaded on Component 5, calls for public drinking and unemployment had the second and third largest loading on Component 5 respectively.

The placement of the variables square footage, calls for public drinking, and unemployment within a single component was compelling and unique. Just as the individual property level of analysis, the variable calls for public drinking was also deemed to have a positive, albeit weak, influence on property values, but only when the independent variable square footage was excluded from the analysis. At the block group level of analysis, this social incivility appears to have a more powerful correlation to property values than several of the other independent variables.

Many of Richmond's bars and restaurants are located within the downtown and fan area. The fan is a large residential area of the City in which many residents and students of Virginia Commonwealth University live. This area is also home to numerous night time establishments. Persons who patron the businesses and live in these areas often witness public intoxication. Therefore, the possibility of the extent of police calls for public intoxication in this area is likely very extensive, despite being in an area in which the property values are typically higher than in other areas of Richmond. This could explain this variable's inclusion in the component with the variables unemployment and square footage.

From the unemployment standpoint, it is likely that a segment of Richmond's population are unemployed are students attending one of the City's several public and private universities. Many of the students that attend Virginia Union University, University of Richmond, or Virginia Commonwealth University, likely live in or rent homes in close proximity to the fan neighborhood, Jackson Ward, and other central area neighborhoods. According to the longitudinal analysis, many of the property values are higher in areas in close proximity to universities than in areas that are not in close proximity to universities. Many of the students, particularly undergraduates, are likely unemployed. This could explain its inclusion in the component that included calls for public intoxication and square footage.

Model 2 included Components 5 and 1. Component 1 included the variables that were indicative of a higher socio-economic status. The regression analysis and resulting standardized beta weight scores within Model 2 supported the notion that there was a positive influence between individuals with a higher social-economic status with property values. This also suggests that individuals who have a high socio-economic status tend to live in areas in which the property values are higher. Although, Component 1 did not contribute as strongly to the dependent variable as Component 5, its standardized beta weight score of .469 indicated that it had a moderate, positive influence on property values.

Model 3 included Components 5, 1, and 2. Component 2, which included all of the variables associated with a lower socio-economic status, had the weakest influence on property values within the regression analysis. Although the influence of Component 2 was weak, it is important to recognize that its correlation to property values was negative. The observation clearly signified that indicators of a lower socio-economic status had an adverse influence on property values.

What is evident in this analysis is that incivilities did not appear to have a significant influence on property values at the block group level. Conversely, the socio-economic indicators had more of an influence on property values at the block group level than any of this study's incivilities. The wealth and associated high education indicators had a positive influence on property values while the variables that were indicative of a lower socio-economic status had a relatively weak but negative influence on property values. With the presence of these social and economic indicators at the block group level, the contribution of the incivility indicators was diminished. Consequently, the regression results suggest that the mix of social and economic characteristics of the environment, from a block group perspective, tended to have more of an overpowering influence on property values than the presence of both physical and social incivilities within Richmond.

Assessment Excluding the Independent Variable Square Footage

Another analysis was performed at the block group level that excluded square footage from the PCA and the multiple regression analysis. The PCA in which the variable square footage was excluded resulted in the formulation of seven components (See Appendix K). According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components was 69.41 percent.

The variables with the largest loadings on Component 1 were: The number of people with incomes between $50,000 and $74,999, the number of people with incomes greater than $75,000, the number of people with degrees, the number of people with advanced degrees, and the property structural cost per square foot. The variables with the largest loadings on Component 2 were: The number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people without a diploma, and the number of people with only a diploma. The variables with the largest loadings within Component 3 were: The structure's age and lot cost per square foot. Component 4 included the physical incivility variables: Trash, boarded doors and windows, and vegetation. Component 5 contained the variables: Calls for public drinking, calls for loiters, and the number of people unemployed. Component 6 included the remaining physical incivilities: Vacancy and graffiti. Finally, Component 7 captured the remaining social incivility variables: Calls for prostitution, calls for loud noise, and calls for fighting.

Only three significant models were generated in the multiple regression analysis. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix L.

Table 9: Multiple Regression Model Summary Table – Block Group Level Analysis – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.447[a]	.200	.195	2.76E+05
2	.538[b]	.290	.281	2.61E+05
3	.560[c]	.314	.301	2.57E+05
a. Predictors: (Constant), REGR factor score 1 for analysis 2				
b. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 5 for analysis 2				
c. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 5 for analysis 2, REGR factor score 2 for analysis 2				

Model 1 had a moderate R score of .447 and a low R square score of .200. The low R square score suggests that the explanatory power of the independent variables in Model 1 is weak. As an independent variable, Component 1 had a standardized beta weight score of .447 and was significant at the .000 level. This standardized beta weight score suggested that Component 1 had a positive and significant contribution to the prediction of property values. Component 1 included the variables that were indicative of a higher socio-economic status.

Model 2 had a higher R score of .538 and a low R square score of .290. Model 2 indicated that a stronger relationship existed between the independent variables utilized within the model, Components 1 and 5, and the prediction of property values. Yet, the strength of the relationship in Model 2 between the components and the dependent variable was still only fair. Additionally, Model 2 only explained 29 percent of the variance in the dependent variable. Components 1 and 5 had standardized beta weight scores of .447 and .300 respectively. In Model 2, Component 1 was the more influential of the two in the model and thus contributed more to the prediction of the dependent variable due to its higher standardized beta weight score. Both components had positive influences on the dependent variables and were significant at the .000 level.

Finally, Model 3 had a slightly higher R score of .560 and an R square score of .314. In Model 3, Components 1, 5, and 2 had standardized beta weight scores of .447, .300, and -.155 respectively. Components 1 and 5 both had positive influences on the dependent variable, with Component 1 having the greater influence on the dependent variable. However, and similar to the previous analysis, Component 2, which was indicative of a lower socio-economic status, had a weak but negative influence on the dependent variable. In Model 3, Components 1 and 5 were significant at the .000 level. Component 2, as an independent variable, was significant at the .020 level.

Without the contribution of the variable square footage in the analysis, it was still clear that the demographics of the locality continued to be correlated to property values. The component that was representative of a higher socio-economic status had the strongest, positive influence on property values. Component 2, which was indicative of a lower socio-economic status had a weak but negative influence on property values. The Components that were exclusive to physical and social incivilities were not included in any of regression models in which the variable square footage was excluded. Interestingly and like the prior analysis, Component 5, which included the variables calls for public drinking, calls for loiters, and unemployment, had a fairly weak but positive influence on property values.

There were not many differences between the two statistical outputs when the variable square footage was removed from the analysis. Both of the PCAs generated seven components with very similarly sized variance proportion scores. Nearly all of the individual components in both sets of analysis had the same dominant variable loadings. The only difference was in Components 5 and 7. In the analysis that included square footage, Component 5 included the variables square footage, calls for public drinking, and unemployment. In the analysis that excluded square footage, Component 5 included the variables calls for public drinking, calls for loitering, and unemployment. As a result, a second social incivility loaded onto Component 5 when the variable square footage was excluded from the analysis. Component 5, in which the variable square footage was included, was the strongest and most influential of all of the components in the regression analysis. Rather than Component 5 having a negative influence on property values, this regression analysis indicated that Component 5 had a moderate, positive influence on the dependent variable. However, without the variable square footage, Component 5 was the second strongest and most influential independent variable, trailing behind the components indicative of a high social economic status.

Similar to the individual property level analysis, the variable square footage continued to appear to have a dominant and positive influence on property values at the block group level of analysis. Without the use of the variable square footage, the strength of the relationships between the independent variables (Components) and the dependent variable within the regression models weakened. Likewise, the explanatory power of the independent variables decreased substantially when the variable square footage was excluded from the analysis. This is evident in the lower R and R square scores in the regression analysis that utilized the components that did not have square footage as a variable. This is further evidence that the independent variable square footage had a very powerful influence on property values in Richmond.

Assessment Utilizing Properties with Above Average Physical Incivility Scores

It is apparent from the block group level of analysis that the block groups that had evidence of incivilities could have been overpowered by the block groups without incivilities. Accordingly, the incivilities that were assessed were not prevalent on every randomly selected property. Subsequently, none of the incivility components were significant enough to be included within the regression analysis. Therefore, another brief analysis was conducted in order to again determine the contribution incivilities have, at the block group level, to property values. In this analysis, the same 2009 data was utilized however, only block groups with above average incivility component scores (or those properties that were characterized as having above average incivility scores) were selected to be included in this additional regression analysis. By doing so, it was believed that a clearer depiction of the influence of physical and social incivilities to property values would be presented.

In this segment of the analysis, only the components that included the physical and social incivility variables with the largest loadings were selected for this analysis. Component 4 was the independent variable component that contained several physical incivilities with the largest loadings. A total of 41 cases were identified when selecting only those properties that had above average physical incivility scores on Component 4. Since each of the cases selected under Component 4 contained above average physical incivility scores it is plausible that the contribution of physical incivilities, as loaded on Component 4, would be more defined and possibly more influential than the influence of the other components. A regression analysis was conducted on the selected 41 cases that determined the contribution of these component scores to property values. As before, the variable square footage was included in one analysis and excluded from the subsequent.

Three significant models were generated in the regression analysis when including the variable square footage in the analysis. Each of the models had very strong model scores. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix M.

Table 10: Multiple Regression Model Summary Table – Utilizing Above Average Physical Incivility Component Scores – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911[a]	.830	.826	2.34E+05
2	.948[b]	.899	.893	1.83E+05
3	.953[c]	.909	.902	1.76E+05
a. Predictors: (Constant), REGR factor score 5 for analysis 1				
b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1				
c. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor 1 for analysis 1, REGR factor score 2 for analysis 1				

According to the model summary table, Model 1 had an extremely high R score of .911 and a high R square score of .830. According to the R score, there was a very strong relationship between Model 1 and property values. Likewise, the R square score suggested that Model 1 explained a very high percentage, 83.0 percent, of the variance in the dependent variable. Both scores suggested a very strong relationship between the only component utilized within the first model and the dependent variable.

Model 1 included Component 5 as the exclusive independent variable. In Model 1, Component 5 had a standardized beta weight score of .911. This suggested that Component 5 had a very strong, positive influence on the dependent variable. Component 5, when used as an independent variable, was significant at the .000 level.

Model 2 had a very high R score of .948 and a high R square score of .899. The R score indicated, like Model 1, a strong relationship between the components utilized within Model 2 and property values. Model 2 included the independent variables Components 5 and 1. Components 5 and 1 had standardized beta weight scores of .820 and .277 respectively. Both scores were significant at the .000 level and had positive influences on the dependent variable.

However, Component 5 was the more influential of the two due to it having the higher standardized beta weight score.

Model 3 had an even higher R score of .953 and a high R square score of .909. These scores suggested that Model 3 had a very strong relationship with and explained a very high percentage of the variance in the dependent variable. Model 3 included the independent variables Components 5, 1, and 2. In Model 3, the three independent variables had standardized beta weight scores of .816, .256, and -.105 respectively. Component 5 continued to have the strongest influence out of the three components utilized in Model 3 due to it having the higher standardized beta weight score. However, Component 2 had a weak, yet negative influence on the dependent variable. The independent variables in Model 3 were significant at the .000, .000, and .046 levels respectively.

This analysis attempted to examine the correlation of this study's dominant physical incivility component to property values. The results of the statistical analysis generated nearly identical results to the previous block group analysis that included square footage. The same components that were included in the prior analysis were included in this analysis. Components 5, 1, and 2 were selected in both analyses, with Component 5 having the greatest influence on the property values. Component 5 included the variables square footage, calls for public drinking, and the number of people unemployed. This component had the greatest influence on 2009 property values in both sets of the block group level of analysis. Component 1, which included the indicators of a higher socio-economic status was again identified as the independent variable with the second most important influence on property values, although substantially weaker than Component 5. As before, Component 1 had a positive influence on property values. Finally, Component 2, which included the indicators of a lower socio-economic status was identified as the independent variable as the third most influential on property values. As before, Component 2 had a weak, but negative influence on property values.

The only difference between the two analyses is that the second analysis generated higher statistical scores than the first analysis. This is likely due to the reduced sample size of the second analysis. Component 5 had a more powerful influence on the dependent variable in this analysis than the previous analysis in which there were 163 individual cases. However, Components 1 and 2 had a more powerful influence on the dependent variable in the first analysis in which all block groups were analyzed.

Only two significant models were generated when square footage was excluded from the regression analysis. As before, the exclusion of the variable square footage reduced the strength of the model scores. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix N.

Table 11: Multiple Regression Model Summary Table – Utilizing Above Average Physical Incivility Component Scores – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.676[a]	.457	.444	4.09E+05
2	.767[b]	.588	.567	3.61E+05
a. Predictors: (Constant), REGR factor score 5 for analysis 2				
b. Predictors: (Constant), REGR factor score 5 for analysis 2, REGR factor score 1 for analysis				

Model 1 had a fairly high R score of .676 and a modest R square score of .457. According to the R score, there's a fairly strong relationship between Component 5 (the only component utilized in the model) and the dependent variable. Additionally, Model 1 explained only 45.7 percent of the variation in the dependent variable. Component 5 had a standardized beta weight score of .676 and was significant at the .000 level. The standardized beta weight scores suggested that Component 5 had a strong, positive influence on the dependent variables.

Model 2 had a high R score of .767 and a moderately high R square score of .588. The R score in Model 2 suggested that there was a strong relationship between the model and the dependent variable. Likewise, the R square score indicated that Model 2 explained 58.8 percent of the variance in the dependent variable. Model 2 included Components 5 and 1. Likewise, Model 2 explained a slightly higher percentage of variance in the dependent variable at 58.8 percent. Components 5 and 1 had standardized beta weight scores of .594 and .370 respectively. The component scores conclude that the independent variables had positive influences on property values. However, Component 5 was the more influential of the two due to its higher standardized beta weight score.

There were slight differences between the two analyses. In the original analysis that included all of the block groups, in which the variable square footage was excluded from the PCA, only three significant models were generated. In this analysis, only two significant models were generated. Again, this is likely attributed to the smaller sample size utilized for this analysis. In the original analysis, Components 1, 5, and 2 were the most significant and influential independent variables in the regression analysis. In this analysis, only Components 5 and 1 were identified as having significant influences on the dependent variable. In the previous analysis, Component 1 or the component indicative of a higher socio-economic status had the strongest influence on the dependent variable. Component 5, which included the variables: calls for public drinking and loiters and the number of people unemployed, had the second most important influence on the dependent variable. In this analysis, Component 5 had the strongest influence while Component 1 had the second most important influence on the dependent variable.

What is evident from this analysis is that the physical incivility component, Component 4, was not significant enough to be included in any of the models. Therefore, the conglomeration of physical incivilities onto a single measure was not strong enough to influence property values at the block group level, even when specific block groups identified as having above average incivility ratings were utilized in the analysis. Consequently, the other components continued to have a stronger influence on property values at the block group level than physical incivilities.

Assessment Utilizing Properties with Above Average Social Incivility Scores

Another regression analysis was performed at the block group level utilizing the component with the highest social incivility scores. As before, only the block groups with above average social incivility scores, as loaded on the component with the most social incivility variables, was included in this analysis. The goal of this analysis was to determine if block groups with above average social incivility scores would have an influence on property values. Component 7 was the strongest independent variable with the most social incivility variables for this segment of the analysis.

Four significant models were generated in the regression statistical output when the variable square footage was included in the assessment. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix O.

Table 12: Multiple Regression Model Summary Table – Utilizing Above Average Social Incivility Component Scores – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623[a]	.389	.375	1.14E+05
2	.804[b]	.647	.631	8.72E+04
3	.848[c]	.719	.700	7.87E+04
4	.872[d]	.760	.738	7.36E+04

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1

c. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 3 for analysis 1

d. Predictors: (Constant), REGR factor score 1 for analysis , REGR factor score 5 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1

Model 1 had a fairly high R score of .623 and a low R square score of .389. The R score indicated a fairly strong relationship between Model 1 and the dependent variable. However, the R square score indicates that Model 1 only explains 38.9 percent of the variance in the dependent variable. Model 1 included Component 1. Component 1 has a standardized beta weight score of .623. This indicated that Component 1 had a fairly strong, positive influence on the dependent variable. Component 1 was significant at the .000 level.

Model 2 had a high R score of .804 and a fairly high R square score of .647. Subsequently, there was a strong relationship between Model 2 and the dependent variable. Likewise, the R square score indicated that Model 2 explained 64.7 percent of the variance in the dependent variable. Model 2 consisted of Components 1 and 5. Components 1 and 5 had standardized beta weight scores of .664 and .510 respectively. Accordingly, Component 1 was the more important of the two independent variables due to its higher standardized beta weight score. However, both components within Model 2 had fairly strong, positive influences on the dependent variable. Both components were significant at the .000 level.

Model 3 had a high R score of .848 and a high R square score of .719. Accordingly, the R score revealed that there was a very strong relationship between Model 3 and the dependent variable. Likewise, Model 3 explained a high percentage, approximately 71.9 percent, of the variance in the dependent variable. Model 3 included Components 1, 5, and 3. The components within Model 3 had standardized beta weight scores of .577, .525, and .283 respectively. Component 1 continued to be the most influential independent variable out of the three utilized within Model 3 due to its higher standardized beta weight score. Component 5 was the second most influential independent variable. Component 3 was the least influential independent variable out of the three independent variables utilized within Model 3 due to it having the lowest standardized beta weight score. Components 1 and 5 were significant at the .000 level. Component 3 was significant at the .002 level.

Model 4 had a high R score of .872 and a high R square score of .760. The R score suggested that the strength of the relationship between Model 4 and the dependent variable was strong. Additionally, the R square score specified that Model 4 explained a high percentage, 76 percent, of the variance in the dependent variable. Model 4 included Components 1, 5, 3, and 2. These components had standardized beta weight scores of .613, .566, .251, and -.210 respectively. Components 1 and 5 were significant at the .000 level. Component 3 was significant at the .003 level and Component 2 was significant at the .010 level.

There were some similarities and differences between this analysis and the first analysis in which all block groups were assessed. In both analyses, Components 1 and 5 remained the two dominant or most influential independent variables within the models. Component 2 was also utilized between both sets of analysis. However, in the second analysis, Component 3, which included the structural traits of the property (age and lot cost per square foot) was included within the models. Component 3 had a weak, but positive influence on the dependent variable. In both analyses, the indicators of a high socio-economic status had a positive influence on the dependent variable. Conversely, indicators of a lower socio-economic status had a weak, but negative influence on property values. None of the social incivility components were included in any of the models. Therefore, the components indicative of non incivility variables continued to have a stronger and more significant influence on property values than incivilities. Despite utilizing only the block groups with above average social incivility scores, this analysis resulted in no significant influences of social incivilities on property values.

A final regression analysis was performed utilizing the same dominant social incivility component. However, this time, the variable square footage was excluded from the analysis. According to the regression output, only 1 significant model was generated. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix P.

Table 13: Multiple Regression Model Summary – Utilizing Above Average Social Incivility Component Scores – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425[a]	.181	.162	4.76E+05
a. Predictors: (Constant), REGR factor score 1 for analysis 2				

Model 1 had a relatively moderate R score of .425 and a very low R square score of .181. According to the R score, there was only a modest relationship between Component 1 and property values. Likewise, the R square score suggested that the explanatory power of Model 1 on the dependent variable was very weak at 18.1 percent. Component 1 had a standardized beta weight score of .425 and was significant at the .004 level. Component 1 included the variables that were indicative of having a higher socio-economic status. According to this analysis, this independent variable had a positive, but not a necessarily strong influence on property values.

The scores of the regression models decreased substantially when the variable square footage was excluded from the analysis. The exclusion of the variable square footage weakened the models within the analysis. In the prior analysis there were several models that included multiple components that had a statistically significant relationship to property values. In this analysis, only one model and one component had a significant influence on property values. Component 1, which included variables indicative of having a higher socio-economic status, continued to have a positive influence on property values. As a result of these observations, the social incivility index appeared to not have an adverse influence on property values at the block group level, particularly when other socio-economic factors were assessed.

What was unique from both analyses was that not any of the incivility components had a significant influence on property values at the block group level. This observation continued even when block groups with above average incivility ratings were singled out and assessed at the block group level. What was consistent throughout the analysis at the block group level was that the independent variables that were associated with a higher and lower socio-economic status tended to have a stronger influence on property values at the block group level than incivilities in general. Even when square footage was excluded from the analysis, the demographic features of the community continued to have a significant influence on property values at the block group level.

Now that it has been determined that incivilities, in general, do not have a significant, negative influence on property values at the block group level, a final analysis was conducted in order to determine the influence of incivilities at a much smaller geographic level. Instead of considering the influence of incivilities at a citywide block group level, a final analysis was performed to determine the influence of all of this study's independent variables within distinct and smaller geographic areas of the locality.

Neighborhood Level of Analysis

The final quantitative analysis that was conducted determined the influence of incivilities to single-family residential property values within specific geographic regions of Richmond. For this level of analysis, the residential properties selected for this study were identified and aggregated by their location; specifically by their defined area neighborhood. The primary focus of this level of analysis was to determine: the role of incivilities in influencing residential property values by area neighborhoods, the role of other non incivility features in influencing residential property values by area neighborhoods, and to assess any area neighborhood or geographic differences in the contribution of the study's independent variables to property values.

There were a total of seven area neighborhoods in the City of Richmond. The area neighborhoods were: North Side, East End, Downtown, Central, West End, South West, and South Side. Each of the area neighborhoods consisted of groupings of smaller individual neighborhoods. Therefore, a cluster of neighborhoods made up a specific area neighborhood. The area neighborhoods were recognized areas by Richmond's Department of Community Development. In nearly all cases, the boundaries of the area neighborhoods resembled the boundaries of the census areas (as discussed in the time series analysis). Therefore, the socio-economics of the census areas were essentially representative of the area neighborhoods.

All of the properties that were randomly selected in the individual property level of analysis were grouped by their area neighborhood. This was determined by geographically plotting each residential property on a map and identifying the area neighborhood boundaries in which each property resided. As a result of the grouping, each area neighborhood contained a set number of properties. The downtown area neighborhood contained only 11 properties after the initial categorization of properties into area neighborhoods. Due to the minimal number of properties that were identified within the downtown area neighborhood, this area neighborhood was excluded from the final analysis. As with the other block group analyses, a PCA and multiple regression analysis was conducted on each area neighborhood. Additionally, and as before, two sets of analysis were conducted. For each subsequent area neighborhood, the variable square footage was included and excluded from the analysis, in order to assess the differences in the statistical outputs.

It is important to note that if there were any variables that were not found on a property, then that variable was excluded from the PCA and regression analysis for that particular area neighborhood. For example, if there were no homes that were identified within the area neighborhood as having any calls for fighting or boarded doors and windows, then these variables were excluded from the analysis for that particular area neighborhood. A brief overview of the area neighborhood is provided prior to the presentation of that area' statistical results.

North Side Area Neighborhood

According to the City's Department of Economic and Community Development, Richmond's North Side "offers city residents an ideal living environment since the turn of the last century, when an innovative electric street car system first made it possible for people to live on the edges of the city while still working downtown. The first of these "streetcar suburbs" was developed in 1890, and by the 1920s North Side was one of Richmond's most desirable areas in which to live" (City of Richmond, 2010). The North Side neighborhood contained several parks including the historic Ginter and Bryan Parks. The Union Theological Seminary and the City's minor league baseball stadium are also located in this neighborhood. The North Side area neighborhood is home to the Ginter Park, Sherwood Park, Bellevue, and Highland Park neighborhoods.

The North Side area neighborhood contained many of Richmond's most historic homes. Several properties in the area neighborhood were built in the early 20th century and were often located on relatively large lots. Homes in this area also had a very wide range of property values. Typically, homes located closer to the North/North western or central part of the area neighborhood had higher property values than homes located closer to the eastern edge of the area neighborhood border. Additionally, homes in the Highland Park area, which is in the eastern part of the neighborhood, witnessed extensive revitalization through the City's Neighborhood in Bloom (NIB) program. "NIB is a public/private partnership that targets specific areas within older urban neighborhoods and provides a range of resources to make structural, environmental, and community improvements" (City of Richmond, 2010). Commercial and retail outlets are primarily located in the central and eastern parts of the area neighborhood.

According to the 2000 census, the census tracts that were primarily indicative of this area neighborhood suggest that the North Side area neighborhood is very diverse. The census tracks in which the randomly selected properties were selected indicate that there's a mix of both moderately high and low income earners in North Side. Area demographics also indicated that there were more people in poverty and with low incomes than there were with incomes greater than $50,000. However, there was a relatively moderate amount of individuals with incomes above $50,000 in this neighborhood as well. Additionally, there appears to be more people with just a diploma or who do not have a diploma than those with a degree or an advanced degree in this area neighborhood. Provided below is a brief summary table of key demographic data of the North Side Area neighborhood.

Table 14: North Side Area Neighborhood Census Summary Statistics

North Side Area Neighborhood - 2000 Census Summary Statistics	
% of City population living in Area Neighborhood	16.4%
% of Persons in Poverty	19.1%
% of Civilian Labor Force Unemployed	10.8%
% of Population (25 years and older) without a High School diploma or GED	26.9%
% of Population (25 years and older) with a High School Diploma/GED	27.2%
% of Population (25 years and older) with a Degree (College or Associate)	17.5%
% of Population (25 years and older) with an Advanced Degree	9.7%
# of people with income less than $24,999	5,301
# of people with income between $25,000 and $49,999	4,162
# of people with income between $50,000 and $74,999	2,010
# of people with income greater than $75,000	1,699

Walkthroughs and visual inspections of the randomly selected properties in the North Side area neighborhood indicated that there was a wide range of different styles of homes. Several homes had very large square footages and appeared to be in a very quiet, clean area of the neighborhood. Homes in these areas did not appear to be afflicted by physical incivilities. However, the degree of incivilities appeared to increase the further east homes were located in the area neighborhood. The general condition of the environment, condition of the homes, style of homes, as well as the traffic pattern changed substantially in the eastern part of the area neighborhood from the north, north-western, and central areas of the neighborhood. In the eastern section of the area neighborhood, several properties were identified as vacant or had boarded doors and windows. Several homes closer to and in the Highland Park neighborhood contained several physical incivilities, including boarded doors and windows, graffiti, excessive trash or vegetation. In these areas, there were groups of individuals "hanging out" on street corners. This was also evident by the substantial calls for loitering/suspicious activity and calls for fighting on blocks within this area neighborhood according to the local police department.

A GIS map of the City of Richmond depicting the location of the randomly selected single-family properties located in the North Side area neighborhood is provided below. The North Side area neighborhood is most closely associated with Census Area 100. Each of the randomly selected properties in the North Side Area neighborhood were located in a "100" census tract.

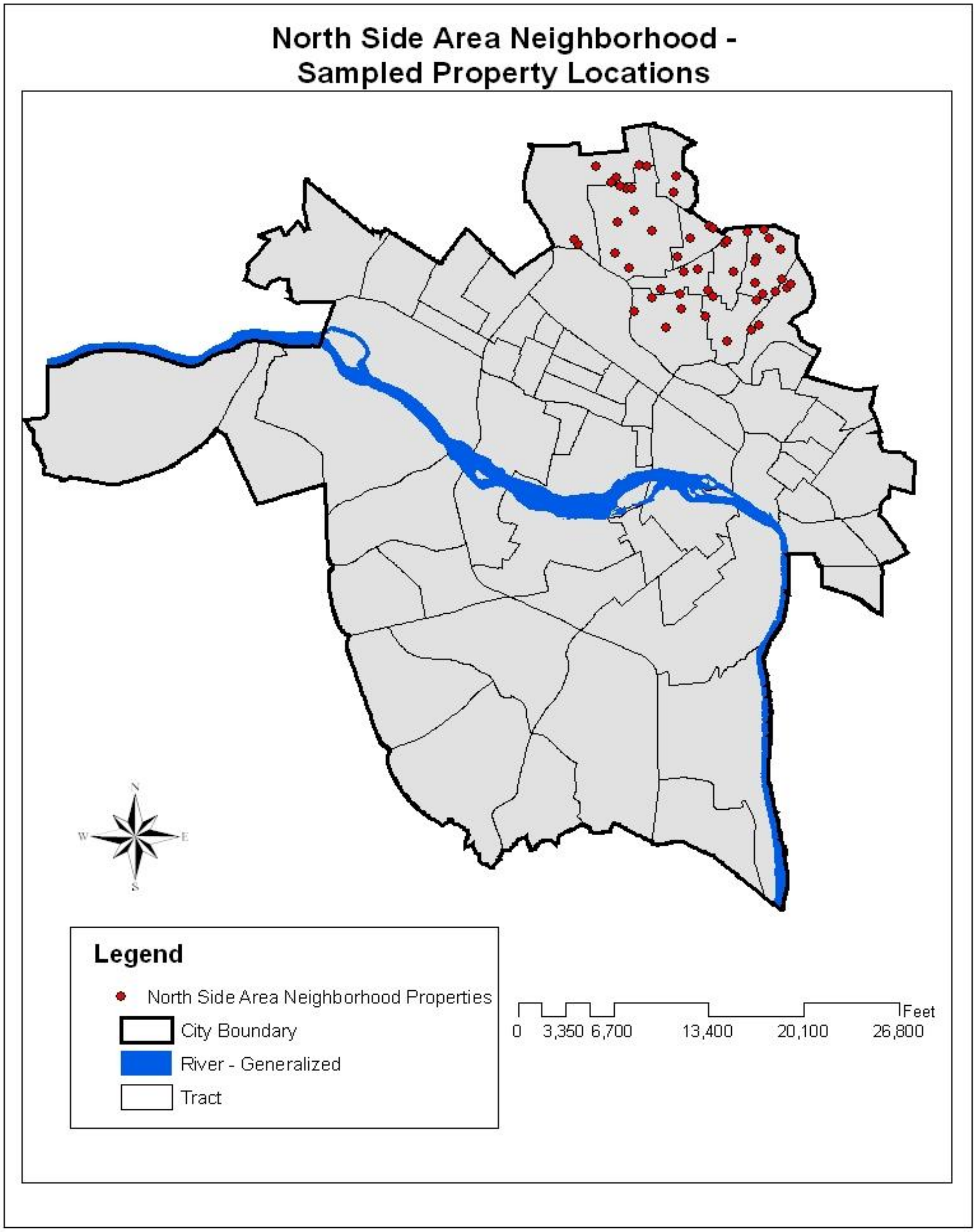


Figure 9: Geographic Information System Map – North Side Area Neighborhood Sampled Property Locations

The North Side area neighborhood generated six components. See Appendix Q for the PCA statistical output tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the six components was 77.79 percent.

When including the variable square footage in the multiple regression analysis, the North Side area neighborhood resulted in three significant models. The regression model scores were relatively strong. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix R

Table 15: Multiple Regression Model Summary Table – North Side Area Neighborhood – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725[a]	.526	.516	62547.48285
2	.843[b]	.711	.699	49338.29568
3	.861[c]	.741	.725	47182.11002
a. Predictors: (Constant), REGR factor score 4 for analysis 1				
b. Predictors: (Constant), REGR factor score 4 for analysis 1, REGR factor score 2 for analysis 1				
c. Predictors: (Constant), REGR factor score 4 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1				

Model 1 had a high R score of .725 and a moderate R square score of .526. According to the R score there's a strong relationship between Model 1 and property values in the North Side area neighborhood. Model 1 explained 52.6 percent of the variance in property values within this area neighborhood. Model 1 included the independent variable Component 4. The variables with the largest loadings on Component 4 were the structural characteristics of the property that included square footage, age, and lot size. Component 4 had a standardized beta weight score of .725 and was significant at the .000 level. The standardized beta weight score of Component 4 signified that this independent variable had a strong, positive influence on the dependent variable.

Model 2 had a very high R score of .843 and a high R square score of .711. Accordingly, the R score indicated that a very strong relationship existed between Model 2 and the dependent variable. Likewise, the R square score explained a fairly large percentage, 71.1 percent, of the variance in the dependent variable. Model 2 included Components 4 and 2. The variables with the largest loadings on Component 2 were: the indicators of a higher socio-economic status i.e. the number of people with degrees, the number of people with advanced degrees, the number of people with incomes between $50,000 and $74,999, the number of people with incomes greater than $75,000, and the property's structural cost per square foot and lot cost per square foot. Components 4 and 2 had standardized beta weight scores of .725 and .430 respectively. Both components were significant at the .000 level and had positive influences on property values in the North side area neighborhood. Component 4, due to its higher standardized beta weight score, was the more influential variable between the two independent variables utilized in Model 2.

Finally, Model 3 had a high R score of .861 and a high R square score of .741. The R score suggested a very strong relationship between Model 3 and the dependent variable. Additionally, Model 3's R square score suggests that the explanatory power of the model is high at 74.1 percent. Model 3 included Components 4, 2, and 1. The variables with the largest loadings on Component 1 were: the number of calls for fighting, the number of people without a diploma, the number of people with a diploma only, the number of people in poverty, the number of people with incomes less than $24,999, and the number of people with incomes between $25,000 and $49,999. Component 1 subsequently included one social incivility variable and many of the indicators of a lower socio-economic status. Components, 4, 2, and 1 had standardized beta weight scores of .725, .430, and -.174 respectively. As before, Component 4, due to it having the highest standardized beta weight score of the three independent variables in Model 3, was the most influential variable in the model. Component 1, the third independent variable in Model 3, had a weak, but negative influence on property values. Components 4, 2, and 1 were significant at the .000, .000, and .023 levels respectively.

There were not many differences in the statistical outputs between the principal component and regression analysis when the variable square footage was excluded from the analysis. See Appendix S for the PCA statistical output tables. As before, the PCA generated six components. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the six components was 78.24 percent.

Two significant models were generated from the resulting regression analysis. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix T.

Table 16: Multiple Regression Model Summary Table – North Side Area Neighborhood – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.656[a]	.431	.419	68555.8584
2	.789[b]	.623	.607	56380.57189
a. Predictors: (Constant), REGR factor score 4 for analysis 2				
b. Predictors: (Constant), REGR factor score 4 for analysis 2, REGR factor score 2 for analysis 2				

Model 1 had a fairly high R score of .656 and a modest R square score of .431. The R score suggested a fairly strong relationship between Model 1 and the dependent variable. Additionally, the R square score indicated that Model 1 explained a fair percentage, 43.1 percent, of the variance in North Side area neighborhood property values. Model 1 only included the independent variable, Component 4. The variables with the largest loadings on Component 4 were age and lot size. Component 4 had a standardized beta weight score of .656. This suggested that the variables age and lot size (as indicative of the characteristics of the property), had a strong, positive influence on property values within the North Side area neighborhood when the variable square footage was removed from the equation. Component 4 was significant at the .000 level.

Model 2 had a high R score of .789 and a fairly high R square score of .623. The R score indicated a strong relationship between Model 2 and the dependent variable. Additionally, Model 2 explained a fairly large amount of the variance, 62.3 percent, in property values in North Side. Model 2 included the independent variables Components 4 and 2. The variables with the largest loadings on Component 2 were: the number of people with income levels between $50,000 and $74,999, the number of people with incomes greater than $75,000, the number of people with degrees, the number of people with advanced degrees, and the property's lot cost and structural cost per square foot. In Model 2, Components 4 and 2 had standardized beta weight coefficient scores of .656 and .438 respectively. Both components had positive influences on the dependent variable. However, Component 4, due to its higher standardized beta weight score, was the more influential of the two independent variables utilized in the regression analysis. Both components were significant at the .000 level.

The variable square footage continued to have a very powerful, positive influence on residential property values in the North Side area neighborhood. The regression analysis clearly illustrated that there was a positive relationship between structural features of the property and neighborhood demographics to this area neighborhood's property values. The component with the most influence on the prediction of residential property values in the North Side area neighborhood included the variables square footage, age, and lot size. Square footage resulted in the regression models being more powerful than in the regression analysis in which it was excluded. When the variable square footage was excluded from the analysis, the component that included the variable age and lot size continued to have the strongest, positive influence on property values in North Side. Although the overall strength of the models, standardized beta weight scores, and the explanatory power of the models weakened slightly when the variable square footage was excluded from the analysis, a critical characteristic of the property, age and lot size, continued to have a relatively strong, positive influence on property values within the neighborhood.

In addition to the structural/characteristics of the property, the indicators of a high socio-economic status also had a positive influence on property values in North Side. Although the extent of this positive influence was not as strong as the influence of the characteristics of the property itself, the statistical results suggested that specific demographic characteristics of the individuals living in the North Side area neighborhood had a favorable influence on property values or tended to have a positive relationship to property values. Individuals that live in North side that: had incomes greater than $50,000, had a degree or an advanced degree, and had high lot and structural cost per square footage (structural characteristics), tended to have a positive correlation on property values within the neighborhood. Even when the variable square footage was excluded from the analysis, these same variables loaded on the same component and had nearly identical, positive influence on property values.

Finally, residential property values in North Side were not adversely influenced by physical incivilities. The variables that had a negative influence on property values in the North Side area neighborhood were primarily the indicators of a lower socio-economic status. The variables that loaded on a single component that had an adverse influence on property values in North Side were: individuals that did not have a diploma, that only had a diploma, were in poverty, had an income less than $49,999, and police calls for fighting. This component, which loaded a majority of the variables that were indicators of a lower socio-economic status, had a negative, but weak influence on property values within the North Side area neighborhood.

The stepwise regression analysis did not select any of the components that were dominated by physical or social incivilities to be included in the significant models for the North Side area neighborhood. This suggested that, based on the sample selected from this area neighborhood, the presence of incivilities, in general, did not have a significant influence on property values in the North Side. On the other hand, the North Side area neighborhood's demographics had both a positive and negative, influence on property values within the neighborhood. However, the structure's square footage, lot size, and age, as loaded on one component, had the most powerful and most significant, positive influence on property values in North Side.

East End Area Neighborhood

"Richmond's East End is the city's birthplace. It was among its hills overlooking the James River that William Byrd II, who owned the land, founded his new settlement, and named after a city in England that had a similar view of the Thames River" (City of Richmond, 2010). The East End area neighborhood is home to many of Richmond's most historic and famous churches, particularly, St. John's Episcopal Church, where Patrick Henry gave his famous "give me liberty or give me death" speech. The East End also boasts several historic parks and community facilities. In the Church Hill area of the East End area neighborhood, "are most of the original 32 blocks of the town laid out by Captain William Mayo in 1737" (City of

Richmond, 2010). Located in this area neighborhood is Main Street Station, Richmond's historic full service, and recently restored rail and transportation hub, several famous civil war monuments, and some of the most architecturally stunning and historic homes along the East Coast. The East End area neighborhood consists of the Church Hill, the oldest community in the City, and the Fulton neighborhoods.

Many of the homes in Church Hill were constructed in the late 19th or early 20th century. The Fulton neighborhood contained more modern styled homes built in the mid 20th century. The Fulton area is the site of the National Cemetery "where veterans from the Civil War to the Persian Gulf War are buried, and Powhatan Hill Park, which offers a playground, a community center and magnificent views of downtown and the south side of the city" (City of Richmond, 2010). The East End area neighborhood is also home to several of the locality's largest public housing complexes. There are at least four public housing complexes within a square mile radius of one another.

The East End area neighborhood is economically, socially, and educationally diverse. According to census data, a majority of the people who live in this area neighborhood live in poverty and do not have a high school diploma or only have a diploma. Conversely, the amount of people with a degree or an advanced or who have incomes above $50,000 pales in comparison to the number of people with incomes below $24,999. Provided below is a brief summary table of key demographic data of the East End Area neighborhood.

Table 17: East End Area Neighborhood Census Summary Statistics

East End Area Neighborhood - 2000 Census Summary Statistics	
% of City population living in Area Neighborhood	14.0%
% of Persons in Poverty	37.3%
% of Civilian Labor Force Unemployed	13.0%
% of Population (25 years and older) without a High School diploma/GED	40.8%
% of Population (25 years and older) with a High School Diploma/GED	30.2%
% of Population (25 years and older) with a Degree (College or Associate)	9.7%
% of Population (25 years and older) with an Advanced Degree	4.8%
# of people with income less than $24,999	5,966
# of people with income between $25,000 and $49,999	2,806
# of people with income between $50,000 and $74,999	1,066
# of people with income greater than $75,000	616

Walkthroughs and visual inspections of the randomly selected properties in the East End neighborhood suggested that many properties were in areas characterized by both physical and social disorders. Several properties were identified as vacant, graffiti was occasionally present on one or more sides of several homes, trash and excessive vegetation was present on numerous properties, many homes had both boarded doors and windows, and there were very few retail or commercial outlets throughout the neighborhood. Pan handlers and homelessness was observed in several sections of this area neighborhood during the physical assessments of properties. Additionally, groups of individuals were observed "hanging out" on corners or in alleys. Also, there were numerous police calls for loiters/suspicious activity and loud noise in this neighborhood.

Conversely, there was a section of this area neighborhood that did not appear to be characterized by physical and social incivilities and appeared to be in a state of order. In this area, homes appeared to be well maintained and tended to be in an overall cleaner, more socially controlled environment. People were walking their pets and there were not a lot of youth hanging out on the corner. Homes in this area appeared to be larger, in terms of square footage and were at least three stories. Many of these homes were closer to the river, had neatly decorated sidewalks, public gas powered street lamps, and were generally closer to more dining and retail establishments of the downtown area.

A GIS map of the City of Richmond, depicting the location of the single-family properties located in the East End area neighborhood is provided below. The East End area neighborhood is most closely associated with Census Area 200. Each of the randomly selected properties in the East End Area neighborhood were located in a “200” census tract.

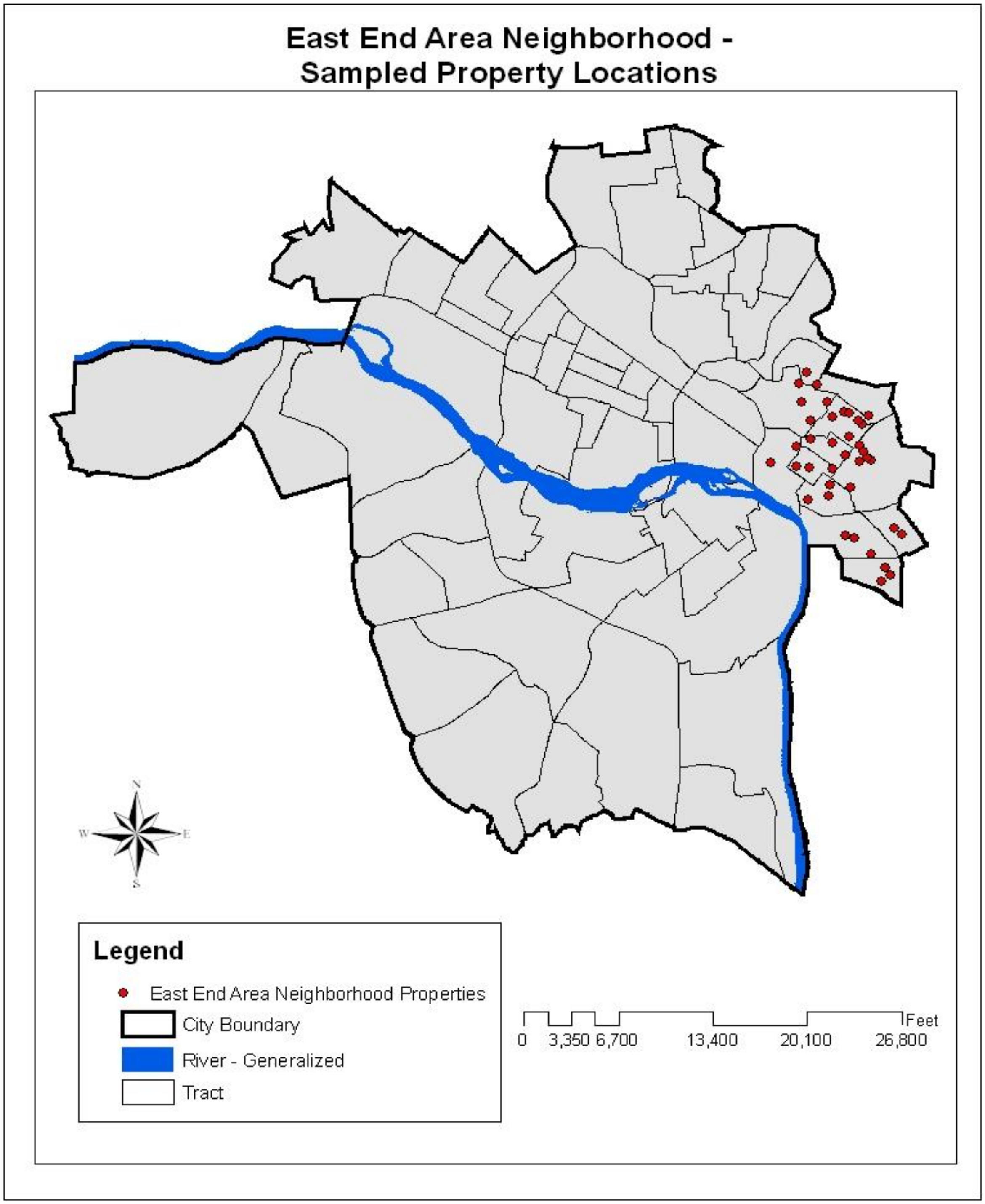


Figure 10: Geographic Information System Map – East End Area Neighborhood Sampled Property Locations

The East End area neighborhood generated seven components. See Appendix U for the PCA statistical output tables for the East End area neighborhood. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components was 83.82 percent.

Four significant models were generated in the regression analysis when the variable square footage was included in the analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix V.

Table 18: Multiple Regression Model Summary Table – East End Area Neighborhood – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842[a]	.710	.702	51880.76656
2	.890[b]	.792	.780	44521.0649
3	.911[c]	.829	.814	40951.89201
4	.927[d]	.860	.843	37649.17685

a. Predictors: (Constant), REGR factor score 2 for analysis 1

b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 3 for analysis 1

c. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 6 for analysis 1

d. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 1 for analysis 1

Model 1 had a high R score of .842 and a high R square score of .710. The R score suggested a very strong relationship between the model and property values in the East End. Additionally, the R square score indicated that explanatory power of Model 1 was very high, as it explained 71 percent of the variance in the East End area neighborhood's property values.

Model 1 included the independent variable Component 2. The variables with the largest loadings on Component 2 were: square footage, age of the property, individuals with incomes greater than $75,000, the number of people with degrees and advanced degrees, and the property's lot cost per square foot. Component 2 had a standardized beta weight score of .842 and was significant at the .000 level. The standardized beta weight score suggested that Component 2 had a strong, positive influence on the dependent variable.

Model 2 had a slightly higher R score of .890 and a higher R square score of .792, when compared to Model 1. Model 2's R score signified that the model had a very strong relationship with the dependent variable. Additionally, the R square score suggested that again, Model 2 explained a very high percentage, 79.2%, of the variance in the dependent variable. Model 2 included the independent variables Components 2 and 3. Component 3 included a grouping of physical incivility variables. The variables with the largest loadings on Component 3 were: vacancy, boarded doors and windows, and vegetation. Component 2 and 3 had standardized beta weight scores of .842 and -.287 and significance levels of .000 and .001 respectively. Component 2 was the more influential of the two independent variables due to it having the higher standardized beta weight score. Component 2 had a strong, positive influence on the dependent variable. However, Component 2, an "incivility index", had a moderately weak but negative influence on the dependent variable.

Model 3 had a very high R score of .911 and a high R square score of .829. According to the R score, there was a very strong relationship between Model 3 and the dependent variable. Additionally, Model 3 explained 82.9 percent of the variance in the East End area neighborhood's property values. Model 3 included the independent variables: Components 2, 3, and 6. The variables with the largest loadings on Component 6 included only the physical incivility graffiti. Components, 2, 3, and 6 had standardized beta weight scores of .842, -.287, and -.192 and were significant at the .000, .000, and .010 levels respectively. In Model 3, Component 2 was the most influential out of the three independent variables due to it having the higher standardized beta weight score. Additionally, Component 2 had a positive influence on the dependent variable. Components 3 and 6, in which several physical incivilities loaded strongly, were the only independent variables in Model 3 with a negative influence on the property values.

Finally, Model 4 had a very high R score of .927 and a high R square score of .860. Accordingly, the regression scores indicated a very strong relationship between the independent variable utilized within the model and the dependent variable. Model 4 utilized Components 2, 3, 6, and 1. The variables with the largest loadings on Component 1 included the indicators of a lower socio-economic status. Specifically, the variables that loaded on Component 1 were the number of people in poverty, the number of people with incomes less than $49,999, the number of people without a diploma, the number of people with a diploma only, and the number of people unemployed. According to the coefficients table, Components 2, 3, 6, and 1 have standardized beta weight scores of .842, -.287, -.192, and -.175 respectively. Component 1's negative standardized beta weight score signified that the indicators of a lower socio-economic status had a weak but negative influence on property values in the East End area neighborhood.

There were few differences in the statistical outputs between the principal component and regression analysis when the variable square footage was excluded from the analysis for the East End area neighborhood. In the analysis in which square footage was excluded, the PCA generated seven components. Nearly all of the components loaded the same variables in this analysis as the previous analysis that included the variable square footage. See Appendix W for the PCA Statistical Output Tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components was 83.89 percent.

The multiple regression analysis for the East End area neighborhood, which excluded the square footage variable, resulted in four significant models. The multiple regression model summary table is provided below. Additional statistical outputs tables of the multiple regression analysis are supplied in Appendix X.

Table 19: Multiple Regression Model Summary Table – East End Area Neighborhood – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831[a]	.690	.681	53638.26544
2	.869[b]	.755	.741	48322.59794
3	.891[c]	.793	.775	45039.73858
4	.910[d]	.829	.808	41603.2466
a. Predictors: (Constant), REGR factor score 2 for analysis 2				
b. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2				
c. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 1 for analysis 2				
d. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 1 for analysis 2, REGR factor score 6 for analysis 2				

Model 1 had an R score of .831 and a high R square score of .690. The R score suggested that there was a strong relationship between Model 1 and the dependent variable. Likewise, the R square score indicated that Model 1 explains a high percentage of the variance in the dependent variable. Component 2 was the only independent variable utilized in Model 1. The variables with the largest loadings on Component 2 included: the age of the property, the number of people with incomes greater than $75,000, the number of people with degrees and advanced degrees, and the property's lot cost per square foot. Component 2 had a standardized beta weight score of .831 and was significant at the .000 level. Component 2's standardized beta weight score indicated that this independent variable had a strong, positive influence on property values.

Model 2 had a high R score of .869 and an R square score of .755. The R score again signified that there was a strong relationship between Model 2 and property values in the East End area neighborhood. As before, the explanatory power of Model 2 is very high, with an R square score of .755. Model 2 included Components 2 and 3. Components 2 and 3 had standardized beta weight scores of .831 and -.256 and were significant at the .000 and .004 levels respectively. The variable with the largest loading on Component 3 were the physical incivility variables vacancy, boarded doors and windows, and excessive vegetation. Component 3's standardized beta weight score suggested that this independent variable, an index of physical incivility, had a negative influence on property values in the East End area neighborhood.

Model 3 had a very high R score of .891 and a high R square score of .793. The R score indicated a very strong relationship between Model 3 and the dependent variable. Additionally, the R square score revealed that Model 3 explained 79.3 percent of the variation in the dependent variable. Model 3 included Components, 2, 3, and 1. The variables with the largest loadings on Component 1 included: the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people without a diploma, the number of people with a diploma only, and the number of people who were unemployed. According to the coefficients table, Components 2, 3, and 1 have standardized beta weight scores of .831, -.256, and -.195 respectively.

Finally, Model 4 had a very high R score of .910 as well as a high R square score of .829. There was a very strong relationship between Model 4 and the dependent variable according to the R score. The explanatory power of the independent variables in Model 4 was very high, as it explained 82.9 percent of the variation in property values. Model 4 included Components 2, 3, 1, and 6. The variables with the largest loadings on Component 6 include the physical incivility graffiti. According to the coefficients table, Components 2, 3, 1, and 6 had standardized beta weight scores of .831, -.256, -.195, and -.188 respectively. Component 6, which included only the physical incivility graffiti, had a very weak but negative influence on property values in the East End area neighborhood.

The results for the East End area neighborhood were very unique compared to the North Side area neighborhood. In the East End area neighborhood, the component that included square footage, age, and the indicators of a higher socio-economic status had a very strong, positive influence on property values. In the East End, individuals with: incomes greater than $75,000, with a degree or an advanced degree, and with a high lot cost per square foot, had a positive relationship to property values. Even when the variable square footage was excluded from the analysis, the same component, that included the aforementioned variables, continued to have a very strong, positive influence on property values. In nearly all regression models the R and R square scores were very high and such models were generally significant. This suggests that there was a strong, significant relationship between the selected independent variables and the dependent variable within the analysis for this area neighborhood.

The regression analysis indicated that residential property values within the East End area neighborhood were adversely influenced by physical incivilities. The regression analysis selected a component in which the variables vacancy, boarded doors and windows, and vegetation loaded strongly and exclusively. Subsequently, the statistical results of the East End area neighborhood clearly indicated that a “physical incivility index” had a negative influence on property values in the area neighborhood. Although, the extent of this influence was not necessarily strong and subsequently lagged behind the component that included square footage and other variables that were indicative of a higher socio-economic status.

Only the variable graffiti loaded strongly and exclusively on one component when the variable square footage was included and excluded from the analysis. The regression analysis indicated that this component, in which graffiti was the only strongly loaded variable within the component, also had a negative influence on property values within the East End area neighborhood. According to this components standardized beta weight score, the negative influence of graffiti on property values was weak.

Finally, the variables that were indicative of a lower socio-economic status: individuals in poverty, the number of people with incomes less than $49,999, the number of people without a diploma, the number of people with a diploma only, and the number of people unemployed, all loaded on one component. This component had a very weak, negative influence on property values in the East End area neighborhood when square footage was included and excluded from the analysis.

The stepwise regression analysis confirmed that some features of physical incivilities have a negative influence on property values. The confirmation of this finding has so far been exclusive to a specific area or region of the locality. Within the East End area neighborhood, the influence of physical incivilities appears to overpower the indicators of a lower socio-economic status. However, the adverse influence of these incivilities on property values was not particularly strong. This suggests that, within the East End area neighborhood, the indicators of a high socio-economic status was stronger than or overpowered the influence of the physical incivilities on property values. As determined by the regression model's R and R square scores and the standardized beta weight scores of this component, the indicators of a high socio-economic status continued to have a very strong, positive influence on property values.

Central Area Neighborhood

The Central area neighborhood "is geographically and socially the heart of the city. The area includes Richmond's best-known example of urban living, The Fan, as well as the architecturally diverse and culturally rich West of the Boulevard and the quiet Byrd Park and Carillon neighborhoods along the river" (City of Richmond, 2010). The Central area neighborhood is home to many of Richmond's most historic and oldest neighborhoods and boasts some of the most popular restaurants and bars. Unlike the other area neighborhoods, this area has an immense conglomeration of residential, commercial, and mixed use development. A typical neighborhood in the Central area is often served by corner restaurants and unique businesses that are conveniently located for residents in the area. Additionally, most homes, particularly in The Fan neighborhood, are typically very close to one another. The Central area neighborhood is very dense and also heavily populated.

Unlike the other neighborhoods, the Central area neighborhood is easily accessible by two of the nation's primary interstates that lay to the outskirts of this area. This potentially creates traffic congestion within the area. This is also supplemented by the large dining and social amenities in the neighborhood that attract people to the area neighborhood as well. Additionally, Virginia Commonwealth University (one of the largest public universities in the state of Virginia) and Virginia Union University are located in this neighborhood. This suggests that there is a very large student population within the area neighborhood. "The area also includes many of the city's best-known attractions, including Monument Avenue, the only street in America designated as a National Historic Landmark, Hollywood Cemetery, Byrd Park and Maymont Park, the Virginia Museum of Fine Arts, and the Carytown shipping district" (City of Richmond, 2010).

Demographically, the Central area neighborhood is very diverse. There's a wide range of income levels of the people living in the neighborhood. There is a fairly large amount of people in poverty and with incomes below $24,999. However, it is very likely that this is partly attributed to the large university student population in the area. Conversely, there are a modest number of people with incomes greater than $75,000. This is evident by the values of many homes in the neighborhood, particularly homes located in the Fan neighborhood and on the historic Monument Avenue in which many properties are typically valued over $1 million. Provided below is a brief summary table of key demographic data of the Central area neighborhood.

Table 20: Central Area Neighborhood Census Summary Statistics

Central Area Neighborhood - 2000 Census Summary Statistics	
% of City population living in Area Neighborhood	16.5%
% of Persons in Poverty	21.3%
%of Civilian Labor Force Unemployed	7.8%
% of Population (25 years and older) without a High School diploma/GED	11.6%
% of Population (25 years and older) with a High School Diploma/GED	16.6%
% of Population (25 years and older) with a Degree (College or Associate)	33.4%
% of Population (25 years and older) with an Advanced Degree	16.5%
# of people with income less than $24,999	6,726
# of people with income between $25,000 and $49,999	4,690
# of people with income between $50,000 and $74,999	2,253
# of people with income greater than $75,000	2,443

Physical walkthroughs of the Central area neighborhood indicated that physical incivilities were not extensively present. Most homes in the Central area neighborhood were well maintained. Additionally, the size of the lots restricted the amount of vegetation, which generally was well maintained. There were not many vacant properties nor were there properties with boarded doors or windows that were randomly selected or observed in this area. There were, however, social incivilities in this area. This was evident by the high number of police calls for loiters/suspicious persons, loud noise, and calls for public drinking. The extent of police calls for these incivilities could be attributed to the very large university population and the dining and bar establishment in the area, which were all very close to homes.

A GIS map of the City of Richmond, depicting the location of the single-family properties located in the Central area neighborhood, is provided below. The Central area neighborhood is most closely associated with Census Area 400. Each of the randomly selected properties in the Central Area neighborhood were located in a "400" census tract.

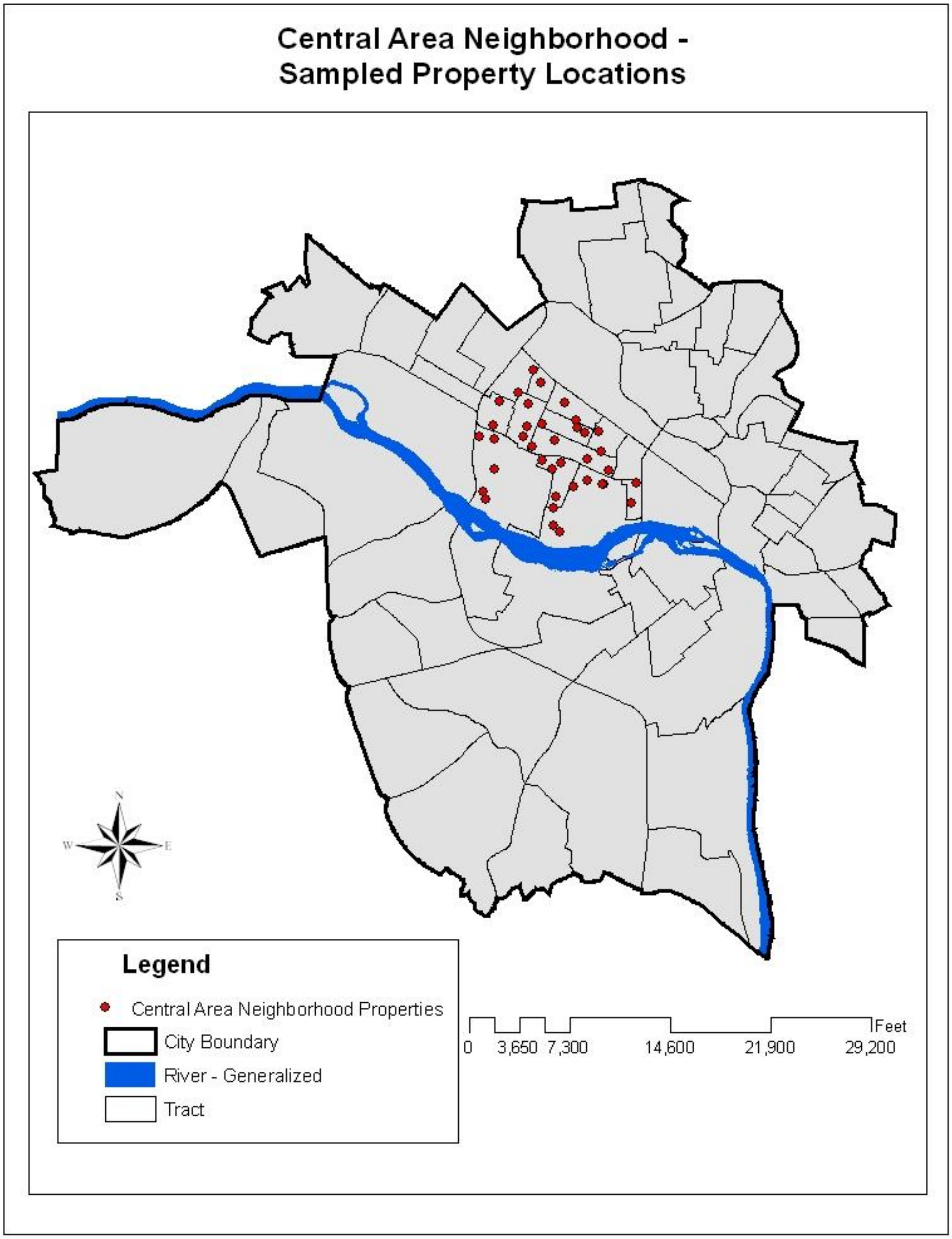


Figure 11: Geographic Information System Map – Central Area Neighborhood Sampled Property Locations

The PCA resulted in seven components when the variable square footage was utilized in the analysis. See Appendix Y for the PCA Statistical Output Tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components in the Central area neighborhood was 88.06 percent. The regression analysis resulted in three significant models. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix Z.

Table 21: Multiple Regression Model Summary Table – Central Area Neighborhood – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.927[a]	.859	.855	2.11E+05
2	.957[b]	.915	.910	1.65E+05
3	.962[c]	.925	.918	1.58E+05

a. Predictors: (Constant), REGR factor score 5 for analysis 1

b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1

c. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 4 for analysis 1

Model 1 had a very high R score of .927 and a high R square score of .859. The R score revealed that Model 1 had a very strong relationship with property values in the Central area neighborhood. Additionally, Model 1 explained a very high percentage of the variance in the dependent variable. Model 1 included Component 5 as the only independent variable. The variables with the largest loadings on Component 5 were: square footage, lot size, and police calls for public drinking. Component 5, as an independent variable, had a very high standardized beta weight score of .927. Component 5's standardized beta weight score suggested that it had a very strong, positive influence on the dependent variable. Component 5 was significant at the .000 level.

Model 2 also had a very high R score of .957 as well as a high R square score of .915. Model 2 had a very strong relationship with property values. Model 2 also explained 91.5 percent of the variance in the dependent variable within the Central area neighborhood. Model 2 included Components 5 and 1. The variables with the largest loadings on Component 1 were: the number of people with incomes greater than $75,000, the number of people with advanced degrees, and the property's lot and structural cost per square foot. In Model 2, Components 5 and 1 had standardized beta weight scores of .927 and .238 and were significant at the .000 level respectively. Both independent variables had positive influences on the dependent variable. However, Component 5, due its higher standardized beta weight score, was the stronger and more influential of the two independent variables utilized within the Model.

Model 3 had a very high R score of .962 as well as a very high R square score of .925. The R score again signified a very strong relationship between Model 3 and the dependent variable and the R square score indicated that the explanatory power of the model was very high as well. Model 3 included Components 5, 1, and 4. The variables with the largest loadings on Component 4 were: the number of people in poverty, the number of people with incomes less than $24,999, the number of people without a high school diploma, and the number of people unemployed. Component 4 primarily featured the variables that were indicators of a lower socio-economic status. In Model 3, Components 5, 1, and 4 had standardized beta weight scores of .927, .238, and .097 and significant levels of .000, .000, and .046 respectively. All of the independent variables utilized in Model 4 had positive influences on the dependent variables. However, Components 5 and 1 had the strongest and second strongest influence on the dependent variables due to its respective higher standardized beta weight scores. Component 4 had a very weak influence on the dependent variable.

Only six components were generated in the PCA when the variable square footage was excluded from the analysis. See Appendix AA for the PCA Statistical Output Tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the six components was 83.68 percent.

The multiple regression analysis resulted in the creation of only two significant models. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AB.

Table 22: Multiple Regression Model Summary Table – Central Area Neighborhood – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748[a]	.559	.547	3.72E+05
2	.797[b]	.635	.614	3.43E+05
a. Predictors: (Constant), REGR factor score 6 for analysis 2				
b. Predictors: (Constant), REGR factor score 6 for analysis 2, REGR factor score 1 for analysis 2				

Model 1 had a high R score of .748 and a moderately sized R square score of .559. The R score indicated a strong relationship between Model 1 and Central area neighborhood property values. Likewise, the R square score revealed that Model 1 explained 55.9 percent of the variance in the dependent variables. Model 1 included the independent variable Component 6. The variables with the largest loadings on Component 6 were: lot size of the property and police calls for public drinking. Component 6 had a standardized beta weight score of .748 and was significant at the .000 level. The standardized beta weight score signified that the independent variable, Component 6, had a strong and positive influence on the dependent variable.

Model 2 generated a high R score of .797 and a fairly high R square score of .635. The R score again suggested a strong relationship between the model and the dependent variable. Additionally, Model 2 explained a fairly high percentage, 63.5 percent, of the variance in the dependent variable. Model 2 included the independent variables Component 6 and 1. The variables with the largest loadings on Component 1 were: the number of people with incomes above $75,000, the number of people with advanced degrees, and the property's lot and structural cost per square foot. In Model 2, Components 6 and 1 had standardized beta weight scores of .748 and .275 and significant levels of .000 and .011 respectively. Both independent variables had a positive influence on property values within the Central area neighborhood. However, Component 6 was the more influential between the two. Component 1 had the weaker influence on property values.

The variable square footage continued to have a very strong influence on property values within the Central area neighborhood. However, the component that included square footage also included the variables lot size and calls for public drinking. This component had a substantially powerful and positive influence on property values within the Central area neighborhood. This observation was also similarly observed in the block group level of analysis in which the variable calls for drinking also loaded on a component in which it had a positive influence on property values. As indicated within that analysis, the Central area neighborhood encompasses an area of Richmond that is incredibly diversified with historic homes and neighborhoods in which the property values range from very high to very low, is also the location of the campus of one of Virginia's largest public universities, and has a mix of restaurants, bars and clubs that serve the population of residential and collegiate patrons within the area. It is probable that there would be many calls for public drinking within such a neighborhood. The same component included lot size and calls for public drinking even when the variable square footage was excluded from the analysis. This component continued to have a very strong, positive influence on property values.

The regression analysis also indicated that residential property values within the Central area neighborhood were positively influenced by: individuals with incomes greater than $75,000, individuals with advanced degrees, and properties' structural and lot cost per square foot. These variables loaded strongly on one component. However, the influence of this component on property values within the Central neighborhood was fairly modest. The relative strength of square footage, lot size, and police calls for public drinking, as loaded on one component, appeared to have dwarfed the influence of any other variables in the Central area neighborhood. When the variable square footage was excluded from the analysis the same variables, as loaded on the same components, maintained its modest but positive influence on property values.

When square footage was included in the analysis for the Central area neighborhood, the variables: poverty, incomes less than $24,999, lack of a diploma, and unemployment had a weak, but positive influence on property values. According to this component's standardized beta weight score, this component also had a very weak influence on property values in the Central area neighborhood. Although the significance of this component was higher than .000 or the .001 level, it was still unusual that the indicators of a lower socio-economic status had a positive, albeit a very weak, influence on property values within a community.

The stepwise regression analysis again confirmed that the demographics of the area had an influence on property values. However, there appears to be several compelling dynamics of those demographics and its relationship to property values within the Central area neighborhood. Only one social incivility loaded on a component in this analysis. However, this incivility indicator loaded on a component with other non incivility features. This suggested that there was a conglomeration of factors that were characteristic of: the broader culture of the Central area neighborhood itself, the socio-economics of the residents, and the incivilities found throughout the community. This was evident by the most influential component within this area neighborhood. This component included the social incivility variable police calls for public drinking along with the variables square footage and lot size. When the variable square footage was excluded from the analysis, the variables lot size and calls for public drinking continued to have a powerful and positive influence on property values in the Central area. There were no physical incivilities that loaded on a component that were included in the regression models within this neighborhood.

West End Area Neighborhood

The West End area neighborhood is one of the most stunning and captivating residential areas of Richmond. "Richmond's west end is the perfect combination of city and suburban living. It offers river views, winding streets flanked by mature trees, and stately brick homes, and also corner restaurants, urban parks and boutique shopping" (City of Richmond, 2010). The West End is home to the West Hampton, Windsor Farms, and Sauer's Gardens neighborhoods as well as the University of Richmond.

According to City assessment data of properties in this area neighborhood, single-family residential homes typically had larger square footage and lot sizes compared to homes in other area neighborhoods. Property values in this area neighborhood were typically very high, as many homes were valued well over $1 million. There was also very minimal poverty in this area neighborhood. Similarly, there were more people in this area with incomes greater than $75,000 than those with incomes less than $24,999 and with incomes between $50,000 and $74,999.

Additionally, there were more people with college degrees and advanced degrees than those with or without a high school diploma. Provided below is a brief summary table of key demographic data of the West End Area neighborhood.

Table 23: West End Area Neighborhood Census Summary Statistics

West End Area Neighborhood - 2000 Census Summary Statistics	
% of City population living in Area Neighborhood	8.7%
% of Persons in Poverty	3.6%
%of Civilian Labor Force Unemployed	2.6%
%of Population (25 years and older) without a High School diploma/GED	4.9%
% of Population (25 years and older) with a High School Diploma/GED	10.1%
% of Population (25 years and older) with a Degree (College or Associate)	45.7%
% of Population (25 years and older) with an Advanced Degree	25.4%
# of people with income less than $24,999	1,111
# of people with income between $25,000 and $49,999	1,839
# of people with income between $50,000 and $74,999	1,325
# of people with income greater than $75,000	2,902

Physical walkthroughs of the West End area neighborhood indicated that this was an exceptionally well-maintained and clean neighborhood. People were jogging, walking their pets, and maintaining their lawns. There were not many retail or commercial outlets in the far western portion of the area neighborhood. However, homes closer to the central and eastern portion of the area neighborhood contained more retail and commercial outlets. Out of the properties that were randomly selected in this area neighborhood, not one had indicators of physical incivilities. According to the Richmond police department there were very few calls for police service on most of the study's social incivilities. However, police calls for loiters/suspicious persons in this area neighborhood were higher compared to calls for other social incivilities.

A GIS map of the City of Richmond, depicting the location of the single-family properties located in the West End area neighborhood is provided below. The West End area neighborhood is most closely associated with Census Area 500. Each of the randomly selected properties in the West End area neighborhood were located in a "500" census tract.

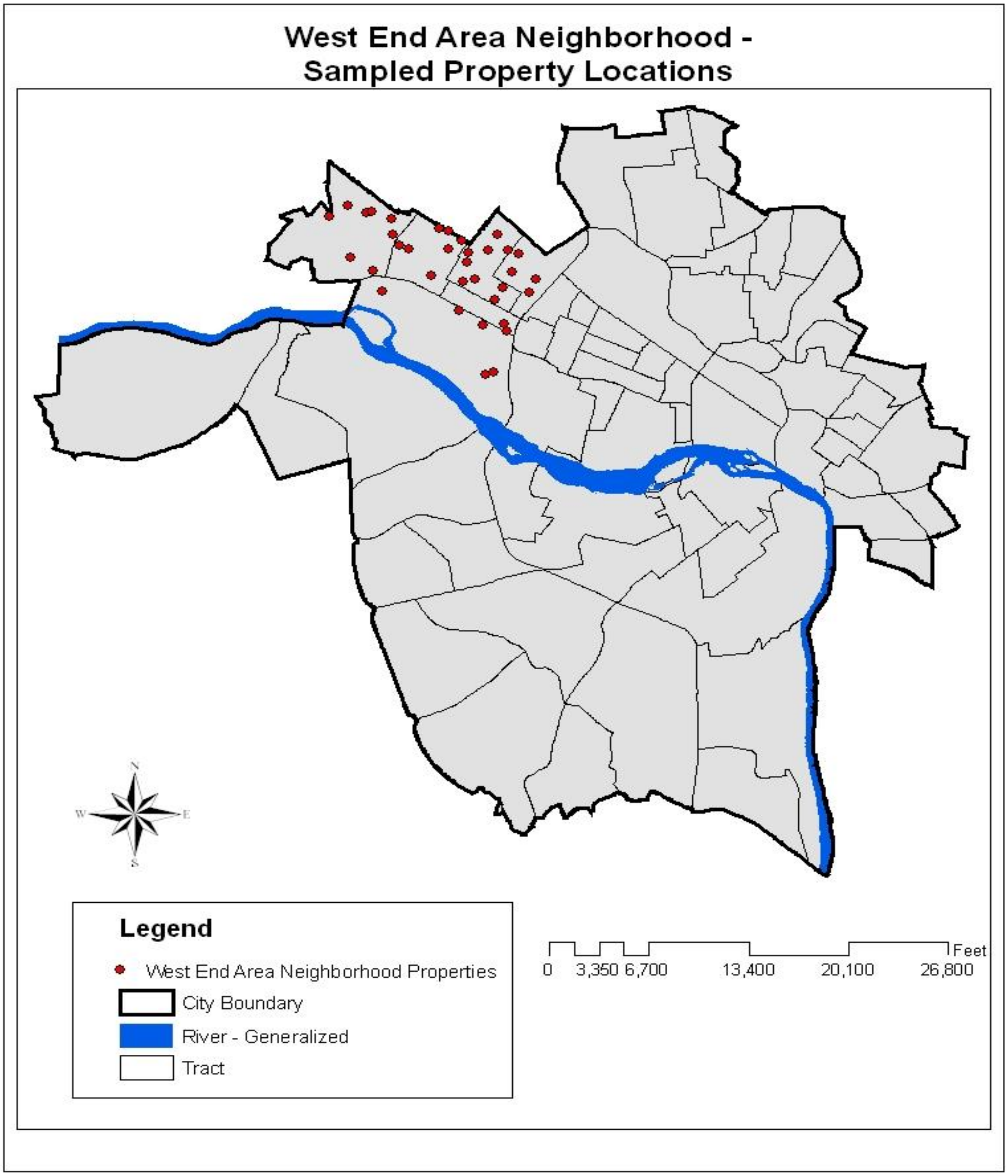


Figure 12: Geographic Information System Map - West End Area Neighborhood Sampled Property Locations

The PCA for the West End area neighborhood generated only four components. See Appendix AC for the PCA Statistical Output Tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the four components was 80.79 percent.

Four significant models were generated in the regression analysis when the variable square footage was included in the analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AD.

Table 24: Multiple Regression Model Summary Table – West End Area Neighborhood – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722[a]	.522	.507	1.48E+05
2	.850[b]	.723	.706	1.14E+05
3	.891[c]	.793	.773	1.00E+05
4	.925[d]	.856	.837	85055.93308

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 3 for analysis 1

c. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1

d. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 4 for analysis 1

Model 1 had a high R score of .722 and a moderate R square score of .522. Accordingly, there was a strong relationship between Model 1 and the dependent variable. Model 1 suggests that the explanatory power of the independent variable and the dependent variable is average at only 52.2 percent. Model 1 included Component 1 as the exclusive independent variable. The variables with the largest loadings on Component 1 were: the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people with incomes between $50,000 and $74,999, the number of people without a diploma, the number of people with only a diploma, and the number of people with a degree. According to the coefficients table, the independent variable Component 1 had a standardized beta weight score of -.722 and a significance level of .000. The standardized beta weight score signified that Component 1 had a very strong, negative influence on property values in the West End area neighborhood.

Model 2 had a high R score of .850 and a high R square score of .723. As before, the R score revealed a very strong relationship between Model 2 and the dependent variable. Additionally, Model 2 explained a high percentage, 72.3 percent, of the variance in the dependent variable.

Model 2 included the independent variables Components 1 and 3. The variables with the largest loadings on Component 3 were: square footage, lot size, the number of people with incomes greater than $75,000, and the number of people with advanced degrees. In Model 2, Components 1 and 3 had standardized beta weight scores of -.722 and .449. Component 1 continued to have a strong, negative influence on property values within the West End area neighborhood. However, Component 3 had a moderately strong, positive influence on the property values.

Model 3's R score of .891 and R square score of .793 suggested that there was a strong relationship between Model 3 and the dependent variable and that the model explained a very high percentage of the variance in the dependent variable. Model 3 included Components 1, 3, and 2. The variables with the largest loadings on Component 2 were: age of the property, the number of people unemployed, and the property's structural and lot cost per square foot. In

Model 3, Components 1, 2, and 3 had standardized beta weight scores of -.722, .449, and .265 respectively. According to the standardized beta weight scores, Component 2 had a relatively weak, but positive influence on property values. In Model 3, Components 1, 3, and 2 had significant levels of .000, .000, and .003 respectively.

Finally, Model 4 had a high R score of .925 and a high R square score of .856. As before, there's a very strong relationship between Model 4 and property values. Model 4 suggested that the explanatory power of the independent variables and the dependent variable was high at 85.6 percent. Model 4 included Components 1, 3, 2, and 4. The variables with the largest loading on Component 4 were: Calls for loiters and calls for loud noise. Component 4 merged two social incivility variables onto one "social incivility index". In Model 4, Components 1, 3, 2, and 4 had standardized beta weight scores of -.722, .449, .265, and -.251 respectively. Component 4 was the least influential independent variable out of those utilized within Model 4. However, Component 4 standardized beta weight score indicated that it has a fairly weak, but negative influence on property values. Components 1, 2, 3, and 4 were significant at the .000, .000, .001, and .001 levels respectively.

Another analysis was conducted that excluded square footage from the analysis. See Appendix AE for the PCA Statistical Output Tables. The PCA generated four components. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the four components in this analysis was 80.99 percent.

The multiple regression analysis resulted in the creation of four significant models. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AF.

Table 25: Multiple Regression Model Summary Table – West End Area Neighborhood – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.662[a]	.438	.421	1.60E+05
2	.781[b]	.610	.586	1.36E+05
3	.853[c]	.728	.702	1.15E+05
4	.894[d]	.799	.772	1.01E+05
a. Predictors: (Constant), REGR factor score 1 for analysis 2				
b. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 3 for analysis 2				
c. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 2 for analysis 2				
d. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 2 for analysis 2, REGR factor score 4 for analysis 2				

Model 1 had a fairly high R score of .662 and a moderate R square score of .438. The R score suggested that there was a fairly strong relationship between Model 1 and the dependent variable. However, the R square score indicated that Model 1 explained only 43.8 percent of the variance in the dependent variable. Model 1 included the independent variable Component 1. The variables with the largest loadings on Component 1 were: the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people with incomes between $50,000 and $74,999, the number of people without a diploma and with a diploma only, and the number of people with a degree. Component 1 had a standardized beta weight score of -.662 and was significant at the .000 level. The standardized beta weight score for Component 1 indicated that this independent variable had a fairly strong, negative influence on property values in the West End area neighborhood.

Model 2 had a higher R score of .781 and a higher R square score of .610. Subsequently, there was a strong relationship between Model 2 and property values in the West End area neighborhood. Model 2 suggested that the explanatory power of the independent variables and the dependent variable was relatively high at 61.0 percent. Model 2 included Components 1 and 3. The variables with the largest loadings on Component 3 were: lot size, the number of people with incomes greater than $75,000, and the number of people with advanced degrees. In Model 2, Components 1 and 3 had standardized beta weight scores of -.662 and .415 respectively. Component 3's standardized beta weight score indicated that it had a positive influence on the dependent variable. Although Component 1 had a negative influence on the dependent variable, it still had the stronger influence on property values amongst the two independent variables in the model. In Model 2, Component 1 was significant at the .000 level and Component 3 was significant at the .001 level.

Model 3 had a high R score of .853 and a high R square score of .728. The R score of .853 revealed a strong relationship between the model and property values in the West End. Additionally, the R square score indicated that Model 3 explained a high percentage, 72.8 percent, of the variance in property values within the area neighborhood. Model 3 included Components 1, 3, and 2. The variables with the largest loadings on Component 2 were: age of the property, the number of people unemployed, and the property's structural and lot cost per square foot. In Model 3, Components 1, 3, and 2 had standardized beta weight scores of -.662, .415, and .343 respectively. According to Component 2's standardized beta weight score, it had a fairly moderate but positive influence on the dependent variable.

Finally, Model 4 had a very high R score of .894 and a high R square score of .799. Accordingly, there was a strong relationship between Model 4 and the dependent variable.

Additionally, Model 4 explained a high percentage, 79.9 percent, of the variance in property values in the West End area neighborhood. The independent variables included in Model 4 were: Components, 1, 3, 2, and 4. The variables with the largest loadings on Component 4 were: Calls for loud noise and calls for loiters. Components 1, 3, 2, and 4 had standardized beta weight scores of -.662, .415, .343, and -.266 respectively. Component 4 had a fairly weak, yet negative influence on property values. As before, Component 4, a "social incivility index" had a negative influence on property values in the West End area neighborhood. Components 1, 3, 2, and 4 were significant at the.000, .000, .000, and .003 levels respectively.

The statistical outputs of the West End area neighborhood generated very clear and distinct results. Compared to some of the other area neighborhoods in which the influence of incivilities were comingled with other neighborhood characteristics, the West End area neighborhood appeared to be relatively homogenous in terms of having consistently higher property values rather (as evident in the longitudinal analysis) than a mix of properties with varying values and a mix of physical incivilities. In the West End area neighborhood there were no physical incivilities located on any of the randomly selected properties. Additionally, nearly all of the indicators that represented a lower socio-economic status loaded on a single component. That component was the most significant and influential independent variable in the analysis. It subsequently had a very strong, negative influence on property values in the West End.

Out of all of the area neighborhoods in which the indicators of a lower socio-economic status had a negative influence on property values, the West End area neighborhood was influenced the greatest by such indicators. What is compelling about this independent variable in the West End is that two of the variables that were normally included in the component that were normally indicative of a higher socio-economic status i.e. people with incomes between $50,000 and $74,999 and individuals with a degree, loaded together on the component that included poverty, individuals with incomes below $49,999, and individuals with a diploma only. This observation suggested, as the longitudinal and qualitative analysis indicated that individuals living within the West End area neighborhood had very high incomes; well over $75,000 and that individuals living in this area had higher levels of education. Incomes were so high in this area neighborhood that individuals making between $50,000 and $74,000 were negatively correlated to property values in the area neighborhood.

The indicators of a high socio-economic status i.e. individuals with incomes greater than $75,000 and with advanced degrees, in addition to the square footage and lot size of the property, all loaded on one component and had a moderate yet positive influence on property values in the West End area neighborhood. The variable square footage was not as powerful in this neighborhood as it was with other area neighborhoods, hence its placement on the second most influential component. Therefore, individuals: in poverty, with incomes below $75,000, and with only a diploma or a degree, had a more powerful influence on property values, albeit negative, than square footage within this particular area neighborhood.

Social incivilities also had a negative influence on property values within the West End area neighborhood. The variables: police calls for loud noise and loiters all loaded on one component together. This "social incivility index" had a fairly weak but negative influence on property values within the West End area neighborhood.

When the variable square footage was excluded from the analysis, nearly the same results in terms of variable loadings were generated in the analysis that included square footage. Nearly all of the variables that loaded on the components in the analysis that included square footage loaded on the same components in the analysis in which square footage was excluded. The only difference was that the strength of the models was generally weaker when the variable square footage was excluded from the analysis.

Overall the West End area neighborhood is an area of Richmond that contained some of the City's and State's most wealthy residents. The presence of indicators of a lower socio-economic status had an incredibly powerful, negative influence on property values within this area. In fact, some of the same socio-economic indicators that may have had a positive influence on property values in other areas of the City had a negative influence on property values in the West End area neighborhood. The influence of these variables appeared to overpower the strength of the variable square footage, which up until this area neighborhood, continued to have the strongest influence on property values.

There were no physical incivilities and very minimal social incivilities in the West End neighborhood. However, the existence of the few social incivilities that were present within the West End had a negative influence on property values. However, the influence of these incivilities pales in comparison to the influence of the demographics within the area neighborhood.

South West Area Neighborhood

"Richmond's South West area has a dual personality. It offers elements of country living such as wildflower-filled meadows and secluded riverfront properties. It also contains the city's newest office, retail and residential development, Stony Point, and a fast growing retail area at Forest Hill and Chippenham Parkway" (City of Richmond, 2010). The South West area is home to the Stratford Hills/Oxford and Huguenot Farms/Hobby Hills neighborhoods.

The South West area neighborhood is located across the river and is relatively segregated from the congestion and pace of the downtown area. The separation of this area neighborhood from the downtown area allows for less traffic congestion and typically less retail and commercial outlets. The commercial and retail outlets that are located within the South West area neighborhood were typically segregated from the residential areas and located along primary business corridors and not within the individual neighborhoods. Thus, the South West area neighborhood tends to have more of a suburban rather than urban character.

The South West area neighborhood is an area in which many homes were secluded by vibrant greenways and forests, all of which were accessible by winding roads and back streets. There were a wide diversity of housing styles in this area. Many of the larger and highly valued homes were located along and in close proximity to the river. Conversely, many of the smaller and more modern homes were located in the eastern half of the area neighborhood.

Demographically, the South West area neighborhood is very diverse. There are a wide range of income and education levels of the residents within the area. Within this area neighborhood, there are more people without a diploma than there are with an advanced degree. Similarly, there were more individuals with incomes less than$50,000 than there were individuals earning more than $75,000. Provided below is a brief summary table of key demographic data of the South West Area neighborhood.

Table 26: South West Area Neighborhood Census Summary Statistics

South West Area Neighborhood - 2000 Census Summary Statistics	
% of City population living in Area Neighborhood	26.5%
% of Persons in Poverty	13.6%
% of Civilian Labor Force Unemployed	4.7%
% of Population (25 years and older) without a High School diploma/GED	30.5%
% of Population (25 years and older) with a High School Diploma/GED	31.4%
% of Population (25 years and older) with a Degree (College or Associate)	22.2%
% of Population (25 years and older) with an Advanced Degree	9.3%
# of people with income less than $24,999	7,423
# of people with income between $25,000 and $49,999	8,137
# of people with income between $50,000 and $74,999	4,122
# of people with income greater than $75,000	3,520

Physical walkthroughs of the South West area neighborhood indicated that there were very minimal physical incivilities present on residential properties. Homes, typically in the south western and central portion of the area neighborhood, were generally very well maintained, yards were kept clean and free of trash, and there did not appear to be any or very minimal graffiti or boarded doors or windows present on properties. However, the condition of the environment tended to change in the eastern portion of the area neighborhood. There were more commercial activity, more multi-dwelling units, and less greenery the further east in the area neighborhood.

Data from the local police department suggested that there were not many calls for police service on the study's social incivilities. There were however, significantly more police calls for loiters/suspicious person than any of the other social incivilities in this area neighborhood.

A GIS map of the City of Richmond, depicting the location of the single-family properties located in the South West Area neighborhood is provided below. The South West Area neighborhood is most closely associated with Census Area 700. Many of the randomly selected properties in the South West Area neighborhood were located in a "700" census tract.

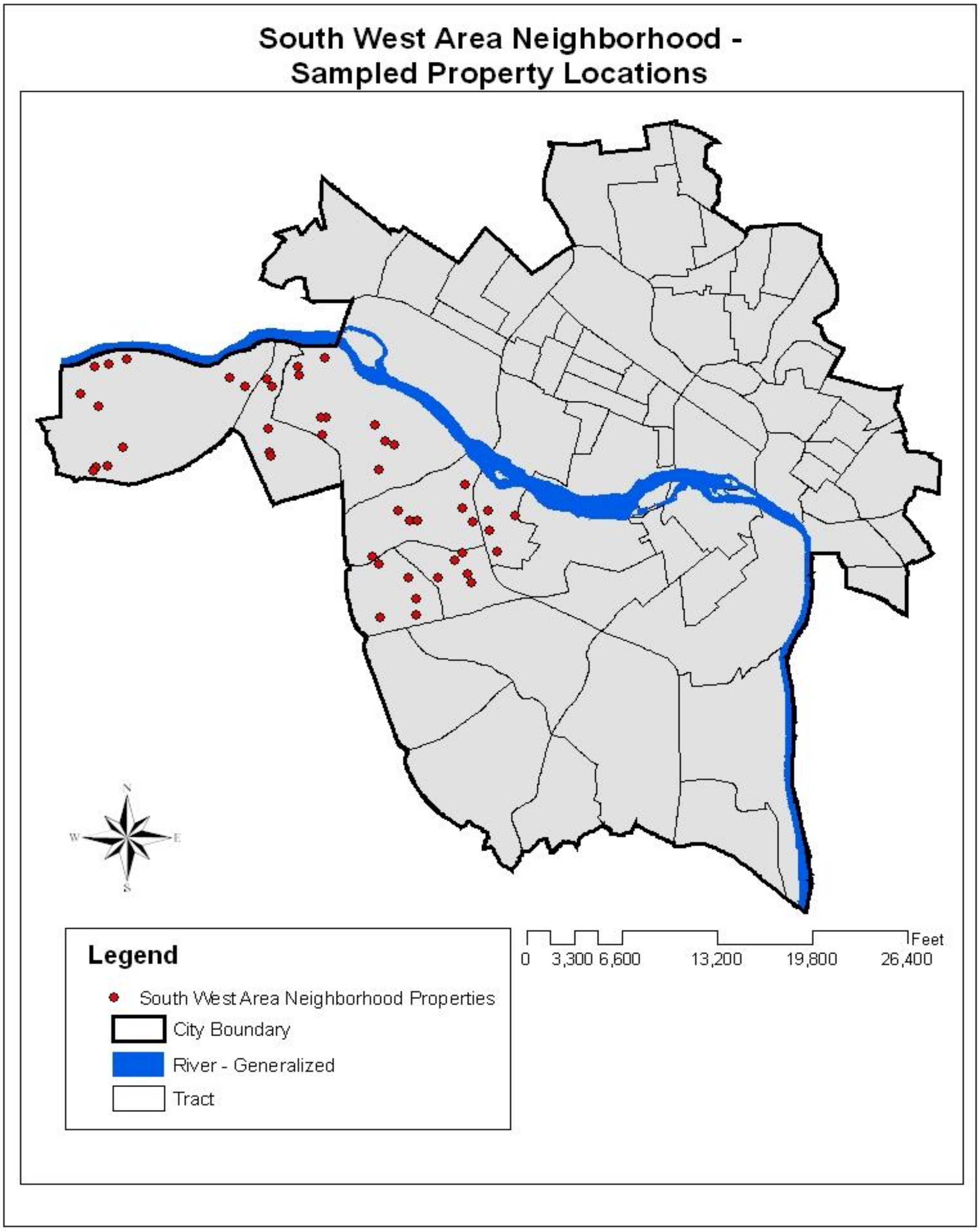


Figure 13: Geographic Information System Map - South West Area Neighborhood Sampled Property Locations

The PCA for the South West area neighborhood generated five components. The PCA Statistical Output Tables are provided in Appendix AG. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the five components was 78.55 percent.

Three significant regression models were generated when the variable square footage was included in the analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AH.

Table 27: Multiple Regression Model Summary Table – South West Area Neighborhood – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774[a]	.599	.590	79802.92247
2	.837[b]	.700	.687	69728.69288
3	.865[c]	.747	.730	64763.3471
a. Predictors: (Constant), REGR factor score 2 for analysis 1				
b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 5 for analysis 1				
c. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1				

Model 1 had a high R score of .774 and a moderate R square score of .599. According to the R score, there was a strong relationship between Component 2, the only independent variable utilized within Model 1, and property values within the South West area neighborhood. Additionally, the R square score indicated that Model 1 explained 59.9 percent of the variance in the dependent variable.

The variables with the largest loadings on Component 2 were: square footage, lot size, the number of people with incomes more than $75,000, the number of people with a degree, and the number of people with an advanced degree. Component 2 had a standardized beta weight score of .774. This score suggested that Component 2 had a strong and positive influence on property values in the South West area neighborhood. Component 2 was significant at the .000 level.

Model 2's high R score of .837 and R square score of .700 revealed that there was a very strong relationship between the model and property values and that the model explained 70 percent of the variance in the dependent variable. Model 2 suggests that the explanatory power of the independent variables and the dependent variable was fairly high at 70.0 percent. Model 2 included Components 2 and 5. The variable with the largest loadings on Component 5 was structural cost per square foot. In Model 2, Component 2 and 5 had standardized beta weight scores of .774 and .319 and significant levels of .000 and .000 respectively. In Model 2, Component 2 was the stronger and more influential of the two independent variables within the model due to its higher standardized beta score. Component 5's standardized beta weight score revealed that it had a weak, but positive influence on the dependent variable.

Model 3 also had a very high R score of .865 and an R square score of .747. According to the R score, Model 3 had a strong relationship with the dependent variable. Model 3 suggested that the explanatory power of the independent variable and the dependent variable was high at 74.7 percent. Model 3 included Components 2, 5, and 1. The variables with the largest loadings on Components 1 were: calls for public drinking, the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people with incomes between $50,000 and $74,999, the number of people without a diploma, the number of people with a diploma only, and the number of people unemployed. In Model 3, Components 2, 5, and 1 had standardized beta weight scores of .774, .319, and -.217 respectively. Component 1, according to its standardized beta weight score, had a weak but negative influence on the dependent variable. Components 2, 5, and 1 were significant at the .000, .000, and .007 levels respectively.

Another analysis was conducted in which the variable square footage was excluded. The PCA Statistical Output Tables are provided in Appendix AI. The PCA again resulted in the generation of five Components. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the five Components in this analysis was 80.07 percent.

Three significant models were generated from the multiple regression analysis. The regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AJ.

Table 28: Multiple Regression Model Summary Table – South West Area Neighborhood – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751[a]	.563	.554	83231.02874
2	.810[b]	.656	.640	74745.83292
3	.848[c]	.719	.699	68334.66575
a. Predictors: (Constant), REGR factor score 2 for analysis 2				
b. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 5 for analysis 2				
c. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 5 for analysis 2, REGR factor score 1 for analysis 2				

According to the regression analysis, Model 1 had a high R score of .751 and a moderate R square score of .563. The R score revealed a strong relationship between Model 1 and property values. Also, the R square score suggested that Model 1 explained 56.3 percent of the variance in the dependent variable.

Model 1 included Component 2 as the only independent variable. The variables with the largest loadings on Component 2 were: lot size, the number of people with incomes between $50,000 and $74,999, the number of people with incomes greater than $75,000, the number of people with a degree, the number of people with an advanced degree. In Model 1, Component 2 had a standardized beta weight score of .751 and was significant at the .000 level. Accordingly, Component 2's standardized beta weight score signified that this independent variable had a strong, positive influence on property values in the South West area neighborhood.

Model 2 had a high R score of .810 and a fairly high R square score of .656. As before, the R score suggested a strong relationship between Model 2 and the dependent variable. Likewise, the R square score indicated that Model 2 explained 65.6 percent of the variance in the dependent variables. Model 2 included Components 2 and 5. The variable with the largest loadings on Component 5 was structural cost per square foot. In Model 2, Components 2 and 5 had standardized beta weight scores of .751 and .304 and significant levels of .000 and .001 respectively. Component 2 had the strongest influence on the dependent variable between the two independent variables. Additionally, both components had positive influences on property values in the South West area neighborhood.

Finally, the regression analysis in Model 3 produced a high R score of .848 and a high R square score of .719. According to the R score, there was a strong relationship between the model and the dependent variables. Additionally, the R square score suggested that Model 3 explained a high percentage, 71.9 percent, of the variance in the dependent variable. Model 3 included Components 2, 5, and 1. The variables with the largest loadings on Component 1 included: calls for public drinking, the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people without a diploma, the number of people with just a diploma, and the number of people who were unemployed. In Model 3, Components 2, 5, and 1 had standardized beta weight scores of .751, .304, and -.251 and significant levels of .000, .001, and .003 respectively. According to its standardized beta weight score, Component 1 had a weak, negative influence on property values in the South West area neighborhood.

The South West area neighborhood generated statistical results that were similar to several of the other area neighborhoods. The variables square footage and lot size loaded on a component with individuals with incomes greater than $75,000, with degrees, and advanced degrees. Although this component was not exclusively representative of a higher socio-economic status, this component did however have the strongest influence on property values within the South West area neighborhood. This was followed by the property's structural cost per square foot, which had the next strongest, positive influence on property values in the area neighborhood.

The component that included the indicators of a lower socio-economic status had a negative influence on property values within the South West area neighborhood. On this component, the variables poverty, individuals with incomes less than $74,000, individuals who were unemployed, and police calls for public drinking all loaded on this component. This component, in which the socio-economic variables loaded heavily, had a negative influence on property values within the South West area neighborhood. Interestingly, the variable associated with individuals with incomes between $50,000 and $74,999 loaded on this component. In other areas of Richmond, this variable was included on the component with the indicators of having a higher socio-economic status. This observation also suggested that residents within this area of the City that have higher incomes tend to have exceptionally, high valued properties as compared to other residents with moderate or lower incomes. This was also evident by the longitudinal analysis that indicated this area of Richmond was one that contained properties with higher values than many other areas of the locality.

Generally the same components were formulated when the variable square footage was excluded from the analysis. The exclusion of square footage from the analysis resulted in slightly weaker models and standardized beta weight coefficient scores. In both analyses, not any of the physical and only one of the social incivilities had a significant influence on property values in the South West area neighborhood.

Single-family residential property values in the South West area neighborhood were heavily influenced by the property's square footage and lot size as well as the demographics of the area neighborhood. Conversely, poverty, unemployment, police calls for public drinking, and individuals with incomes less than $49,999 had a negative influence on property values. Police calls for public drinking loaded on a factor with other demographic variables. Therefore this particular variable's influence on property values within the South West area neighborhood was difficult to exclusively extract and quantify. However, its inclusion with other variables that had a negative influence on property values signified that this social incivility did not have a positive influence on property values within this specific area neighborhood.

South Side Area Neighborhood

Richmond's South Side area neighborhood "offers its residents a wealth of natural beauty, including river views, quiet tree-lined streets and thriving woods and creeks. It offers literally every type of community possible; from converted warehouses and renovated storefronts of Old Manchester, to the sloping lots and gorgeous views of Riverside Drive, to the brand new homes built in Fawnbrook and Broad Rock" (City of Richmond, 2010). The Woodland Heights, Westover Hills, Cherry Gardens/Cullenwood, and Beaufont Hills in addition to the Fawnbrook, Broad Rock neighborhoods are all located in the Southside area neighborhood.

The homes in the South Side area neighborhood were very diverse, similar to the neighborhood's demographics. Homes in the Westover Hills neighborhood, which were generally closer to the river "offered a wealth of personality, with architectural styles ranging from cape cods to brick colonials, Spanish colonial and Tudor Revival" (City of Richmond, 2010). Homes in the Broad Rock neighborhood, which was further south in the area neighborhood, were "mostly ranch-style brick homes from the 1950s and 1960s, with several areas offering newer tri-levels and split-levels from the 1980s and 1990s" (City of Richmond, 2010). The South Side area neighborhood has several dining, commercial, and retail outlets, which were primarily located along the Jefferson Davis, Hull Street, and Midlothian turnpike corridors. The South Side area also contained several public housing complexes. Just as the East End area neighborhood, many of these public housing complexes were located in very close proximity to one another. The South Side area neighborhood was also the site of several urban revitalization investment programs aimed at improving housing and living conditions of some of the City's most vulnerable residents.

According to assessment data, there was a wide range of property values in the South Side area neighborhood. Homes closer to the river, with larger lots and higher square footage appeared to generally have higher property values. Homes located in the more industrial and commercial sections of the area neighborhood appeared to have moderate to lower property.

The Southside area neighborhood was also demographically very diverse. There were many individuals living in poverty in the South Side area. Similarly, there were a disproportionate number of individuals with incomes below $24,999 than individuals making more than $50,000. Also, there were almost twice as many people without a diploma as there were individuals with a degree or an advanced degree. Provided below is a brief summary table of key demographic data of the South Side Area neighborhood.

Table 29: South Side Area Neighborhood Census Summary Statistics

South Side Area Neighborhood - 2000 Census Summary Statistics	
% of City population living in Area Neighborhood	14.2%
% of Persons in Poverty	26.4%
% of Civilian Labor Force Unemployed	9.6%
% of Population (25 years and older) without a High School diploma/GED	36.0%
% of Population (25 years and older) with a High School Diploma/GED	25.4%
% of Population (25 years and older) with a Degree (College or Associate)	15.1%
% of Population (25 years and older) with an Advanced Degree	7.1%
# of people with income less than $24,999	5,514
# of people with income between $25,000 and $49,999	3,287
# of people with income between $50,000 and $74,999	1,567
# of people with income greater than $75,000	1,183

Physical walkthroughs of the South Side area neighborhood indicated that physical incivilities were present in specific segments of the community. Specifically, incivilities appeared to be minimal in the northern and north-western sections of the area neighborhood. However, physical incivilities were more extensive in areas closer to the industrial and commercial corridors, near the public housing complexes, and in areas further south and away from the river. Vacant properties, boarded doors and windows and excessive vegetation were observed in the area neighborhood. Additionally, local police calls for loud noise, fighting, and loiters/suspicious persons were relatively extensive in South Side.

A GIS map of the City of Richmond, depicting the location of the single-family properties located in the South Side Area neighborhood is provided below. The South Side Area neighborhood is most closely associated with Census Area 600. Many of the randomly selected properties in the South Side Area neighborhood were located in a "600" census tract. Several of the selected properties however, were located in a "700" census tract.

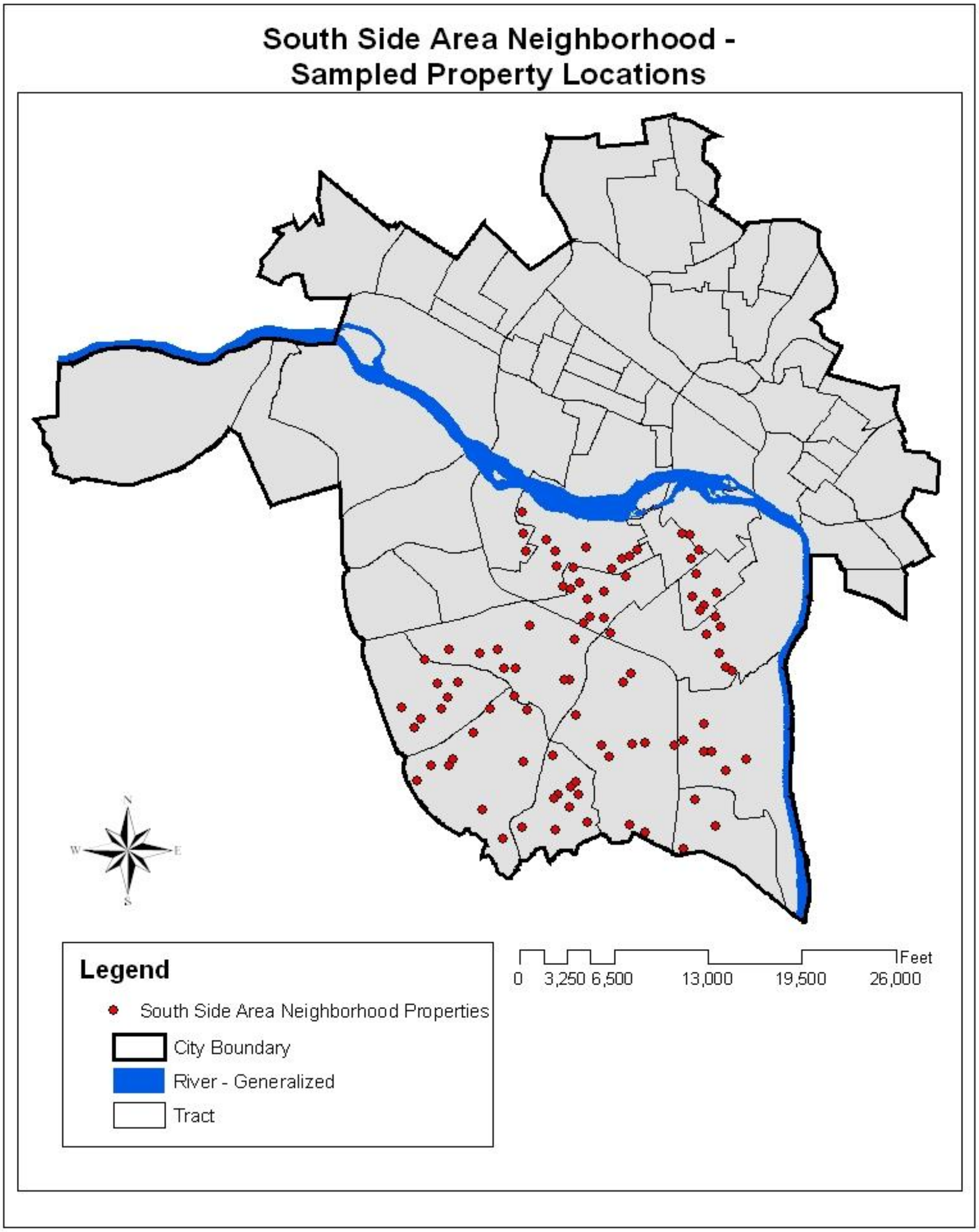


Figure 14: Geographic Information System Map – South Side Area Neighborhood Sampled Property Locations

The PCA for the South Side area neighborhood generated seven components. See Appendix AK for the PCA Statistical Output Tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components was 75.98 percent.

Four significant models were generated in the regression analysis when the variable square footage was included in the analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AL.

Table 30: Multiple Regression Model Summary Table – South Side Area Neighborhood – Includes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781[a]	.610	.606	34956.33614
2	.849[b]	.721	.715	29740.1115
3	.858[c]	.736	.727	29068.17926
4	.865[d]	.748	.737	28571.15397
a. Predictors: (Constant), REGR factor score 2 for analysis 1				
b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1				
c. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1				
d. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1				

Model 1 generated a high R score of .781 and a fairly high R square score of .610. According to the R score, there was a strong relationship between the independent variable utilized in Model 1 and property values in the South Side area neighborhood. Model 1 suggested that the explanatory power of the independent variable and the dependent variable was moderately high at 61.0 percent. Model 1 included the independent variable Component 2. The variables with the largest loadings on Component 2 were: the number of people with incomes greater than $75,000, the number of people with a degree, the number of people with an advanced degree, and the property's structural cost per square foot. According to the coefficients table, Component 2 had a high standardized beta weight score of .781. This high score suggested that Component 2 had a strong, positive influence on property values. Component 2 was significant at the .000 level.

Model 2 also had a very high R score of .849 and a high R square score of .721. The R score indicated a strong relationship between Model 2 and the dependent variable. Additionally, the R square score indicated that Model 2 explained 72.1 percent of the variance in the dependent variable. Model 2 consisted of Components 2 and 1. The variables with the largest loadings on Component 1 were: the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people with incomes between $50,000 and $74,999, the number of people without a diploma, the number of people with just a diploma, and the number of people unemployed. Within Model 2, Components 2 and 1 had standardized beta weight scores of .781 and -.333 and significant level scores of .000 and .000 respectively. Component 2 was the more influential of the two independent variables due to it having the higher standardized beta weight score. Component 1, on the other hand, had a moderately negative influence on property values in the area neighborhood.

Model 3 had a high R score of .858 and a high R square score of .736. Accordingly, the R score revealed a strong relationship between Model 3 and the dependent variable. Additionally, the R square score indicated that Model 3 explained a high percentage, 73.6 percent, of the variance in the dependent variable. Model 3 consisted of Components 2, 1, and 5. The variables with the largest loadings on Component 5 were two social incivilities: calls for loud noise and calls for loiters. In Model 3, Components 2, 1, and 5 had standardized beta weight scores of .781, -.333, and -.124 and significant levels of .000, .000, and .024 respectively. According to its standardized beta weight score, Component 5, a "social incivility index" for the South Side area neighborhood, had a weak but negative influence on property values within this area neighborhood.

Model 4 had a very high R score of .865 and a high R square score of .748. The R score signified again, a very strong relationship between the model and the dependent variable. Additionally, the R square score indicated that Model 4 explained a very high percentage, 74.8 percent, of the variance in the dependent variable.

Model 4 included Components 2, 1, 5, and 4. The variable with the largest loadings on Component 4 was lot cost per square foot. In Model 4, Components 2, 1, 5, and 4 had standardized beta weight scores of .781, -.333, -.124, and -.109 and significant levels of .000, .000, .022, and .044 respectively. According to Component 4's standardized beta weight score, this independent variable had a very weak but negative influence on property values in the South Side area neighborhood.

Another analysis was conducted on the South Side area neighborhood in which the variable square footage was excluded from the analysis. The PCA again resulted in the formulation of seven components. See Appendix AM for the PCA Statistical Output Tables. According to the Total Variance Explained table, the cumulative percentage of variance accounted for by the seven components in the analysis was 77.85 percent.

This time, only two significant models were generated by the regression analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AN.

Table 31: Multiple Regression Model Summary Table – South Side Area Neighborhood – Excludes Square Footage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774[a]	.599	.595	35438.52308
2	.836[b]	.699	.693	30866.70615
a. Predictors: (Constant), REGR factor score 2 for analysis 2				
b. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 1 for analysis 2				

According to the regression analysis, Model 1 had a high R score of .774 and a moderate R square score of .599. The R score revealed a strong relationship between the independent variable utilized in the model and property values in the South Side area neighborhood. Model 1 also suggested that the explanatory power of the independent variable and the dependent variable was slightly above average at 59.9 percent. Model 1 consisted of only the independent variable Component 2. The variables that were included in Component 2 were: the number of people with incomes greater than $75,000, the number of people with a degree, the number of people with an advanced degree, and the property's structural cost per square foot. According to the coefficients table, Component 2 had a standardized beta weight score of .774. This score suggested that Component 2 had a strong, positive influence on the dependent variable. Component 2 was also significant at the .000 level.

Finally, Model 2 had a high R score of .836 and a fairly high R square score of .699. According to the R score, Model 2 had a strong relationship with the dependent variable. Model 2 suggested that the explanatory power of the independent variable and the dependent variable was fairly high at 69.9 percent. Model 2 included Components 2 and 1. The variables with the largest loadings on Component 1 were: the number of people in poverty, the number of people with incomes less than $24,999, the number of people with incomes between $25,000 and $49,999, the number of people with incomes between $50,000 and $74,999, the number of people without a diploma, the number of people with just a diploma, and the number of people unemployed. In Model 2, Components 2 and 1 had standardized beta weight scores of .774 and -.316 and significance levels of .000 and .000 respectively. Component 1, which was primarily indicative of the indicators of a lower socio-economic status, had a moderately weak but negative influence on property values in the South Side area neighborhood.

The results for the South Side area neighborhood were very similar to many of the City's other area neighborhoods. However, one divergent aspect of this area neighborhood is that the variable square footage was not included in any of the components selected by the stepwise regression for the analysis models. Therefore, the square footage of the properties did not have as strong of an influence on property values in the South Side area neighborhood.

Just as in most area neighborhoods, the South Side area neighborhood was heavily influenced by the demographics of the residents within the area. The strongest and most influential component to residential property values was the component that was dominated by indicators of a higher socio-economic status. In this case, individuals with: incomes greater than $75,000, with a college education, along with a property's structural cost per square foot had a very strong, positive influence on property values in the South Side area neighborhood. Likewise, individuals with incomes less than $74,000, who were in poverty, lacked a diploma, or only had a diploma, or were unemployed had a negative, yet moderate influence on property values. As with the other neighborhoods, the demographics of an environment continued to have an influence on property values.

Physical incivilities did not have an influence on property values in the South Side area neighborhood. However, the PCA in which square footage was included did generate a component in which two social incivilities loaded strongly, which was included in one of the significant models. The analysis indicated that this component, an index of social incivility, which included police calls for loud noise and police calls for loitering had a weak, but negative influence on property values in South Side. When the variable square footage was included in the analysis, the stepwise regression analysis confirmed that some features of social incivilities had a negative influence on property values in the South Side area neighborhood. The influence, however, of this "social incivility index" was very weak. Yet, the existence of social incivilities in the South Side area neighborhood did not appear to overpower the significant influence of the area's socio-economics to property values.

When the variable square footage was excluded from the analysis, many of the same variables loaded on the same components. However, when square footage was excluded from the analysis, the "social incivility index" component was not a part of a significant regression model. The exclusion of square footage resulted in the reduction in the number of significant models in the regression analysis.

Overall Neighborhood Assessment

What is clear from the quantitative assessment is that, at the neighborhood level, neighborhood demographics typically had a stronger influence on property values than physical and social incivilities. More than often, the variables associated with a higher socio-economic status all loaded on a single component together. This component in nearly every area neighborhood had a strong and positive correlation to property values. Conversely, the variables that were more associated with a lower socio-economic status typically loaded on a single component, separate from the indicators of a higher socio-economic status, and consistently had a negative influence on property values. In general, it was the socio-economics of communities that had more of an influence on property values than incivilities in the City of Richmond.

Physical and social incivilities did not have a consistent pattern of influence across are all area neighborhoods in Richmond. Many of the physical incivilities appeared to be concentrated in specific areas of the locality. Even within those areas of Richmond in which physical incivilities were concentrated, there was still a mixture of other neighborhood characteristics that tended to have a stronger influence on property values within those areas. However, as the statistical results suggested, there were areas of Richmond in which physical incivilities had a negative influence on property values. This appears to be evident within the East End area, in which one component loaded several physical incivilities. This component had a significant, negative influence on property values. Although, the relative influence of this "physical incivility index" to property values was not necessarily very strong. There were no other area neighborhoods that were influenced by components that were dominated by physical incivilities.

There were a few cases in which social incivilities had negative influences on property values. Often there would be one or two social incivilities that loaded on a single component with other variables, particularly those that were indicative of a lower socio-economic status. The South Side and the West End area neighborhoods were negatively influenced by components that were dominated by social incivilities. However, the influences of these components were generally weak and typically not significant at the .000 or .001 levels.

The data analysis suggested that square footage continued to have a very strong, positive influence on property values at the neighborhood level. When the variable square footage was excluded from the analysis, in general, each of the regression models and standardized beta weight scores of the variables weakened. At times, the variable square footage loaded on the component that included the indicators of a higher socio-economic status.

According to the data analysis of single-family residential properties at the neighborhood level, there appeared to be a correlation between physical and social incivilities and property values within the City of Richmond. However, the correlation of incivilities was predicated upon certain aspects. First, from a neighborhood level analysis perspective, incivilities do not adversely influence property values in all areas or neighborhoods of Richmond. The statistical results suggested that not all areas of Richmond were influenced by incivilities even though incivilities may be present, to some degree, extensive or minimally, throughout that area. Nor is the extent of the influence the same in those areas in which incivilities had a negative influence on property values. Single-family residential properties in the East End area neighborhood were adversely influenced by specific features of physical blight, while single-family residential properties in the North Side, West End, Central, and South West were not adversely influenced by physical incivilities, even though some degree of physical incivilities were present in those areas. This same assessment can be made of social incivilities. Social incivilities had more of an adverse influence on property values in the South Side and West End area neighborhoods than many of the other areas neighborhoods in the City. There was no specific pattern on the influence of incivilities within Richmond's area neighborhoods.

Second, although the data analysis at the neighborhood level suggested that the relative influence of incivilities on residential property values was negative, what was apparent was that this correlation was generally weak. There were no areas of Richmond in which incivilities had a very strong, negative influence on property values. Therefore, the influences of physical and social incivilities on property values do not appear to be as strong or as severe as the literature implies. Although most incivilities may have a negative influence on property values and that the extent of this negative influence is not homogenous throughout area neighborhoods of Richmond, other variables, particularly those associated with the demographics at the neighborhood or block group level, tended to have a stronger influence on property values than incivilities.

Finally, the influence of the social and economic characteristics of the residents tended to have a stronger, negative influence on property values than incivilities. At the individual property level in which demographic data was not a part of the analysis, the physical incivility boarded doors and windows clearly had a negative influence on property values. However, when the level of analysis shifted to the block group and neighborhood level, in which demographic data was included in the analysis, the influence of incivilities became much less apparent. At these smaller geographic levels, demographic data was factored into the equation and overpowered the influence of the other variables. At the block group and neighborhood level of analysis, the influence of neighborhood demographics appeared to diminish the influence of incivilities on single-family residential property values. In nearly all area neighborhoods the existence of indicators of a lower socio-economic status tended to have a stronger, negative influence on property values than incivilities. In some instances, the inclusion of neighborhood demographics eliminated incivilities from the regression analysis all together. As a result, the influence of incivilities on property values appeared to weaken when neighborhood demographics were factored in the analysis.

Additional Physical Incivility Assessment – Vacant Lots

The individual, block group, and neighborhood quantitative analyses generated results that were somewhat contradictory to the assertion within the literature on the adverse influences of incivilities on residential property values. The analysis conducted as a part of this research determined that the influence of physical incivilities, notably vacant/abandoned property, did not have as strong of a negative influence on property values as the literature has suggested. This outcome could partially be attributed to the size of the sample selected for this study and the "nature of" (by that it is meant the general characteristics of the property and block group in which the property is located) each sample unit that was randomly selected. Perhaps a larger random sample, in which more properties that were inflicted by physical and social incivilities or were vacant and had the opportunity to be selected and analyzed, would have generated findings more congruous with the themes in the literature.

Another potential explanation for the discrepancy between the results of this study and the literature is that this research only collected data on single-family residential structures. Physical incivility data that was collected as a part of this study was limited to those that were physically present or recognizable on the structure or lot of the property. Data on vacant lots, another physical incivility but also relatively prevalent in Richmond, was not originally collected from the identified sample nor the population. The exclusion of this incivility feature within the analysis could have played a role in the divergence between this study's results and the literature on abandoned property. The question on whether the incivility vacant lots in concert with the other independent variables, as well as exclusively, has a negative influence on single-family residential property values, is the basis for further analysis. The results of such an analysis would aid in confirming the results of the prior three levels of analysis and/or would generate results to support the literature on incivilities and its negative influences on property values.

Another analysis was performed that incorporated the new independent variable vacant lots. As noted above, the independent variable vacant lots was not one of the original physical incivilities collected during the data collection process. However, data on vacant lots was included in the 2009 assessment data file that was obtained by the City Assessor's Office. Specifically, data on vacant lots was determined by three defined characteristics, as determined by the Richmond City Assessor. Parcels that: did not have a structural square footage amount, did not have an improvement value or had an improvement value of "0", and had a lot value and a lot size (square footage) were determined to be a vacant lot. Data on vacant lots was subsequently calculated as the ratio or proportion of vacant lots out of the total number of single-family residential properties within each census tract. For this additional level of analysis, each of the randomly selected sampled properties was assessed at the census tract level.

In order to remain consistent with the manner in which the new independent variable vacant lots was calculated, each of the other independent variables utilized within the research had to be converted to either an average score or a ratio score at the census tract level. The structural characteristics of the property i.e. square footage, age, and lot size were converted to the average square footage, average age, and average lot size of the sample units within each census tract. The physical and social incivility scores were converted to the average incivility scores/ratings of the sample units within each census tract. The demographic scores were converted to the ratio or proportion of scores out of the total number of people within the census tract. The proximity independent variables were excluded from this level of analysis.

The original dependent variable, assessed value, was also modified. In order to ensure consistency amongst the study's variables, a new dependent variable, but still a variant of assessed value, was developed. The average assessed value of the sampled properties within each census tract was divided by the average square footage of the sampled properties within the census tract. This calculation created the new variable "average improvement value per square foot". Additionally, the average land value of the sampled properties within each census tract was divided by the average lot size of the sampled properties within the census tract. This calculation created the new variable "average land value per square foot". Subsequently, the new variable average improvement value per square foot was added to the second new variable average land value per square foot to create the new dependent variable "Average Value per Square Foot".

For this final analysis, four regression analyses were performed. The first two analyses utilized the dependent variable "average value per square foot". However, the first regression analysis assessed all of the study's independent variables influence on the dependent variable. The second regression analysis assessed only the independent variable vacant lots' influence on the dependent variable. The purpose of this second analysis was to determine the exclusive influence of the variable vacant lots to property values.

The third and fourth regression analyses utilized the dependent variable "average improvement (structure) value per square foot" rather than the "average value per square foot". The purpose of utilizing this dependent variable was to assess the influence of vacant lot on the physical structure value per square foot of the properties within the census tract. The third regression analysis assessed all of the independent variables influence on each census tracts' "average improvement value per square foot", while the fourth analysis assessed the variable vacant lots' exclusive influence on the "average improvement value per square foot". The multiple regression model summary table for the first of the four models is provided below. Additional statistical output tables of this multiple regression analysis are supplied in Appendix AO.

Table 32: Multiple Regression Model Summary Table – Vacant Lots Analysis – Includes All Independent Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.793[a]	.629	.623	24.18399
2	.830[b]	.688	.678	22.33676
3	.865[c]	.748	.736	20.24674
4	.891[d]	.794	.781	18.44423
5	.908[e]	.825	.810	17.17586
6	.919[f]	.844	.828	16.32614
7	.925[g]	.856	.838	15.84723
a. Predictors: (Constant), NoDiploma				
b. Predictors: (Constant), NoDiploma, AvgLotsize				
c. Predictors: (Constant), NoDiploma, AvgLotsize, BDW				
d. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree				
e. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree, AvgSqft				
f. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree, AvgSqft, VacantLot				
g. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree, AvgSqft, VacantLot, Vice				

The results from the first analysis, which assessed all of the independent variables' influence on the dependent variable average value per square foot, generated seven significant models. In general, the R and R square scores were very high which indicated a strong relationship between the independent variables and the dependent variable and a very strong or high explanatory power between the independent variables and the dependent variable. The independent variable no diploma or the proportion of individuals without a high school diploma, was the only independent variable included in Model 1. Model 1 had a high R score of .793 and a high R square score of .629. The R score indicated a strong relationship between Model 1 and the dependent variable. Additionally, Model 1 explained 62.9 percent of the variance in a property's average value per square foot. The independent variable no diploma had a standardized beta weight score of -.793. This score signified that the proportion of individuals without a diploma had a strong, negative influence on property values in the Richmond. The independent variable, no diploma, was significant at the .000 level.

The independent variables no diploma and average lot size were the only two variables included in Model 2. Model 2 had a high R and R square score of .830 and .688 respectively. Accordingly, the R score again indicated a strong relationship between Model 2 and the dependent variable. The independent variables' no diploma and average lot size had standardized beta weight scores of -.864 and -.254 respectively. In Model 2, although both independent variables had negative influences on property values, the independent variable no diploma had a more powerful influence on the dependent variable than average lot size. The independent variables No diploma and average lot size were significant at the .000 and the .00l levels.

Model 3 had an R score of .865 and an R square score of .748. There was a strong relationship between Model 3 and the dependent variable. The independent variables included in Model 3, no diploma, average lot size, and boarded doors and windows, had standardized beta weight scores of -780, -.284, and -.263 respectively. All of the independent variables had negative influences on the dependent variable. However, the independent variable no diploma continued to have the strongest influence on property values compared to the other independent variables included in the models. The physical incivility variable boarded doors and windows had a relatively weak, but negative influence on property values. All of the independent variables were significant at the .000 level within the model.

Model 4 had an R score of .891 and an R square score of .794. Just as the other models, there was a strong relationship between Model 4 and the dependent variable. Additionally, the R square score indicated that Model 4 explained a very high percentage of the variance in the dependent variable at 79.4 percent. The independent variables no diploma, average lot size, boarded doors and windows, and the proportion of people with an advanced degree were included in Model 4. The standardized beta weight scores of the variables were -.537, -.299, -.255, and .330 respectively. The independent variable advanced degree had a positive influence on the dependent variable. In Model 4, the independent variable advanced degree had a stronger influence on property values than the independent variable's average lot size and the proportion of boarded doors and windows. The independent variable no diploma continued to have the strongest influence on property values. The independent variables were all significant at the .000 level with the exception of the independent variable advance degree which was significant at the .001 level.

Model 5 had a high R score of .908 and a high R square score of .825. The R score revealed a very strong relationship between the model and the dependent variable. Model 5 included the independent variables no diploma, average lot size, boarded doors and windows, advanced degree, and average square footage, all of which had standardized beta weight scores of -.510, -.319, -.259, .299, and .185 respectively. Within Model 5, the independent variable average square footage had a weak, but positive influence on property values. However, the other independent variables continued to have the same relative influence on property values. All of the independent variables had significant levels of .000 with the exception of the independent variable advanced degree which had a significant level of .001 and the independent variable average square footage which had a significant level of .002.

Model 6 had a very high R score of .919 and a high R square score of .844. Again, the R score indicated a very strong relationship between the model and the dependent variable and a very high explanatory power of the independent variables on the dependent variable, according to the R square score. The independent variables included in Model 6 were: no diploma, average lot size, boarded doors and windows, advanced degree, average square footage, and vacant lots. The independent variable vacant lots had a standardized beta weight score of -.171 against the dependent variable. This indicated that vacant lots had a negative, but weak influence on property values when assessed together with other independent variables. The independent variable vacant lots was significant at the .009 level.

Finally, Model 7 had a high R score of .925 and a high R square score of .856. Model 7's R score revealed a very strong relationship between the model and the dependent variable. Model 7 suggested that the explanatory power of the independent variables and the dependent variable was high at 85.6 percent. Additionally, the R square score indicated that Model 7 explained 85.6 percent of the variance in the dependent variable. Model 7 included the independent variables: no diploma, average lot size, boarded doors and windows, advanced degree, average square footage, vacant lots, and the social incivility vice. The independent variables had standardized beta weight scores of -.446, -.319, -.197, .299, .188, -.185, and -.109 respectively. The independent variable vice, according to its standardized beta weight score, had a weak, negative influence on property values. The independent variable vice had a significance level of .037.

The second regression analysis assessed the influence of the variable vacant lots to properties' average value per square foot. All of the other independent variables were excluded from the analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AP.

Table 33: Multiple Regression Model Summary Table – Vacant Lots Analysis – Includes Only Vacant Lots

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.552[a]	.305	.294	33.09496
a. Predictors: (Constant), VacantLot				

Model 1 had an R score of .552 and a low R square score of .305. Model 1's R score signified a fairly strong relationship between the model and the dependent variable. The R square score indicated that Model 1 explained only 30.5 percent of the variance in the dependent variable. According to the coefficients table, the independent variable vacant lots had a standardized beta weight score of -.552. According to the standardized beta weight score and when excluding the influence of the other independent variables from the analysis, the physical incivility vacant lots had a negative influence on property values. The independent variable vacant lots was significant at the .000 level.

These two regression analyses offered further insight into the influence of incivilities, particularly vacant lots, on property values. First, the influence of the socio economics of the community continued to have the strongest influence on property values. In this analysis, the proportion of the people within the census tract without a diploma consistently had the strongest, negative influence on property values. Additionally, the independent variable the proportion of people within the census tract with an advanced degree had a positive influence on property values. The education demographics of the population tended to have a stronger influence on property values than any of the other variables in the analysis.

The only incivilities included within the regression analysis were boarded doors and windows, vacant lots, and police calls for vice. According to the regression analyses, all three incivilities had relatively weak but negative influences on property values. The three incivilities were similar in strength, with boarded doors and windows having a slightly stronger influence amongst the other incivilities, on property values.

Finally, a second analysis was performed in order to determine the exclusive influence of vacant lots to property values. When controlling for the other variables, the independent variable vacant lots had a moderately strong yet negative influence on property values. The statistical results revealed, as the literature has indicated on incivilities in general, that vacant lots, a physical incivility, is adversely correlated to property values in Richmond. However, this correlation is only moderately strong. However, this observation should be recognized in the context of the exclusive relationship between only two and not other possible contributory variables.

Two additional analyses were performed utilizing the dependent variable average improvement value per square foot. Just as before, the first analysis assessed all of the independent variables influence on average improvement value per square foot. The second analysis assessed the influence of the independent variable vacant lots on properties' average improvement value per square foot. The purpose for utilizing this dependent variable was to assess the influences of the independent variables on just the average structural or improvement value per square foot of the sampled properties.

The results from the first analysis, which assessed all of the independent variables' influence on the average improvement value per square foot, generated five significant models.

The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AQ.

Table 34: Multiple Regression Model Summary Table – Vacant Lots Analysis – Includes All Independent Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802[a]	.643	.637	19.95287
2	.845[b]	.714	.705	17.98438
3	.864[c]	.746	.734	17.08721
4	.883[d]	.780	.765	16.05635
5	.896[e]	.802	.785	15.33922

a. Predictors: (Constant), NoDiploma

b. Predictors: (Constant), NoDiploma, BDW

c. Predictors: (Constant), NoDiploma, BDW, AdvDegree

d. Predictors: (Constant), NoDiploma, BDW, AdvDegree, AvgLotsize

e. Predictors: (Constant), NoDiploma, BDW, AdvDegree, AvgLotsize, VacantLot

In general, the R and R square scores of the models were high which suggested a strong relationship between the independent variables and the dependent variable and indicated that the explanatory power of the independent variables in the model was strong, respectively. The only independent variable included in Model 1 was no diploma. Model 1 had a high R score of .802 and a relatively high R square score of .643. The statistical scores of Model 1 indicated that there was a strong relationship between Model 1 and the dependent variable. The independent variable no diploma had a standardized beta weight score of -.802 and was significant at the .000 level. This standardized beta weight score of the independent variable no diploma, just as before, signified that this demographic characteristic of the population had a very strong, negative influence on property values in Richmond.

The only two variables included in Model 2 were no diploma and the physical incivility boarded doors and windows. Model 2 had a high R and R square score of .845 and .714

respectively. As before, there's a strong relationship between the model and the dependent variable. Similarly, Model 2 explained a high percentage, 71.4 percent, of the variance in the dependent variable. The independent variables no diploma and boarded doors and windows had standardized beta weight scores of -.701 and -.286 respectively. In Model 2, although both independent variables had negative influences on property values, the independent variable no diploma continued to have the strongest, negative influence on the dependent variable between the two. The variables no diploma and boarded doors and windows were significant at the .000 level.

Model 3 had an R score of .864 and an R square score of .746. The independent variables included in Model 3, no diploma, boarded doors and windows, and advanced degree had standardized beta weight scores of -.496, -.278, and .274 respectively. As before, the independent variables no diploma and boarded doors and windows continued to have negative influences on the dependent variable. However, the independent variable no diploma remained the strongest and most influential in the model. The physical incivility variable boarded doors and windows had a relatively weak, but negative influence on property values. The independent variable advanced degree had a relatively modest but positive influence on property values. The independent variables no diploma and boarded doors and windows were significant at the .000 level. The independent variable advanced degree was significant at the .007 level.

Model 4 had an R score of .883 and an R square score of .780. The independent variables no diploma, boarded doors and windows, advanced degree, and average lot size were included in Model 4. The standardized beta weight scores of the independent variables were -.528, -.300, .292, and -.192 respectively. The independent variable advanced degree continued to have a positive influence on the dependent variable, while the independent variable no diploma continued to have the strongest, negative influence on property values. The independent variable average lot size had a weak, negative influence on property values. The independent variables were all significant at the .000 level, except advanced degree which was significant at the .003 level and average lot size which was significant at the .004 level.

Finally, Model 5 had a high R score of .896 and a high R square score of .802. Model 5 included the independent variables no diploma, boarded doors and windows, advanced degree, average lot size, and vacant lots, all of which had standardized beta weight scores of -.481, -.231, .280, -.194, and -.183 respectively. Within Model 5, the independent variable vacant lots had a relatively weak but negative influence on property values. However, the other independent variables continued to have the same relative influence on property values as in the prior model. As an independent variable, vacant lots was significant at the .012 level.

The second regression analysis assessed the influence of the variable vacant lots to properties' average improvement value per square foot. All of the other independent variables were excluded from the analysis. The multiple regression model summary table is provided below. Additional statistical output tables of the multiple regression analysis are supplied in Appendix AR.

Table 35: Multiple Regression Model Summary Table – Vacant Lots Analysis – Includes Only Vacant Lots

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.582[a]	.338	.328	27.15393

a. Predictors: (Constant), VacantLot

Model 1 had an R score of .582 and an R square score of .338. The R score indicated a modestly strong relationship between the model and the dependent variable. The R square score suggested that Model 1 explained a relatively low percentage, 33.8 percent, of the variance in the dependent variable. The independent variable vacant lots had a standardized beta weight score of -.582 according to the standardized beta weight table. When excluding the influence of the other independent variables from the analysis, the physical incivility vacant lots had a negative influence on properties' average improvement value per square foot in Richmond. The independent variable vacant lots was significant level at the .000 level.

Both analyses suggested that there is a negative correlation between vacant lots and property values in Richmond. When excluding all of the other variables from the analysis, vacant lots had a fairly strong, negative influence on property values. However, when including other variables in the analysis, the strength of the influence of vacant lots diminished substantially. Similar to the block group and neighborhood analyses, the socio-demographics of the community continued to have a stronger correlation to property values. Although, income levels were not strong enough to be included in this analysis, educational levels (which are likely to be correlated to incomes) were included in the significant regression models. Individuals without a diploma and with an advanced degree tended to have a stronger influence on property values than incivilities, including vacant lots.

Answering the Research and Ancillary Questions

What are the influences of physical and social incivilities to single-family residential property values at an individual and a collective property level of analysis?

What is clear from this research is that incivilities were negatively correlated to single-family residential property values in Richmond. This was apparent at both the individual property and the collective levels of analysis. Specifically, particular physical and social incivilities tended to have a negative influence on single-family residential property values.

Physical incivilities typically had a stronger, negative influence on property values than social incivilities at both levels of analysis. Additionally, at the collective level of analysis, notably the neighborhood level, the negative influence of incivilities was generally more apparent. Social incivilities, in general, tended to have a weaker and less consistent adverse correlation to property values at the collective property level. At the collective level, specific social incivilities had both a positive and a negative influence on property values. The correlation and extent of the influence of social incivilities to property values was dependent on the specific area or region of the locality in which the property was located.

What is the extent, if any, in which incivilities correlate to property values?

This research suggests that when physical and social incivilities were correlated to property values, the relative strength of the correlation was generally moderate or weak. This tended to be the case when other variables were assessed in concert with the incivility measures. When assessed exclusively, the extent of the influence of incivilities, including vacant lots, was generally slightly stronger. There were no instances of very strong or powerful correlations between incivilities and property values.

If there is a correlation between incivilities and property values, do these same relationships exist in different areas of Richmond?

This research suggests that incivilities in Richmond did not have the same level of influence throughout all areas of the locality. First, the correlation of incivilities to property values was not uniform amongst the levels of analysis. At the individual property level, only the incivility boarded doors and windows had a significant, negative influence on property values. None of the other physical incivilities had a significant relationship with property values at this level of analysis. At the neighborhood level, the incivilities, boarded doors and windows, excessive vegetation, and abandoned property, as loaded on a single "physical incivility index", and graffiti as loaded on a second, separate component, had a significant negative influence on property values in the East End area neighborhood. However, these were the only physical incivility components that had a negative influence on property values within all of the area neighborhoods. Only a handful of social incivilities had a negative influence on property values within other area neighborhoods. The influences of the social incivilities, however, were not consistent amongst area neighborhoods.

Additionally, some areas of Richmond were not statistically influenced by incivilities despite the presence of incivilities in the area. Specific incivilities that influenced property values in one area of Richmond were typically not the same incivilities that had an influence on property values in another area of Richmond. This signified that each area neighborhood of the City had unique structural, cultural, and socio-economic characteristics that played a distinct role, albeit significant or minor, in influencing property values specific to that area.

Are there other, non-incivility features that have an influence on property values?

This research supports that there were other non-incivility variables that had an influence on property values. Specifically, the structural characteristics of the property, the demographics of the community, and at times, the proximity in which the property was located from the nearest public school or the central business district all had an influence on single-family residential property values in Richmond. When assessing the influence of variables at the individual property level, in which demographic data was excluded from the analysis, the structural characteristics of the property tended to have a stronger (positive) influence on property values. In nearly all cases demographic data that was indicative of a higher or lower socio-economic status typically had a stronger influence on property values than incivilities. Indicators of a lower socio-economic status, such as poverty, low income, and low educational attainment had a stronger, negative influence on property values, more so than physical and social incivilities. At the neighborhood and block group level, indicators of a high socio-economic status, such as high incomes (generally $50,000 and greater) and high educational attainment (generally a degree or advanced degree) had a relatively strong, positive influence on property values in nearly all areas of Richmond. Overall, demographics, particularly those associated with a lower economic status, tended to have a stronger, negative influence on property values than incivilities.

Answering the Research Hypotheses

The primary hypothesis for this study focused on confirming the premise that incivilities adversely influence property values. The primary research hypothesis for this study is:

H1: Physical incivilities are more likely to have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

This research tested and as a result of the data analysis, could not support this hypothesis. It was apparent that demographic data, when considered, typically had a stronger influence on single-family residential property values than physical and social incivilities. Occasionally, the structural features of the property had a stronger influence on property values than physical and social incivilities.

All of the study's independent variables were stated and a hypothesis for each was generated and tested for confirmation. This study's subsequent research hypotheses, as based on each of the independent variables, follows along the conclusion of this study's primary research hypothesis.

Category A: Physical Incivilities

Distinction: Structural/physical signs of disorder found on residential properties
<u>Physical blight/incivility hypotheses</u>
H2. Property abandonment (vacancy status) will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H3. Boarded windows and/or doors on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H4. Graffiti on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H5. Trash/litter on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

H6. Overgrown/excessive vegetation on a property will have a greater influence on single-family residential property values than social incivilities and other non-incivility features.

This research tested and as a result of the data analysis could not support any of the hypotheses within this category. As noted above, there was not a consistent influence of physical incivilities on property values in Richmond. Additionally, demographic data and structural characteristics of the property typically had a stronger influence on property values than physical incivilities.

Category B: Social Incivilities
Distinction: Social/street behaviors identified by the local police department on street blocks.
<u>Social blight/incivility hypotheses</u>
H7. Police calls for loitering will have a greater influence on single-family residential property values than non-incivility features.

H8. Police calls for loud noise will have a greater influence on single-family residential property values than non-incivility features.

H9. Police calls for public drinking will have a greater influence on single-family residential property values than non-incivility features.

H10. Police calls for vice/prostitution will have a greater influence on single-family residential property values than non-incivility features.

H11. Police calls for public fighting/arguing will have a greater influence on single-family residential property values than non-incivility features.

This research tested and as a result of the data analysis could not support any of the hypotheses within this category. There was not a consistent influence of social incivilities on property values in Richmond. Demographic and structural characteristics of the property typically had a stronger influence on property values than social incivilities.

Category C (Non-incivility Variable): Neighborhood/Demographic Features
Distinction: Demographic data that is representative of the population in the block group
Demographic Variables

H12. Poverty rates will have a weaker influence on single-family residential property values than physical and social incivilities.

H13. Income levels will have a weaker influence on single-family residential property values than physical and social incivilities.

H14. Educational levels will have a weaker influence on single-family residential property values than physical and social incivilities.

H15. Unemployment rates will have a weaker influence on single-family residential property values than physical and social incivilities.

This research tested and as a result of the data analysis could not support any of the hypotheses within this category. There was a consistent pattern in the results that indicated that neighborhood/demographic features of the area typically had a stronger influence on property values than physical and social incivilities when considering properties at the block group and neighborhood level.

Category D: (Non-incivility Variable) Structural Characteristics of Residential Properties
Distinction: Structural layout and features of the unit
Housing characteristic

H16. The square footage of a structure will have a weaker influence on single-family residential property values than physical and social incivilities.

H17. The age of the structure will have a weaker influence on single-family residential property values than physical and social incivilities.

H18. The lot size of a structure will have a weaker influence on single-family residential property values than physical and social incivilities.

This research tested and as a result of the data analysis could not support any of the hypotheses within this category. There was a relatively consistent pattern in the data analysis that the structural features of the property tended to have a stronger influence on property values than physical and social incivilities.

Category E: (Non-incivility Variable) Locational/Proximity
Distinction: Proximity (in miles) to urban sites
Locational/Proximity

H19. The proximity/distance of a structure to a public housing complex will have a weaker influence on single-family property values than physical and social incivilities.

H20. The proximity/distance of a structure to the central business district will have a weaker influence on single-family residential property values than physical and social incivilities.

H21. The proximity/distance of a structure to a public school will have a weaker influence on single-family residential property values than physical and social incivilities.

This research tested and as a result of the data analysis supported all of the hypotheses within this category. The hypotheses within this category were only scrutinized at the individual property level of analysis. At this level, the physical incivility boarded doors and windows had a stronger influence on property values than the proximity variables. The influence of proximity to the central business district, to the nearest public school, and to the nearest public housing complex had a weaker influence on property values than the physical incivility selected in the regression analysis at the individual property level of analysis.

CHAPTER V.

PUBLIC POLICY IMPLICATIONS AND CONCLUSION

Public Policy Implications

Physical and social incivilities have been linked by politicians and public administrators, planning and community development organizations, and urban revitalization advocates to the decline of inner cities. The perceived influences of incivilities have galvanized local governments to not only engage in dialogue about the problems associated with incivilities but to also seek and develop the means to address such issues. The outcome has been the creation of a list of municipal policies, strategies, campaigns, and other measures that have attempted to reduce the presence of incivilities in and ultimately improve the overall vibrancy and health of urban neighborhoods.

The research conducted and results generated as a part of this study provides a slightly different lens in which to view the influence of incivilities and other neighborhood characteristics on property values. This essentially presents several implications for public policy and local governments. Such implications are associated with: articulating and defining the concept of incivilities and its influences on communities to aid in the public policy development process, evaluating the manner in which existing and newly developed policies are assessed and deployed, the development of policies that address non incivility features of the community, and administratively and politically framing the issue of and justifying the use of local resources to abate incivilities.

Implications for Public Policy Development

The literature suggested that the concept of blight is subjective and often defined differently by localities. Accordingly, local governments have devised numerous policies, often based on their respective definitions of blight, to reverse or abate its potential influences on communities. However, effective public policies that address blight (or any issue in which the locality desires to address) hinge first on a solid and clear definition of the concept as well as a transparent understanding of the nature of its problems within the locality. Obtaining a clear understanding of the term blight as well as its influences on the locality is critical to the development of effective neighborhood revitalization strategies and policies. This serves as the initial basis for effective public policy development.

The implications of this research for local governments are that it first allows localities to better understand the nature, distinctions, and theoretical influences of blight through the conceptualization and use of the term incivilities. The term incivility is a widely researched topic that is understood by those in academia. Additionally, the natural delineation between physical and social incivilities is easily apparent and can be clearly identifiable in practical use. The conceptual use of the term incivilities also aids localities in clearly outlining the empirical and perceived influences of incivilities on communities as found within the literature. By organizing the influences of incivilities on communities from a structural, economic, psychological, and environmental standpoint, localities will be better positioned to assess existing incivility policies and to devise new incivility abatement policies and programs.

Implications for Existing and New Municipal Policies

Many existing incivility policies and programs, although devised with the best of intentions, were developed based on the underlying premise that incivilities have specific, detrimental impacts on communities. From a psychological and aesthetic perspective, incivilities can have profound consequences for residents living within the area and for those who pass by such areas. The empirical literature supports this premise. Most existing incivility policies, however, were not specifically designed to address the empirically validated psychological influences of incivilities. Instead, most municipal policies were crafted to mitigate the presence of incivilities in order to: reduce crime, increase property values, and to improve the overall appeal of the community. Richmond, like many localities, developed and implemented a number of such policies and programs including:

- Code enforcement regulations (which focus on addressing problems related to the living environment such as housing, zoning, building, and health codes such as excessive vegetation over 12 inches tall, trash and litter cluttered on property, and substandard/abandoned structures and abandoned vehicles),
- Aggressive code enforcement regulations (a dedicated code enforcement division within the locality in which inspectors respond to citizen complaints and issue citations to negligent owners; zero-tolerance campaigns that respond to citizen complaints and initiate court proceedings that may result in fines and, in some cases demolition, and criminal penalties for code violations (Accordino and Johnson, 2000),
- Building and property regulations (which attempt to regulate the property owner to keep their property within municipal guidelines),
- Graffiti abatement strategies (primarily handled by the Department of Public Works to remove graffiti on public, and at times, private property),
- Providing physical improvements to blighted private properties (including mowing lots with excessive vegetation and removing trash and abandoned vehicles found on private properties),
- Punitive sanctions on property owners that consistently violate code, building, and property maintenance regulations,
- Incentive training programs for property owners,
- Property demolitions,
- Acquisitions of and sales of vacant and abandoned property (particularly tax delinquent properties),
- Rehabilitation incentives, and
- Community revitalization strategies.

Although this is a fairly extensive list of some of the existing incivility policies currently in place in Richmond as well as in other localities, most of these policies and programs are utilized independent of one another and are functions of multiple departments. The lack of cross communication and coordination between multiple departments in the incivility abatement process reduces the likelihood of program efficiencies and misses the opportunity to address other issues impacting the community in concert with incivilities. As a result, existing incivility policies and programs, because of its typical narrow focus, tend to not attack many of the multi-faceted issues plaguing some of Richmond's most vulnerable and depressed areas. Additionally, most incivility policies and programs focus on a single incivility. There is often not a comprehensive incivility abatement strategy that seeks to address the range of physical and social incivilities plaguing specific areas of the locality. This research offers several implications of and can address some of these challenges posed by existing municipal incivility policies and can aid in the development of new incivility abatement and neighborhood revitalization strategies.

The primary implication of this research is that it encourages municipalities to assess the influence of community incivilities and non incivility features prior to developing incivility and neighborhood revitalization strategies. Such an assessment, as conducted in this study, can result in the determination of statistically validated linkages between distinct features of the community and property values. This then aids local governments in the development of policies aimed at targeting, statistically validated variables that have a negative correlation to property values, in specific areas of the jurisdiction. The first public policy implication of this research noted that this research can assist local governments in obtaining a clearer understanding of the concept of incivilities as well as the nature of its influences within urban communities. By being able to clearly define the problem, backed by statistically valid analysis, local governments will be better suited to develop concise policies that target statistically validated incivility or non-incivility variables that have the strongest, negative correlation to property values. Statistically based policies can assist in overall program/policy efficiency and ultimately aid in the policy's overall success.

Next, if localities wish to target specific incivilities that have a negative influence on property values, then such public policies should be devised, deployed, and analyzed at a smaller geographic level rather than at the entire city level. The statistical analysis of this research revealed that where there were negative influence of both physical and social incivilities to property values, that influence was typically stronger at a much more intimate geographic region, most notably, at the neighborhood and census tract level. An analysis that incorporates every property at the city wide level could possibly distort the nature of the problem of incivilities within specific areas of the locality by the analysis being overwhelmed by the likely numerous properties that are not afflicted by incivilities.

This research subsequently aids in the development of neighborhood focused policies. An analysis of variables that are neighborhood focused (or another smaller defined geographic area) can capture the culture, demographics, incivilities and possibly the influences of previous policies that may have been targeted in that area, in the analysis. This can result in a richer, more detailed and comprehensive outlook of the role neighborhood and property features play in inhibiting or positively influencing property values within a defined area. This approach can assist not only in public policy development through the targeting of variables that were assessed as having a negative influence on property values within a specific area but it can also serve as a source of political discourse between elected officials and citizens on the issues that impact their feelings of safety, their homes, their community, and ultimately their quality of life.

Policies Addressing the Socio-Economics of the Community

This research suggests that there are a range of community factors, including socio-economic conditions, as well as incivilities, that have an adverse influence on property values. The direct implications of this research for new public policies suggest that if the locality's goal is to improve the economic viability of its neighborhoods, in addition to creating a comprehensive incivility abatement strategy, cities should focus resources on policies that aim to: reduce poverty in inner city neighborhoods, decrease high school drop-out rates, increase job readiness and skills of those in areas in which unemployment, poverty, and low educational attainment is high, and aggressively attract businesses that have jobs to match the skills of the City's unemployed workforce. Richmond should also consider developing an urban workforce initiative that strategically aims to assess, develop, and match the skills of the unemployed labor force to existing and prospective employers in Richmond and the region. Comprehensive neighborhood revitalization strategies that seek to increase the wealth and education of residents, as well as the abatement of area incivilities, will likely have a positive influence on property values in the City of Richmond.

Poverty and Mixed Income Communities

One of the many challenges associated with urban localities are its propensity to have a disproportionate number of individuals in poverty as compared to their suburban counterparts. The City of Richmond is no exception, as the current poverty rate clearly indicates that nearly 1 in 4 people live in poverty. Additionally, cities are more likely to have a greater breadth of public housing. In the City of Richmond, one public housing community, Gilpin Court, is the largest publicly subsidized housing complex on the East Coast (VCU, 2011). As it is typical in most urban areas, the areas of Richmond (East End and South Side) that contain many of the City's public housing complexes were also areas with high poverty and high crime and high levels of incivilities. Additionally, the statistical analysis of this research indicated that the indicators of a lower quality of life, which included high poverty, tended to have a fairly strong negative correlation to property values. For local practitioners, it would be negligent to overlook the role that concentrated poverty and dense clusters of public housing play in the socio-economic dynamics and the overall economic health of communities. Policies that focus on reducing poverty and the prevalence of dense public housing would likely have a monumental, positive influence on the social and economic maladies afflicting specific areas. The reduction in poverty within such areas could possibly serve as a significant catalyst to the improved economic viability of urban communities, among a list of many other positive outcomes.

In addition to the development of policies that focus on decreasing high incidents of pupil drop outs, attracting businesses to the area, and increasing employment opportunities, etc. Richmond should also focus more efforts on de-concentrating poverty, particularly in key areas where there is an intensity of both poverty and public housing. One such method that inherently focuses on urban revitalization and on reducing the influence of poverty is the development of mixed income communities. Mixed-income communities are communities built to de-concentrate poverty and to improve the social and economic conditions of the indigent by relocating tenants of public housing into areas with people with much higher incomes or by attracting high income earners to developments that are occupied by the poor (Schwartz and Tajbakhsh, 1997). Although, there are political challenges associated with this concept, the benefits of such communities are: the reversal of the social isolation of the poor, the integration and provision of unique and positive role models for poor individuals who are accustomed to daily negative influences and role models, the presence of middle and higher income persons are more likely to attract and demand improved public services to the area, thus "low-income households will have the benefit of better schools, access to jobs, and enhanced safety, enabling them to move themselves and their children beyond their current economic condition, and crime rates will fall because higher income households will (tend to) demand a stricter and better enforced set of ground rules for the community" (Brophy and Smith, 1997, p. 6). The overall benefit of such a policy is the minimalization of the influence and side effects of poverty by dissolving its concentration and potency. When the concentration of poverty is diffused, it is believed that its influences to communities will be negligible. As a result, it is likely that the social, structural, economic, and ecological conditions of the broader area will improve.

Once tenants of public housing have been relocated to mixed income communities throughout the City, the public housing complexes should be considered for demolition and private developers could be solicited to redevelop those areas into viable commercial, grocery or retail outlets, mixed income housing units, affordable single-family homes, or public facilities that are neighborhood focused. The advent of new development could possibly attract more residents to the neighborhood thus increasing the City's tax base. Additionally, the dissolution of poverty within the area and the influx of additional jobs and individuals with higher incomes will likely have a commensurate positive influence on property values, thereby improving upon the overall economic, social, and structural health of that community.

Understanding Community Dynamics

This research also stresses the importance of local governments assessing and understanding the dynamics of its area neighborhoods and the features that influence property values within such neighborhoods. This study revealed that there were areas in the locality in which incivilities, particularly social incivilities, had a positive influence on property values. As this research has indicated, police calls for public drinking was part of a component that had a positive influence on property values. This was likely due to the location and number of bars and restaurants as well as university students in a specific area. Homes in this area were located in a neighborhood in which property values were relatively higher than in other areas. Therefore, it is reasonable to suggest the positive relationship between police calls for public drinking and property values in such an area. This should not imply that increasing the opportunities for individuals to be publicly drunk will have a positive influence on property values. Rather, this is a practical example of the peculiarities of that particular neighborhood that may be unique to that area only. Such an explanation is essential to understanding peculiar attributes of areas of the locality as well as to the development of effective, targeted public policy. The culture, housing styles, demographics, etc. of this area neighborhood may make this location unique from other areas. This also stresses the importance of performing analyses at a smaller neighborhood level in order to draw differences between communities.

Future Discourse

This research suggests that existing and future municipal discourse on the influences of incivilities on urban residential property values should continue to be discussed, but not without an assessment on the extent of the influence of incivilities on property values as well as an awareness of the other factors that may also adversely influence property values. In order to devise policies to improve upon the conditions that have an adverse influence on residential property values, it would be essential to ensure that local governments first understand the features of the community that have negative influences on property values rather than assuming that a strong correlation exists between incivilities and property values. Without this awareness, local governments could have a skewed perception of the influence of incivilities and other neighborhood features to property values. An unclear or misleading understanding of the factors that have an adverse influence on residential property values can result in the development of inherently flawed public policy that seek to solve the right problems but by potentially addressing the wrong indicators or the indicators that are the least influential.

Administrative and Political Implications

Politically and administratively, this study can aid local governments in justifying the areas of the locality that are faced with factors that adversely influence property values. By doing so, localities can justify focusing its limited resources on specific variables in targeted areas of the municipality rather than focusing resources city-wide or in the wrong area of the locality. This can result in the conservation of fiscal resources and aids in creating overall policy and program efficiencies. From an administrative and political context, the promotion of maximizing resources and ensuring policy or program efficiency is justifiable to the citizens and elected officials particularly during periods of fiscal stress.

Additionally, this research suggests that there are political and administrative implications from promoting and developing strategically targeted policies in defined, political segments of the local community. This study can provide local government elected officials with a snapshot of the variables that are economically impacting their constituent communities. By being able to statistically validate the problems associated with specific neighborhoods, local government elected officials can advocate for and justify: using existing local resources, eliminating existing ineffective policies that may not be targeting the appropriate variables, or increasing municipal revenues in order to fund programs/policies to abate those factors that have an adverse influence on property values within their electoral boundaries.

From an administrative standpoint, this research assists local government administrators in addressing one of the most common and multifaceted urban issues to date; improving the fiscal health of local governments through the economic sustainment of viable urban neighborhoods. By employing this study's methodology, not only will public administrators have a clearer understanding of their overall community and the factors that have a positive and negative influence on property values but will also be better situated to address such issues.

The political and public policy implications of this study can alter and refine the manner in which the problem of incivilities is ultimately defined and understood in the context of the overall city and its area neighborhoods. If there is one thing that local officials should take away from this research is that they should not assume the exclusive influence of a single variable/factor to overall ecological outcomes. Local practitioners and elected officials should consider the potential influences of a wide range of variables, particularly demographics, when assessing the correlation of and addressing the features that could have a negative impact on a community. By doing so, localities will be better situated to appropriately address issues specific to their locality. Ultimately and perhaps more importantly, this study helps local governments, public administrators, and elected officials better understand their community, their neighborhoods, and the multitude of factors that impair the fiscal health of the community.

Recommendations for Future Research

Past research has suggested and questioned the influence of other neighborhood variables to overall ecological outcomes but has not yet incorporated that into an empirical analysis. This research assists in bridging that gap to spark additional discussion and debate on the relative influence of incivilities and other neighborhood variables to the decline of a community, particularly to the reduction in property values. It would be prudent for future research on incivilities and neighborhood revitalization to consider and measure the potential monumental role that demographics have on citywide and neighborhood conditions, particularly property values, as it is a critical feature of a community's health. It is likely that the demographics of the community have a stronger correlation to property values and urban outcomes than previously believed.

Additionally, future research should also focus on longitudinally assessing the influence of incivilities to broader ecological outcomes, including property values within urban areas. By doing so, this would aid in confirming or refuting Wilson and Kelling and Skogan's variants of the Incivilities Thesis on the long term impacts of incivilities on communities. Additionally, such a longitudinal assessment can also assess the influence of community demographics to urban outcomes as well.

Summary of Major Findings

Abu-Lughod noted that understanding the linkages of undesirable urban outcomes and then altering the conditions that lead to them are our tasks as social scientists, citizens, and public administrators (Abu-Lughod, 1991). Incivilities are one of many features of a community that have been linked to a variety of undesirable and sullen outcomes for municipalities, most notably, neighborhood disorder and decline. This study attempted to assess the perceived voracious influence of incivilities to property values in the City of Richmond. The purpose was to demonstrate or dispel the relative strength of that influence.

Over time, single-family residential property values in Richmond generally increased. However, there were specific areas in Richmond in which property values were lower than other areas. The qualitative and quantitative analyses validated those areas in which property values were lower and attempted to ascertain why and determine the role of incivilities and other variables in influencing lower property values in such areas of the city.

The focus group and personal interviews emphasized the importance of market conditions and the state or condition of the environment in which properties were located as a key determinant of property value. Quality of life features or lack thereof within the area in which the property was located were considered as having a positive or negative influence on the demand for properties. Quality of life features of the environment that were considered as having a negative influence on the demand for properties were viewed as having a negative influence on property values. Areas that were perceived to have problems associated with crime, lack retail and grocery outlets, had a perception of poor performing or unsafe schools, were embedded in areas with high levels of poverty, unemployment, and low individual educational attainment, and contained extensive physical and social incivilities were noted as adversely impacting demand for homes in the area. In Richmond, these low quality of life features were considered primary factors that adversely influenced property values. Areas in which property values were lower were viewed as having a preponderance of these low quality of life features. Areas in which property values were higher were viewed as not having or having minimal levels of these low quality of life features. However, the qualitative analysis did not determine which of the low quality of life features had the strongest, negative influence on property values.

Quantitatively, the adverse influence of incivilities was apparent at particular levels of analysis. At the individual property level, in which demographic data was excluded from the analysis, the incivility boarded doors and windows had a significant but modest, negative influence on property values. However, at the block group and neighborhood level of analysis, in which demographic data was included in the analysis, indicators of a lower socio-economic status generally had a stronger, negative correlation to property values, more so than incivilities. This was also evident in most of Richmond's area neighborhoods as well. Even incorporating the new incivility variable, vacant lots, which had a negative influence on property values, the variables relating to educational attainment, an indicator of socio-economic status, continued to have a stronger influence on property values than incivilities. Although, incivilities tended to have a negative correlation to property values, the extent of this influence was generally overpowered by the stronger influence of community demographics.

This study revealed that specific incivilities do have a negative influence on property values in Richmond. However, that influence was relatively humble and was typically isolated in specific areas of the locality. From a practical, political, and public policy perspective, if Richmond's goal is to improve the economic viability of its neighborhoods, the city should focus resources on policies and programs aimed not just at mitigating incivilities but also at improving the lives of some of the locality's most socially, economically, and educationally disadvantaged residents. This should be augmented by having the locality provide homeownership and landlord training programs. Homeowners and rental property owners need to understand the axioms maintaining their property. Localities can create programs focused on homeownership education, home repair, property upkeep, the signs of incivility and their role in minimize its influence within their community, etc. This strategy is usually relatively cost effective and educational and can supplement existing code enforcement regulations.

From a public policy perspective, the awareness of the influence of the socio-economics and incivilities of an area can aid in the development of strategic policies that target specific area neighborhood variables that have the most adverse influence on property values. For example, in the East End area neighborhood, the City of Richmond should focus on abating the incivility boarded doors and windows, graffiti, abandoned building, and excessive vegetation in addition to reducing poverty rates, increasing incomes, and increasing high school graduation rates and encouraging higher education attainment. In the South Side and West End area neighborhood, Richmond should consider tackling instigators of loud noise and the presence of loiters or suspicious persons roaming the area. By attacking these variables within these specific areas, as validated by the data analysis, Richmond would be implementing strategic, targeted policy aimed at thwarting the negative influence of key features of the community to property values. Afterward, the city can then assess the success of the policy or program by determining over time whether property values have increased in these targeted areas at a rate greater than property values in other non-targeted areas.

Closing Remarks

One of the most commonly discussed outcomes of incivilities are its detrimental economic impacts to localities. This has been suggested to be evident by: a decline in property values, the deterrence of new economic and residential development, the migration of residents from the locality, the instability of the local housing market, and reduced municipal tax revenues. From an economic perspective, the potential influence of incivilities on property reductions is monumental and demand strict municipal attention, particularly during challenging economic times. This research has confirmed that incivilities in general can have an adverse correlation to residential property values and are linked to the decline in residential property values.

However, there are other urban features that can have a greater influence in that economic malady. The political, academic, and social discourse on the influence and role of incivilities on the decline of property values and ultimately the decline of urban communities should acknowledge the potential and likely strong influence of community demographics to property values. The influence of and extent in which demographics adversely influence property values should also be discussed and assessed in each locality during the development of community and neighborhood revitalization public policy. Such an assessment aids in providing a clear picture of the issues that are impacting the locality and can assist the locality in developing a clear vision in how the area should look.

Still, the psychological ramifications of implementing anti-incivility policy have intrinsic value. Incivility policies that demolish vacant structures, remove boarded doors and windows of vacant structures, clear empty lots, remove graffiti, and mow excessive vegetation could potentially have a positive influence, albeit psychologically, on residents within the area and those who pass by. People who see such visual aesthetic changes may begin to feel better about themselves and their community. However, such policies are likely only attacking this one facet, the psychological ramifications, of the virus depressing communities.

Ultimately, the social, economic, and education development of some of the locality's most disadvantaged residents should continue to remain at the forefront of political and legislative agendas. Public policies that holistically approach the issue of the improvement of a community's socio-economics as well as the reduction or elimination of structural and behavioral incivilities afflicting the community will not only improve the lives of residents and their families but will also likely cure one of the most pervasive challenges facing municipalities today; the stagnation of and decline in values of urban residential properties and the degradation of vibrant neighborhoods. In the words of Abu-Lughod (1991) the understanding of the attributes that lead to such undesirable urban outcomes and the development of the means to alter those conditions are our tasks as social scientists, citizens, and public administrators.

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APPENDIX A

University IRB Approval Letter

VCU Memo

Virginia Commonwealth University

Office of Research
Office of Research Subjects Protection

BioTechnology Research Park
800 East Leigh Street, Suite 114
P.O. Box 980568
Richmond, Virginia 23298-0568

(804) 827-0868
Fax: (804) 827-1448

DATE: October 14, 2008

TO: I-Shian Suen, PhD
L. Douglas Wilder School of Government and Public Affairs
Box 842028

FROM: Lea Ann Hansen, Pharm D *Lea Ann Hansen, Pharm D / AB*
Chairperson, VCU IRB Panel D
Box 980568

RE: **VCU IRB #: HM11858**
Title: A Municipal Exigency: An Exploration of the Correlation of Physical and Social Incivilities on the Decline of Residential Property Values in Richmond, VA

On October 13, 2008, the following research study was ***approved*** by expedited review according to 45 CFR 46.110 Category 7. This approval includes the following items reviewed by this Panel:

PROTOCOL: A Municipal Exigency: An Exploration of the Correlation of Physical and Social Incivilities on the Decline of Residential Property Values in Richmond, VA

- Research Plan (Dated September 19, 2008; received in ORSP 9/22/08)

CONSENT/ASSENT:

- Verbal Consent Statement (Dated September 19, 2008; 2 pages; received in ORSP 9/22/08)
    - One of the two conditions for waiver of documentation of consent has been met and the Panel has waived the requirement for documentation of consent. See 45 CFR 46.117(c) (1), (2).

ADDITIONAL DOCUMENTS: None

This approval expires on September 30, 2009. Federal Regulations/VCU Policy and Procedures require continuing review prior to continuation of approval past that date. Continuing Review report forms will be mailed to you prior to the scheduled review.

The Primary Reviewer assigned to your research study is L. Thompson Hanes, JD, MHA. If you have any questions, please contact Dr. Hanes at thanes@sandsanderson.com or 783-7292; or you may contact Aleksandra Baldwin, IRB Coordinator, VCU Office of Research Subjects Protection, at akbaldwin@vcu.edu or 827-1445.

Attachment – Conditions of Approval

Page 1 of 2

Conditions of Approval:

In order to comply with federal regulations, industry standards, and the terms of this approval, the investigator must *(as applicable):*

1. Conduct the research as described in and required by the Protocol.
2. Obtain informed consent from all subjects without coercion or undue influence, and provide the potential subject sufficient opportunity to consider whether or not to participate (unless Waiver of Consent is specifically approved or research is exempt).
3. Document informed consent using only the most recently dated consent form bearing the VCU IRB "APPROVED" stamp (unless Waiver of Consent is specifically approved).
4. Provide non-English speaking patients with a translation of the approved Consent Form in the research participant's first language. The Panel must approve the translated version.
5. Obtain prior approval from VCU IRB before implementing any changes whatsoever in the approved protocol or consent form, unless such changes are necessary to protect the safety of human research participants (e.g., permanent/temporary change of PI, addition of performance/collaborative sites, request to include newly incarcerated participants or participants that are wards of the state, addition/deletion of participant groups, etc.). Any departure from these approved documents must be reported to the VCU IRB immediately as an Unanticipated Problem (see #7).
6. Monitor all problems (anticipated and unanticipated) associated with risk to research participants or others.
7. Report Unanticipated Problems (UPs), including protocol deviations, following the VCU IRB requirements and timelines detailed in VCU IRB WPP VIII-7):
8. Obtain prior approval from the VCU IRB before use of any advertisement or other material for recruitment of research participants.
9. Promptly report and/or respond to all inquiries by the VCU IRB concerning the conduct of the approved research when so requested.
10. All protocols that administer acute medical treatment to human research participants must have an emergency preparedness plan. Please refer to VCU guidance on http:/www.research.vcu.edu/irb/guidance.htm.
11. The VCU IRBs operate under the regulatory authorities as described within:
    a) U.S. Department of Health and Human Services Title 45 CFR 46, Subparts A, B, C, and D (for all research, regardless of source of funding) and related guidance documents.
    b) U.S. Food and Drug Administration Chapter I of Title 21 CFR 50 and 56 (for FDA regulated research only) and related guidance documents.
    c) Commonwealth of Virginia Code of Virginia 32.1 Chapter 5.1 Human Research (for all research).

010507

VERBAL CONSENT STATEMENT

Initial Phone Contact – Verbal Consent Statement

"Good morning/afternoon. My name is Jay Austin Brown and I am a doctoral student in the L. Douglas Wilder School of Government and Public Affairs in the Center for Public Policy at Virginia Commonwealth University. If you have a few moments, I would like to share with you my research interests that may be related to your professional occupation.

I am conducting research on the relationship of blight to decreased residential property values in the City of Richmond, VA. Past research suggests that blight can have tremendous economic implications on local governments, particularly from the standpoint of reduced property values, loss tax revenues, and the reduction in the local tax base. Yet, there may be other things that also contribute to property value loss. The purpose of my research is to determine if and how strong blight correlates to reduced property values and if there are other non-blight features that may also play a role in property devaluation.

I would like to know if you would be interested in participating in a small focus group discussion, with individuals of similar background, to discuss your thoughts on the City of Richmond's housing market and property values? Your experience in the (real estate, community development, housing) sector suggests that you would be a perfect candidate to serve on this focus group discussion. I am confident that you will add tremendous insight into my research. Participation is completely voluntary and there will be no compensation for this group session. Would you be interested in participating in this focus group discussion? Do you have any questions for me regarding my research or the focus group discussion? If you are willing to participate then I will be contacting you soon to discuss a meeting time and location to conduct the focus group. If you are unable to participate, are there any other individuals of similar background that you would recommended that I contact for their participation?

If you have any questions at any time, please do not hesitate to contact me at (804) 651-7090. Thank you for your time."

Focus Group Meeting – Verbal Consent Statement

Good morning/afternoon. I would like to thank each and every one of you for coming here today and agreeing to participate in this focus group discussion. Each of you are here because I would like to ask you as a group questions regarding your professional expertise and experience with the housing market in the City of Richmond and property values in particular areas of the City.

My overall research objectives are to assess the relationship if any, between

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10/13/08 LH/AB

blight and reduced property values of single-family properties in Richmond, VA. One element of that objective is to pool together a group of professionals who are versed in the City of Richmond's housing market, particularly by profession, in order to obtain a broad understanding of the City's housing market. By doing so, I will be able to gain greater insight into the nature, peculiarities, and the complexity or simplicity of the housing market in the City prior to me conducting an analysis on the relationship between blight and loss in property value.

As part of my formal study, I will be asking the group a series of questions about their professional perspectives. You don't have to answer any questions if you don't want to. You also need to understand that all information that I receive from you, including your name and anything else will be strictly confidential. I will not identify you or use any information that would make it possible for anyone to identify you (outside of this focus group) in any presentation or written reports about this study. If it is okay with you, I might want to use direct quotes from you, but these would only be cited as from a participant (or if person has a specific professional title, it might be used). There is no expected risk to you for helping me with this study. There are no expected or benefits to you either. When the focus group discussion is complete, I will group all the answers together in a report or presentation. There will be no way to identify individual participants.

The focus group meeting should last approximately one hour.
Are there any questions about this research project?
Remember that your participation is voluntary; you do not have to answer these questions.

If you do not agree to verbally consent to participating in this study, thank you for your time.

If there are no future questions, do I have everyone's verbal consent to participate and to proceed with the first question?

APPROVED

10/13/08 LH/AB

APPENDIX B

Focus Group and Interview Questionnaire

I. Styles/Types of Homes in Richmond

1. Describe the types/styles of single-family homes in Richmond?
2. Do different areas of Richmond have different types/styles of homes?
3. Do different style/types of homes generally have different property values (higher/lower)? If so, why?

II. Investor and Buyer (Homeowner) Attitude/Preferences of Housing Market

4. What are some of the things investors and buyers are looking for when searching for or buying a property in Richmond? Specifically, what are the most important preferences of investors and buyers when searching for a property?
5. What is it about an area that attracts investors and buyers?
6. What is it about an area that repels investors and buyers (why would one not want to invest or purchase a home in a particular area)?
7. What areas in Richmond do you feel discourages investors and/or buyers from purchasing a property and why?
8. How does the condition of the neighborhood impact the likelihood that an investor or buyer will purchase property in that area?

III. Property Values of Single-Family Residential Properties

9. What do you feel are the determinants of a property's value in Richmond?
10. Which features play the greatest role in determining property values in Richmond and why?
11. What are the trends in property/assessed values over time in Richmond? Do they normally increase, decrease, remain stationary and why?
12. Are there areas of Richmond in which property values increase at a greater (faster) rate or lesser (slower) rate than other areas? If so, why?
13. If there are areas in which there is a slower growth in values, what factors are attributing to this outcome?
14. Which areas in Richmond do you feel have the highest single-family property values?
15. What factors attribute to properties in these areas having higher values than in other areas?
16. Which areas of Richmond have the lowest single-family property values?
17. What causes properties in these areas to have lower values? In other words, what do you feel are the factors that cause a property to lose value in these areas relative to other areas?
18. Do the areas that do not experience these <u>factors/features</u> that have an adverse influence on property values, have higher property values?

19. Do you feel that properties in these areas have lower values than in other areas without blight? If so, is blight the primary cause or are there other factors that play a role (in depreciating property values)?
20. How much of an impact does poverty, crime, and other neighborhood demographics have on property values? Do neighborhood demographics play a role in property values? If so, does it have a strong or weak or a positive or a negative influence?

IV. Richmond neighborhoods

21. What are some of the challenges facing Richmond neighborhoods (in terms of viability and health)?
22. Which areas/neighborhoods have more of these challenges and why?
23. What role do these challenges play, if any, in adversely impacting property values? Would areas that face these challenges have lower property values than other areas not facing such challenges?

V. Stimulants and Depressants of Richmond housing market

24. What factors do you feel stimulate and depress the Richmond housing market?
25. In the areas in which there has been a depression in the housing market, what is the condition of the neighborhood and how prevalent is blight and other community/neighborhood challenges discussed earlier?
26. How would you define blight?
27. What features of blight do you feel are the most prevalent in Richmond?
28. Which areas/regions of Richmond have the most blight?

APPENDIX C

Data Summarization and Data Collection Plan

Property and Assessment Data

Data Collection

A listing of all single-family residential properties was obtained from the City of Richmond Assessor's Office, particularly from the City Assessor's Land Book records. A total of over 49,000 single-family residential properties were identified by the City Assessor for the 2009 calendar year. The data set (an access data base) was split into three separate tables. Each table contained specific and unique structural, neighborhood, and assessment data on each single-family property. Each table was linked with the primary key of the property's parcel identification number.

The first table "Assessment data" included the following property data:

- Parcel identification number,
- Assessed land value of the property,
- Assessed Improvement value of the structure,
- Total assessed value of the property (land value plus improvement value), and
- Year in which the property was assessed.

The second table "Parcel data" contained the following data:

- Parcel identification number,
- Council district number,
- Neighborhood name, property class identification number, property class description, property street address, property city name, property state name, property zip code,

- property square footage,
- Year in which the property was built,
- Lot size of the property,
- Block group number in which the property is located, and
- Census tract number in which the property is located.

The third table "Transfer data" contained the following data:

- Parcel identification number,
- Sale date (date in which the property sold) and
- Sales/consideration price.

Data from these tables were manipulated via queries and then entered into excel for random selection.

Physical Incivilities

Data Collection

Data on four out of five physical incivilities was collected by visual observations of residential properties. The researcher engaged in primary data collection by driving through blocks in which the single-family residential properties were randomly selected and obtained visual confirmation on the presence of the study's physical incivilities. Data from the visual observations was collected and recorded on a tracking form for each property with a listed address. The information collected on the tracking form was recorded in an electronic database.

Physical incivilities were gauged by on-site, physical assessments of each of the randomly selected single-family residential properties. Physical walk or drive-throughs were conducted on each randomly selected property in order to assess the extent in which physical incivilities were present on the property.

- Three of the four incivilities (graffiti, litter/trash, excessive vegetation) were measured on its presence on the structure or property. This was rated as a score of 0 for a lack of noticeable incivilities or 1 noticeable presence of incivilities. This was measured on a nominal scale.
- Excessive vegetation was identified by local regulations as vegetation on public property taller than 1 foot in height. Vegetation greater than 1 foot in height was rated as 1. Vegetation less than 1 foot in height was rated as 0.
- The physical incivility, boarded doors and windows was rated as 0 = no presence of boarded door or window, 1 = either boarded door or window present on the property, or 2 = the property contained both boarded doors and windows. This was rated on an ordinal level of measurement.
- The Department of Community Development supplied a listing of all vacant properties in the City of Richmond. Properties that were identified as vacant were rated as 1. Properties that were not identified as vacant were rated 0.

Social Incivilities

Data Collection

The data on social incivilities were obtained by the Richmond Police Department. Police calls for service included:

- Vice (prostitution),
- Public drinking (intoxicated person),
- Suspicious person (loitering),
- Public fighting (fights), and
- Louse Noise (noise)

Each of the police calls for service were deemed suitable social incivilities due to their extensive reference within the literature on incivilities. The social incivility data was tracked by the Richmond police department by block. Subsequently, each of the police calls of services had to be matched with the individual properties selected for the study. Some properties had no calls for services on the block in which it is located. Other properties were located on blocks in which there were multiple calls for police service for different types of social incivilities. The data for each of the social incivilities were merged with each property's corresponding address via its block identification number on the tracking form.

Neighborhood Census/Demographic Features

Data Collection

Demographic data was deemed as an suitable proxy of neighborhood characteristics, specifically, the socio-economic conditions of the area in which the randomly selected property were located. The inclusion of these characteristics would aid in determining if there were socio-economic factors of the community that have an influence on property values, particularly within different areas of the locality. Data was obtained from the City of Richmond's Department of Community Development and was provided in a summary excel file. Specifically, the 2000 Census was utilized to obtain this data at the block group level. The socio-economic/demographic variables utilized in this study were: poverty (the number of persons within the block group in poverty), unemployment (the number of persons, aged 16 and older, within the block group who were unemployed), income levels, and educational attainment levels. Two categories of incivilities were divided into several sub categories of variables.

The variable income was broken down into four sub categories. Those categories were:

- The number of persons by block group with incomes less than $24,999,

- The number of persons by block group with incomes between $25,000 and $49,999,
- The number of persons by block group with incomes between $50,000 and $74,999, and
- The number of persons with incomes greater than $75,000.

The variable education was also broken down into several sub categories. Those categories were:

- The number of people (Aged 25 and older) within the block group without a high school diploma,
- The number of people (Aged 25 and older) within the block group with a diploma only,
- The number of people (Aged 25 and older) within the block group with a degree (college or associates), and
- The number of people (Aged 25 and older) within the block group with an advanced degree.

The census data associated with each block group was then linked to each property on the tracking form. Since this data was measured at the block group level, this data was not used at the individual property level of analysis. Rather, this data was analyzed at a much broader level of analysis, the block group and neighborhood levels.

Proximity Data

Data Collection

The discussions from the qualitative analysis initiated the inclusion of several variables that attempted to capture the influence of proximity to a particular site to property values. The proximity of a home to public schools and the employment base (central business district) were factors that investors and home owners consider when purchasing a home in Richmond. This was the general consensus of the focus group discussions. These factors were suggested as potentially having a positive influence on property values as their proximity to these amenities are positive attributes people consider when living in urban areas. Conversely, close proximity to a public housing complex was suggested as being a deterrent to home buyers as well as an attribute of a lower quality of life. This was suggested as potentially having a negative influence on property values in Richmond. Therefore, data was obtained on the distance each selected property was from each of these sites.

Each single-family residential property was plotted via an online geographic locating instrument on its proximity/distance to: the central business district, the nearest public school, and the nearest public housing complex. Only the nearest distance to each of these sites was collected for this study. The distance variables were measured in miles. The address of the central business district, 900 East Main Street, was suggested by representatives of the City's Department of Economic Development. 900 East Main Street is located in the heart of the City's financial district and is the location of one of SunTrust Bank's corporate offices. The address of Richmond's public housing complexes were obtained from the Richmond Redevelopment and Housing Authority. The addresses for the public school facilities were obtained from the Richmond Public School system.

Data Readiness and Analysis for SPSS

Each single-family residential property that was randomly selected for this study was matched with its associated independent and dependent variables via excel for the 2009 calendar year. Three levels of analysis were conducted via SPSS. The first level of analysis assessed the correlation of the independent variables to property values at the individual property level. The second level of analysis assessed the correlation of the independent variables at the block group level. The third and final level of analysis assessed the correlation of independent variables to property values at the neighborhood level.

SPSS Data and Variable Acronyms

<u>Independent Variables</u>

Structural Characteristics of Property
Sqft = Square Footage of Property
Yrblt = Year in which the Property was Built
Lotcpsqft or Landcpsqft= Lot/Land Cost per Square Foot
Age = Age of the Property
Lotsize = Lot size of the Property
Strucpsqft = Structural Cost per Square Foot

Incivility Variables
Vacancy = Vacant/Abandoned Property
Trash = Trash Present on Property
BDW = Board Doors and/or Window on Property
Vegetation = Excessive Vegetation found on Property
Intox – Police Calls for Public Intoxication/Drinking
Loiters = Police Calls for Suspicious Person/Loiters
Graffiti = Graffiti present on Property
Vice = Excessive Vegetation on Property
Noise = Police Calls for Loud Noise
Fight = Police Calls for Public Fighting

Proximity Variables
Disph = Distance to Nearest Public Housing Complex
Disbcd = Distance to the Central Business District
Disedu = Distance to Nearest Public Schools

Neighborhood Demographics
Poverty = The Number of People in Poverty
Nodiploma = The Number of Individuals without a Diploma
Diploma = The Number of People with a Diploma (only)
Degree = The Number of People with a Degree (only)
AdvancedDegree = The Number of People with an Advanced Degree
Income24kandless = The Number of People with Incomes less than $24,999
Income25kto49k = The Number of People with Incomes between $25,000 and $49,999
Income50kto74k = The Number of People with Incomes between $50,000 and $74,999
Income75kandup = The Number of People with Incomes greater than $75,000
Unemployed = The Number of People Who Are Unemployed

<u>Dependent Variable</u>

Property Values
AV2009 = Assessed Value 2009

APPENDIX D

Data Sources and Collection Summarization Chart

Quantitative - Time Series/Longitudinal Assessment - Data Collection Synopsis

Data	Description of Data	Source of Data	Data Source Type	Location of Data	How was Data collected	Year in which Data was collected	Relevance to Research
Assessed property values	Municipal Assessment data for improvement and land values of all single-family residential properties in the City	Richmond City Assessor's Office-City property data file	Secondary	Richmond City Assessor's Office	Access Database	2004 - 2008	Data used to analyze changes in total assessment value over time. Property values are essential for this analysis.
Single-family residential properties	Municipal data on the identification of single-family residential properties	Richmond City Assessor's Office-City property data file	Secondary	Richmond City Assessor's Office	Access Database	2004 - 2008	Data used to link/match properties with assessments. Data also serves as population frame for this analysis.
Census Tracts	Identification of census tracts in which single-family residential properties are located	Richmond City Assessor's Office-City property data file	Secondary	Richmond City Assessor's Office	Access Database	2004 - 2008	Used to segregate properties into distinct geographic categories for analysis.

Qualitative Assessment - Focus Group and Individual Interview Data Collection Synopsis

Data	Description of Data	Source of Data	Data Source Type	Location of Data	How was Data collected	Date data was collected	Relevance to Research
Responses to interview questions	Qualitative responses to series of group questions	Focus Group Interview Session and Individual Interviews	Primary	Voice recorder and manual notes	Hand notes/Voice recorder	11/21/2008 and 12/2/2008	Responses used to qualitative assess housing market in Richmond

APPENDIX D

Data Sources and Collection Summarization Chart

Focus Group Panel Discussion - November 21, 2008

Participant Number	Professional Title	Employer	Scope of Responsibilities
1	Local Realtor	Long and Foster Reality	Sells homes in the Richmond region
2	Local Realtor	Century 21 Reality	Sells homes in the Richmond region
3	Director of Home Ownership	H.O.M.E. Inc	Community outreach coordination
4	Vice President-Chief of Operations	Better Housing Coalition	Oversees operations of organization
5	Senior Planner	Department of Community Development-City of Richmond	GIS analysis, neighborhood revitalization, etc.

Individual Interviews - December 8, 2008

Participant Number	Professional Title	Employer	Scope of Responsibilities
6	Local Realtor	Barber and Rhodes Reality	Sells homes in the Richmond region
7	Executive Director	Southside Community Development & Housing Corporation	Oversees all aspects of housing operations
8	Senior Planner	Department of Community Development-City of Richmond	Manages CDBG and housing grants in City

Miscellaneous Interviews

Participant Name	Professional Title	Employer	Scope of Responsibilities
9	Deputy City Assessor	Richmond City Assessor's Office - City of Richmond	Manage City Assessment Office
10	Assessor	Richmond City Assessor's Office-City of Richmond	Assesses City properties

Quantitative - Cross Sectional Research Design Data Collection Synopsis

What	What	What	What	Where		Where	How	When	Why
Variable	**Study Variable Description**	**Data**	**Description of Data**	**Source of Data**	**Data Source Type**	**Location of Data**	**How was Data collected**	**Year Data was Collected**	**Relevance to Research**
IV	Physical Incivility	Boarded Doors and/or Boarded Windows	Presence of boarded doors and windows on property	Visual Inspections of property	Primary	Indicated on physical structure of randomly selected property	Excel	2009	Measure of physical blight
IV	Physical Incivility	Graffiti (presence of)	Presence of graffiti on front or side façade of property	Visual Inspections of property	Primary	Indicated on physical structure of randomly selected property	Excel	2009	Measure of physical blight
IV	Physical Incivility	Overgrown Vegetation	Presence of overgrown vegetation greater than 1 foot in length	Visual Inspections of property	Primary	Indicated on physical structure of randomly selected property	Excel	2009	Measure of physical blight
IV	Physical Incivility	Excessive Trash	Presence of excessive trash on property	Visual Inspections of property	Primary	Indicated on physical structure of randomly selected property	Excel	2009	Measure of physical blight
IV	Physical Incivility	Vacant Property	Listing of identified vacant property in the City limits	Municipal Vacant registry listing	Secondary	Richmond-Department of Community Development	Excel	2008-2009	Data used as a measure of physical blight
IV	Social Incivility	Police calls for Vice/prostitution	Represents actual calls for service by municipal block	Richmond Police Department Calls for Service	Secondary	Richmond City Police Department calls for service tracking system	Excel	2009	Measure of social blight
IV	Social Incivility	Police calls for loud noise	Represents actual calls for service by municipal block	Richmond Police Department Calls for Service	Secondary	Richmond Police Department calls for service tracking system	Excel	2009	Measure of social blight
IV	Social Incivility	Police calls for public fighting	Represents actual calls for service by municipal block	Richmond Police Department Calls for Service	Secondary	Richmond Police Department calls for service tracking system	Excel	2009	Measure of social blight

IV	Social Incivility	Police calls for loiters/suspicious person	Represents actual calls for service by municipal block	Richmond Police Department Calls for Service	Secondary	Richmond Police Department calls for service tracking system	Excel	2009	Measure of social blight

Variable	Study Variable Description	Data	Description of Data	Source of Data	Data Source Type	Location of Data	How was Data collected	Year Data was Collected	Relevance to Research
IV	Social Incivility	Police calls for public drinking/intoxication	Represents actual calls for service by municipal block	Richmond Police Department Calls for Service	Secondary	Richmond Police Department calls for service tracking system	Excel	2009	Data used as a measure of social blight
IV	Structural Trait of Property	Square footage of property	Indicates structural square footage of property	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Excel	2009	Measure of the structural characteristics of the property
IV	Structural Trait of Property	Lot size of property	Indicates the lot size of property	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Excel	2009	Measure of the structural characteristics of the property
IV	Structural Trait of Property	Year in which property was built	Indicates year in which property was built	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Excel	2009	Measure of the age of the property
IV	Structural Trait of Property	Age of property	Represents age of property	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Excel	2009	Measure of the age of the property
DV	Structural Trait of Property	Assessed value of property	Represents total value of structure and lot/land of property	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Excel	2009	Measure of the value of the property
IV	Demographic	Income levels	Represents various income levels of individuals by block group	2000 Census	Secondary	2000 Census Summary file	Excel	2000	Measure of income ranges of the block group in which the property is located

Variable	Study Variable Description	Data	Description of Data	Source of Data	Data Source Type	Location of Data	How was Data collected	Year Data was Collected	Relevance to Research
IV	Demographic	Poverty	Represents poverty levels of individuals by block group	2000 Census	Secondary	2000 Census Summary file	Excel	2000	Measure of the poverty of the block group in which the property is located
IV	Demographic	Education levels	Represents various educational levels of individuals by block group	2000 Census	Secondary	2000 Census Summary file	Excel	2000	Measure of the education levels of the block group in which the property is located
IV	Demographic	Unemployment rates	Represents the number of people unemployed by block group	2000 Census	Secondary	2000 Census Summary file	Excel	2000	Measure of the unemployment rate of the block group in which the property is located
IV	Proximity Data	Distance (in miles) of property to nearest public housing complex	Represents mileage between selected property and the nearest public housing complex	Calculated via online mapping software (www.batchgeocode.com)	Secondary	Calculated via online mapping software (www.batchgeocode.com)	Excel	2009	Measure of the distance the property is located to the nearest public housing complex
IV	Proximity Data	Distance (in miles) of property to nearest public school	Represents mileage between selected property and the nearest public housing complex	Calculated via online mapping software (www.batchgeocode.com)	Secondary	Calculated via online mapping software (www.batchgeocode.com)	Excel	2009	Measure of the distance the property is located to the nearest public school
IV	Proximity Data	Distance (in miles) of property to central business district	Represents mileage between selected property and	Calculated via online mapping software (www.batchgeocode.com)	Secondary	Calculated via online mapping software (www.batchgeocode.com)	Excel	2009	Measure of the distance the property is located to the central

			the nearest public housing complex						business district

Quantitative - Vacant Lot Analysis

Data	Description of Data	Source of Data	Data Source Type	Location of Data	How was Data collected	Year Data was collected	Relevance to Research
Assessed property values	Municipal Assessment data for improvement and land values of all single-family residential properties	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Access Database	2009	Data used to determine whether it's influenced by other variables
Average Improvement Value per Square Foot	Calculation utilizing the average assessed value of samples (by Census Tract) improvement value per square foot	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Access Database	2009	Data used as a measure of property values (new DV)
Average Land Value per Square Foot	Calculation utilizing the average assessed value of samples (by Census Tract) land value per square foot	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Access Database	2009	Data used as a measure of property values (new DV)
Average Value per Square Foot	Calculation utilizing the average assessed value of samples (by Census Tract) improvement and land value per square foot	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Access Database	2009	Data used as a measure of property values (new DV)
Vacant Lots	Parcels identified as vacant lots (excludes properties with structures)	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Access Database	2009	Data used to determine influence on property values.
Single-family residential properties	Municipal data on the identification of single-family residential properties	Richmond Assessor's Office-City property data file	Secondary	Richmond Assessor's Office	Access Database	2009	Data used to link properties with assessments. Data served as population frame

Census Tracts	Identification of census tracts in which single-family residential properties are located	Richmond Assessor's Office-City property data file	Secondary	Richmond Department of Community Development	Access Database	2009	Used to segregate properties into distinct geographic categories for analysis.

APPENDIX E - Multicollinearity Diagnostics Statistical Outputs Tables – Individual Property Level Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-702172.726	556647.523		-1.261	.208		
	Sqft	168.830	5.200	.867	32.469	.000	.830	1.205
	Yblt	315.377	290.280	.033	1.086	.278	.632	1.583
	Lotsize	2.041	.599	.107	3.409	.001	.604	1.656
	Vacancy	-42093.492	29939.701	-.042	-1.406	.161	.659	1.517
	Graffiti	-111521.243	89239.111	-.035	-1.250	.212	.764	1.309
	Trash	-3007.680	74162.559	-.001	-.041	.968	.740	1.352
	BDW	-42326.597	26565.938	-.061	-1.593	.112	.401	2.491
	Vegetation	16597.601	32629.067	.014	.509	.611	.748	1.337
	Vice	-44675.954	27450.270	-.041	-1.628	.105	.953	1.050
	Intox	-10411.824	12015.134	-.022	-.867	.387	.912	1.096
	Noise	-130.610	2915.711	-.001	-.045	.964	.950	1.052
	Fight	-318.386	7581.501	-.001	-.042	.967	.905	1.105
	Loiters	3303.288	5755.902	.015	.574	.566	.822	1.216
	Disph	3292.764	10027.554	.019	.328	.743	.184	5.447
	Dissch	44268.186	21194.342	.055	2.089	.038	.863	1.158
	Discbd	-7438.393	9577.843	-.048	-.777	.438	.153	6.553

a. Dependent Variable: AV2009

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions																
				(Constant)	Sqft	Yblt	Lotsize	Vacancy	Graffiti	Trash	BDW	Vegetation	Vice	Intox	Noise	Fight	Loiters	Disph	Dissch	Discbd
1	1	6.316	1.000	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	2.153	1.713	.00	.00	.00	.00	.05	.04	.04	.06	.06	.00	.00	.00	.01	.00	.00	.00	.00
	3	1.346	2.167	.00	.00	.00	.01	.00	.01	.01	.00	.00	.11	.11	.08	.12	.07	.00	.00	.00
	4	1.029	2.478	.00	.00	.00	.00	.02	.35	.28	.00	.03	.01	.00	.00	.02	.00	.00	.00	.00
	5	.977	2.542	.00	.00	.00	.00	.05	.03	.01	.00	.01	.17	.16	.40	.03	.00	.00	.00	.00
	6	.951	2.577	.00	.00	.00	.00	.00	.01	.01	.00	.00	.52	.31	.00	.03	.02	.00	.00	.00
	7	.884	2.674	.00	.00	.00	.00	.06	.06	.11	.00	.00	.06	.00	.35	.28	.01	.00	.00	.00
	8	.772	2.860	.00	.00	.00	.00	.30	.07	.02	.01	.28	.04	.01	.02	.13	.00	.00	.00	.00
	9	.606	3.228	.00	.00	.00	.03	.02	.10	.13	.00	.28	.01	.10	.01	.32	.15	.00	.00	.00
	10	.583	3.290	.00	.01	.00	.04	.03	.04	.12	.00	.16	.04	.26	.10	.04	.24	.00	.00	.00
	11	.413	3.910	.00	.00	.00	.33	.03	.01	.00	.01	.01	.03	.01	.00	.01	.23	.00	.13	.00
	12	.342	4.294	.00	.67	.00	.01	.02	.02	.02	.00	.02	.00	.02	.01	.00	.06	.02	.00	.01
	13	.247	5.056	.00	.01	.00	.01	.37	.26	.24	.88	.13	.01	.00	.00	.01	.08	.00	.00	.00
	14	.221	5.343	.00	.08	.00	.36	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.07	.45	.01
	15	.134	6.853	.00	.12	.00	.17	.06	.00	.01	.00	.00	.00	.00	.01	.00	.09	.10	.37	.00
	16	.023	16.479	.00	.06	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.77	.02	.86
	17	6.150E-5	320.492	1.00	.04	1.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00	.00	.03	.02	.12

a. Dependent Variable: AV2009

Correlations

		Sqft	Yblt	Lotsize	Vacancy	Graffiti	Trash	BDW	Vegetation	Vice	Intox	Noise	Fight	Loiters	Disph	Dissch	Discbd	AV2009
Sqft	Pearson Correlation	1	-.176**	.249**	-0.056	0.022	-0.018	-0.034	-0.086	0.041	.122*	-0.039	-0.044	0.082	.111*	0.044	0.02	.891**
	Sig. (2-tailed)		0.002	0	0.319	0.701	0.753	0.546	0.127	0.465	0.03	0.497	0.434	0.148	0.049	0.438	0.718	0
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Yblt	Pearson Correlation	-.176**	1	.208**	-.196**	-0.099	-0.038	-.198**	-0.075	-0.031	-0.099	-.119*	-0.11	-.204**	.365**	.263**	.499**	-0.077
	Sig. (2-tailed)	0.002		0	0	0.079	0.497	0	0.183	0.589	0.08	0.035	0.052	0	0	0	0	0.172
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Lotsize	Pearson Correlation	.249**	.208**	1	-0.096	-0.053	0.003	-0.099	-0.06	0.011	-0.058	-0.035	-0.109	-.143*	.568**	.179**	.567**	.332**
	Sig. (2-tailed)	0	0		0.09	0.348	0.963	0.08	0.293	0.852	0.302	0.539	0.054	0.011	0	0.001	0	0
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Vacancy	Pearson Correlation	-0.056	-.196**	-0.096	1	.135*	0.101	.511**	.163**	-0.026	-0.025	0.035	.175**	0.022	-.232**	-.136*	-.240**	-.140*
	Sig. (2-tailed)	0.319	0	0.09		0.017	0.073	0	0.004	0.641	0.659	0.534	0.002	0.7	0	0.016	0	0.013
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Graffiti	Pearson Correlation	0.022	-0.099	-0.053	.135*	1	-0.008	.416**	.163**	-0.008	-0.021	-0.018	-0.021	0.009	-0.073	-0.033	-0.102	-0.051
	Sig. (2-tailed)	0.701	0.079	0.348	0.017		0.89	0	0.004	0.892	0.714	0.75	0.714	0.868	0.195	0.561	0.07	0.368
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Trash	Pearson Correlation	-0.018	-0.038	0.003	0.101	-0.008	1	.421**	.275**	-0.009	-0.025	-0.007	0.013	-0.016	-0.087	-0.067	-0.1	-0.043
	Sig. (2-tailed)	0.753	0.497	0.963	0.073	0.89		0	0	0.867	0.653	0.9	0.824	0.778	0.123	0.234	0.077	0.445
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
BDW	Pearson Correlation	-0.034	-.198**	-0.099	.511**	.416**	.421**	1	.457**	-0.022	-0.028	-0.037	0.09	-0.06	-.203**	-0.062	-.229**	-.133*
	Sig. (2-tailed)	0.546	0	0.08	0	0	0		0	0.692	0.615	0.517	0.111	0.292	0	0.275	0	0.018
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Vegetation	Pearson Correlation	-0.086	-0.075	-0.06	.163**	.163**	.275**	.457**	1	-0.022	-0.006	-0.046	.159**	0.027	-0.101	-0.006	-.123*	-0.105
	Sig. (2-tailed)	0.127	0.183	0.293	0.004	0.004	0	0		0.694	0.909	0.421	0.005	0.63	0.073	0.915	0.03	0.063
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Vice	Pearson Correlation	0.041	-0.031	0.011	-0.026	-0.008	-0.009	-0.022	-0.022	1	0.051	0.029	.119*	.150**	0.017	-0.08	-0.022	-0.004
	Sig. (2-tailed)	0.465	0.589	0.852	0.641	0.892	0.867	0.692	0.694		0.365	0.613	0.035	0.008	0.761	0.159	0.696	0.942
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Intox	Pearson Correlation	.122*	-0.099	-0.058	-0.025	-0.021	-0.025	-0.028	-0.006	0.051	1	0.012	0.07	.253**	-0.084	-0.035	-.127*	0.082
	Sig. (2-tailed)	0.03	0.08	0.302	0.659	0.714	0.653	0.615	0.909	0.365		0.836	0.218	0	0.137	0.542	0.025	0.146
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Noise	Pearson Correlation	-0.039	-.119*	-0.035	0.035	-0.018	-0.007	-0.037	-0.046	0.029	0.012	1	0.084	.141*	-0.073	-0.06	-0.054	-0.043
	Sig. (2-tailed)	0.497	0.035	0.539	0.534	0.75	0.9	0.517	0.421	0.613	0.836		0.138	0.013	0.196	0.292	0.339	0.45
	N	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313
Fight	Pearson Correlation	-0.044	-0.11	-0.109	.175**	-0.021	0.013	0.09	.159**	.119*	0.07	0.084	1	.118*	-.141*	-0.064	-.152**	-0.068
	Sig. (2-tailed)	0.434	0.052	0.054	0.002	0.714	0.824	0.111	0.005	0.035	0.218	0.138		0.037	0.012	0.256	0.007	0.228
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Loiters	Pearson Correlation	0.082	-.204**	-.143*	0.022	0.009	-0.016	-0.06	0.027	.150**	.253**	.141*	.118*	1	-.198**	-.179**	-.238**	0.053
	Sig. (2-tailed)	0.148	0	0.011	0.7	0.868	0.778	0.292	0.63	0.008	0	0.013	0.037		0	0.001	0	0.348
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Disph	Pearson Correlation	.111*	.365**	.568**	-.232**	-0.073	-0.087	-.203**	-0.101	0.017	-0.084	-0.073	-.141*	-.198**	1	.193**	.891**	.177**
	Sig. (2-tailed)	0.049	0	0	0	0.195	0.123	0	0.073	0.761	0.137	0.196	0.012	0		0.001	0	0.002
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Dissch	Pearson Correlation	0.044	.263**	.179**	-.136*	-0.033	-0.067	-0.062	-0.006	-0.08	-0.035	-0.06	-0.064	-.179**	.193**	1	.265**	.124*
	Sig. (2-tailed)	0.438	0	0.001	0.016	0.561	0.234	0.275	0.915	0.159	0.542	0.292	0.256	0.001	0.001		0	0.028
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
Discbd	Pearson Correlation	0.02	.499**	.567**	-.240**	-0.102	-0.1	-.229**	-.123*	-0.022	-.127*	-0.054	-.152**	-.238**	.891**	.265**	1	0.104
	Sig. (2-tailed)	0.718	0	0	0	0.07	0.077	0	0.03	0.696	0.025	0.339	0.007	0	0	0		0.065
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314
AV2009	Pearson Correlation	.891**	-0.077	.332**	-.140*	-0.051	-0.043	-.133*	-0.105	-0.004	0.082	-0.043	-0.068	0.053	.177**	.124*	0.104	1
	Sig. (2-tailed)	0	0.172	0	0.013	0.368	0.445	0.018	0.063	0.942	0.146	0.45	0.228	0.348	0.002	0.028	0.065	
	N	314	314	314	314	314	314	314	314	314	314	313	314	314	314	314	314	314

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX F

Multiple Regression Analysis – Individual Property Level Analysis – Including Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-76784.374	10640.116		-7.216	.000
	Sqft	173.427	5.008	.891	34.633	.000
2	(Constant)	-92838.885	10890.063		-8.525	.000
	Sqft	167.707	5.011	.862	33.467	.000
	Lotsize	2.259	.492	.118	4.589	.000
3	(Constant)	-85010.700	10858.688		-7.829	.000
	Sqft	167.523	4.906	.861	34.145	.000
	Lotsize	2.087	.484	.109	4.310	.000
	BDW	-64489.001	16972.424	-.093	-3.800	.000
4	(Constant)	-108997.372	14249.476		-7.649	.000
	Sqft	167.529	4.862	.861	34.454	.000
	Lotsize	1.878	.487	.098	3.859	.000
	BDW	-62477.346	16839.033	-.090	-3.710	.000
	Dissch	51150.283	19916.829	.063	2.568	.011

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.621E13	1	1.621E13	1199.418	.000[a]
	Residual	4.203E12	311	1.352E10		
	Total	2.041E13	312			
2	Regression	1.648E13	2	8.239E12	648.915	.000[b]
	Residual	3.936E12	310	1.270E10		
	Total	2.041E13	312			
3	Regression	1.665E13	3	5.551E12	456.174	.000[c]
	Residual	3.760E12	309	1.217E10		
	Total	2.041E13	312			
4	Regression	1.673E13	4	4.183E12	349.975	.000[d]
	Residual	3.682E12	308	1.195E10		
	Total	2.041E13	312			

a. Predictors: (Constant), Sqft

b. Predictors: (Constant), Sqft, Lotsize

c. Predictors: (Constant), Sqft, Lotsize, BDW

d. Predictors: (Constant), Sqft, Lotsize, BDW, Dissch

e. Dependent Variable: AV2009

APPENDIX G

Multicollinearity Diagnostics and Statistical Output Tables – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-191472	58299.199		-2.803	.005		
	Age	464.353	524.840	.049	.885	.377	.607	1.648
	Lotsize	8.580	1.044	.449	8.219	.000	.634	1.579
	Vacancy	-8694.587	53905.531	-.009	-.161	.872	.649	1.540
	Graffiti	-30904.3	159806.9	-.010	-.193	.847	.761	1.315
	Trash	-15419.8	132795.3	-.006	-.116	.908	.737	1.358
	BDW	26127.322	48054.368	.038	.544	.587	.392	2.553
	Vegetation	-51340.8	58117.390	-.044	-.883	.378	.753	1.329
	Vice	16875.049	49243.563	.015	.343	.732	.945	1.058
	Intox	39957.816	21412.634	.085	1.866	.063	.917	1.091
	Noise	-4502.247	5211.537	-.039	-.864	.388	.950	1.053
	Fight	243.497	13555.811	.001	.018	.986	.904	1.106
	Loiters	9140.483	10291.888	.043	.888	.375	.821	1.218
	Disph	7491.797	18072.611	.042	.415	.679	.180	5.553
	Disedu	34150.406	38031.089	.104	2.213	.028	.850	1.176
	Discbd	-22125.5	16984.127	-.144	-1.303	.194	.154	6.487
	Landcpsqft	8954.403	1684.476	.298	5.316	.000	.602	1.661
	Strucpsqft	2431.369	373.372	.353	6.512	.000	.643	1.555

a. Dependent Variable: AV2009

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions																	
				(Constant)	Age	Lotsize	Vacancy	Graffiti	Trash	BDW	Vegetation	Vice	Intox	Noise	Fight	Loiters	Disph	Disedu	Discbd	Landcpsqft	Strucpsqft
1	1	6.744	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	2.179	1.759	.00	.00	.00	.05	.03	.04	.06	.06	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
	3	1.392	2.201	.00	.00	.02	.00	.01	.02	.01	.01	.06	.10	.07	.08	.06	.00	.00	.00	.01	.00
	4	1.062	2.520	.00	.00	.01	.01	.21	.15	.00	.03	.19	.00	.00	.07	.00	.00	.00	.00	.03	.00
	5	.988	2.613	.00	.00	.01	.00	.18	.10	.00	.00	.44	.00	.08	.00	.00	.00	.00	.00	.01	.00
	6	.967	2.641	.00	.00	.00	.06	.00	.03	.00	.02	.00	.34	.30	.07	.02	.00	.00	.00	.00	.00
	7	.886	2.759	.00	.00	.00	.07	.05	.12	.00	.00	.11	.01	.28	.26	.01	.00	.00	.00	.00	.00
	8	.787	2.928	.00	.00	.04	.05	.00	.00	.00	.02	.03	.39	.13	.01	.00	.00	.00	.00	.10	.00
	9	.769	2.961	.00	.00	.00	.25	.08	.02	.01	.26	.06	.00	.07	.16	.00	.00	.00	.00	.01	.00
	10	.598	3.357	.00	.00	.00	.04	.14	.24	.00	.46	.02	.00	.01	.32	.02	.00	.00	.00	.00	.00
	11	.480	3.750	.00	.00	.02	.00	.02	.01	.01	.00	.07	.13	.04	.00	.74	.00	.01	.00	.07	.00
	12	.349	4.396	.00	.00	.34	.01	.00	.00	.01	.02	.00	.00	.00	.01	.01	.00	.24	.00	.22	.00
	13	.251	5.181	.00	.00	.09	.40	.25	.23	.73	.11	.00	.01	.00	.01	.04	.00	.00	.00	.00	.01
	14	.232	5.394	.00	.01	.40	.01	.02	.01	.11	.01	.00	.00	.00	.00	.01	.10	.20	.01	.00	.00
	15	.167	6.349	.01	.26	.00	.05	.00	.00	.01	.00	.01	.00	.00	.01	.07	.01	.31	.00	.30	.00
	16	.093	8.538	.00	.12	.05	.00	.00	.02	.05	.00	.00	.00	.01	.00	.00	.07	.14	.00	.12	.65
	17	.044	12.440	.16	.22	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01	.31	.09	.21	.12	.22
	18	.014	21.602	.82	.38	.01	.01	.00	.00	.00	.00	.01	.01	.00	.00	.01	.50	.00	.77	.00	.10

a. Dependent Variable: AV2009

Correlations

		Age	Lotsize	Vacancy	Graffiti	Trash	BDW	Vegetation	Vice	Intox	Noise	Fight	Loiters	Disph	Disedu	Discbd	Landcpsqft	Strucpsqft	AV2009
Age	Pearson Correlation	1	-.208**	.196**	.099	.038	.198**	.075	.031	.099	.120*	.110	.204**	-.365**	-.263**	-.499**	.407**	-.122*	.077
	Sig. (2-tailed)		.000	.000	.079	.497	.000	.183	.589	.080	.034	.052	.000	.000	.000	.000	.000	.030	.172
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Lotsize	Pearson Correlation	-.208**	1	-.096	-.053	.003	-.099	-.060	.011	-.058	-.034	-.109	-.143*	.568**	.179**	.567**	-.251**	.048	.332**
	Sig. (2-tailed)	.000		.090	.348	.963	.080	.293	.852	.302	.544	.054	.011	.000	.001	.000	.000	.393	.000
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Vacancy	Pearson Correlation	.196**	-.096	1	.135*	.101	.511**	.163**	-.026	-.025	.035	.175**	.022	-.232**	-.136*	-.240**	-.030	-.303**	-.140*
	Sig. (2-tailed)	.000	.090		.017	.073	.000	.004	.641	.659	.531	.002	.700	.000	.016	.000	.595	.000	.013
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Graffiti	Pearson Correlation	.099	-.053	.135*	1	-.008	.416**	.163**	-.008	-.021	-.018	-.021	.009	-.073	-.033	-.102	.057	-.153**	-.051
	Sig. (2-tailed)	.079	.348	.017		.890	.000	.004	.892	.714	.751	.714	.868	.195	.561	.070	.317	.007	.368
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Trash	Pearson Correlation	.038	.003	.101	-.008	1	.421**	.275**	-.009	-.025	-.007	.013	-.016	-.087	-.067	-.100	-.044	-.088	-.043
	Sig. (2-tailed)	.497	.963	.073	.890		.000	.000	.867	.653	.901	.824	.778	.123	.234	.077	.435	.119	.445
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
BDW	Pearson Correlation	.198**	-.099	.511**	.416**	.421**	1	.457**	-.022	-.028	-.037	.090	-.060	-.203**	-.062	-.229**	-.015	-.326**	-.133*
	Sig. (2-tailed)	.000	.080	.000	.000	.000		.000	.692	.615	.518	.111	.292	.000	.275	.000	.785	.000	.018
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Vegetation	Pearson Correlation	.075	-.060	.163**	.163**	.275**	.457**	1	-.022	-.006	-.045	.159**	.027	-.101	-.006	-.123*	-.033	-.157**	-.105
	Sig. (2-tailed)	.183	.293	.004	.004	.000	.000		.694	.909	.422	.005	.630	.073	.915	.030	.558	.005	.063
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Vice	Pearson Correlation	.031	.011	-.026	-.008	-.009	-.022	-.022	1	.051	.029	.119*	.150**	.017	-.080	-.022	-.044	-.053	-.004
	Sig. (2-tailed)	.589	.852	.641	.892	.867	.692	.694		.365	.612	.035	.008	.761	.159	.696	.441	.353	.942
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Intox	Pearson Correlation	.099	-.058	-.025	-.021	-.025	-.028	-.006	.051	1	.012	.070	.253**	-.084	-.035	-.127*	.051	-.052	.082
	Sig. (2-tailed)	.080	.302	.659	.714	.653	.615	.909	.365		.833	.218	.000	.137	.542	.025	.366	.358	.146
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Noise	Pearson Correlation	.120*	-.034	.035	-.018	-.007	-.037	-.045	.029	.012	1	.084	.141*	-.073	-.059	-.053	.066	-.059	-.043
	Sig. (2-tailed)	.034	.544	.531	.751	.901	.518	.422	.612	.833		.136	.013	.200	.301	.348	.243	.296	.450
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Fight	Pearson Correlation	.110	-.109	.175**	-.021	.013	.090	.159**	.119*	.070	.084	1	.118*	-.141*	-.064	-.152**	.000	-.111*	-.068
	Sig. (2-tailed)	.052	.054	.002	.714	.824	.111	.005	.035	.218	.136		.037	.012	.256	.007	1.000	.050	.228
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Loiters	Pearson Correlation	.204**	-.143*	.022	.009	-.016	-.060	.027	.150**	.253**	.141*	.118*	1	-.198**	-.179**	-.238**	.176**	-.027	.053
	Sig. (2-tailed)	.000	.011	.700	.868	.778	.292	.630	.008	.000	.013	.037		.000	.001	.000	.002	.634	.348
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Disph	Pearson Correlation	-.365**	.568**	-.232**	-.073	-.087	-.203**	-.101	.017	-.084	-.073	-.141*	-.198**	1	.193**	.891**	-.225**	.244**	.177**
	Sig. (2-tailed)	.000	.000	.000	.195	.123	.000	.073	.761	.137	.200	.012	.000		.001	.000	.000	.000	.002
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Disedu	Pearson Correlation	-.263**	.179**	-.136*	-.033	-.067	-.062	-.006	-.080	-.035	-.059	-.064	-.179**	.193**	1	.265**	-.187**	.136*	.124*
	Sig. (2-tailed)	.000	.001	.016	.561	.234	.275	.915	.159	.542	.301	.256	.001	.001		.000	.001	.016	.028
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Discbd	Pearson Correlation	-.499**	.567**	-.240**	-.102	-.100	-.229**	-.123*	-.022	-.127*	-.053	-.152**	-.238**	.891**	.265**	1	-.325**	.194**	.104
	Sig. (2-tailed)	.000	.000	.000	.070	.077	.000	.030	.696	.025	.348	.007	.000	.000	.000		.000	.001	.065
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Landcpsqft	Pearson Correlation	.407**	-.251**	-.030	.057	-.044	-.015	-.033	-.044	.051	.066	.000	.176**	-.225**	-.187**	-.325**	1	.347**	.355**
	Sig. (2-tailed)	.000	.000	.595	.317	.435	.785	.558	.441	.366	.243	1.000	.002	.000	.001	.000		.000	.000
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
Strucpsqft	Pearson Correlation	-.122*	.048	-.303**	-.153**	-.088	-.326**	-.157**	-.053	-.052	-.059	-.111*	-.027	.244**	.136*	.194**	.347**	1	.464**
	Sig. (2-tailed)	.030	.393	.000	.007	.119	.000	.005	.353	.358	.296	.050	.634	.000	.016	.001	.000		.000
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314
AV2009	Pearson Correlation	.077	.332**	-.140*	-.051	-.043	-.133*	-.105	-.004	.082	-.043	-.068	.053	.177**	.124*	.104	.355**	.464**	1
	Sig. (2-tailed)	.172	.000	.013	.368	.445	.018	.063	.942	.146	.450	.228	.348	.002	.028	.065	.000	.000	
	N	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314	314

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX H

Multiple Regression Analysis Statistical Output Tables – Individual Property Level Analysis – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-75476.8	33713.620		-2.239	.026
	Strucpsqft	3194.187	345.418	.464	9.247	.000
2	(Constant)	-133282	32819.516		-4.061	.000
	Strucpsqft	3090.579	324.429	.449	9.526	.000
	Lotsize	5.938	.900	.311	6.596	.000
3	(Constant)	-152079	30632.573		-4.965	.000
	Strucpsqft	2238.431	324.970	.325	6.888	.000
	Lotsize	7.702	.874	.403	8.816	.000
	Landcpsqft	10321.917	1463.906	.343	7.051	.000
4	(Constant)	-163259	30736.116		-5.312	.000
	Strucpsqft	2292.279	323.171	.333	7.093	.000
	Lotsize	7.779	.867	.407	8.969	.000
	Landcpsqft	10107.341	1455.058	.336	6.946	.000
	Intox	50098.981	20563.604	.106	2.436	.015
5	(Constant)	-125213	35535.910		-3.524	.000
	Strucpsqft	2514.997	338.457	.365	7.431	.000
	Lotsize	8.868	1.007	.464	8.810	.000
	Landcpsqft	9044.076	1533.159	.301	5.899	.000
	Intox	46155.017	20537.233	.098	2.247	.025
	Discbd	-18367.6	8748.562	-.120	-2.099	.037
6	(Constant)	-149365	37284.139		-4.006	.000
	Strucpsqft	2406.354	340.917	.349	7.058	.000
	Lotsize	8.799	1.002	.460	8.781	.000
	Landcpsqft	9568.617	1546.863	.318	6.186	.000
	Intox	45928.484	20432.900	.097	2.248	.025
	Discbd	-20488.8	8765.864	-.134	-2.337	.020
	Disedu	74693.025	36609.914	.093	2.040	.042

a. Dependent Variable: AV2009

ANOVA[g]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.4E+012	1	4.392E+012	85.512	.000[a]
	Residual	1.6E+013	312	5.136E+010		
	Total	2.0E+013	313			
2	Regression	6.4E+012	2	3.179E+012	70.336	.000[b]
	Residual	1.4E+013	311	4.520E+010		
	Total	2.0E+013	313			
3	Regression	8.3E+012	3	2.767E+012	70.807	.000[c]
	Residual	1.2E+013	310	3.908E+010		
	Total	2.0E+013	313			
4	Regression	8.5E+012	4	2.132E+012	55.435	.000[d]
	Residual	1.2E+013	309	3.846E+010		
	Total	2.0E+013	313			
5	Regression	8.7E+012	5	1.739E+012	45.719	.000[e]
	Residual	1.2E+013	308	3.805E+010		
	Total	2.0E+013	313			
6	Regression	8.9E+012	6	1.476E+012	39.184	.000[f]
	Residual	1.2E+013	307	3.766E+010		
	Total	2.0E+013	313			

a. Predictors: (Constant), Strucpsqft

b. Predictors: (Constant), Strucpsqft, Lotsize

c. Predictors: (Constant), Strucpsqft, Lotsize, Landcpsqft

d. Predictors: (Constant), Strucpsqft, Lotsize, Landcpsqft, Intox

e. Predictors: (Constant), Strucpsqft, Lotsize, Landcpsqft, Intox, Discbd

f. Predictors: (Constant), Strucpsqft, Lotsize, Landcpsqft, Intox, Discbd, Disedu

g. Dependent Variable: AV2009

APPENDIX I - Principal Component Analysis Statistical Output Tables – Includes Square Footage - Block Group Level Analysis

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.146	20.582	20.582	5.146	20.582	20.582	4.691	18.764	18.764
2	3.580	14.321	34.903	3.580	14.321	34.903	3.584	14.335	33.098
3	2.492	9.969	44.872	2.492	9.969	44.872	1.933	7.731	40.829
4	2.086	8.342	53.214	2.086	8.342	53.214	1.913	7.651	48.479
5	1.345	5.381	58.596	1.345	5.381	58.596	1.865	7.460	55.939
6	1.303	5.213	63.809	1.303	5.213	63.809	1.558	6.234	62.173
7	1.107	4.426	68.235	1.107	4.426	68.235	1.516	6.063	68.235
8	.943	3.770	72.005						
9	.902	3.607	75.612						
10	.813	3.252	78.865						
11	.758	3.030	81.895						
12	.743	2.972	84.867						
13	.659	2.634	87.501						
14	.642	2.566	90.067						
15	.464	1.855	91.922						
16	.456	1.823	93.745						
17	.344	1.377	95.122						
18	.302	1.207	96.329						

19	.240	.962	97.291						
20	.178	.711	98.002						
21	.167	.667	98.668						
22	.120	.479	99.148						
23	.092	.366	99.514						
24	.074	.298	99.812						
25	.047	.188	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Sqft	.333	-.145	-.092	.024	.682	.207	-.050
Age	.013	-.151	.594	.144	.351	.313	.028
Lotsize	.268	-.133	-.769	.043	.161	.000	-.093
Vacancy	-.274	.066	.052	.310	-.027	.517	.012
Graffiti	-.035	-.008	.050	-.090	-.063	.832	-.024
Trash	-.017	-.036	-.099	.781	-.030	-.063	.062
BDW	-.175	.115	.092	.722	-.046	.506	-.067
Vegetation	-.154	.076	.069	.671	-.052	.011	-.045
Vice	.079	.057	-.195	-.019	.057	.145	.701
Intox	-.113	.094	-.005	-.088	.657	-.137	.164
Noise	-.066	-.013	.311	-.087	-.097	-.126	.452
Fight	-.130	.006	.071	.089	.045	-.054	.694
Loiters	-.010	.150	.215	-.096	.497	-.044	.505
Poverty	-.224	.763	.238	.152	.212	.040	.000
Income24kandless	.152	.842	.202	.159	.211	.032	.044
Income25kto49k	.607	.622	-.055	-.148	-.115	-.061	.022
Income50kto74k	.777	.308	-.156	-.157	-.179	-.063	.036
Income75kandup	.865	-.161	-.142	-.045	-.018	-.027	-.082
Nodiploma	-.272	.864	-.124	.075	.035	.060	.043
Diploma	.019	.872	-.271	-.125	-.082	-.019	.061
Degree	.961	.034	.043	-.057	-.004	-.034	-.017
AdvancedDegree	.907	-.178	.068	-.042	.033	-.020	-.064
Unemployed	-.185	.255	.137	-.044	.576	-.114	-.099
Lotcpsqft	.474	-.105	.705	.008	.254	.018	-.012
Strucpsqft	.681	-.214	.095	-.214	.078	-.328	-.061

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

APPENDIX J

Multiple Regression Analysis Statistical Output Tables – Block Group Level Analysis – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	217750.854	18900.114		11.521	.000
	REGR factor score 5 for analysis 1	192731.088	18958.719	.626	10.166	.000
2	(Constant)	217750.854	15137.461		14.385	.000
	REGR factor score 5 for analysis 1	192731.088	15184.399	.626	12.693	.000
	REGR factor score 1 for analysis 1	144392.848	15184.399	.469	9.509	.000
3	(Constant)	217750.854	14501.679		15.016	.000
	REGR factor score 5 for analysis 1	192731.088	14546.646	.626	13.249	.000
	REGR factor score 1 for analysis 1	144392.848	14546.646	.469	9.926	.000
	REGR factor score 2 for analysis 1	-56801.531	14546.646	-.185	-3.905	.000

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.980E12	1	5.980E12	103.344	.000[a]
	Residual	9.259E12	160	5.787E10		
	Total	1.524E13	161			
2	Regression	9.337E12	2	4.669E12	125.766	.000[b]
	Residual	5.902E12	159	3.712E10		
	Total	1.524E13	161			
3	Regression	9.857E12	3	3.286E12	96.439	.000[c]
	Residual	5.383E12	158	3.407E10		
	Total	1.524E13	161			

a. Predictors: (Constant), REGR factor score 5 for analysis 1

b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1

c. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 2 for analysis 1

d. Dependent Variable: AV2009

APPENDIX K
Principal Component Analysis Statistical Output Tables – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.077	21.155	21.155	5.077	21.155	21.155	4.577	19.071	19.071
2	3.579	14.913	36.068	3.579	14.913	36.068	3.52	14.667	33.738
3	2.372	9.883	45.951	2.372	9.883	45.951	2.042	8.509	42.247
4	2.081	8.671	54.622	2.081	8.671	54.622	1.923	8.012	50.259
5	1.312	5.468	60.09	1.312	5.468	60.09	1.608	6.702	56.961
6	1.163	4.847	64.937	1.163	4.847	64.937	1.496	6.232	63.193
7	1.075	4.478	69.415	1.075	4.478	69.415	1.493	6.222	69.415
8	0.922	3.843	73.257						
9	0.833	3.472	76.729						
10	0.807	3.362	80.091						
11	0.758	3.156	83.247						
12	0.743	3.096	86.343						
13	0.649	2.704	89.047						
14	0.553	2.306	91.353						
15	0.461	1.921	93.274						
16	0.368	1.533	94.807						
17	0.321	1.336	96.143						
18	0.241	1.006	97.149						
19	0.181	0.756	97.905						
20	0.167	0.696	98.601						
21	0.12	0.499	99.1						
22	0.094	0.391	99.491						
23	0.074	0.31	99.802						
24	0.048	0.198	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Age	.007	-.135	.682	.145	.193	.232	.033
Lotsize	.275	-.132	-.680	.072	.031	-.032	-.034
Vacancy	-.270	.059	.075	.320	-.025	.517	.024
Graffiti	-.029	-.019	.080	-.076	-.066	.850	-.006
Trash	-.019	-.031	-.082	.780	-.057	-.080	.074
BDW	-.173	.113	.117	.729	-.059	.501	-.052
Vegetation	-.150	.070	.045	.664	.009	.032	-.050
Vice	.080	.050	-.159	-.020	.059	.144	.713
Intox	-.038	.025	-.029	-.061	.811	-.023	.152
Noise	-.114	.032	.370	-.105	-.232	-.253	.446
Fight	-.137	.005	.080	.073	.064	-.062	.684
Loiters	.019	.124	.244	-.089	.519	-.029	.497
Poverty	-.225	.762	.253	.157	.214	.014	-.004
Income24kandless	.147	.844	.218	.159	.194	.013	.044
Income25kto49k	.598	.628	-.085	-.157	-.084	-.041	.019
Income50kto74k	.767	.317	-.179	-.166	-.171	-.042	.040
Income75kandup	.873	-.157	-.124	-.038	-.068	-.023	-.065
Nodiploma	-.280	.861	-.126	.078	.071	.057	.047
Diploma	.010	.869	-.297	-.126	-.018	.002	.065
Degree	.960	.043	.050	-.060	-.052	-.030	-.010
AdvancedDegree	.914	-.172	.087	-.039	-.028	-.024	-.054
Unemployed	-.136	.214	.138	-.021	.638	-.065	-.106
Lotcpsqft	.468	-.088	.740	-.002	.147	-.034	-.027
Strucpsqft	.695	-.218	.068	-.217	.091	-.298	-.073

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

APPENDIX L

Multiple Regression Analysis Statistical Output Tables – Block Group Level of Analysis – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	217750.854	21689.285		10.040	.000
	REGR factor score 1 for analysis 2	137546.493	21756.539	.447	6.322	.000
2	(Constant)	217750.854	20496.704		10.624	.000
	REGR factor score 1 for analysis 2	137546.493	20560.260	.447	6.690	.000
	REGR factor score 5 for analysis 2	92316.610	20560.260	.300	4.490	.000
3	(Constant)	217750.854	20208.533		10.775	.000
	REGR factor score 1 for analysis 2	137546.493	20271.195	.447	6.785	.000
	REGR factor score 5 for analysis 2	92316.610	20271.195	.300	4.554	.000
	REGR factor score 2 for analysis 2	-47828.750	20271.195	-.155	-2.359	.020

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.046E12	1	3.046E12	39.969	.000[a]
	Residual	1.219E13	160	7.621E10		
	Total	1.524E13	161			
2	Regression	4.418E12	2	2.209E12	32.458	.000[b]
	Residual	1.082E13	159	6.806E10		
	Total	1.524E13	161			
3	Regression	4.786E12	3	1.595E12	24.116	.000[c]
	Residual	1.045E13	158	6.616E10		
	Total	1.524E13	161			

a. Predictors: (Constant), REGR factor score 1 for analysis 2

b. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 5 for analysis 2

c. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 5 for analysis 2, REGR factor score 2 for analysis 2

d. Dependent Variable: AV2009

APPENDIX M

Multiple Regression Analysis Statistical Output Tables – Utilizing Above Average Physical Incivility Component Scores – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	271305.0	36810.243		7.370	.000
	REGR factor score 5 for analysis 1	469227.9	33991.611	.911	13.804	.000
2	(Constant)	230666.0	29918.709		7.710	.000
	REGR factor score 5 for analysis 1	422255.4	28185.971	.820	14.981	.000
	REGR factor score 1 for analysis 1	122212.7	24146.049	.277	5.061	.000
3	(Constant)	234401.0	28769.578		8.148	.000
	REGR factor score 5 for analysis 1	420498.7	27063.105	.816	15.538	.000
	REGR factor score 1 for analysis 1	113013.4	23597.453	.256	4.789	.000
	REGR factor score 2 for analysis 1	-53949.2	26139.931	-.105	-2.064	.046

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.0E+013	1	1.045E+013	190.557	.000[a]
	Residual	2.1E+012	39	5.486E+010		
	Total	1.3E+013	40			
2	Regression	1.1E+013	2	5.658E+012	168.229	.000[b]
	Residual	1.3E+012	38	3.363E+010		
	Total	1.3E+013	40			
3	Regression	1.1E+013	3	3.816E+012	123.193	.000[c]
	Residual	1.1E+012	37	3.098E+010		
	Total	1.3E+013	40			

a. Predictors: (Constant), REGR factor score 5 for analysis 1

b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1

c. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 2 for analysis 1

d. Dependent Variable: AV2009

APPENDIX N

Multiple Regression Analysis Statistical Output Tables – Utilizing Above Average Physical Incivility Component Scores – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	327849.3	62383.447		5.255	.000
	REGR factor score 5 for analysis 2	736279.3	125262.3	.676	5.878	.000
2	(Constant)	276022.5	56936.164		4.848	.000
	REGR factor score 5 for analysis 2	647018.0	113331.9	.594	5.709	.000
	REGR factor score 1 for analysis 2	167315.4	47013.150	.370	3.559	.001

a. Dependent Variable: AV2009

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.8E+012	1	5.776E+012	34.550	.000[a]
	Residual	6.9E+012	41	1.672E+011		
	Total	1.3E+013	42			
2	Regression	7.4E+012	2	3.712E+012	28.523	.000[b]
	Residual	5.2E+012	40	1.302E+011		
	Total	1.3E+013	42			

a. Predictors: (Constant), REGR factor score 5 for analysis 2

b. Predictors: (Constant), REGR factor score 5 for analysis 2, REGR factor score 1 for analysis 2

c. Dependent Variable: AV2009

APPENDIX O

Multiple Regression Analysis Statistical Output Tables – Utilizing Above Average Social Incivility Component Scores – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	191711.1	16392.453		11.695	.000
	REGR factor score 1 for analysis 1	86253.953	15952.123	.623	5.407	.000
2	(Constant)	179757.5	12769.707		14.077	.000
	REGR factor score 1 for analysis 1	91840.096	12298.619	.664	7.468	.000
	REGR factor score 5 for analysis 1	68136.985	11883.080	.510	5.734	.000
3	(Constant)	166374.0	12182.482		13.657	.000
	REGR factor score 1 for analysis 1	79847.913	11648.791	.577	6.855	.000
	REGR factor score 5 for analysis 1	70167.052	10733.049	.525	6.537	.000
	REGR factor score 3 for analysis 1	37619.263	11173.933	.283	3.367	.002
4	(Constant)	170308.8	11482.345		14.832	.000
	REGR factor score 1 for analysis 1	84863.905	11047.435	.613	7.682	.000
	REGR factor score 5 for analysis 1	75718.092	10242.082	.566	7.393	.000
	REGR factor score 3 for analysis 1	33350.932	10565.318	.251	3.157	.003
	REGR factor score 2 for analysis 1	-33333.1	12307.476	-.210	-2.708	.010

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.8E+011	1	3.768E+011	29.236	.000[a]
	Residual	5.9E+011	46	1.289E+010		
	Total	9.7E+011	47			
2	Regression	6.3E+011	2	3.135E+011	41.188	.000[b]
	Residual	3.4E+011	45	7611974881		
	Total	9.7E+011	47			
3	Regression	7.0E+011	3	2.324E+011	37.543	.000[c]
	Residual	2.7E+011	44	6190313247		
	Total	9.7E+011	47			
4	Regression	7.4E+011	4	1.842E+011	34.045	.000[d]
	Residual	2.3E+011	43	5411196731		
	Total	9.7E+011	47			

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1

c. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 3 for analysis 1

d. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1

e. Dependent Variable: AV2009

APPENDIX P

Multiple Regression Analysis Statistical Output Tables – Utilizing Above Average Social Incivility Component Scores – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	263825.7	71002.677		3.716	.001
	REGR factor score 1 for analysis 2	213266.8	69173.264	.425	3.083	.004

a. Dependent Variable: AV2009

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.2E+012	1	2.156E+012	9.505	.004[a]
	Residual	9.8E+012	43	2.269E+011		
	Total	1.2E+013	44			

a. Predictors: (Constant), REGR factor score 1 for analysis 2

b. Dependent Variable: AV2009

APPENDIX Q

Principal Component Analysis Statistical Output Tables – North Side Area Neighborhood – Includes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.594	23.307	23.307	5.594	23.307	23.307	4.831	20.131	20.131
2	4.685	19.521	42.828	4.685	19.521	42.828	4.719	19.663	39.794
3	2.749	11.455	54.283	2.749	11.455	54.283	3.03	12.627	52.421
4	2.596	10.817	65.1	2.596	10.817	65.1	2.719	11.33	63.751
5	1.705	7.106	72.206	1.705	7.106	72.206	1.936	8.067	71.817
6	1.341	5.587	77.793	1.341	5.587	77.793	1.434	5.976	77.793
7	0.971	4.048	81.841						
8	0.911	3.794	85.635						
9	0.824	3.434	89.069						
10	0.619	2.578	91.648						
11	0.441	1.836	93.484						
12	0.393	1.639	95.123						
13	0.304	1.266	96.389						
14	0.229	0.955	97.344						
15	0.205	0.855	98.199						
16	0.145	0.604	98.803						
17	0.111	0.463	99.266						
18	0.083	0.348	99.614						
19	0.039	0.164	99.778						
20	0.022	0.092	99.87						
21	0.016	0.065	99.936						
22	0.011	0.044	99.98						
23	0.003	0.014	99.994						
24	0.001	0.006	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
Sqft	.083	-.008	.012	.886	-.002	.007
Age	-.039	.009	.303	.671	.067	.359
Lotsize	-.073	.045	-.253	.767	-.009	-.282
Vacant	.160	-.132	.931	-.075	-.064	.106
Trash	-.067	-.062	.868	.057	.058	-.093
BDW	.083	-.122	.957	-.048	-.055	.007
Vegetation	.046	-.168	-.033	-.022	-.076	.876
Vice	.425	.152	-.046	.235	.583	-.102
Intox	-.177	-.120	-.120	-.032	.759	.063
Noise	.055	-.078	.252	-.065	.683	-.319
Fight	.514	-.126	.205	-.207	.239	0.3
Loiters	.344	.072	-.131	.291	.628	.242
Poverty	.827	-.309	.095	-.186	.003	.067
Incomeless24.9k	.813	.149	.099	.164	.120	.030
Incomebtw25kand49.9k	.747	.539	-.139	-.190	.067	-.162
Incomebtw50kand74.9k	.278	.891	-.118	-.071	.104	-.125
Income75kandup	.074	.783	-.192	.473	-.077	-.157
NoDiploma	.945	-.122	.089	-.028	-.054	.043
Diploma	.952	-.088	-.066	-.042	.013	-.055
Degree	.060	.939	-.042	.150	.026	-.056
AdvancedDegree	-.207	.911	-.068	.178	-.074	-.106
Unemployment	.182	-.193	.018	-.478	-.142	.001
Lotcpsqft	-.430	.674	.230	-.291	-.029	.283
Struccpsqft	-.363	.741	-.198	-.021	-.122	.029

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

APPENDIX R
Multiple Regression Analysis Statistical Output Tables – North Side Area Neighborhood – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	174923.530	8758.399		19.972	.000
	REGR factor score 4 for analysis 1	65247.543	8845.550	.725	7.376	.000
2	(Constant)	174923.530	6908.743		25.319	.000
	REGR factor score 4 for analysis 1	65247.543	6977.489	.725	9.351	.000
	REGR factor score 2 for analysis 1	38691.693	6977.489	.430	5.545	.000
3	(Constant)	174923.530	6606.817		26.476	.000
	REGR factor score 4 for analysis 1	65247.543	6672.558	.725	9.778	.000
	REGR factor score 2 for analysis 1	38691.693	6672.558	.430	5.799	.000
	REGR factor score 1 for analysis 1	-15630.557	6672.558	-.174	-2.343	.023

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.129E11	1	2.129E11	54.410	.000[a]
	Residual	1.917E11	49	3.912E9		
	Total	4.046E11	50			
2	Regression	2.877E11	2	1.439E11	59.097	.000[b]
	Residual	1.168E11	48	2.434E9		
	Total	4.046E11	50			
3	Regression	2.999E11	3	9.998E10	44.910	.000[c]
	Residual	1.046E11	47	2.226E9		
	Total	4.046E11	50			

a. Predictors: (Constant), REGR factor score 4 for analysis 1

b. Predictors: (Constant), REGR factor score 4 for analysis 1, REGR factor score 2 for analysis 1

c. Predictors: (Constant), REGR factor score 4 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

d. Dependent Variable: AV2009

APPENDIX S

Principal Component Analysis Statistical Output Tables – North Side Area Neighborhood – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.581	24.265	24.265	5.581	24.265	24.265	4.807	20.902	20.902
2	4.654	20.235	44.5	4.654	20.235	44.5	4.715	20.5	41.402
3	2.726	11.854	56.353	2.726	11.854	56.353	3.018	13.123	54.525
4	2.137	9.293	65.647	2.137	9.293	65.647	2.085	9.064	63.588
5	1.557	6.768	72.414	1.557	6.768	72.414	1.945	8.458	72.046
6	1.341	5.83	78.244	1.341	5.83	78.244	1.425	6.198	78.244
7	0.968	4.208	82.452						
8	0.832	3.617	86.069						
9	0.782	3.4	89.47						
10	0.618	2.685	92.155						
11	0.439	1.909	94.064						
12	0.374	1.626	95.689						
13	0.26	1.13	96.82						
14	0.226	0.984	97.804						
15	0.16	0.694	98.497						
16	0.135	0.587	99.084						
17	0.098	0.427	99.512						
18	0.052	0.224	99.736						
19	0.026	0.111	99.847						
20	0.016	0.068	99.915						
21	0.014	0.062	99.976						
22	0.003	0.015	99.991						
23	0.002	0.009	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
Age	-.027	.015	.310	.610	.085	.379
Lotsize	-.047	.041	-.237	.811	-.015	-.250
Vacant	.160	-.132	.930	-.091	-.064	.106
Trash	-.063	-.065	.870	.064	.051	-.088
BDW	.082	-.121	.955	-.069	-.053	.006
Vegetation	.049	-.170	-.033	-.028	-.081	.879
Vice	.424	.155	-.043	.209	.594	-.098
Intox	-.185	-.121	-.122	-.045	.762	.057
Noise	.052	-.082	.253	-.045	.676	-.321
Fight	.514	-.131	.206	-.185	.225	.299
Loiters	.345	.075	-.129	.254	.637	.249
Poverty	.822	-.303	.090	-.220	.009	.060
Incomeless24.9k	.815	.153	.101	.131	.125	.036
Incomebtw25kand49.9k	.740	.541	-.140	-.188	.069	-.168
Incomebtw50kand74.9k	.272	.891	-.118	-.063	.106	-.128
Income75kandup	.080	.786	-.185	.457	-.067	-.142
NoDiploma	.946	-.119	.090	-.043	-.051	.044
Diploma	.950	-.083	-.067	-.068	.019	-.056
Degree	.059	.940	-.039	.148	.031	-.052
AdvancedDegree	-.208	.912	-.066	.169	-.069	-.102
Unemployment	.150	-.172	-.004	-.637	-.098	-.035
Lotcpsqft	-.447	.677	.221	-.334	-.018	.266
Struccpsqft	-.360	.733	-.194	.045	-.138	.034

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

APPENDIX T
Multiple Regression Analysis Statistical Output Tables – North Side Area Neighborhood – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	174923.530	9599.740		18.222	.000
	REGR factor score 4 for analysis 2	59036.244	9695.262	.656	6.089	.000
2	(Constant)	174923.530	7894.859		22.157	.000
	REGR factor score 4 for analysis 2	59036.244	7973.417	.656	7.404	.000
	REGR factor score 2 for analysis 2	39424.478	7973.417	.438	4.944	.000

a. Dependent Variable: AV2009

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.743E11	1	1.743E11	37.078	.000[a]
	Residual	2.303E11	49	4.700E9		
	Total	4.046E11	50			
2	Regression	2.520E11	2	1.260E11	39.635	.000[b]
	Residual	1.526E11	48	3.179E9		
	Total	4.046E11	50			

a. Predictors: (Constant), REGR factor score 4 for analysis 2

b. Predictors: (Constant), REGR factor score 4 for analysis 2, REGR factor score 2 for analysis 2

c. Dependent Variable: AV2009

APPENDIX U

Principal Component Analysis Statistical Output Tables – East End Area Neighborhood – Includes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.104	25.431	25.431	6.104	25.431	25.431	4.944	20.598	20.598
2	4.524	18.849	44.281	4.524	18.849	44.281	4.55	18.957	39.555
3	3.199	13.329	57.61	3.199	13.329	57.61	3.838	15.993	55.548
4	2.272	9.466	67.076	2.272	9.466	67.076	2.303	9.597	65.145
5	1.686	7.024	74.099	1.686	7.024	74.099	1.749	7.286	72.432
6	1.222	5.09	79.19	1.222	5.09	79.19	1.422	5.925	78.356
7	1.113	4.637	83.826	1.113	4.637	83.826	1.313	5.47	83.826
8	0.931	3.879	87.705						
9	0.807	3.362	91.067						
10	0.61	2.542	93.609						
11	0.492	2.052	95.66						
12	0.333	1.389	97.05						
13	0.252	1.051	98.1						
14	0.156	0.649	98.749						
15	0.08	0.332	99.081						
16	0.065	0.27	99.351						
17	0.058	0.24	99.591						
18	0.037	0.153	99.745						
19	0.03	0.124	99.869						
20	0.018	0.077	99.946						
21	0.01	0.041	99.987						
22	0.002	0.009	99.996						
23	0.001	0.004	100						
24	4.25E-16	1.77E-15	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Sqft	-.167	.886	.047	-.053	.006	.225	-.019
Age	-.139	.787	.371	-.194	-.193	-.043	-.180
Lotsize	.033	-.147	-.080	.954	-.043	-.021	-.012
Vacant	.067	-.092	.690	-.320	-.066	.322	.275
Graffiti	-.111	.046	.217	-.090	-.029	.899	.011
Trash	-.082	.021	.357	.870	-.033	-.078	.009
BDW	-.147	-.023	.810	.253	-.084	.331	.241
Vegetatoin	-.044	.003	.791	.300	-.023	-.193	.234
Intox	.003	-.116	-.045	-.003	.886	-.015	-.010
Noise	-.149	-.016	-.128	.032	.018	.006	-.897
Fight	.337	.208	-.040	-.022	.652	.006	.025
Loiters	.537	.059	.097	-.187	.546	-.144	-.405
Poverty	.913	-.147	.132	-.074	.146	-.066	.076
IncomeLessthan24.9k	.914	-.018	.163	.085	.230	-.085	.032
Incomebtw25kand49.9k	.629	.232	-.467	.202	-.204	-.019	.003
Incomebtw50kand74.9k	-.115	.290	-.722	.156	-.143	.186	.255
Income75kandup	-.092	.874	-.268	.076	.022	.052	.049
NoDiploma	.917	-.259	-.001	.092	-.003	.010	.067
Diploma	.782	-.209	-.300	-.025	.003	.144	.073
Degree	-.131	.849	-.388	.041	.084	-.048	.114
AdvancedDegree	-.036	.916	-.221	-.003	.102	-.072	-.013
Unemployment	.895	-.186	.115	-.166	.153	-.093	-.035
Lotcpsqft	-.227	.642	.237	-.399	-.054	-.313	.050
Strucpsqft	-.127	.091	-.719	-.116	.077	-.314	.147

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

APPENDIX V

Multiple Regression Analysis Statistical Output Tables – East End Area Neighborhood – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	117689.5	8416.172		13.984	.000
	REGR factor score 2 for analysis 1	80030.01	8529.145	.842	9.383	.000
2	(Constant)	117689.5	7222.27		16.295	.000
	REGR factor score 2 for analysis 1	80030.01	7319.218	.842	10.934	.000
	REGR factor score 3 for analysis 1	-27274.2	7319.218	-.287	-3.726	.001
3	(Constant)	117689.5	6643.274		17.716	.000
	REGR factor score 2 for analysis 1	80030.01	6732.45	.842	11.887	.000
	REGR factor score 3 for analysis 1	-27274.2	6732.45	-.287	-4.051	.000
	REGR factor score 6 for analysis 1	-18273	6732.45	-.192	-2.714	.010
4	(Constant)	117689.5	6107.503		19.27	.000
	REGR factor score 2 for analysis 1	80030.01	6189.487	.842	12.93	.000
	REGR factor score 3 for analysis 1	-27274.2	6189.487	-.287	-4.407	.000
	REGR factor score 6 for analysis 1	-18273	6189.487	-.192	-2.952	.006
	REGR factor score 1 for analysis 1	-16639.1	6189.487	-.175	-2.688	.011

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.370E11	1	2.370E11	88.043	.000[a]
	Residual	9.690E10	36	2.692E9		
	Total	3.339E11	37			
2	Regression	2.645E11	2	1.323E11	66.722	.000[b]
	Residual	6.937E10	35	1.982E9		
	Total	3.339E11	37			
3	Regression	2.769E11	3	9.229E10	55.028	.000[c]
	Residual	5.702E10	34	1.677E9		
	Total	3.339E11	37			
4	Regression	2.871E11	4	7.177E10	50.636	.000[d]
	Residual	4.678E10	33	1.417E9		
	Total	3.339E11	37			

a. Predictors: (Constant), REGR factor score 2 for analysis 1

b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 3 for analysis 1

c. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 6 for analysis 1

d. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 1 for analysis 1

e. Dependent Variable: AV2009

APPENDIX W

Principal Component Analysis Statistical Output Tables – East End Area Neighborhood – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.714	24.842	24.842	5.714	24.842	24.842	4.969	21.605	21.605
2	4.462	19.4	44.242	4.462	19.4	44.242	3.824	16.626	38.23
3	2.905	12.629	56.871	2.905	12.629	56.871	3.783	16.449	54.68
4	2.244	9.758	66.628	2.244	9.758	66.628	2.32	10.089	64.769
5	1.68	7.305	73.933	1.68	7.305	73.933	1.745	7.588	72.356
6	1.193	5.189	79.122	1.193	5.189	79.122	1.361	5.916	78.273
7	1.098	4.772	83.895	1.098	4.772	83.895	1.293	5.622	83.895
8	0.91	3.956	87.851						
9	0.788	3.424	91.275						
10	0.585	2.541	93.816						
11	0.481	2.089	95.906						
12	0.301	1.309	97.215						
13	0.231	1.004	98.218						
14	0.156	0.677	98.895						
15	0.078	0.341	99.236						
16	0.062	0.271	99.507						
17	0.038	0.165	99.672						
18	0.032	0.138	99.81						
19	0.02	0.087	99.897						
20	0.016	0.07	99.967						
21	0.005	0.021	99.989						
22	0.002	0.007	99.996						
23	0.001	0.004	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Age	-.165	.734	.400	-.235	-.196	-.068	.181
Lotsize	.037	-.113	-.057	.960	-.045	-.021	.014
Vacant	.069	-.120	.689	-.332	-.058	.355	-.235
Graffiti	-.120	-.006	.238	-.108	-.030	.864	.009
Trash	-.087	.009	.379	.855	-.034	-.111	-.017
BDW	-.149	-.056	.827	.231	-.077	.340	-.211
Vegetatoin	-.041	.009	.802	.284	-.013	-.151	-.208
Intox	.004	-.129	-.063	-.001	.883	-.053	-.012
Noise	-.150	-.008	-.130	.034	.019	.014	.919
Fight	.338	.249	-.024	-.023	.654	.060	.005
Loiters	.535	.065	.089	-.193	.546	-.148	.411
Poverty	.914	-.144	.124	-.075	.145	-.086	-.083
IncomeLessthan24.9k	.913	.002	.168	.079	.230	-.093	-.035
Incomebtw25kand49.9k	.626	.290	-.437	.206	-.209	.005	.000
Incomebtw50kand74.9k	-.114	.344	-.690	.172	-.147	.252	-.228
Income75kandup	-.110	.889	-.216	.057	.016	.094	-.020
NoDiploma	.924	-.229	-.003	.100	-.002	.018	-.059
Diploma	.789	-.183	-.303	-.008	.000	.160	-.057
Degree	-.147	.878	-.340	.027	.078	.001	-.094
AdvancedDegree	-.055	.936	-.172	-.026	.097	-.030	.035
Unemployment	.898	-.183	.100	-.166	.152	-.113	.028
Lotcpsqft	-.246	.609	.247	-.428	-.056	-.327	-.068
Strucpsqft	-.120	.145	-.723	-.091	.072	-.261	-.145

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

APPENDIX X

Multiple Regression Analysis Statistical Output Tables – East End Area Neighborhood – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	117689.5	8701.276		13.526	.000
	REGR factor score 2 for analysis 2	78894.65	8818.077	.831	8.947	.000
2	(Constant)	117689.5	7838.961		15.013	.000
	REGR factor score 2 for analysis 2	78894.65	7944.186	.831	9.931	.000
	REGR factor score 3 for analysis 2	-24299.2	7944.186	-.256	-3.059	.004
3	(Constant)	117689.5	7306.41		16.108	.000
	REGR factor score 2 for analysis 2	78894.65	7404.487	.831	10.655	.000
	REGR factor score 3 for analysis 2	-24299.2	7404.487	-.256	-3.282	.002
	REGR factor score 1 for analysis 2	-18567.6	7404.487	-.195	-2.508	.017
4	(Constant)	117689.5	6748.938		17.438	.000
	REGR factor score 2 for analysis 2	78894.65	6839.532	.831	11.535	.000
	REGR factor score 3 for analysis 2	-24299.2	6839.532	-.256	-3.553	.001
	REGR factor score 1 for analysis 2	-18567.6	6839.532	-.195	-2.715	.010
	REGR factor score 6 for analysis 2	-17899.3	6839.532	-.188	-2.617	.013

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.303E11	1	2.303E11	80.047	.000[a]
	Residual	1.036E11	36	2.877E9		
	Total	3.339E11	37			
2	Regression	2.521E11	2	1.261E11	53.991	.000[b]
	Residual	8.173E10	35	2.335E9		
	Total	3.339E11	37			
3	Regression	2.649E11	3	8.830E10	43.529	.000[c]
	Residual	6.897E10	34	2.029E9		
	Total	3.339E11	37			
4	Regression	2.768E11	4	6.919E10	39.975	.000[d]
	Residual	5.712E10	33	1.731E9		
	Total	3.339E11	37			

a. Predictors: (Constant), REGR factor score 2 for analysis 2

b. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2

c. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 1 for analysis 2

d. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 1 for analysis 2, REGR factor score 6 for analysis 2

e. Dependent Variable: AV2009

APPENDIX Y

Principal Component Analysis Statistical Output Tables – Central Area Neighborhood – Includes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.307	27.423	27.423	6.307	27.423	27.423	4.175	18.153	18.153
2	4.178	18.164	45.587	4.178	18.164	45.587	3.913	17.013	35.167
3	2.657	11.554	57.141	2.657	11.554	57.141	3.209	13.954	49.121
4	2.566	11.158	68.299	2.566	11.158	68.299	2.925	12.718	61.839
5	1.93	8.39	76.689	1.93	8.39	76.689	2.528	10.993	72.832
6	1.548	6.731	83.42	1.548	6.731	83.42	1.926	8.374	81.206
7	1.069	4.649	88.069	1.069	4.649	88.069	1.578	6.863	88.069
8	0.74	3.217	91.285						
9	0.662	2.879	94.164						
10	0.544	2.365	96.529						
11	0.289	1.258	97.787						
12	0.245	1.064	98.851						
13	0.13	0.564	99.416						
14	0.084	0.364	99.779						
15	0.031	0.134	99.913						
16	0.013	0.057	99.97						
17	0.003	0.015	99.985						
18	0.002	0.009	99.993						
19	0.002	0.007	100						
20	7.85E-20	3.42E-19	100						
21	-1.56E-18	-6.79E-18	100						
22	-2.26E-16	-9.81E-16	100						
23	-5.00E-16	-2.17E-15	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Sqft	.167	.051	-.084	.106	.935	.005	.050
Age	.352	-.076	-.156	.433	.011	.497	.405
Lotsize	.017	-.003	.081	-.079	.945	-.153	-.049
Vacant	-.073	-.053	-.040	-.144	-.032	-.064	.913
Trash	-.126	-.125	.978	-.006	-.030	-.063	-.040
BDW	-.126	-.125	.978	-.006	-.030	-.063	-.040
Vegetation	-.126	-.125	.978	-.006	-.030	-.063	-.040
Intox	-.145	-.213	-.197	-.118	.628	.425	-.164
Noise	.002	-.143	-.172	-.139	-.238	.585	.486
Fight	.069	.083	-.007	.089	-.017	.836	-.147
Loiters	.011	.527	-.110	-.103	.257	.524	.134
Poverty	-.014	.028	.011	.963	-.103	.031	-.057
Incomelessthan24.9k	.009	.381	-.072	.884	-.024	-.002	-.078
Incomebtw25kand49.9k	.073	.930	-.164	.185	-.118	.047	.004
Incomebtw50kand74.9k	.101	.938	-.094	.190	.000	-.039	-.153
Income75kandup	.860	.397	-.129	.051	-.012	-.156	-.183
NoDiploma	-.775	.045	.083	.492	-.054	.210	-.209
Diploma	-.693	.405	.025	.360	-.095	-.206	.328
Degree	.431	.823	-.141	.222	.052	.058	-.013
AdvancedDegree	.718	.634	-.179	.016	-.088	-.107	-.085
Unemployment	-.093	.415	.083	.624	.384	.037	.179
Lotcpsqft	.824	.106	-.314	.237	-.114	.098	.028
Strucpsqft	.847	.166	.004	.006	.177	.034	-.103

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

APPENDIX Z

Multiple Regression Analysis Statistical Output Tables – Central Area Neighborhood – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	344499.999	34161.938		10.084	.000
	REGR factor score 5 for analysis 1	512166.624	34620.508	.927	14.794	.000
2	(Constant)	344499.999	26842.032		12.834	.000
	REGR factor score 5 for analysis 1	512166.624	27202.344	.927	18.828	.000
	REGR factor score 1 for analysis 1	131339.259	27202.344	.238	4.828	.000
3	(Constant)	344499.999	25668.226		13.421	.000
	REGR factor score 5 for analysis 1	512166.624	26012.782	.927	19.689	.000
	REGR factor score 1 for analysis 1	131339.259	26012.782	.238	5.049	.000
	REGR factor score 4 for analysis 1	53779.729	26012.782	.097	2.067	.046

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.706E12	1	9.706E12	218.855	.000[a]
	Residual	1.597E12	36	4.435E10		
	Total	1.130E13	37			
2	Regression	1.034E13	2	5.172E12	188.903	.000[b]
	Residual	9.583E11	35	2.738E10		
	Total	1.130E13	37			
3	Regression	1.045E13	3	3.484E12	139.142	.000[c]
	Residual	8.512E11	34	2.504E10		
	Total	1.130E13	37			

a. Predictors: (Constant), REGR factor score 5 for analysis 1

b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1

c. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 4 for analysis 1

d. Dependent Variable: AV2009

APPENDIX AA – Principal Component Analysis Statistical Output Tables – Central Area Neighborhood – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.258	28.446	28.446	6.258	28.446	28.446	4.144	18.837	18.837
2	4.175	18.976	47.422	4.175	18.976	47.422	3.799	17.267	36.104
3	2.656	12.074	59.497	2.656	12.074	59.497	3.200	14.544	50.648
4	1.946	8.845	68.342	1.946	8.845	68.342	3.148	14.309	64.958
5	1.846	8.392	76.734	1.846	8.392	76.734	2.258	10.265	75.223
6	1.530	6.953	83.687	1.530	6.953	83.687	1.862	8.464	83.687
7	.994	4.516	88.203						
8	.680	3.091	91.294						
9	.653	2.969	94.263						
10	.487	2.215	96.478						
11	.284	1.290	97.768						
12	.229	1.042	98.809						
13	.129	.585	99.394						
14	.083	.379	99.773						
15	.031	.140	99.913						
16	.013	.058	99.971						
17	.003	.014	99.985						
18	.002	.009	99.994						

19	.001	.006	100.000						
20	-1.426E-19	-6.483E-19	100.000						
21	-2.423E-18	-1.101E-17	100.000						
22	-2.735E-16	-1.243E-15	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
Age	.329	-.093	-.161	.325	.693	-.042
Lotsize	.060	-.003	.069	-.060	-.178	.797
Vacant	-.105	-.109	-.065	-.348	.356	-.298
Trash	-.125	-.124	.977	.006	-.083	-.019
BDW	-.125	-.124	.977	.006	-.083	-.019
Vegetation	-.125	-.124	.977	.006	-.083	-.019
Intox	-.121	-.170	-.193	-.056	.273	.796
Noise	-.064	-.114	-.163	-.263	.734	-.305
Fight	.044	.150	.016	.123	.672	.176
Loiters	.009	.559	-.106	-.113	.492	.283
Poverty	-.006	-.001	.006	.946	.106	-.175
Incomelessthan24.9k	.031	.350	-.078	.884	.048	-.104
Incomebtw25kand49.9k	.089	.920	-.166	.196	.041	-.155
Incomebtw50kand74.9k	.130	.930	-.095	.238	-.109	-.021
Income75kandup	.878	.375	-.130	.078	-.186	-.049
NoDiploma	-.754	.040	.081	.543	-.267	-.046
Diploma	-.664	.410	.027	.446	-.339	-.054
Degree	.454	.804	-.146	.230	.065	.004
AdvancedDegree	.733	.612	-.181	.031	-.113	-.128
Unemployment	-.045	.400	.074	.672	-.007	.376
Lotcpsqft	.811	.089	-.312	.198	.166	-.194
Strucpsqft	.862	.155	.003	.018	.016	.169

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

APPENDIX AB

Multiple Regression Analysis Statistical Output Tables – Central Area Neighborhood – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	344499.999	60357.896		5.708	.000
	REGR factor score 6 for analysis 2	413241.063	61168.106	.748	6.756	.000
2	(Constant)	344499.999	55721.921		6.182	.000
	REGR factor score 6 for analysis 2	413241.063	56469.900	.748	7.318	.000
	REGR factor score 1 for analysis 2	151939.469	56469.900	.275	2.691	.011

a. Dependent Variable: AV2009

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.318E12	1	6.318E12	45.641	.000[a]
	Residual	4.984E12	36	1.384E11		
	Total	1.130E13	37			
2	Regression	7.173E12	2	3.586E12	30.396	.000[b]
	Residual	4.130E12	35	1.180E11		
	Total	1.130E13	37			

a. Predictors: (Constant), REGR factor score 6 for analysis 2

b. Predictors: (Constant), REGR factor score 6 for analysis 2, REGR factor score 1 for analysis 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	344499.999	60357.896		5.708	.000
	REGR factor score 6 for analysis 2	413241.063	61168.106	.748	6.756	.000
2	(Constant)	344499.999	55721.921		6.182	.000
	REGR factor score 6 for analysis 2	413241.063	56469.900	.748	7.318	.000
	REGR factor score 1 for analysis 2	151939.469	56469.900	.275	2.691	.011

c. Dependent Variable: AV2009

APPENDIX AC

Principal Component Analysis Statistical Output Tables – West End Area Neighborhood – Includes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.868	43.713	43.713	7.868	43.713	43.713	6.136	34.091	34.091
2	3.328	18.490	62.203	3.328	18.490	62.203	3.590	19.946	54.037
3	1.988	11.046	73.250	1.988	11.046	73.250	2.644	14.687	68.724
4	1.358	7.547	80.797	1.358	7.547	80.797	2.173	12.073	80.797
5	.954	5.302	86.098						
6	.870	4.833	90.932						
7	.627	3.485	94.417						
8	.458	2.546	96.963						
9	.270	1.499	98.462						
10	.151	.838	99.301						
11	.090	.499	99.800						
12	.036	.200	100.000						
13	4.281E-16	2.378E-15	100.000						
14	3.310E-16	1.839E-15	100.000						
15	1.088E-16	6.044E-16	100.000						
16	-2.637E-16	-1.465E-15	100.000						
17	-3.902E-16	-2.168E-15	100.000						
18	-6.068E-16	-3.371E-15	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Sqft	-.741	.245	.355	-.262
Age	.294	.579	-.100	.400
Lotsize	-.733	-.157	.447	-.298
Intox	.245	-.699	-.075	.218
Noise	.309	-.468	.051	.737
Loiters	.210	.110	-.010	.846
Poverty	.745	-.405	-.023	-.012
Incomeless24.9k	.946	-.148	-.027	.135
Incomesbtw25kand49.9k	.910	-.137	.043	.284
Incomebtw50kand74.9k	.918	.080	-.093	.180
Incomes75kandup	-.093	.255	.892	-.144
NoDiploma	.558	-.586	-.172	.357
Diploma	.723	-.555	-.162	.328
Degree	.816	.097	.499	-.055
AdvancedDegree	-.048	.468	.843	.051
Unemployment	.062	.415	-.569	-.360
Lotcpsqft	-.344	.687	.181	-.085
Strucpsqft	.083	.807	.348	.141

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

APPENDIX AD
Multiple Regression Analysis Statistical Output Tables – West End Area Neighborhood – Includes Square Footage

Coefficients[a]

Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	(Constant)		414434.3	25004.93		16.574	.000
	REGR factor score	1 for analysis 1	-152243	25369.98	-.722	-6.001	.000
2	(Constant)		414434.3	19324.3		21.446	.000
	REGR factor score	1 for analysis 1	-152243	19606.42	-.722	-7.765	.000
	REGR factor score	3 for analysis 1	94545.34	19606.42	.449	4.822	.000
3	(Constant)		414434.3	16958.62		24.438	.000
	REGR factor score	1 for analysis 1	-152243	17206.2	-.722	-8.848	.000
	REGR factor score	3 for analysis 1	94545.34	17206.2	.449	5.495	.000
	REGR factor score	2 for analysis 1	55888.39	17206.2	.265	3.248	.003
4	(Constant)		414434.3	14377.08		28.826	.000
	REGR factor score	1 for analysis 1	-152243	14586.97	-.722	-10.437	.000
	REGR factor score	3 for analysis 1	94545.34	14586.97	.449	6.481	.000
	REGR factor score	2 for analysis 1	55888.39	14586.97	.265	3.831	.001
	REGR factor score	4 for analysis 1	-52860.8	14586.97	-.251	-3.624	.001

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.881E11	1	7.881E11	36.011	.000[a]
	Residual	7.222E11	33	2.188E10		
	Total	1.510E12	34			
2	Regression	1.092E12	2	5.460E11	41.774	.000[b]
	Residual	4.182E11	32	1.307E10		
	Total	1.510E12	34			
3	Regression	1.198E12	3	3.994E11	39.678	.000[c]
	Residual	3.120E11	31	1.007E10		
	Total	1.510E12	34			
4	Regression	1.293E12	4	3.233E11	44.688	.000[d]
	Residual	2.170E11	30	7.235E9		
	Total	1.510E12	34			

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 3 for analysis 1

c. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1

d. Predictors: (Constant), REGR factor score 1 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 4 for analysis 1

e. Dependent Variable: AV2009

APPENDIX AE

Principal Component Analysis Statistical Output Tables – West End Area Neighborhood – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.136	41.979	41.979	7.136	41.979	41.979	5.352	31.480	31.480
2	3.328	19.575	61.555	3.328	19.575	61.555	3.863	22.724	54.204
3	1.947	11.452	73.006	1.947	11.452	73.006	2.441	14.360	68.564
4	1.358	7.990	80.996	1.358	7.990	80.996	2.113	12.432	80.996
5	.922	5.425	86.421						
6	.792	4.661	91.082						
7	.627	3.685	94.767						
8	.413	2.431	97.198						
9	.242	1.426	98.624						
10	.136	.799	99.423						
11	.062	.365	99.788						
12	.036	.212	100.000						
13	4.095E-16	2.409E-15	100.000						
14	2.035E-16	1.197E-15	100.000						
15	1.565E-16	9.205E-16	100.000						
16	-1.476E-16	-8.683E-16	100.000						
17	-5.504E-16	-3.238E-15	100.000						

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.136	41.979	41.979	7.136	41.979	41.979	5.352	31.480	31.480
2	3.328	19.575	61.555	3.328	19.575	61.555	3.863	22.724	54.204
3	1.947	11.452	73.006	1.947	11.452	73.006	2.441	14.360	68.564
4	1.358	7.990	80.996	1.358	7.990	80.996	2.113	12.432	80.996
5	.922	5.425	86.421						
6	.792	4.661	91.082						
7	.627	3.685	94.767						
8	.413	2.431	97.198						
9	.242	1.426	98.624						
10	.136	.799	99.423						
11	.062	.365	99.788						
12	.036	.212	100.000						
13	4.095E-16	2.409E-15	100.000						
14	2.035E-16	1.197E-15	100.000						
15	1.565E-16	9.205E-16	100.000						
16	-1.476E-16	-8.683E-16	100.000						
17	-5.504E-16	-3.238E-15	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Age	.286	.521	-.107	.464
Lotsize	-.699	-.071	.448	-.356
Intox	.218	-.726	-.045	.165
Noise	.280	-.537	.090	.698
Loiters	.191	.027	.015	.859
Poverty	.749	-.429	-.055	-.021
Incomeless24.9k	.940	-.197	-.054	.154
Incomesbtw25kand49.9k	.901	-.194	.026	.297
Incomebtw50kand74.9k	.905	.022	-.115	.219
Incomes75kandup	-.045	.321	.871	-.167
NoDiploma	.519	-.646	-.141	.328
Diploma	.682	-.619	-.136	.306
Degree	.831	.096	.471	-.046
AdvancedDegree	.004	.511	.815	.052
Unemployment	.087	.414	-.641	-.287
Lotcpsqft	-.302	.717	.139	-.040
Strucpsqft	.130	.807	.294	.203

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

APPENDIX AF
Multiple Regression Analysis Statistical Output Tables – West End Area Neighborhood – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	414434.3	27101.41		15.292	.000
	REGR factor score 1 for analysis 2	-139525	27497.07	-.662	-5.074	.000
2	(Constant)	414434.3	22926.76		18.076	.000
	REGR factor score 1 for analysis 2	-139525	23261.47	-.662	-5.998	.000
	REGR factor score 3 for analysis 2	87383.39	23261.47	.415	3.757	.001
3	(Constant)	414434.3	19455.98		21.301	.000
	REGR factor score 1 for analysis 2	-139525	19740.03	-.662	-7.068	.000
	REGR factor score 3 for analysis 2	87383.39	19740.03	.415	4.427	.000
	REGR factor score 2 for analysis 2	72355.69	19740.03	.343	3.665	.001
4	(Constant)	414434.3	17009.33		24.365	.000
	REGR factor score 1 for analysis 2	-139525	17257.65	-.662	-8.085	.000
	REGR factor score 3 for analysis 2	87383.39	17257.65	.415	5.063	.000
	REGR factor score 2 for analysis 2	72355.69	17257.65	.343	4.193	.000
	REGR factor score 4 for analysis 2	-56079.7	17257.65	-.266	-3.25	.003

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.619E11	1	6.619E11	25.747	.000[a]
	Residual	8.483E11	33	2.571E10		
	Total	1.510E12	34			
2	Regression	9.215E11	2	4.608E11	25.045	.000[b]
	Residual	5.887E11	32	1.840E10		
	Total	1.510E12	34			
3	Regression	1.100E12	3	3.665E11	27.663	.000[c]
	Residual	4.107E11	31	1.325E10		
	Total	1.510E12	34			
4	Regression	1.206E12	4	3.016E11	29.785	.000[d]
	Residual	3.038E11	30	1.013E10		
	Total	1.510E12	34			

a. Predictors: (Constant), REGR factor score 1 for analysis 2

b. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 3 for analysis 2

c. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 2 for analysis 2

d. Predictors: (Constant), REGR factor score 1 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 2 for analysis 2, REGR factor score 4 for analysis 2

e. Dependent Variable: AV2009

APPENDIX AG- Principal Component Analysis Statistical Output Tables – South West Area Neighborhood – Includes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.206	31.031	31.031	6.206	31.031	31.031	5.915	29.576	29.576
2	4.890	24.451	55.483	4.890	24.451	55.483	4.428	22.141	51.717
3	1.700	8.502	63.985	1.700	8.502	63.985	2.010	10.048	61.765
4	1.679	8.394	72.379	1.679	8.394	72.379	1.850	9.248	71.013
5	1.234	6.171	78.550	1.234	6.171	78.550	1.507	7.536	78.550
6	.922	4.609	83.158						
7	.756	3.780	86.938						
8	.727	3.637	90.575						
9	.632	3.158	93.734						
10	.518	2.591	96.325						
11	.345	1.723	98.048						
12	.169	.843	98.891						
13	.094	.468	99.359						
14	.059	.297	99.657						
15	.050	.252	99.909						
16	.013	.064	99.973						
17	.005	.023	99.995						
18	.001	.005	100.000						
19	3.345E-16	1.672E-15	100.000						
20	-1.344E-16	-6.718E-16	100.000						

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.206	31.031	31.031	6.206	31.031	31.031	5.915	29.576	29.576
2	4.890	24.451	55.483	4.890	24.451	55.483	4.428	22.141	51.717
3	1.700	8.502	63.985	1.700	8.502	63.985	2.010	10.048	61.765
4	1.679	8.394	72.379	1.679	8.394	72.379	1.850	9.248	71.013
5	1.234	6.171	78.550	1.234	6.171	78.550	1.507	7.536	78.550
6	.922	4.609	83.158						
7	.756	3.780	86.938						
8	.727	3.637	90.575						
9	.632	3.158	93.734						
10	.518	2.591	96.325						
11	.345	1.723	98.048						
12	.169	.843	98.891						
13	.094	.468	99.359						
14	.059	.297	99.657						
15	.050	.252	99.909						
16	.013	.064	99.973						
17	.005	.023	99.995						
18	.001	.005	100.000						
19	3.345E-16	1.672E-15	100.000						
20	-1.344E-16	-6.718E-16	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Sqft	-.186	.730	-.023	-.084	-.148
Age	-.430	-.136	-.202	-.611	-.174
Lotsize	-.208	.840	.084	-.126	-.027
Vacant	-.166	-.399	-.274	-.378	-.179
Vegetation	.098	-.221	.842	-.029	.053
Intox	.685	.020	-.159	-.071	.450
Fight	-.100	-.159	.803	.060	-.088
Loiters	.237	-.213	.117	.708	-.483
Poverty	.871	-.253	.153	.094	.109
Incomelessthan24.9k	.923	-.238	.029	.161	-.063
Incomebtw25kand49.9k	.880	.065	-.226	.067	.228
Incomebtw50kand74.9k	.576	.512	-.307	.182	.226
Income75kandup	-.079	.928	-.199	-.017	.096
NoDiploma	.905	-.174	-.033	.042	-.193
Diploma	.926	-.069	-.006	.143	-.204
Degree	.233	.832	-.298	.122	.272
AdvancedDegree	-.089	.922	-.267	-.094	.161
Unemployment	.767	.136	.253	-.059	-.049
Lotcpsqft	-.178	-.198	-.238	.811	.221
Strucpsqft	-.022	.094	.012	.141	.786

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

APPENDIX AH

Multiple Regression Statistical Output Tables – South West Area Neighborhood – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	244295.745	11640.453		20.987	.000
	REGR factor score 2 for analysis 1	96404.272	11766.299	.774	8.193	.000
2	(Constant)	244295.745	10170.975		24.019	.000
	REGR factor score 2 for analysis 1	96404.272	10280.935	.774	9.377	.000
	REGR factor score 5 for analysis 1	39741.229	10280.935	.319	3.866	.000
3	(Constant)	244295.745	9446.705		25.860	.000
	REGR factor score 2 for analysis 1	96404.272	9548.835	.774	10.096	.000
	REGR factor score 5 for analysis 1	39741.229	9548.835	.319	4.162	.000
	REGR factor score 1 for analysis 1	-27017.494	9548.835	-.217	-2.829	.007

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.275E11	1	4.275E11	67.129	.000[a]
	Residual	2.866E11	45	6.369E9		
	Total	7.141E11	46			
2	Regression	5.002E11	2	2.501E11	51.435	.000[b]
	Residual	2.139E11	44	4.862E9		
	Total	7.141E11	46			
3	Regression	5.337E11	3	1.779E11	42.418	.000[c]
	Residual	1.804E11	43	4.194E9		
	Total	7.141E11	46			

a. Predictors: (Constant), REGR factor score 2 for analysis 1

b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 5 for analysis 1

c. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 1 for analysis 1

d. Dependent Variable: AV2009

APPENDIX AI

Principal Component Analysis Statistical Output Tables – South West Area Neighborhood – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.106	32.136	32.136	6.106	32.136	32.136	5.912	31.116	31.116
2	4.583	24.122	56.258	4.583	24.122	56.258	4.041	21.267	52.383
3	1.684	8.862	65.120	1.684	8.862	65.120	1.977	10.406	62.789
4	1.639	8.625	73.745	1.639	8.625	73.745	1.851	9.744	72.533
5	1.203	6.332	80.077	1.203	6.332	80.077	1.433	7.544	80.077
6	.890	4.685	84.762						
7	.747	3.933	88.696						
8	.635	3.344	92.039						
9	.559	2.941	94.980						
10	.358	1.885	96.865						
11	.328	1.724	98.589						
12	.097	.510	99.100						
13	.077	.406	99.506						
14	.059	.311	99.817						
15	.023	.119	99.936						
16	.011	.056	99.991						
17	.001	.006	99.997						
18	.001	.003	100.000						
19	1.482E-16	7.799E-16	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Age	-.430	-.134	-.204	-.609	-.198
Lotsize	-.248	.830	.098	-.166	-.064
Vacant	-.150	-.424	-.288	-.365	-.127
Vegetation	.106	-.216	.843	-.036	.050
Intox	.681	.047	-.164	-.044	.491
Fight	-.093	-.173	.804	.044	-.090
Loiters	.255	-.172	.133	.676	-.552
Poverty	.882	-.204	.153	.100	.111
Incomelessthan24.9k	.935	-.189	.030	.157	-.069
Incomebtw25kand49.9k	.876	.107	-.226	.075	.244
Incomebtw50kand74.9k	.550	.596	-.282	.169	.158
Income75kandup	-.124	.950	-.177	-.050	.041
NoDiploma	.914	-.145	-.038	.029	-.183
Diploma	.929	.001	.005	.119	-.243
Degree	.193	.877	-.275	.105	.217
AdvancedDegree	-.132	.914	-.255	-.118	.143
Unemployment	.760	.148	.250	-.080	-.034
Lotcpsqft	-.162	-.164	-.226	.839	.182
Strucpsqft	-.029	.157	.027	.190	.722

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

APPENDIX AJ

Multiple Regression Analysis Statistical Output Tables – South West Area Neighborhood – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	244295.745	12140.493		20.122	.000
	REGR factor score 2 for analysis 2	93525.590	12271.746	.751	7.621	.000
2	(Constant)	244295.745	10902.800		22.407	.000
	REGR factor score 2 for analysis 2	93525.590	11020.672	.751	8.486	.000
	REGR factor score 5 for analysis 2	37852.071	11020.672	.304	3.435	.001
3	(Constant)	244295.745	9967.635		24.509	.000
	REGR factor score 2 for analysis 2	93525.590	10075.397	.751	9.283	.000
	REGR factor score 5 for analysis 2	37852.071	10075.397	.304	3.757	.001
	REGR factor score 1 for analysis 2	-31288.072	10075.397	-.251	-3.105	.003

a. Dependent Variable: AV2009

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.024E11	1	4.024E11	58.083	.000[a]
	Residual	3.117E11	45	6.927E9		
	Total	7.141E11	46			
2	Regression	4.683E11	2	2.341E11	41.908	.000[b]
	Residual	2.458E11	44	5.587E9		
	Total	7.141E11	46			
3	Regression	5.133E11	3	1.711E11	36.641	.000[c]
	Residual	2.008E11	43	4.670E9		
	Total	7.141E11	46			

a. Predictors: (Constant), REGR factor score 2 for analysis 2

b. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 5 for analysis 2

c. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 5 for analysis 2, REGR factor score 1 for analysis 2

d. Dependent Variable: AV2009

APPENDIX AK

Principal Component Analysis Statistical Output Tables – South Side Area Neighborhood – Includes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.558	29.807	29.807	6.558	29.807	29.807	5.555	25.252	25.252
2	3.147	14.302	44.110	3.147	14.302	44.110	3.448	15.672	40.924
3	2.043	9.285	53.395	2.043	9.285	53.395	1.977	8.986	49.910
4	1.526	6.938	60.333	1.526	6.938	60.333	1.667	7.577	57.486
5	1.270	5.771	66.104	1.270	5.771	66.104	1.586	7.211	64.697
6	1.132	5.146	71.250	1.132	5.146	71.250	1.316	5.983	70.680
7	1.041	4.734	75.984	1.041	4.734	75.984	1.167	5.304	75.984
8	.891	4.051	80.035						
9	.836	3.799	83.834						
10	.724	3.291	87.126						
11	.679	3.086	90.212						
12	.588	2.671	92.883						
13	.480	2.182	95.065						
14	.328	1.492	96.557						
15	.227	1.031	97.588						
16	.140	.637	98.225						
17	.122	.555	98.781						
18	.085	.385	99.166						
19	.060	.274	99.440						

20	.053	.242	99.682						
21	.043	.194	99.876						
22	.027	.124	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Sqft	-.203	.157	.601	-.119	-.347	-.142	-.106
Age	-.458	-.060	.469	.419	.264	.044	-.182
Lotsize	.009	.006	-.111	-.872	.035	-.075	-.118
Vacant	-.071	-.289	.598	.169	.055	.079	-.302
BDW	.121	.021	.749	.066	.001	.027	.291
Vegetation	-.061	.099	-.005	.123	-.050	-.062	.875
Intox	.026	.050	.024	.048	-.150	.860	-.113
Noise	.016	-.011	-.013	-.120	.823	-.059	.055
Fight	-.133	-.070	-.218	.379	.124	.381	.105
Loiters	-.128	-.115	-.099	.319	.600	-.050	-.224
Poverty	.812	-.108	.205	-.106	.389	.042	.043
Incomelessthan24.9k	.894	.190	.094	-.104	.066	.236	.062
Incomebtw25kand49.9k	.834	.369	-.125	-.178	-.165	.007	-.107
Incomebtw50kand74.9k	.637	.491	-.238	-.072	-.171	-.374	-.006
Income75kandup	.467	.585	-.222	.029	-.232	-.382	-.187
NoDiploma	.893	-.008	-.143	.012	-.138	-.158	-.044
Diploma	.887	.211	-.159	-.153	-.139	-.076	-.121
Degree	.384	.849	.013	-.111	-.044	.032	.053
AdvancedDegree	.112	.882	.105	.067	-.069	-.014	.035
Unemployment	.738	-.132	.025	.070	.051	-.039	.059
Lotcpsqft	-.389	.504	.405	.550	.021	-.072	-.003
Strucpsqft	-.165	.852	-.109	-.009	.010	.070	.122

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

APPENDIX AL

Multiple Regression Analysis Statistical Output Tables – South Side Area Neighborhood – Includes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	124329.8	3605.471		34.484	.000
	REGR factor score 2 for analysis 1	43473.56	3624.803	.781	11.993	.000
2	(Constant)	124329.8	3067.458		40.532	.000
	REGR factor score 2 for analysis 1	43473.56	3083.906	.781	14.097	.000
	REGR factor score 1 for analysis 1	-18529.8	3083.906	-.333	-6.009	.000
3	(Constant)	124329.8	2998.154		41.469	.000
	REGR factor score 2 for analysis 1	43473.56	3014.23	.781	14.423	.000
	REGR factor score 1 for analysis 1	-18529.8	3014.23	-.333	-6.147	.000
	REGR factor score 5 for analysis 1	-6910.21	3014.23	-.124	-2.293	.024
4	(Constant)	124329.8	2946.89		42.19	.000
	REGR factor score 2 for analysis 1	43473.56	2962.691	.781	14.674	.000
	REGR factor score 1 for analysis 1	-18529.8	2962.691	-.333	-6.254	.000
	REGR factor score 5 for analysis 1	-6910.21	2962.691	-.124	-2.332	.022
	REGR factor score 4 for analysis 1	-6041.66	2962.691	-.109	-2.039	.044

a. Dependent Variable: AV2009

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.758E11	1	1.758E11	143.841	.000[a]
	Residual	1.124E11	92	1.222E9		
	Total	2.882E11	93			
2	Regression	2.077E11	2	1.038E11	117.413	.000[b]
	Residual	8.049E10	91	8.845E8		
	Total	2.882E11	93			
3	Regression	2.121E11	3	7.071E10	83.688	.000[c]
	Residual	7.605E10	90	8.450E8		
	Total	2.882E11	93			
4	Regression	2.155E11	4	5.388E10	66.008	.000[d]
	Residual	7.265E10	89	8.163E8		
	Total	2.882E11	93			

a. Predictors: (Constant), REGR factor score 2 for analysis 1

b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

c. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1

d. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1

e. Dependent Variable: AV2009

APPENDIX AM

Principal Component Analysis Statistical Output Tables – South Side Area Neighborhood – Excludes Square Footage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.541	31.147	31.147	6.541	31.147	31.147	5.576	26.551	26.551
2	3.066	14.6	45.746	3.066	14.6	45.746	3.375	16.072	42.623
3	2.019	9.612	55.359	2.019	9.612	55.359	1.781	8.48	51.103
4	1.336	6.364	61.722	1.336	6.364	61.722	1.662	7.913	59.017
5	1.218	5.801	67.523	1.218	5.801	67.523	1.502	7.152	66.169
6	1.132	5.389	72.912	1.132	5.389	72.912	1.289	6.138	72.307
7	1.039	4.947	77.859	1.039	4.947	77.859	1.166	5.551	77.859
8	0.891	4.244	82.103						
9	0.802	3.818	85.92						
10	0.694	3.304	89.224						
11	0.593	2.825	92.049						
12	0.486	2.313	94.362						
13	0.354	1.684	96.046						
14	0.227	1.083	97.129						
15	0.149	0.709	97.838						
16	0.135	0.643	98.481						
17	0.122	0.581	99.062						
18	0.073	0.346	99.408						
19	0.054	0.258	99.666						
20	0.043	0.203	99.869						

21	0.027	0.131	100						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Age	-.475	-.034	.460	.415	.251	.026	-.202
Lotsize	.013	.011	-.140	-.859	.033	-.075	-.107
Vacant	-.108	-.244	.640	.147	-.005	.036	-.347
BDW	.082	.071	.789	.062	-.072	-.019	.244
Vegetation	-.058	.091	.024	.122	-.052	-.061	.875
Intox	.020	.048	.038	.040	-.142	.864	-.111
Noise	.033	-.022	-.009	-.119	.854	-.038	.081
Fight	-.106	-.106	-.270	.411	.204	.431	.147
Loiters	-.120	-.124	-.048	.283	.607	-.049	-.220
Poverty	.802	-.099	.281	-.126	.357	.032	.031
Incomelessthan24.9k	.886	.193	.155	-.121	.036	.228	.052
Incomebtw25kand49.9k	.840	.358	-.127	-.172	-.167	.016	-.101
Incomebtw50kand74.9k	.656	.470	-.284	-.049	-.148	-.351	.012
Income75kandup	.484	.567	-.289	.055	-.207	-.361	-.170
NoDiploma	.899	-.022	-.122	.011	-.136	-.146	-.040
Diploma	.896	.196	-.164	-.144	-.129	-.060	-.110
Degree	.391	.846	-.025	-.098	-.044	.036	.059
AdvancedDegree	.111	.889	.071	.076	-.084	-.021	.030
Unemployment	.741	-.141	.049	.071	.058	-.027	.063
Lotcpsqft	-.389	.514	.308	.583	.051	-.064	-.001
Strucpsqft	-.161	.852	-.112	-.019	-.008	.058	.119

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

APPENDIX AN

Multiple Regression Analysis Statistical Output Tables – South Side Area Neighborhood – Excludes Square Footage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	124329.787	3655.205		34.014	.000
	REGR factor score 2 for analysis 2	43085.634	3674.804	.774	11.725	.000
2	(Constant)	124329.787	3183.658		39.052	.000
	REGR factor score 2 for analysis 2	43085.634	3200.728	.774	13.461	.000
	REGR factor score 1 for analysis 2	-17610.239	3200.728	-.316	-5.502	.000

a. Dependent Variable: AV2009

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.726E11	1	1.726E11	137.466	.000[a]
	Residual	1.155E11	92	1.256E9		
	Total	2.882E11	93			
2	Regression	2.015E11	2	1.007E11	105.738	.000[b]
	Residual	8.670E10	91	9.528E8		
	Total	2.882E11	93			

a. Predictors: (Constant), REGR factor score 2 for analysis 2

b. Predictors: (Constant), REGR factor score 2 for analysis 2, REGR factor score 1 for analysis 2

c. Dependent Variable: AV2009

APPENDIX AO

Multiple Regression Analysis Statistical Output Tables – Vacant Lots Analysis – Includes All Independent Variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	152.755	6.076		25.14	.000
	NoDiploma	-323.379	31.297	-.793	-10.333	.000
2	(Constant)	169.673	7.46		22.746	.000
	NoDiploma	-352.298	30.102	-.864	-11.703	.000
	AvgLotsize	-0.001	0	-.254	-3.443	.001
3	(Constant)	169.186	6.763		25.017	.000
	NoDiploma	-317.916	28.745	-.780	-11.06	.000
	AvgLotsize	-0.002	0	-.284	-4.214	.000
	BDW	-28.871	7.592	-.263	-3.803	.000
4	(Constant)	139.054	10.256		13.558	.000
	NoDiploma	-218.778	37.596	-.537	-5.819	.000
	AvgLotsize	-0.002	0	-.299	-4.855	.000
	BDW	-27.963	6.921	-.255	-4.041	.000
	AdvDegree	184.53	50.213	.330	3.675	.001
5	(Constant)	129.78	9.983		13.001	.000
	NoDiploma	-208.058	35.171	-.510	-5.916	.000
	AvgLotsize	-0.002	0	-.319	-5.536	.000
	BDW	-28.404	6.446	-.259	-4.406	.000
	AdvDegree	167.063	47.079	.299	3.549	.001
	AvgSqft	0.005	0.002	.185	3.192	.002

6	(Constant)	132.29	9.534		13.875	.000
	NoDiploma	-190.051	34.089	-.466	-5.575	.000
	AvgLotsize	-0.002	0	-.320	-5.849	.000
	BDW	-21.341	6.661	-.194	-3.204	.002
	AdvDegree	161.031	44.805	.288	3.594	.001
	AvgSqft	0.005	0.002	.182	3.319	.002
	VacantLot	-53.016	19.62	-.171	-2.702	.009
7	(Constant)	131.307	9.266		14.171	.000
	NoDiploma	-181.933	33.307	-.446	-5.462	.000
	AvgLotsize	-0.002	0	-.319	-5.993	.000
	BDW	-21.646	6.468	-.197	-3.347	.001
	AdvDegree	166.904	43.578	.299	3.83	.000
	AvgSqft	0.005	0.002	.188	3.516	.001
	VacantLot	-57.362	19.153	-.185	-2.995	.004
	Vice	-32.926	15.422	-.109	-2.135	.037

a. Dependent Variable: AggLandandImpValue

ANOVA[h]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62441.210	1	62441.210	106.762	.000[a]
	Residual	36846.525	63	584.865		
	Total	99287.735	64			
2	Regression	68354.015	2	34177.008	68.500	.000[b]
	Residual	30933.720	62	498.931		
	Total	99287.735	64			
3	Regression	74281.973	3	24760.658	60.402	.000[c]
	Residual	25005.762	61	409.931		
	Total	99287.735	64			
4	Regression	78876.354	4	19719.088	57.965	.000[d]
	Residual	20411.381	60	340.190		
	Total	99287.735	64			
5	Regression	81882.131	5	16376.426	55.511	.000[e]
	Residual	17405.604	59	295.010		
	Total	99287.735	64			
6	Regression	83828.241	6	13971.374	52.417	.000[f]
	Residual	15459.493	58	266.543		
	Total	99287.735	64			
7	Regression	84973.056	7	12139.008	48.337	.000[g]
	Residual	14314.679	57	251.135		
	Total	99287.735	64			

a. Predictors: (Constant), NoDiploma

b. Predictors: (Constant), NoDiploma, AvgLotsize

c. Predictors: (Constant), NoDiploma, AvgLotsize, BDW

d. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree

e. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree, AvgSqft

f. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree, AvgSqft, VacantLot

g. Predictors: (Constant), NoDiploma, AvgLotsize, BDW, AdvDegree, AvgSqft, VacantLot, Vice

h. Dependent Variable: AggLandandImpValue

APPENDIX AP

Multiple Regression Analysis Statistical Output Tables – Vacant Lots Analysis – Includes Only Vacant Lots

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	117.157	5.469		21.423	.000
	VacantLot	-171.600	32.633	-.552	-5.258	.000

a. Dependent Variable: AggLandandImpValue

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30285.332	1	30285.332	27.651	.000[a]
	Residual	69002.403	63	1095.276		
	Total	99287.735	64			

a. Predictors: (Constant), VacantLot

b. Dependent Variable: AggLandandImpValue

APPENDIX AQ

Multiple Regression Analysis Statistical Output Tables – Vacant Lots Analysis – Includes All Independent Variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	135.077	5.013		26.945	.000
	NoDiploma	-274.89	25.821	-.802	-10.646	.000
2	(Constant)	132.82	4.555		29.161	.000
	NoDiploma	-240.343	24.869	-.701	-9.664	.000
	BDW	-26.41	6.698	-.286	-3.943	.000
3	(Constant)	111.141	8.939		12.433	.000
	NoDiploma	-170.232	34.615	-.496	-4.918	.000
	BDW	-25.643	6.37	-.278	-4.026	.000
	AdvDegree	128.657	46.42	.274	2.772	.007
4	(Constant)	120.26	8.928		13.47	.000
	NoDiploma	-181.166	32.728	-.528	-5.535	.000
	BDW	-27.704	6.025	-.300	-4.598	.000
	AdvDegree	137.22	43.712	.292	3.139	.003
	AvgLotsize	-0.001	0	-.192	-3.014	.004
5	(Constant)	122.429	8.57		14.285	.000
	NoDiploma	-164.799	31.896	-.481	-5.167	.000
	BDW	-21.333	6.257	-.231	-3.41	.001
	AdvDegree	131.593	41.816	.280	3.147	.003
	AvgLotsize	-0.001	0	-.194	-3.183	.002
	VacantLot	-47.858	18.432	-.183	-2.596	.012

a. Dependent Variable: AggImpValue

ANOVA[f]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45119.843	1	45119.843	113.333	.000[a]
	Residual	25081.370	63	398.117		
	Total	70201.213	64			
2	Regression	50148.064	2	25074.032	77.523	.000[b]
	Residual	20053.149	62	323.438		
	Total	70201.213	64			
3	Regression	52390.885	3	17463.628	59.813	.000[c]
	Residual	17810.328	61	291.973		
	Total	70201.213	64			
4	Regression	54732.832	4	13683.208	53.076	.000[d]
	Residual	15468.381	60	257.806		
	Total	70201.213	64			
5	Regression	56319.008	5	11263.802	47.872	.000[e]
	Residual	13882.205	59	235.292		
	Total	70201.213	64			

a. Predictors: (Constant), NoDiploma

b. Predictors: (Constant), NoDiploma, BDW

c. Predictors: (Constant), NoDiploma, BDW, AdvDegree

d. Predictors: (Constant), NoDiploma, BDW, AdvDegree, AvgLotsize

e. Predictors: (Constant), NoDiploma, BDW, AdvDegree, AvgLotsize, VacantLot

f. Dependent Variable: AggImpValue

APPENDIX AR
Multiple Regression Analysis Statistical Output Tables – Vacant Lots Analysis – Includes Only Vacant Lots

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	105.491	4.487		23.510	.000
	VacantLot	-151.958	26.775	-.582	-5.675	.000

a. Dependent Variable: AggImpValue

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23749.064	1	23749.064	32.209	.000[a]
	Residual	46452.148	63	737.336		
	Total	70201.213	64			

a. Predictors: (Constant), VacantLot

b. Dependent Variable: AggImpValue