DOES THE LIKELY DEMOGRAPHICS OF AFFORDABLE HOUSING JUSTIFY NIMBYISM?

A Thesis

Presented to the faculty of the Department of Public Policy and Administration

California State University, Sacramento

Submitted in partial satisfaction of the requirements for the degree of

MASTER OF PUBLIC POLICY AND ADMINISTRATION

by

Imaez Nusrat Wahid

SUMMER 2018

© 2018

Imaez Nusrat Wahid

ALL RIGHTS RESERVED

DOES THE LIKELY DEMOGRAPHICS OF AFFORDABLE HOUSING JUSTIFY NIMBYISM?

A Thesis

by

Imaez Nusrat Wahid

Approved by:

_____, Committee Chair

Dr. Robert Wassmer

_____, Second Reader Andrew Sturmfels, MPPA

Date

Student: Imaez Nusrat Wahid

I certify that this student has met the requirements for format contained in the University format manual, and that this thesis is suitable for shelving in the Library and credit is to be awarded for the thesis.

_, Department Chair

Dr. Robert Wassmer

Date

Department of Public Policy and Administration

Abstract

of

DOES THE LIKELY DEMOGRAPHICS OF AFFORDABLE HOUSING JUSTIFY NIMBYISM?

by

Imaez N Wahid

Lack of affordable housing opportunities has categorized California as one of the most expensive places to call home in the nation. Approximately 70 percent of the people that call the Golden State their home spend more than 30 percent of their annual income on housing related costs. High housing costs has compelled many Californians' to live in overcrowded and unhealthy homes, and a low quality of life status. The primary reason Californians' have to spend a significant portion of income on housing yet live a low quality of life status is stagnant housing supply. In the last decade, the State's housing production had been below the targeted goal of 180,000 units per year. One of the factors often cited for inadequate housing supply is NIMBY (Not In My Back Yard) - an acronym used to describe people who oppose the siting of development projects such as affordable housing in their locality. Neighborhood (NIMBY) residents or NIMBYies oppose affordable housing within proximity of their homes because of the notion that affordable housing deteriorates neighborhood quality and cause property values to decline. Although NIMBYism is often cited as a major contributing factor to the State's inadequate housing supply, limited research data exists on the validity of local NIMBY group's core argument and the extent to which NIMBYism contributes to the State's housing crisis.

Using a mixed method approach, which includes a quantitative regression analysis and a qualitative (field interview) analysis, this thesis conducted a comprehensive study on NIMBYism

and affordable housing. For the quantitative regression analysis, this thesis adopted a hedonic regression approach to examine whether the greater intensity of affordable housing in a neighborhood reduces the selling price of homes experiencing it. Using home sales data from 2013 Multiple Listing Services (MLS) and demographic data from the United States Census Tract, this thesis observed 4,101 properties sold in Sacramento County to examine the effects of affordable housing household characteristics (low-income households and larger household size) on the final selling price of neighboring properties. For the qualitative research, this thesis interviewed housing experts in the greater Sacramento area. The purpose of this qualitative research was to gather first-hand information on the implications of NIMBYism on the housing development process, and to identify best practical approaches to address NIMBYism.

Despite research limitations, this study offers important findings relevant to the policy debate occurring in California, and other parts of the United States, regarding affordable housing. The quantitative regression results demonstrate that an increase in intended residents of affordable housing in a Census Tract caused the final selling price of properties to decline. The regression results also demonstrate that the neighborhood residents' argument against affordable housing has validity, and that when proposing affordable housing projects in a locality, local officials and housing developers must consider the arguments put forth by local residents.

The qualitative research results demonstrate that NIMBYism is a major contributing factor to the State's housing crisis. The qualitative research results also show that the extent to which NIMBYism stalls affordable housing projects varies from one neighborhood community to another. This thesis found three best practical approaches to mitigate NIMBYism from the housing development process: collaborative governance, community outreach and compensation. This thesis concludes that applying the three methods mentioned above during the housing development process increases opportunities to bridge the gap between proponents and opponents of affordable housing.

____, Committee Chair

Robert Wassmer, Ph.D.

Date

ACKNOWLEDGEMENTS

I would like to take this opportunity to express my sincere gratitude to the individuals who helped me get through this degree program.

To Dr. Robert Wassmer, thank you for your support from day one. Thank you for serving as the committee chair of this thesis and providing thorough and prompt feedback on the chapters. Thank you for advising and supporting me throughout the course of this program. This thesis is incomplete without your encouragement.

To Andrew Sturmfels, thank you for your selfless help and support. Thank you for providing prompt and thorough feedback on the thesis chapters. And thank you for always willing to listen to me and help me get through my academic and career challenges.

To Shareena, thank you for working with me on this thesis, listening to my ideas and providing constructive feedback. Thank you for understanding what accomplishing this degree meant to me and always willing to help me in any way possible.

To Ibnaez and Nafiza, thank you for helping me during hard times. And also thank you to Niloofa for taking care of things at home when I was unable to.

To my father and mother, thank you for teaching me the value of hard work and blessing me with many great bounties. Thank you for supporting me in every way possible and helping me accomplish this educational goal. This degree is for you two.

TABLE OF CONTENTS

Acknowledgments viii			
List of Tables xii			
List of Figures xiii			
Chapter			
1. INTRODUCTION			
Housing in California			
How is Lack of Housing Opportunities Costing Californians? 4			
Addressing California's Housing Challenges			
NIMBYism and Housing in California			
Purpose of this Research			
2. LITERATURE REVIEW 12			
Examining the Impact of Proximity of Affordable Housing on Property Values13			
Measuring the Impact of Different Types of Affordable Housing 17			
Measuring the Impact of Household Characteristics on Property Values 21			
Key Findings on the Quantitative Impact of Affordable Housing			
Defining and Understanding NIMBYism			
Neighborhood Perception towards Affordable Housing			
Addressing NIMBYism			
Key Findings on NIMBYism			
3. METHODOLOGY: QUANTITATIVE REGRESSION			
Scope of Study			
Variables			

Data
Regression Model: Hedonic Regression
Regression Analysis
Multicollinearity
Heteroscedasticity
Regression Results
Key Findings
4. QUALITATIVE RESEARCH: FIELD STUDY
Appropriate Research Approach
Selecting Interview Participants
The International Review Board Requirement71
Conducting the Interview72
Gathering and Analyzing Data75
Key Findings
5. RESULTS AND RECOMMENDATIONS
Effects of Affordable Housing on the Final Selling Price of Residential Properties. 80
Factors Contributing to the State's Housing Crisis
Stakeholder Objectives and Conflicting Interests
Addressing NIMBYism
6. CONCLUSION
Appendix A. Table of Regression Articles
Appendix B. Correlation Coefficients for Pairwise Comparison of Explanatory
Variables 106
Appendix C. Summary of the Qualitative Research 109

Appendix D.	Informed Consent Form	113
Appendix E.	Request to Participate in a Research Study on Housing Affordability	115
References		116

LIST OF TABLES

Page

Tables

1.	Name of Variables, Description and Primary Source	47
2.	Independent Variables Expected Direction of Effect on Selling Price	49
3.	Descriptive Statistics	51
4.	Regression Results in Log-Lin, Linear and Log-Log Form	57
5.	VIF Values for Independent Variables	60
6.	Final Regression Results	62
7.	Description of Housing Organizations	71
8.	Expected Dollar Value Change in 2013 Market Value Home in Sacramento County	
	from Given Changes in Neighborhood Characteristics	81
9.	Goals and Interests of Stakeholders	89

LIST OF FIGURES

Figures		Page
1.	Annual Production of Housing Units 1955-2015	6
2.	Causal Relationship between Affordable Housing and Property Values	39

CHAPTER 1

INTRODUCTION

California's economy of \$2.7 trillion ranks fifth in the world (Segarra, 2018). However, California also has the highest poverty rate per capita and worst quality of life status in the nation (Nichols, 2018). This raises the question that how can the majority of residents of the fifth largest world economy have the worst quality of life status? And why does California have the highest per capita poverty rate in the nation when the State's thriving economy supposedly provides an array of opportunities for an average person to prosper? According to Glaeser (2011), prosperity attracts poverty (p.9). Glaeser (2011) claims that places with thriving economies attract people with a low socioeconomic status (SES) because of the vast economic opportunities they provide for people to enhance their overall quality of life status. Glaeser's claim that places with thriving economies attract people with a low SES is valid and applicable to California. California is viewed as a place with vast education and economic opportunities for people from all walks of life and a place where dreams and aspirations become true. But the State is labeled as the poverty capital of the nation because a greater percentage of its residents live in cost-burdened households.

California is a desirable place to live. But lack of affordable housing opportunities has categorized the Golden State as one of the most expensive places to call home in the nation. Approximately 38 million people reside in California, but only 11 million (30 percent) can afford a healthy and decent home without spending more than 30 percent of income on housing. In 2017, a mere 30 percent of Californians' could afford a median

priced home of \$497,000, while 70 percent of the residents were priced out of the housing market (Glover, 2017). According to PolitiFact California's report on California's poverty and wealth, McKinsey Global Institute's study showed that the State's stagnant housing supply has placed the Golden State at 49 out of 50 in the United States in per capita housing unit (Nichols, 2018). California's housing affordability issue dates back to the late 1980s, when the State first experienced a greater percentage of its population living in financially burden households because of high housing cost. Today, the magnitude of the problem has grown so large that housing experts have labeled it as a "crisis." This chapter discusses California's housing affordability issue. After this introductory paragraph, this chapter provides information on housing in California and how the housing affordability crisis is impacting a greater percentage of Californians' overall quality of life status. This chapter also provides information on why California has a housing affordability crisis and what the State must do to address this crisis. Finally, this chapter provides information on the purpose of this research and a brief description of the remaining chapters.

Housing in California

California has a housing affordability crisis. This housing crisis is impacting a large number of Californians' overall quality of life. At a 2016 Housing Forum discussion, Assembly member David Chiu (D- San Francisco) stated that the American dream is no longer a reality because millions of Californians are struggling to put a roof over their heads (Bannon p.9). According to the Department of Housing and Urban Development (HUD), affordable housing is defined as households spending more than

30 percent of their income on housing related costs. While California rejoices its growing economy, beautiful weather and diversity, the number of people that can attain healthy and affordable homes in the State is declining. According to U.S. News, California ranks 49th in the nation when factoring each State's basic cost of living, housing cost and money available after spending on monthly housing related costs (2018). The State's coastal regions and major metropolitan areas are labelled as the most expensive places to live in the nation because households in these regions are pay on average more than 50 percent of their monthly income on housing related expenses. According to the Department of Housing and Community Development's (HCD) 2017 housing report, approximately 70 percent of California households are categorized as cost-burden because they spend more than 50 percent of their income on housing and transportation. HCD's report further shows that approximately 16 million (43 percent) of Californians are renters and out of that, 3 million (18 percent) Californians spend 30 percent of their income on rent and approximately 1.5 million (9 percent) Californians spend 50 percent of their income towards rent. A household must earn an annual income of \$53,627 to afford a two-bedroom apartment, without paying more than 30 percent of income on housing. A low-income household earns approximately \$1,470 per month while average monthly housing cost in the State is approximately \$1,250. After paying for monthly housing related costs, low-income families have approximately \$220 for other basic necessities such as food, utilities, transportation, school, daycare, etc. In addition, a low-income household must work an additional 129 hours per month to afford a two-bedroom apartment, without paying 30 percent of income on housing costs (HCD, 2017).

How is Lack of Housing Opportunities Costing Californians?

Californians' are unable to achieve financial stability because of lack of affordable housing opportunities. A recent Legislative Analyst Office (LAO) report states that high housing cost is the main reason the State's poverty rate is 23.4 percent, almost nine percent higher than the nation's average poverty rate. Additionally, California's prohibitive housing compels many residents to live far away from the workplace and endure longer commute time. Californians spend on average 55 minutes commuting to work each day and even higher in major metropolitan areas such as Los Angeles (62 minutes) and San Francisco (72 minutes) because of lack of affordable housing opportunities within proximity of workplace (Taylor 2015, p.28). According to Rice (2004), transportation expenditure accounts for 13 percent of household budget for low-income families and 15 percent for all other households.

Lack of affordable housing opportunities also compels many Californians' to reside in overcrowded and substandard homes. According to Taylor (2015), Californians are four times more likely to reside in overcrowded and substandard homes or experience homelessness because of lack of affordable housing opportunities. According to HCD's 2016 report, California has the second highest percentage of overcrowded homes per capita in the nation. The report also highlights that overcrowded homes are 35 percent more likely to experience food insecurity and 69 percent more likely to have foodinsecure children (p.3). The report further shows that California ranks forty-one in the nation in terms of providing shelter and food security. Additionally, HCD's 2017 housing report shows that California has 12 percent of the nation's population, but 22 percent of the nation's homeless population. In 2016, on any given night, 3.1 percent or 118,000 Californians did not have access to a decent and healthy living space (p.60). As summarized, lack of housing opportunities has significant ramification on the social and economic well-being of Californians.

Addressing California's Housing Challenges

Addressing the state's housing challenges is especially important for California because the sizeable percentage of the State's households are low-income households, and the financial burden high housing cost place on them (Harkness and Newman, 2010). Glaeser and Gyourko's (2017) report on housing in California showed that a greater percentage of the State's cost burden households are in the coastal regions and major urban areas and the State must increase affordable housing supply in these areas to meaningfully address its housing crisis (p.4). According to the California Housing Forum's 2016 report, progressive housing policies such as high density multi-family housing units and sustainable housing programs in these regions and surrounding areas are required to address the housing affordability crisis. According to HCD's 2017 housing report, the State needs approximately 1.8 million new housing units, or 180,000 new homes annually between 2015 and 2025 to bridge the gap between housing supply and demand, and increase affordable housing opportunities in California (p. 5). However, between 2005 and 2015, the State supplied less than 80,000 homes annually, 44 percent less than the annual target goal. But the below target production of housing units that the

State experienced in the last decade has not always been the case in California. As Figure 1 shows, between 1980 and 1990, the State was building approximately 200,000 new homes annually, but between 1991 and 2004, the State's annual housing supply was approximately 130,000 units.



Figure 1: Annual Production of Housing Units 1995-2015

bource. Cumornia Department of Housing and Community Development

Why is the State unable to meet its annual housing production goal in recent years? Several factors have been cited for California's inadequate housing supply. Some of the contributing factors are State government's reluctance to invest in affordable housing and home ownership assistance programs; stringent zoning and housing development policies at the local jurisdiction level; and local elected officials unwillingness to support affordable housing initiatives (HCD 2017, p.2). According to a 2015 LAO report on housing, cities often elect to approve commercial developments over residential because commercial developments generate local revenue while residential developments increase local cost burden. Acknowledging the negative consequences of lack of affordable housing opportunities, and the positive correlation between housing affordability and economic prosperity, the State legislature recently approved several funding measures to increase the State's affordable housing opportunities. This includes \$3.2 billion in state and federal funding to construct affordable housing and assist first-time home buyers; \$149.4 million from General Fund for housing and homelessness programs and \$2.7 billion in local bonds for the construction of affordable housing (Kimberline 2017, p.3). Despite the Governor signing the above-mentioned housing initiatives, many housing experts argue that the State will continue to fail in meeting its housing goals, largely due to reluctance from cities and neighborhood communities to support affordable housing initiatives. Taylor (2015) points out that California's housing affordability concerns – which many have labeled a crisis – are in part a result of the State and local government's failure to enforce policies designed to increase the construction of affordable housing (p.18).

While lack of funding for housing and local officials' failure to adopt affordable housing policies are often cited as major factors contributing to the State's housing crisis, another factor that is often overlooked and deserves consideration is neighborhood residents opposition towards affordable housing development. Neighborhood residents may support the concept of more affordable housing in principle, but in practice advocate for NIMBY (not in my backyard) because of the perception that affordable housing developments cause neighboring property values to decline. Housing experts trace the NIMBY phenomenon back to the 1970's when the state experienced an upsurge in urban and coastal communities' opposition towards housing development. Policy makers, elected officials and housing experts have identified NIMBYism as a major contributing factor to the State's housing crises.

NIMBYism and Housing in California

Even though California's Housing Element Law requires that each locality take on its "fair share" of the affordable housing needed for the region that it is a part of, and most localities meet this requirement through zoning land within their borders, the construction of these affordable houses if often curtailed through NIMBYism. The practice of NIMBYism is easier in California because of the misuse of California's Environmental Quality Act (CEQA). Enacted in 1970 under the governorship of Ronald Reagan, the objective of CEQA is to ensure that all public and private development projects pass the appropriate Environmental Impact Review (EIR) before the construction phase. Even though an EIR prolongs the review and approval of a development project, it provides necessary information to relevant stakeholders and to the public about the environmental impact of a development project (Fulton and Shigley, 2015). Although CEQA was enacted to protect the State's climate and natural resources, an unintended consequence of this law is that neighborhood NIMBY groups have used CEQA to stall necessary development projects, including affordable housing. Opponents of affordable housing use CEQA to slow or even halt affordable housing developments even though proposed projects may not have substantial impact on the neighborhood. They use CEQA to commission an unfavorable EIR for an affordable housing project for the economic reason of not wanting to lower residential property values cited earlier, but often cloaked in the language of generating congestion and changing the character of the neighborhood.

Hernandez et.al. (2015) analyzed 600 CEQA lawsuits filed against housing development projects between 2010 and 2012 in California. They concluded that nearly 80 percent of these lawsuits were filed because local groups opposed affordable housing development consisting of infill housing, multi-unit, high-density housing projects. Residential NIMBYism in California, under the guise of an unfavorable EIR as allowed through CEQA has successfully prevented affordable housing development projects from coming to fruition. Even if the positive findings of an affordable housing development's EIR are ultimately valid; the threat of a prolonged challenge to them, and the cost born by the developer if it materializes, discourages the construction of affordable housing in the State.

Purpose of this Research

This chapter discussed how high cost of housing overshadows California's thriving economy. This chapter also discussed how lack of affordable housing opportunities impact Californians' overall quality of life status. This thesis found that a major contributing factor to the State's inadequate housing supply is NIMBYismneighborhood residents adopting NIMBY tactics to oppose unwanted development within proximity of their homes. Using a mixed-method approach, which includes a quantitative regression analysis and qualitative analysis, this thesis conducts a comprehensive research on NIMBYism. The objective of this research is to understand the concerns of neighborhood residents regarding the proximity of affordable housing and determine whether the greater intensity of affordable housing in a neighborhood reduces the selling price of homes experiencing it. After this introductory chapter, this research is divided into five chapters.

Chapter II reviews scholarly literature on affordable housing and NIMBYism. The purpose of reviewing existing literature is to thoroughly understand the implications of affordable housing on property values; why do neighborhood residents elect to adopt NIMBY tactics and how to address the concerns put forth by opponents of affordable housing. This chapter is divided into two parts: the quantitative and qualitative literature review on NIMBY ism. The quantitative literature review section discusses what key explanatory variables previous studies used to examine the relationship between affordable housing and property values. This section is divided into three themes: proximity of affordable housing from neighboring properties; effects of below poverty level households on property values; and effects of different types of affordable housing on property values. The qualitative literature review section discusses why neighborhood NIMBY communities oppose development projects, particularly affordable housing within proximity of their homes. Furthermore, this section provides information on the best practical approaches to address the concerns raised by local NIMBY groups. This section is divided into three themes: *defining NIMBYism, common perception towards* affordable housing and best practical approaches to address NIMBYism.

Chapter III provides information on the methodology used to test the quantitative impact of affordable housing on neighboring property values. Specifically, this chapter discusses the scope of study, variables, data sources, and the regression

model used to test the hypothesis. This chapter concludes with the key findings of the quantitative regression analysis.

Chapter IV provides information on the qualitative research, which includes interviewing housing experts in the greater Sacramento region. The objective of interviewing housing experts is to gather first-hand information on the implications of NIMBYism on the housing development process and identify best practical approaches to address NIMBYism. This chapter discusses the methodology used to conduct the qualitative research. This chapter also discusses the process of selecting the appropriate research method, and the process of conducting face-to-face interviews. This chapter concludes with the process of gathering and analyzing the qualitative research data and the key findings.

Chapter V discusses the results of the quantitative regression analysis. Specifically, this chapter discusses the quantitative impact of affordable housing on the final selling price of neighboring properties. This chapter also discusses the extent to which NIMBYism contributes to the State's housing crisis. Finally, this chapter concludes with recommendations to address NIMBYism.

Chapter 2

LITERATURE REVIEW

The terms NIMBY (Not In My Back Yard), NIMBYies and NIMBYism are used to describe individuals or neighborhood communities who oppose the siting of development projects, including affordable housing in their locality. The NIMBY opposition is based on the perception that affordable housing deteriorates neighborhood quality and depreciates property values. This thesis preliminary research on affordable housing raised the following questions: *what NIMBYism is; who is identified as NIMBYies; are they rational members of the society or selfish home owners; and why do neighborhood residents elect to adopt NIMBY tactics.* This thesis reviewed several scholarly articles on affordable housing and NIMBYism to seek answers to the abovementioned questions. This thesis also reviewed several regression analysis studies to analyze the quantitative impact of affordable housing on neighboring properties. Specifically, this thesis gathered information on the types of regression models and variables previous studies used to assess the quantitative relationship between affordable housing and property values.

This chapter shares substantial information that this thesis deems important to understand the core argument of NIMBYies; affordable housing cause neighboring property values to decline. This chapter is divided into two parts: the quantitative and qualitative literature review on NIMBYism. The quantitative literature review section discusses what key explanatory variables previous studies used to examine the relationship between affordable housing and property values. This section is divided into three themes: *proximity of affordable housing from neighboring properties; effects of below poverty level households on property values; and effects of different types of affordable housing on property values.* The qualitative literature review section discusses why neighborhood NIMBY communities oppose development projects, particularly affordable housing within proximity of their homes. Furthermore, this section provides information on the best practical approaches to address the concerns raised by local NIMBY groups. This section is divided into three themes: *defining NIMBYism, common perception towards affordable housing and best practical approaches to address*

Examining the Impact of Proximity of Affordable Housing on Property Values

Neighborhood residents support policies and programs that increase affordable housing opportunities for socio-economic disadvantaged citizens, but oppose the siting of affordable housing within proximity of their homes. They argue that an increase in the intended residents of affordable housing cause neighborhood crime rates to rise, thus resulting in an adverse effect on neighborhood quality (Albright et.al. 2013, p.89). On the other hand, proponents of affordable housing argue that the siting of affordable housing within proximity have no effect or positive effect on neighboring properties. This thesis found that several studies used proximity of public housing as the key explanatory when testing the quantitative impact of affordable housing on neighboring properties. Prior studies show that measuring distance of affordable housing developments increases opportunities to understand if a neighborhoods character and quality improves as the distance between affordable housing and neighboring properties increases.

Green et.al. (2002) used a repeat sales method, where they analyzed data of properties sold at least twice, to examine whether proximity of Low-Income Housing Tax Credit (LIHTC) developments had a positive or negative effect on the final selling price of neighboring properties. They used housing data from Wisconsin's Department of Housing and Economic Development Authority. They observed 2,258 home sales data from the Milwaukee area and 3,138 home sales data from the Maddison area, two major cities in the state of Wisconsin. After observing a total of 5,396 homes that were sold at least twice, they concluded that a LIHTC development's proximity had minimal negative impact on the properties sold in the Milwaukee area and had no effect on the properties sold in the Madison area. For the Milwaukee area, they found that selling price of properties declined by 0.5 percent as the distance of LIHTC developments increased by one standard deviation. Overall, Green et.al. (2002) concluded that distance of affordable housing developments such as the LIHTC developments have minimal negative effect on the final selling price of properties.

Similarly, Bair and Fitzgerald (2005) used a non-linear functional semi-log form to assess the relationship between HOPE VI and other types of public housing, and final selling price of properties. The HOPE VI affordable housing program was created in 1992 to improve the nations most distressed public housing programs. Bair and Fitzgerald (2005) selected distance of HOPE VI housing and distance of other public housing as the key explanatory variable for their study. They concluded that proximity of public housing had minimal or no effect on neighboring properties. In the case of HOPE VI public housing, they concluded that each quarter mile increase in distance from HOPE VI public housing caused property values to decline by 8.25-10.25 percent. For example, a quarter mile increase of HOPE VI public housing caused a \$200,000 property's value to decline by \$16,500–\$20,500. Bair and Fitzgerald's study provides substantial information on the positive effect of affordable housing on neighboring properties. Their study shows that siting affordable housing in a neighborhood does not cause neighboring property values to decline. In addition, their study shows that adequately funded and well-managed affordable housing programs, such as the HOPE VI housing programs have a positive effect on neighboring property values.

Lee et.al. (1999) also used distance of affordable housing as key explanatory variable to examine the relationship between affordable housing and property values in the Philadelphia area. Using a hedonic linear functional form, they measured the impact of different types of affordable housing located at a quarter mile and one-eighth of a mile in a neighborhood. Lee et.al. (1999) hypothesized that a unit decline in distance between affordable housing and market rate housing would cause the value of market rate housing to decline. They found that selling price of properties located within a quarter mile of a low-income housing declined by 2 percent and selling price of properties located within one-eighth of a mile declined by 4.2 percent. Lee et.al. (1999) concluded that the negative impact of affordable housing on neighboring properties reduces as the distance between affordable housing and market rate housing properties reduces as the distance between

This section provides substantial information on one of the key arguments against affordable housing; affordable housing cause neighboring property values to decline. The studies reviewed in this section show that using distance of affordable housing as a key explanatory variable provides opportunities to understand if siting affordable housing in a neighborhood cause neighboring property values to decline. Two of the studies, Green et.al. (2002) study of affordable housing in the Milwaukee and Madison, Wisconsin area and Bair and Fitzgerald's (2005) study of the HOPE VI affordable housing programs showed that proximity of affordable housing has no effect, positive effect or minimal negative effect on neighboring properties. However, Lee's et.al. (1999) study, which measured the impact of different types of public housing located at a quarter mile and one-eighth of a mile showed that neighboring property values decline as distance between affordable housing and property values decreases. Additionally, their findings showed that the quantitative impact of affordable housing located at a quarter mile and one-eighth located differed for different types of affordable housing. Lee et.al (1999) concluded that while proximity of affordable housing is a good indicator to assess the relationship between affordable housing and property values, it is also essential to assess different types of public housing because the relationship between public housing and property values varies by the type of public housing (p.89). The next section discusses the effects of different types of public housing on neighboring property values.

Measuring the Impact of Different Types of Affordable Housing

Traditional public housing by design were high density buildings often built in the most underdeveloped and undesirable parts of the neighborhood. This led to a higher concentration of socio-economic disadvantaged households in a confined geographical location (Bair and Fitzgerald 2005, p.773). The U.S. Department of Housing and Urban Development (HUD) implemented various types of public housing programs (HOPE VI, LIHTC, Section 8) for the purpose of deconcentrating high poverty neighborhoods and allowing recipients of affordable housing to reside within proximity of other services such as public transportation. Another purpose of the housing voucher program was to provide recipients of affordable housing opportunities to assimilate with other members of the community. However, communities opposing affordable housing programs were often inhospitable towards low-income families settling in their neighborhoods. They cited that regardless of the type of subsidized housing programs, affordable housing has a negative effect on neighborhoods (Nguyen 2005, p.16). This section discusses the effects of different types of public housing on neighboring properties.

Nourse (1963) offers one of the most cited affordable housing studies. In his landmark research, he used hedonic regression model to assess the valuation of neighborhoods that had public housing projects. He compared home sale prices in eight neighborhoods that had traditional public housing projects against three control neighborhoods between 1937 and 1959 in St. Louis, MO. The regression results suggested that homes in public housing neighborhoods and controlled neighborhoods experienced similar pricing trends. Nourse (1963) study shows that public housing did not have a significant negative effect on neighboring property values.

Likewise, Albright et.al. (2013) examined the establishment of Ethel Lawrence Public Housing (ELH), a 140-unit public housing complex in Mt. Laurel, an affluent suburb in New Jersey. The ELH public housing complex opened in late 2000 and was fully occupied by the end of 2001. Using a multiple time series control group quasi experiment, Albright et.al. (2013) examined property values a decade prior to the opening of ELH (1990-2000) and a decade after the opening of the complex (2001-2010). Albright et.al. (2013) also examined property values in three other New Jersey suburbs comparable to Mt. Laurel: Cherry Hill, Cinnamison and Evesham. The final regression results showed that the opening of ELH had no effect in the crime rates in Mt. Laurel. The crime rate trend remained the same a decade after the opening of the ELH complex, thus ELH housing complex had no effect on Mt. Laurels neighborhood crime rate. Additionally, the study showed that the opening of ELH did not have significant effect on property values in Mt. Laurel. Property values in Mt. Laurel continued to trend upwards between 2001 and 2010. Comparing Mt. Laurel with the three other controlled suburbs, Albright et.al. (2013) concluded that property values in Mt. Laurel raised at a similar rate as the other three areas, however property values in Mt. Laurel increased at a slower pace than the other areas after the opening of ELH complex. In conclusion, Albright et.al. (2003) writes that their study found no significant evidence that the opening of ELH had significant negative effect on property values in Mt. Laurel.

Similarly, Lee et.al. (1999) examined the impact of different types of affordable housing (Scattered-Site public housing, Section 8 New Construction and Rehabilitation Housing (Section-8 NCRH) and Section 8 certificate and voucher (Section-8 CV)) on neighboring properties within the city of Philadelphia. They found that properties located within a quarter mile of Scattered-Site public housing experienced a 0.7 percent decline in their value and properties located within a quarter mile of Section-8 NCRH experienced a 0.29 percent decline in their value; and properties located within a quarter mile of Section-8 CV experienced a 0.8 percent decline in their value. Overall, Lee et. al (1999) concluded, regardless of the type of public housing programs, affordable housing had minimal effect on neighboring properties (p.90).

Likewise, Woo et.al. (2015) used an Adjusted Interrupted Time Series- Difference in Difference model to address a simple research question: Do Low-Income Housing Tax Credit (LIHTC) subsidized housing developments negatively impact neighboring property values. This type of subsidized housing program gives developers' tax credit when they propose to build affordable housing in a jurisdiction. Woo et.al. (2015) examined housing prices in Charlotte, North Carolina (NC) and Cleveland, Ohio (OH), before and after the inclusion of LIHTC developments in a neighborhood (tested neighborhoods) and compared the prices with neighborhoods (controlled) that did not elect to adopt LIHTC programs between 1996 and 2007. They found that LIHTC developments had a negative impact on neighboring properties in Charlotte, NC. Before the adoption of LIHTC development program, property values in a (tested) neighborhood were 5.4 percent lower than a (controlled) neighborhood. After the adoption of LIHTC development, property values in a (tested) neighborhood were 6.6 percent lower than a (controlled) neighborhood. Woo et.al. (2015) concluded that LIHTC developments caused neighboring property values to decline in Charlotte.

On the other hand, they found that LIHTC had a positive effect on neighboring property values in Cleveland, OH. Before the adoption of LIHTC development program, a (tested) neighborhood's property value was 8.1 percent lower than a (controlled) neighborhood. After the adoption of the LIHTC development, a (tested) neighborhood's property value was 7.1 percent higher than a (controlled) neighborhood. Woo et.al. (2015) concluded that LIHTC developments had minimal negative impact on neighboring properties; after the siting of LIHTC developments, property values declined by 0.5 percent when compared against neighborhoods that elected to not adopt LIHTC developments. However, LIHTC developments had significant positive effect on neighboring properties. After the inclusion of LIHTC developments, neighborhoods experienced a 1.2 percent incline in their property values when compared against neighborhoods that elected to not adopt LIHTC developments.

Previous studies used different types of affordable housing as key explanatory variables to assess if a particular type of affordable housing exerts greater negative effect on neighboring properties. This section reviewed regression studies that examined the effect of different types of affordable housing on neighboring properties. This thesis concludes that regardless of the type of affordable housing program (high-rise public housing, low-income housing, Section 8 vouchers, LIHTC, or FHA loan programs) public housing has minimal negative effect on neighboring properties. This thesis found that using different types of affordable housing as key explanatory variable provide substantial information on the quantitative relationship between affordable housing and property values. However, this thesis also found that opponents of affordable housing oppose the development of affordable housing within proximity of their homes because of the intended residents of affordable housing than the structure of the housing complex or the type of housing program. Therefore, this thesis deemed it important to review studies that used household characteristics as key explanatory variable to measure the impact of affordable housing on neighboring properties. The next section discusses the effects of affordable housing household characteristics on neighboring properties.

Measuring the Impact of Household Characteristics on Property Values

The NIMBY outcry is largely based on the perception that a higher concentration of recipients of affordable housing would result in a higher crime rate, consequently creating undesirable neighborhoods and causing property values to decline (Albright et.al. 2013). This thesis reviewed several research studies to determine the true effects of affordable housing household characteristics on neighboring property values. This section discusses the key findings of three of the studies; Galster et.al. (2006), Bair and Fizgerald (2005), and Lee et.al. (1999). These studies used household characteristics as key explanatory variables or interacted poverty level with other explanatory variables to examine the relationship between affordable housing and property values.

Galster et.al. (2006) study assessed the social costs of concentrated poverty on neighboring households in the Cleveland metropolitan area. Out of all the academic journal articles reviewed, only Galster's et.al. study used poverty rate as key explanatory variable. They used two empirical models to observe a total of 12,560 single home sales transaction: the first was a hedonic model of home sales between 1993 and 1997 and the second study examined the impact of poverty on neighboring properties between 1990 and 2000. Results from both the studies showed that neighborhoods with less than 10 percent poverty rate had no effect on neighboring property values. Neighborhoods that had poverty rate higher than ten percent had no immediate effect on property values and that poverty rate must remain higher than 10 percent for a decade to have minimal negative effect property values. The decadal assessment of poverty rate and property values showed that a zero percent poverty rate in 1990 must exceed 11 percent in 2000 for property values to decline by 0.83 percent. Furthermore, a 5 percent poverty rate in 1990 must exceed 10 percent in 2000 for below poverty level households to have a negative effect on neighboring home prices. In addition, neighborhoods with poverty rate above

10 percent in 1990 must exceed 19 percent in 2000 to cause neighboring property values to decline by 1.78 percent. Galster's et.al. (2006) study shows no relationship between affordable housing and property values in Census Tracts with less than 10 percent low-income households. Their study also shows that affordable housing households have a minimal negative effect on neighboring property values.

Bair and Fizgerald (2005), Lee et.al. (1999), and Albright et.al (2013) interacted poverty levels with other explanatory variables to assess the impact of below poverty level households on neighboring property values. Bair and Fitzgerald (2005) interacted poverty rate with property characteristics and distance of public housing to analyze the effects of HOPE VI public housing on neighboring property values. They concluded that when poverty rate was measured against property values by itself, it caused property values to decline by 1.4 percent. When poverty rate was interacted with property characteristics and distance of public housing, it caused property value to decline by 0.6 percent. Thus, the results that a neighborhood's poverty rate exerts minimal negative effect on neighboring property values.

Albright et. al. (2013) measured the impact of poverty rate on neighboring properties after the opening of ELH public housing and compared it with communities without public housing complexes. Their study showed that despite the opening of the ELH public housing, Mt. Laurel's poverty rate remained 0.9 percent lower than Cherry Hill. Additionally, despite the opening of the of ELH public housing, Mt. Laurel did not experience social disorganization; increase in violent and non-violent crime rates. Thus, Albright et. al. (2013) concluded that an increase in affordable housing households in an affluent suburban neighborhood does not directly cause property values to decline. However, correlating affordable housing with other factors such as poor management of housing complex and lack of economic opportunities for recipients of affordable housing can lead to social disorganization, resulting in a negative effect on property values.

Similarly, Lee et.al. (1999) controlled for total population below poverty line, average owner-occupied household size and single female parent headed household size when measuring the impact of HOPE VI and other types of affordable housing on neighboring properties. Their study showed that an increase in the total population below poverty line caused neighboring property values to decline by 1.4 percent. Lee et.al.
(1999) concluded that low-income households had minimal negative impact on neighboring properties.

Key Findings on the Quantitative Impact of Affordable Housing

As discussed, existing studies used various methods, including test versus control method, hedonic regression analysis, and repeat sales method to assess the relationship between affordable housing and property values. Previous studies also accounted for several variables, including distance of affordable housing development, percentage of below poverty level households, and types of affordable housing to examine the true effects of affordable housing on neighboring property values. There are two main lessons acquired through this literature review: the first is regardless of the type of affordable housing, affordable housing development has minimal negative effect on neighboring properties. The second lesson is that proximity of affordable housing has minimal effect on neighboring properties. This thesis also found that limited studies used affordable housing occupant characteristics as key explanatory variable to measure the quantitative effect of affordable housing on property values. As mentioned earlier, the core argument of NIMBY groups is that affordable housing cause property values to decline. This thesis concludes that although the literature provides substantial information on the effects of affordable housing, additional research is required using household characteristics as key explanatory variables (household income level, household size and education attainment) to understand the true effects of affordable housing on neighboring properties.

This section discusses why neighborhood communities are reluctant to development projects and strongly oppose affordable housing within proximity of their homes. This section also provides information on the best practical approaches to address the concerns raised by NIMBY groups and mitigate NIMBYism from the housing development process. The section is divided into three themes: *defining NIMBYism, common perception towards affordable housing and best practical approaches to address NIMBYism.*

Defining and Understanding NIMBYism

What is NIMBYism? The acronym NIMBY stands for NOT IN MY BACK YARD! The term NIMBY (Not in My Back Yard) is used to define neighborhood residents who oppose the siting of certain facilities or developments within proximity of their homes (Pol 2004, p.2). According to Dear (1992), the term NIMBY was first coined by British politician Thomas Ridley when residents in London neighborhoods collaborated to protest against locally unwanted land use (LULU) projects. Burningham et.al. (2006), argue that the term is an American English word coined by Walter Rodgers of the American Nuclear Society. Nevertheless, the literature suggests that the term became a mainstream catchphrase during the 1980s when developers and neighborhood residents experienced an increase in neighborhood protest against development projects (Burningham et.al. 2006). However, Dear (1992) writes that NIMBYism is not a new phenomenon. Opposition against development projects dates back to the late 20th century, when residents first began opposing halfway homes for AIDS patients and homeless population in Canada. Today, the NIMBY movement is labeled as a phenomenon because of the ability of ordinary citizens to halt development projects that are necessary for civil societies. This thesis found that NIMBYies share common characteristics and understanding these characteristics is important to address the concerns put forth by local NIMBY groups.

According to Dear (1992), the term NIMBY is used to define neighborhood residents who adopt protectionist tactics to oppose unwelcome developments in their community. These neighborhood residents, who are usually homeowners are labeled as NIMBY ies because they understand that certain facilities and developments are socially necessary and support the idea of building such facilities/developments but oppose the idea of siting those facilites/developments close to their homes. Their decision to adopt NIMBY tactics is largely based on the perception that such facilities/developments will have an adverse effect on neighborhood identity and culture and cause property values to depreciate. The term NIMBY is often viewed with a negative connotation. Neighborhood groups who elect to adopt NIMBY tactics are viewed as anti-progressive citizens because their opposition towards development projects often makes it impossible for a local governing body to build necessary facilities and infrastructure in a timely manner (Dear 1992, p.1). They are labeled as selfish members of society who engage in turf protectionist behavior without sufficient evidence on how a proposed project negatively impacts neighborhood quality.

Burningham et.al. (2006) however sheds a positive light on neighborhood groups who oppose the siting of unwelcome developments within proximity of their homes. Burningham et.al. (2006) states that local NIMBY groups are citizens who are concerned about the well-being of their community. Burningham et.al. (2006) further write that since existing residents will have to bear the negative externalities that may result from a proposed development project, the arguments put forth by the local NIMBY groups have validity and deserves consideration. They further argue that these citizens have the right to defend their homes and neighborhood community against development plans that would destroy the attractiveness and beauty of their community, pollute the environment, destroy the culture and identity and deteriorate the quality of their neighborhood. Furthermore, local residents electing to adopt NIMBY tactics is a representation of democracy in action. It is a representation of ordinary citizens' having the courage to defend their rights and properties against powerful and wealthy developers.

Wekler (2006) writes that even though NIMBY groups are sometimes irrational in their opposition against development projects, understanding their concerns is important because they can delay the approval process of important development projects. Furthermore, the NIMBY groups could create "bad" publicity for local officials who support such projects, which could result in political havoc for these elected officials. Moreover, discounting the concerns of local NIMBY residents could lead to lawsuits that could create financial havoc for developers and builders. Wekler (1996) states that just as countries build borders to protect their geographical territory, neighborhood residents collaborate and use defensive tactics to protect their backyard (communities). He explains that "backyard" is defined as the amenities within proximity of the neighborhoods. These include but not limited to, neighborhood parks, schools and public transportation. Local residents depend on these amenities on a daily basis and argue that affordable housing would increase the target population who greatly rely on public services, such as homeless population and low-income households. This would cause the quality of local public services to deteriorate. They further argue that local governments would be compelled to increase local expenditure to maintain these services, which would place a tax burden on existing residents.

Additionally, Welker writes that the NIMBY syndrome is coined a syndrome because the basis for NIMBY opposition is similar throughout the world. Welker (2006) explains that at the heart of the NIMBY syndrome is the argument of proximity of locally unwanted land use (LULU) projects. Bryson et.al. (1991) also states that proximity of LULU projects determines local residents' involvement in the review and approval of proposed development projects. Groups are more likely to show strong opposition towards development projects if these projects are within close proximity of their homes. They are reluctant to support development projects within proximity of their home because of the concern that such developments generate negative externalities such as noise and air pollution and increases traffic congestion. Additionally, Pol et. al. (2004) states that development projects within close proximity threatens neighborhood culture and identity, and impedes on existing residents' quality of life.

Dear (1992) provides a different method to understand NIMBY groups. He writes that although all NIMBY groups oppose development projects within proximity of their homes, the intensity of NIMBY sentiments vary widely. Dear explains that NIMBY opposition follows a high-low conflict pattern, which is periods of intense conflict followed by extended periods of less resistance. He further states that local NIMBY

groups argument varies based on the length of the conflict and categorizes the conflict into three phases: youth, maturity and old age. The youth phase, which is the early stages of the development process involves a small group of neighborhood residents residing within close proximity of the proposed project. During this phase, the group does not have sufficient evidence to support their argument and often their reasoning to oppose is perceived as irrational and naive. Also, the gatherings of neighborhood residents are informal, and methods of opposition include but not limited to, a small group of residents distributing flyers at a movie theater. Dear (2002) stresses that residents during the youth phase show strong opposition because they perceive the development as an infringement on their privacy and freedom. The second phase is the maturity phase. During this phase, the NIMBY argument becomes a battle between proponents and opponents of the project. The NIMBY groups have ample evidence to support their argument, thus they move from private meetings to public forums such as city council meeting and town hall discussion. The third phase is the Old Age phase. During this phase, the conflict has extended a long period of time and is inconclusive. Dear writes that litigation or some kind of arbitration process is required once the conflict between proponent and opponent of developments project reaches this phase. Dear (1992) argues that understanding the three phases of the NIMBY argument helps gauge the level of opposition from neighborhood residents and identify strategies to address the concerns put forth by these residents.

Another reason local neighborhood groups elect to adopt NIMBY tactics is the desire to protect property value. Pendall (1999) writes that the responsibility to protect property value is the primary reason for home owners to adopt NIMBY tactics. Thige

(2012) asserts that housing represents the largest investment and most valuable asset for a majority of American people. Likewise, Pendall (1999) suggests that home ownership is the most important asset for U.S. households, and home owners are acting rationally when they oppose development projects that would depreciate their properties value. Local NIMBY groups perceive development projects such as affordable housing as high risk prone because of the negative impact it would have on their properties. Furthermore, Ong and Haselhoft (2007) assert that despite the many reasons NIMBY groups give to oppose certain projects, the underlying reason for NIMBY opposition is property value.

Neighborhood Perception towards Affordable Housing

Previous studies have illustrated that the local NIMBY opposition against affordable housing developments is largely based on the perception that such developments are "bad" for the neighborhood. This section highlights some of the reasons local NIMBY groups have negative perception towards affordable housing projects. Schively (2007), in her comprehensive research on NIMBY and LULU phenomenon pointed out that local NIMBY opposition is largely based on the perception of impact. Schively (2007) writes that relatively to affordable housing, neighborhood opposition is based on the perception that affordable housing causes traffic congestion and increases neighborhood crime rate. As a result, it creates an undesirable neighborhood and has an adverse effect on the quality of life status for existing residents. Citing the work of Freudenberg and Pastor, Burnigham et.al. (2006) also writes that local residents adopt NIMBY tactics against affordable housing projects because of the assumption that such projects negatively impact the culture and identity of the neighborhood.

Schively (2007) further writes that local NIMBY opposition is also based on the perception of other stakeholders' goals and objectives. Residents often elect to oppose development projects because of the perception that developers seek to advance their economic interests at the expense of neighborhood residents. Citing Ibitayo and Pijawaka's study, Schively (2007) asserts that residents often view developers as outsiders who disregard the rights of local residents and whose primary interest is profit maximization. Schively (2007) and Burnigham et.al. (2006) write that residents view the adoption of collective action strategies, such as protesting and voicing opinions against unwanted development projects at townhall meetings as their civic responsibility to preserve the identity and culture of the neighborhood and protect the value of their properties.

Another factor that influence local residents to oppose affordable housing developments is place attachment. Brown et. al. (2002) defines place attachment as the bond between people and their socio-physical setting. Wright (2009) writes that when purchasing homes, Americans do not only care about the size or style of the home, but also give great attention to the social and cultural setting of the neighborhood. Wright (2009) further writes that a stronger bond is developed between residents and the neighborhood over a period of time. Long-term residents have a stronger desire to protect their neighborhoods than renters and short-term residents. Long-term residents view any changes to the neighborhood as a threat to their identity and culture. To protect the identity of the community, long-term residents create a bond between community members, invest in the community and collectively prevent any development that may destroy the quality of life status of the residents. (Brown et.al. 2002).

Brown et.al. (2002) studied over 600 residents in a neighborhood to understand the demographic that is more likely to have a higher level of place attachment with the neighborhood. They used a sample size of eight contiguous and socially similar census block groups to identify the reasons people have a high level of attachment to their community. Some of the variables they examined were portion of homeowners in a census block and the number of years' residents have resided in a neighborhood. They concluded that home owners and long-term residents have a higher level of place attachment with the neighborhood. They also concluded that home owners who have invested in their property or neighborhood are more likely to oppose development projects than those that did not. Brown et. al. (2002) and Wright (2009) agree that neighborhood residents with a greater psycho-sociological attachment with the neighborhood perceive the protection of neighborhood culture and identity as a civic duty and moral obligation. They concluded that since place attachment explains the residents' psycho-sociological relationship with their homes and communities, policy makers must consider residents place attachment with the neighborhood when addressing concerns put forth by local NIMBY groups.

Addressing NIMBYism

Based on the comprehensive review on affordable housing and NIMBYism, this thesis concludes that developers should anticipate some type of opposition from

neighborhood residents when they propose development projects in a neighborhood. This thesis found that to increase opportunities for approval of affordable housing projects, developers and elected officials should address the concerns raised by local NIMBY groups and/or include neighborhood residents in the decision-making process. Lack of acknowledgement of local NIMBY groups concerns leads to residents adopting NIMBY tactics, resulting in a lengthy review process, costly litigation battle between developers and neighborhood communities and disapproval of proposed projects. Proponents of affordable housing argue that the neighborhood NIMBY opposition, which is prevalent in California because of the misuse of CEQA is discouraging developers from building in the State, consequently increasing the gap between housing supply and rising demand. Previous studies provide several methods to address the concerns put forth by NIMBY groups and mitigate the impact of NIMBY is from the housing development process. This includes monetary compensation to neighborhood residents or tax credit to local jurisdictions; risk communication; consensus building; and institutional mechanisms. This section discusses the best practical approaches to address NIMBYism.

Schively (2007) writes that addressing neighborhood NIMBY opposition is essential for changing residents' perception from NIMBYies to YIMBYies (yes in my back yard)-an acronym used to identify residents who support development in their neighborhoods. She further states that acknowledging the concerns put forth by neighborhood residents is an important step to bridge the gap between proponents and opponents of affordable housing. Schively (2007) recommends several methods to address the concerns put forth by neighborhood residents. One of the recommendations is

providing monetary compensation to residents that bear the social and economic cost of development projects sited in their neighborhood. Opponents of affordable housing often argues that an increase in recipients of affordable housing increases reliance on public goods and services, consequently increasing local public expenditure and local tax burden. Proposing a plan that includes monetary compensation sends a signal to the neighborhood residents that developers are willing to collaborate with the community and bear their share of the development cost. However, she emphasizes that the purpose of monetary compensation should be to offset any negative externalities that may occur as a result of development projects. Schively (2007) points out that while monetary compensation could lead to a higher acceptance rate of development projects, it may not be a viable option in neighborhoods that do not support any type of developments and may view compensation as bribing. Alternatively, she suggests providing property tax credit to local communities who bear the social cost of LULU development projects. Schively (2007) writes that although existing literature largely suggest that affordable housing projects have minimal negative effect on property values, the perception that affordable housing cause property values to decline often leads to local residents adopting NIMBY tactics to oppose proposed projects. Schively (2007) concludes that providing home value insurance to homeowners whose property value did not increase in accordance with neighborhood or regional price index, or tax credit to neighborhood communities who bear the social cost of affordable housing presents a fair proposal to address the social and economic ramifications of affordable housing.

In addition to monetary compensation and tax credit, this thesis found collaboration/ communication during the early stage of the development process as a viable method to bridge the gap between proponents and opponents of affordable housing. Burningham, et.al. (2006) writes that creating a platform to discuss the positive and negative effect of LULU projects improves the relationship between neighborhood residents and developers. Furthermore, collaboration helps developers identify how residents view development projects in their neighborhoods (p. 4). Citing Futell's study, Burningham, et.al. (2006) stresses the importance of collaboration and framing strategies. Futell's case study analyzed the strategies developers used to address local residents protest against U.S. Army's plan to incinerate chemical weapons in Madison County, Kentucky. Burningham, et.al. (2006) writes that the case study provides information on the importance of interaction between developers and local residents (Burningham, et.al. 2006). Developers used a social constructive methodology to collaborate with the local residents, which did not only inform residents about the negative externalities of transporting chemical weapon from the neighborhood to the recycling site, but also informed the residents about the safe procedure utilized in the transportation process.

Burningham, et.al. (2006) and Schively (2007) also supports the idea of adopting a collaborative governance process when proposing to build in a neighborhood. Both, Burningham, et.al. (2006) and Schively (2007) claim that collaborative governance has proven to be an effective method to mitigate NIMBYism from the development projects. A collaborative governance process would provide a platform for stakeholders to engage in a dialogue and collectively identify strategies to mitigate issues that may arise as a result of development projects. However, Schively (2007) points out that the conventional approach of risk communication, which emphasizes on public education through the process of experts lecturing the residents about the project has proven to be an ineffective method. Instead, she argues that the risk communication approach should create an environment in which dialogue between stakeholders regarding potential risk occurs. Additionally, she points out that discussions regarding development projects should not just entail the technical issues but should also include deliberation regarding social risks issues such as how to address issues that may impact existing residents' quality of life. Burningham, et.al. (2006) and Schively (2007) assert that when risk communication is effective, it can enhance relationship between LULU developers, government officials and citizen groups.

Weisberg (2007) also supports the idea of incorporating a participatory process in the housing development process. After conducting a comprehensive study on New York City's approach to NIMBYism, she concluded that local residents claimed that they often had very little information about development projects sited within proximity of their homes. The lack of information sharing on the cost and benefits of proposed projects often prompted residents to adopt NIMBY tactics. Thus, including a deliberate decisionmaking process in the planning phase would provide an opportunity for relevant stakeholders to discuss the positive and negative effects of affordable housing. Additionally, she states that neighborhood residents often elect to adopt NIMBY tactics because of lack of trust with the developers and transparency in the development process. Incorporating a collective participatory method would provide a platform for stakeholders with varying interests to engage in a deliberate dialogue. This would allow developers to respond to existing residents input, and allow residents to engage in an honest discussion and avoid them from exaggerating the negative impact of LULU projects. Schively (2007), asserts that a deliberative and democratic decision-making process increases opportunities for stakeholders with varying interests to recognize each other's concerns and collectively identify methods to address pertinent affordable housing related issues. Additionally, she states that a deliberative and democratic decision-making reduces frustration and animosity between developers and neighborhood residents.

Key Findings on NIMBYism

This thesis reviewed existing literature for the purpose of understanding NIMBYism; why neighborhood residents oppose affordable housing developments and how to address NIMBYism. The qualitative literature review part of this chapter provided substantial information on NIMBYism. This thesis found that NIMBY(ism) is an acronym used to label neighborhood residents who elect to oppose development projects including affordable housing within proximity of their homes. This chapter discussed why neighborhood residents elect to oppose development projects and how to address the concerns put forth by local NIMBY groups. This thesis found that improving communication between developers and neighborhood residents and incorporating collaborative decision-making process in the project siting and approval process increases opportunities to mitigate NIMBYism and bridge the gap between proponents and opponents of affordable housing.

Chapter 3

METHODOLOGY: QUANTITATIVE REGRESSION

The previous chapter reviewed several academic studies for the purpose of understanding how previous research examined the quantitative relationship between affordable housing and property value. After reviewing more than thirty academic journal articles on affordable housing, this thesis found that a majority of studies used proximity of affordable housing and different types of housing programs as key explanatory variables. This thesis also found that a minimal number of studies used household/occupant characteristics as key explanatory variables to measure the impact of affordable housing on neighboring properties. Previous research has shown that neighborhood residents elect to adopt NIMBY tactics out of fear that a greater concentration of recipients of affordable housing would result in social disorganization and deterioration of neighborhood quality. This would make the neighborhood undesirable and unsafe (or at least the perception of it by potential home buyers), thus resulting in depreciation of property values. Because neighborhood residents are greatly concerned about the recipients of affordable housing than the design or distance of affordable housing developments, it is important to test the validity of local NIMBY groups core argument: what exactly is the impact of neighborhood characteristics on home value, that are likely to have affordable housing built within proximity? To answer this research question, this thesis proposed the following hypothesis: an increase in recipients of affordable housing causes neighboring property values to decline. Figure 1 shows the potential causal relationship between affordable housing and property values.

The figure shows the relationship between the independent and the intervening variables; an increase in affordable housing characteristics (low-income households, larger household size) cause neighborhood crime rate and dependence on local public services to rise, and academic performance to decline. The figure also shows the relationship between the intervening variables and the dependent variable; a negative effect on the intervening variables result in social disorganization and depreciation of property values.

After this introductory section, this chapter expands on the methodology used to test the quantitative impact of affordable housing on neighboring property values. Specifically, this chapter discusses the scope of study and the variables, data sources, and the regression model used to test the hypothesis. This chapter concludes with the results of the quantitative regression analysis.



Figure 2: Causal Relationship between Affordable Housing and Property Values

Scope of Study

The scope of study for this research was the County of Sacramento. The County has seven cities: Citrus Heights, Elk Grove, Folsom, Galt, Isleton, Rancho Cordova, and Sacramento. According to the County's demographic report, 61.23 percent of the population lives in one of the seven cities and 38.76 percent of the population lives in the unincorporated area (Sacramento County, 2018). According to the United States Census Bureau, the county's population increased from 1,418,788 in 2010 to 1,514,460 persons in 2016, a 6.7 percent population growth. In 2010, the County had a total of 555,932 housing units. Between 2010 and 2016, the County added 9,883 new housing units to its housing supply, totaling the number of housing units to 565,815 (US Census Bureau, 2017).

Since 2000, median rent in the County has increased by 18 percent annually while the median household income has declined by 11 percent. The 2013 median household annual income ranged from \$17,133 to \$147,155, and household size ranged from 1.3 to 4.21 persons per household (US Census Bureau, 2013). In 2013, average household monthly expenses with a mortgage payment or rent was \$1,739, and average household expenses without a monthly mortgage payment was \$472 (US Census Bureau, 2013). Due to lack of affordable housing opportunities, residents' have to earn 2.5 times the State's minimum wage of \$10.75 to afford an average monthly rent of \$1,350. According to Sacramento Housing Alliance's report on housing cost, 18.5 percent of the residents are considered living in poverty because of high housing cost. The report also states that the County's lower-income households spent approximately 56 percent of their monthly income on housing related expenditure (Beaty et.al, 2017).

Sacramento County proved to be an ideal scope of study to test the quantitative relationship between affordable housing and property values because of the different income levels, household size and housing price data. The County has areas with a high concentration of affordable housing households, areas with a high concentration of high-income households, and areas with a combination of middle income and affordable housing households. This broad range of demographic and housing price data provided an opportunity to measure the quantitative impact of a broad range of household characteristics on neighboring properties.

Furthermore, it is worth noting that while the county was the scope of study, the unit of analysis for this research was individual Census Tracts in the County. There are 308 Census Tract and 60 Zonal Improvement Plan (ZIP) codes in Sacramento County. This thesis clustered relevant demographic data by Census Tract because Census Tracts are smaller in geographical size than ZIP codes. According to Proximity One Foundation (2018), the advantages of using Census Tracts over ZIP codes are that Census Tracts cover a well-defined geographical area, align conterminously with the boundaries, and provide granularity (73,000 areas) than ZIP codes (43,000 areas). Additionally, Census Tracts provide a greater statistical uniformity, averaging 4,000 plus population in a defined area, while population within a ZIP codes is that Census Tracts remain the same from decennial census to census.

Variables

This section discusses the variables used to test the hypothesis. This thesis used Sacramento County's 2013 home sales report and demographic data to generate a sample size of 4,101 observations. This thesis generated a total of 35 independent variables, which are categorized into three categories: neighborhood characteristics, property characteristics and selling characteristics. These 35 independent variables were measured against the dependent variable; the final selling price of properties sold in Sacramento County. As follows, the next section provides a brief description of the independent variables and the dependent variable.

Neighborhood Characteristics

The purpose of this quantitative analysis was to examine the consequences of characteristics of the population that are more likely to inhabit affordable housing on the selling price of single-family residential properties in the same Census Tract. A lesson acquired through the literature review was that affordable housing exerts a minimal negative effect on neighboring property values. However, only a few studies have used affordable housing household characteristics as explanatory variables in their regression studies.

For the quantitative regression analysis, this thesis used four different variables to define household characteristics: household size, education attainment, poverty level and household income. Further, this thesis defined affordable housing as households with four or more adult occupants, and households whose adult occupants highest level of education attainment was high school diploma. Additionally, this thesis used different income levels to define affordable housing households. Households with annual income of \$24,250 or less was considered extremely low-income household; households with annual income of \$25,000 –\$37,750 was considered very low-income household; households with annual income of \$38,000 –\$57,200 was considered low-income household. Of primary importance to this thesis was the impact of extremely low-income households and low-income households on the final selling price of property values. Prior to conducting the regression analysis, this thesis predicted that low-income households and households with four or more occupants would exert a negative influence on the final selling price of properties.

Property Characteristics

Together with neighborhood characteristics, this thesis examined the impact of a property's physical characteristics on the final selling price of the property. This analysis uses 22 variables to test the impact of property characteristics on property value. These characteristics were roof and foundation type, number of bedrooms and bathrooms, square footage of a residential lot, square footage of a home, garage size, the year home was built, and foundation and roof types. Regarding the relation between property characteristics and property value, it is apparent that an increase in the number of bedrooms and bathrooms, lot size, and square footage of a home results in a higher selling price. But examining factors such as foundation or roof type of a home or when the home was built provides opportunity to learn if a particular type of foundation or roof exerts a higher selling price or does the year a home was built has any relevance on the final selling price. Prior to conducting the regression analysis, this thesis predicted that

variables such as foundation and roof type does not impact the final selling price of a home. This thesis also predicted that older homes in an affluent neighborhood yields a higher selling price and a newer homes impact on the final selling price depends on the location of the home.

Selling Characteristics

Based on previous research on housing, selling characteristics are not perceived as a contributing factor on the final selling price of a property. The assumption is that selling characteristics such as loan financing options or the number of days a property is listed on the real estate market impacts the potential buyers capacity to purchase a home and does not have any relevance on the final selling price of the property. This research used a total of 10 variables to test the impact of selling characteristics on the final selling price of properties. These variables were different types of financing option, tenant occupied property, short-sale property, foreclosure property, properties used for HUD program, and properties in a Home Owners Association (HOA) community. In addition, this thesis used the following financing options to define selling characteristics: Federal Housing Assistance (FHA), Veterans Affairs (VA), and Cash Financing. Prior to conducting the regression analysis, this thesis predicted that tenant occupied properties, short-sale properties, properties in a Home Owners Association community would cause the final selling price to decline.

Property Value

What is the value of a residential property? Sherman (2018) writes that when discussing the value of a residential property, it is important to recognize that the value is

composed of the structure of the property and the land it is located. Hummel (2011) writes that a property's value refers to the fair market value as determined by what it sells for. He further writes that the fair market value is the assessed value, which is often determined by examining the physical structure of the property and by studying the price of other properties recently sold in the neighborhood. The final selling price is often influenced by the factors used to assess the fair market rate (physical structure and neighborhood market rate) and other factors such financing option, loan type, number of days a property is listed on the market, etc. While the assessed value provides the true market value of a property, this thesis elected to use the final selling price of a property as a measure of property value because data for assessed value is not readily available.

Data

This research used secondary data to assess the relationship between affordable housing and neighboring property value. The secondary data derived from two sources: Sacramento Association of Realtors (SAR) and the United States Census Bureau data. The Sacramento Association of Realtors (SAR) generate quarterly reports on monthly home sales in Sacramento County. This report consists of the total number of escrows closed per month, the median sale price of residential properties and the monthly inventory of housing units in the County. The report also consists of information on the type of financing used to close the escrow and the number of days a property was listed on the real estate market before it was sold. Using the last quarter of 2013's home sales report, this thesis generated data for the dependent variable –final price of properties sold in Sacramento County. In addition, this thesis used the home sales report to generate data

for the variables included in the property characteristics category and selling characteristics category. For the household characteristics data, this thesis used the 2013 U.S. Census Bureau to generate data.

Table 1 provides a brief description and the source for each variable. This thesis divided the table into three broad categories: neighborhood characteristics, property characteristics, and selling characteristics. This thesis used the variables in each category to measure the relationship between the broad categories mentioned above and the final selling price of a property value in a given Census Tract. This table also has a list of dummy variables that this thesis used to test the hypothesis. Dummy variables have a value of zero or one. The dummy variables were used to measure the relationship between a particular independent variable and the dependent variable, after including and excluding the independent variable in the regression analysis. For example, this thesis generated Roof type data with and without Tile roof, making Tile roof a dummy variable. This allowed me to measure the degree of impact of Tile roof when it is added in the regression model and when it is excluded from the regression model.

Neighborhood Characteristics	Description	Source
Edu HS Grad	Percentage of high school graduate	2013 United States Census Tract
Poverty Rate	Percentage household poverty rate	2013 United States Census Tract
Household Size	Number of Occupants Per Household	2013 United States Census Tract
Income Ls10K	Percentage Income less than \$10,000 per Household	2013 United States Census Tract
Income 10K-14K	Percentage Income between \$10000-\$140000 per Household	2013 United States Census Tract
Income 15K-24K	Percentage Income between \$15000-\$24000 per Household	2013 United States Census Tract
Income 25K-34K	Percentage Income between \$25000-\$34000 per Household	2013 United States Census Tract
Income 35K-49K	Percentage Income between \$35000-\$49000 per Household	2013 United States Census Tract
Income 50K-74K	Percentage Income between \$50000-\$74000 per Household	2013 United States Census Tract
Income 75K-99K	Percentage Income between \$75000-\$99000 per Household	2013 United States Census Tract
Income 100K-149K	Percentage Income between \$100000-\$149000 per Household	2013 United States Census Tract
Income 150K-200K	Percentage Income between \$150000-\$200000 per Household	2013 United States Census Tract
Income 200Kplus	Percentage Income between \$200000 Plus per Household	2013 United States Census Tract
Property Characteristics		
Home Square Feet (1,000s)	Home size in Square Feet	2013 Multiple Listing Service
Lot Square Feet (1,000s)	Lot Size in Square Feet	2013 Multiple Listing Service
Years Old	Year when Property was Built	2013 Multiple Listing Service
Garage Spaces	Garage Space of Selling Property	2013 Multiple Listing Service
Bedrooms	Bedroom per Household	2013 Multiple Listing Service
Bath Half	Half Bathroom per household	2013 Multiple Listing Service
Bath Full	Full Bathroom Per Household	2013 Multiple Listing Service
Shaker Roof Dummy	Equals 1 if Selling Property with Shaker Roof	2013 Multiple Listing Service
Tile Roof Dummy	Equals 1 if Selling Property with Tile Roof	2013 Multiple Listing Service

 Table 1: Name of Variables, Description and Primary Source

Slate Roof Dummy	Equals 1 if Selling Property with Slate Roof	2013 Multiple Listing
		Service
Metal Roof Dummy	Equals 1 if Selling Property with Metal Roof	2013 Multiple Listing Service
Wood Roof Dummy	Equals 1 if Selling Property with Wood Roof	2013 Multiple Listing Service
Stucco Dummy	Equals 1 if Selling Property with Stucco	2013 Multiple Listing Service
Fire Places	Equals 1 if Selling Property has a fireplace.	2013 Multiple Listing Service
Pool Dummy	Equals 1 if Selling Property has a pool	2013 Multiple Listing Service
Found Raised Dummy	Equals 1 if Selling Property has Foundation Raised	2013 Multiple Listing Service
Foundation Concrete Slab Dummy	Equals 1 if Selling Property has Foundation Concrete Slab	2013 Multiple Listing Service
Foundation Concrete Raised Slab	Equals 1 if Selling Property has Foundation Concrete Raised Slab	2013 Multiple Listing Service
Half Plex Dummy	Equals 1 if Selling Property is a Half Ples	2013 Multiple Listing Service
Two House Dummy	Equals 1 if Selling Property is one of the two house in the lot.	2013 Multiple Listing Service
Condo Dummy	Equals 1 if Selling Property is a Condo	2013 Multiple Listing Service
One Story Dummy	Equals 1 if Selling Property is One Story	2013 Multiple Listing Service
Selling Characteristics		
Short Sale Dummy	Equals 1 if selling property is a short sale	2013 Multiple Listing Service
Foreclosure Dummy	Equals 1 if selling property is a foreclosure	2013 Multiple Listing Service
Tenant Occupied Dummy	Equals 1 if Selling Property was occupied with tenant	2013 Multiple Listing Service
Number of days On Market	Number of Days Selling Property was on the Market	2013 Multiple Listing Service
Cash Financing Dummy	Equals 1 if property sold for CASH	2013 Multiple Listing Service
VA Financing Dummy	Equals 1 if Property sold with VA financing	
FHAA Financing	Equals 1 if property sold with FHAA financing	
HUD Description	Equals 1if property was sold under HUD	2013 Multiple Listing
Dummy	program	Service
HOA Dummy	Equals 1 if Selling Property was a HOA neighborhood	2013 Multiple Listing Service
CC And R Dummy	Equals 1 if property sold is CC and R description	2013 Multiple Listing Service
November Sold	Equals 1 if property sold in November	2013 Multiple Listing
Dummy		Service
December Sold	Equals 1 if property sold in December	2013 Multiple Listing
Dummy		Service

Table 2 describes the explanatory variables with a description of the variable and the predicted impact of the independent variable on the dependent variable. This thesis made predictions on how property characteristics, selling characteristics and neighborhood characteristics impacted the final selling price of properties that were sold in 2013 in Sacramento County. A positive (+) sign denotes that the independent variable had a positive impact on the final selling price. A negative (-) sign denotes that the independent variable had a negative influence on the final selling price of the property, and a (?) sign denotes that the influence of the explanatory variable on the dependent variable is unknown.

Variable Name	Description of Variables	Expected Direction
Selling Price (dependent variable)	Selling Price of Property Sold in Sacramento County in 2013	
Independent Variables		
Neighborhood Characteristics		
Edu Bachelor's	Percentage of Households with Bachelor's Degree	Positive
Median Age	Median Household Age	Negative
Household Size	Number of Occupants Per Household	Negative
Income Ls10K	Percentage Income less than \$10,000 per Household	Negative
Income 10K-14K	Percentage Income between \$10000-\$140000 per Household	Negative
Income 15K-24K	Percentage Income between \$15000-\$24000 per Household	Negative
Income 25K-34K	Percentage Income between \$25000-\$34000 per Household	Negative
Income 35K-49K	Percentage Income between \$35000-\$49000 per Household	Negative
Income 50K-74K	Percentage Income between \$50000-\$74000 per Household	Negative
Income 75K-99K	Percentage Income between \$75000-\$99000 per Household	Positive
Income 100K-149K	Percentage Income between \$100000-\$149000 per Household	Positive
Income 150K-200K	Percentage Income between \$150000-\$200000 per Household	Positive

Table 2: Independent Variables Expected Direction of Effect on Selling Price

Income 200Kplus	Percentage Income between \$200000 Plus per Household	Positive
Property Characteristics		
Year Built	Year Build	Negative
Square Foot	Selling Property Size in Square Feet	Positive
Garage Spaces	Garage Space of Selling Property	Positive
Bedrooms	Bedroom per Household	Positive
Bath Half	Half Bathroom per household	Positive
Bath Full	Full Bathroom Per Household	Positive
Tile Roof Dummy	Equals 1 if Selling Properties with Tile Roof	?
Comp Roof Dummy	Equals 1 if Selling Properties with Comp Roof	?
Slate Roof Dummy	Equals 1 if Selling Properties with Slate Roof	Positive
Metal Roof Dummy	Equals 1 if Selling Properties with Metal Roof	Positive
Wood Roof Dummy	Equals 1 if Selling Properties with Wood Roof	-
Found Raised Dummy	Equals 1 if Selling Property has Foundation Raised	Positive
Foundation Concrete Slab Dummy	Equals 1 if Selling Property has Foundation Concrete Slab	Positive
Prop1HsDummy	Equals 1 if Selling Property has 1 house in the lot	Positive
Prop Half Plex Dummy	Equals 1 if Selling Property is a Half Plex	Negative
Selling Characteristics		
Short Sale Dummy	Equals 1 if selling property is a short sale	Negative
Foreclosure Dummy	Equals 1 if selling property is a foreclosure	Negative
Tenant Occupied Dummy	Equals 1 if Selling Property was occupied with tenant	Negative
Number of Days on Market	Number of Days Selling Property was on the Market	Negative
Cash Financing Dummy	Equals 1 if property sold for CASH	Positive
HUD Description Dummy	Equals 1if property was sold under HUD program	Positive
HOA Dummy	Equals 1 if Selling Property was a HOA neighborhood	Positive

Table 3 provides descriptive statistic of the dependent variable and the independent variables, which includes the mean, standard deviation, minimum and maximum value of each explanatory variable and the dependent variable.

<u>Variable</u>	<u>Mean</u>	Std. Dev.	<u>Minimum</u>	<u>Maximum</u>
Dependent Variable				
Selling Price	265,315	154,065	27,500	2,795,000
Property Characteristics				
Home Square Feet	1,647.06	670.73	320	7537
Lot Square Feet	201,694.70	7,167,885.07	0	2.97e+08
Years Old	35.18	21.78	0	123
Garage Spaces	1.80	0.88	0	10
Bedrooms	3.29	0.88	1	9
Full Baths	1.99	0.64	1	7
Half Baths	0.21	0.41	0	3
Shaker Roof Dummy	0.05	0.21	0	1
Tile Roof Dummy	0.30	0.46	0	1
Slate Roof Dummy	0.002	0.04	0	1
Metal Roof Dummy	0.008	0.09	0	1
Wood Roof Dummy	0.015	0.12	0	1
Foundation Raised Dummy	0.26	0.44	0	1
Found Concrete Slab Dummy	0.70	0.46	0	1
Found Conc Raised Slab Dummy	0.04	0.20	0	1
Two-House Dummy	0.008	0.08	0	1
Half-Plex Dummy	0.02	0.14	0	1
Condo Dummy	0.07	0.26	0	1
Pool Dummy	0.22	0.41	0	1
Fireplaces	0.83	0.54	0	4
Stucco Dummy	0.43	0.50	0	1
One-Story Dummy	0.71	0.45	0	1
Selling Characteristics				
Days on Market	84.62	70.54	4	901
Short Sale Dummy	0.12	0.32	0	1
Foreclosure Dummy	0.06	0.23	0	1
Tenant Occupied Dummy	0.11	0.31	0	1
HUD Dummy	0.02	0.15	0	1
HOA Dummy	0.19	0.40	0	1
HOA Annual Dues	35.96	123.80	0	5,500
FHAA Financing Dummy	0.21	0.41	0	1
VA Financing Dummy	0.05	0.22	0	1
Cash Financing Dummy	0.23	0.42	0	1
CC&R Dummy	0.85	0.36	0	1

Table 3: Descriptive Statistics

1
1
4.21
51.70
59.40
43.4
35.9
23.8
29.6
30.1
59.3
27.0
1 4 5 4 3 2 3 5 2

Regression Model: Hedonic Regression

Opponents of affordable housing point out several factors that cause deterioration of neighborhood quality and depreciation of home values. Several of these factors correlate with recipients of affordable housing. For example, local NIMBY residents argue that low-income renters and absentee landlords may not have an interest in maintaining the property; resulting in an adverse effect on neighboring properties. Such assumptions may not be true but often leads to a strong opposition from neighborhood communities and disapproval of affordable housing projects. On the other hand, proponents of affordable housing often claim that affordable housing households have minimal negative effect on the neighborhood and other mediating factors influence the final selling price of neighboring properties. They further argue that affordable housing households are often located in the most undesirable parts of the neighborhood. Past studies have shown that depreciation of property values is not solely contingent upon a high concentration of affordable housing households. This thesis elected to conduct a comprehensive statistical analysis to validate the core arguments put forth by opponents and proponents of affordable housing and measure the true effects of affordable housing on property values. The process of conducting a statistical analysis includes defining a research objective, selecting the independent and dependent variables, selecting a scope of study, gathering data, adopting a regression model and manipulating the data. The rest of this section explains the importance of using a hedonic regression model to test the hypothesis.

After reviewing existing literature on affordable housing, this thesis found that hedonic regression model is the most commonly used statistical method to assess the quantitative relationship between affordable housing and property value. Nguyen (2005), reviewed thirteen academic studies on affordable housing to identify a robust method to measure the quantitative impact of affordable housing. She found that two of the most common statistical models researchers used to assess the relationship between affordable housing and property values were test vs control model and hedonic regression model. Comparing the two models, she concluded that a hedonic regression model provides a more robust finding because it allows researchers to measure the interaction between an independent variable and the dependent variable, while controlling for other variables.

For this research, using a hedonic regression model provided opportunities to measure the quantitative impact of affordable housing on property values in a given Census Tract, while controlling for other mediating factors that may influence the relationship between affordable housing and property values. It also provided opportunities to measure the impact of other mediating factors such as selling characteristics and physical characteristics of properties on the final selling price of the property. As a result, this thesis was able to generate an inclusive report on the impact of

affordable housing on neighboring property values.

The hedonic regression model to test the relationship between the dependent variable and the independent variables is as follows:

"Selling price (dependent variable) is a function of property characteristics,

selling characteristics, neighborhood characteristics."

The general formulation of the regression model is:

```
Selling Price = f (Property Characteristics, Selling Characteristics,
Neighborhood Characteristics),
where
```

Property Characteristics = f (Square Foot, Year Built, Garage Spaces, Bedrooms, Bath Half, Bath Full, Shaker Roof Dummy, Tile Roof Dummy, Comp Roof Dummy, Slate Roof Dummy Metal Roof Dummy Wood Roof Dummy, Foundation Raised Dummy Foundation Concrete Slab Dummy, No Foundation Dummy, Property 1-House Dummy, Property Half Plex Zip Code Dummy)

Selling Characteristics = f (Number of Days On Market, Short Sale Dummy, Foreclosure Dummy, Tenant Occupied Dummy, HUD dummy, HOA Dummy, Conventional Financing Dummy, FHAA Financing Dummy, VA Financing Dummy, Cash Finance, CC And R Dummy, Set of 55 Zip Codes Dummy Sacramento County)

Neighborhood Characteristics = f (Median Age, Household Size, Education High School, Education Bachelor's Degree, Income Less 10,000, Income10K-14K, Incomem15K-24K, Income25K-34K, Income 35K-49K, Income 50K-74K, Income 75K-99K, Income 100K-149K, Income 150K-200K, Income 200K Plus).

Regression Analysis

This section discusses the process of manipulating the data. This section also provides information on the statistical tests this thesis conducted to check for measurement bias.

Functional Forms

The next step in the data manipulation process is selecting the correct regression functional form. This thesis used a Multivariate Ordinary Least Squared (OLS) functional form to test the quantitative relationship of multiple explanatory variables and the dependent variable. Unlike the bivariate model, which measures the impact of a single independent variable on the dependent variable at a time, the multivariate OLS model measures the impact of multiple independent variables against the dependent variable, while holding other impacting variables constant. Bailey (2016) writes that using the multivariate OLS model reduces statistical bias because the regression results are on average less skewed from the true value. Additionally, this model reduces uncertainty and provides robust and precise findings because the results are more closely clustered to the true value (129). Another advantage of applying the multivariate OLS model was that it provided opportunities to test the hypothesis with three types of functional forms: *linearlinear regression, log-log regression and log-linear regression.* The first type of functional form, linear regression, measured the change in the independent variables and the dependent variable in units; a one unit change in the independent variables caused a one unit change in the selling price, holding everything else constant. After conducting the regression analysis using the *linear-linear functional form*, this thesis had a total of 24

statistically significant results. The second type of functional form, *log-log functional form* measured the change in the dependent variable and the independent variables in percentage. After conducting the regression analysis using the log-log form, there were a total of 19 statistically significant results. The third type of functional form, *log-linear functional form*, measured the independent variable change in units, and measured the dependent variable change in percentage. After conducting the regression analysis using this form, there were 33 statistically significant variables at 90 percent confidence level. This thesis elected to use the log-linear form to conduct the final regression analysis for two reasons: (1) the data on key explanatory variables were collected and coded in percentage form and (2) the log-linear functional form had the highest number of statistically significant results. Table 4 compares the statistical results in all three functional forms.

Selling Price_LN	Coefficient Log- Lin	Coefficient Linear Regression	Coefficient Log- Log Model
Number of Days on Market (LN)*	-0.00046***	-62.53*	-0.0428***
Square Foot (LN)^	0.00027***	156.37***	0.6855***
Year Built (LN)^	0.00105**	-313.04	0.379
Garage Spaces	0.056***	11562.65***	0.051***
Bedrooms (LN)^	0.0059	-19797.26***	-0.019***
Bath Half (LN)^	0.027***	6693.66	0.0122477
Bath Full (LN)^	0.049***	12081.26***	0.039***
Tile Roof Dummy	0.014	2440.27	0.0202
Comp Roof Dummy	-0.0279**	-9773.76*	-0.0172
Slate Roof Dummy	-0.066	16007.52	0.0653
Metal Roof Dummy	0.0320	-14542.53	0.019
Wood Roof Dummy	-0.033	-15603.42	-0.0424*
Found Raised Dummy	0.034**	9182.58	0.040**
Foundation Concrete Slab Dummy	-0.029*	-2188.20	-0.017
Prop1HsDummy	0.354***	48215.63***	0.318***
Prop Half Plex Dummy	0.158***	15275.21**	0.150***
Foreclosure Dummy	-0.054***	-20799.1***	-0.049***
Tennant Occupied	-0.063***	-12592.5***	-0.052***
HUD dummy	-0.1259387	-25934.67***	-0.112***
HOA Dummy	-0.102***	-4178.483	-0.084***
Conv Financing Dummy	0.010	-7263.63	0.0064
FHAA Financing Dummy	0.016	-4946.53	0.018*
Cash Finance	-0.13***	-21688.18***	-0.133***
CC And Rs Desc Dummy	0.012	2866.56	0.0079
Median Age (LN)^	0.0009	365.55	-0.0266
House Hold Size (LN)^	-0.103***	-17800.69***	-0.329***
Percentage with Bachelors (LN)^	0.0016**	169.43	0.0117
Income 10K-14K	-0.327***	-109882.6***	-0.3511***
Income Less than 10K	-0.008***	-1169.374	-0.0011
Income 15K-24K	-0.0082***	-1264.58	0.0003
Income 25K-34K	-0.0068***	-1205.48	0.00082
Income 35K-49K (LN)^	-0.0062***	-1812.35**	0.02788**
Income 50K-74K	-0.0055***	-1554.59***	0.00094

Table 4: Regression Results in Log-Lin, Linear and Log-Log Form

Income 75K-99K (LN)^	-0.0050**	-1574.57**	0.0342**
Income100K-149K (LN)^	-0.0057***	-1496.39**	0.039***
Income 150K-200K	-0.0050*	-1454.61	0.0054***
Income 200KPlus	0.0058***	2002.75***	0.013***
Education Bachelor*Income10K14K	0.0003***	49.09	0.0003***
Year Built*Income10K14K	0.00014***	55.02	0.00017***
Square Foot*Income10K14K	0.00001***	-1.79	-4.45E-08
_cons	9.86689	753791.8	3.92
Number of Observation	4101	4101	4101
R-Squared	0.8720	0.8012	0.8826

(LN)^- indicates variable was converted into log-form when log-log regression analysis was conducted. Total of 10 variables converted into log form.

Standard errors corrected for heteroscedasticity

***Indicates statistical significance with 99 percent confidence

**Indicates statistical significance with 95 percent confidence

*Indicates statistical significance with 90 percent confidence

Multicollinearity

After selecting the correct regression functional form, the next step in the data manipulation process was conducting the measurement bias test. This thesis conducted two measurement bias tests: multicollinearity and heteroscedasticity. Multicollinearity occurs when two or more independent variables are strongly correlated. Multicollinearity causes the variance of coefficient results to be higher than it would have been in the absence of multicollinearity. It increases the standard error value and the *p*-value and lowers the *t*-value, thus causing the regression results to be statistically insignificant.

The initial regression analysis produced a higher than 0.01 *p-value* for three of the key explanatory variables (low-income levels, poverty rate and high school education), indicating that the findings are not exclusively a result of measuring the independent variable against the dependent variable. The multicollinearity was a result of lower income levels being strongly correlated with poverty level and high school education. To further confirm for multicollinearity, this thesis conducted "estatvif" command test in the statistical software STATA (See Table 5.0). The results from the "estatvif" command test showed that the VIF scores for low-income levels, poverty rate and high school education were higher than 0.5, thus confirming that the regression analysis was producing bias results. To fix for multicollinearity, this thesis removed poverty level and high school education level from the final regression analysis. After removing these variables, the regression results produced a *p-value* of less than 0.01 for the key explanatory variables income levels and household size, indicating that the regression analysis passed the multicollinearity test. In addition to the "estatvif" command test, this thesis conducted a
"pairwise coefficient of explanatory variables" test to check for multicollinearity. This study passed the "pairwise coefficient of explanatory variables" test because the highest level of correlation coefficient between the two independent variables was 0.73. (See Appendix B).

	1	
Variable	VIF	1/VIF
Year Built * Income 10K14K	10976.27	0.000091
Income 10K14K	10899.62	0.000092
PCT_Inc~149K	34.63	0.028874
PCT_Inc~200K	20.53	0.048716
Income 15K24K	20.36	0.049112
Income 35K49K	20.17	0.049578
Income 75K99K	17.01	0.058803
Income 50K74K	14.42	0.069360
Education Bachelor Degree	13.30	0.075213
Income 25K34K	12.86	0.077732
Income 200Kplus	10.94	0.091392
Income less 10K	10.72	0.093258
Square Foot*Income10K14K	10.06	0.099386
Year Built	8.07	0.123935
PCT_EduB~14K	6.59	0.151818
House Hold Size	6.18	0.161844
Foundation Concrete Slab Dummy	6.11	0.163671
Square Foot	6.01	0.166427
Foundation Raised Dummy	5.73	0.174422
Median Age	4.33	0.230731
Tile Roof Dummy	4.17	0.239961
Comp Roof Dummy	3.55	0.282061
Conventional Finance Dummy	3.09	0.323788
Bathroom Full	3.03	0.329761
Cash Finance Dummy	2.69	0.371880
Bedrooms	2.65	0.376924
FHAA Finance Dummy	2.53	0.395342
HOA Dummy	2.52	0.397465
Property 1 House Dummy	2.30	0.435056
Garage Spaces	1.78	0.562360
Property Half Plex Dummy	1.48	0.676572
Bath Half	1.33	0.749792
Wood Roof Dummy	1.18	0.849019
CC And R Dummy	1.14	0.880555
Metal Roof Dummy	1.13	0.887431
Tenant Occupied Dummy	1.08	0.922754
Number of Days on Market Dummy	1.07	0.934026
Foreclosure Dummy	1.07	0.938248

Table: 5: VIF Values for Independent Variables

Slate Roof Dummy	1.05	0.951715
HUD dummy	1.05	0.953068
Mean VIF	280.04	

Heteroscedasticity

In addition to multicollinearity, this thesis checked for heteroscedasticity. In regression analysis, heteroscedasticity occurs when the variance of a random variable differs for some of the observations, meaning some observations are on average closer to the predicted value than others. Heteroscedasticity does not bias the results from the OLS model, but it causes bias in the standard errors for some of the observations. To check for heteroscedasticity, this thesis conducted a Breusch-Pagan / Cook-Weisberg test using the command "hettest, rhs" command in STATA. The results generated a chi-squared value of 21527.75 at a 99 percent confidence interval, indicating that the regression results were depicting heteroscedasticity. To fix heteroscedasticity and generate robust standard errors, this thesis used the command "vce (robust)" when conducting the regression analysis.

Regression Results

This section discusses the findings from the quantitative regression analysis. This section is divided into three subsections: property characteristics, selling characteristics and neighborhood characteristics. Table 6 shows the regression results after accounting for multicollinearity and heteroscedasticity. The table shows the regression coefficient between the dependent variable and the independent variable, holding everything else constant. The table is arranged from the highest positive effect to the highest negative

effect. Variables with the highest positive effect are listed on top and variables with the

highest negative effect are listed towards the bottom of the table.

Selling Price _LN	Regression	Standard	P-Value	90%	Interval
	Coefficient	Error		Confidence	
Prop1HsDummy	.3540***	.0221	0.000	.3175	.39051
Property Half Plex	.1581***	.0264	0.000	.1146	.20175
Dummy					
Garage Spaces	.0563***	.0059	0.000	.04656	.06604
Bath Full	.0492***	.0109	0.000	.03136	.06710
Foundation Raised	.03430*	.0176	0.053	.00519	.06341
Dummy					
Metal Roof Dummy	.0320	.0435	0.462	03956	.10364
Bath Half	.0274***	.0090	0.002	.01253	.04235
FHAA Financing	.0166	.0103	0.106	00031	.03370
Dummy					
Tile Roof Dummy	.0141	.0137	0.299	00827	.03664
CC And R Description	.0126	.0099	0.205	00375	.02899
Dummy	0.105				
Conventional Financing	.0102	.0098	0.300	00601	.0264
Dummy	00500	00.62	0.040	00450	01651
Bedrooms	.00598	.0063	0.349	00453	.01651
Income 200Kplus	.0058***	.0018	0.001	.002857	.00879
Education Bachelors	.00163**	.0006	0.015	.000524	.0027
Year Built	.00105**	.0004	0.025	.000283	.00182
Median Age	.00090	.0010	0.378	000/8	.00259
Education	.00033***	.000086	0.000	.00019	.00047
Bachelor*Income10K14K	0000	000010	0.000	00022	00007
Square Foot	.00026***	.000013	0.000	.00023	.00027
Year Division 10121412	.00015***	.000049	0.002	.00006	.00023
Built*Income10K14K	00001***	2.21.00	0.000	7.11.00	000014
Square East*Income10V14V	.00001***	2.21e-06	0.000	7.11e-06	.000014
Foot*Incometox14x	00016***	000066	0.000	000560	00024
Number of Days on Market	00040	.000000	0.000	000369	00054
Income 75K00K	0050**	002080	0.016	00842	00157
Income 150K200K	0050**	.002080	0.010	00842	00137
Income 50K7/K	0051	001001	0.000	00945	00070
Income 100K1/0K	0050	002136	0.003	00809	00244
Income 35K40K	- 0062***	002150	0.007	- 01013	- 00220
Income 25K34K	0002	002168	0.000	- 010/6	00239
Income 15K24K	- 0082***	002377	0.001	- 01213	- 00/31
Income Less than 10k	- 0085***	002327	0.001	- 01242	- 00476
Comp Roof Dummy	- 0279**	013198	0.000	- 0/966	00470
Foundation Concrete	- 0290*	017615	0.094	- 05801	- 000023
Slah Dummy	.0290	.017015	0.077	.05001	.0000+
Wood Roof Dummy	0333515	.025333	0.188	07503	.00832

 Table 6: Final Regression Results

Foreclosure Dummy	0546***	.014684	0.000	07877	03045
Tenant Occupied	0635***	.010156	0.000	08030	04688
Dummy					
Slate Roof Dummy	0665	.075890	0.380	19143	.05827
HOA Dummy	1024***	.012971	0.000	12378	08109
House Hold Size	1037***	.014298	0.000	12728	08023
HUD Dummy	1259***	.018144	0.000	15579	09608
Cash Finance Dummy	1339***	.012206	0.000	15402	11386
PCT_Incm10K14K	3278***	.095983	0.001	48567	16984

***Indicates statistical significance with 99 percent confidence

**Indicates statistical significance with 95 percent confidence

*Indicates statistical significance with 90 percent confidence

Property Characteristics

Regarding the hedonic regression results for property characteristics, the results were similar to the predictions made in Table 1. As expected, an increase in a property's lot size, home square-footage size, the number of bedrooms and bathrooms caused the final selling price of the property to rise. A one-thousand-foot increase in a home's square feet raised the final selling price by 0.030 percent. An increase in the number of full and half baths caused the final selling price to increase by 6.8 percent and 5.0 percent respectively. Likewise, an increase in the number of bedrooms and increase in the garage space size caused the final selling price to rise by 0.6 percent and 5.6 percent respectively. Though interestingly, when holding square feet of a home constant, more bedrooms initially add value, but at a decreasing rate. The foundation types had a positive effect on the final selling price of a home; a raised foundation caused the final selling price to rise by 30 percent, a concrete slab foundation caused the final selling price to rise by 26.5 percent and a raised concrete slab foundation caused the final selling price to rise by 30.6 percent. A home with a fireplace was sold for 6.5 percent more in a Census Tract than a home without a fireplace. The results of this study reveal that a home's value

increases as the number of bedrooms, bathrooms and the square-footage of a home increases. This study also reveals that homebuyers pay more for homes with additional features such as a pool or a fireplace. While improving the physical characteristics of a home rises the property's value, the type of home on a lot has differing impact on the final selling price. In a given Census Tract, a one-story home experienced a 7.7 percent increase in its final selling price, while Condos were sold for 35 percent less and Duplex or Half Plex were sold for 15 percent less.

Selling Characteristics

The regression results for selling characteristics were similar to the predictions made in Table 1, except for the Cash Finance variable. The Cash Finance variable measured the impact of cash home buyers on the final selling price of the property. Surprisingly, this study found that a unit increase in cash buyers caused the final selling price of a home in a Census Tract to decline by 13.9 percent. Together with the Cash Finance variable, other financing options had a negative effect on the final selling price. Foreclosure homes and Short Sale homes were sold for 8.6 percent and 15 percent less in a Census Tract respectively. Likewise, homes that were financed through the federal home loan programs, FHAA and VA, were sold for 1.2 percent and 0.007 percent less respectively, though it is worth noting that the negative effect of federal home loan programs on the final selling price of a property was very diminutive. Additionally, a home falling under a home owner association agreement (HOA) sold for 0.03 percent less than one without. But the amount of activity in the HOA (as measured by dues) tempered this by exerting a positive effect on sale value at a decreasing rate. And homes that were occupied with tenants sold for 6 percent in a given Census Tract than one without.

Neighborhood Characteristics

The primary interest of this thesis is the regression finding for neighborhood characteristics. Recall the hypothesis of this research – an increase in characteristics that define affordable housing households cause property values to decline. The regression findings for neighborhood characteristics concur with the hypothesis of this research. Overall, the findings suggest that in a given Census Tract, when affordable housing household characteristics increased, the final selling price of neighboring properties declined. The following is a summary of the quantitative impact of affordable housing household characteristics on the final selling price of properties:

- A unit increase in household size caused the final selling price to decline by 21.5 percent.
- A one unit increase in households with annual income less than \$10,000 caused the final selling price to decline by 0.4 percent.
- A one unit increase in households with annual income between \$15K and \$14K caused the final selling price to decline by 0.5 percent.
- A one unit increase in households with annual income between \$25K and \$34K caused the final selling price to decline by 0.18 percent.

Key Findings

The limitations of this research are that it used home sales data from the last fiscal quarter of 2013 and measured the relationship between affordable housing and property values for one of the 52 Counties in California. To further advance this research, this

thesis recommends conducting a trend study using a longitudinal design. Using a longitudinal design would provide opportunities to measure the quantitative relationship between affordable housing and property values over a period of time. Furthermore, this thesis recommends conducting a trend study using a cross-sectional design. Using a cross-sectional design would provide opportunities to measure home sales and demographic data of multiple counties from the year 2013. Replicating this study using both, longitudinal and cross-sectional design would provide an inclusive finding on the impact of NIMBY ism on California's housing supply. Despite the potential limitations of the broader usefulness of the findings, this study offers important findings relevant to the policy debate occurring in California, and other parts of the United States, regarding affordable housing. This study illustrates that the arguments put forth by local NIMBY groups deserve consideration when proposing affordable housing in a neighborhood.

CHAPTER 4

QUALITATIVE RESEARCH: FIELD STUDY

According to the Housing and Community Development's (HCD) 2017 housing report, the simple answer to the State's housing problem is "the State needs to build more housing units." The report further demonstrates that the State needs to build approximately 200,000 housing units annually to meaningfully address the housing crisis. However, housing development in California is a lengthy, complex and contentious process. One of the reasons often cited for the lengthy and complex development process is NIMBY ism. This thesis found that the NIMBY syndrome is largely based on the perception that affordable housing deteriorates neighborhood quality and depreciate property values. To quantify the validity of local NIMBY groups core argument, this thesis conducted a hedonic regression analysis using characteristics of affordable housing as key explanatory variable and final selling price of neighboring properties as the dependent variable. The previous chapter provided substantial information on the quantitative impact of affordable housing on neighboring properties. Based on the findings of the quantitative regression analysis, this thesis concluded that local NIMBY groups core argument against affordable housing has validity and deserves further consideration.

Therefore, this thesis conducted a qualitative research, which included face-toface interviews with housing experts in the greater Sacramento region. The objective of this qualitative research was to gather first-hand information on the implications of NIMBYism on the housing development process and identify best practical approaches to address NIMBYism. This chapter discusses the methodology used to conduct the qualitative research. After this introductory paragraph, this chapter discusses the process of selecting the appropriate research method, and the process of conducting face-to-face interviews. This chapter concludes with the process of gathering and analyzing the qualitative research data and the key findings.

Appropriate Research Approach

According to Singleton and Straits (2015), social researchers seek answers to research questions using four principle research strategies: analyzing available data, conducting test versus controlled experiments, and conducting field interviews or online/phone surveys (p. 5). While the four methods have their pros and cons, this thesis found the field interview methodology to be the most appropriate approach to seek answers related to NIMBY ism and affordable housing. Singleton and Straits (2015) writes that although the field interview method is costly and time consuming, it enable researchers to provide necessary information to the interviewees, such as explaining the objective of the research to the participants or sharing necessary information such as the quantitative regression results of this thesis. Singleton and Straits (2015) writes, there are several methods to conduct field interviews. This includes Computer-Assisted Self interviews, phone interviews and face-to-face interviews (p.281). This thesis elected to conduct the interviews using the face-to-face interview method because the direct and inperson interaction with the interview participants increase opportunities to build rapport with the participants, ask open-ended questions, restate the questions and ask follow upquestions. The field-interview method also allows participants to respond to the questions thoughtfully and comprehensively and with more flexibility than a self-administered survey method. As a result, this thesis deemed the field interview method as the appropriate research method for the qualitative research. After selecting the appropriate research approach, the next steps in the qualitative research were selecting the interview participants and conducting the field study in compliance with the International Review Board.

Selecting Interview Participants

Selecting the right interview participants is one of the most important steps in the qualitative research process. According to Singleton and Straits (2015), selecting the right participants enable researchers to gather correct data/information, resulting in a greater percentage of validity and reliability. They further state that researchers should account for four factors in order to select the "right" interview participants. These factors are identifying the primary objective of the qualitative research; knowing the unit of analysis and the sample size needed for robust findings; and forecasting the amount of time and funding needed for the research project. As mentioned earlier, the objective of this field study is to gather information from the housing experts on the implications of NIMBY is not the housing development process. Therefore, the unit of analysis for this research were organizations whose mission/goals included affordable housing and addressing housing needs in California. This thesis used purposive sampling method to select the "right" participants. According to Singleton and Straits (2010), in a purposive sampling methodology, the prospective participants share certain skills and qualities that makes them the ideal candidates for the research. Since the goal of this qualitative

research was to gather information on NIMBYism and California's housing crisis, the baseline criteria for selecting participants was any formal housing organizations in the State of California. This included state and local housing authorities, officially registered non-profit housing organizations, and affordable and market-rate housing developers. This thesis did not include renters' association, state or local building officials or informal housing organizations, such as local neighborhood groups.

This thesis invited a total of eight housing experts from the greater Sacramento area, the Yolo County and the Bay Area via email invitation. The email invitation requested the prospects to participate in a one-time face-to-face interview session and answer questions relating to the State's housing affordability crisis (see Appendix C). This thesis found that while the field interview method provides robust and precise findings, one of the disadvantages of this method is scheduling interviews. Out of the ten prospective interviewees, four agreed to participate in a face-to-face interview and one agreed to participate via phone. Two of the interview prospects declined to participate in this research because of professional reasons or time conflict, and one interview prospect was a non-responder. The table below provides information on the organizations of the interviewees that agreed to participate in a face-to-face interview.

Table 7: Description of Housing Organizations

Organization Name	Type of Agency	Mission
Sacramento Area Council of Government	Association of Local Government in the six-county Sacramento Region	Prepares the region's long-range transportation plan and approves the distribution of affordable housing in the region and assists in planning for transit, bicycle networks, clean air and airport land uses.
Mutual Housing California	Non-profit Affordable Housing Developer	Develop, operate and advocate for sustainable housing that builds strong communities through resident participation and leadership development.
Sacramento Housing and Redevelopment Agency	Housing Authority and Redevelopment Agency	Revitalize communities, provide affordable housing opportunities and to serve as the Housing Authority for the City and County of Sacramento.
Sacramento Housing Alliance	Non-profit Housing Coalition and Advocacy Group	Advocates for safe, stable, accessible, and affordable homes for homeless and lower income people in healthy communities through education, leadership, and policy change

Sources: Sacramento Housing Alliance; Sacramento Area Council of Government; Mutual Housing California and Sacramento Housing and Redevelopment Agency

The International Review Board Requirement

Prior to conducting a research involving human subjects, the IRB requires researchers to complete an online course on human subject research and obtain approval from the human subjects review committee of respective institutions. The purpose of completing the online course and obtaining an approval from the review committee is to ensure that the research is in compliance with the requirements of Public Welfare, 45 C.F.R. (2009), otherwise known as the Common Rule. The Common Rule require researchers to inform participants that their participation in the research is voluntary and that they have the right to not participate at all or leave the study at any time without penalty of loss or benefit. The Common Rule also require researchers to inform participants about the methodology utilized to protect private data and the type of data/information researchers' intent to disclose.

Since this qualitative research involved direct interactions with individuals from various housing organizations, this thesis obtained approval from the Office of Research Affairs at California State University, Sacramento prior to conducting the interviews. Before scheduling the interview appointments, this thesis also provided informed consent forms to the participants, which highlighted the participants, their rights and the necessary information regarding the confidentiality of personal information and disclosure of subject matter information through public presentations and publications (see Appendix B).

Conducting the Interview

The four face-to-face interviews and one phone interview were approximately one-hour in length. Two of the face-to-face interviews were conducted at the offices of the participants and the other two were conducted at local coffee shops. During the interview sessions, the interviewees were asked a total of eleven open-ended questions. All the interviewees were asked the same questions, however some of the follow-up questions differed based on the response to the original questions. The purpose of using open-ended questions was to gather detail information on the State's housing issue. Additionally, using open-ended questions provided insight on the participants understanding of the housing topic and allowed the participants to answer the questions thoughtfully and comprehensively. Listed below are the eleven interview questions. These questions were designed to seek information on the agency's role as it relates to California's housing policy and development; identify factors that contribute to the State's insufficient housing supply; and seek information on best policy recommendations to address the State's housing affordability crisis. Additionally, the questions were designed to seek information on the extent to which NIMBYism contributes to the state's housing affordability issue, reasons neighborhood residents elect to adopt NIMBY tactics, and identify best policy approaches to address NIMBYism.

Interview Questions

- 1. Can you please explain your agency's role as it relates to the state's housing policy and development?
- 2. One of the main reason for California's lack of affordable housing opportunities is the state's inability to meet the rising demand. What factors contribute to insufficient housing supply in California?
- 3. What is your agency's role in addressing the state's housing affordability issue?
- 4. To address the housing issue, the state must increase its housing supply in major metropolitan areas. Local governments in these regions are unable to increase housing supply because of strong opposition from neighborhood residents, also known as NIMBY. To what extent does NIMBYism contribute to the state's housing issue?

- 5. How does your agency view the issue of NIMBYism and what is your agency's role in addressing the issue of NIMBYism?
- 6. What are the main reasons neighborhood NIMBY communities opposed housing development?
- 7. Existing research on the topic of housing affordability suggest compensating local and regional government as well as neighborhood residents where the affordable housing development will be cited. Do you think the state government should implement policies that will compensate local government and local neighborhood communities?
- 8. What policy implication would you suggest in addressing the state's affordable housing issue?
- 9. According to reports on California's housing crises, the state needs to build approximately 200,000 annually to meaningfully address the housing issue. How can this goal be achieved? What other factors should be addressed? What should be the policy recommendation?
 - a. The second part of this question is regarding urban sprawl. Urban sprawl contributes to other issues such as loss in time and resources because Californian's spend more time in traffic congestion. It also increases infrastructure expenditure and annual greenhouse gas emission. The solution to this is increasing affordable housing opportunities within proximity of work and urban regions. How can this goal be achieved while also addressing the concerns of local neighborhood residents?

- 10. Existing research on NIMBYism suggest that addressing the issue of NIMBYism requires collaboration between various stakeholders, which includes state and local government, private developers, neighborhood communities. Would you agree that collaboration between stakeholders is necessary to address the housing affordability issue? How can this goal be achieved?
- 11. What is your agency's proposed policy recommendation or action plan to increase opportunities of collaboration between stakeholders such as local governments, neighborhood communities and private developers?

Gathering and Analyzing Data

According to Singleton and Straits (2010), the data-gathering and analyzing phase is the most prone to error phase in a qualitative research (p. 385). They further state that while using open-ended questions in qualitative research provide ample information on the subject matter, one of the major drawbacks of open ended-questions is summarizing and analyzing the wide-range of responses. Coding such data is time consuming and costly and is likely to result in high degree of error. To address the errors likely to occur during the data-analysis phase, this thesis adopted the following steps: first, this thesis recorded the response to the interview questions using a voice recorder application; secondly, this thesis transcribed the recordings into text format; and finally, this thesis coded the data into common themes and concepts. Following is a list of themes this thesis used to code each participant's response to the interview questions:

• Agency's role as it relates to the state's housing policy and development

- Reasons for the State's housing affordability issue
- Extent to which NIMBYism contributes to the housing issue
- Reasons neighborhood communities oppose affordable housing
- How does the agency address NIMBYism?
- Policy recommendation to address the State's housing crises
- Agency's position in compensating neighborhood NIMBY groups
- How to increase Collaboration between different stakeholders?

The purpose of coding the responses to the above-mentioned themes was to identify the factors that contribute to the housing affordability crisis and identify best policy recommendations to address the housing affordability issue and the issue of NIMBYism in particular. Appendix C provides detail information on each interviewee's response to the interview questions.

Key Findings

This chapter discussed the second part of the mixed-method research approach: the qualitative research. The qualitative research included face-to-face interviews with housing experts in the greater Sacramento region. As mentioned earlier, the purpose of conducting this qualitative research was to gather first-hand data/information on the implications of NIMBYism on the housing development process and identify best practical approaches to address NIMBYism. The findings of this qualitative research provided information necessary to understand the State's housing crisis and the implications of NIMBYism on the housing development process. In addition, this qualitative research provided information necessary to understand why neighborhood residents oppose affordable housing developments and identify best practical approaches to address NIMBYism. The following is a summary of the key findings:

- California's housing development process is complex and contentious. The housing development process involves multiple stakeholders with varying interests and objectives. Stakeholders seeking to advance their interests often leads to lengthy review process and disapproval of housing projects.
- This thesis found high construction costs, lack of housing subsidy and NIMBYism (neighborhood residents electing to adopt NIMBY tactics) as the major factors contributing to the State's housing crisis. Because of these factors, the State is unable to build housing units in a timely and cost-effective manner.
- This thesis found that the extent to which NIMBYism impacts a proposed housing development project varies from neighborhood to neighborhood, but the reasons neighborhood resident groups elect to adopt NIMBY tactics are similar to a larger extent.
- Primarily, local neighborhood groups elect to adopt NIMBY tactics to preserve neighborhood culture and identity, and protect property value.
- Local neighborhood groups fear that affordable housing increases traffic congestion and neighborhood crime rate. They oppose affordable housing development because of lack of communication from housing developers on how development projects will benefit existing residents.

- This thesis found that NIMBYism is a major contributing factor to the State's insufficient housing supply and addressing NIMBYism is critical for the State to increase its housing supply.
- This qualitative research found monetary compensation as the least preferable method to address neighborhood resident groups concerns, and community engagement and collaboration as the best practical approaches to address NIMBYism.

CHAPTER 5

RESULTS AND RECOMMENDATIONS

California's median home price is one of the highest in the nation. This is largely due to the State failing to build adequate housing units to meet its demand. To effectively address the resulting high housing prices, the State needs to increase housing supply in high demand areas such as coastal regions and metropolitan areas. One of the reasons often cited for the insufficient housing supply is NIMBYism- residents opposing proposed housing projects in their locality, particularly affordable housing. This NIMBY opposition towards affordable housing is based on the perception that affordable housing cause neighborhood quality to deteriorate and property values to decline. After conducting thorough research on NIMBYism and affordable housing, this thesis concluded that the following needed further examination to understand why neighborhood residents elect to adopt NIMBY tactics:

- Measuring the quantitative impact of affordable housing on neighboring properties using household characteristics (income level and household size) as key explanatory variable.
- 2. Examining the impact of NIMBYism on the housing development process.

This thesis adopted a mixed-method approach to address the major gaps listed above and to offer findings and develop recommendations to address NIMBYism. This thesis used a hedonic regression methodology to measure the quantitative impact of affordable housing on neighboring properties in Sacramento County. In addition, this thesis interviewed four housing experts in the Sacramento region. The purpose of interviewing these experts was to gather first-hand information on NIMBYism and its impact on California's housing crises and identify best practical approaches to address NIMBYism. This chapter discusses the results of the quantitative regression analysis. Specifically, this chapter discusses the quantitative impact of affordable housing on the final selling price of neighboring properties. This chapter also discusses the extent to which NIMBYism contributes to the State's housing crisis. Finally, this chapter concludes with recommendations to address NIMBYism.

Effects of Affordable Housing on the Final Selling Price of Residential Properties

This thesis assessed the quantitative relationship between affordable housing and property value in a Census Tract using three major household characteristics: household size, income level and highest level of education completed. Before conducting the hedonic regression analysis, this thesis proposed the following hypothesis: Census Tracts that experienced an increase in households with affordable housing characteristics also experienced a decline in the final selling price of neighboring properties. After conducting the regression analysis, this thesis found that an increase in Census Tract residents more likely to exhibit characteristics of those in new affordable housing was associated with a decline in the final selling price of properties sold in Sacramento County. Regarding the impact of household size on the final selling price of properties sold in the last quarter of 2013, the results show that an increase in household size by 0.53 persons per household (one unit rise from the average household size) caused the final selling price to decline by 8.1 percent. Furthermore, the regression results infer that an increase in low-income level households (\$24K or less) caused the final selling price of a residential property to decline by about a half percent. Also, worth noting, recall in Chapter 3 that measuring the impact of low-income level households, high school completion and poverty rate in the same regression model caused multicollinearity. This thesis used a separate specification for poverty rate and high school education rate in a Census Tract to account for multicollinearity. The regression results suggest that a 10.87 percent increase in the poverty rate caused the final selling price of properties to decline by 7.8 percent, and a one unit increase in households with less than a high school diploma caused the final selling price to decline by 10.6 percent. Table 7 shows the expected magnitude of the dollar changes predicted by the hedonic regression results.

Table 8: Expected Dollar Change in 2013 Market Value Home in SacramentoCounty from Given Change in Neighborhood Characteristics

Neighborhood Characteristic	Specification One	Specification Two
Average Household Size		
(mean of 2.84)	-\$18,360^	-\$27,120
rises one standard deviation of 0.5 persons		
% Education Less Than HS		
(mean of 13.39)	-\$20,952	-\$8,520
rises one standard deviation of 10 percentage points		
Poverty Rate		
(mean of 15.97)	-\$18,876	-
rises one standard deviation of 11 percentage points		
% Income Less than \$14K		
(mean of 5.45)	-	-\$9,024
Rises one standard deviation of eight percentage		
points		
% Income \$14K to \$24K		
(mean of 9.07)	-	-\$6,768
Rises one standard deviation of six percentage points		

% Income \$100K to \$200K		
(mean of 21.21)	-	\$12,586
Rises one standard deviation of 12 percentage points		
% Income \$200K Plus		
(mean of 4.96)	-	\$16,440
Rises one standard deviation of five percentage points		

An increase in average household size by 0.5 persons in a Census Tract caused the final selling price of residential properties to decline by \$18,000 - \$27,000; an increase in households with less than a high school education attainment caused the final selling price to decline by \$9,000-\$21,000; and an increase in poverty rate by 11 percent in a Census Tract caused the final selling price to decline by approximately \$19,000. Similarly, Table 7 shows that a six percent increase in households with annual income of \$14K-\$24K and an eight percent increase in households with annual income of less than \$14K caused the final selling price to decline by \$6,768 and \$9,024 respectively. On the other hand, increase in households with income level \$100K-\$200k in a Census Tract caused the final selling price to increase by approximately \$13,000.

The regression findings concur with the hypothesis of this thesis. The findings suggest that when residents with affordable housing characteristics (low-income, larger household size and less education attainment) increase within a Census Tract, the final selling price of neighboring properties decline. Thus, it should not be a surprise that homeowners are resistant to affordable housing sited within proximity of their homes. Housing is the single largest investment for the majority of Americans and since this study shows that an increase in affordable housing households resulted in a negative dollar-value impact on neighboring properties, existing residents' concern regarding the impact of affordable housing deserves consideration. The rest of this chapter discusses the extent to which NIMBYism hinders the housing development process and offer recommendations to address NIMBYism.

Factors Contributing to the State's Housing Crisis

This section discusses the factors that contribute to California's housing crises. Based on the findings of the qualitative research, which included face-to-face interviews with housing experts from the Sacramento region, this thesis identified three major factors that contribute to California's housing crisis:

- 1. Lack of funding for affordable housing.
- 2. Lengthy and complex review and approval process.
- 3. Neighborhood NIMBY Opposition

Key Finding # 1: Lack of Funding for Affordable Housing

One of the questions for the housing experts was to describe the factors that contribute to the State's housing crisis. The experts identified lack of funding for housing as the main contributing factor to the State's housing crisis. They further stressed that without adequate funding, local jurisdictions do not have the resources necessary to meet the local housing demand. Using the Redevelopment Act as an example, they stated that until 2012, local jurisdictions in California received re-development funding from the State government to rebuild blighted neighborhoods. This allowed local jurisdictions to adequately provide affordable housing and other local amenities to low-income neighborhoods. However, the elimination of such programs led to many jurisdictions not having sufficient resources to rebuild blighted neighborhoods. For example, the greater Sacramento region lost 66 percent of housing funds after the elimination of the Redevelopment Act. This led to the city adopting fewer affordable housing programs than they did prior to the elimination of the Redevelopment Act. Furthermore, examining from a financial point of view, without housing subsidy programs, local jurisdictions have a greater incentive to pursue commercial projects over residential because commercial projects generate local sales and property tax revenue.

This thesis found that without adequate funding, addressing the State's housing crisis will be challenging. Stressing the need for adequate funding, the housing experts stated that recipients of affordable housing need more than just "a roof over their heads." They need access to basic services and amenities such as healthcare, transportation, parks and recreation and other social programs for a higher quality of life. Without adequate funding, local jurisdictions are unable to provide basic services and amenities in an efficient and timely manner. This results in an adverse effect on the recipients of affordable housing as well as the communities where affordable housing is sited. *Key Finding # 2: Building in California – A Lengthy, Expensive and Complex Process*

While the housing experts ardently stated lack of funding as the main reason for California's housing crisis, they also conform that other factors need consideration to address the crisis. One of the factors that demands the State and local elected officials' attention is California's lengthy, expensive and complex housing development process. In California, a proposed housing project is reviewed by the government of the city/county in which the developer plans to build. While the review and approval process differ from jurisdiction to jurisdiction, this thesis found that overall, the State's housing development process is lengthy, complex and contentious. Developers are required to comply with local jurisdictions rigorous and complex zoning and planning requirements to get housing development projects approved. This rigorous and complex zoning and planning requirement, together with the costly permitting and entitlement fees and the high labor and material cost discourages many developers from building in California. Furthermore, developers are electing not to build affordable housing projects in California because of lack of financial incentive. After paying for the permitting and entitlement fees and other expenditures related to housing construction, the profit margin on affordable housing projects is minimal in comparison to market rate housing.

Furthermore, compliance with the requirements specified in the California Environmental Quality Act (CEQA), which includes submitting an environmental impact report (EIR) for the proposed project prolongs the approval process. EIR's provide local jurisdictions necessary information about the environmental impact of a proposed project. But the unintended consequences of CEQA and EIR is that neighborhood NIMBY groups have used CEQA to commission an unfavorable EIR for an affordable housing project for the economic reason of not wanting to lower residential property values, but often cloaked in the language of generating congestion and changing the character of the neighborhood. As mentioned in Chapter 1, Hernandez et.al. (2015) report on the implications of NIMBYism of the housing development process showed that out of 600 CEQA lawsuits filed against housing development projects between 2010 and 2012, 20 percent were filed by individuals or groups advocating for the protection of the environment and nearly 80 percent of the lawsuits were filed by local NIMBY groups to oppose affordable housing development in the neighborhood. Residential NIMBY ism in California, under the guise of an unfavorable EIR as allowed through CEQA, has successfully prevented affordable housing development projects from coming to fruition. Even if the positive findings of an affordable housing development's EIR are ultimately valid; the threat of a prolonged challenge to them, and the cost borne by the developer if it materializes, discourages the construction of affordable housing in the State. The housing experts cited that misuse of CEQA and EIR by local NIMBY groups has made it impractical to increase the housing supply in a timely manner.

Key Finding # 3: Neighborhood NIMBY Opposition

The NIMBY opposition has often been cited as a reason for disapproval of housing development projects. One of the questions for the interview panelist was to describe the extent to which NIMBY ism contributes to the State's housing crises. The experts identified NIMBY ism as a major contributing factor to the state's housing crisis. They further stressed that developers/builders for both, affordable and market rate housing should anticipate some type of NIMBY opposition every time they propose housing projects in a jurisdiction. This is largely because neighborhood NIMBY opposition is embedded in the local review and approval process. In California, housing development is a local government process. Local jurisdictions have the authority to review and approve or reject proposed housing projects. Part of the review process is the public hearing and comment phase. This phase allows residents to voice their opinion on development projects in their neighborhood. Neighborhood residents often utilize this opportunity and platform to oppose affordable housing projects, which results in lengthy review and approval process or rejection of proposed projects.

This thesis found that a common type of NIMBY opposition method is local neighborhood residents partaking in public hearings and voicing their opposition towards proposed projects. Other methods local NIMBY groups utilize that demonstrates active NIMBY ism includes distributing flyers in the neighborhood; canvassing door to door; posting NIMBY signs in the front yard and in the neighborhood; using media/social media to tell their story; and pressuring local elected officials to vote "NO" on proposed housing projects. Iglesias (2006) writes, if elected officials show signs of support towards proposed projects, neighborhood residents threaten a lawsuit or a referendum, or threaten to vote elected officials out of the office. These collective action strategies on the part of neighborhood residents often result in elected officials coinciding with residents and voting "NO" on housing projects.

Why do neighborhood residents oppose affordable housing projects?

Some neighborhood communities are antigrowth and will oppose every type of development project; even projects that benefits the neighborhood such as public parks. They perceive every project as a threat to the identity and culture of the neighborhood. Regarding, affordable housing, the NIMBY opposition is based on the perception that affordable housing is "bad" for the neighborhood. This thesis identified similar reasons as specified in the literature review chapter for neighborhood communities to oppose affordable housing projects. When neighborhood residents learn about affordable housing being sited within proximity of their homes, they conclude that it will generate negative externalities in the neighborhood. Residents fear that siting affordable housing within proximity would result in traffic congestion, higher crime rate, and an adverse effect on neighborhood identity and quality. They argue that such externalities make the neighborhood undesirable for potential buyers, thus causing property values to decline.

Stakeholder Objectives and Conflicting Interests

This section provides information on the relevant stakeholders in the housing development process. Since housing development involves multiple stakeholders, it is important to know the stakeholders and their goals and objectives as it relates to housing in California. Discussing the relevant stakeholders and their objectives offers an insight on the conflicting interests between stakeholders and why residents elect to adopt NIMBY tactics. As mentioned earlier, housing development is a multi-phase process in California, involving multiple stakeholders. The development process involves the Department of Housing and Community Development (HCD); regional government such as Sacramento Area Council of Government (SACOG); local housing entities such as Sacramento Housing and Redevelopment Agency; city and county government; housing advocacy groups such as Sacramento Housing Alliance (SHA); non-profit housing organization such as Mutual Housing; developers and neighborhood residents. This thesis found that these stakeholders have different roles and responsibilities in the housing development process. Additionally, they have different objectives to accomplish and interests to serve. The table below shows the responsibilities and objectives of the stakeholders.

Stakeholder	Type of Governance/ Representation	Goals and Interests of Stakeholders
Department of Housing	State Government	Implement policies that increases
and Community		opportunities for healthy, safe and affordable
Development (HCD)		housing in California
Sacramento Area	Regional Government	Responsible for developing regional land use,
Council of Governance		housing and transportation plans.
(SACOG)		
Sacramento Housing and	Local Government	Housing authority and development agency.
Redevelopment Agency		Responsible for developing local land use and
(SHRA)		housing policies.
City Council/ City	Local Jurisdictions	Implement zoning, land use and housing
Planning Commission		ordinances. Makes decision on proposed
_		housing projects.
Sacramento Housing	Advocacy Group	Member based advocacy group. Primary goal
Alliance (SHA)		is to increase affordable housing opportunities
		in the Sacramento region.
Mutual Housing	Non-Profit Housing	Manage operations of affordable housing
	Developer	programs
Private Developers	For Profit Housing	Primary goal is to generate maximum profit
_	Developer	from housing development
Neighborhood NIMBY	Formal or informal	Neighborhood communities who oppose
Communities	Representation	affordable housing to preserve neighbor
		identity and protect home value.

Table 9: Goals and Interests of Stakeholders

The above table shows conflicting interests between affordable housing developers and for-profit developers. Private developers' primary objective is to generate maximum profit from proposed housing projects, while affordable housing developers' primary goal is to increase affordable housing opportunities for socio-economic disadvantaged households. The table also shows that housing developers and neighborhood residents have conflicting interests and objectives. While the developers' primary objective is to build homes for the purpose of either earning profit or increasing housing opportunities, neighborhood residents perceive housing projects as a threat to the identity of the neighborhood. Neighborhood communities' elect to adopt NIMBY tactics to preserve the identity of the neighborhood and protect home values. This thesis identified the protection of a home's value as the underlying factor for most NIMBY opposition.

In addition to the preservation of neighborhood identity, another factor that compels neighborhood residents to adopt NIMBY tactics is lack of communication from developers on how a proposed project will benefit existing residents and the community at large. Because of lack of communication and collaboration, residents often view developers as "outsiders" and "money makers" whose primary goal is to maximize profit from the developments at the expense of the community.

Addressing NIMBYism

Based on the findings from the qualitative research, this thesis concludes that NIMBYism deters the State from accomplishing its housing goals. Neighborhood residents utilizing NIMBY tactics to prevent affordable housing in their neighborhood often results in either lengthy review and approval process or rejection of development projects. This hinders the State from building adequate housing units in a timely manner. The housing experts unanimously agreed that addressing NIMBYism is critical for the State to adequately increase its housing supply. This thesis also found that the extent to which NIMBYies stall affordable housing projects varies from one neighborhood community to another. Some neighborhood residents are more reluctant to housing projects and adhere to more organized and aggressive collective action strategies. Other neighborhood communities view affordable housing as a public good and are more supportive to the idea of having affordable housing in their neighborhood. One of the objectives of this thesis was to identify best practical approach to mitigate NIMBYism and bridge the gap between proponents and opponents of affordable housing. This thesis found that because NIMBY opposition varies from one neighborhood to another, a single practical approach is not applicable to address NIMBYism in every neighborhood.

Based on the comprehensive research on affordable housing and NIMBYism, which included reviewing existing literature and interviewing housing experts in the Sacramento region, this thesis deems three types of interactive method as instrumental in mitigating neighborhood NIMBY opposition. These methods are:

- 1. **Collaborative Governance**–Making stakeholder collaboration as part of the development
- Community Outreach incorporating community outreach programs in the housing development process.
- Compensation-providing some type of compensation to communities that bear the social/economical cost of affordable housing and providing tax credit or subsidies to local governments to maintain the quality of local services and amenities.

Collaborative Governance

Collaborative governance is a type of governing arrangement that provides individuals and groups with diverse interests and objectives, a platform to engage in a consensus-oriented deliberation and decision-making process that could not otherwise be accomplished (Emerson & Nabatchi 2015, p.18). Neighborhood residents often elect to

adopt NIMBY tactics because of lack of information from developers and local leaders on how a proposed housing project will benefit the community. This thesis found that collaborating with neighborhood residents increases opportunities to bridge the gap between proponents and opponents of affordable housing. Iglesias (2002) recommends incorporating a Managing Local Opposition (MLO) framework to increase collaboration between neighborhood residents and developers. After studying local opposition to affordable housing in the San Francisco Bay Area, he believes the best practical approach to manage local opposition is recognizing the validity of NIMBY ism and incorporating community outreach programs and proactive collaboration between stakeholders as part of the housing development process. He describes this as respecting the "legitimate" concerns of the community, honoring the rights of current and prospective residents, and advancing the prospects for future affordable housing. Iglesias (2002) writes that incorporating a proactive collaborative approach during the early stage of the development process will allow developers to assess residents' perception towards affordable housing. This will also allow developers to share information with the residents on the benefits of the affordable housing and address any issues or concerns residents may have regarding the project. Iglesias further writes that incorporating an early stage collaboration process provide developers the window of opportunity to build rapport and trust with the residents.

Acknowledging the relevance of a proactive collaboration process, this thesis asked the housing experts to explain the importance of stakeholder collaboration in the housing development process. All four of the housing experts agreed that early stage collaboration plays a significant role in the development process. It helps alleviate the misconception regarding affordable housing and address the concerns put forth by neighborhood residents. One of the agencies interviewed for this thesis was Mutual Housing (MH), a non-profit affordable housing developer in the greater Sacramento area. When MH proposes an affordable housing project in a neighborhood, MH's strategy is to collaborate with the residents early in the development process. Before the first public hearing, MH staff will conduct an information session meeting with the residents. This allows MH staff to provide background information on the goals and objectives of MH and introduce the project to the residents. MH staff stressed that early stage meeting with the residents provides a platform for both, developers and neighborhood residents to collectively discuss the project and identify any potential issues or concerns residents have regarding the project. This helps in mitigating any potential NIMBY issues and allows MH to build rapport with the community. The MH staff further stressed that collaboration with the residents during the early phase of the development process minimizes opposition during the hearing process, thus increasing opportunities for project approval.

Community Outreach Programs

In addition to early stage collaborative deliberation, this thesis found that outreach programs are an effective method to connect with the community and educate residents about the importance of affordable housing. According to the interview participants, the common misconception about affordable housing is that affordable housing is "bad" for the neighborhood and cause property values to decline. All the interview participants stated that their agencies utilize community outreach programs to address neighborhood NIMBY concerns. The staff of Sacramento Housing Alliance (SHA) utilizes outreach programs to educate the community that most of the recipients of affordable housing are people with skills and traits that the community needs, such as service workers, teachers and other civil servants. SHA staff further stated that they use outreach programs to educate the residents about how affordable housing help build communities. For example, the staff stated that residents often assume that affordable housing creates negative externalities in the neighborhood. However, studies have shown that providing affordable housing to the homeless population and the socio-economic disadvantaged households not only increases opportunities for recipients of affordable housing to be self-sufficient, but also minimizes reliance on public goods and services.

Another misconception local NIMBY residents have about affordable housing is that affordable housing facilities are mismanaged and creates "eye-sore" in the neighborhood. Before proposing an affordable housing projects in a neighborhood, Mutual Housing (MH) and Sacramento Housing Alliance (SHA) staff conducts seminars and community meetings, which allows them to educate the residents about the management and operation of affordable housing facilities. Furthermore, it allows them to discuss the positive and negative effects of affordable housing, and collectively identify best practices to manage and operate affordable housing in the neighborhood. Additionally, MH and SHA conduct bus tours; take neighborhood residents to affordable housing facilities to educate the residents about how MH and SHA manage and operate affordable housing facilities. MH and SHA claim that outreach programs have proven to be instrumental in mitigating issues and concerns neighborhood residents have regarding affordable housing and bridging the gap between proponents and opponents of affordable housing.

Some Form of Compensation

This thesis concludes that outreach programs and early stage collaboration increases opportunities to alleviate misconceptions regarding affordable housing and provide opportunities for proponents and opponents of affordable housing to engage in a collaborative decision-making process. However, all the interview participants acknowledged that protectionist communities will always be reluctant to affordable housing developments. The participants stressed that it is not feasible to propose affordable housing projects in neighborhoods with lack of development land and in neighborhoods that are not within proximity of public services such as public transportation. Additionally, they stressed that it is not feasible to build affordable housing in protectionist neighborhoods – residents are willing to go to great lengths to protect the character and culture of the community. This thesis asked the interviewees if neighborhood communities should receive some type of compensation to offset the unintended consequences of affordable housing. The housing experts opposed the idea of compensating NIMBY homeowners, citing that affordable housing, if managed and maintain appropriately, is beneficial to neighborhoods. However, this thesis found that increase in intended residents of affordable housing can cause social disorganization, such as traffic congestion in the neighborhood. Therefore, this thesis recommends some
form of compensation/tax credit to neighborhood communities and local jurisdictions to provide local goods and services sufficiently and improve neighborhood infrastructure.

Weisberg (2007) recommends adopting a "fair-share" approach; providing nonmonetary compensation in the form of neighborhood improvement subsidies and/or tax reductions. Weisberg (2007) describes New York City's "fair-share" approach to the siting of affordable housing as involving four steps: (1) an agreement that status quo unacceptable. (2) a participatory and open process to all stakeholders that admits past mistakes, (3) an overall goal of geographic fairness, and (4) the necessity keeping multiple options open. Within this approach, New York City has recognized the potential cost to a neighborhood of locating more affordable housing there and sometimes provides non-monetary compensation in the form of neighborhood improvements and/or tax reductions. California has chosen to instead employ a set of "Anti-NIMBY Tools" (Rawson, 2006) centered around its statewide Housing Element Law that every jurisdiction must plan/zone for its fair share of affordable housing necessary for the region it is part of. Though, as noted earlier, the achievement of this affordable housing element is difficult due to local NIMBYism and the California Environmental Quality Act (CEQA) that permits the slowdown/stoppage of its construction if "environmental" concerns raised.

Wassmer (2005) suggest that local jurisdictions work together to meet the housing demand in the greater metropolitan area. Wassmer (2005) broached this subject by suggesting the allowance for jurisdictions most adverse to building their state-mandated portion of regional affordable housing, compensating another jurisdiction for doing it instead. Given that California has since embraced the market practice of "cap-and-trade" as the preferred method of achieving its ambitious greenhouse gas (GHG) emission goals, why not consider a version of this to overcome the pervasive NIMBY ism that exists in the siting of affordable housing? The analogy to a desired one-third statewide reduction in GHGs, being the desire within a region that every jurisdiction satisfy its Housing Element requirement of one-third of its housing becoming affordable to low-income residents in the region. Under cap-and-trade for GHG reduction, the realization is explicit that it is not efficient to require every GHG generator in the state to adhere to a one-third cut. Instead, what occurs is the imposition of a mandate on each GHG generator to cut its emissions by one third by a certain date in the future. Those generators not wishing to meet the mandate can buy the right to emit more from another emitter, who would then need to emit even less. Economists recognize this as a more efficient way of reaching the same overall goal. As applied to achieving a housing affordability goal in a region, consider a jurisdiction seeking to satisfy its one-third affordable housing element, but facing extreme resistance from NIMBYs saying that it imposes too high a cost to do so. Under a cap-and-trade scheme, the local policymaker could approach another jurisdiction in the region and asks how much compensation they would need to take on an additional amount of affordable housing. Those expecting a greater drop in home value due to affordable housing, would pay those jurisdictions expecting to experience less. And the payment could then compensate the homeowners who subsequently had the affordable housing placed in their backyard. A market transaction, that if it occurs, leaves everyone better off.

CHAPTER 6

CONCLUSION

The objective of this thesis was to understand the concerns of local NIMBY groups regarding the proximity of affordable housing to their own residence; whether the greater intensity of affordable housing in a neighborhood has an adverse effect on the selling price of neighboring properties. This objective was in response to the argument that NIMBYism deters developers from building in California and delays the approval of housing projects. If NIMBYism is often cited as a major contributing factor to the State's inadequate housing supply, understanding NIMBYism and its impact on the State's housing crises, and identifying efficient practical methods to mitigate local NIMBY opposition is more important today than it has ever been in the past.

Using secondary home sales and neighborhood/household characteristics data, this thesis conducted a hedonic regression analysis to measure the impact of affordable housing on neighboring property values in a given Census Tract in Sacramento County. The primary intent of this study was to examine the effects of larger housing size, lower educational achievement, and low- income level (indicators of affordable housing) in a Census Tract in an urban California County on the selling price of a house within the tract. Despite research limitations, this thesis offers important findings relevant to the policy debate occurring in California, and other parts of the United States, regarding affordable housing. This study suggests that socio-economic status of those more likely to inhabit affordable housing – such as low-income level, lower education attainment, and larger households – exert negative influence on the selling price of a residential property in Sacramento County.

The results of the quantitative regression analysis demonstrate that the arguments put forth by local NIMBY groups deserves consideration when proposing policies designed to increase affordable housing in a jurisdiction. This thesis also conducted a qualitative analysis, which included face-to-face interviews with housing experts from the greater Sacramento area. The results of the qualitative research demonstrate that local NIMBY opposition varies from one neighborhood to another and that a single practical approach is not sufficient to address every NIMBY opposition. The qualitative research also demonstrates that when developers propose to build affordable housing in a neighborhood, they must adopt a broad range of practical methods to address NIMBYism, including community outreach program, collaboration between different stakeholders from an early stage of the development process and in some dire cases, compensating neighborhood communities.

Why is it necessary to adopt a broad range of practical methods during the development process? Housing development in California is a complex and contentious process. The process involves multiple stakeholders with diverse interests and objectives. This thesis found that NIMBYism largely looms in the development process because of lack of collaboration between stakeholders and conflicting interests between neighborhood communities and housing developers. The methods are not by any means the only practical approach for addressing NIMBYism. However, since the impact of NIMBY opposition varies from one neighborhood community to another, this thesis

99

believes that community outreach, collaboration and compensation provides a broad range of options that policy makers and proponents of affordable housing can use to lessen the conflict between developers and neighborhood residents. Furthermore, it increases opportunities to bridge the gap between proponents and opponents of affordable housing. Finally, alleviating NIMBYism from the housing development process will not address the housing affordability crises in its entirety. To adequately address the State's housing crisis, State and local lawmakers also need to address other factors such as increasing funding for affordable housing and reviewing existing housing laws. But understanding and addressing local NIMBY opposition increases opportunities for the State to provide sufficient housing units in a timely manner.

Appendix A:	Table of	Regression	Articles
-------------	----------	------------	----------

Author(s) / Date	Location, Data Set, Years; Sample Characteristics	Type of Research/ Scope of Research	Key Explanatory Variable	General Conclusion	Research Findings
Albright et.al. (2013)	Location: New Jersey. Data Set: Crime Data: Uniform Crime Report for the State of New Jersey. Affordable Housing Data from New Jersey Department of Community Affairs. Year: 1990-2008 Data Set: Property Value and Property Tax Data from New Jersey Division of Taxation. Year: 1994-2010 Sample Characteristics: City Level Analysis of ELH Public Housing Development and Crime Rate, Property Value,	Regression Analysis. Multiple Time Series Control Group Quasi Experiment Research Scope: The research focused on the impact of ELH public housing development on property values in New Jersey suburban communities	Type of Affordable housing: Ethel Lawrence Housing Developmen t-140 unit affordable housing development	The ELH Public Housing Development did not have significant effect of property values in Mt. Laurel Township. Similar to Evesham, Cherry Hill and Cinnaminson, property values in Mt. Laurel increased even after the opening of ELH Housing Project. The findings suggest that affordable housing can be developed in affluent suburban neighborhood.	 Property values in Cherry Hill increased on average by \$13693 every year between 2001 and 2010. Property values in Cinnaminson increased on average by \$13790 every year between 2001 and 2010. Property values in Evesham increased on average by \$13722 every year between 2001-2010. After ELH development, property values in Mount Laurel increased on average by \$13827 every year between 2001 and 2010. ELH development had no significant effect on property values in Mt. Laurel

	I continue Dhile delate	Decreasion Arcal-usia	Distor	The study measure 1	Easton income handings with the
Lee et.al. (1999)	Location: Philadelphia. Data Set: Assisted Housing Data from U.S Department of Housing and Urban Development. Year: 1989- 1991 Data Set: Sale Price Data from Board of Revision of Taxes in Philadelphia. Year: 1989-1991Sample Size: N=18062.Sample Characteristics: Types of Affordable Housing Program, Neighborhood Characteristics.	Regression Analysis. Hedonic Linear Functional Research Scope: The research focused on the impact of federally assisted housing project on property values.	Distance of federally assisted housing project and type of affordable housing project.	Ine study measured distance of federally assisted housing projects and concluded that federally assisted home ownership program had beneficial impact of surrounding properties. However, public housing preferences for poor tenants and low-income households since the 1980s have led to negative impact on surrounding property values.	 For low income housings within a quarter mile, property values declined by 4.2 percent. For low income housings located within one-eighth of a mile, property values declined by 4.2 percent. For properties located within a quarter mile of Scatter-site Public Housing, value declined by 0.7 percent. For properties located within a quarter mile of Section 8, New Construction and Rehabilitation Housing, value declined by 0.29 percent. For properties located within a quarter mile of Section 8, New Construction and Rehabilitation Housing, value declined by 0.29 percent.
Galster et.al. (2006)	Location: Cleveland. Data Set: Housing Data obtained for City of Cleveland was obtained from the Urban Institute through its National Neighborhood Indicators Partnership Year: 1993- 1999). Data Set: Demographics Data obtain from the US Census Tract.	Regression Analysis.Hedonic LinearFunctionalResearch Scope:The research examinedthe impact on propertyvalues in neighborhoodswith high concentrationof poverty.	Characteris tics of Affordable Housing Occupant: Poverty Rate	Study finds that household poverty level below had no significant impact on property values until poverty level exceeded 20 percent.	Neighborhoods with poverty level below 10 percent had no significant impact on property values. Neighborhood with poverty level higher than 15 percent had negative impact on property values.

	Year: 1993-1999). Sample Size: N=12,650Sample Characteristics: Percent Poor, Property Structure, Crime Rate				After poverty level reached 19 percent, a 1 percent increase in households receiving affordable housing assistance yields 1.78 percent decline in single family home values.
Woo et.al. (2015)	Location: Charlotte, NC and Cleveland, OH. Data Set: Housing Sales Data Obtained from the County Assessor's Office for Charlotte and Ohio Community and Neighborhood Data Year: 1996-2007 Data Set: Data Obtained from U.S. HUD for LIHTC Development Year: 1996-2007) Sample Size: Charlotte N=114,471. Cleveland N=27,636. Sample Characteristics: Property Structure, Sale Years, Occupant Characteristics	Regression Analysis. Adjusted Time Series Difference in Difference (AITS-DID). Research Scope: The research examined Neighboring Property Values before and after the development of LIHTC Housing in Charlotte and Cleveland.	Type of Affordable Housing: LIHTC Housing Developmen t	Study finds that LIHTC had positive effect on property values Cleveland OH. Study finds LIHTC had negative impact on property values in Charlotte NC.	Cleveland- Before the LLHTC development, property values were 8.1 percent lower compared to property values in controlled neighborhood. After the LIHTC development, property values increased by 7.1 percent in LIHTC development. Charlotte- Before LIHTC development property values were 5.4 percent lower in neighborhood with LIHTC development compared to property values in controlled neighborhood. After LIHTC development, property values in LIHTC neighborhood were 6.6 percent lower compared to values in controlled neighborhood.

			1		
Green et.al. (2002)	Location: Madison and Milwaukee. Data Set: Property Value Data obtained from Multiple Listing Service of South Central Wisconsin Year: 1999-2000. Sample Size: Maddison N=3193 Data Set: Property Sales Data obtained from Metropolitan Milwaukee County Year: 1999-2000 Sample Size: Milwaukee N=2258 Data Set: Section 42 Development Data obtained from Wisconsin Housing and Economic Development Authority Sample Characteristics: Metropolitan City Home Sales and LIHTC development	Regression Analysis. Repeat Sales Method (Paired Sales Technique). Analyzing Home Sales Data for all units sold at least twice. Research Scope: The research examined whether proximity of LIHTC housing development had an impact selling price of neighboring properties.	Proximity of Affordable Housing Developmen t: Distance of LIHTC Housing Developmen t	Study finds no evidence that LIHTC development had negative impact on property values.	For one standard deviation away from the LIHTC project, property values depreciated by 0.5 percent in Milwaukee area. On the contrary, proximity to LIHTC development did not diminish property values in the Madison Metropolitan area
Bair and Fitzgerald (2005)	Location: Atlanta, Charlotte, Kansas, Boston, Denver, Philadelphia. Data Set: 2000 Census Sample Data File. Housing Price Data from American Housing Survey. Year: 1999 Sample Characteristics: Public Housing Type,	Regression Analysis. Hedonic Non-Linear Functional Semi-Log Research Scope: The research focused on the effects of HOPE VI housing project and other housing projects on neighboring properties selling price and the	Type of Affordable housing. HOPE VI Housing Project and Other Housing Projects, and properties.	Study finds HOPE VI housing development and property value had positive correlation.	For each mile closer a residential property was from HOPE VI housing project, property values increased by 8.25-10.25 percent. For each mile closer a residential property was from other types of affordable housing development, property values increased by 0.5 percent.

	Occupant characteristic and property characteristic	effect of HOPE VI's proximity on neighboring properties selling price.			
Nourse (1963).	Location: St. Louis. Data Set: Data for years between 1937 and 1959 were Obtained from Census Block Statistics. Nourse constructed price index for eight neighborhoods with housing projects and three control neighborhoods. Sample Characteristics:	Regression Analysis Log-Linear, Two-Stage Least Squares Research Scope: Examine the impact of public housing Projects on surrounding properties value against neighborhoods with no public housing projects.	Neighborho od with public housing projects and Neighborho od with non- public housing projects.	Nourse concluded that his data provided no evidence that selling price for homes in public housing projects neighborhoods were higher than neighborhoods without public housing projects. Public housing projects did not cause neighboring property values to increase.	For year 1937, for properties located in Area A (neighborhood with public housing), their values increased by 1.01 percent. Properties located in Area A (1) (neighborhood with no public housing), their values increased d by 0.99 percent. Nourse had similar findings for property values in Area A, B and C between 1937 and 1959.

	Number	Square Foot	Year Built	Garage	Bedrooms	Tile Roof	No Foundation
	Days on	_		Space		Dummy	
	Market						
Number Days on	1.0000						
Market							
Square Foot	0.0889	1.0000					
Year Built	0.0160	0.3655	1.0000				
Garage Spaces	0.0279	0.5283	0.3972	1.0000			
Bedrooms	0.0487	0.7005	0.2633	0.4067	1.0000		
Bath Full	0.0518	0.7298	0.4542	0.4751	0.6146	1.0000	
Tile Roof Dummy	0.0153	0.3776	0.6125	0.3048	0.2560	0.3417	1.0000
No Foundation Dummy	0.0055	-0.0297	-0.0283	-0.0363	-0.0275	-0.0156	-0.0304
Prop1House Dummy	-0.0108	0.2190	-0.0772	0.2703	0.3531	0.1586	0.0561
Short Sale Dummy	0.4764	0.0216	0.0727	0.0144	0.0057	0.0394	0.0145
Tenant Occupied	0.0662	-0.0995	-0.0226	-0.0388	-0.0973	-0.0813	-0.0588
HUD Dummy	0.0689	-0.0495	0.0153	-0.0295	-0.0312	-0.0369	-0.0102
HOA Dummy	0.0090	0.0621	0.3481	-0.0624	-0.1485	0.0521	0.2823
Cash Finance	0.0294	-0.1442	-0.1062	-0.1552	-0.1507	-0.1353	-0.0924
CC And R	-0.0363	0.0769	0.2222	0.0704	0.0369	0.0988	0.1803
Median Age	-0.0035	0.1998	-0.1875	0.0804	0.0126	0.0897	-0.1213
House Hold Size	0.0201	0.0539	0.3691	0.1699	0.2149	0.1243	0.2735
Edu HS Grad	-0.0314	0.3310	0.2216	0.2305	0.1481	0.2740	0.2456
Edu Bachelor's	-0.0238	0.3996	0.1621	0.1782	0.1299	0.2633	0.3125
Income 10K-14K	0.0195	-0.3222	-0.3754	-0.3036	-0.2405	-0.3255	-0.3018
Income Ls10K	0.0159	-0.3038	-0.3157	-0.2852	-0.2260	-0.3119	-0.2865
Income 15K-24K	0.0121	-0.3534	-0.4245	-0.3246	-0.2424	-0.3230	-0.4118
Income 25K-34K	0.0255	-0.3170	-0.3106	-0.2335	-0.2048	-0.2859	-0.3482
Income 35K-49K	0.0110	-0.3191	-0.2319	-0.1934	-0.1443	-0.2167	-0.3653
Income 50K-74K	-0.0071	-0.1116	0.0288	0.0027	-0.0063	-0.0105	-0.0624
Income 75K-99K	-0.0169	0.1895	0.3845	0.2407	0.1823	0.2427	0.3332
Income 100K-149K	-0.0286	0.4188	0.4517	0.3434	0.2626	0.3677	0.4771
Income 150K-200K	-0.0176	0.4240	0.3278	0.2883	0.2383	0.3174	0.4297

Appendix B: Correlation Coefficients for Pairwise Comparison of Explanatory Variables

Income 200Kplus	0.0079	0.4511	0.2319	0.2729	0.2231	0.3202	0.3026

	No	1-House	Short Sale	Tenant	HUD Dummy	HOA Dummy	Cash
	Foundati	Property	Dummy	Occupied			Finance
	on						
	Dummy						
No Foundation Dummy	1.0000						
Prop1HsDummy	-0.0365	1.0000					
Short Sale Dummy	-0.0009	-0.0390	1.0000				
Tenant Occupied	0.0003	-0.0777	0.0982	1.0000			
HUD Dummy	-0.0070	-0.0113	-0.0492	-0.0468	1.0000		
HOA Dummy	0.0295	-0.4785	0.0043	-0.0057	0.0230	1.0000	
Cash Finance	0.0354	-0.1572	0.1504	0.1082	0.0114	0.0508	1.0000
CC And R	-0.0238	-0.0860	-0.0262	-0.0472	0.0443	0.1799	-0.0632
Median Age	0.0393	-0.0388	-0.0559	-0.0695	-0.0415	0.0840	-0.0457
House Hold Size	-0.0268	0.1849	0.0834	0.0702	0.0217	-0.1666	0.0056
Edu HS Grad	0.0059	-0.0309	-0.0281	-0.1069	-0.0277	0.2359	-0.1416
Edu Bachelor's	0.0110	-0.0342	-0.0415	-0.0926	-0.0525	0.3032	-0.1188
Income 10K-14K	0.0160	-0.0494	-0.0141	0.0731	0.0173	-0.0965	0.1278
Income Ls10K	-0.0079	-0.0571	0.0034	0.0586	0.0234	-0.0708	0.1331
Income 15K-24K	0.0002	-0.1196	-0.0246	0.0745	0.0459	-0.1260	0.1525
Income 25K-34K	-0.0198	-0.1000	0.0046	0.0712	0.0221	-0.1223	0.1157
Income 35K-49K	-0.0055	-0.0325	-0.0029	0.0304	0.0068	-0.2173	0.0786
Income 50K-74K	0.0005	0.0295	0.0288	-0.0045	0.0093	-0.1467	-0.0053
Income 75K-99K	0.0011	0.0849	0.0402	-0.0559	-0.0070	0.0498	-0.0896
Income 100K-149K	0.0058	0.0866	-0.0005	-0.0677	-0.0187	0.1903	-0.1576
Income 150K-200K	-0.0078	0.0692	-0.0112	-0.0609	-0.0452	0.2380	-0.1428
Income 200Kplus	0.0060	0.0650	-0.0130	-0.0380	-0.0395	0.1685	-0.0985

CC & R	Median Age	House Hold Size	High School Graduate	Edu Bachelor's	Income 10K-14K	Income Ls10K

CC And R	1.0000						
Median Age	-0.0080	1.0000					
House Hold Size	0.0210	-0.6139	1.0000				
Edu HS Grad	0.1141	0.4989	-0.4270	1.0000			
Edu Bachelor's	0.1222	0.4556	-0.3991	0.7467	1.0000		
Income 10K-14K	-0.1184	-0.2432	-0.0940	-0.5954	-0.4318	1.0000	
Income Ls10K	-0.0970	-0.3164	-0.0361	-0.5394	-0.4231	0.6073	1.0000
Income 15K-24K	-0.1380	-0.2021	-0.1085	-0.6199	-0.5500	0.6041	0.5282
Income 25K-34K	-0.0696	-0.2227	-0.0324	-0.5401	-0.5491	0.4186	0.3701
Income 35K-49K	-0.0882	-0.2452	0.0411	-0.3874	-0.5788	0.1895	0.1835
Income 50K-74K	0.0053	-0.0779	0.0989	0.0305	-0.1694	-0.2279	-0.2380
Income 75K-99K	0.0954	0.0709	0.1864	0.4121	0.2102	-0.5006	-0.4746
Income 100K-149K	0.1238	0.2556	0.0837	0.6504	0.6506	-0.6251	-0.5635
Income 150K-200K	0.1257	0.3075	-0.0355	0.5881	0.7302	-0.5013	-0.4791
Income 200Kplus	0.0884	0.3972	-0.0606	0.4844	0.6709	-0.4118	-0.3918

	15K-24K	25K-34K	35K-49K	50K-74K	75K-99K	100K- 149K	150K- 200K	200K-Plus
Income 15K-24K	1.0000							
Income 25K-34K	0.5204	1.0000						
Income 35K-49K	0.3370	0.3862	1.0000					
Income 50K-74K	-0.1204	-0.1374	0.1170	1.0000				
Income 75K-99K	-0.5877	-0.3958	-0.2435	0.1145	1.0000			
Income 100K-149K	-0.7134	-0.6674	-0.6036	-0.0800	0.3930	1.0000		
Income 150K-200K	-0.6236	-0.5603	-0.6330	-0.2162	0.2253	0.7055	1.0000	
Income 200Kplus	-0.4835	-0.4585	-0.4971	-0.2370	0.1247	0.5554	0.6373	1.0000

Agency Name	Sacramento Area Council	Mutual Housing California	Sacramento Housing	Sacramento Housing and
	of Government		Alliance	Redevelopment Agency
Agency's Role as it Relates to the State's Housing Policy and Development	 -Develop regional housing allocation plan, land use and transportation plan for the Sacramento Region. -Conduct land use and housing analysis for the Sacramento region. 	 -Lobby for new affordable housing program, funding for disadvantaged populations. -Advocate for affordable housing programs and policies at the state level either directly or through non-profit housing organizations that Mutual Housing is part of. -Participate in the public hearing process. 	 -Member base non-profit that advocates for increasing the supply of affordable housing. -Preserve and protect existing affordable housing supply. 	 Housing Authority and Development Agency for the City of Sacramento. -Authority having jurisdiction for housing development in the city of Sacramento and unincorporated parts of Sacramento County. -As a development agency, provide assistance to city and county of Sacramento with their housing policies, advocates for housing on behalf of local jurisdictions at the state level.
Reason for the State's Housing Affordability Issue	 -Lengthy and expensive development process. -Lengthy entitlement and review process. High construction costs. -Lack of incentive to build affordable housing. -Higher profit margin to build expensive homes. 	 -Lack of funding for housing development and for affordable housing projects at the local level. -Easing review and permitting process all sounds good but they are secondary to the funding factor. -Easing review, NIMBY and permitting slow down the development process but does not stop the process. 	 -Loss of public subsidy. Elimination of redevelopment. -Expiration of some state funding sources. -Example: Sacramento region loss 66 percent of funding to build affordable housing. -Jurisdictions best interest to pursue commercial development 	 -Loss of funding for housing that local jurisdictions used to receive from state government in the form of redevelopment funds. -Lack of developable land. -Neighborhood NIMBY opposition prolongs the housing development process. -HCD's lack of authority to enforce housing element or

Appendix C: Summary of the Qualitative Research

		-Construction and land is expensive.	so they can generate sale tax revenue. -Limited incentive to pursue residential	approve housing element without thorough review.
			development.	
Agency's Role in Addressing the State's Housing Crises	-Identify best sites for sustainable developments. -Coordinate with local jurisdictions. Provide analysis reports and tools necessary for local land use planning.	 -Mutual Housing's mission is to develop quality, sustainable and affordable housing to low income folks. -Involvement in policy making at the local and state level. Manage existing affordable housing complexes, engage in community building. Provide a pathway for low-income households to achieve financial stability. 	 -Work at the local and regional level to advocate for affordable housing. -At the state level, voter education to support veteran housing bonds. 	 -Allocate land and provide resources to Sacramento City and County. -Work with the city and county of Sacramento to develop efficient housing policies.
Extent to Which NIMBYism Contributes to the Housing Crisis	NIMBYism is a major factor, but not the only factor. The impact of NIMBYism on housing development is a case by case issue. Some neighborhoods are less reluctant to development than others.	NIMBYies challenge during the entitlement process, which makes the entitlement process longer. NIMBYism slow down the process by six months the most, but it didn't stop the projects	NIMBYism is a major factor, but it is difficult to say at this moment because of insufficient funding. But NIMBYism is embedded in the housing development process for various reasons.	NIMBYism is a major factor. It takes political will to build in affluent neighborhood such as East Sacramento. But at the same time, there are not a lot of land to build in those areas because of lack of access to transit. SHRA recommends building close to public transit and other amenities.
Reasons Neighborhood Residents Oppose Affordable Housing	Traffic congestion, changes neighborhood identifies which causes property values to decline, Impact on the schools, increase in crime rate, frustrated with developers not	Affordable housing increase crime in the neighborhood, bring property value down. Neighbors oppose projects because they have concerns about design, management and traffic congestion.	Increase in crime rate and decline in poverty value. Neighborhood character, too high building, lack of sunlight	Traffic Congestion, Environmental impact,

	communicating with the residents.	Outcome may differ from neighborhood to neighborhood. Some neighborhoods will always oppose affordable housing.		
How to Address NIMBYism?	Engage with the public. Community Outreach and Public Education.	 Developers, whether for affordable housing or market- rate, will encounter NIMBY resistance. COMPLY with the local jurisdictions zoning law. Engage in community outreach before the hearing process. Educate the community about affordable housing, introduce the project, explain what affordable housing is all about and address their concerns. Efficient management and operation of affordable housing complexes. 	Public education. Community outreach programs. Bus tours. Important role that organizations such as SHA plays to address the concerns of neighborhoods, build bridge between developers and communities. Form coalition between different environment and advocacy groups.	Community Outreach program. Educate the community and the leaders on the importance of affordable housing.
Policy Recommendation to Address the State's Housing Crises	 -Increase funding for affordable housing development. Funding for community building. -Affordable housing recipients need more than just shelter. They need amenities for better quality of life. 	 -FUNDING. BY pass the EIR process for affordable housing projects. -EIRs prolongs the process. a political will to develop affordable housing. -Some jurisdictions make it difficult for housing development to take place. 	-Increase funding. Implement local policies to advance affordable housing programs at the local level.	-Housing Element Law with no enforce mechanism. Lack of repercussion for not complying with housing element.

	-Need construction workers, prevent the use of CEQA to stall projects.	Improve the housing element review process. -Because some cities opportunity sites are not developable but are approved by the HCD.		
Is Compensation a	NO.	NO . It is hard to prove if	NO. Difficult to prove	NO
viable solution to		affordable housing cause	the effects of affordable	
address NIMBYism		property values to decline.	housing on property	
			values.	
How to Increase Collaboration Between Different stakeholders	No policy recommendation to increase collaboration.	Collaboration is necessary, but every stakeholder must do their part. Increase funding which federal and state government needs to do. Local jurisdictions to zone developable land for affordable housing. Political will for local government to increase housing in the jurisdictions.	Increase collaboration through public engagement. Conducting tours with the community residents.	Adopting collective action plan to address housing issue. Housing development is a multiphase process, which involves multiple stakeholders. A collective action plan would provide necessary information on the roles and responsibilities of the stakeholders.
		-Developers to comply with zoning and development laws. -Engage with community to		
		educate about the project.		

Appendix D

INFORMED CONSENT FORM

Does the Likely Demographics of Affordable Housing Justify NIMBYism?

My name is Imaez Wahid, and I am a graduate student at California State University, Sacramento, Public Policy Administration. I am conducting this research study to examie the effects of affordable housing households on the selling price of property values within proximity. If you volunteer to participate, you will be asked to participate in a one time question-answer interview session. Your participation in this study will last approximately one hour. The interviewer will begin the interview by explaining the purpose of the research and the objective of the interview. This is followed by a questionanswer session. During the question-answer session, you will be asked approximately ten questions regarding hosuing addordability and NIMBYism.

Your participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time without penalty or loss of benefits to which you are otherwise entitled. Please email Imaez Wahid @ if you choose to withdraw your participation. You can also contact Imaez Wahid by calling and give verbal notification of your withdrawal from this study.

There are some possible risks involved for participants. These risks are that participants will be asked to provide at a minimum, their name and professional occupation during the interview session. There are some benefits to this research. The primary objective of thie resaerch is to make recommendations on how to address issues related to housing affordability and how to increase affordable housing opportunties for socio-economic disagvantaged households. The interview provides participants with the opportunity to share information and provide policy recommendations on how to address the state's housing issue.

It is anticipated that study results will be shared with the public through presentations and/or publications. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Measures to insure your confidentiality are that information that would reveal participants personal identity will not be used to report results. In addition, recordings of interviews will be stored on a password protected device, and in a password protected folder. Signed consent forms will be kept in a locked file cabinet. Raw data containing infromation that can be identified with you will be destroyed after a period of three years after study completion. The de-identified data will be maintained in a safe, locked location and may be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you. If you have any questions about the research at any time, please contact Imaez Wahid at or , or contact research advisor Dr. Robert Wassmer at or <u>rwassme@csus.edu</u>. If you have any questions about your rights as a participant in a research project please call the Office of Research Affairs, California State University, Sacramento, 916-278-5674, or email <u>irb@csus.edu</u>.

Your signature below indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Signature	Date

You will receive a copy of this form to take with you.

Appendix E

Request to Participate in a Research Study Regarding Housing Affordability

Dear Prospective Interviewee,

My name is Imaez Wahid. I am a graduate student of the Public Policy and Administration program at California State University, Sacramento. I am conducting a qualitative research on housing affordability and NIMBYism. The objective of this research is to understand what distinct levels of government and other stakeholders recommend addressing the housing affordability issue and the issue of NIMBYism, in particular. I am writing to ask your consent to participate in this research study.

If you agree to volunteer, you will be asked to participate in a one-time question-answer interview session. Your participation in this study will last approximately one hour. During the question-answer session, you will be asked ten questions regarding the state's housing affordability issue. Your participation in this study is voluntary. You have the right not to participate at all, or to leave the study at any time without penalty or loss of benefits to which you are otherwise entitled.

Please respond to this email if you choose to participate in this research. You can also contact me by calling , if you have any further questions. I have attached the consent form, which also provides information regarding this study.

Thank you in advance.

Sincerely,

Imaez Wahid.

References

Albright L., Derickson, E. S., & Massey, D. S. (2013). Do Affordable Housing Projects Harm Suburban Communities? Crime, Property Values, and Taxes in Mount Laurel, NJ. *American Sociological Association*. Retrieved From

http://onlinelibrary.wiley.com.proxy.lib.csus.edu/doi/10.1111/cico.12015/epdf

Bailey, Michael A., (2016). *Real Stats: Using Econometrics for Political Science and Public Policy*. New York, NY: Oxford University Press.

Bair, Edward, & Fitzgerald, John M. (2005). Hedonic Estimation and Policy Significance of the Impact of HOPE VI on Neighborhood Property Values. *The Policy Studies Organization*. Vol.22. No.6. Retrieved from

http://onlinelibrary.wiley.com.proxy.lib.csus.edu/doi/10.1111/j.1541-

1338.2005.00175.x/epdf

Bannon, Tom. (2016). Key Findings Report. *California Housing Forum*. Retrieved from https://caanet.org/caas-key-findings-from-the-2016-housing-forum/.

Beaty, V., Rutherford, D., & Joy, A. (2018). Policy Agenda Issue Briefing. Sacramento Housing Alliance. Retrieved from https://sachousingalliance.org/wpcontent/uploads/PolicyBrief2018.Final_.pdf

Brown, B., Perkins, D. D., & Brown, G. (2003). Place Attachment in a Revitalizing Neighborhood: Individual and Block Levels of Analysis. *Journal of Environmental Psychology*, 23(3), 259–271. Retrieved from https://ac-elscdncom.proxy.lib.csus.edu/S0272494403000501/1-s2.0-S0272494403000501main.pdf?_tid=a4444528-e98b-11e7-8656

00000aab0f6b&acdnat=1514217342_669ae61871d5d413eb98f7a90244c1cf

Bruno, Carson. (2016, March 24). NIMBY-ism, and the California Housing Shortage. *Real Clear Markets*. Retrieved from

http://www.realclearmarkets.com/articles/2016/03/24/nimby-

ism_and_the_california_housing_shortage_102078.html

Bryson, J. M., Crosby, B. C., & Carroll, A. R. (1991). Fighting the Not-In-My-Backyard Syndrome in Minneapolis. *Journal of Planning Education and Research*, 11(1), 66–74. Retrieved from

http://journals.sagepub.com.proxy.lib.csus.edu/doi/pdf/10.1177/0739456X9101100108

Burningham, K., Barnett, J., & Thrush, D. (2006). The limitations of the NIMBY concept for understanding public engagement with renewable energy technologies: a literature review. *Economic and Social Research Council*. Retrieved from http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/bn_wp1_3.pdf

California Department of Housing and Community Development. (2017). *California's Housing Future: Challenges and Opportunities*. Retrieved from http://www.hcd.ca.gov/policy-research/plans-reports/docs/California%27s-Housing-Future-Full-Public-Draft.pdf Collins, Jeff. (2017, May 1). Housing Crisis' Tops State's Legislative Agenda This Year. *The Orange County Register*. Retrieved from

http://www.ocregister.com/2017/05/01/housing-crisis-tops-states-legislative-agenda-this-year/

Corfield, J. (2016, July 21). Seven Reasons NIMBYs Oppose New Development. *City Metric*. Retrieved from https://www.citymetric.com/politics/seven-reasons-nimbysoppose-new-developments-2274.

Dear, M. (1992). Understanding and Overcoming the NIMBY Syndrome. *Journal* of the American Planning Association, 58(3), 288–300. Reterived from http://eds.a.ebscohost.com.proxy.lib.csus.edu/ehost/detail/detail?vid=0&sid=8367f9fff3c7-4a1b-af3b-daf6fcddb734%40sessionmgr4008&bdata=#db=bth&AN=9608260308

Devine-Wright, P. (2009). Rethinking NIMBYism: The Role of Place Attachment and Place Identity in Explaining Place-Protective Action. *Journal of Community & Applied Social Psychology*, 19(6), 426–441. Retrieved from https://s3.amazonaws.com/objects.readcube.com/articles/downloaded/wiley/665d0ef0423 60994668a2d9264ee21d29ed4e1f29c385ad9cad79e62c6dd4cbe.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIS5LBPCM5JPOCDGQ%2F20171224%2Fus-east-

1%2Fs3%2Faws4_request&X-Amz-Date=20171224T182021Z&X-Amz-

Expires=106778&X-Amz-SignedHeaders=host&X-Amz-

Signature=bd99b44e9a4206225541544a47bb2e9991fb693858f63a362bb4455ea070ffd9

DataUSA. (2018). Sacramento County. Retrieved from

https://datausa.io/profile/geo/sacramento-ca/

Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., & Chen, D. (2007).

Growing Cooler: The Evidence on Urban Development and Climate Change. Urban

Land Institute. Retrieved from https://www.nrdc.org/sites/default/files/cit_07092401a.pdf

Galster, G. C., Cutsinger J. M., & Malega R. (2006). The Social Cost of Concentrated Poverty: Externalities to Neighboring Households and Poverty Owners and the Dynamics of Decline. *A National Policy Summit Joint Center for Housing Studies*. Retrieved from

https://www.researchgate.net/publication/241367108_The_Social_Costs_of_Concentrate d_Poverty_Externalities_to_Neighboring_Households_and_Property_Owners_and_the_ Dynamics_of_Decline

Glaeser, E. (2011). Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier. New York, NY. The Penguin Press.

Glaeser, E., & Gyourko, J. (2017). The Economic Implication of Housing Supply. National Bureau of Economic Research. Working Paper #w23833. Retrieved 10/24/2017 from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3038661.

Glover, M. (2017, April 10). Rising home prices in California concern economists, prompt action by lenders. *The Sacramento Bee*. Retrieved from https://www.sacbee.com/news/business/article143006489.html

Green, R. K., Malpezzi, S., & Seah, K. Y. (2002). Low Income Housing Tax Credit Housing Developments and Property Values. *The Center for Urban Land* *Economics Research*. Retrieved from http://medinamn.us/wpcontent/uploads/2014/04/Low-Income-Housing-Tax-Credit-Housing-Developments-and-Property-Values-UW-Study.pdf

Harkness, J. & Newman, S. J. (2005). Housing Affordability and Children's Wellbeing: Evidence from the National Survey of American Families, Housing Policy Debate, 16(2), 223-255.

Hernandez, J., Friedman, D., DeHerrera, S. (2015). In the Name of Environment. How Litigation Abuse Under the California Environmental Quality Act Undermines California's Environmental, Social Equity and Economic Priorities – and Proposed Reforms to Protect the Environment from CEQA Litigation Abuse. *Law Firm of Harold and Knight*. Retrieved from

http://issuu.com/hollandknight/docs/ceqa_litigation_abuseissuu?e=16627326/14197714.

Hummel, C. (2011, March 2). Definition of Property Values. *Sapling*. Retrieved from https://www.sapling.com/8010292/definition-property-values

Iglesias, T. (2002). Managing Local Opposition to Affordable Housing: A New Approach to NIMBY. Journal of Affordable Housing & Community Development Law, 12(1), 78-122.

Kimberlin, S. (2017). Understanding the Recently Enacted 2017 State Legislative Housing Package. *California Budget and Policy Center*. Retrieved 10/24/2017 from http://calbudgetcenter.org/blog/understanding-recently-enacted-2017-state-legislativehousing-package/ Lee, C. M., Culhane, D. P. & Wachter, S. M. (1999). The Differential Impact of Federally Assisted Housing Programs on Nearby Property Values: A Philadelphia Case Study. *School of Social Policy and Practice*. Vol.10. Issue. 2. Retrieved from http://repository.upenn.edu/cgi/viewcontent.cgi?article=1066&context=spp_papers

Levin, S. (2017, October 4). California has highest poverty rate of all US states, new report finds. *The Daily Californian*. Retrieved from http://www.dailycal.org/2017/10/04/california-highest-poverty-rate-u-s-states-reportfinds/

Nguyen, Mai Thi. (2005). Does Affordable Housing Detrimentally Affect Property Values? A Review of the Literature. *Journal of Planning Literature*. Vol.20, No.1. Retrieved from

https://planning.unc.edu/people/faculty/mainguyen/copy_of_JPL_AffordableHousingand PropertyValues.pdf

Nichols, C. (2018, April 2). Checking the facts on California's wealthy and poverty. *PolitiFact California*. Retrieved from

https://www.politifact.com/california/article/2018/apr/02/checking-facts-californiaswealth-and-poverty/

Nourse, Hugh O. (1963). The Effects of Public Housing on Property Values in St. Louis. *University of Wisconsin Journal Division*. Vol.39. No.4.433-441. Retrieved from https://www.jstor.org/stable/3144848?seq=1#page_scan_tab_contents Pendall, R. (1999). Opposition to Housing: NIMBY and Beyond. *Urban Affairs Review*. 35(1). Retrieved from

http://journals.sagepub.com.proxy.lib.csus.edu/doi/pdf/10.1177/10780879922184310

Pol, E., Di Masso, A., Castrechini, A., Bonet, M. R., & Vidal, T. (2006).

Psychological Parameters to Understand and Manage the NIMBY Effect. European

Review of Applied Psychology, 56(1), 43–51. Retrieved from

http://www.cienciaensocietat.org/upimages/File/Deliberativa_2/31-

Psychological%20parameters%20to%20understand.pdf

Rice, L. (2004). How Much California's Low-Income Households Spend on

Transportation. Public Policy Institute of California, (91). Retrieved from

http://www.ppic.org/content/pubs/rb/RB_704LRRB.pdf

Scally C.P., & Tighe, R.J. (2015). Democracy in Action?: NIMBY as Impediment

to Equitable Affordable Housing Siting. *Journal of Housing Studies*, 30(5), 749-769.

Retrieved from http://www.tandfonline.com/doi/abs/10.1080/02673037.2015.1013093.

Schively, C. (2007). Understanding the NIMBY and LULU Phenomena:

Reassessing Our Knowledge Base and Informing Future Research. Journal of Planning

Literature, 21(3), 255-266. Retrieved from

http://journals.sagepub.com.proxy.lib.csus.edu/doi/pdf/10.1177/0885412206295845

Segarra, L. M. (2018, May 5). California's Economy is Now Bigger Than All of the U.K. *Fortune Magazine*. Retrieved from http://fortune.com/2018/05/05/californiafifth-biggest-economy-passes-united-kingdom/ Singleton, R. A. Jr., & Straits, B. C. (2010). *Approaches to Social Research*. New York, NY: Oxford University Press.

Taylor, M. (2015, March 17). California's High Housing Costs – Causes and Consequences. Legislative Analyst. Retrieved from

http://www.lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.pdf.

United States Census Bureau. (2018). Quick Facts Sacramento County,

California. Retrieved from

https://www.census.gov/quickfacts/fact/map/sacramentocountycalifornia/IPE120216

Wassmer, R. (2005). An Economic View of the Causes as Well as the Costs and Some of the Benefits of Urban Spatial Segregation. In D. Varady (Ed.), Desegregating the City: Ghettos, Enclaves, and Inequality (pp.158-175). Albany NY: State University of New York Press.

Weisberg, B. (2007). One City's Approach to NIMBY How New York City Developed a Fair Share Siting Process. *Journal of the American Planning Association*, 59(2), 93-97. Retrieved from

http://eds.b.ebscohost.com.proxy.lib.csus.edu/ehost/detail/detail?vid=0&sid=c3cd3ef2-7c52-4881-ad0e-a24e3dd5324f%40sessionmgr104&bdata=#AN=9608215015&db=bth

Wexler, M. N. (1996). A Sociological Framing of the Nimby (Not-In-My-Backyard) Syndrome. *International Review of Modern Sociology*, 26(1), 91–110. Retrieved from http://www.jstor.org.proxy.lib.csus.edu/stable/pdf/41421101.pdf William, F., & Shigley, P. (2005). *Guide to California Planning*. San Francisco, CA: Solano Press Books.

Woo, A., Joh, K. & Zandt, S. V. (2015). Unpacking the Impacts of the Low-Income Housing Tax Credit Programs on Nearby Property Values. *Sage Urban Studies*. Vol. 53. Retrieved from

http://journals.sagepub.com.proxy.lib.csus.edu/doi/pdf/10.1177/0042098015593448