Evaluating Infill Development as an Antidote to Sprawl In the Detroit Metropolitan Region

By

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Abstract

Current national land use trends of increased suburban development have prompted city mayors, administrators, planners, community activists, and others to devise strategies for increasing the attractiveness of living in urban areas in order to preserve open space in the surrounding region. One of these strategies is infill development.

In addition to being promoted as an antidote to sprawl, infill development can potentially offer a variety of benefits to urban communities including encouraging neighborhood revitalization, generating new growth on abandoned lots, providing significant cost benefits in the areas of the environment and transportation, expanding a city's tax base, and increasing the affordable housing supply. Due to its complexity and inherent barriers to success, however, it is not used as widely as it might be, especially considering the extensive volume of vacant urban land.

This study examines the use of infill development in Detroit in order to assess whether or not it is accomplishing similar goals in Detroit as in other areas around the country—especially with regard to its potential to serve as an antidote to sprawl.

Acknowledgements

I would like to thank Professor Richard Norton and Professor June Manning Thomas for the many hours they have spent reading and re-reading my writing. I could not have completed this thesis without your guidance. I would also like to thank my family and Josh Damm for their patience, encouragement, and love through the ups and downs that came with writing this thesis.

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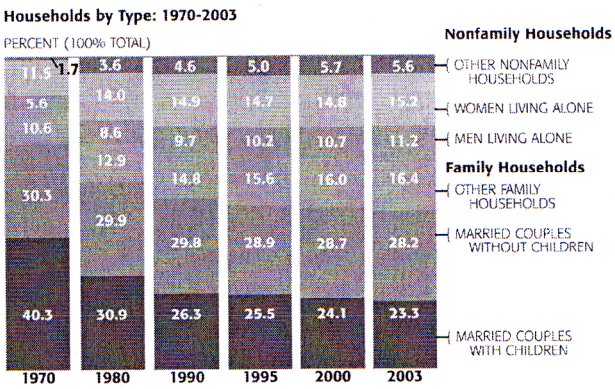
Section 1: Introduction and Study Overview

But whatever its shortcomings as a place to live, the suburban subdivision was unquestionably a successful product.
Kunstler, Geography of Nowhere, 1993, pg. 105

Urban areas around the United States have been losing population and employment to nearby suburban areas since the 1920s (Dawkins and Nelson, 2003). After World War II, people began moving to the suburbs on a large scale. The ease of moving out of the city was facilitated by federal homeownership policies and rising incomes. The suburbs were particularly attractive to white, middle or upper class city residents. This attraction resulted in a national movement where the U.S. population living in cities declined from 64% to 39% between 1948 and 1990.

The United States cannot afford to see this trend of suburban preference continue. It is estimated that by 2030, "the United States will need roughly 427 billion square feet of built space to accommodate current projected growth estimates" (Johnson and Ellis, 2006, pg. 1). This is about a 30 percent increase from the 300 billion square feet of built space that was in use as of 2000 (Johnson and Ellis, 2006). The majority of this space will be used for housing construction; however, most of this housing will be nontraditional housing. The percentage of married-couple households with children is decreasing, and this trend is expected to continue into the future (Figure 1). In turn, this has generated a greater demand for multifamily housing, townhouses, and condominiums, particularly in urban areas.

Figure 1. Households by Type, 1970-2003



Source: Johnson, Heather and Clark Ellis. *Converting Markets: The Rise of Urban Infill Development.* Metalmag July/August 2006. http: www.metalmag.com Accessed 5 Apr. 2008.

In order to "meet the challenges created by population growth, dwindling land resources, the appreciating cost of housing, long commutes to work, and homebuyer preferences, land-development alternatives to urban sprawl must be examined" (Johnson and Ellis, 2006, pg. 1). Current national land use trends have prompted individual city mayors and planners to devise strategies for increasing the attractiveness of living in urban areas in order to preserve open space in the surrounding region. One of these strategies is infill development.

The use of infill development[1] in urban environments is commonly promoted as a critical policy for helping to reverse the trend of sprawl. In addition to serving as an antidote to sprawl, infill development can offer a

[1] Here, "infill development" is defined as the redevelopment of small numbers of parcels within a community in a style which complements neighboring homes.

variety of benefits to urban communities including encouraging neighborhood revitalization, generating new growth on abandoned lots, providing significant cost benefits in the areas of the environment and transportation, expanding a city's tax base, and increasing the affordable housing supply. Due to its complexity and inherent barriers to success, however, it is not used as widely as it might be, especially considering the extensive volume of vacant urban land. Infill faces barriers that are political, economical, and logistical. Its primary barriers include the real estate context in which it is being built, and the widespread appeal of the suburbs. Its secondary barriers include its high cost, potential neighborhood opposition, zoning regulations and building requirements that are difficult to adhere to, and existing environmental problems on chosen infill sites. These barriers prevent infill from being used widely because developers and planners are nervous about potential financial and legal risks.

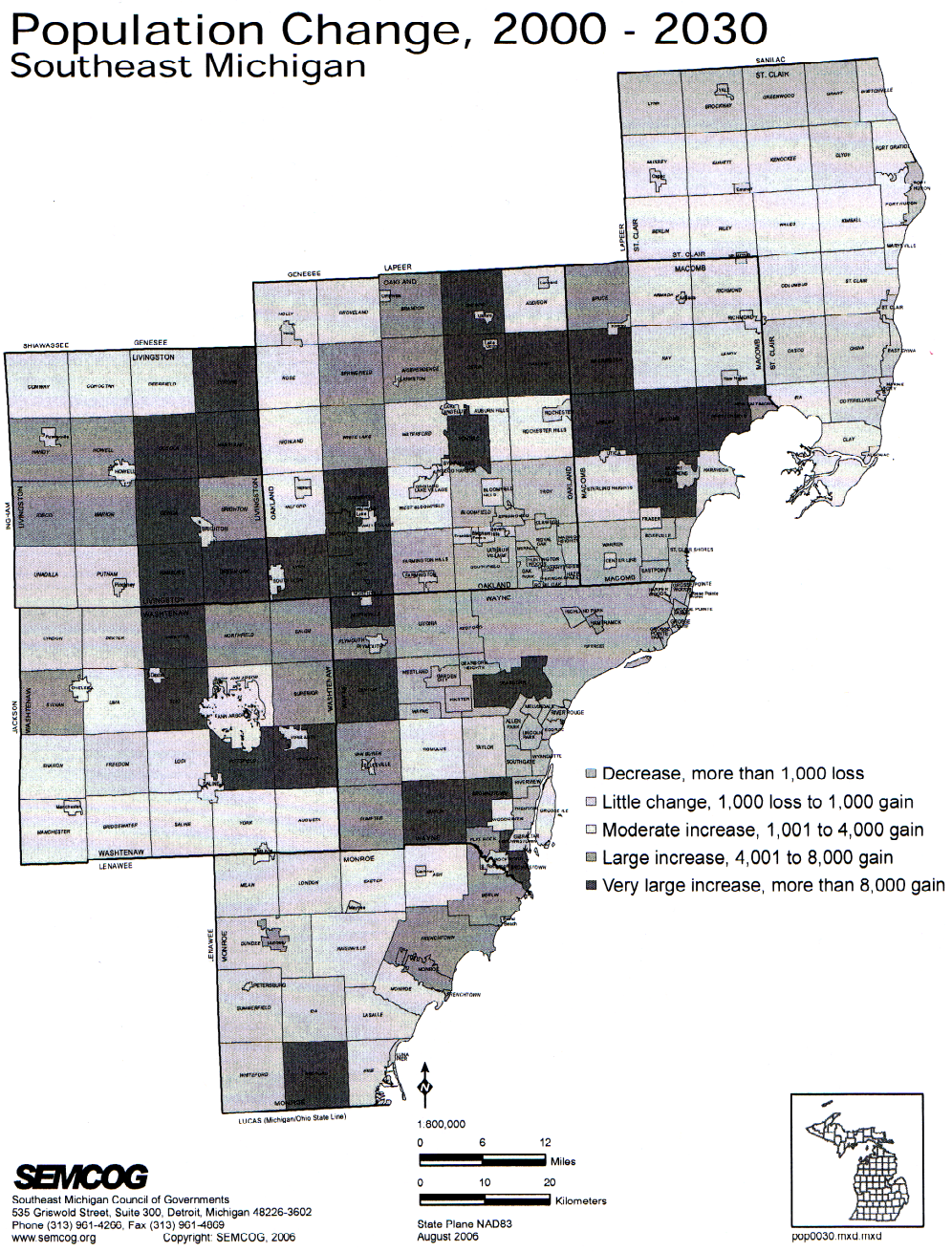
Despite these barriers and problems, infill development has enjoyed success in many well-known urban areas across the United States including Chicago, Illinois, Washington D.C., and Denver, Colorado (Haughey, 2004). Infill has been used extensively around the country due to a growing realization that "cities need good housing to become the vibrant centers of cultural and social life that they once were" (Haughey, 2001, pg. 4). In Ryan and Weber's (2007) study on how urban design and housing values in poor neighborhoods are related, they found that, compared to traditional neighborhood developments and enclaves, infill housing is able to increase

house values the most. The benefits it promises of neighborhood revitalization, an enlarged tax base, and increased commercial development, have resulted in rising political support (Haughey, 2001).

Detroit has also benefited from well-placed and well-designed infill development—primarily by providing necessary affordable housing and by improving the city's image to turn it into a more positive one through increased neighborhood stabilization. The city suffers from widespread abandonment and large tracts of vacant land in some neighborhoods while others enjoy great stability. Infill can help Detroit effectively transform these various vacant lots around the city into stable lots with new development. Detroit has a great opportunity to develop a new image for itself by developing in completely abandoned areas and reestablishing neighborhoods 'with more distinction of a truly new Detroit' (Gallagher, Nov. 11, 2007, pg. 1H).

Well-placed and well-designed infill development in Detroit also has the potential to help the southeastern Michigan region in its efforts at growth management. The region's population is expected to increase greatly through 2030, but most of this growth is expected to occur in its suburban areas rather than Detroit where there has already been a high level of development (Map 1). Developers and city officials could offer a competitive alternative to suburban living with infill development.

Map 1.


Population Change, 2000 - 2030
Southeast Michigan
Decrease, more than 1,000 loss
Little change, 1,000 loss to 1,000 gain
Moderate increase, 1,001 to 4,000 gain
Large increase, 4,001 to 8,000 gain
Very large increase, more than 8,000 gain
1:800,000
0 6 12
Miles
0 10 20
Kilometers
State Plane NAD83
August 2006
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The overall purpose of this study is to examine the use of infill development in Detroit in order to answer the question: Does infill development in Detroit serve as an antidote to sprawl? This study also strives to explain why appropriately placed and sensibly constructed infill development is an important goal for the city of Detroit to pursue. I will begin by contextualizing my research within Detroit's relevant and necessary history. This brief overview focuses primarily on the city's post-World War II economic and demographic trends, and how they have affected the city's recent revitalization efforts. I will then review the current research being done by academics on infill development. The literature I considered relevant to this project included the research on the use and perception of infill development both in Detroit as well as within the United States in general. Following this overview, I describe my methodological approach to this research project, which included a literature review and 17 in depth personal interviews with people considered to be knowledgeable about Detroit's planning and development. I then present the findings from that work and conclude with recommendations regarding the appropriate use of infill development in Detroit. I also identify issues for further study.

I came to five overall conclusions about the role of infill development in Detroit: (1) Detroit lacks a working definition for infill development, which is contributing to its inability to achieve similar goals with infill development as other urban areas; (2) it is not serving as an antidote to sprawl at the market-rate level; (3) it is not achieving the same goals as other

urban areas around the United States and likely will not be able to without a regional commitment to concentrate new construction in Detroit; (4) infill development is a critical tool for helping bring about neighborhood stabilization within the City; and (5) non-city residents' negative perception of Detroit serves as a deterrent to potential residents who might otherwise be motivated to locate in the city's infill development projects.

Section 2: Detroit History (1950-2008)

Erickcek and McKinney (2004, referenced by Hill, 2005, pg. 412) found that "history explains a great deal" about the economic performance of small and mid-sized metropolitan areas—those with populations below 1 million. Detroit is no exception. In addition to affecting its economy, Detroit's unique history also plays a significant role in the success of its residential development, and therefore of its infill development. The city's history affects the barriers that developers face, the locations developers have chosen for affordable versus market-rate infill, and the goals city officials can expect to achieve through infill development. One important goal of infill development in Detroit is to achieve more sustainable growth in the southeastern Michigan region. Concentrating growth in existing built environments[2] is a high priority for both the state, and therefore the city. Without understanding the context of Detroit's economic and demographic post WWII trends, one is left with an incomplete understanding of the decisions and goals relating to the city's infill efforts.

[2] Built environments are defined as those areas where community amenities such as water lines, sewer lines, and schools, already exist.

The 1940s and 1950s: Deindustrialization

Sugrue[3] describes Detroit's postwar experience as an "urban crisis," evident in the loss of industry, population, and negative reputation it experienced beginning in the 1950s (1996, pgs. 3-5; 126). Throughout the 1940s, Detroit was known as America's 'arsenal of democracy' because of its significant manufacturing contributions to the war effort. As a result of its industrial capability, at the time it was one of the fastest-growing urban centers and the site of the highest salary for blue-collar workers in the United States. Beginning in 1949, however, the city experienced the first of four recessions it would suffer over the next 11 years. The effects of these downturns in the city's economy remained long after the last one in 1960—they marked the "beginning of a long-term and steady decline in manufacturing employment that affected Detroit and almost all other major northeastern and midwestern industrial cities" (Sugrue, 1996, pg. 126). The city never fully recovered.

The 1950s stand as an influential turning point in the city's development, largely regarding the severe impact the decade's events had on the future of Detroit's economy (Sugrue, 1996, pgs. 126-127). During the nineteenth and early twentieth century, industries in the United States relied on centralization whereby resource availability and ease of transportation determined plant location. The national trend of deindustrialization—"the closing, downsizing, and relocation of plants and sometimes whole

[3] The following sections rely heavily on Thomas Sugrue's book, The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit, 2006, and cite to his book unless otherwise noted.

industries"—began in the late twentieth century and increased as the century went on (Sugrue, 1996, pg. 127). By the late 1950s, Detroit began to suffer the effects of deindustrialization, which hit the city harder than most other urban areas around the United States and dramatically affected its economy in the form of vast fluctuations (Thomas, 1997; Sugrue, 1996).

In addition to deindustrialization, the New Deal negatively affected Detroit's economy. Through the New Deal, the federal government provided the South with a greatly increased level of financial support compared to the North (Sugrue, 1996, pgs. 126-127). Through this assistance, the South became "the Sunbelt-dominated military-industrial complex of the Cold War era" (Sugrue, 1996, pg. 127). In addition, highway construction following World War II allowed goods to be transported rapidly over long distances and largely reduced the need for central industrial location. The reorganization of Detroit's local economy that resulted generated a loss of 134,000 manufacturing jobs between 1947 and 1963. This gap between employee availability and employment opportunities only grew over the years and profoundly affected Detroit's future.

Detroit's tax base was significantly reduced by the numerous industries that left the city (Sugrue, 1996, pgs. 127-128; 139; 164). As businesses left, taking with them a large proportion of the tax base, the city was forced to use state and federal aid to cover the financial gap left behind in order to provide basic city services. The city tried to stop the trend of industrial flight and bring manufacturers back to the city through incentives

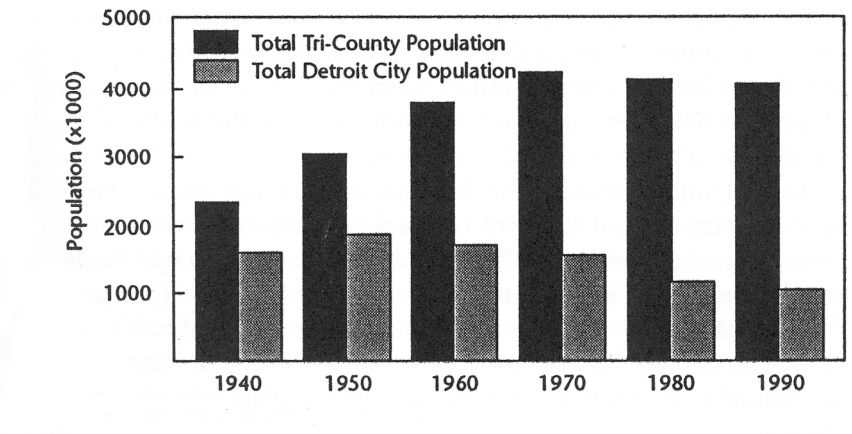
such as previously cleared land and low property taxes. City officials chose these incentives over trying to convince corporations to reform their decentralization policies because they believed industries were leaving the city due to a lack of land for industry expansion. The city's decisions only served to increase taxes for income earning residents. Unfortunately, "with an aging infrastructure, an enormous school district, an expensive city-funded social welfare program, and a growing population of poor people, Detroit could not reduce its taxes to the level of its small-town and rural competitors," and industries continued to leave the city (Sugrue, 1996, pg. 139). Detroit was not the only city to experience a similar fate during the 1950s. Industrial flight and job loss similarly affected other prominent industrial cities in the Rust Belt. Many industries chose to move to neighboring suburbs or to semi-rural areas—sometimes even to other countries altogether. In Detroit, businesses largely left the city for the surrounding suburbs due to the city's high tax rates and industry's need to expand beyond the space available to them in the city (Thomas, 1997).

The automotive industry, the historic economic and employment lifeblood of Detroit, was the main component of this industrial relocation phenomenon (Thomas, 1997). Between 1947 and 1955, Ford, General Motors, and Chrysler built twenty new plants—not one of which was located within Detroit or its central suburbs (Thomas, 1997). Both auto manufacturers and suppliers permanently reduced their employment levels in

the city by shutting down plants and moving to other parts of the country (Sugrue, 1996).

As employers and jobs left the city due to deindustrialization, Detroit's population began to decline and the metropolitan areas surrounding the city began to gain population (Thomas, 1997; Figure 2).

Figure 2. Population change in Detroit and three largest surrounding metropolitan counties, 1940-1990. It is clear that, as Detroit's population decreased, the populations of the surrounding metropolitan areas increased.



Source: Thomas, June Manning. Redevelopment and Race: Planning a Finer City in Postwar Detroit. John Hopkins University Press, Baltimore & London. 1997. Pg. 85, Fig. 4.1.

Since 1950, Detroit has lost more than half its population—nearly a million people—and hundreds of thousands of jobs (Northeast-Midwest, 2001; Sugrue, 1996). In 1950, 61% of the region's population lived in the city, while about 25% lived there in 2000 (Dewar, 2006). White workers who could afford to follow the jobs and move to the suburbs and rural areas left the city (Thomas, 1997; Sugrue, 1996). Whites' movement from central cities

to the suburbs was "one of the greatest migrations of the twentieth century" and resulted in widespread suburbanization (Sugrue, 1996, pg. xxi). Detroit's population steadily decreased once white flight began, while also becoming increasingly "poorer and blacker" (Sugrue, 1996, pg. 149; Table 1).

Table 1. City of Detroit population, 1910-2000

Year	*Total Population*	*Black Population*	*Percent Black*
1910	465,766	5,741	1.2
1920	993,678	40,838	4.1
1930	1,568,662	120,066	7.7
1940	1,623,452	149,119	9.2
1950	1,849,568	300,506	16.2
1960	1,670,144	482,229	28.9
1970	1,514,063	660,428	44.5
1980	1,203,368	758, 969	63.0
1990	1,027,974	777,916	76.0
2000	951, 270	775,772	81.6

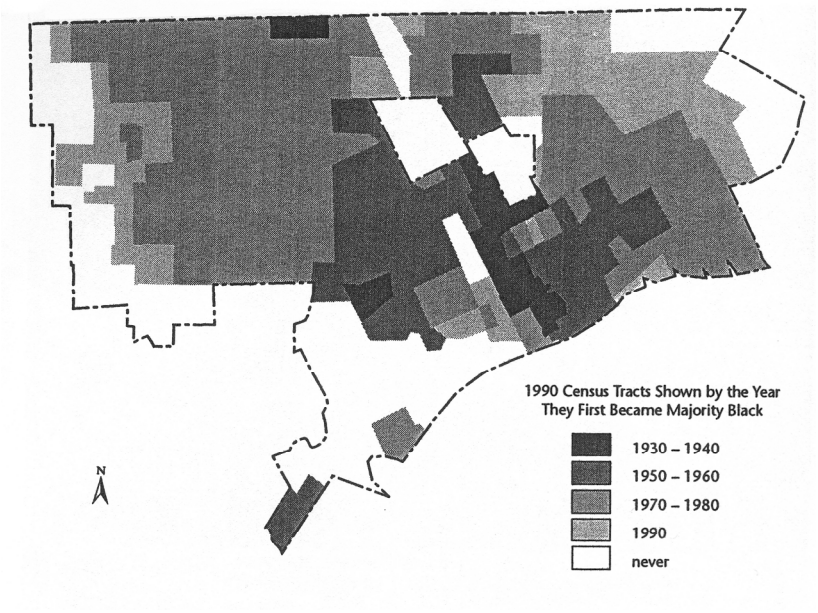
Source: U.S. Department of Commerce, Bureau of the Census, *United States Census of Population,* 1910-1970 (Washington, D.C.: U.S. Government Printing Office, various years); The Detroit Free Press. The Detroit Almanac. Ed. Peter Gavrilovich and Bill McGraw. Detroit: Detroit Free Press, 2001.

The loss of jobs, population, and reputation created by deindustrialization had a profound effect on the state of Detroit's housing and its racial composition. In the 1940s, "Detroit was, above all, a city of homes" (Sugrue, 1996, pg. 23). After the war, the city focused on clearing blighted areas in the inner city and replacing them with middle-class housing in an attempt to revitalize the urban economy (Sugrue, 1996). It is estimated that about one-third of Detroit's Black population was adversely affected by

renewal projects within the city's core that took place through 1962 (Thomas, 1997). These projects included clearing slums and erecting high-rise public housing on previously blighted areas in an attempt at redevelopment within the center city (Sugrue, 1996; Thomas, 1997). The city's focus on housing as a main component of its revitalization strategy was most likely in response to 1950 survey responses where city residents ranked housing as 'the most urgent single problem in Detroit,' and over half of residents listed housing as one of the top three problems in the city (Sugrue, 1996, pg. 52). At this time, out of the existing residential structures, two-thirds of them were single-family homes while one-fifth of them were two-family homes (Sugrue, 1996). Detroit differed greatly from many cities on the East Coast because it did not tenements or high-rise apartments (Sugrue, 1996). In fact, apartment buildings only comprised 1.3 percent of the residential structures in Detroit. Detroit was never a densely built city, evidenced by the "vast amount of open land available within the city's boundaries as late as mid-twentieth century" (Sugrue, 1996, pgs. 21-22).

Detroit's postwar racial composition was significantly altered during the 1950s as white residents began to leave the city in the start of suburbanization and "better-off blacks" moved out of the oldest, most run-down sections of the city into previously all-white neighborhoods (Sugrue, 1996, pg. 207; Thomas, 1997; Map 2).

Map 2. Growth in majority African-American Areas, 1930-1990. Blacks began to move out of their prewar concentrations on Detroit's east side into the inner city and the northwest parts of the city.



Source: Thomas, June Manning. Redevelopment and Race: Planning a Finer City in Postwar Detroit. John Hopkins University Press, Baltimore & London. 1997. pg 24.

Blacks had a difficult time finding adequate housing due to the overwhelming barrier of discriminatory practices in the city's construction industry and real estate market (Sugrue, 1996). Although Detroit's black population doubled in size from 1940 to 1950, the amount of available housing grew well below this rate. Discrimination in the housing market led to blacks being "trapped in the city's worst housing, in strictly segregated sections of the city" (Sugrue, 1996, pg. 34). In addition, the city's first housing director, Josephine Gomon, used the guiding principle that, 'No housing project shall change the racial characteristics of a neighborhood,' when deciding where to build new housing projects around the city (Thomas,

1997, pg. 25 citing DCPC[4]). The city had long been racially divided as a result of government housing programs that officially sanctioned and therefore "perpetuated racial divisions by placing public housing in already poor urban areas and bankrolling white suburbanization through discriminatory housing subsidies" (Thomas, 1997, pg. 6; Sugrue, 1996).

Blacks in the city suffered further as a result of industry's decision to relocate plants in the suburbs, which "severely limited the economic opportunities of Detroit's blacks" and made it financially difficult for many blacks to move to better housing within the city (Sugrue, 1996, pg. 262). Those with low-paying jobs suffered most from deindustrialization and "remained confined in the decaying inner city neighborhoods that had long housed the bulk of Detroit's black population" (Sugrue, 1996, pg. 188). Blacks did not have the option of following economic opportunities to the suburbs, either, as "neither public nor private housing was open to Blacks in most suburban communities" (Thomas, 1997, pg. 84).

The events of the last fifty years have caused Detroit to become "plagued by joblessness, concentrated poverty, physical decay, and racial isolation" (Sugrue, 1996, pg. 3). In the years after deindustrialization's effects began to set in, the city "increasingly…became the home for the dispossessed, those marginalized in the housing market, in greater peril of unemployment, [and] most subject to the vagaries of a troubled economy" (Sugrue, 1996, pg. 149).

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[4] DCPC, "Neighborhood Conservation: A Ten Year Investment and Program To Eliminate Deterioration and Prevent Blight and Slums in Detroit's 53 Middle-Aged Neighborhoods" (Detroit, DCPC, 1955), pp. 3; 4.

The 1990's and the 21st Century: Revitalization Efforts

The city is currently looking for ways to revitalize itself and attract people and businesses back within its boundaries. Detroit faces a unique situation because of its history, which has made urban renewal difficult. The following description offers a visual perspective of the challenges the city faces:

> Few cities have dealt with the level of physical and economic devastation that marks Detroit's inner-city neighborhoods. Whole blocks of single-family and apartment houses are abandoned. Vacant weed-choked lots suggest rural pockets in the middle of a once-thriving city. One of the worst areas, formerly known as Cass corridor and now called Midtown, has been called 'the most dysfunctional neighborhood in America.' By 1990, a square mile of Midtown had lost 24 percent of its population compared to the previous decade (4,709 in 1980 to 3,574 in 1990). A quarter of its housing lay vacant. It was plagued by drugs, prostitution, and physical decay (Northeast-Midwest, 2001, pg. 36).

In 1994, Mayor Dennis Archer organized the Detroit Land Use Task Force, which "produced wide-ranging recommendations that tied Detroit's economic outlook to improved parks and neighborhoods" (Northeast-Midwest, 2001, pg. 8). Archer's focus on land use was most likely due to the large number of foreclosures and resulting vacant properties around the city (Dewar, 2006). After implementing these recommendations, General Motors created 8,000 office jobs in previously vacant downtown buildings, land values rose "for the first time in memory," and market-rate housing was selling or leasing rapidly (Northeast-Midwest, 2001, pg. 8).

The city has been able to take advantage of some of its preexisting assets including the Detroit Medical Center, Wayne State University, and

Orchestra Hall, as catalysts for new development (Northeast-Midwest, 2001). In addition, preexisting infrastructure, improved security, and a growing desire by people to be closer to jobs, are all factors helping to attract residents back to the city (Northeast-Midwest, 2001). Detroit, in addition to many other Rustbelt cities, has started looking to "arts and culture, entertainment, and tourism" to revive its economy (Sugrue, 1996, pg. xxiii). In particular, Detroit has focused its effort on attracting casinos. Community Development Corporations (CDCs) in Detroit are doing their part in bringing life back to city as well by encouraging commercial development (Sugrue, 1996).

Detroit Housing (2007-2008)

The current housing situation has been a major focus for the city, as increased residential opportunities are an important part of revitalization efforts because of the ripple effect they are perceived to have in encouraging further development. Infill housing is an important part of the new housing construction in Detroit. Developers are using infill to generate new opportunities for those looking for both market-rate and affordable housing in all areas of the city. Around Detroit's medical center, "public-private partnerships" have built both affordable and market-rate housing—specifically lofts in the Midtown area and mixed-income housing in the Woodbridge Estates project in the Jeffries neighborhood (Sugrue, 1996, pg. xxiv).

According to architect Roger Margerum, 'houses are being replaced with the same building styles, resulting in a new "old" Detroit…' (Gallagher, Nov. 11, 2007, pg. 1H). The magnitude of new construction has caused a reconfiguration of the city's social geography on a scale similar to the one of the 1950s, although it is economically, rather than racially, based. As new affordable housing is becoming more available in the city due to infill development, many low-income residents are moving into different neighborhoods of the city and significantly altering the city's layout.

There are many ongoing housing projects aimed at attracting new residents to the city. One notable project is Dave Bing's "upscale" Watermark condominiums (Gallagher, Nov. 30, 2007, pg. 1E). Bing's project is seen as "key in the redevelopment in Detroit," especially waterfront development (Gallagher, Nov. 30, 2007, pg. 1E). The Watermark's success is important, as it will serve to fuel further development (Gallagher, Nov. 30, 2007). Mike Wilcox, who plans to build loft condominiums in the historic Globe Building at Atwater, said that, 'If the Watermark can hit its numbers and move forward, there's no question we can get our project going' (Gallagher, Nov. 30, 2007, pg. 1E). An additional project is the 'Taylor Cares Program,' where "11 houses will be rehabilitated and then sold to low- to moderate-income individuals or families," with the ultimate goals of helping people become proud homeowners, combating blight, revitalizing neighborhoods, and improving the city's image by turning around vacant homes and reselling them at a low market price (Hackney, 2007, pg. 1G).

Even with the significant assets Detroit can draw upon to attract new residents, revitalization has been hard for Detroit, as the suburbs have succeeded in attracting "a lion's share of postwar private and public sector investment" (Sugrue, 1996, pg. xxi; Hill, 2005). The lack of investment has created areas in Detroit where "whole rows of small shops and stores are boarded up or burned out" (Sugrue, 1996, pg. 3). In 2005, Detroit was one of 11 metropolitan areas that "had less than 10% of metropolitan area employment within 3 miles of the CBD [Central Business District]" (Hill, 2005, pg. 412). Between 1998 and 2001, Detroit's job opportunities decreased by 2.4% while the surrounding suburbs increased jobs by 1.9% (Hill, 2005). According to Hill (2005, pg. 422), if Detroit does not "have advantages that offset high operating and tax costs to employers, the city's land and housing will lose value, its tax collections will diminish, its political power will wane, it will lose its fiscal independence, and its survival will come to depend on entitlements and redistribution rather than on value creation and growth."

The national foreclosure crisis that began in the summer of 2007 has thrown a unique twist not only on the national housing market, but on Detroit's revitalization housing efforts as well (Gorchow, Nov. 27, 2007). This "sub prime collapse," along with the state's poor economy, has led to many foreclosures in the Detroit metropolitan area (Gorchow, Nov. 28, 2007, pg. 1A). According to officials, three-quarters of these foreclosures are a result of people caught in "poorly designed loans—part of the sub prime

market where loans began with cheap initial interest rates that later ballooned to unaffordable levels" (Gorchow, Nov. 28, 2007, pg. 1A). Home sales fell for the eighth straight month as of November 2007 to the "slowest sales pace on record going back to 1999"—a rate that "was 20.7% below activity a year ago" (Free Press Staff, 2007, pg. 1D). The lack of sales is creating an inventory of unsold homes that is double normal rates and that is likely to rise further in the coming months (Free Press Staff, 2007). Detroit's economy is suffering as a result. In fact, "the Detroit region ranks seventh in the nation in loss of economic activity[5] among metro areas with a hit of $3.2 billion because of the foreclosure epidemic" (Gorchow, Nov. 27, 2007, pg. 1A; Hackney, 2007). In order for the economy and house sales to recover, new construction must slow down considerably so that the demand can catch up to the supply (Fox, 2007). Banks are helping to reduce housing construction, as many have "grown so skittish in today's market that they are imposing conditions on new construction loans that are all but impossible to meet" (Gallagher, Nov. 30, 2007, pg. 1E). Even with banks' influence, it is difficult to tell when positive changes will begin to occur.

Looking to the future

Some feel that before things improve in Michigan, they will likely get worse (Free Press Staff, 2007). Mark Zandi, chief economist at Moddy's Economy.com in West Chester, PA, predicts that the housing market will be

[5] "Economic activity is defined as the total value of goods and purchases" (Gorchow, Nov. 27, 2007, pg. 1A).

'a mess through 2008' as housing prices continue to fall, potential buyers continue to face difficulties getting loans, and weak sales continue (Fox, 2007, pg. 39). Some predict that "many homeowners in metro Detroit could face…higher taxes, lower home values, and shrinking services" as of spring 2008, which is likely to generate angry reactions from city residents (Wisely et al., 2007, pg. 1A). One can only hope that the negative effects of this crisis do not serve as a deterrent for people to live in the city considering the variety of attractive housing options available for people in all economic brackets. The more people are discouraged from moving into or remaining in the city because of the current housing market, the more problems the state will have with growth management around the Detroit metropolitan area. As I will discuss in later sections, sustainable growth in the Detroit area through policies such as infill development that are touted as being able to attract residents and businesses to the city is a high priority for both the city and the state.

Section 3: Literature Review

Introduction and Overview

Smart growth advocates widely promote infill development as an important smart growth policy in urban areas throughout the United States. These advocates promote infill especially as one solution for the problems that have arisen between urban areas and their surrounding suburbs—namely sprawl—because it entails building on vacant lots and reusing previously developed lots instead of developing on greenfields.

To better understand the use of infill development as a smart growth policy, it is necessary to have a working definition for that to which it offers a solution—sprawl. For the purposes of this study, "sprawl" will be defined as Galster (2001, pg. 5) defines it: "a pattern of land use in a UA [urban area] that exhibits low levels of some combination of eight distinct dimensions: density, continuity, concentration, clustering, centrality, nuclearity, mixed uses, and proximity." Some common results of sprawl are low-density, new development on open space rather than redevelopment of existing parcels in an older, existing neighborhood, unlimited expansion beyond high-density areas, increased automotive travel, new infrastructure construction, and segregated, rather than mixed, land use (Downs, 2005). One of the common goals of smart growth strategies, which work to counteract sprawl, is to revitalize older areas and in so doing, to preserve open space (Downs, 2004).

Using the above definition and characteristics of sprawl, infill development is considered an important smart growth strategy.

In order to understand how "infill development" can be used in different urban areas to potentially counteract the negative effects of sprawl, one must first become familiar with what the relationships are between infill and suburbanization, what factors make it more likely that infill will succeed, and how it is defined. As a sustainable growth practice, a developer's greatest challenge with infill development is successfully attracting specific groups of buyers by offering a preferential housing option within the city to suburban living (largely in terms of price, location, and style). These buyer groups include people who currently live in the city or in the suburbs and are looking to move. In order for infill to succeed in curbing sprawl, it must offer benefits that are competitive with the benefits offered by suburban developments. Infill development's benefits largely fall into two main categories: environmental and social. Its environmental benefits include serving as an antidote to sprawl, providing the ability to realize significant cost benefits in the areas of transportation, and improving an urban area's natural environment by building on vacant lots and blighted properties. Its social benefits include revitalizing neighborhoods, reusing vacant or abandoned property, increasing a city's tax base, and increasing the affordable housing stock.

An urban area's ability to realize these benefits through infill development is potentially compromised, however, by the (in)ability of

developers to recognize and address a number of barriers. These barriers fall into two categories, which I label here primary and secondary barriers. Primary barriers are those barriers that researchers and commentators have consistently identified as problematic. Their prevalence in the literature and the depth in which they are discussed suggests that they will arise as barriers in my case study of infill development in Detroit. Secondary barriers are those barriers that have been identified by only a limited number of researchers. The fact that these barriers were mentioned infrequently and only discussed superficially suggests that they may only arise as barriers under specific conditions and so are not as likely to influence the success of infill development in Detroit.

The primary barriers identified in the literature are: (1) infill development's lack of competitiveness with the suburbs; and (2) the degree to which the municipality and/or the developer has accounted for the real estate market because the barriers and benefits that can be expected from infill differ depending on the context of the real estate market. The secondary barriers are: (1) neighborhood opposition in the area designated for an infill project, (2) complicated zoning and building regulations, and (3) environmental problems with the chosen infill site. The benefits a municipality can expect to achieve through infill development are directly affected by the extent which these barriers are considered when choosing a site and designing an infill development.

Infill development has great potential when it comes to preserving open space and revitalizing urban areas. Before it is possible for municipalities to achieve success in these areas through the promotion of infill, however, it is necessary to have a working knowledge of what "infill development" entails and how it has been implemented previously.

Background – "Infill" Defined and Situated

A broad range of definitions has been used to describe infill development in the literature. The lack of a working definition for "infill development" is a complicated analytical issue that is primarily of concern to academics; however, it affects developers and city planners and officials in that it is difficult to assess the success of infill if people do not know what it is. Lack of a consensus on the term suggests that, without a generally agreed upon definition, infill development may not successfully occur. If this issue is not addressed, it could potentially develop into a primary barrier, examples of which are discussed further below. If developers, planners, and financiers are discussing infill development, but each using a different definition, it is likely that no one will be happy with the end result, as it will not match with their initial concept of infill development. Before planners, developers, and city officials can expect to see the intended benefits of infill development, they must first develop a working definition for infill development as it pertains to their municipality.

As illustrated in Table 2, a wide range of definitions has been articulated for "infill development" by academics, many of whom have differing views on its defining characteristics. By combining these various definitions, a working definition can be assigned to "infill development"—new residential development on vacant or abandoned properties that is built according to the present housing style within the existing, surrounding community. Infill development is distinguished from other types of residential development because it takes place within social and physical infrastructures (schools, organizations, businesses, neighbors) that are already in place (Felt, 2007). It seeks to add to a community rather than to redefine it.

Table 2. "Infill development" definitions from consulted literature.

Defining Characteristic	Definition
Build on vacant lots	
	Infill housing development—new residential development on vacant, abandoned, and underutilized property within built-up areas of existing communities where infrastructure is already in place. Infill development differs from adaptive re-use and rehabilitation of existing structures in that it requires demolition of existing structures followed by new construction. To a majority of community development practitioners, the term 'infill' is synonymous with development that is low-scale and low-volume, and has high per-unit costs." (Felt, 2007, pgs. 1; 48)
	Urban infill is the practice of developing vacant or underutilized properties within an urban area rather than undeveloped land in more rural areas (greenfields); infill helps prevent sprawl and can aid in economic revitalization. (Felt, 2007, pg. 4 referencing U.S. Environmental Protection Agency 1999)

	Infill is the development of vacant or remnant lands passes over by previous development in urban areas. (Felt, 2007, pg. 4 referencing Oregon Transportation and Growth Management Program 1999)
	[Infill refers to] new development on vacant lots within urbanized areas, redevelopment of underused buildings and sites, and the rehabilitation of historic buildings for new uses. (Felt, 2007, pg. 4 referencing Northeast-Midwest Institute and Congress for New Urbanism 2001)
	Infill development involves developing vacant parcels within existing urbanized areas that for various reasons have been passed over in the normal course of development. (Felt, 2007, pg. 4 referencing Denver Regional Council of Governments 2006)
	[Infill development is] the creative recycling of vacant or underutilized lands within cities and suburbs. A big box store that moves into an existing community is still infill development. (Northeast-Midwest, 2001, pgs. 3; 12)
Existing home; requires demolition	
	'An infill lots is one that was developed in years past, say 25 years ago. The home is now out of date, in poor repair, or has been demolished by the city after a fire; the water and sewer hookups are there but fees haven't been paid in years; and maybe there's a remnant of the driveway visible under the weeds in the front yard. It's a property ripe for a new single family home or maybe even a duplex.' (Felt, 2007, pg. 4 referencing affordable housing practitioner, Texas, 2006)
New development in existing neighborhood	
	Infill construction is defined as construction in tracts with densities of at least 2500 persons per square mile as of the 1980 US Census. (Felt, 2007, pg. 4 referencing Joint Center for Housing Studies, Harvard University, 2005)
	[Infill sites are] vacant or potentially redevelopable parcels located within existing neighborhoods. (Felt, 2007, pg. 4 referencing Institute of Urban and Regional Development, University of California, Berkeley, 2005)
	A mix of old housing and new (Seigel, 1999, pg. A1)
	Building new, market value, single-family homes to complement those already occupied (Hair, 2003, pg. 1)

	Scattered-site development that occurs where small numbers of parcels are available for redevelopment on existing city blocks. This type of development does not change the neighborhood structure substantially because new housing is located between existing buildings oriented to current street and lot subdivision patterns. (Ryan and Weber, 2007, pg. 101)
	Infill is defined in this case as residential development occurring within the city limits of the major city(s) in the" metropolitan statistical area (MSA). (Steinacker, 2001, pg. 497).
Not building off of existing neighborhood	
	'An infill project in a run-down area should be large enough to create its own environment' (Farris, 2001, pg. 11 quoting Suchman and Sowell 1997, pg. 13)

Note: Definitions are sorted according to the author's perception of the defining characteristic of "infill development"

The Benefits of Infill

There are six main benefits that the literature identifies as viable benefits to infill development. These benefits fall into two groups: environmental and social. The first environmental benefit that researchers and advocates attribute to infill is the ability to counteract the negative effects of sprawl. Infill can serve as an antidote to sprawl because it supports smart growth policies through increased housing options in previously developed areas, which reduces the need to build in greenfields (Bragado, 2001; Felt, 2007; Steinacker, 2003; Farris, 2001; Haughey, 2001; Northeast-Midwest, 2001). According to Felt (2007), real estate development, and infill

development in particular, plays a vital role in the area of improved sustainability. Haughey (2001) agrees, arguing that urban infill development is a sensible smart growth option because it is denser than suburban development and it reuses previously developed properties. Infill's ability to bring about benefits in this area is highly dependent on an urban area's ability to overcome the many barriers to its success, which are discussed further below. The fact that no authors provided any real-life case studies of urban areas where suburban sprawl has been reduced as a direct result of infill development raises questions about whether this purported benefit of infill is in fact valid.

The second environmental benefit of infill development mentioned in the literature is its ability to produce significant cost benefits in the areas of transportation and the environment (Felt, 2007 referencing EPA study, 1999; Northeast-Midwest, 2001). Successful infill often supports "mass transit and alternative modes of transportation" (Haughey, 2001, pg. 4), which helps to address traffic problems by creating "communities where people live closer to work and school, and where biking, walking, and transit can substitute for auto travel" (Northeast-Midwest, 2001). Infill development's environmental benefits also relate to the fact that, "if not maintained, vacant lots often become dumping grounds for waste, posing health and safety hazards; abandoned buildings become venues for crime; vacant properties cost cities millions in foregone property tax revenues and in maintenance or demolition costs; and abandoned homes can decrease adjacent property values by

thousands of dollars…" (Felt, 2007, pg. 12). Urban infill housing also tends to be less destructive to the natural environment than suburban development because it is generally of a higher density and it reuses old properties rather than continually building on previously undeveloped land (Haughey, 2001).

In addition to its environmental benefits, infill development benefits urban areas socially. First, infill is publicized as encouraging neighborhood revitalization in the following ways: neighborhood reinvestment, re-creating walkable, transit-oriented communities, revitalizing downtowns and neighborhoods, increasing tax revenues, reducing crime rates, generating community empowerment, and decreasing traffic congestion (Felt, 2007; Haughey, 2001; Northeast-Midwest, 2001). There appears to be a growing realization that "cities need good housing to become the vibrant centers of cultural and social life that they once were, and thus public and political support for urban infill housing is on the rise" (Haughey, 2001, pg. 4). As a result, there is a "general preference" for infill construction by those involved with city planning and policy development (Felt, 2007, Abstract).

Second, infill development is supported as a way to counteract the negative effects of vacant or abandoned properties because it generates new growth in those areas (Felt, 2007). This new growth in turn supports property-value appreciation and increases the stability of the surrounding neighborhood. Many urban neighborhoods have suffered from suburban expansion because businesses and developers stopped investing in their areas. Infill serves as a catalyst for reinvestment. When infill in areas with high

rates of foreclosure and/or vacancy is combined with incentives such as "foreclosure prevention, accelerated disposition of foreclosed properties, building rehabilitation, code enforcement," the positive effects are increased exponentially (pg. 13).

Third, infill development benefits the municipality by expanding its tax base (Felt, 2007; Steinacker, 2003; Northeast-Midwest, 2001). If designed correctly, developers and city officials can attract more middle-class residents to the city through infill development, which in turn serves to attract more businesses and thus more development (Steinacker, 2003). Saegert et al.'s (1985) study on housing buyer preference "highlighted a strong market for downtown housing among single women and men, single mothers, and unmarried couples living together," suggesting that infill development catered to this market could succeed in increasing a city's tax base (referenced by Birch, 2002, pg. 10). An increase in new residents encourages "retailing, office development, restaurant openings, cultural activities and events, religious activities, and the development of parks and recreational areas," all of which improve the surrounding community and encourage further reinvestment (Haughey, 2001, pg. 4). Increased development (both residential and commercial) brings previously vacant land back into the tax system at higher assessed values, which results in significant financial benefits for the city (Steinacker, 2003). Infill development is cyclical in that it generates new growth, which in turn encourages additional growth.

Fourth, many municipalities are not adequately meeting their affordable housing needs and infill development can help to increase the affordable housing supply (Felt, 2007; Steinacker, 2003; Northeast-Midwest, 2001). Felt (2007, pg. 12) notes that "affordable housing production on infill sites is also seen as a means of mitigating the effects that displacement, or gentrification, has on long-time residents of historically low-income neighborhoods in hot real estate markets." This is, of course, assuming that mixed-income neighborhoods are a viable option in the chosen location. Infill development that is not income-restricted can often generate more gentrification and low-income resident displacement because the new construction on vacant lots raises property values and attracts higher-income buyers. While an increase in the tax base may be beneficial to the city overall, it can present relocation problems for existing residents in the neighborhood chosen for infill development. This, in turn, can raise the issue of neighborhood opposition, discussed further below.

Making Infill Succeed

The literature presents many recipes for infill success; however, even with the help of lessons learned from other infill projects, developing successful infill is difficult. The Northeast-Midwest Institute and the Congress for the New Urbanism (2001) believe that in order to be successful, an infill development project should be built on a human scale, keeping the pedestrian in mind at all times. It should also knit together "a fabric of land

uses that support each other" (Northeast-Midwest, 2001, pg. 13). Facilitating this fabric are area amenities such as "zoning, urban design, transportation and capital improvement, open space, community facilities, and traffic and parking" (Bragado, 2001, pg. 43). The surrounding neighborhood is essential to the success of infill, as it builds off of the "existing assets" of the surrounding community (Farris, 2001, pgs. 6-7 referencing Danielsen, Land, and Fulton, 1999; Herron, 1998; Lang, Hughes, and Danielsen, 1997; O'Malley, 1998). Developers can use these assets by marketing the "location, proximity to culture, walking neighborhoods, and nightlife" (Farris, 2001, pgs. 6-7 referencing Danielsen, Land, and Fulton 1999; see also Herron, 1998; Lang, Hughes, and Danielsen, 1997; O'Malley, 1998).

In order to succeed, there must also be a favorable market for infill housing. One way to create this market is for municipalities to expand centrally located office employment, or for developers to find reasonably priced land close to transit and employment centers (Farris, 2001, pg. 6 quoting Suchman and Sowell, 1997). Examples of areas that cater to infill development are places near hospitals or universities because they are well-established locations with existing infrastructures and surrounding communities (Farris, 2001, pg. 6 quoting Suchman and Sowell 1997).

The Real Estate Research Corporation suggests that the most favorable infill sites are those that are located in a neighborhood open to new development, where the surrounding properties are well maintained, the land is reasonably priced, the existing public amenities are sufficient, there are no

outstanding environmental problems with the land, the land is zoned for its intended use, and the site is profitable (referenced by Farris, 2001). Unfortunately, these characteristics are not commonly found together. As a result, successful infill development can be hard to find.

Three main groups have consistently been involved in promoting and implementing successful infill development: (1) community development corporations (CDCs); (2) for-profit developers; and (3) municipalities. Borrowing from Felt's (2007, pg. 6) definition, CDCs are "nonprofit, community-based organizations created to renew and improve the economic and social opportunities in a specific neighborhood, population or community." Many CDCs are involved in infill developments as a way to produce affordable housing. CDCs set themselves apart from the for-profit developers in that they are often "community-controlled" and include residents in all aspects of the development process, and they often operate with a "double bottom line"—succeeding financially is equally important as accomplishing philanthropic goals within the community (Felt, 2007, pg. 16, referencing Urban Institute, 2005). As a result, in the last thirty years, CDCs "have become the primary, front-line investors in, and builders of, the economic and social assets of poor neighborhoods" (Felt, 2007, pg. 16).

For-profit developers tend to focus more on profiting from infill development rather than using infill development to help improve the surrounding community. With this focus, their developments can sometimes be destructive to the fabric of the neighborhood. This is not to say that all for-

profit developers necessarily act in this manner—some, like CDCs, also operate with a "double bottom line" (Felt, 2007, pg. 6).

Municipalities can work to either facilitate or hinder new infill development. In this way they are indirectly related to infill construction. Municipalities can assist developers "with incentive programs aimed at either the development (supply side) or purchase (demand side) or housing" (Haughey, 2001, pg. 7). These programs help expand the market for infill development and encourage more developers to enter the area of infill. In addition to incentive programs, when elected officials support and encourage infill development, the regulatory review process is less arduous for developers. Once constructed, infill developments themselves are more likely to succeed if municipalities support them because the city is more willing to invest in such things as "subsidies, tax breaks, density bonuses, and infrastructure improvements," which helps to improve the surrounding neighborhood (Northeast-Midwest, 2001, pg. 20). When municipalities are in favor of infill development, they increase the chance that a community can create a market for infill and, in turn, that the infill project can pay for itself (Northeast-Midwest, 2001). Municipalities play a significant role in determining whether or not an infill development project will succeed.

Infill development is particularly useful to municipalities because it has the potential to bring about benefits for multiple stakeholders (Felt, 2007). Supporters of infill assert that it can "improve solid communities and revitalize those facing problems" (Northeast-Midwest, 2001, pg. 3). Due to

its wide-ranging benefits, developers and municipalities alike are beginning to view infill development as "part of the solution—not part of the problem," which has resulted in increased political support for infill projects (Haughey, 2001, pg. 5).

Barriers to Infill

Realizing the benefits associated with infill development is not easily accomplished due to the many barriers and limitations that a developer must first overcome and take into consideration when building. The literature identifies two primary barriers and three secondary barriers that serve as limitations to building (successful) infill.

1st Primary Barrier

Infill development may not be competitive enough with suburban development to realize the potential benefit of serving as an antidote to sprawl. As Steinacker (2003, pg. 493) notes, in order for urban housing options to be competitive with the suburbs, they must first be perceived as a "viable alternative to potential suburban residents." Urban areas are primarily less competitive in the areas of residential preferences, public amenities, short-term costs, and obstacles that developers face in pursuing new construction.

Resident preferences for the suburbs are more complicated than simple cost comparisons between urban versus suburban living. Farris (2007,

pg. 7) found that, although specific demographic groups are showing an interest in urban and inner-suburban development, "an even larger portion of the population still chooses to live in the suburbs or on the suburban fringe" (Urban Land Institute, 1999). A 1997 survey by Fannie Mae showed that "70 percent of Americans prefer to live in suburbs, small towns far from cities, or rural areas" (Farris, 2001, pg. 7). Infill development is not attractive to families with school-age children in part because the public services that a city provides tend to be inadequate compared with the public services provided by neighboring suburbs. The Urban Land Institute (1999) found that many cities are not focusing their efforts on making cities family-friendly places, or they are trying, but not succeeding. As a result, some urban areas are currently only friendly for families with kids outside of the school range. Thus, cities like Detroit that could benefit from infill development are not. Cities are missing a significant portion of the market by not succeeding in improving such public services as school systems, crime reduction, open space, and, specifically in the case of Detroit, not providing an adequate number of grocery stores (Birch, 2002).

Public amenities within urban areas tend to suffer from a lack of competitiveness with other areas such as the suburbs, which can serve as a deterrent for people who would otherwise move into infill developments. Birch (2002, pg. 7) argues, "Urban life could be marketable if municipalities provided amenities—primarily schools and open space—similar to those of the suburbs." Cities tend not to focus their efforts on making cities friendly

for families with kids of all ages and so are losing a large portion of the housing market—those families with children inside of school-age range (Groc, 2007). They are primarily losing these people to the suburbs. Investor choices are linked closely to the amenities provided by the downtown area, so without a commitment from the city's government to address those public services that need attention, infill development is unlikely to succeed in that city (Birch, 2002). When home sellers in Toledo, OH were surveyed in 1991, the top five reasons they listed for moving were to "(1) seek a larger house, (2) seek a better school, (3) change jobs, (4) seek a better-styled home, and (5) seek a safer neighborhood" (Farris, 2001, pg. 7). It is difficult for cities to meet these stated desires, especially when it comes to those looking for new, large homes, because of the many obstacles cities face in terms of "land assembly, property acquisition and disposition, and developer preferences" (Farris, 2001, pg. 7 referencing Aryeetey-Attoh et al. 1998 and Suchman 1996).

Many authors commented that one of the reasons infill development may not be able to effectively counteract sprawl is the significant short-term cost differential between suburban subdivision construction and urban infill development. To put it simply, infill development costs more than building on previously undeveloped land in the suburbs, as illustrated by Table 3 (Bragado, Corbett, and Sprowls, 2001; Felt, 2007). Developers in general find that "the overall costs associated with infill development are more than

building on raw land" (Bragado, Corbett, and Sprowls, 2001, pg. 6; Steinacker, 2003).

Table 3. Short-term cost comparison between infill development and suburban sprawl development.

Development Costs (per salable s/f)	*Infill*	*Sprawl**
Land	$10-$20	$8-$14
Site Preparation	$5-$10	$5-$12
Hard Costs: Construction (wood frame only)	$60-$70	$40-$50
Parking (infill structured: sprawl-included above)	$5-$8	$0
Fees and Permits	$5-$8	$8-$15
Soft costs (includes consultants, escrow, insurance, finance, etc.)	$10-$20	$7-$12
Contingency (5%)	$4.75-$6.80	$3.40-$5.15
SUBTOTAL	$99.75-$142.80	$71.41-$108.15
Profit (10%)	$14.96-$21.42	$10.71-$16.22
Marketing	$5-$7	$5-$7
TOTAL COST	$119.71-$171.22	$87.11-$131.37

*Sprawl here is defined according to the definition from Gallster, 2001, pg. 5.

Source: Bragado, Nancy, Judy Corbett, and Sharon Sprowls. Building Livable Communities: A Policymaker's Guide to Infill Development. Prepared by: The Center for Livable Communities, A Local Government Commission Initiative. Copyright 2001 by Local Government Commission.

It can be difficult to find suitable infill sites and as a result, infill tends to be located on small or irregularly shaped parcels, a situation which generates feasibility and design problems (Bragado, Corbett, and Sprowls, 2001; Felt, 2007; Steinacker, 2003 referencing Suchman, 1997). The market

of potential infill site purchasers is reduced because it can be difficult to find or assemble larger sites (Felt, 2007; Steinacker, 2003 referencing Bowman and Pagano, 2000). High cost is even a problem for CDCs (Felt, 2007).

Many CDCs mentioned that site assembly is a main operational challenge that limits the amount of infill development they are able to accomplish. When it comes to affordable housing construction, CDCs find that they often must balance the volume and density of units with the per-unit costs of building and work to find the best combination (Felt, 2007). CDCs must therefore choose between financial sustainability and increasing the number of residential opportunities within the community. Competition for sites between developers also drives up costs. This can be a problem for nonprofit affordable housing developers because they generally cannot compete with for-profit developers who often have adequate financial resources available for doing so. Gap financing is often necessary for both infill development and general urban rehabilitation because "the costs of blighted land assembly are frequently higher than the value of the site for the reuse intended" (Farris, 2001, pgs. 11; 22).

Each of these economic factors make it more difficult for developers to build in urban areas rather than suburban areas and serve as a deterrent to their pursuing infill development (Felt, 2007). Cities are having problems finding developers and builders who can construct infill developments on a level that will generate economies of scale because they often do not have

> access to capital on terms competitive with suburbia, lots available on an expeditious and continual basis, the willingness to deal with the

> barriers, and a large enough capacity to have an efficient home building operation, compared with the standard suburban, large-scale, institutionalized developer (Farris, 2001, pg. 21 referencing Danielsen, Lang, and Fulton, 1999).

When the cost of doing infill development outweighs the benefits, which appears to be the case in many instances, the likelihood of more developers and builders pursuing it as a common practice is low.

Suburban development is often not only cheaper for developers in the short term than infill development, but it also presents fewer obstacles, and is therefore often preferred by them (Steinacker, 2003). Unlike urban infill housing where developers often face challenges such as "social problems in distressed neighborhoods, land acquisition and land assembly difficulties, financing complexities, regulatory constraints, contaminated sites, infrastructure problems, community opposition, and historic-preservation requirements," suburban developers do not generally run into similar obstacles (Haughey, 2001, pg. 5; Farris, 2001). Land acquisition, which presents such a great obstacle to infill development, is generally avoided in suburban development due to the "relatively inexhaustible land supply at the periphery," which makes land assembly and development much easier (Farris, 2001, pg. 14 referencing Nelson, 2000). In the case of funding, suburban development involves an "institutionalized and relatively simple financing process" and therefore involves fewer risks than infill (Farris, 2001, pgs. 8-9, 13; Steinacker, 2003). As a result, funding sources tend to be more supportive. This clear preference is confirmed by the fact that, "during the 1990s, 78.7 percent of the new housing permits in the non-central-city

portion of these areas were for single-family units, compared with only 32.4 percent in the central city" (Farris, 2001, pg. 6).

Felt's (2007) findings contradict much of what is said in the literature and suggest that the cost differential between the suburbs and infill may not be that great. Felt (2007) surveyed 236 NeighborWorks® America community development affiliates, 98 of which responded. One of the questions asked on the survey was, "In your experience over the last five years, how does the cost of doing infill compare to the cost of doing Greenfield development, in terms of total development cost per unit?" (Felt, 2007, pg. 59). The responses are listed in Table 4.

Table 4. Survey responses of CDCs as to whether they perceive infill development or greenfield development as more costly overall (long- or short-term not specified).

	Percent of CDCs agreeing with the statement
Infill > Greenfield	18.8%
Infill ~ Greenfield	11.8%
Infill ~ 20% > Greenfield*	3.5%

*The cost of infill development is about 20% more than the cost of greenfield construction.

Source: Felt, Emily. "Patching the Fabric of the Neighborhood: The Practical Challenges of Infill Housing Development for CDCs." Supported by: Harvard Joint Center for Housing Studies and NeighborWorks® America. April 2007.

The numbers are surprisingly low considering the information from other sources, which suggests that many more CDCs would have chosen "Infill > Greenfield" (Felt, 2007, pg. 59). Haughey's (2001) research

confirms Felt's findings. Haughey (2001, pgs. 4-5) found that, although urban infill housing may be riskier, it "often generates greater financial rewards than does suburban greenfields development." Steinacker (2003) also tested whether infill housing units (single-family homes and multifamily units) are more expensive than suburban units and found that infill is more expensive when building multifamily units, but not when building single-family homes.

Some study's cost comparisons can be misleading, as they may only represent the short-term costs. If the long-term costs of establishing new infrastructure were factored into the initial cost of suburban homes, one would find that infill development is often a more cost-efficient option overall (Felt, 2007). When the total cost of building new roads, water lines, sewer lines, drainage systems, and parks are factored in, infill development can be less costly than suburban development because it does not require building new infrastructure in new growth areas (Felt, 2007 referencing Coriolis Consulting, 2003).

In terms of housing affordability in greenfield compared with infill development, Steinacker (2003, pg. 499) found a general trend (with a "substantial" number of places that did not follow the trend) where new, single-family housing tended to be more affordable in cities compared to the suburbs. It is possible that, due to the lack of adequate affordable housing in existing communities, new affordable housing construction is being driven out beyond present metropolitan area boundaries as a result of feasibility

from the low cost of land (Northeast-Midwest, 2001). Steinacker's (2003) overall findings confirm this and suggest that, if cities promote infill development, it may lead to housing affordability problems because the high cost of building infill development means that infill units must be sold at a higher cost.

The lack of conclusive findings on whether or not infill housing is more expensive of a development option to pursue than greenfield development and its impact on housing affordability leaves room for further research. My research on infill development in Detroit will contribute additional evidence on this question.

2nd Primary Barrier

Before city officials can expect infill development to succeed in their municipalities, they must identify and acknowledge the real estate context in which they hope to promote it. As Felt (2007, pg. 2) aptly states, "real estate context matters." Real estate context is important in that the goals and challenges, and therefore the overall strategy, of infill development change depending on the market for which you are working to attract and therefore for which you are building.

There are two types of real estate markets, commonly referred to as hot and cold, each presenting different obstacles to infill development's success. Borrowing from Felt's (2007, pg. 7) definition for the purpose of this study, a hot real estate market is defined as "a real estate context in which the

average home price has increased at a rate significantly greater than the rate of household income." A cold real estate market is defined as "a real estate market in which the average home price is unchanging or growing slowly relative to the national average" either as a result of "high rates of property vacancy or abandonment" (pg. 7).

In a so-called "hot market," the demand for housing is greater than the supply for all income levels and so the municipality's greatest challenge is providing enough quality affordable housing (Felt, 2007). This is financially difficult, however, for CDCs and nonprofit developers who must compete with for-profit, private developers for land acquisition. This often requires gap financing from large amounts of public subsidizing such as "discounted land, increased allowances for density, low- or no-interest loans and/or property tax abatements" (Felt, 2007, pg. 3). If CDCs and nonprofit developers are not able to purchase land, displacement, and potentially gentrification results, forcing low- and moderate-income residents to move out of their neighborhood. For CDCs, infill development is not intended to work against low- and moderate-income urban residents. In order to avoid this negative outcome, municipalities must identify the market in which infill development will be taking place and take steps to prevent displacement.

In "cold markets," population growth is minimal or nonexistent and developers must focus on maintaining and generating value within existing neighborhoods in order to preserve their "stability and quality of life" (Felt, 2007, pg. 49). Cold market cities tend to have a large number of abandoned

houses and high vacancy rates. As a result, unlike hot market cities, high land cost is less of a concern. Infill housing in weak markets is intended to attract residents (primarily moderate- to high-income) and businesses to the neighborhood in which development is occurring; however, current residents may be skeptical that attracting higher-income residents and changing the neighborhood to become mixed-income will result in benefits such as appreciated home values. To counteract this fear, many CDCs practice "focused infill" where new infill sites are viewed as "anchors of reinvestment" that work to prevent unstable neighborhoods from declining further (Felt, 2007, pg. 2). The ultimate goal is to use infill development to bring about positive, long-term neighborhood transformations.

The majority of the literature argues that there is a potential for infill development in all cities, no matter the real estate market; however, Farris (2001) argues that infill development potential varies with the market. He believes that "vacant land in cities with weak downtowns will not attract strong infill development patterns," and as a result, "the primary goal of smart growth advocates should be to encourage higher-density, quality development at the metropolitan edge and exurbia while selectively choosing those relatively limited infill opportunities" depending on the market (2001, pgs. 2; 7). Felt qualifies Farris' statement, stating that, "*stand-alone* infill affordable housing development is neither a viable nor a sustainable revitalization strategy in a weak market" (2007, pg. 50; emphasis added). She goes on to state that, "in the absence of comprehensive community initiatives,

the effect of a stand-alone infill development on community revitalization diminishes" (Felt, 2007, pg. 3). My case study on Detroit will help determine the likelihood that infill development will flourish or fail in a cold market city.

Secondary Barriers

There are three barriers that were not mentioned as widely or in as much detail in the literature as the above-mentioned primary barriers, but they were mentioned often enough to suggest that they are significant barriers under specific conditions. First, some authors mentioned that the surrounding neighborhood of a proposed infill site might strongly oppose its construction. Neighborhood opposition is likely to occur "virtually any time that a developer—affordable or otherwise—introduces a structure that is out of character, in terms of density, typology or façade, with the surrounding neighborhood" (Felt, 2007, pg. 31). Residents in neighborhoods where infill development has already occurred may oppose new infill if the previous examples were of a poor quality or if they did not achieve the intended results (Bragado, Corbett, Sprowls, 2001). Farris (2001) and Felt (2007) argue that neighborhood fear of gentrification and the resulting displacement is an important issue in some areas. Traffic is also frequently discussed as a point of contention between existing residents and proposed infill projects. If a developer creates additional parking spaces to accommodate new residents, the existing neighborhood may oppose the project, feeling that it will

generate too much traffic (Northeast-Midwest, 2001). On the other hand, if there is not enough parking, the existing neighborhood may be nervous about losing the little existing parking to their new neighbors. In order to improve the chances of success, both nonprofit and for-profit developers must consider whether the surrounding neighborhood will oppose such a project and take the initiative on detailing the benefits that can be realized through infill (Felt, 2007).

Second, infill can be very difficult for developers to achieve given the current zoning regulations and building requirements. The problem stems from the fact that "…existing zoning codes and land use plans do not encourage—or envision—infill development" (Felt, 2007, pg. 34). As a result, infill developers will often need to rezone land to a more intensive use in order to help cover the cost of land, which in turn often generates neighborhood resistance (Farris, 2001). Regulations such as limiting a building's footprint, the type of parking that will be provided, and restrictions on building mixed-use neighborhoods increase infill costs and limit potential sites (Felt, 2007). It is often the case that regulations "tell developers what communities don't want rather than present a positive model for development" (Northeast-Midwest, 2001, pg. 21). Downtown areas tend to be zoned for commercial use, and so building infill development, which is residential, can be difficult or impossible (Urban Land Institute, 2004). Zoning restrictions and building codes tend to be outdated and so place restrictions on density and use (Felt, 2007). Developers find it "difficult to

design while meeting today's codes (e.g. off-street parking) and buyer preferences (e.g. large closets), while preserving old neighborhood character and layout" (Felt, 2007, pg. 28). Urban areas need to revise their zoning policies in order to accommodate different housing opportunities and in turn encourage revitalization (Birch, 2002).

Third, environmental problems (hazardous or otherwise) with sites intended for infill development may complicate construction. These problems include the need to demolish existing structures or clean up contamination that is potentially hazardous (Felt, 2007). According to Bragado, Corbett, and Sprowls,

> hazardous contamination of urban properties is a serious impediment to infill development. The problem stems from the fact that parties can be held liable for clean-up under the Superfund law if they own a piece of contaminated property, even if they had nothing to do with the contamination. Understandably, there are few buyers and lenders willing to undertake such risks, and old industrial zones of cities are being abandoned (2001, pg. 35).

Developers have also run into problems trying to reuse the infrastructure of older buildings because they have asbestos or lead paint problems (Steinacker, 2003 referencing Simons, 1998 and Wright, 1997). One of the "most common problems" city officials came across with vacant land was that parcels often "suffered from physical conditions that made development unlikely," limiting the number of sites on which developers were willing to do infill (Steinacker, 2003, pg. 496 referencing Bowman and Pagano, 2000).

Even with the many barriers and limitations that come with "filling in the missing teeth" or "patching the neighborhood quilt," infill development

continues to be "widely practiced" (Felt, 2007, pg. 20). Even though "many public officials and developers are skeptical about claims that urban infill housing can be produced in significant amounts," it appears that many urban areas across the nation are encouraging infill development because they find it to be a beneficial practice that is helping their cities take advantage of something that, for many, is a vast resource: vacant and abandoned properties (Haughey, 2001, pg. 3).

Conclusion

Based on the information revealed in the literature, it appears that there is a general understanding as to the situations in which infill development succeeds, who is involved in infill development, and the potential benefits and barriers one may face in constructing an infill development.

Review of the literature also reveals some research gaps, particularly where a clear consensus on an aspect of infill development is not apparent. These gaps include the fact that infill development lacks a working definition that is generally applicable to urban areas around the United States. Further research is also needed on how infill development functions in different markets. Most significantly, further research is needed to determine whether or not infill development can actually curb sprawl. Many authors made this claim, but it was not supported with empirical evidence. If infill development *can* serve as an antidote to sprawl, urban areas around the country would

greatly benefit from a better understanding of the necessary market conditions, implementation strategies, and financial resources.

Through my case study on infill development in Detroit, I hope to gain further insight on these several research gaps. More specifically, I hope to develop a working definition for infill development as it relates to Detroit, to determine which population groups might be attracted by infill development in a cold market such as Detroit, and, most importantly, whether or not infill development—to the extent it is already occurring—is serving as an antidote to sprawl in Detroit's surrounding metropolitan region.

Case Analysis: Setting and Methods

Setting: Detroit

To assess the extent to which the benefits and barriers of infill development identified in the literature are significant, I examined the use of infill housing development in Detroit, Michigan. In order to gain a better understanding of the relationship between infill development and Detroit, I looked at how it is defined by those involved in its implementation and construction, the population it is serving, how well it serves this population, why people choose to move into Detroit's infill developments, where the majority of infill is located within Detroit, and the greatest barriers to its success. This information ultimately allowed me to make an initial assessment as to whether or not infill development is producing the outcomes for which it is being promoted in the literature—primarily focusing on its supposed potential to serve as an antidote to sprawl. In addition, I examined whether or not the primary barriers identified by the literature were significant in a place like Detroit, where there is a strong attraction to the surrounding suburban areas and the real estate market tends to be weak compared to other urban areas around the country. The results of this study allowed me to suggest how infill development could be used in the city and the benefits the city can hope to gain from its use.

Detroit, Michigan is an ideal case study for measuring the degree to which location and market strength affect the impact of primary barriers (as

identified in the literature) when it comes to infill's success. The literature revealed that academics have not yet developed a working definition for "infill development." In order to assess whether planners, developers, financial sources, city officials, and academics involved in Detroit's infill development lacked a working definition as well, I included a question asking interviewees to define the term. Their agreement, or disagreement, on the term compared with the amount and type of infill development done in Detroit will hopefully shed some light on the degree to which varying definitions affect its success. Detroit is a cold real estate market. Depending on how those involved in the infill development process have taken Detroit's real estate market into consideration, infill within the city may have been affected. Historically, Detroit has lost a great deal of its population and jobs to its surrounding suburbs. This remains true today, and the degree to which it has remained true may help to explain the success rate of infill development within the city as well as the demographics moving into the city's infill projects.

Research Goal

The purpose of this study is to gain a sense of the extent to which infill development is used in Detroit and to draw on this information to evaluate the effect its use is having on curbing residential development in the surrounding suburbs. The literature promotes infill development as an antidote to sprawl—a tool that can create more housing opportunities within

cities, and in doing so, attract people to move from the suburbs to the city. Because infill development operates by developing in previously developed areas, greenfield development and sprawl may be reduced as a result. If infill development is not accomplishing these goals, I will make suggestions as to why. Following these recommendations, I will propose actions Detroit could take to attract more residents. This question is of particular interest to Detroit planners and developers considering the lack of readily available current information on infill development in Detroit.

I expect to find that infill development in Detroit is not deterring suburban growth in its surrounding metropolitan region. I suspect that Detroit's population is either remaining the same or decreasing because of the lack of jobs, the negative perception of its schools and safety, and the lack of a public transportation system connecting Detroit to the surrounding regions. I anticipate that those interviewed will have widely varying suggestions as to alternative, superior methods to infill development that the city should pursue.

Research Approach

Data for the study were obtained between September 2007 and February 2008 from two sources: (1) existing literature on infill development in the United States and (2) interviews with informed individuals involved in Detroit's planning and development. The literature consulted consisted

primarily of journal and newspaper articles found through Internet search engines.

Interviewees were chosen based on suggestions from informed individuals. In total, 17 people from 16 different organizations were interviewed from organizations in Detroit as well as its surrounding metropolitan area (Table 5).

Table 5.

Knowledge Type	Organization
Academic	Citizens Research Council of Michigan
Community Development Corporation	Bagley Housing Association
Community Development Corporation	Corktown Community Development Corporation
Community Development Corporation	Grandmont Rosedale Development Corporation
Consulting	Community Legal Resources
Consulting	The Protogenia Group, LLC
Funding Body	Detroit LISC
Funding Body	Detroit Renaissance
Funding Body	Hudson Weber Foundation
Funding Body	National City
Government	City of Detroit Planning and Development Department
Government	Genessee County Land Bank
Government	New Far East Side Development Company
Government	Wayne County Land Bank (2 interviewees)
Private Developer	The Hubbell Group
Private Developer	Zachary and Associates

Six perspectives, or "knowledge types," were sampled, for the purpose of gaining a well-rounded and well-informed perspective on the true state of infill development in Detroit. The interview consisted of 9 questions aimed at learning more about the relationship between infill development and

Detroit (Appendix A). The interviews ranged in length from a half hour to an hour. I guaranteed privacy to each individual interviewed, and so interview responses are categorized by knowledge type rather than by the interviewee's name or organization affiliation. I conducted all of my interviews between November 2007 and January 2008. Three of the interviews took place in person while fourteen of them took place over the phone.

Section 5: Findings

In addition to reviewing the existing literature on infill development in urban areas around the United States, one aspect of this study included interviewing informed individuals involved with Detroit's planning and development about infill development in the city. Specifically, people were interviewed in order to gain perspectives from individuals knowledgeable about housing in Detroit and the affect of infill development on the relationship between the city and its surrounding suburbs.

The findings revealed through the interviews are presented beginning with an orientation of infill and the groups involved in building and locating infill developments in Detroit. I go on to discuss the meaning of infill development as it relates to Detroit, the most commonly mentioned locations of infill developments around the city, the populations being served by infill, and who the city is intending to target by constructing infill in different locations and within varying price ranges. I end my findings with interviewees' perception of infill development's adequacy given the barriers it faces and the steps the city should take toward making infill development more successful in the future.

Infill Development in Detroit: Orientation

Up until the mid- to late-1990s, developers in Detroit were not following traditional infill standards when building new "infill" construction. Developers were constructing on the scale of blocks rather than on the scale of houses. They built entirely new neighborhoods according to a suburban model rather than the traditional single-family home model of historical Detroit. In addition, developers did not build new construction according to the existing city grid, but instead created new zoning for the area.

In the last ten years, developers and city planners have been changing their approach to the city's development due to difficulties with land assembly, a situation that has compelled developers to work with smaller parcels. The use of eminent domain has also become much more difficult legally, politically, and logistically, and so developers have turned to infill development as a strategy almost out of necessity.

The city has developed a land inventory system, which greatly facilitates the use of infill development because it tracks properties throughout the city and provides developers with an idea of the extent of city-owned property, and thus the lots where development is encouraged. The city has also developed an overall city land use strategy as a guide for the development projects it is accepting. Guiding principles in this strategy are to rebuild Detroit according to its historical grid and to incorporate different levels of density throughout the city. As discussed further in the interview responses below, the city is trying to attract a diverse population by

marketing to a wide spectrum of populations throughout the city, and it views infill as an important strategy in helping it to achieve this goal.

Groups Involved

Interviewees mentioned three main groups that facilitate infill development in Detroit: (1) city officials and planners, (2) developers—both for-profit and non-profit, and (3) funding bodies—both federal and local.

The City is largely working to facilitate infill development by assisting developers with land assembly. Land assembly has become much more difficult legally, politically, and logistically, which has made infill development even more of a necessity for adding new home construction to Detroit (Private Developer[6]). The city has developed a land inventory system, which tracks properties throughout the city and provides developers with an idea of the extent of city-owned property that is available for development (City government official). Many of these properties are a result of tax foreclosures (Academic). In addition to identifying parcels available for development, the city is looking at the potential for combining lots in order to increase the amount of green space in the hopes that it will encourage people to move into nearby infill housing (City government official).

Developers are inclined to work within the city's land use strategy and build infill because the opportunities for large-scale development in Detroit are few and far between; thus, in order to engage in new construction,

[6] Due to confidentiality with those interviewed, the citations in this section refer to the knowledge type (Section 4, Table 1) of the person interviewed rather than a literary source.

infill is often required (CDC representative). On the whole, infill development is used more frequently by non-profit housing developers than by private, for-profit developers because they are willing to spend the time and money required in land assembly (Academic representative, Private developer, Funding body representative). For-profit developers have tried to avoid the high cost of land assembly by building market-rate infill housing in the downtown area that caters to those of a higher income level because it is one of the few places they can make a profit; however, with the recent downward turn of the housing market, for-profit developers are starting to switch over to building low-income housing (CDC representative, Private developer, City government representative).

Non-profit developers—the Community Development Corporations—have constructed the majority of infill in Detroit because they are willing to build on the scattered sites that frequent the city's landscape (Private developer, CDC representative). They largely build single-family affordable housing in neighborhoods that have traditionally been single-family residential. They receive much of their funding from the state, which requires that buyers meet certain income guidelines (CDC representative). Many of the houses are therefore not available to people making above 80 percent of the adjusted income, meaning that non-profit infill developments largely serve the low-income population.

The infill development occurring in Detroit is made possible through funding from federal grants as well as state and local funding bodies. The

most common form of affordable housing funding comes from single family or low-income housing tax credits, which are administered by the Internal Revenue Service (IRS) (Funding body representative). The program started in the late 1980s and has served as the primary funding source for many projects—providing sometimes up to three-fourths of the financing (Funding body representative). The U.S. Department of Housing and Urban Development (HUD) provides funding through their Community Development Block Grant (CDBG) programs (Funding body representative). The Local Initiatives Support Coalition (LISC) in Detroit also is a major funding body. The city largely provides income-restricted funding for development, which is available to those making eighty percent or below the adjusted family income (Funding Body Representative).

Infill Development Defined

Those who are knowledgeable about Detroit's infill development have varied opinions as to its definition. While all but one of the knowledge groups were in agreement as to the main component of "infill development," the representatives consulted from the funding bodies involved in Detroit's infill had widely varying opinions as to its specific attributes (Table 6).

Table 6.

Knowledge Group	Main Components of Definition
Academic	Vacant lot redevelopment; demolition may occur
Community Development Corporation	New development on vacant lots scattered within an existing neighborhood fabric; lots are usually vacant due to demolition; affordable or market-rate housing is constructed
Consulting	Scattered-site development within an existing neighborhood fabric; demolition occurs to make way for new construction; small scale construction
Funding Bodies	Filling in gaps of vacant lots within an existing neighborhood; ideally done within context of comprehensive plan; new housing caters to higher economic levels—may result in unintentional gentrification
	Detroit neighborhoods: scattered-site development as a response to vacant lots
	Affordable or market-rate housing; infill strategy depends on neighborhood being targeted
	Scattered-site, single-family residential development that works with existing neighborhood fabric; not gentrification—financially compatible neighborhood reconstruction
Government	New construction on vacant lots that integrates with the fabric of the existing neighborhood; vacant lots may be the result of demolition; End goal is to create a mixed income neighborhood
Private Developer	New construction within an existing neighborhood; connect the dots of vacant land around the city; scale is not specified
	Detroit core: rehabilitation of existing buildings—largely manufacturing plants; definition is location-dependent

Note: underline denotes conflicting information from respondents of same interview group

While the exact definitions varied between and among knowledge groups, there appeared to be an agreement that new construction within an existing neighborhood fabric is a necessary component of "infill development" (Table 7).

Table 7.

Main Component of Definition	Frequency (out of 17)
New construction within an existing neighborhood fabric	13
Vacant lots	7
Demolition is necessary	4
Location-dependent	3

These interviews lead me to conclude that infill development in Detroit can be defined as follows: residential construction that seeks to fill in a neighborhood's existing gaps with housing that is compatible with the surrounding neighborhood. It does not cater to a specific income level and it is not restrictive as to the number of units created by the new construction.

The Location of Infill Development in Detroit

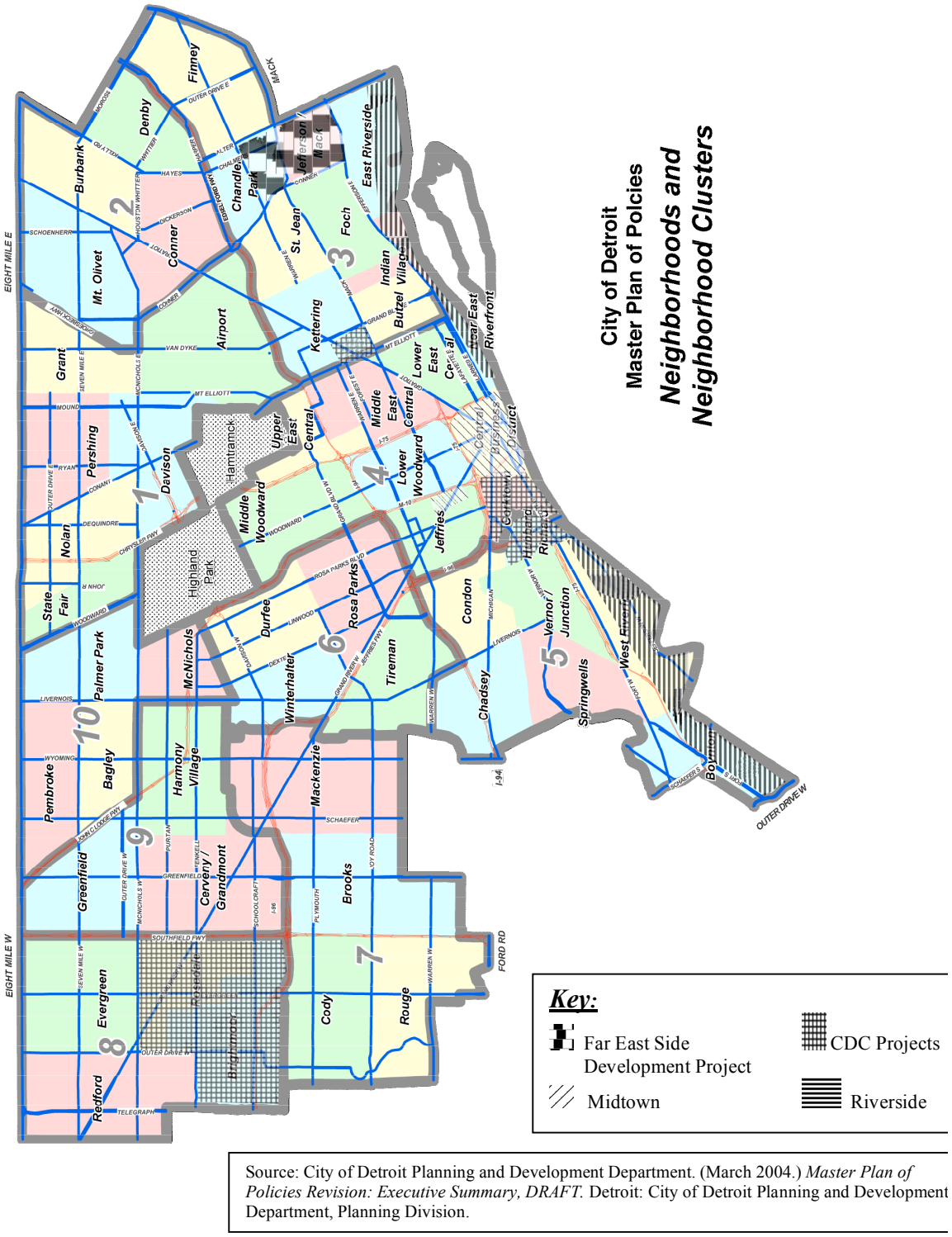
Infill development is widespread around the city of Detroit. Interviewees mentioned four main areas around the city where infill development is taking place: (1) The Far East Side Development Project; (2) Detroit Community Development Corporation projects, located in various

areas around the city; (3) Riverside area development; and (4) Midtown and central city core development (Map 3).

The Far East Side Development Project

According to a city government representative, the Far East Side Development Project is a 1200-acre master plan urban redevelopment initiative developed during Mayor Dennis Archer's administration between 1994 and 2001. The city chose this site because they owned a large number of parcels—about fifty percent of the lots. City planners hired four development companies to complete the project: (1) United Streets Networking and Planning: Building A Community development corporation (U-SNAP-BAC), (2) Kimball Hill Homes, (3) Phoenix Communities, Inc., and (4) CityView. Infill development works well for this site because it encompasses predominantly single-family neighborhoods with a number of vacant lots scattered within them (Private developer). In addition, the city has focused on replacing the basic, existing infrastructure in order to make development more attractive (Academic representative). Developers are inclined to site new infill projects here because some of the surrounding neighborhoods, like Grosse Pointe, are stable, and thus their infill projects are more likely to succeed (Private developer). Detroit planners hope to make the area a community of interconnected and diverse development (City government representative).

Map 3. Detroit neighborhoods[7] where infill development is taking place.



[7] The 10 areas outlined in gray are neighborhood cluster boundaries of sub-areas, as defined by the US Census Bureau for Detroit. The neighborhood clusters may include more than one neighborhood under each numerical heading. The colored areas provide loose boundaries and associated titles for various individual Detroit neighborhoods.

There are some pockets of development within this expansive area, but according to a government representative, nothing that follows a comprehensive plan. This is likely due to the fact that the project has unfortunately lost much of the attention it initially drew and the city has been forced to accept developers and their projects as they come (Funding body representative). The city offers lots to builders to develop in the style of their choice and many have chosen to build suburban-style development—both affordable and market-rate—with the end result being similar to that of infill development of mixed-income communities (CDC representative).

Community Development Corporation Projects

My findings suggest that Community Development Corporations (CDCs) have primarily developed the infill projects located in Detroit's neighborhoods. Seven CDCs[8] and their efforts were explained in detail during the interviews (Table 8).

[8] This list does not represent a complete list of all Community Development Corporations (CDCs) operating in Detroit. Additional CDCs were mentioned, but interviewees did not provide extensive enough information for their efforts to be included in this list.

Table 8. Community Development Corporations constructing infill developments in Detroit.

Bagley Housing Corporation	• Operate in the Hubbard Richard neighborhood • Traditional infill development—consistent with the surrounding neighborhood • Goal to create mixed-income neighborhoods • Rehabilitate existing homes and construct new homes • Market-rate and affordable housing • Community improvements—parks and schools
Grand Rosedale Development Corporation (GRDC)	• Rosedale neighborhood • Focused on increasing the available housing for the middle class • Rehabilitate deteriorating homes—40 or 50 homes total in last ten years • Recently, become involved in new construction • Benefits of infill for them: fixes one problematic house before the situation escalates into a problematic neighborhood.
The Greater Corktown Development Corporation	• Corktown neighborhood • Traditional infill development—filling in gaps of vacant lots • Respect the traditional, narrow lots that historically comprised Detroit's landscape • Largely build single-family homes • Infill efforts have been successful in part because the surrounding infrastructure has the capacity to support the additional housing.
Mexicantown Community Development Corporation	• Hubbard Richard neighborhood—Mexicantown • Focus on commercial development • Neighborhoods in Mexicantown cater primarily to Mexican immigrants • Established Mexican population in area; has become a destination-area for other Mexican immigrants.
Northwest Detroit Neighborhood Development Corporation	• Brightmoor neighborhood • Rental housing—primarily single family and duplex rental housing • Like Southwest Housing Solutions, they see rental housing as the first step in helping to revitalize the area.
Southwest Housing Solutions	• Hubbard Richard neighborhood • Non-traditional rental infill—renovate apartment buildings • Similar goals as traditional infill housing • Community improvement efforts—creating programs that work with existing homeowners to tap into home renovations programs

U-SNAP-BAC	• Kettering neighborhood; "Morningside Commons" • Both rental and single-family market-rate housing • Slightly larger scale than traditional infill—work to redevelop entire blocks using federal funds and help from other organizations such as Habitat for Humanity.

Riverside Area

According to academic and private developer representatives, for-profit developers dominate the construction in the riverside area. They primarily build higher-income infill development (million-dollar homes) on the large-acre vacant lots that were once industry sites (Private developer representative). Land assembly in the city core is difficult because of homeowner opposition and the fact that the city does not tend to own contiguous parcels (Academic representative). The riverside is therefore attractive to for-profit developers because it is one of the few areas in Detroit where developers are able to assemble large tracts of land, which in turn enables them to build higher-end development.

Midtown and Central City Core

Infill development in Detroit's Midtown and central city sections primarily consists of higher-income lofts and condominiums built from commercial and industrial infrastructure conversion (Funding body representative, CDC representative). It is targeted at the young professionals and single people without children who are attracted to the typical urban

lifestyle (Funding body representative, CDC representative, City government representative).

The market-rate infill in this area is also successfully attracting higher-income families from the suburbs who are able to pay to send their children to private schools and avoid the problem of Detroit's potentially inadequate school system (Academic representative).

Infill housing in this area is experiencing the greatest success because it offers incentives for people like Wayne State University and the cultural center (Funding body representative). Although this infill development does not have the same characteristics as traditional infill development in that a surrounding neighborhood style for developers to complement is not present, it is achieving the same goals and successfully attracting higher-income residents to the city.

One example of the infill development in this area is Woodbridge estates, a mixed-income infill project of single-family homes and rental apartments in the Jeffries neighborhood. This new construction largely replaced the "Jeffries Homes" housing development, most of which was demolished in 1996 to make way for the new development (New Detroit).

Populations Served Through Infill Development

Interviewees classified the populations being served by infill development either in terms of income, location within the city, or familial composition.

Just over half of those interviewed (8 in total) distinguished the populations infill is serving according to income (Table 9).

Table 9.

Income Level	Opinion held by	Knowledge groups holding this opinion
Low	6 people	Consulting, Private Developer, Funding Body, CDC
High	2 people	Private Developer, Academic

Four of those who used income to categorize populations being served by infill asserted that infill development in Detroit is largely affordable housing construction built by non-profit developers and is therefore predominantly serving the low-income population of Detroit. This opinion was unanimous among representatives of the consulting, funding body, and CDC knowledge groups. The low-income population being served is primarily single female heads of household with children (CDC representative). According to a CDC representative, financially qualified immigrants are beginning to move into low-income infill housing—especially in the Southwest Detroit, Mexicantown area. In the future, this demographic may become more widely represented, but at present it is a small percentage of those moving into low-income infill. CDC and consulting representatives added that much of the infill housing being built is funded

through federal grants that place income-restrictions on the construction they are funding. Thus, many infill developments are only able to serve low-income populations looking for affordable housing.

Two of those who described the populations served by infill according to income thought that infill development in Detroit largely serves higher-income populations. This perspective was held by one of the private developers and the academic group. For-profit developers are generally responsible for constructing the market-rate high-income infill housing (Private developer representative). The high-income population being served by these infill projects is largely young professionals, existing suburban residents looking to move and who are attracted to the typical urban lifestyle, and single individuals without children (CDC representative).

Three interviewees, including private developers and a funding body representative, thought that the populations living in infill developments varied by location within the city (Table 10).

Table 10.

Location	General income Level	Primary Population Served
Midtown	High-income	Young, single individuals—may or may not have children, previously lived in suburbs
Neighborhood	Low-income	Single families; upwardly mobile middle class African-Americans; first-time homebuyers
Riverfront	Very high-income	Those looking for million dollars homes on large lots

Those previously suburban residents moving into infill developments in Midtown tend to be of an income status where they are able to pay to send their children to private school (Private developer representative, City government representative, Academic representative). In doing so, they bypass a commonly cited deterrent by suburban residents who will not move into Detroit because of the city's negatively perceived school system.

In the neighborhoods, infill housing is mostly attracting first time homebuyers, middle-income residents, and those who qualify for affordable housing (CDC representative). It especially caters to those who want to live in the city, but do not have the money to live in a higher-priced area. Infill provides them with a variety of housing options at an affordable price (CDC representative, Academic representative, Funding body representative). According to those involved in the city government, infill project developers have been working to create mixed-income neighborhoods in these areas by building new, market-rate housing among existing affordable housing.

One academic representative and one of the consulting representatives described the populations being served according to familial composition. They were uniform in their opinion that infill development largely serves pre-existing Detroit families. The academic representative noted that the overall housing market in Detroit is bifurcated and predominantly includes people without children and pre-existing Detroit families (generally single moms with children). According to these perspectives, infill development is missing

a large share of the market because it is not catering to suburban residents with children.

Five people who represented the academic, funding body, and government perspectives, viewed current infill development residents in terms of their previous place of residence—urban or suburban. Of these, four (academic, funding body, and government) were of the opinion that infill development primarily caters to existing residents of Detroit who are living in substandard housing within the city and are looking for new construction. They are attracted to infill housing because it offers them affordably priced new housing, which is extremely attractive to those who qualify (CDC representative, Academic representative, Funding body representative). Only one funding body representative thought that infill development was attracting suburban residents.

One funding body representative and one city official thought that infill development in Detroit serves a "true cross-section" of populations. They asserted that there is a relatively "even split" between affordable housing ($150,000 or less) and market-rate housing ($150,000 or more). In their opinion, this is largely the result of the city's market, which strongly demands both housing types.

Infill Development's Target Population

In response to the question of what Detroit infill's target population should be, seven out of 15 responses said that Detroit should be working to create mixed-income neighborhoods because they tend to be more stable (Table 11).

Table 11. Population the city should be targeting through its infill development.

Target Population	Number of Responses	Knowledge Groups Holding This Opinion
Mixed-income neighborhoods	7	Consulting, Private Developer, Government, Funding Body, CDC
Suburban dwellers	2	Government
Young professionals	2	Funding Body
Affordable housing buyers	1	CDC
Appropriate population	1	Government
Attracted to urban living	1	Government
Immigrants	1	CDC

Currently, as a result of the income restrictions that have been placed on much of the city's existing housing, there are many neighborhoods with primarily affordable housing (City government representative, Consulting representative, CDC representative). According to a funding body representative, the widespread use of low-income tax credits has succeeded in creating "low-income tax credit ghettos" and a shortage of higher quality, new, market-rate construction. The city should focus on creating mixed-

income neighborhoods by constructing market-rate, non-subsidized infill housing in the gaps amidst its existing affordable housing (Funding body representative).

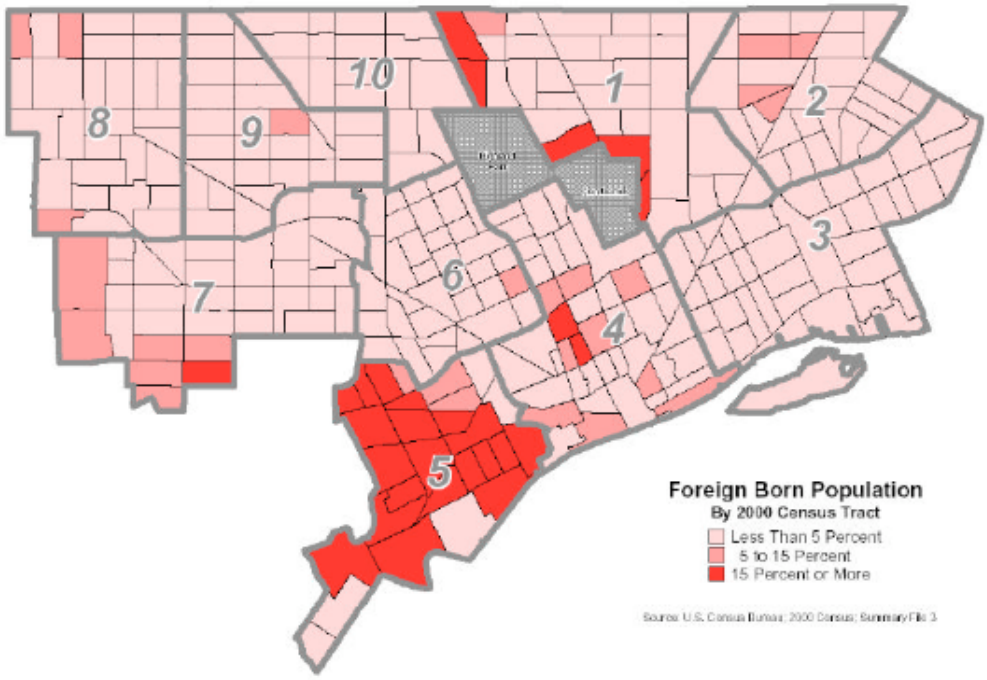
There is a definite demand for high-income housing, but it is difficult to finance because the cost of building a house is much higher than the price for which it can be sold in Detroit (Private developer representative). When it comes down to it, people will not pay that much to live in Detroit. Thus, developers often do not have the resources to support market-rate housing construction. There are places and some programs that provide subsidies to people either at or above one hundred percent median income level. These programs could be used to attract higher income residents to the city (City government representative). City government and CDC representatives cautioned that, although successful development requires mixed income neighborhoods and therefore attracting high-income residents, construction should be conducted so as to avoid creating gentrification and displacement.

Two funding body representatives asserted that Detroit should be working to attract a younger population, especially those that are creative industry professionals. The creative industries are driving urban economies around the country, and Detroit should be working to be part of this phenomenon.

A CDC representative noted that Southwest Detroit is the only area of Detroit that is experiencing population growth, largely as a result of immigration (Map 4). In this person's opinion, this trend suggests that the

city should focus on finding ways to encourage more immigration into Detroit. A surge in Detroit's immigrant population would help to counteract the loss of population it has experienced in the past.

Map 4. Detroit immigrant population



Source: City of Detroit Planning and Development Department. (March 2004.) *Master Plan of Policies Revision: Executive Summary, DRAFT*. Detroit: City of Detroit Planning and Development Department, Planning Division.

A consulting representative and an academic representative noted that current trends suggest it will be very difficult to generate a demand for housing in the neighborhoods outside of the traditional Detroit populous. They have concluded that infill developments have only succeeded in relocating existing residents from one neighborhood to another, leaving abandoned neighborhoods behind. Instead of increasing its infill housing

construction, they believe the City should focus on marketing its existing housing and revitalizing stable neighborhoods.

Adequacy of Detroit's Infill Development

Interviewees had mixed responses on whether or not infill development is adequately serving the current and potential residents of Detroit (Table 12).

Table 12. Is infill development adequately serving its intended population?

Response	Number of respondents
No	5 people
Yes	7 people

Note: Only eleven of the responses could be categorized as either "yes" or "no." One person answered both "yes" and "no," qualifying each response with the success of infill developments in different locations around the city.

These findings did not provide any conclusive results. Rather, people's responses provided insight into the many reasons why infill development is serving some populations well while not meeting the needs of others (Tables 13 and 14).

Table 13. Reasons why infill development **is not** serving the intended market

Reason	Number of Responses	
Cost	2	• Cost of infill outweighs value • Currently, developers are suffering from low appraisals. Selling at-cost or below-cost, which is bringing down the values of neighboring homes. • Gap financing increasingly required
Poor Public Amenities	2	• Infill projects are uncoordinated with social area development • These amenities include high quality public transportation, open green spaces, green infrastructure, public spaces, public art—things that will generate more of a sense of place within the city that could motivate people to move to the city • Many city services are overwhelmed—are not adequately meeting many people's standards
Housing Type/Style	2	• Buyers with good credit have many better options than infill • Funding bodies of infill (federal government and banks) tend to have conservative views on housing design. They are more willing to fund projects that build houses with mass appeal—largely meaning affordable, suburban-style homes. • Limited amount of rental housing available
Poor Schools	1	• When young people have children and the financial means to move to a location of their choice, they generally move to the suburbs • Preventing Detroit from attracting or maintaining an entire life cycle population—from young professionals to families with children to empty nesters.

Table 14. Reasons why infill development **is** serving the intended market

Reasons	Number of Responses	
Proximity to Cultural Activities	10	• Within walking distance to entertainment • Attractive to young professionals • Infill is particularly attractive to those who enjoy the urban lifestyle
New Construction	10	• Very attractive—financial cost of maintaining and old house is avoided • In the neighborhoods—successfully attracting first-time homebuyers, empty nesters, middle-income residents, those who qualify for affordable housing • Many CDC projects are within established neighborhoods—infill provides people with an opportunity to become a part of a community
Quality, Affordable Housing	5	• Infill caters to young families with limited means—they can buy a new house at a reasonable price
Become a part of Detroit's revitalization efforts	4	• Allows people to "do the right thing" and remain in the city • Many people are in love with the city of Detroit itself and infill offers them a desirable housing option within the city
Market-rate Construction	3	• Specifically downtown—lofts and condominiums are very attractive to young professionals
Supporting Infrastructure	1	• Increased commercial development—specifically downtown where infill is occurring
Live closer to work	1	• For those who work in the city, it provides them with a shorter commute

It appears that developers in Detroit are not adequately meeting the needs of middle- to higher-income families with school-age children through infill development and so are not able to attract this demographic (Funding Body representative, City government representative). The responses did not

highlight a particular reason why infill development is not meeting the needs of this demographic. The Far East side development is trying to serve this population's housing desires, but the market for this population is now saturated with too many choices (Consulting representative).

The quality of the schools is a constant problem that is preventing Detroit from attracting the young families it so badly wishes to draw within its borders (Private developer representative, Academic representative, City government representative, Funding body representative, Consulting representative). When young people have children and the financial means to move to a location of their choice, they generally move to the suburbs (Funding body representative). Detroit is not able to attract or maintain residents from the middle of the housing spectrum—families with school-age children. Those who would be inclined to move from a suburban neighborhood to an urban neighborhood and are able to afford market-rate housing are thus deterred from moving to Detroit. Currently, it only caters to the broad ends of the spectrum (Funding body representative).

The most common reasons cited for why infill development is serving the intended population were its proximity to cultural activities and the fact that it is new construction, which offers people an alternative to Detroit's aging housing stock. Infill development appears to be adequately addressing the low-income population because it provides them with the opportunity to move out of substandard housing run by slumlords into quality, affordable housing (Funding body representative). The market-rate infill development

occurring downtown seems to be serving the young professional population adequately as well.

Barriers to Success

Distinct from those reasons why potential residents are or are not motivated to move into Detroit's infill housing, interviewees also commented on the barriers that they see as preventing developers and city planners from succeeding with existing infill development projects and from constructing additional infill developments in the future. The interview responses did not offer a consensus as to a main barrier (Table 15). The most commonly cited factor preventing the construction of more infill housing according to seven of the interviewees was the negatively perceived state of Detroit's public school system.

Table 15.

Response	**Number of Responses**	
Schools	7	• Deterrent for families with school-age children
Negative Image	5	• People are unaware of positive improvements being made by the city • Suburbs control perception through media

Mortgage Crisis (2007-2008)	4	• Downturn of the national housing market • www.entrepreneur.com lists Detroit as the worst place to buy real estate in the U.S. • Lowered appraisal values have generated instability in neighborhoods • Increased gap financing being required
Surrounding Neighborhood Fabric/ Amenities Lacking	4	• The city cannot hope to attract people through housing alone • Funding is not available for improvements
Perception of Safety	3	• Not an attractive selling point
Aging Infrastructure	2	• Infrastructure improvements have only been made in select areas of the city
Lack of Demand/ Housing Surplus	2	• The city continues to lose population to the suburbs at a greater rate than it is gaining new residents
Retail Development Lacking	2	• Main commercial and retail developers will not locate in the city—seen as financial risk • Even when constructed, not supported because people are willing to drive to meet their needs
Suburban Attraction	2	• Much easier and often less expensive for developers to convert suburban land into subdivisions rather than pursue infill • Misleading short-term cost comparison that favors suburban development construction and purchase • Land assembly for infill is costly
Zoning	1	• Difficult to comply with
Racial Issues	1	• Large African-American population—may serve as deterrent to other African Americans, or, the more likely case, for whites to move into the city • Issue must be incorporated into other city improvement discussions
Local Government	1	• Serves as a disincentive for developers

Outlook For the Future: The Role of Infill Development

When asked whether or not increased infill development is an important or appropriate strategy for the city of Detroit to pursue, the majority of respondents answered "yes" (Table 16).

Table 16. Is infill development an important strategy for the city to pursue?

Response	**Number of Responses**
Yes	14
No	3

Out of those who responded "yes," the most common reasons they gave for why are listed in Table 17. These interviewees believe that, although infill development is not necessarily a *better* strategy to pursue, it is a comprehensive strategy that will inevitably have a positive effect on the city. Through the new development of infill, surrounding homeowners will be encouraged to invest in their own homes, which will further improve the neighborhood.

Table 17. Why infill development is an important strategy for Detroit to pursue.

Reason Given		Frequency	Knowledge group(s) holding this opinion
Smart growth strategy	• Existing infrastructure • Need a regional approach to development • Detroit cannot keep creating the "doughnut experience" (Funding Body representative)	3	Consulting, Funding Body, CDC
Revitalization	• Allows Detroit to rebuild communities	3	Government, Funding Body
Appropriate alternative to eminent domain	• Eminent domain is no longer a viable strategy; therefore, it must be a primary component of new housing construction • "What better tool is there for urban development if not infill?" (Government representative)	2	Government
Produces mixed-income neighborhoods	• Important goal for the city to pursue	1	Government

Four of the respondents mentioned the scale—either city or neighborhood—at which infill development should be approached. Three out of the four thought that the city should be taking a neighborhood-based approach where each neighborhood's potential is assessed separately (Consulting representative, Funding body representative). Infill development cannot work over large areas; therefore, funding for infill projects should be targeted to those neighborhoods with the greatest potential for improvement

(Funding body representative). According to a consulting representative, the city will never again be what it once was. Once people accept this, the city can begin to focus on what it should be saving and pursue infill projects in those designated areas. One private developer representative stated that Detroit should be planning infill projects on a citywide scale rather than an individual neighborhood scale because infill is an important redevelopment strategy to improve the *entire* city.

For those who responded "no," and those who responded "yes," but qualified their answer, the most common reasons why are listed in Table 18.

Table 18. Why infill development is an inappropriate, or incomplete strategy for the city to pursue.

Reason Given		**Frequency**	**Knowledge group(s) holding this opinion**
Cannot be only strategy	• Must operate within a combination of strategies • Wide range of housing types necessary • Must invest in neighborhood improvements as well	7	Consulting, Government, CDC, Funding Body
Regional rail system	• People will be inclined to move to the city once a regional rail system is constructed • Lack of mobility • People are unable to access suburban job centers if they live in the city	6	Private Developer, Funding Body, CDC
Must develop a strategy for homeowner ship	• Existing residents need financial support to maintain their homes • Gentrification and displacement will be greatly reduced	2	Government, Funding Body

Land assembly	• Significant barrier that cannot easily be overcome • Very difficult to find contiguous parcels in appropriate infill locations	1	Funding Body
Focus on existing housing stock	• The city should focus on marketing the existing housing stock rather than engaging in new construction	1	Consulting
Lack of attention on market demand	• By focusing solely on infill projects, the city and developers run the risk of not paying adequate attention to what the market dictates in terms of demand	1	Government

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Almost half of those interviewed believe that infill development is an incomplete solution and should be viewed as a strategy that offers important aspects for community success within the city, but that by itself will not attract new residents to the city. It must be coupled with strategies that will work to improve the neighborhood and community surrounding the infill development as well. One CDC representative explained the rationale behind this opinion by arguing that the sprawl of the metropolitan region surrounding Detroit has occurred because people have chosen to move out of the city—not because the city's population has grown beyond what the city is able to support. This finding suggests that increased housing options are not the key to reversing the current trend of Detroit's decreasing population and the increasing sprawl outside of its borders.

Section 6: Overall Conclusions

One of the important unanswered questions in the literature regarding the use of infill development is the extent to which it can succeed as a smart growth policy, particularly as an "antidote to sprawl," given the presence of certain (primary and/or secondary) barriers. Synthesizing and analyzing the various responses to the interviews of informed individuals as reported in Section 5, I have identified five important conclusions regarding the relationship between current infill development activities in Detroit, on the one hand, and the potential for infill development as a policy to influence suburbanization and urban revitalization processes throughout Detroit, on the other. I discuss these five conclusions in this section.

Conclusion 1: The lack of a standard definition for infill development as it relates to Detroit will prevent it from achieving the level of success it could be realizing.

According to the literature, infill development has the potential to serve as an antidote to sprawl by attracting residents to the city; however, without a common definition, it is – at the very least – difficult to study. More importantly, given this potential confusion, the development and use of infill development as a specific development management policy by the City of Detroit cannot be expected to necessarily achieve this goal. City planners, officials, and developers must come to a consensus as to what infill development means in Detroit. Without an agreed upon definition, infill is likely to be implemented inappropriately, or at the very least opportunities for its appropriate use may be missed because people misunderstand how and

where it might be constructed or what conditions will be necessary for its success.

Infill development is location sensitive. It does not have the same meaning in Detroit as it does in other urban areas around the country; therefore, in order for developers and city officials to have a clear understanding of how infill development can and should operate Detroit, the city should develop an infill definition and strategy tailored to Detroit. This strategy will likely differ from its use in other places. Detroit has historically been a low density, single-family residential city—a landscape that is quite different from what many other places like Chicago, New York, or Philadelphia are working with. Planners from more traditionally dense cities see Detroit as having a great deal of potential because planners and developers can rebuild the city in the style of their choice. In choosing a housing style, developers should keep Detroit's history in mind. The city's definition of "infill development" should reflect this.

Funding bodies in particular do not have a working definition of "infill development." Those representatives who think infill development is equivalent to gentrification are not likely to be inclined to fund projects labeled as infill. This could be destructive to those neighborhoods where infill development would actually be beneficial in providing much-needed housing.

Detroit's problem of not having a standard definition for "infill development" is not unique to the city. The literature revealed a similar

problem in other urban areas around the country. Definitions throughout the literature consistently included four main characteristics, three of which were also found to be main components of definitions given by those interviewed: (1) it involves building on vacant lots; (2) nonetheless, it often requires a degree of demolition due to the frequent presence of existing derelict homes on the lot; and (3) it should be constructed consistent with the existing neighborhood fabric. One component that arose as unique to Detroit is that the specific meaning of infill development is location-dependent and often varies within different neighborhoods around the city.

These findings suggest that infill development in Detroit can be defined as residential construction that seeks to fill in a neighborhood's existing gaps with housing that is compatible with the surrounding neighborhood. It does not cater to a specific income level Citywide, although it may do so in specific locations, and it is not restrictive as to the number of units created by the new construction.

Conclusion 2: Infill development in Detroit is not successfully attracting suburban residents to move to the city at a rate that will enable it to serve as an antidote to sprawl.

Infill development at the market-rate level in Detroit is not serving as an antidote to sprawl. Detroit's market-rate infill developments in the Midtown and riverside areas attract a bifurcated market: young, single individuals without children and empty nesters. For the most part, they are not attracting or retaining residents with school-age children whose income

level allows them to live somewhere other than the city. Infill is only able to attract former suburban residents with children when the family is able to send their kids to a private school.

This finding is consistent with other observations presented the literature, which suggest that, in its use as a sustainable growth practice, developer's greatest challenge with infill development is in successfully attracting specific groups of buyers by offering a preferential housing option to suburban living within the city (largely in terms of price, location, and style). Urban areas are primarily less competitive in the areas of residential preferences, public amenities, short-term costs, and obstacles developers face in pursuing new construction. These factors contribute to suburban areas being particularly attractive to families with school-age children.

At the affordable housing level, infill is adequately responding to the market in Detroit. It is providing low-income people with new, quality, affordable housing. The findings from this research suggest that affordable infill developments are retaining low-income Detroit residents. Although these low-income residents are remaining within the city, they are moving from older housing stock into the new construction of infill, generating more vacant lots within unstable neighborhoods where the potential for infill is low. Thus, infill is primarily pulling existing residents away from older neighborhoods, which is having a detrimental affect on these older areas. Further research focused on Detroit's affordable housing market in particular

could determine whether or not income-restricted infill developments are drawing low-income suburban residents into the city.

Conclusion 3: Infill development will not be able to truly serve as an antidote to sprawl unless the state, and particularly the surrounding metropolitan region, are committed to curbing greenfield development and concentrating new construction in Detroit.

The suburbs present a strong attraction for both developers and homebuyers and this trend is expected to continue into the future. Southeastern Michigan's population is expected to increase greatly between 2000 and 2030 (Map 1). All of this growth is expected to occur in suburban areas—potentially on undeveloped greenfields—rather than in significant existing built environments like Detroit. Until the state and the suburbs surrounding Detroit commit to developing a sustainable growth policy, which concentrates development in Detroit and significantly decreases the attraction of suburban development, people will continue choosing to live in the suburbs over infill developments the city.

Detroit cannot compete with its surrounding suburbs for residents or developers. The state has a strong role to play in reducing the attractiveness of developing on farmland and increasing the attractiveness of infill development as a result. The city cannot hope to be on a level playing field with the suburbs without a significant boost in its funds. City funds will not receive a boost without an increased tax base, which will not happen as long as people and businesses prefer to locate outside of Detroit's borders.

Conclusion 4: Infill development in Detroit is not only an important component for a regional smart growth strategy, but it is also a critical tool for stabilizing neighborhoods within the city.

The literature suggests that infill development can benefit cities by bringing about neighborhood stabilization, and my research suggests that Detroit is a good example of this phenomenon. Developers have successfully used infill development to stabilize low-income neighborhoods throughout the city. CDC projects in particular are a good example. The city should consider infill development as an important tool that can significantly aid its revitalization efforts.

Detroit will likely gain the greatest benefits from infill development if the city develops a plan for how it perceives infill development's role in working to achieve larger city goals. The city has created a land inventory, but no formal land use policy to determine how that land should be used. Each developer is therefore planning part of the city independently, without having to make each individual construction project fit within the larger context of the city. Although Detroit will likely benefit from the increased development, the lack of coordinated development may be preventing the city from realizing the level of success it could be achieving with infill.

Conclusion 5: Detroit's negative image is discouraging people from moving into or remaining in the city.

Those who are unfamiliar with Detroit tend to have a negative image about the city while its current residents tend to have a highly positive image about the city. The interviews revealed that the negative perception from non-

Detroit residents is largely due to the fact that the suburbs currently control Detroit's image through the media, and the city has a bad national reputation when it comes to safety and real estate statistics.

Section 7: Discussion and Recommendations

Detroit currently suffers from significant population loss and the negative effects of sprawling southeastern Michigan—high environmental costs, high social costs, and high transportation costs. This sprawl has occurred because people have chosen to move out of the city—not because the city's population has grown beyond what the city is able to support. Infill development is promoted in the literature as a means of curbing sprawl by offering those with the financial means to move to the suburbs with an appealing alternative to suburban living. Infill development is therefore a potential solution for Detroit's issues with sprawl.

I began this project to better understand how infill development might serve as an antidote to sprawl in the surrounding metropolitan region of Detroit. After reviewing the literature relating to its use in urban areas around the United States and interviewing informed individuals from various organizations involved in Detroit's infill development, I arrived at five overall analytical conclusions, which are discussed in detail in Section 6: (1) Detroit lacks a working definition for infill development, which may lead to its inappropriate use or an incomplete understanding by those involved in its construction; (2) it is not serving as an antidote to sprawl at the market-rate level; (3) it is not achieving the same goals as other urban areas around the United States and likely will not be able to without a regional commitment to concentrate new construction in Detroit; (4) infill is a critical tool for helping bring about neighborhood stabilization within Detroit; and (5) non-city

residents' negative perception of Detroit serves as a deterrent to potential residents who might otherwise be motivated to locate in the city's infill development projects. My research conclusions also led me to develop 6 recommendations, which I present fully in this section. I conclude this section by discussing several limitations to this study and by offering several observations.

Recommendations

My research led me to develop 6 recommendations for the city regarding their use of infill development in the future.

Recommendation 1

Infill development should be included as one strategy for targeted neighborhood redevelopment where the end goal is to create *true* mixed-income neighborhoods by encouraging more market-rate development within Detroit's primarily low-income neighborhoods. By focusing on individual neighborhoods, the city can generate islands of stabilization from which surrounding neighborhoods will benefit. Funding will likely have a greater benefit if concentrated in specific areas rather than spread thinly across the entire city.

Recommendation 2

Detroit will probably have the greatest success attracting higher-income residents by taking a neighborhood improvement approach rather than focusing strictly on increasing and diversifying its housing supply. At present, the city cannot offer what the suburbs offer in terms of schools and safety, which are two extremely important neighborhood qualities for families. The city should concentrate its improvement efforts in these two categories.

Recommendation 3

The city should maintain and improve its homeownership program in order to reduce the gentrification and displacement that could result from infill development being built in an already relatively stable neighborhood. By providing existing residents with the financial support to remain in their homes, developers will likely face less neighborhood opposition with other infill development projects around the city. Making this financial assistance available will hopefully encourage people to maintain their homes and reduce the need for new construction.

Recommendation 4

Developers may be more attracted to building infill development if Michigan generates an inventory of the built environments[9] within the state—Detroit being a significant one. Michigan funding bodies could then apply development incentives in these areas in order to encourage sustainable development.

Somewhat surprising is that Detroit is the one place in the region where new housing starts have continued to grow over the years. In fact, new housing in the city has grown ten percent while growth in the suburbs has declined over the years, yet my research did not suggest that the national "back to the city movement" was taking place in Detroit on any reasonable scale. My research does not suggest any explanation for this statistic.

Recommendation 5

Detroit needs a regional commitment of inclusion from the surrounding metropolitan area. The metropolitan areas surrounding Detroit have begun to come together to combine resources and take a more efficient approach to solving regional problems. Detroit should make a strong push to be included in these efforts by demonstrating its capabilities.

The greatest expression of this commitment would be state and local funding and planning efforts to build and develop a regional rail system connecting Detroit to its surrounding suburbs. The state has identified the

[9] Built environments are defined as those areas where community amenities such as water lines, sewer lines, and schools, already exist.

need for sustainable growth in southeastern Michigan and having a light rail system in Detroit would greatly increase the potential for Transit-Oriented Development, of which infill development is an important strategy. Several interviewees emphasized this point, noting that a light rail system would encourage more residential and commercial development within the city. Higher-income residents are much more likely to move into the city if there is a regional rail system connecting city residents to suburban jobs. This would also therefore increase Detroit's tax revenue and provide necessary funding for neighborhood improvements.

The suburbs surrounding Detroit may be wary of supporting a light rail system given the many benefits it would bring to Detroit; however, given the environmental and social importance of concentrating development in areas where significant development has already occurred, it is an important investment. Overall, this would be a smart decision for the city and the surrounding region.

Recommendation 6

Many non-Detroit residents seem unaware of improvements the city is making. For example, many interviewees mentioned improvements in Detroit's public school system, yet it still has a negative national and regional reputation. Several interviewees mentioned that the suburban media is actively involved in promoting Detroit's reputation—especially to non-Detroit residents. The city government should also look at gaining media

attention and support from its surrounding suburbs for the future improvements it hopes to make. If it is true that the suburban media is largely controlling the city's reputation within the region, one of Detroit's high priorities should be in gaining back this control. A time lapse during which the city should continue to promote itself actively will have to occur before people will once again be motivated to move to the city. The reputation of the city needs time to accurately prove people's fears incorrect.

It will take time for change to happen, but positive changes *are* happening. If more people knew about Detroit's positive attributes, they would most certainly be inclined to move there.

Study Limitations

My research happened to coincide with the mortgage crisis of 2007-2008, which drastically affected the city's housing market and may have affected people's answers to some of the interview questions. In particular, interviewees frequently responded that the mortgage crisis was a significant barrier facing infill development. The mortgage crisis is (hopefully) a temporary situation and will not remain as a barrier. Because the mortgage crisis is such a visible problem, other—perhaps more permanent—barriers were excluded from being mentioned.

The mortgage crisis may also have affected who is currently moving into the infill developments that are actually being built. Those infill housing projects that are restricted to low-income persons are built using federal

funds, and that housing market is likely to be less affected by the mortgage crisis than those persons looking for market-rate housing (Funding body representative). Thus, interviewees' answers to questions regarding the targeted and actual population of infill housing developments in Detroit may have been affected.

In addition, my interview did not include a question on the housing market in Detroit or on the particular affordable housing versus market-rate housing demands within the city. Future research should look at the various housing markets operating in Detroit to determine exactly where the demand for each market lies. City planners and developers would be most interested in this research, as it would indicate which new construction projects would generate the greatest success and thus be worth the investment. If the city has not already invested in such a study, it should consider doing so.

In recognizing these limitations, I have made every effort to make my research relevant to the future of Detroit as well as to urban areas facing situations similar to those of Detroit.

Closing Remarks

The importance of land use is gaining more and more attention as open space becomes an increasingly limited resource. It is my hope that this research will aid city planners and developers in pursuing strategies such as well-implemented infill development that will enable the Detroit metropolitan region to grow sustainably into the future.

Section 8: Appendix A

Infill Interview Questions

1. How would you define "infill housing"?
2. What do you see as the current "infill housing" trend (if any) in Detroit? What are some examples of "infill" in Detroit, specifically looking at the time frame of the mid-1990s up to today?
3. What kinds of populations does this infill housing appear to be serving?
4. Who do *you* believe *should* be the target population of this "infill housing" (i.e., the same populations currently being served and/or others)? If others, who should they be?
5. Is Detroit's "infill housing" adequately serving/attracting that intended target population (in terms of affordability, style, location)?
6. For the past and present residents of "infill housing," what would you say were the most important factors motivating them to move into this type of housing?
7. Please identify those factors that you see as preventing more "infill housing" from being built in Detroit.
8. Do you see increased "infill housing" as an appropriate and/or important goal for the city and state to pursue? If not, please identify the course of action that you feel would be most effective for increasing residential opportunities in the city.
9. Please identify any other individuals who are knowledgeable in the area of "infill housing" and who would be able to provide further insight for me on these questions.

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