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PRE- AND POST-CRISIS GEOGRAPHIES OF NEW URBANISM IN ATLANTA'S INNER SUBURBS

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I am submitting herewith a thesis written by Scott Nyland Markley entitled "PRE- AND POST-CRISIS GEOGRAPHIES OF NEW URBANISM IN ATLANTA'S INNER SUBURBS." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Geography.

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PRE- AND POST- CRISIS GEOGRAPHIES OF NEW URBANISM IN ATLANTA'S INNER SUBURBS

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ABSTRACT

Since the 1990s, Atlanta's historically white and affluent northern inner suburbs have experienced increasing rates of poverty alongside growing racial/ethnic diversity, challenging a region notorious for private property politics and a history of supporting anti-immigrant and anti-poor legislation. Meanwhile, on the built landscape, high-end (re)development projects incorporating New Urbanist planning and design features, such as pedestrian accessibility, compact densities, and mixed land uses and housing types, have become increasingly common in this region, especially since the onset of the Great Recession. As Hanlon (2015) has noted, the "green turn" in public planning exemplified by New Urbanism may have adverse consequences for certain communities. Namely, the high prices and exclusivity of these projects may threaten the tenure security of working-class residents, many of whom—especially the Latino population—rely on the relative accessibility of in-town suburban housing to walk to work, stores, and transit stops. Thus, the growing emphasis on challenging sprawl and encouraging environmental sustainability via New Urbanist redevelopment may come at the expense of social and spatial justice. This thesis seeks to build on Hanlon's critical work by asking, What types of neighborhoods in Atlanta's northern inner suburbs have been targeted for New Urban-designed projects before and after the onset of the Great Recession, and how have these geographies changed following the crisis? To answer the first part of this question, I employ a logistic generalized linear model (GLM) to estimate the effects selected housing, locational, socioeconomic, and racial/ethnic characteristics have on the likelihood of neighborhoods to receive a New Urban-designed project from 1999 to 2015. To answer the second part, I conduct a second GLM that interacts a time period variable—indicating whether variables represent a neighborhood's characteristics before or after the housing crash—with each other explanatory variable.

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CHAPTER ONE
INTRODUCTION

Since the 1990s, the conventions of the social and built landscapes of Atlanta's northern suburbs have been challenged. On the historically white and affluent social landscape, rising rates of poverty and racial/ethnic diversity have confronted this region's private property politics and history of supporting anti-immigrant and anti-poor legislation (Connor 2015; Kruse 2005; Lands 2009; Odem 2008, 2009). On the notoriously sprawled built landscape, New Urbanist ("NU" will henceforth refer to "New Urban," "New Urbanism," and "New Urbanist") planning and design principles promoting pedestrian accessibility, higher densities, connected street networks, mixed land uses, neo-traditional architecture, and public spaces have been increasingly integrated into new housing developments.

Following the recent economic crisis, efforts to revitalize disinvested suburban neighborhoods via high-priced NU projects have accelerated (Hanlon 2015). According to advocates, retrofitting "underutilized" suburban spaces into walkable, "livable," and (purportedly) sustainable spaces seems an entrepreneurial solution to combat decline and to address the social, environmental, and aesthetic detriments associated with conventional suburban development. From a more critical lens, efforts to bring people back to the inner suburbs via high-priced NU projects tend to forget about, ignore, or, in some cases, intentionally seek to remove the people that already live there. However, despite the serious implications NU projects bring to the communities in which they are constructed, research has yet to identify the aspects that make suburban neighborhoods conducive for NU (re)development. Given NU's growing popularity in Metro Atlanta and in regions across the world, I suggest that it will become increasingly important for planners, policymakers, residents, community

organizations, affordable housing advocates, and scholars to understand its geography. As such, this thesis aims to contribute to this understanding by examining the question: What types of neighborhoods in Atlanta's northern inner-suburbs have been targeted for NU-designed projects before and after the onset of the Great Recession, and how have these geographies changed following the crisis?

A variety of stakeholders in Atlanta's northern suburbs have supported the growing implementation of New Urbanism as a means to counter "placeless" expansion through infill (re)development. Proponents argue that NU projects within the established suburbs—rather than conventional projects at the metropolitan fringe—can increase nearby property values, improve environmental sustainability, foster a sense of community, beautify aging landscapes, boost local tax revenues, and decrease crime rates (Markley and Sharma 2016; Wang and Immergluck 2015; Wiley 2013). As such, the growing adoption of NU redevelopment strategies since the late 1990s, in many respects, has come as a policy response to the disinvestment that had been creeping into historically affluent suburban neighborhoods. Suburban governments acting in competition for jobs, businesses, investments, and middle-class residents have scrambled to come up with entrepreneurial strategies to address decline, and NU proponents have met these efforts quite successfully by proposing a shift in focus from conventional development to NU-designed *re*development (see Markley and Sharma 2016). Marketed as an alternative to sprawling bedroom communities, the argument goes, infill NU can bring middle-class homeowners fed up with the two-hour commutes and general alienation of the exurbs back to walkable neighborhoods closer to the urban core, spurring inner-suburban reinvestment while reducing air pollution.

However, scholars and commentators critical of NU have long argued that the high prices commanded for properties in NU-designed neighborhoods create exclusive, homogenous enclaves for the wealthy, effectively repackaging conventional suburbia (see Grant 2006; Harvey 1997; Marcuse 2000; Marshall

1995). Despite progressive rhetoric that advocates social mixing and conserving the "social fabric" of communities (see CNU 2001), NU in practice has frequently neglected issues of social justice in the face of market forces and local political regimes hostile to these objectives (Grant 2009; Hanlon 2015; Johnson and Talen 2008; Pyatok 2000; Trudeau 2013). For example, constructing these high-priced developments in low-income communities as part of a revitalization strategy can displace existing residents via gentrification (Busch 2015; Gonzalez and Lejano 2009; Hanlon 2015; Hetzler et al. 2006; Pyatok 2000). Atlanta's northern arc suburbs, in particular, have received a number of NU-designed projects that have replaced low-rent apartments without designating any affordable units in the new structure (Baca 2005; Markley and Sharma 2016; Petchenik 2012; Wiley 2013).

Although displacement disrupts the lives of any residents forced to undergo the process, it may be especially burdensome for the large Latino population residing in Atlanta's inner suburbs. Latino residents in this area are more likely than non-Hispanic whites to rely on walking to commute to work and to the store in large part due to cost restraints and Georgia's stringent laws restricting many immigrants from obtaining driver's licenses (Bohon et al. 2008). As such, many Latinos live in aging apartment complexes in relatively accessible locations near suburban downtowns, which are the exact places developers and local officials are often seeking to revitalize with projects exhibiting NU features (Dunham-Jones and Williamson 2011; Peiser and Schmitz 2007; Wang and Immergluck 2015). Thus, as developers seek to sell walkability in the suburbs as a novelty to the middle classes via infill New Urbanism, they may be taking accessible locations from residents who rely on walkability out of necessity.

Since the housing crash of 2007-2008, NU-designed projects have proliferated in Atlanta's inner suburbs (Catts 2013; Kass 2015). On the supply side, major homebuilders such as Lennar Corporation have retooled their accumulation strategies in response to the crash, and have opened divisions that specialize in multifamily and mixed-use development. Likewise, inner-suburban

governments have sought entrepreneurial ways to remain competitive in the wake of crisis, and targeting disinvested spaces with NU-designed retrofit projects has seemed an innovative solution to increase tax revenues, to revitalize existing infrastructure, and perhaps even to take back prime space from those blamed as the culprits of decline (Niedt 2006; Smith 1996). On the demand side, an aging and increasingly childless middle-class population is finding the promises of walkability and community cohesion an appealing alternative to car-dependent lifestyles on the metropolitan fringe. The increasing visibility of gentrification in central cities may make the idea of urban living more attractive to these middle-class, usually white, residents, but the exorbitant land rents in addition to the chaos, noise, and large black populations of the inner city are likely to steer these potential residents away. New Urbanist communities in the suburbs can offer an urban(e) lifestyle without the apparently unsavory elements of the central city.

Despite general agreement that NU is spreading, where these NU projects are actually being constructed in the suburbs is not yet well understood. One study found that NU projects are more likely to be constructed in the inner suburbs than on "greenfield" sites, which makes sense considering that infill (re)development is more in line with NU's emphasis on environmental sustainability (Trudeau and Malloy 2011). However, this study did not specify where *within* the inner suburbs these projects are being located. Moreover, although NU principles have been more frequently adopted since the Great Recession in many localities, research has thus far not identified the extent to which its emerging geographies have changed since the crisis. This is unfortunate because as Hanlon (2015) notes, there is a need for more analyses on the impacts of suburban redevelopment on social justice. Given NU's growing popularity and the potential implications its implementation has on working-class and Latino communities, especially, I suggest that understanding its changing geographies will become increasingly important for researchers and the public alike.

Accordingly, there are two principal aims of this project. The first aim is to identify the types of neighborhoods within Atlanta's northern inner suburbs that have been targeted for NU-designed redevelopment between 1999 and 2015. The second aim is to assess how these geographies have changed from the housing boom years leading up to the housing crash and the years immediately following. Specifically, the focus is on NU-designed residential developments that *began* construction between February, 1999 and December, 2007 and from January, 2008 to September, 2015 in the inner-suburban neighborhoods of Cherokee, Cobb, and Gwinnett County, and the northern sections of DeKalb and Fulton County. To identify NU-designed projects, I cross-reference Google Earth's historical satellite imagery and Nearmap aerial imagery with realtor websites, news reports, site plans, and local government documents to determine whether selected projects meet a set of NU criteria adapted from the *Ten Principles of New Urbanism* (see Michigan Land Use Institute 2006). If projects meet the criteria, they are geocoded using ArcGIS 10.3 (ESRI 2014) to their respective 2010 normalized census tract gathered from the Longitudinal Tract Database (LTDB). To examine the geography of NU during the entire study period, I conduct a logistic generalized linear model (GLM) with tract-level variables indicating a neighborhood's housing stock age and structure, location within the metropolitan area, socioeconomic status, racial/ethnic composition, and race and property value trajectories in the years leading up to development. Then, to measure the degree to which this geography changed between the two time periods, I conduct a second GLM that interacts a time period variable with all other variables. The results of the first model indicates each variable's impact on a tract's probability of receiving a NU development, and the second model quantifies the degree to which these relationships changed following the crisis.

New Urbanism promises to bring walkability, community, and sustainability to suburban residents trapped in an unfulfilling routine of hour-plus commutes and tedious isolation. In practice though, these benefits are usually enjoyed exclusively by those who can afford NU's high price tag, while

implementing NU as a suburban retrofit strategy threatens to displace those who cannot. Displacement uproots residents from their homes and community networks, and it can be especially devastating for those without access to personal automobiles in an environment built to accommodate the car. As initiatives to redevelop aging suburban districts and corridors continue unabated, high-end NU projects threaten to squeeze out affordable housing options in relatively accessible suburban locations. Identifying the neighborhood-level determinants of NU project locations can grant at-risk neighborhoods a better understanding of their likelihood of receiving future projects, and accordingly, these residents and their allies will be better prepared to defend their communities. In addition, understanding the extent to which NU may disrupt working-class and Latino communities may encourage some advocates of the NU movement to better implement its stated social justice objectives. Finally, establishing a geography of infill NU can work toward answering Hanlon's (2015) call to more critically examine the impacts suburban redevelopment initiatives have on working-class and nonwhite communities.

CHAPTER TWO
BACKGROUND

The New Urbanism

In the United States, the movement known as New Urbanism emerged in response to the prevailing patterns of post-World War II metropolitan development characterized by low density, automobile dependency, and segregated land uses. Repulsed by the unsightly landscapes produced by modernist planners—and the social turmoil that (allegedly) resulted from such an alienating environment—adherents to what would come to be known as New Urbanism were determined to revolutionize contemporary urban planning and design. Promoting compact and mixed land uses, walkability, and quality architecture and design, the New Urban movement began to coalesce in the late 1970s and early 1980s (Grant 2006).

After three decades of unchecked suburban expansion and the dominance of modernism in planning and design, criticisms of the postwar development paradigm were in no short supply. A sequence of books and other works emerged in the 1960s that were critical of the physical and social effects suburban-style development inflicted on society. These early criticisms focused on suburbia's lack of community cohesion (Mumford 1961), absence of a public realm comparable to the city sidewalk (Jacobs 1961), dissatisfaction of suburban housewives (Friedan 1963), and feelings of estrangement and boredom experienced by some residents (Gans 1967). By the 1970s, mounting concerns about fuel prices, the economy, and the environment heightened the scrutiny. A study co-commissioned by the young Environmental Protection Agency revealed that suburban sprawl imposed considerable economic and environmental costs

on society and were not sustainable in either sense (Real Estate Research Corporation 1974).

Answering these multi-pronged attacks, a diverse group of professionals, which included architects, designers, developers, planners, and academics, developed a variety of approaches to address sprawl (Pyatok 2000). Common among many was the adherence to the idea of "neotraditional urbanism," which calls for the creation of communities based on compact development found in urban villages and streetcar suburbs of the 19th and early 20th centuries (Falconer Al-Hindi and Till 2001; Trudeau and Malloy 2011). According to practitioners, basing the design of new communities on many of the principles found in what they considered to be the most beautiful and successful cities in Europe and the US—such as Amsterdam and Savannah—is a necessary step toward correcting the social and environmental ills of postwar suburbs and the modernist planning regime. The theory that neotraditional urbanism can improve social relations and the lived experience of residents rests largely on the contributions of Jane Jacobs (1961), who proposed that an attractive and accessible public realm, houses and storefronts lining the street, and a mix of land uses and building types could foster community solidarity, increase the social capital of residents, reduce crime, and promote social interaction between different social groups. As for addressing environmental concerns, adherents to the neotraditional movement have suggested that designing towns with traditional features such as connected street networks, mixed uses, and compact densities can decrease traffic congestion and thereby lower emissions, reduce wasteful land consumption, and allow better opportunities for public transit and walking (Calthorpe 1993; Duany et al. 2000; Ellis 2002).

With its guiding principles, neotraditional urbanism materialized in the 1980s in the forms of Andres Duany and Elizabeth Plater-Zyberk's Traditional Neighborhood Design (TND) and Peter Calthorpe's Transit-Oriented Development (TOD). Duany and Plater-Zyberk's TND town planning firm, Duany Plater-Zyberk and Company (DPZ), established perhaps the earliest example of a

neotraditional community in the US with the creation of Seaside, Florida in 1982 (Figure 2.1). This flagship project brought considerable publicity to the neotraditional movement, and proponents seized the opportunity to disseminate their vision. Throughout the rest of the 1980s, DPZ continued to develop traditionally designed communities throughout Florida and into Alabama, Maryland, and New England, while Calthorpe established his own urban design consulting firm on the West Coast. Neotraditional urbanism was gaining momentum, and it was becoming the hot new trend among planners, homebuilders, and architects (Carlton 2009).

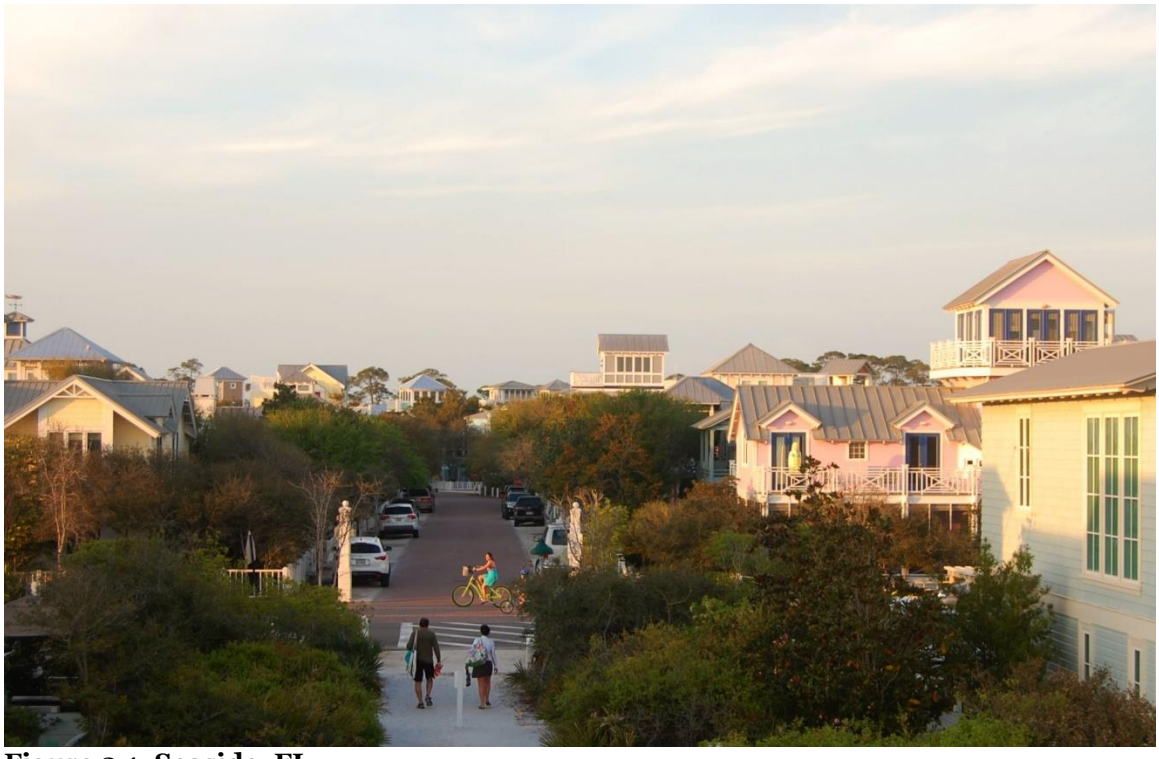

Figure 2.1. Seaside, FL
Courtesy of UGArdener (2012)

During the 1990s, proponents of NU would take significant strides toward driving NU further into the mainstream. In 1993, Duany, Plater-Zyberk, Calthorpe, and other urban designers founded the Congress for the New Urbanism (CNU) for the purpose of uniting efforts toward promoting compact development, connected street patterns, mixed land uses, multiple transportation options, and sustainability. New Urbanism was officially born, and its values and standards were soon codified in the *Charter of the New Urbanism* (CNU 2001). CNU would prove incredibly effective at spreading its gospel to prominent sponsors. For example, Henry Cisneros, then secretary of the Department of Housing and Development (HUD), signed CNU's *Charter* (Garde 2006). Additionally, in HUD's newly adopted HOPE VI program, the agency began allocating federal grants to local governments aiming to redevelop aging public housing complexes with mixed-income communities designed with NU principles (Fraser et al. 2013; Garde 2006; Goetz 2013; Pyatok 2000). NU also picked up endorsements from the Urban Land Institute, the American Institute of Architects, and numerous planners and developers, while multiple planning and architecture schools began offering courses and programs emphasizing NU (Gallagher 2013; Garde 2006; Passell 2013). Furthermore, CNU assisted in the development of the Smart Growth Network, which advocates policies to implement NU principles. Smart Growth policies have since been adopted by several state, city, and regional bodies (Poticha 2000). By the end of the millennium, projects incorporating NU principles had been constructed in cities and suburbs across the US, plus in Canada, the UK, Continental Europe, and several countries in Asia (Garde 2006).

In more recent years, the implementation of NU has continued to accelerate in the US and abroad. Garde (2006) notes that while there were only about 119 NU projects in 1996, there were approximately 648 of such projects by 2006. More recent estimates are difficult to come by, but if NU construction spread at half the rate it did during the previous decade, the number of projects would be close to 1,500. However, there is reason to believe that NU's rate of

growth in the past ten years has far exceeded that of the previous decade. In a multitude of metropolitan regions around the US and abroad, NU has found a niche as a preferred method to revitalize aging parts of town (Dunham-Jones and Williamson 2011; Fraser et al. 2013; Gallagher 2013; Gonzalez and Lejano 2009; Hanlon 2015; Markley and Sharma 2016; Peiser and Schmitz 2007; Slater 2008; Trudeau and Malloy 2011). As such, suburbs and center cities that have undergone disinvestment over recent years (or decades) have begun to turn to NU as a way to bring back investments, jobs, and affluent residents.

In addition, NU has continued to make headlines with high-profile projects. For example, following the devastation of Hurricane Katrina, New Urbanists, led by CNU and Andres Duany, prepared redevelopment plans for eleven Gulf Coast communities in Mississippi plus the City of New Orleans (Gallagher 2013; Passell 2013; Slater 2008). And following Hurricane Sandy, New Jersey Governor Chris Christie has collaborated with DPZ to rebuild the Jersey Shore using NU guidelines (Gallagher 2013). Such success in gaining highly visible contracts in addition to an exhaustive marketing campaign has generated a demand among a growing population of childless adults and downsizing Baby Boomers, as well as suburban governments interested in redevelopment, that now propels the expansion of NU far beyond the direct reach of CNU and its affiliations. As Gallagher (2013: 127-128) writes,

> [L]arge home builders…are starting to build New Urbanism-style communities themselves. They're not calling them that, of course, and many may not even be familiar with New Urbanism, but there are by some estimates as many as four hundred "city replicas" already built or going up in suburban America, ranging from small-scale, intimate walkable villages to giant, ambitious "lifestyle centers" that combine retail, apartments, restaurants, and sometimes high-rise apartment buildings. In one of the brightest

spots in the housing market, nearly every major home builder these days is working on some effort to effectively urbanize the suburbs.

Yet, with popularity has come criticism. In the 1990s, substantial opposition to NU emerged from academics and other commentators from multiple backgrounds and ideologies. For example, right-libertarians accused NU of increasing government control over land development and subverting consumer preferences for sprawl (see Passell 2013 for a summary on these positions). Meanwhile, other criticisms have challenged NU's architectural style, its claims to environmental sustainability, its flirtation with physical determinism, its failure to offer an adequate amount of affordable housing options, and its tendency to create homogenous enclaves for the wealthy (see Ellis 2002, Grant 2006, and Trudeau and Malloy 2011 for further discussion of these critiques). The last two interrelated critiques are perhaps NU's most serious, and each have been covered extensively since the early stages of the NU movement. For example, Scully (1991) suggested a more fitting term for NU to be "New (Sub)urbanism." Marshall (1995) called NU developments "suburbs in disguise." Lehrer and Milgrom (1996) argued that NU in practice perpetuates class and racial/ethnic segregation. Harvey (1997: 2) accused New Urbanists of building an image of community for those "who do not need it, while abandoning those that do to their 'underclass fate.'" Marcuse (2000: 6) said NU appealed to a nostalgia for a sanitized version of "a past never experienced." And Pyatok (2000: 814) suggested that NU represented a "more seductive form of business as usual." Indeed, despite CNU's progressive rhetoric about diversity and inclusion, much of these early observations were later confirmed by empirical studies that have consistently found home sale prices in NU communities to be considerably higher than in comparable conventional subdivisions (Bitter 2014; Johnson and Talen 2008; Song and Knaap 2003; Tu and Eppli 1999, 2001).

Because of NU's high price tag and its emphasis on revitalization and retrofit, a more recent body of literature has also scrutinized NU for its role in

gentrifying working-class spaces. Researchers critical of the federal HOPE VI program have noted that it has failed to replace the number of affordable units that were demolished and has even sparked speculative bidding on adjacent properties that has likely priced out low-income residents living nearby (Fraser et al. 2012, 2013; Goetz 2005, 2013; Pyatok 2000). Not helping NU's case among affordable housing advocates has been the staunch defense of HOPE VI and gentrification by two of CNU's founding members. Defending HOPE VI, Peter Calthorpe stated that "fewer public housing units in exchange for communities with more social integration" was a necessary "trade-off" (quoted from Goetz 2013: 344). And in *American Enterprise Magazine*, a publication by the right-wing think tank, the American Enterprise Institute, Andre Duany (2001) offered "Three Cheers for Gentrification," stating,

> Gentrification is usually good news…Gentrification rebalances a concentration of poverty by providing the tax base, rub-off work ethic, and political effectiveness of the middle class, and in the process improves the quality of life for all of a community's residents. It is the rising tide that lifts all boats.

Lees, Slater, and Wyly (2008: 84) call this reasoning a "sort of trickle-down theory applied to housing and neighborhoods" that has served as a "powerful ideological weapon" to advance the agenda of private developers, land speculators, and other elite interests at the expense of low-income residents. Furthermore, empirical studies suggest that the theoretical underpinning of Calthorpe's and Duany's assertions—that simply placing residents of different classes in propinquity automatically improves the lives of poorer residents—is flimsy at best. Numerous works have found that in mixed-income communities—including in HOPE VI projects—intergroup relations range from benign neglect to resentment and even outright hostility, and many of the social and psychological effects experienced by low-income residents transferred from

public housing to mixed communities are far from beneficial (Chaskin et al. 2012; Chaskin and Joseph 2011, 2013; Fraser et al. 2012, 2013; Khare et al. 2015; Oakley et al. 2015). Because of these aspects, Fraser and his colleagues (2013) argue that the social doctrine of mixed-income development celebrated by HOPE VI and NU advocates should not be uncritically accepted as a solution to ameliorate poverty. Rather, they argue, it may be more useful to conceptualize HOPE VI as a *colonial* project, since it enables "some groups to exercise power to claim rights to place while precluding others from doing so" (p 528). In a similar vein, a volume edited by Bridge, Butler, and Lees (2012: 1) suggests that proposals for mixed-income communities may be acting as "gentrification by stealth," since "gentrification" may be a dirty word, but, as the authors ask, "who would oppose 'social mixing' or 'mixed communities?'". Extending this point further, Slater (2014) suggests that efforts to bring mixed-income communities to poor areas should be exposed for their hypocrisy. He (p 523) points to an example from a coalition of public housing tenants in inner-city New Orleans who, faced with proposals to rebuild their community with mixed-income NU developments shortly after Hurricane Katrina, marched through the most affluent parts of town holding a banner that read, "Make THIS Neighborhood Mixed-Income!"

Perhaps more problematic is that as private homebuilders continue to incorporate principles of NU into their developments, as Gallagher (2013) suggests, there is little reason to expect them to include *any* subsidized units at all. Indeed, looking at a sample of 152 market-rate NU developments in the United States, Talen (2010) found that only 23 contained units considered affordable to households making the Area Median Income. Talen (p 503) suggests that "public sector intervention is necessary to ensure income mix in new planned communities." However, in the age of limited government and market-based solutions, cities and suburbs adopting New Urbanism are delegating the responsibility of planning these projects to private developers. Moreover, many suburban governments adopting NU as part of a revitalization

strategy are doing so with the explicit purpose of attracting high-income residents, and are requiring private builders to construct NU projects within planning zones intentionally designed to discourage affordable housing construction (Grant 2009; Johnson and Talen 2008; Trudeau 2013). Since disinvested or aging neighborhoods within the metropolis are almost by definition populated by working-class residents, such initiatives are likely to result in displacement.

Taken together, there are some interesting dynamics in the state of contemporary New Urbanism. Although NU proponents employ progressive rhetoric to support their social mission, the realities of implementing NU require advocates to negotiate which principles they are willing to compromise (Grant 2009). This has produced a sizable gulf separating NU in theory from NU in practice, which has made NU as a movement vulnerable to a wide array of criticisms (Grant 2006). So far, it seems that the easiest principles to discard or ignore have been those concerned with social justice. Part of this comes with the territory of using market-based solutions, which are notoriously bad at generating socially desirable outcomes in housing (see Lees et al. 2008). But also, as with the case of HOPE VI, it seems that the CNU has decided that its top priority be to get NU projects approved, regardless of the concessions or consequences. Pyatok (2000: 806-807) explains,

> The CNU, whether consciously or not, wants larger projects to achieve real impact and to provide demonstrations it thinks are worth emulating. So the CNU, with only a few exceptions, gravitates toward larger-scale sponsors. In doing so, it often finds itself having to represent powerful interests that are displacing others in the way of development [...]
>
> If the powers that be...see homeownership as the solution to neighborhood revitalization, and renters must be displaced, the CNU adopts that ideology.

Meanwhile, as New Urbanists have sought to transform US suburbs into more walkable and sustainable places, the suburbs themselves have been undergoing tremendous racial/ethnic and socioeconomic change. Namely, since at least the 1980s, suburbs have been experiencing increasing racial and ethnic diversity from growing black, Latino, and Asian populations, and many have been exhibiting signs of economic decline (see Anacker 2015; Hanlon et al. 2006; Jones-Correa 2006; Orfield 2002; Smith et al. 2001). Consequently, then, NU hit the metropolitan development scene just as many suburban governments were starting to look for solutions to reinvent themselves in ways that address decline (and diversity). Before elaborating on NU's role as a vehicle for revitalization, it is first necessary to contextualize the recent history of suburban change.

Suburban Decline and Diversity

Homeowner associations, mass-produced single-family housing, and white middle-class homogeneity have long dominated popular perceptions of suburbia in the United States. This image grew out of the massive expansion in residential construction following World War II when Levittowns and similar tract developments on the fringes of American cities could reasonably be described in these terms (Gans 1967; Hanlon et al. 2006). As investments and middle-class residents flowed to rapidly developing suburbs, central cities suffered substantial decline, and the suburbs came to be conceptualized as the antithesis of the danger, poverty, chaos, and decay characteristic of the stereotypical inner-city (Beauregard 2003). Additionally, racial discrimination imbedded in state and federal policies, lending institutions, real estate practices, and preferences of white homeowners ensured that this city-suburb dichotomy was always heavily racialized, with the standard account demarcating the "chocolate city" and the "vanilla suburbs" (Farley et al. 1978).

Although such simplistic dualisms originally had some footing in reality—though never describing more than a portion of metropolitan America—the myth of the white and prosperous suburb versus the black and decaying central city has persisted long after evidence debunked these caricatures. The so-called "back-to-the-city" movement by white middle-class professionals in cities like Boston, New York, and Washington, DC can be traced back at least to the 1960s. By the 1970s, this phenomenon, which came to be known by scholars as "gentrification," developed into a major topic within urban studies and has continued to disrupt what popular narratives define as "inner city" (Lees et al. 2008). Along similar lines, in the 1980s, research began documenting significant socioeconomic and racial changes taking place in the suburbs. In one of the earliest accounts to reference suburban decline, urban historian Kenneth Jackson (1985: 301) cautioned that "[t]he cycle of decline has recently caught up with the inner suburbs," and some suburban communities were "already encountering fiscal, educational, racial, and housing crises as severe as those which troubled major cities in the 1960s and 1970s." In addition, the suburbanization of the nation's black population took off during the 1970s and 1980s, further blurring the racialized distinctions separating city and suburb (Massey and Denton 1993).

In the 1990s, suburban disinvestment and diversity were increasingly acknowledged in news reports and academic literature. One study found that suburbs in 21 out of the 25 largest metro areas in the United States experienced declining median family incomes from 1960 to 1990 (Lucy and Phillips 1995). Out of those, six metropolitan areas had some parts of their suburbs experience more decline than their principal city: Atlanta, Cleveland, Detroit, Kansas City, San Diego, and Seattle. Pejorative language once reserved for the inner-city was also making a comeback to describe the increasingly diverse and economically heterogeneous suburbs. Terms like "slumburb" emerged to describe the apparent slum-like conditions of disinvested suburban neighborhoods (Schafran 2013), and Davis (1997) even exhumed the outdated language of "urban pathologies" to apply to parts of suburban Los Angeles. The dystopian/utopian imaginations

defining the city-suburb dialectic since the nineteenth century were being turned upside down (Nicolaides 2006; Schafran 2013).

At the same time, a growing literature noted significant racial/ethnic changes that were markedly more pronounced than previous decades. In Metropolitan Atlanta, for example, studies pointed to an expanding black middle class, a newly-arriving Latino population, and a growing number of Chinese and Korean immigrants all locating primarily in the inner suburbs (Stewart 1999; Wyly and Holloway 1999). Similar trends were noted in the suburbs of Chicago, Cleveland, Los Angeles, Philadelphia, Washington, DC, and others (see Orfield 2002). To be sure, white and affluent enclaves remained, but by 2000, defining suburbia in terms of whiteness or affluence would have been grossly insufficient. Class and racial homogeneity described only a thinning slice of suburban America.

The 1990s experienced the most dramatic socio-spatial metropolitan transformation in a single decade in the United States since the birth of the postwar suburb. However, that fact was not fully appreciated until after the turn of the twenty-first century. A flurry of new studies—many of which relied on recently released 2000 census data and updated Home Mortgage Disclosure Act data—revealed just how stark the changes had been (e.g., Frey 2003; Hanlon 2008; Hanlon et al. 2006; Jones-Correa 2006; Lucy and Phillips 2006; Orfield 2002; Pandit and Holloway 2005; Singer 2005; Smith et al. 2001; Suro and Singer 2002). After analyzing the spatial-temporal trends of disinvestment in Camden County, New Jersey—an inner-suburban county of Philadelphia—Smith, Caris, and Wyly (2001: 526) summarized what an increasing number of scholars were beginning to recognize. They noted that suburban disinvestment signified "the leading geographical edge of urban change at the end of the twentieth century."

Broadening the study area beyond the Northeast, Orfield (2002: 35) found patterns of suburban decline within the 25 largest metro areas in the US. By the 1990s, he estimated, about 56 percent of the suburban population lived in "at-

risk suburbs," which he defined as "communities that have high social needs but relatively limited, and often declining, local resources." Subsequent studies remarked on similar trends. Hanlon, Vicino, and Short (2006) noted that income inequality widened in their 13 metropolitan statistical areas (MSAs) from 1980 to 2000, and by 2000, all MSAs included in the analysis contained suburban places with median family incomes below that of the central city. In another study, Lucy and Phillips (2006) found that out of over 2500 sampled suburbs within 35 large MSAs, the median incomes in half declined between 1990 and 2000. To take a final example, Hanlon (2008) established that about 14 percent of older, inner suburbs in the nation's largest 100 metros were in a state of crisis, meaning they experienced substantial declines in population and income while experiencing rising poverty rates from 1980 to 2000.

Paralleling these economic trends were racial/ethnic changes. Looking at census data, Hanlon et al. (2006) found that 1245 out of the 1639 suburban places across 13 MSAs increased their black populations from 1980 to 2000, and "immigrant suburbs" sprung up in California, Georgia, Illinois, Virginia, and other parts of the country. Jones-Correa (2006) noted that in the 1990s, 48 percent of immigrants to the US resided in suburbs, and by 1999, 31 percent of African Americans, 44 percent of Latinos, and 51 percent of Asians lived in the suburbs. Bolstering these findings, an emerging literature on "new immigrant gateways" pointed to growing concentrations of Latino immigrants in the suburbs of the US South (Pandit and Holloway 2005; Singer 2005; Suro and Singer 2002). Taken together, the evidence was clear. The suburban monolith, if it ever existed, was now folklore.

However, rising diversity did not mean that populations were distributed equally across metropolitan space. On the contrary, evidence revealed a highly uneven racial/ethnic landscape and the emergence of some troubling trends. For example, Hanlon (2008: 447) found that older, inner suburbs in "crisis" experienced a disproportionately greater increase of minority residents than "stable" or "advanced" suburbs. She concluded that "an overall picture is

emerging where older, inner suburbs in crisis are becoming increasingly populated by minorities." Decennial snapshots in 1980 and 1990 may have seemed to show increasing racial/ethnic integration in many inner suburbs, but as Orfield (2002: 37) contended, "racial transition, rather than stable racial integration, is the norm in suburban America." In other words, despite growing diversity in the suburbs, the trend since the 1980s was toward segregation.

Although the changes to the suburban landscape during the 1990s were monumental at the time, they were only the beginning of what was to come. Innovations in the security and mortgage industries following substantial financial deregulation during the Reagan, Bush, and Clinton administrations would fuel massive injections of capital into the built environment in the late 1990s and early-to-mid 2000s (Immergluck 2015). The immediate effects were to exacerbate sprawl, lengthen commute times, and sell the American Dream of homeownership (at usurious interest rates) to populations historically denied access to it due to their race, income, or credit histories. As it has since become evident and as Smith et al. (2001) predicted early on, flooding the metropolitan fringe and urban core with real estate capital—via sprawling development and inner-city redevelopment, respectively—served to stretch thin the neighborhoods in between. Investments flowed out of or bypassed many inner suburbs, and as a result, poverty rates increased over a full percentage point higher in inner-ring suburbs than in inner cities and outer-ring suburbs in the nation's 100 largest metro areas during the years of the housing boom (Lee et al. 2015). However, the worst was yet to come.

The hurricane of speculative real estate investments flooding sub/urban landscapes in the early 2000s would lead to a crash in the housing market in 2007-2008, throwing millions out of work and millions of (mostly suburban) homes into foreclosure. As a result, poverty rates soared in the suburbs, pockets of concentrated poverty spread across metro regions, property values plummeted, and the working-age population found itself strapped with mounting debt (Immergluck 2011; Kneebone and Berube 2013; Kneebone and Nadeau

2015; Wyly et al. 2009). The effects in the suburbs were particularly acute. Whereas the number of poor individuals living in the urban core of the nation's 100 largest MSAs grew by 23 percent between 2000 and 2010, the population of the suburban poor increased by 53 percent (Kneebone and Berube 2013). In a similar study tracking concentrated poverty, researchers found that the number of "extreme-poverty neighborhoods"—defined as census tracts with at least 40 percent of households living at or below the federal poverty line—grew by 18 percent in cities between the 2000 decennial census and 2005-2009 American Community Survey (ACS) compared to a 54 percent growth in suburbs (Kneebone and Nadeau 2015). Within the suburbs, however, the geographies of poverty and concentrated poverty are not uniform. Whereas the first decade of the 2000s saw unprecedented rises in concentrated poverty in "Emerging" and "Exurb" communities on the metropolitan fringe, the number of extreme-poverty tracts in these areas remained low in comparison to older suburban neighborhoods, defined as "High Density" and "Mature." Indeed, over 75 percent of the growth of concentrated poverty in the suburbs took place in the latter two types of communities (Kneebone and Nadeau 2015).

Changes in the geography of metropolitan poverty mirrored further changes in the racial/ethnic landscape. Contributing to this, it should be noted, were the discriminatory dealings of subprime lenders who disproportionately targeted black and Hispanic homebuyers, and, thus, left suburban communities with large populations of color especially devastated following the crisis (Wyly et al. 2009). While the nonwhite urban population in America's 100 largest metro areas declined by 0.1 percent between 2000 and 2007, the nonwhite population in inner-ring suburbs and outer-ring suburbs increased by 3.8 percent and 2.8 percent, respectively (Lee et al. 2015). By 2005-2009, out of US suburban census tracts with homeownership rates greater than 70 percent, tracts with minority populations exceeding 35 percent of the population were about twice as likely as other, whiter tracts to have median incomes under 90 percent of their respective Area Median Incomes (Pooley 2015a). In other words, changes to US suburbia

have produced a highly uneven tapestry, with the spaces of poverty, disinvestment, and racial/ethnic diversity overlapping considerably.

Suburban Responses to Change

As disinvestment has paralleled racial/ethnic changes in the suburbs, a sinister narrative has gained purchase amongst many influential stakeholders. An implicit, if not outright, cause-and-effect relationship has been drawn to frame the growing populations of racial/ethnic minorities in the suburbs as an early warning sign of economic distress (Hanlon 2009; Markley and Sharma 2016; Niedt 2006; Smith et al. 2001). As Smith and his colleagues (2001: 498) write, "Decline is all too easily blamed on the visible race and class attributes of those who are moving, or trying to move, into the neighborhood." As such, many suburban governments have passed discriminatory legislation masked in the dubious rhetoric of protecting property values and combatting decline.

A streak of "anti-urbanism" has pervaded politics in many suburbs as these regions have been confronted with changing socioeconomic and racial/ethnic landscapes (Conn 2014; Henderson 2006). Historically, this "anti-urbanism" has appeared in the form of legislation opposing busing, affordable housing construction, public transit expansion, and public service provision, or legislation proposing municipal incorporation and even secession (Connor 2015; Hatfield 2013; Henderson 2006; Kruse 2005; Lands 2009; Lassiter 2006). In more recent times, with the influx of Latino immigrants to the suburbs, a growing number of municipalities have adopted laws targeting these residents. Some of the most common include anti-crowding ordinances prohibiting the co-habitation of unrelated (or distantly related) persons, restrictions on "loitering" outside private establishments in search for day labor, establishing English as the local official language, and penalizing employers for hiring and landlords for

renting to unauthorized immigrants (Hanlon and Vicino 2015; Odem 2008, 2009; Vitiello 2014). The widespread application of such legislation serves as a reminder that although suburban diversity has increased over the decades, political influence in metropolitan America is by no means distributed proportionately. Rather, as Nagel (2013: 622) argues, there is an ongoing power of whites "to set the terms of non-white access to metropolitan space and to mobilize resources to preserve a large degree of residential exclusivity." Even in counties where minority groups are the majority and have attained influential positions within the local government—such as in Fulton and DeKalb Counties in Metro Atlanta—many whites have sought to maintain "local autonomy" through either incorporation or secession (Connor 2015). Thus, as Nagel (p 622) argues, responses to "racial otherness" by many suburban whites remains "central to the dynamics of metropolitan change."

Often woven into the narrative that blames decline on diversity is a language of "competitive assets and constraints" evocative of quarterly financial reports and corporate board meetings traditionally confined to the private sector. Within the context of the city, scholars have noted that the slashing of federal expenditures on cities since the 1980s thrusted local governments into a zero-sum competition for jobs, businesses, and affluent and/or "creative" residents in order to balance municipal budgets, pay off debts to lenders, and eschew the specter of decline (Hackworth 2007; Peck 2005). As such, local governance has increasingly become subject to the disciplining logic of the market, and has, in turn, facilitated a broad transformation from "managerialism" to "entrepreneurialism" (Harvey 1989). Within this framework, the primary focus of urban governance has shifted from managing service provision to devising corporate-like strategies to remain competitive with other locales. Consistent with the coercive pressure of inter-urban competition is a near-obsessive calculus of costs, benefits, assets, and liabilities. The implication is that cities face mounting pressure to accumulate residents that are affluent, "creative," and property-owning and who fit into the preferred racial-cultural mix while

minimizing their share of residents who do not meet that profile (Harvey 1989, 2012; Peck 2005).

Although most research on entrepreneurial urbanism has focused on cities, the framework can also be useful for analyzing the suburbs. Whitelegg (2005) draws from Harvey's work on the entrepreneurial city and inter-regional competition to describe the entrepreneurial *suburb* and *intra*-regional competition. His work examines how the Atlanta exurb of Forsyth County crafted and marketed its own competitive identity as a white and affluent bedroom community away from the chaos, dirt, and diversity of Atlanta and its inner suburbs. Using Forsyth as an example, Whitelegg argues that not only is it metropolitan regions that act in competition with one another, but suburbs *within* these regions compete regularly for jobs, investments, and affluent residents. To take two recent examples, the Atlanta suburb of Cobb County lured the Atlanta Braves out of the City of Atlanta with a 2013 (closed door) agreement to put approximately $400 million in taxpayer money toward constructing a new stadium (Burns 2013). Two years later, officials in Marietta—the county seat of Cobb—made a similar offer to the new Atlanta United soccer team, enticing team owners to abandon their contract with DeKalb County and move their practice facilities and corporate headquarters to Cobb (Wickert 2015).

In this competitive environment, as Hackworth (2007: 25) argues, "entrepreneurial governance is a de facto requirement" for municipalities to gain access to capital markets. In search of innovative solutions to reduce costs and increase tax revenues—in a political climate in which raising tax rates is grounds for removal from office—the option for redevelopment becomes especially attractive. Redevelopment, it has been argued, can increase property values and thus returns from property taxes, while it can also make an area appealing for future investment and potentially reduce local expenditures on law enforcement and on social programs (see Atkinson 2004; also Lees et al. 2008).

The darker side to this is that working-class and/or nonwhite communities may become the targets of gentrification. Examining a case in Dundalk,

Maryland, a suburb of Baltimore, Niedt (2006) found that local elites gained indispensable support for a proposed redevelopment project from white homeowners precisely *because* the project would have displaced many African American residents, who were considered by many whites to be the culprits of Dundalk's decline. As Niedt (2006) and Smith (1996) have argued, looking for entrepreneurial ways to revitalize disinvested spaces *and* displacing those blamed for hard economic times may be seen as complementary, if not identical, objectives in the minds of some, especially in the wake of an economic downturn when it is easier to point the finger of blame at marginalized populations. Thus, in recent years, the growing adoption of NU by suburban governments may be partially due to the search by local officials to find innovate solutions to reverse economic hardships ushered in by the housing market crash, and, more cynically, to "take back" prime in-town neighborhoods from certain groups as a sort of revenge against those perceived to have taken those spaces from their "rightful owners" (Smith 1996).

Although suburban governments may find revitalization an appealing possibility, they are generally at a major disadvantage to the inner city. As Smith et al. (2001: 500) explained a decade and a half ago, revitalizing the suburbs would be a "daunting challenge," since they do not have the "central riverfront vistas, monumental railroad stations, Victorian houses, and distinctive warehouse districts of the urban core." In other words, suburbia's uninteresting architecture and landscapes that lack any sort of imbedded history comparable to the inner city make the prospect of following in the path of revitalized cities one difficult to imagine. This is where New Urbanism comes into play. Where these interesting landscapes are absent, fanciful imitations claiming to celebrate local histories can be produced via New Urbanist projects. Although NU may not appeal to young adults as much as the central city, especially with its exorbitant premiums, it may be perfectly situated to draw in the growing number of middle-class empty-nesters and childless couples looking for a more urban(e) lifestyle without having to sacrifice the feelings of safety, comfort, cleanliness, and

racial/ethnic/class homogeneity that brought them to their suburban neighborhoods in the first place. The combination of NU as a "seductive form of business as usual" (Pyatok 2000: 814) and as a substitute for the historical settings of the city may explain why it is NU design that suburbs so often turn to as a revitalization strategy.

In addition, the prospect of sustainability may be appealing to suburban governments looking for innovative ways to remain competitive. New Urbanism's promise to bring sustainability to the suburbs can serve as a way for entrepreneurial suburban governments to market a unique characteristic about their downtowns (at least until sustainability becomes generic) (Zimmerman 2001). In this way, the sustainability narrative reinforces (sub)urban entrepreneurialism. As Hanlon (2015) argues, the push for environmental sustainability in the suburbs via "retrofit" NU projects may be coming at the cost of "social sustainability." She (p 135) goes on,

> Sustainability can be a way to repackage development planning to present a "green façade" in the face of "business as usual exploitation of people and resources" (Sneddon 2000). For instance, the desire for regeneration…in the name of sustainability has led to the promotion of gentrification and the subsequent displacement of poorer residents.

In addition to seeking entrepreneurial and green strategies to combat decline following the recession, suburban governments and private developers may also be turning to NU because of the (false) notion that the roots of the housing crash were somehow imbedded in conventional development itself rather than in the liberalization of the security and mortgage industries or within the capitalist system. Some NU proponents have made claims to that effect, with the obvious implication being that a turn to NU development would not expose places to the risk supposedly inherent in conventional development. For example,

Dunham-Jones and Williamson (2011: x) assert that the "harsh economic impacts of the Great Recession laid bare the weaknesses and tragic lack of resiliency in conventional suburban developments." The authors go on to suggest that NU-designed suburban "retrofits" are a more resilient option. Similarly, Gallagher (2013: 126-127) emphasizes that NU communities "held up better than traditional suburban communities" during the housing crisis, and she suggests that because of this, NU is winning "the attention of policy makers" and leading "the movement to some important victories."

All of this is to suggest that the suburban neighborhoods that would seem to be conducive for entrepreneurial governments and private developers to redevelop with NU projects would be the neighborhoods where low income and/or nonwhite residents would be likely to live—and thus likely to be displaced—when these high-end NU projects arrive. As I have laid out, this may be especially true in the wake of the economic crisis as private development firms retool their accumulation strategies and as entrepreneurial local governments seek innovative solutions to rebuild (and to rebrand) their housing markets and, possibly, to retake prime spaces from residents with the softest political voices (Markley and Sharma 2016). In other words, searches for innovative solutions to emerge from the crisis undertaken by both the private and public sectors may have led to a mutual recognition of a shared interest in revitalizing certain inner-suburban neighborhoods with NU-designed projects that, when implemented, would likely jeopardize the homes and communities of marginalized residents.

However, the evidence of NU being employed as a tool for revitalization—or gentrification—has so far exclusively been collected from individual case studies and anecdotal accounts. Statistical methodology has yet to determine where NU projects are actually being located at a scale broader than single projects. This is unfortunate at the moment because it would seem difficult to continue the dialogue critical of NU's effects on existing residents—spearheaded by Hanlon (2015)—much further without first identifying where these projects are being implemented. Indeed, as Hanlon (p 140) reflects on her own case study,

she notes that "[m]ore cases [of suburban retrofit] need to be studied to identify the extent of this type of suburban gentrification." Moreover, studies have yet to examine how NU's geographies may have shifted following the crisis, despite recognition that NU has picked up momentum in the years since the housing crash. Given the influence this crisis has had on the ways governments and development firms (re)consider their respective accumulation and governance strategies, understanding the contemporary geographies of NU requires examining them within the context of the crisis. To do this, it is imperative to examine the geographies of NU both before and after the crisis. Doing so will allow this research to take the first step toward identifying infill NU's suburban geographies, and it will show where NU may be moving and *who* may be likely to receive a NU-designed project in their neighborhood. Before detailing how my study seeks to accomplish this task, I first summarize the existing evidence that NU redevelopment initiatives have directly or indirectly displaced existing residents within my study area: Metropolitan Atlanta.

Metropolitan Atlanta

The dramatically changing socioeconomic and racial/ethnic landscapes, pernicious homeownership politics, reputation for sprawl, and growing adoption of NU principles to combat that sprawl make Metropolitan Atlanta an ideal case for researching the changing geography of New Urbanism. For example, over the past two decades, Metro Atlanta has become a new immigrant gateway (Suro and Singer 2002), experienced the largest increase in suburban poverty in the nation between 2000 and 2010 out of the 52 metros with at least one million people (Kneebone and Berube 2013), and become the metropolitan area with *the* highest rate of income inequality in the US (Berube and Holmes 2015). At the same time, scholars have made note of the reactionary private property politics that have defined much of this region's race and class relations, especially in the northern

arc suburbs. The very existence of the northern suburbs, in fact, came about as affluent whites resorted to an automobile-dependent "suburban secessionism" in response to the collapse of Jim Crow (Henderson 2006; Kruse 2005; Lassiter 2006). The purpose of moving to and governing these suburbs was originally predicated largely on maintaining private segregation once public segregation was deemed unconstitutional. Recent strategies aimed at maintaining that spatial control have been put forward in various legislative initiatives. These include anti-crowding ordinances targeting Latino households, laws prohibiting the gathering of workers on private property in search for day labor, homeowner-led crusades against affordable housing construction, municipal incorporation, repeated refusals by white suburban voters to apportion tax dollars toward expanding public transportation (on largely racist grounds), and an ongoing attempt from the majority white and affluent northern Fulton County to legally secede from the rest of their majority black and working-class county (Connor 2015; Hatfield 2013; Lands 2009; Odem 2008, 2009).

At the same time, many organizations and local governments in the Atlanta region have been fairly proactive in their efforts to counter Atlanta's immense sprawl with NU projects. Initiatives have been adopted by the Atlanta Regional Commission (ARC)—a regional planning and intergovernmental coordination agency—and numerous municipal governments since the late 1990s to shift focus in the inner suburbs from conventional development to NU-designed *re*development (Markley and Sharma 2016; Wang and Immergluck 2015). This new direction in planning has largely been predicated on addressing environmental concerns associated with sprawl and creating "livable" spaces for a suburban population finding itself trapped in an unfulfilling cycle of hour-plus commutes and general alienation (ARC 2014). However, the push for environmental sustainability and "livability" for middle-class residents may be coming at the expense of affordable housing options for working-class residents in areas near accessible suburban locations (Hanlon 2015).

Indeed, the implementation of NU in the northern metro area has, in numerous ways, directly or indirectly caused displacement. For instance, since 1999, the Livable Centers Initiative (LCI) operated by ARC has allocated nearly $200 million to local governments to assist in the planning and implementation of redevelopment projects incorporating NU features (ARC 2014). These projects target "existing centers and corridors" in an effort to redevelop older commercial districts into "livable," NU-designed spaces. Neighborhoods near LCI-funded projects have experienced increased property values that may be welcomed by some nearby homeowners, but such projects are also likely to contribute to decreasing home values further away and to threaten the tenure security of nearby renters, many of whom are Latino (Wang and Immergluck 2015).

In cases of more direct displacement, space for infill NU has been made by razing public housing. In the suburb of Marietta, for instance, the local housing authority demolished all five of the city's remaining non-senior public housing complexes between 2003 and 2013, replacing several with high-end NU communities (Wiley 2013). Some of these new developments have units *starting* at nearly three times the price of their respective census tract's median home values. For example, Meeting Park, a NU community celebrated for its adherence to NU principles by the NU publication, *The Town Paper*, replaced the Clay Homes, an under-maintained, Jim Crow-era public housing facility. According to the developer's website, units in Meeting Park range from $388,100 for a 2,000 square foot townhome to $537,400 for a 2,800 square foot single-family home (John Wieland Homes 2016). That is compared to the 2006-2010 median home value of $140,000 in its respective census tract (in 2010 dollars).

Since only a few municipalities in Atlanta's northern inner suburbs own non-senior public housing, however, this method of project implementation has been geographically limited. A more common avenue has included filling in undeveloped or underdeveloped suburban lots. Infill projects on vacant sites may still displace residents, however, via "new-build gentrification" (Davidson and Lees 2010). Through this process, rents and property taxes of nearby properties

increase, and residents who cannot afford these new expenses must move out, while those that can must sacrifice a larger portion of their paychecks to put toward housing costs. Furthermore, the likelihood of future purchase and demolition is increased for nearby properties. For example, the announcement of the Atlanta Braves' new stadium in suburban Cobb County in 2013 included plans for a high-end NU-designed mixed-use development. Although this project will not directly dislocate anyone, it has spurred the demolition of four low-rent apartment complexes close to the stadium site, and one renter living nearby complained that the rent for her two-bedroom apartment had climbed from "$500-something" per month to $900 per month within two years of the stadium announcement (Headlee 2015). In addition to rent hikes and threats of demolition, research has also identified related adverse social and psychological effects experienced by remaining residents. Namely, their social fabrics may still be torn as neighbors, friends, and family are displaced, and feelings of alienation may accompany a sense of a "loss of place" due to changing landscapes and people, even if residents physically remain in the same locality (Atkinson 2015; Davidson 2009).

As open land for sale in desirable inner-suburban locations becomes increasingly difficult to develop cost-efficiently, developers may instead purchase and demolish privately-owned apartments. A useful framework for understanding this process is Smith's rent gap theory (1979). In the case of Atlanta's northern inner suburbs, undervalued properties, such as parcels with aging apartment buildings, can be purchased relatively cheaply, subsequently redeveloped, and then sold or let for an immense gain to the savvy purchaser. The difference between the ground rent currently being made on a property ("capitalized ground rent") and the ground rent that could be made if the property was put to its best, most profitable use ("potential ground rent") is the rent gap, and as it widens, the chances for redevelopment tend to increase. This approach has been undertaken in many suburbs north of Atlanta—including Marietta, Roswell, Sandy Springs, and Smyrna—and the results have been to

disproportionately displace residents of color. In the suburb of Roswell, for example, NU developers replaced a predominantly Latino-occupied apartment complex with a high-end NU-designed project with apartment units starting at over double what comparable units costed at the previous place (Markley and Sharma 2016). Replacing private apartments through demolition can be even more devastating to tenants than in public housing redevelopment, since existing laws do not require the relocation of displaced residents. Moreover, the displacement of Latino residents may be especially burdensome to those impacted, since Latinos in this region are more likely than other populations to rely on walking to work and to the store (Bohon et al. 2008).

Despite the serious implications for residents though, the broader geography of infill NU is not well understood in Atlanta or elsewhere. One study found that NU projects in the US are more likely to be constructed in the inner suburbs or urban core than on "greenfield" sites, but it did not specify where *within* the inner suburbs (Trudeau and Malloy 2011). Other studies have identified the determinants of single-family home redevelopment in the inner suburbs of Chicago and Baltimore, but it remains unclear how their findings pertain to NU redevelopment outside those regions. In addition, some findings in the two studies were conflicting. For example, in Chicago's inner suburbs, single-family home redevelopments negatively related to a tract's black or Hispanic share of the population and positively related to income and home values (Charles 2013). In Baltimore's inner suburbs, a positive relationship between redevelopment activity and income was also found, but the study instead found a positive relationship between redevelopment and a tract's share of black residents (Hanlon 2015). Given the different context of Atlanta's northern arc suburbs compared to Baltimore and Chicago, NU's emphasis on walkability and suburban retrofit, and the different politics and planning involved in larger-scale projects compared to individual home redevelopments, it is likely that a very different geography is present. Namely, individual case studies suggest that NU-designed redevelopment in Atlanta's northern inner suburbs may be targeting

neighborhoods with lower incomes and a higher proportion of Latino residents, potentially threatening residents in these communities with displacement.

There is also reason to believe that the geographies of NU in Atlanta's northern inner suburbs may be changing following the onset of the Great Recession. Particular to the Atlanta region, the growing adoption of infill NU in the suburbs following the crisis may partially be due to the apparent "success" (and potential profitability) of the New Urbanist mega-project called "Atlantic Station," which officially opened in 2005. Built on the grounds of the former Atlantic Steel Mill in Midtown Atlanta, the 138-acre project hosts over 15 million square feet of retail, residential, and office space plus 11 acres in green space, and is the largest infill New Urbanist development in the United States (Hankins and Powers 2009). With the widespread acclaim the project has garnered from elites in both business and government from the local level all the way up to the global, Atlantic Station has become a "model for growth" across the US (Pendered quoted from Cochran 2012: 17). As a model for redeveloping "underutilized" space into New Urbanist mixed-use space, the effect Atlantic Station has had on inspiring other places to follow suit may be most acute in Atlanta's suburbs, where comparisons are often drawn between new suburban "mini cities" and Atlantic Station (e.g., Hohmann and Wiley 2013; Kahn 2015; Sen 2014). Indeed, a crop of proposals for these types of large-scale NU developments designed in a similar vein to Atlantic Station have sprung up around the northern suburbs, often being pitched as a local variation of Atlantic Station (ibid.). These include Avalon in Alpharetta, The Battery Atlanta in Cobb County (the site of the new Braves stadium), Assembly in Doraville, and City Center in Sandy Springs.

Research in other regions also supports the theory that the geographies of NU have changed since the crisis. The combination of four factors discussed in the previous section may be interacting with each other and with the influence of Atlantic Station as a successful example of NU redevelopment to produce this post-crisis geography. First, in the contemporary environment of intra-regional competition and suburban disinvestment in which local governments have found

themselves, NU can offer an innovative, attractive, and sustainable fix to remake declining suburban downtowns (Hanlon 2015; Zimmerman 2001). Second, NU is well positioned to take advantage of ongoing shifts in middle-class demand for housing that reflect emerging demographic changes in the US population, as well as growing concerns of sustainability, alienation, and fluctuating fuel prices (Dunham-Jones and Williamson 2011; Gallagher 2013). Third, following the housing crash, homebuilders and local officials may have found convincing the arguments asserting that NU development does not pose the same risks of foreclosure or abandonment as conventional developments (ibid.). As such, private homebuilders searching for new business strategies and suburban governments looking for alternatives to conventional development coming out of the recession are likely to be more adventurous and receptive to the idea of NU development. Fourth, suburbs with histories of enacting anti-poor or anti-immigrant policies in the name of protecting property values may find the prospect of retaking prime space that has recently undergone substantial socioeconomic and racial/ethnic change an appealing policy response to disinvestment and a slumping housing market, especially in a political climate in which minorities and the poor are (mis)construed as the culprits of decline (Markley and Sharma 2016; Niedt 2006; Smith 1996). Considering all five of these factors together and again drawing from individual cases from local news reports, I suspect that inner-suburban neighborhoods with lower incomes and larger shares of Latino residents will be even more likely to receive NU projects following the onset of the Great Recession.

However, to the best of my knowledge, researchers have yet to employ statistical techniques to critically explore who may be impacted by NU's potentially changing geographies. I suggest that this gap in our understanding will impede critical discussion about how the turn toward NU as a redevelopment strategy impacts targeted communities, especially since the onset of the Great Recession. After all, it is necessary to determine where these projects are being located before researchers can identify who is being affected, and it is necessary

to understand how these geographies are changing before researchers can identify who is likely to be affected in the coming years. Furthermore, residents at risk of losing their communities due to this type of gentrification are at a disadvantage when organizing to defend their neighborhoods if they do not know where these projects are being located. It is this incomplete understanding of NU's changing geographies hindering both research and potential resident activism that this research seeks to rectify.

The Study and its Significance

This research is among the first to use generalizable, quantitative methodology to examine infill NU's geography in the suburbs. The growing popularity of NU principles in metropolitan areas around the United States and abroad has largely been accepted by planning and development agencies, as well as a variety of local stakeholders, with little critical inquiry (Moore 2013). Qualitative studies and commentaries linking NU's potential to create exclusionary sub/urban spaces have existed since the early stages of the movement (Harvey 1997; Lehrer and Milgrom 1996; Marshall 1995), but without measurable evidence, NU project implementation continues nearly unquestioned. Quantitative evidence revealing which neighborhoods are receiving NU projects may suggest that the green turn in public planning via New Urbanism has come with considerable social costs to some residents (Hanlon 2015). Although this study focuses on a small geographic area relative to the vast extent of NU project implementation, the use of a quantitative approach will allow future research to reproduce the methods in other, broader contexts.

This study is one of the first to examine the emerging, post-crisis geographies of residential development at the community scale. Although previous research indicates that recessions are followed by large-scale shifts in the geographies of real estate investment (Hackworth and Smith 2001; Harvey

2012; Lees et al. 2008), few studies have identified the trends emerging from the most recent crisis. In Atlanta, one study examined the post-recessionary intra-metropolitan geographies of speculative investment in foreclosed properties (Immergluck and Law 2014), and another analyzed the uneven geographies of housing market recovery (Raymond et al. 2015). However, these studies were interested in single-family homes rather than larger-scale projects. My study is the first to analyze the emerging geographies of community-level projects following the Great Recession to the best of my knowledge.

Drawing from the expanding use of Google Earth's historical satellite imagery in the land use science literature, this study is one of the first to apply this technology in the field of urban social geography. Google Earth's relatively user-friendly interface, free installation, semi-regular updates, improved resolution, and almost global coverage have gained the attention of land use scientists and other environmental analysts in recent years (Duhl et al. 2012; Soulard and Wilson 2015). However, beyond urbanization analysis, its use has not reached the urban social geographies to the best of my knowledge. In this study, I use Google Earth's historical satellite imagery to locate the place and time NU-designed developments began construction for all time intervals from February, 1999 to May, 2014. The last time interval currently available—September, 2015—is provided by Nearmap, a private provider of high-resolution aerial imagery for select metropolitan regions (us.nearmap.com). Scanning aerial imagery allows me to efficiently observe and record the year each project broke ground, and with the location, I am able to find images, site plans, and other pertinent information about projects by searching online for realtor websites, local government websites, Zillow.com, Apartments.com, and local press releases. Using this technique for project identification greatly improves the efficiency from the rigorous approaches used in previous gentrification studies, such as in-person visitation and manual documentation (Wyly and Hammel 1998, 1999, 2004).

CHAPTER THREE
DATA AND METHODS

This research has two principle aims. The first is to identify the types of neighborhoods in Atlanta's northern inner suburbs most likely to have received NU-designed projects from 1999 to 2015. The second is to compare pre-crisis (February, 1999 to December, 2007) geographies of NU-designed projects to their emerging, post-crisis (January, 2008 to September, 2015) geographies. Working toward these aims, I first define Atlanta's northern inner suburbs by referencing relevant literature and conducting a number of preparatory steps using ArcGIS 10.3 (ESRI 2014). Next, I identify NU-designed projects by cross-referencing Google Earth satellite imagery, Nearmap aerial imagery, local newspaper articles, and various online resources with specified NU criteria developed from the *Ten Principles of New Urbanism* (see Michigan Land Use Institute 2006). Once geocoding selected projects to their respective neighborhoods, defined as census tracts, I conduct a logistic GLM using R Studio statistical software (R Core Team 2015) to accomplish my first aim. Then, a second GLM is run with a term interacting a time period variable with all other explanatory variables to quantify the extent to which the relationships between a neighborhood's attributes and its odds of receiving a NU-designed project change between time periods. An Analysis of Variance (ANOVA) is run between the two models to indicate whether or not there are significant changes in how the models fit the data.

Defining the Study Area

To focus on areas of Metro Atlanta with highest concentrations of NU-designed projects, I limit my study area to the inner-suburban census tracts of

Atlanta's northern suburban counties, which I define as Cherokee, Cobb, and Gwinnett County, and the northern sections of DeKalb and Fulton County. As inner-ring suburbs, this area has comparatively older housing stock and is eligible to receive *infill* NU (re)development, as opposed to *greenfield* NU development. Furthermore, Atlanta's northern inner suburbs host some of the wealthiest areas in the state, as well as to some of the most dramatically changing neighborhoods in terms of race, ethnicity, and socioeconomic status (see Table 3.1).

Table 3.1. The study area compared to the Atlanta MSA

	1990	2008[1]	Change (%)
Study Area			
Population	1,074,667	1,556,550	44.8
% Black[2]	9.5	20.2	10.7
% Latino	2.9	16.9	14.0
% Poverty	5.6	11.8	6.2
MHINC[3]	72,863	67,112	-7.9
Atlanta MSA			
Population	3,164,879	5,300,114	67.5
% Black	24.6	30.8	6.2
% Latino	2	10.3	8.3
% Poverty	10.4	12.7	2.3
MHINC	50,883	53,351	4.9

1. 2008 represents midpoint year of 2006-2010 ACS data
2. Change values for % variables (e.g. % Black) are percentage point change.
3. Estimated median household income adjusted to 2010 dollars using Bureau of Labor Statistics inflation calculator: (Tract MHINC*Tract Households)/Total Households

The north-south divides in DeKalb and Fulton are widely noted in reports and local newspapers, with the splits in each county separating suburban residents along lines of race, politics, socioeconomic status, property values, and post-recession recovery (Connor 2015; Matteucci 2010; Pooley 2015b; Raymond et al. 2015; Strait and Gong 2015; Wheeler 2015). Although it is difficult to draw an exact line splitting conceptual boundaries, attempting to do so in this case is necessary to clearly define Atlanta's northern suburbs. In Fulton, the northern suburbs are defined in this study as 2010 census tracts north of the City of Atlanta. In DeKalb, the northern suburbs are defined as 2010 census tracts with at least 50 percent of their surface areas lying north of the proposed boundary of the City of Greenhaven. Although Greenhaven is not yet incorporated, its proposed northern and northwestern boundaries largely demarcate DeKalb's racial, political, and socioeconomic divides (Wheeler 2015).

To focus on only *infill* NU development, it is necessary to define what constitutes Atlanta's inner suburbs. Given Metro Atlanta's expansive built landscape in addition to the Census Bureau's liberal definition of "urbanized areas," Hagerty (2012) suggests using the 1990 census definition of "Urbanized Area" as one way to delineate Atlanta's infill boundary for development occurring from 2000 or later. Following Hagerty, I use the 2010 census tracts that have surface areas at least 50 percent covered by the US Census Bureau's 1990 Urbanized Area to define Atlanta's inner suburbs. To further ensure these tracts represent inner suburbs, I exclude the one tract out of these that did not reach 90 percent urban coverage by 2000, leaving a study area of 298 census tracts. The study area is depicted in Figure 3.1.

Finally, to be included in the analysis, census tracts must have received at least 20 units of new housing construction (NU and/or conventional) during the respective time periods. This is checked by visually examining Google Earth and Nearmap imagery and counting the number of housing units constructed for each time period (1999-2007 and 2008-2015). To increase accuracy, census tract shapefiles were loaded into Google Earth to guide two separate rounds of

extensive surveying. The purpose of excluding tracts without at least 20 new housing units is to ensure the analysis compares NU development versus non-NU development instead of comparing development versus non-development. After this final preliminary step, the study area for the first time period contains 271 tracts, and the second contains 202 tracts.

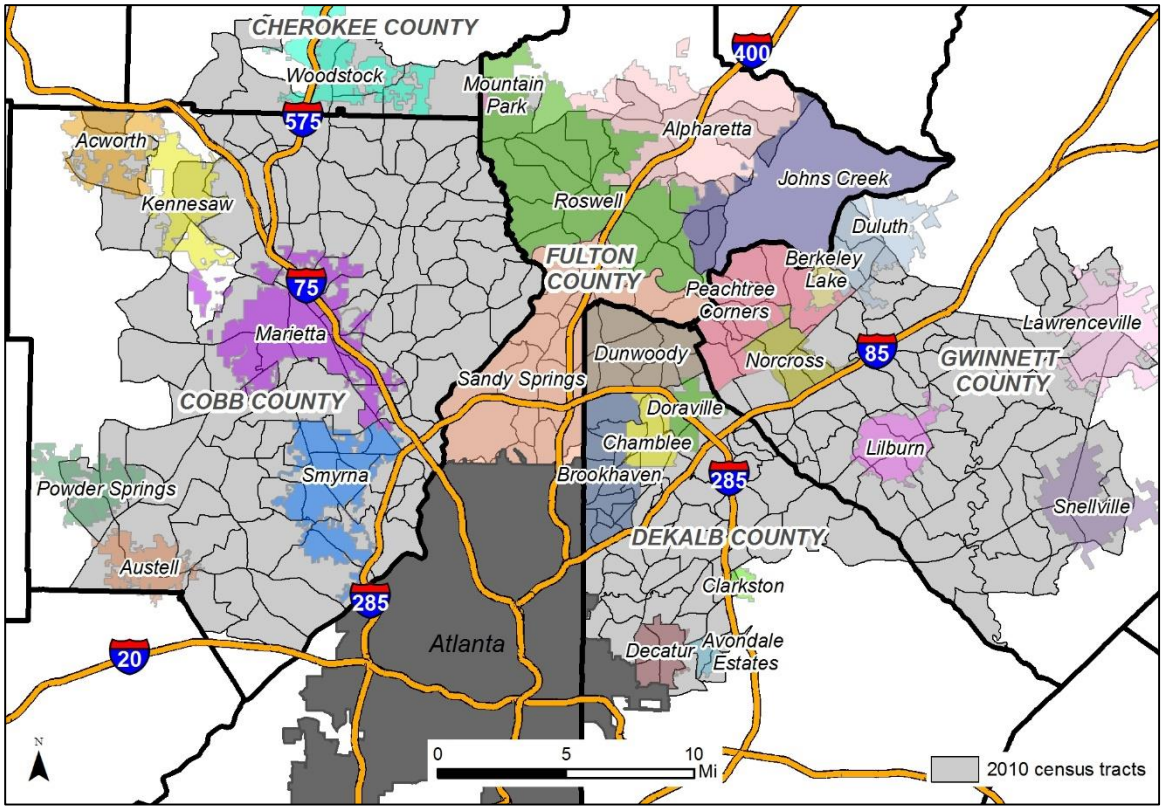

Figure 3.1. The study area and its incorporated municipalities

Data Collection and Processing

Dependent Variable

Drawing from the land use science literature (Duhl et al. 2012; Soulard and Wilson 2015), Google Earth's historical satellite imagery is used to identify

the location and year-built for NU-designed projects in the study area. Because this imagery is central to this analysis, it is necessary to define the housing boom years and the early recovery years to best fit the dates in which Google Earth imagery is available. This is why the specific months of February, 1999 and December, 2007 are chosen as cut-off points. Although house prices in Metro Atlanta began to decline by late 2006 (Raymond et al. 2015), the December, 2007 cut-off point is chosen to reflect the lag separating the housing market and policy response. Viewing the imagery, it is apparent that land clearing for housing construction stalled considerably after 2007. Once potential projects are identified by location and time period, local newspaper articles, Google Earth and Google Maps Street View, and various online resources (e.g., Zillow.com, Apartments.com, and local realtor, government, and homebuilder websites) are referenced to gain further information about the projects, allowing for a full evaluation of their NU credentials. This method of data collection is no doubt an improvement in efficiency compared to those in previous studies that relied on ground truthing to identify newly-built projects (see Wyly and Hammel 1998, 1999, 2004).

The next step of this analysis is to determine whether selected projects constitute NU design. Though NU as a planning movement advocates its principles at scales ranging from the building up to the region (CNU 2001), infill NU development is usually limited to smaller scales, so my focus is on principles of NU at scales ranging from the building up to the neighborhood. However, since there is no official, comprehensive database of NU projects, there are several challenges to defining which communities should be considered New Urbanist. The *first* challenge is that there are no set guidelines outlining what *exactly* constitutes New Urbanism (Talen 2010). Rather, vague guiding principles are put forward in publications such as the *Charter of the New Urbanism* (CNU 2001) and *New Urbanism: Comprehensive Report and Best Practices Guide* (Steuteville 2001) to assist planners and developers in their implementation of NU principles. *Second*, very few projects considered to be NU actually meet all of

the principles championed by New Urbanists (Grant and Bohdanow 2008). Instead, NU's practitioners must navigate through numerous institutional, economic, political, and cultural barriers, which ultimately serve to compromise NU design in favor of perceived consumer demand and salability, producing a "say-do gap" that separates NU in practice from NU in theory (Grant 2009). *Third*, NU's emphasis on "celebrat[ing] local history, climate, ecology, and building practice" (CNU 2001) in architecture and landscape design translates into expressions of NU that (should) differ across geography. Thus, NU in Metro Atlanta should appear different than NU in other places in certain respects, complicating the interpretation of NU within Atlanta's specific context. Such challenges have required researchers to define their own criteria when evaluating NU communities (Grant and Bohdanow 2008).

Due to these complications, I develop my own criteria to determine whether or not selected projects in the northern inner-suburbs of Atlanta constitute NU-*designed* development. My criteria are derived from the *Ten Principles of New Urbanism* (listed in Table 3.2) published by the organization NewUrbanism.org (see Michigan Land Use Institute 2006). These principles significantly overlap the principles outlined by the *Charter* (CNU 2001) and Steuteville (2001), but the detailed descriptions provided by the organization allow me to more clearly and objectively examine the NU characteristics of Atlanta's new projects.

Out of the ten principles, seven are used to identify New Urbanist projects in this analysis, with three principles being excluded due to their vague and/or unobtainable nature. The seven principles include walkability, connectivity, mixed uses, mixed housing, quality architecture and urban design, traditional neighborhood structure, and increased density. Out of these, to be included for analysis, developments must meet the density and architecture requirements plus two additional principles. Increased density is one of NU's primary defining features and likely one of the most visible signs of NU from the perspective of consumers (see Katz 1994). Defining architecture as sufficiently New Urbanist is

Table 3.2. Criteria for determining NU-designed projects

Principles	***How it is measured***
1. Walkability	Development includes *sidewalks* and is within *¼ mile* of commercial use or transportation stop
2. Connectivity	**For detached and multifamily neighborhoods**: *"grid-like"* street pattern ends and at least *2 entrances* to the neighborhood from outside street; **For apartments**: located *along road or among other buildings* rather than sitting back in "garden" style development *and* at least *2 entrances* from outside streets
3. Mixed-Use & Diversity	Development zoned for *mixed uses*, and/or contains residential units and other zoning type (e.g. retail, office, etc.) within the same development; "diversity of people" is not included as a measure due the difficulty of obtaining personal information about the inhabitants of these communities
4. Mixed Housing	Development includes *multiple housing types* (e.g., single-family detached, townhouses, and/or apartments)
5. Quality Architecture & Urban Design	Based on common features proposed by New Urbanists and on a comparison with notable local NU projects. For **SFD housing and townhomes:** must line the street as opposed to sitting behind a large yard; garages are not protruding beyond entrance; include porch or stoop. For **apartments:** line street as opposed to sitting behind parking lot; hide parking lots/garages behind structure
6. Traditional Neighborhood Structure	Park or open space is located near center of development
7. Increased Density	Developments are zoned as either multifamily, apartments, 4 units/acre, or have special zoning designation for higher density mixed use
8. Smart Transportation	Included as part of Principle 1
9. Sustainability	Not included due to difficulty of obtaining this information
10. Quality of Life	Not included due to vagueness and immeasurability

conducted by comparing the architecture of new projects in question with the more established and visible NU projects in Metro Atlanta listed by the NU publication, *The Town Paper* (2015) and by the Atlanta chapter of CNU (CNU Atlanta 2011). These sources provide lists of projects each organization considers to be NU, but since they rely on volunteered information and tend to highlight only the best examples of NU, they are far from comprehensive, only including eleven total NU projects in the study area. As mentioned earlier, NU design varies spatially, so it is necessary to define NU architecture using local standards as a basis. Figure 3.2 depicts NU projects defined by Atlanta's CNU chapter that serve as a baseline from which to compare the architecture of selected projects.

Including the two additional principles, projects selected for analysis must meet four out of the seven specified, measurable principles. Keeping in mind that Grant and Bohdanow (2008) found that only one in 42 Canadian NU projects met all NU principles and that Grant (2009) found that developers tend to selectively choose which feature of NU to include and exclude, I suggest that defining NU-designed development using a simple majority of NU principles is sufficient to differentiate NU-designed projects from conventional projects. Furthermore, these chosen NU-designed projects will sufficiently demonstrate evidence of NU influence and will represent what consumers would likely recognize as New Urbanism. Finally, this approach has the advantage of transparency. Any definition of what constitutes New Urbanism is subject to debate, so by systematically charting which principles each potential development does and does not meet, future researchers are able to toggle the stringency of my inclusion threshold.

To make my dataset more manageable and to better ensure these projects bring enough residents to substantially impact a neighborhood's character, I only include projects with 20 or more residential units. Once identified, these projects are geocoded at their appropriate location using ArcGIS 10.3 software (ESRI 2014). Projects are then aggregated to the 2010 tract level, which represents each project's neighborhood. Census tract shapefiles containing normalized decennial

A **B**

Figure 3.2. Examples of NU-designed architecture

A. This attached single-family house in downtown Woodstock, Georgia is part of a development that won a CNU Charter Award in 2008 for its New Urban design (CNU 2008). Even though NU advocates rear garages, the accommodation of the car, in this case, took precedence over traditional design. However, the garage still does not protrude beyond the front door, and the house still includes iconic NU features such as a front porch, a front-facing orientation, and a position close to the street. This example illustrates the compromises architects and developers make when designing NU communities, and this house is representative of many similar NU-designed developments in Atlanta's northern inner suburbs. Hence, it is used as a baseline to compare with other single-family attached and detached units.

B. This apartment, called "Revival on Main," is located in downtown Kennesaw, an area commended for its NU-designed revitalization efforts (CNU Atlanta 2011). Although styles of apartments vary considerably around Metro Atlanta, two key architectural features stand out with this one that qualify it as a point of reference. These include 1) its close proximity to the street and 2) the location of its resident parking behind the building and out of sight from the public.

census data and American Community Survey (ACS) data are downloaded from the Longitudinal Tract Data Base (LTDB). The LTDB contains decennial census data from 1970 up through 2010 plus 2006-2010 ACS data within normalized census tract boundaries, allowing for longitudinal comparisons at the census-tract level (Logan et al. 2014). Projects built between February, 1999 and December, 2007 are compared to 2000 LTDB data, and projects built after December, 2007 to September, 2015 are compared to 2006-2010 ACS data. Though the ACS data is comprised of averages across the five years spanning from 2006 to 2010, it is used to represent its midpoint year, 2008. Using data from years near the beginning of project construction allows for an examination of housing, locational, socioeconomic, and racial/ethnic characteristics by neighborhood as they were *before* officials and developers targeted them for NU development.

A few projects began construction in the first time period and finished in the second time period, so some simple rules were adopted to help with classification. If projects broke ground before December, 2007 and completed the construction of housing units without any evidence from satellite imagery suggesting that the project had stalled, then it is classified as a Time Period 1 project. This rule is set since the planning and implementation would have taken place in the first time period, and new residents would have (ideally) affected ACS counts. If, on the other hand, ground was cleared before December, 2007 but instead remained without any signs of progress beyond the next time period (April, 2008) *and* then was eventually resumed, the project is classified as a Time Period 2 project. The reason for this rule is to account for the changes in management over the project, the changes in site plans, and the need for these projects to be reapproved by commissioners, councilmembers, and zoning boards. Finally, projects could be classified into both time periods if at least 20 units were constructed in separate phases that straddled the housing crash. This is the case for only one development.

In addition to the above criteria, certain characteristics of otherwise NU-designed projects automatically disqualify them for inclusion in this study. First, following *The Town Paper*'s *Design Rating Standards* (Aurbach 2005), I exclude gated communities. Although it has been argued that gated communities and NU communities may be "two sides of a coin" (Grant 2007), a gated entrance serves as a very visible rejection of the principles of community and inclusion lauded by NU adherents. Furthermore, New Urbanists themselves have voiced vehement opposition to gated communities (see Grant 2007). Second, also following *The Town Paper*, I disqualify age-restricted communities, such as senior housing, active adult communities, and university-owned dormitories. Like the exclusion of gated neighborhoods, discounting age-restricted communities is a conservative measure. Finally, I exclude publicly-owned residences, since many outside factors constrain the geography of public housing, and only a few suburban governments in the study area provide options for public housing. In fact, only two projects meeting the other NU criteria are publicly owned.

Explanatory Variables

The housing data collected for analysis include ***three built and two social housing variables***, all of which are gathered from the LTDB. The three built variables include the share of housing built before 1970, the share of housing built during the decade prior to the respective time period (i.e., 1990 to 1999 and 2000 to 2006-2010), and the share of housing that is comprised of single-family detached (SFD) units. Housing ages, both older and recent, were significant factors in predicting redevelopment activity in the inner suburbs of Chicago (Charles 2013), and it is reasonable to expect these two variables to also influence redevelopment activity in Atlanta's inner suburbs. The share of SFD housing units is included in the models, since a neighborhood's SFD composition likely influences where developers can construct NU projects. Given NU's emphasis on compact development and aversion to sprawl, as well as the history

of SFD homeowners fighting high-density construction in this region (Lands 2009), NU developers may be more likely to target neighborhoods with lower shares of SFD units.

The two social housing variables include the occupancy rate and the homeownership rate. Neighborhoods with high occupancy rates may be more likely to attract development due to an implied under-supply of housing, but it may be politically easier for firms to develop NU projects in neighborhoods with lower occupancy rates. Similarly, NU developers may prefer to build in areas with high homeownership rates if they perceive these areas to be more stable and less risky, but it may be politically easier to target neighborhoods with more renters for reasons similar to the SFD variable.

Three locational variables are used in the regression models. The *first* is a binary variable (i.e., 0 or 1) that represents whether or not a census tract overlaps an "*activity center*," which is defined as "an area that includes a mixture of office, retail, service, and residential or civic uses that creates a central focus for a larger area," (Wang and Immergluck 2015: 169). Since I exclude those that primarily serve non-commercial function (e.g. Dobbins Air Reserve Base), the remaining activity centers serve as proxies for desirable, in-town locations such as suburban downtowns. Activity center shapefiles are available for download on the ARC website (AtlantaRegional.com). The *second locational variable* is also binary, and it represents whether or not census tracts *overlap expressway access points*. This variable is included since NU developers may prefer to locate their properties in neighborhoods with easy access to expressways due to Metro Atlanta's multinucleated configuration that contains numerous employment, shopping, and entertainment centers outside the urban core (Hartshorn and Muller 1989). The *third locational variable* takes into account a neighborhood's *position within the metropolitan region*. A binary variable indicates whether or not tracts cross Interstate 285, known as "The Perimeter." This variable, henceforth referred to as "ITP/OTP" (Inside the Perimeter/Outside the Perimeter), approximates a neighborhood's spatial relation to the City of Atlanta,

and it separates tracts along lines understood by locals and realtors (Chapman 2015).

Two socioeconomic variables are collected from the LTDB. They include *median household income* (MHINC) and a variable that divides the *median home value (MHV) by the median annual rent (median contract rent (MCR) multiplied by twelve*). Charles (2013) and Hanlon (2015) both found positive relationships between single-family home redevelopment activity and a neighborhood's MHINC, but I expect the opposite relationship will be present in the context of Atlanta and with NU-designed projects.

The *second variable*, henceforth referred to as the *value-to-rent ratio*, is included to capture neighborhoods with high home values but low rents. This variable is similar to the "mortgage capitalization ratio" used by Lees et al. (2008: 182) to show low-cost rentals surrounded by expensive home sales. Similarly, the value-to-rent ratio indicates which neighborhoods have high property values but low rents, indicating where NU developers can purchase less expensive land near more expensive properties, potentially exploiting rent gaps (Smith 1979). For the 2006-2010 ACS, eleven tracts are missing MHV data, and two tracts are missing MCR data. For these tracts, I impute the missing values by calculating the weighted averages of MHV and MCR from neighboring tracts.

Two racial/ethnic variables are used in this analysis, including the share of the population that is *black* and the share of the population that is *Latino*. Charles (2013) and Hanlon (2015) both found a tract's share of black population to be a significant predictor of single-family home redevelopment in the suburbs of Chicago and Baltimore, respectively. Though Charles found a positive relationship between the two, Hanlon found the opposite. Hence, it is unclear what relationship might be present in the suburbs of Atlanta, but it is likely that this variable will significantly affect NU-designed project locations, especially considering the deep-rooted connections between race and homeownership politics in this region (Connor 2015; Kruse 2005; Henderson 2006; Lands 2009; Pooley 2015b).

Next, following Charles (2013), I include the *Latino variable* to test whether NU development has targeted Latino neighborhoods. Considering this region's history of prejudiced attitudes and policy directed toward Latino residents (Neal and Bohon 2003; Odem 2008, 2009), suburban governments may target neighborhoods with high Latino populations as a way to retake these neighborhoods. Indeed, recent news reports indicate that many NU-designed projects in this region are being constructed in areas with a high number of Latino residents (see Markley and Sharma 2016; Quill 2014; Wiley 2013), so a high proportion of Latinos may be a significant predictor of NU development. Although NU redevelopment is probably unlikely in high-minority neighborhoods that are isolated and thus undesirable for potential middle-class clients, as is the case of gentrification (see Hammel 1999; Lees et al. 2008), planners and NU developers may instead target neighborhoods with high Latino populations near desirable locations. To account for this, I include an ***interaction term*** that interacts a neighborhood's proximity to an activity center and the Latino proportion of its population.

Finally***, two change variables*** are calculated using the LTDB. Following Charles (2013), I include these variables to capture how policymakers and developers saw neighborhood trajectories at the time of planning. Like Charles, I include a variable representing *MHV change* during the (approximate) decade prior to each study period (i.e., 1990 to 2000 and 2000 to 2006-2010), indicating the degree to which property values within census tracts were increasing or decreasing relative to other tracts. Second, I include a variable representing the *change in the white population* during the preceding decade for each study period. These trends may have affected decisions about project locations, but it is unclear exactly how. For example, areas with declining property values and/or declining white populations may have prompted policymakers to act in a manner to encourage NU real estate investment to reverse those trends. Conversely, rising home prices and/or relatively stable or

increasing white populations may have attracted developers to capitalize on a neighborhood they perceived to be emerging and profitable.

Methods of Analysis

For each of the two time periods, census tracts are assigned a binomial variable (i.e., 0 or 1) representing whether or not a given neighborhood received a NU-designed development. Since this analysis uses a binary dependent variable, a logistic generalized linear model (GLM) is employed to examine the neighborhood-level determinants of NU-designed project locations. This type of GLM fits a logistic curve between zero and one. Thus, the effect each independent variable has on whether or not a neighborhood received a NU-designed project, holding all other variables constant, should be interpreted in terms of likelihood, which is indicated by odds ratios generated for each variable. Odds ratios can be interpreted as the effect a certain variable has on the likelihood, or *odds*, of a neighborhood receiving a NU-designed project. For example, if the odds ratio of the homeownership rate is 0.9, then a one percent increase in a neighborhood's homeownership rate suggests a *decrease* in its *odds* of receiving a NU-designed project by ten percent. Alternatively, if the odds ratio is 1.1, then a one percent increase in the homeownership rate suggests an *increase* in the odds of receiving a NU-designed project by ten percent.

The first GLM is created with data from both time periods together, while including a binomial time period variable (i.e., Time Period 1 or Time Period 2). From this GLM, the significance of each coefficient can be assessed to determine which variables contributed most to a neighborhood's likelihood of receiving a NU-designed project from February, 1999 to September, 2015. These results indicate which characteristics of a neighborhood have made it more or less likely to receive NU-designed projects. Focusing on the significance of some of the

model's key coefficients, such as median household income, the value-to-rent ratio, the share of black population, the share of Latino population, and the interaction term can reveal which socioeconomic and racial/ethnic groups are likely to live in neighborhoods receiving NU projects.

A second regression is then run, and it interacts the time period variable with all other explanatory variables. The results of this model suggests how the predictors of NU-designed development changed from the years of the housing boom to the years following the onset of the Great Recession. To determine if the models' predictions changed significantly between time periods, the models are compared using an Analysis of Variance (ANOVA).

CHAPTER FOUR
RESULTS

Before discussing the results from the two GLMs plus the ANOVA, I present maps and descriptive statistics to allow for a clearer conceptualization of the data. The maps provide a visual of the spatial distribution of NU-designed projects across the study area in addition to various features used in the analysis, including activity centers, interstates, the geography of the Latino population, and the spatial distribution of median household incomes. Supplementing statistical findings with maps can reveal spatial patterns not evident from the GLMs and ANOVA alone. Descriptive statistics are then displayed to show the means of each variable broken up by time period and whether or not neighborhoods received a NU-designed project. Presenting this information in a table provides a quick summary of the data that can be helpful for capturing general patterns.

Maps

The map in Figure 4.1 shows the geography of NU-designed projects and the spatial distribution of the Latino population in Atlanta's northern inner suburbs. The map in Figure 4.2 depicts the same NU geography, but instead includes the spatial distribution of median household incomes. From each it is apparent that a few areas have large concentrations of NU, while other areas have virtually no NU-designed projects. First, looking at Cobb County, there is a cluster of NU projects constructed during the housing boom around the activity center of Smyrna and along a small segment of I-285. Marietta has a few pre-crisis projects as well, and lone projects stand near the Acworth activity center and in East Cobb. The latter of which seems a bit anomalous, since it is far from

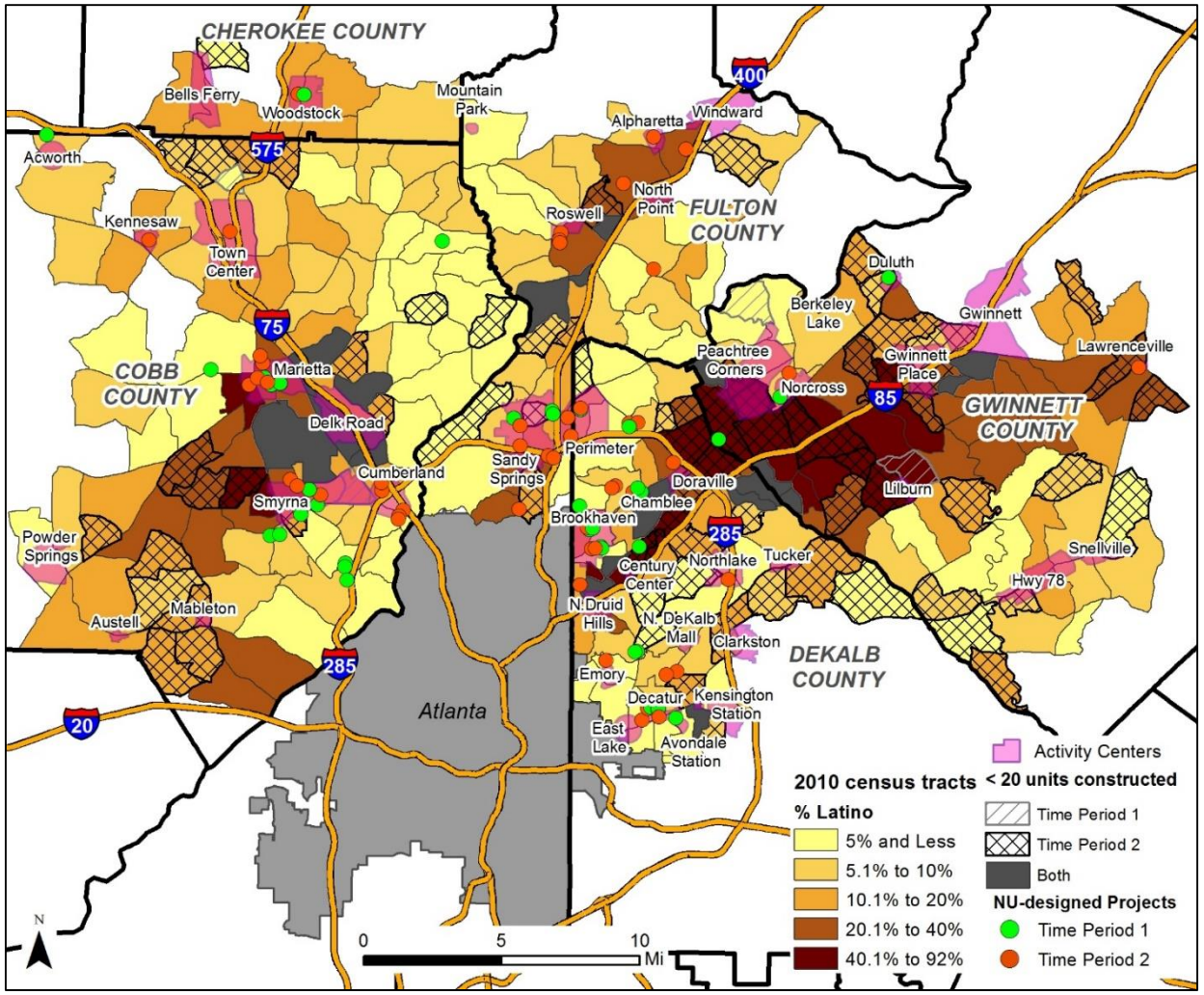

Figure 4.1. Spatial distribution of NU and 2008 Latino population

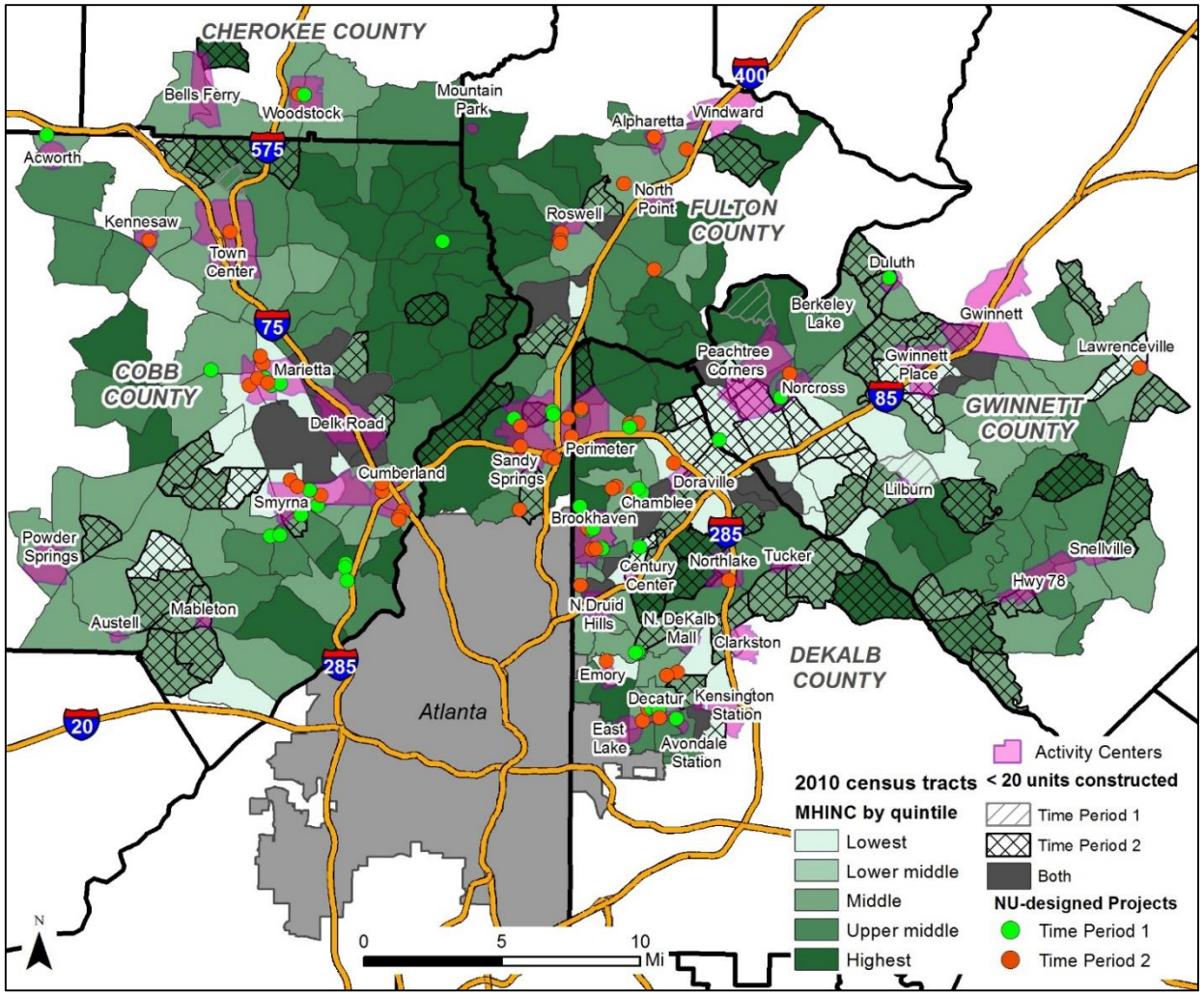

Figure 4.2. Spatial distribution of NU and 2008 household income

any activity center, is far from any highways, sits near the geographic center of a very high-income area, and has a very low Latino population. More projects since the crisis have been constructed around Smyrna but also around Marietta and Cumberland near the junction of I-285 and I-75. That is where the new Braves stadium will be located, and it can be inferred from the maps that the announcement of its construction has probably attracted other NU developers to construct projects nearby. According to Figures 4.1 and 4.2, the neighborhoods around Marietta and Smyrna have larger Hispanic populations and lower incomes than most of Cobb. Other projects are located in downtown Kennesaw, where the local government has recently initiated a downtown revitalization effort, and in Town Center, which is near a major regional mall and Kennesaw State University.

In Cherokee, there are two NU-designed projects, one constructed before the crisis and another after it. Both projects are part of the City of Woodstock's downtown revitalization initiative. In northern Fulton County, there are only three pre-crisis NU projects, and they are all located in Sandy Springs near the Perimeter. Since the crisis, many more NU developments have been initiated in the same vicinity directly or indirectly as part of the City Center project, and another project sits near Sandy Springs's border with Atlanta as part of Sandy Springs's Gateway project (see City of Sandy Springs 2016). Also in northern Fulton, a flurry of new projects have been constructed further north in the suburbs of Alpharetta and Roswell, both of which passed plans for downtown revitalization shortly after the onset of the Great Recession. Figure 4.1 shows that the neighborhoods where these projects are located have some of the largest Latino populations in the northern portion of Fulton County.

DeKalb County has the largest concentration of NU-designed projects in the study area. The City of Decatur and neighborhoods near Atlanta's eastern border were some of the earliest and most adamant adopters of NU beginning in the late 1990s and early 2000s, and these communities have continued to implement NU since the crisis. Some recent projects of note are the creation of a

new Dunwoody downtown on the northern edge of I-285, a major NU-designed development in the recently incorporated City of Brookhaven, a new mixed-use development near Emory University, downtown revitalization in Chamblee, and a massive NU redevelopment on the grounds of a closed GM manufacturing plant in Doraville. Worth noting is that in the 2006-2010 ACS, out of incorporated places with at least 5,000 people, Chamblee and Doraville were the only two in all of Georgia with a Latino population comprising over fifty percent of their total populations (US Census Bureau 2011).

In Gwinnett, NU development is noticeably sparser. Before the crisis, the only NU-designed projects were downtown redevelopments in Duluth and Norcross, plus the construction of a mixed-use project in an area along the Gwinnett-DeKalb border well-known for its Hispanic presence. Following the crisis, only two NU-designed projects have been built. One is in downtown Lawrenceville, and the other is close to downtown Norcross.

Descriptive Statistics

Descriptive statistics are presented in Table 4.1. For purposes of interpreting the regression results, it is important to make a few notes about each variable. All housing variables are calculated as percentages ranging from 0 to 100 percent. Notably, the mean values between tracts with and without NU-designed projects differ considerably for the proportion of housing built before 1970, the proportion of SFD housing, and the homeownership rate. The differences for the occupancy rate are more modest, and the differences for the share of housing built during the previous decade changes considerably between time periods.

The three locational variables are all binomial. Tracts overlapping activity centers are coded with a one, and all others are coded with a zero. Tracts that

Table 4.1. Mean values for each variable

Variables	Unit	Pre-crisis No NU (n=241)	Pre-crisis NU (n=30)	Post-crisis No NU (n=166)	Post-crisis NU (n=36)
Housing Variables					
Built before 1970	%	20.41	38.22	15.14	29.19
Built during Previous Decade	%	25.41	20.35	15.24	15.85
Single-Family Detached	%	70.94	59.25	76.90	50.48
Occupancy Rate	%	96.07	94.67	91.10	88.26
Homeownership Rate	%	66.29	55.08	71.69	47.89
Locational Variables					
Proximity to Activity Center	0,1	0.37	0.72	0.31	0.86
Proximity to Expressway	0,1	0.31	0.21	0.24	0.47
Inside/Outside the Perimeter (ITP/OTP)	0,1	0.19	0.41	0.17	0.44
Socioeconomic & Racial/Ethnic Variables					
Median Household Income	$1,000	64.299	55.434	76.594	58.430
Value-to-Rent Ratio	MHV/(12*MCR)	18.86	22.00	24.22	27.69
Black Population	%	16.00	16.08	18.22	16.69
Latino Population	%	10.04	10.49	12.46	15.71
Change Variables					
Median Home Value Change	%	9.25	25.25	11.97	10.67
White Population Change	PPC	-18.93	-14.05	-10.86	-8.83

have only incidental contact with activity center shapefiles apparently due to imprecise digitizing are coded with a zero. For the proximity to expressways, tracts overlapping or bordering expressway access points are coded with a one, whereas those that are not are coded with a zero. Finally, tracts within or crossing I-285 are considered to be inside the Perimeter (ITP), and they are coded with a one, whereas OTP tracts are coded with a zero. Looking at means, tracts receiving NU development are more likely to overlap activity centers and to be located inside the Perimeter during both time periods. Also, these differences between tracts with and without NU-designed projects widened during the second time period. Tracts receiving NU-designed projects are more likely to contact expressway access points in the first time period, but this switches in the second time period.

Median household incomes are adjusted to 2010 dollars and divided by 1,000. The value-to-rent ratio divides the annualized median contract rent into the median home value. And both the racial/ethnic variables are calculated as percentages ranging from 0 to 100. Tracts receiving NU-designed projects have notably smaller median household incomes and higher value-to-rent ratios for both time periods. Also, the value-to-rent ratio has increased noticeably between time periods for all tracts. Tracts receiving NU-designed projects before the crisis had slightly larger black and Latino populations. Although both of these gaps widened following the crisis, the change is in opposite directions. Since the crisis, tracts with NU have a lower black population percentage but a higher Latino population percentage compared to tracts with only conventional development.

Median home value change is calculated as the percent change in a tract's median home value from the (approximate) decade prior to the study period (e.g., $(MHV_{2000} - MHV_{1990}) / MHV_{1990}$). White population change is calculated as the percentage point change (PPC) in a neighborhood's white share of the population during the decade prior to the respective study period. While tracts with NU experienced a much greater change in their median home values than tracts without NU leading into the first time period, tracts with NU experienced a

change in their median home values that was slightly less than other tracts leading into the second time period. Evident from Table 4.1 is that the white share of the population declined throughout the whole study area in both time periods. However, tracts with NU experienced a less rapidly declining white share of the population than tracts without NU.

Regression and ANOVA Results

Model 1: 1999-2015

Results of GLM 1 are presented in Table 4.2. GLM 1 includes tract-level variables for both time periods (1999-2007 and 2008-2015) plus an additional time period variable necessary for a reliable interpretation of GLM 2. The results from GLM 1 indicate which characteristics contributed most to the likelihood of tracts receiving a NU-designed project over the entire study period. In other words, this model summarizes the geographies of New Urbanism in Atlanta's northern inner suburbs since 1999. The Akaike Information Criterion (AIC) for GLM 1 is 301.34, which is a reduction from the AIC of 307.18 in the "kitchen sink" model. This suggests that GLM 1 fits the data better by excluding several non-significant variables that were discussed in the DATA AND METHODS section, including the share of housing built during the previous decade, the homeownership rate, the occupancy rate, and the percentage point change in the white population. None of these variables were significant in GLM 2 either, and removing them also improved the fit of that model.

GLM 1 has a total of 473 observations. Out of those, 271 are from the first time period and are calculated using 2000 normalized census tract data, and 202 are from the second time period and are calculated using 2006-2010 ACS data. To ensure commensurability between time periods, several preliminary steps were taken. First, all monetary units were converted to 2010 US Dollars using the Inflation Calculator from the Bureau of Labor Statistics (BLS 2016). Second, a

Table 4.2. Results from GLM 1

Variable	Coefficient (SE)	Odds Ratio (CI)
% Housing built < 1970	0.025**	1.025
	(0.010)	(1.005, 1.046)
% SFD housing	-0.026***	0.975
	(0.009)	(0.957, 0.992)
Proximity to Activity Center	0.501	1.65
	(0.539)	(0.568, 4.764)
Proximity to Expressway	-0.240	0.786
	(0.371)	(0.374, 1.611)
ITP/OTP	-0.509	0.601
	(0.476)	(0.233, 1.521)
MHINC	-0.027**	0.973
	(0.013)	(0.947, 0.998)
Value-to-rent ratio	0.027	1.027
	(0.019)	(0.989, 1.067)
% Black	-0.034**	0.967
	(0.014)	(0.939, 0.993)
% Latino	-0.089**	0.915
	(0.044)	(0.825, 0.979)
MHV change	0.009	1.009
	(0.007)	(0.994, 1.023)
Time Period	1.137***	3.119
	(0.355)	(1.571, 6.342)
Interaction: Activity Center and % Latino	0.091**	1.096
	(0.045)	(1.019, 1.217)
Constant	-0.711	0.491
	(1.025)	(0.066, 3.757)

Notes: *p<0.1; **p<0.05; ***p<0.01. “SE” denotes “standard error” and “CI” denotes “confidence interval” at 95% significance.

GLM was run with different weights assigned to variables of each time period (1/271 and 1/202 for Time Period 1 and 2 respectively). Significance levels did not change for any variables, so it was determined that the different number of counts between time periods did not significantly impact the results. Finally, since descriptive statistics revealed fairly large changes in black and Latino populations and in the value-to-rent ratio, a model was run with those variables standardized for each time period. Out of the standardized variables, the only one to change in its significance was the variable interacting activity centers and the Latino share of the population. The p-value jumped from 0.041 to 0.056, or from just under 5 percent significance to just over 5 percent significance. However, given the complications of interpreting odds ratios for standardized variables and the fact that standardizing these variables did not significantly impact the results of GLM 1, I present here only the original model.

Looking first at the housing variables, both housing age and share of detached housing significantly affect a neighborhood's likelihood of receiving a NU-designed project. A one percent increase in the share of housing built before 1970 increases the odds of a neighborhood receiving one of these projects by 2.5 percent. Although the relationship between NU development and share of detached housing is also significant, this relationship is negative. A one percent increase in the share of the housing stock that is single-family detached translates into a 2.5 percent decrease in the odds of a neighborhood receiving a NU-designed project.

None of the locational variables were significantly associated with NU development. However, I keep the proximity to an activity center variable in the model to use in the interaction term, and I keep the ITP/OTP variable to control for a neighborhood's proximity to Atlanta. Also, although proximity to an expressway access point is not significant in this model, preliminary analysis and GLM 2 reveal that this is because this variable's relationship with NU development shifts between time periods. The discussion on GLM 2 below will provide more clarity.

Median household income is significant and negatively associated with the probability of NU development. Its odds ratio indicates that a $1,000 increase in a neighborhood's median household income suggests a 2.7 percent decrease in its odds of receiving a NU-designed development. The value-to-rent ratio is not significantly associated with the probability of NU development, but it is included anyway to control for unequal prices of owner-occupied residential properties versus renter-occupied properties within neighborhoods.

Both racial/ethnic variables come back significant and negatively associated with the likelihood of receiving a NU-designed project. Looking at odds ratios, a one percent increase in the black share of the population suggests a 3.3 percent decline in the odds of a neighborhood receiving NU development, and a one percent increase in the Latino share of the population suggests an 8.5 decrease in the odds of receiving NU development. However, when the Latino share of the population is interacted with the activity center variable, a significant and positive relationship exists. As the Latino share of the population *within* tracts overlapping activity centers increases by one percent, the odds of receiving a NU-designed development increases by 9.6 percent.

Median home value change is not significantly associated with NU development. However, like with proximity to expressway access points, this may be due to changes taking place between time periods. Like with proximity to expressway access points, the discussion about GLM 2 below will provide further insights.

Model 2: 1999-2015 Interacted with Time

This section looks at a model interacting the time period variable with each of the other explanatory variables to quantify the changing influence each explanatory variable has had on a neighborhood's probability of NU development. Results from GLM 2 are presented in Table 4.3. However, before proceeding, it is important to note that the reliability of the results from GLM 2

Table 4.3. Results from GLM 2

	Non-interacted		Interacted with time period	
Variable	**Coefficient (SE)**	**Odds Ratio (CI)**	**Coefficient (SE)**	**Odds Ratio (CI)**
% Housing built < 1970	-0.039	1.039	-0.008	1.035
	(0.034)	(0.973, 1.111)	(0.021)	(0.952, 1.035)
% SFD housing	-0.030	0.970	0.001	1.001
	(0.030)	(0.913, 1.029)	(0.019)	(0.964, 1.039)
Proximity to Activity Center	-1.150	0.317	1.144	3.139
	(1.716)	(0.010, 8.570)	(1.116)	(0.362, 29.86)
Proximity to Expressway	-2.536*	0.079	1.473*	4.363
	(1.323)	(0.005, 0.968)	(0.826)	(0.882, 22.98)
ITP/OTP	-2.829	0.059	1.285	3.616
	(1.817)	(0.001, 1.924)	(1.085)	(0.440, 31.734)
MHINC	-0.010	0.990	-0.008	0.992
	(0.048)	(0.897, 1.082)	(0.029)	(0.938, 1.051)
Value-to-rent ratio	0.000	1.000	0.019	1.019
	(0.065)	(0.870, 1.137)	(0.042)	(0.939, 1.111)
% Black	-0.023	0.977	-0.009	0.991
	(0.049)	(0.884, 1.071)	(0.312)	(0.932, 1.054)
% Latino	-0.176	0.839	0.062	1.064
	(0.166)	(0.546, 1.076)	(0.091)	(0.900, 1.331)
MHV change	0.063**	1.065	-0.034*	0.966
	(0.027)	(1.011, 1.126)	(0.018)	(0.932, 1.000)
Interaction: Activity Center and % Latino	0.157	1.170	-0.043	0.958
	(0.170)	(0.898, 1.803)	(0.095)	(0.763, 1.139)
Time Period	-0.146	0.864		
	(2.250)	(0.010 72.73)		
Constant	0.897	2.452		
	(3.462)	(0.003, 2660)		

Notes: *p<0.1; **p<0.05; ***p<0.01. “SE” denotes “standard error” and “CI” denotes “confidence interval” at 95% significance.

are contingent on the results from the ANOVA, which are covered in the following section. Hence, the results presented in Figure 4.3 and discussed below should be accepted only on a contingent basis.

The estimates of the non-interacted variables represent the relationship between those variables and the likelihood of NU development during the time period before the Great Recession, while the estimates of the interacted variables represent the degree to which the relationship has changed since the crisis. For example, the estimate for the relationship between housing share built before 1970 and likelihood of NU development in the first time period is 0.039, which represents a weak but positive relationship. The estimate of this variable interacted with time is about -0.008, meaning that in the second time period, the estimate is about 0.031 (0.039 - 0.008 = 0.031), which represents a slightly weaker but still positive relationship. With such a small difference, it is not surprising that the interacted variable has a large p-value, suggesting that the relationship of housing age and the likelihood of receiving a NU-designed project did not significantly change following the crisis.

Overall, the results from GLM 2 are fairly weak. The relationship of only two variables noticeably change between time periods, but this change is only at ten percent significance. First, tracts overlapping expressway access points have become more likely to receive NU-designed projects since the crisis. Before the crisis, the estimate of the proximity to expressway access point variable was strongly negative at -2.536, suggesting that tracts overlapping onramps or off-ramps were less likely to receive NU development. After the crisis, however, the relationship is different. The term interacted with time has a coefficient of 1.473, suggesting a much weaker relationship at -1.063. From these results, it can be interpreted that while NU development was less likely to be located away from expressway access points before the crisis, it was neither more nor less likely to be located near these points after the crisis.

Second, a neighborhood's change in median home values leading up to the study period is positively associated with its likelihood of NU development during

the first time period. In other words, the higher the change in a neighborhood's home values from 1990 to 2000, the higher its probability of receiving a NU-designed project between 1999 and 2007. This is indicated by an estimate of 0.063. However, in the time since the crisis, that relationship is no longer significant. The interacted term's estimate of -0.034 indicates a weaker relationship at 0.029, suggesting that median home value change preceding development no longer had a significant impact on a neighborhood's likelihood of receiving a NU-designed project following the crisis. Although this variable is only significant at the ten percent significance level in GLM 2, it is worth noting that its p-value drops below five percent when adding weights to the model.

ANOVA

The final step in this chapter is to run an ANOVA between GLM 1 and GLM 2. This step is conducted to determine if the models themselves significantly change in how they predicted NU development before and after the onset of the Great Recession and to determine the reliability of the results from GLM 2. The results of the ANOVA indicate a p-value of 0.142, suggesting that GLMs 1 and 2 are not significantly different. Thus, any changes in the geographies of New Urbanism in Atlanta's northern inner suburbs following the crisis are not yet significantly different from their pre-crisis geographies, and the results yielded from GLM 2 must be interpreted with great caution. Since the ANOVA did not reveal a significant change between the two GLMs, the changes observed in the *proximity to expressway access point* variable and the *median home value change* variable between time periods are not reliable. The results from GLM 2 may very well indicate a real change in the relationship between these variables and the likelihood of receiving a NU-designed project, but the non-significant results from the ANOVA do not allow me to make that assertion with confidence.

CHAPTER FIVE
DISCUSSION AND CONCLUSION

Discussion

GLM 1

This analysis provides some valuable insights into the geography of infill New Urbanism. Several findings overlap those of studies examining suburban redevelopment in other metropolitan areas, but others depart from the existing literature. Like with single-family home redevelopments in other inner-ring suburbs (e.g., Hanlon 2015), the higher the proportion of housing built before 1970 in Atlanta's northern inner suburbs, the more likely a neighborhood is to receive a NU-designed project. Besides drawing on previous research, this finding was expected for two reasons. First, myriad news reports have covered the tearing down of older, postwar apartment complexes, public housing, and single-family homes to make way for these new projects (Baca 2005; Markley and Sharma 2016; Quill 2014; Wiley 2013). Second, ARC's LCI program has specifically targeted *aging* districts and corridors in suburban Atlanta with redevelopment projects exhibiting smart growth and NU principles (Wang and Immergluck 2015).

This study also finds that neighborhoods with higher proportions of SFD housing units are less likely to receive NU development. This is also not terribly surprising since one necessary component of my definition for "New Urban-designed" includes compact density. From the perspective of developers, it may be politically easier to locate NU-designed projects in neighborhoods with larger proportions of attached or multi-family units, since higher-density zoning is already in place. In addition, homeowners in this region's sprawling neighborhoods, which tend to be dominated by single-family detached units,

have historically resisted high-density development (Lands 2009). In recent times, large coalitions of homeowners have attended city council meetings around the metro area to fight density in their communities. One Roswell Community Development meeting, which are not known for hosting a packed house, was filled with over 225 frustrated residents gathered to oppose a rezoning proposal for a 113-unit subdivision to replace the existing nine single-family units on 21 acres of land (Rosas 2015). NU developers and elected officials in charge of approving proposed projects, therefore, may feel pressure to bypass these neighborhoods in fear of NIMBY ("not in my backyard") pushback from these politically influential stakeholders. The corollary is that areas with residents who do not hold as much political clout, such as neighborhoods with many rental apartments, may be more likely to receive non-conventional or experimental developments like NU-designed projects as developers and officials seek to take the path of least resistance, so to speak.

As for non-significant housing variables that were excluded from the final models, several explanations account for their lack of influence on NU development. First, the share of housing built during the previous decade is not significant in any preliminary model run. The explanation for this, I suspect, is related to the fact that there are wide-ranging reasons why a given inner-suburban tract might not have much recent development. On one end, housing developers may bypass tracts where they do not perceive profitable opportunities due to older housing stock, slumping property markets, and poorer residents. On the other end, homeowners in wealthier established neighborhoods constructed during the 1970s and 1980s such as in East Cobb, Sandy Springs, and Dunwoody are more likely to successfully resist construction proposals in fear of added congestion or potentially adverse effects on property values (Lands 2009). Such variability obfuscates any impact a tract's proportion of recently constructed housing might have on NU development.

Second, the occupancy rate does not significantly influence a neighborhood's likelihood of NU development. Looking at Table 4.1, this is not

altogether surprising. There is not much difference in the occupancy rates between tracts with NU development and tracts without NU development for either time period. It is likely that the stronger effects of SFD composition, median household income, and racial/ethnic composition, which each had a notable degree of correlation with the occupancy rate, accounted for the modest difference observable in Table 4.1.

Finally, even though Table 4.1 indicates large differences between the homeownership rates of tracts receiving and not receiving NU-designed projects, this variable did not significantly influence a tract's likelihood of receiving NU development. This is almost certainly due to this variable's high correlation with the composition of SFD housing, which when calculated, produced an exceptionally high correlation coefficient of 0.97. Conceptually, it makes sense that neighborhoods with a higher proportion of attached units (e.g. apartments) would also have a comparably high proportion of renters. The SFD composition is included rather than the homeownership rate because model results indicate that the former variable has a stronger relationship with a tract's odds of receiving a NU-designed project. Because of this high correlation, though, neighborhoods with a large share of renters are more likely to receive NU projects, meaning that many residents living in rental units are likely to face rising rents, just as the tenant quoted from Marietta whose monthly rent rose by approximately $400 in just two years experienced (Headlee 2015). Although it would be reasonable to suspect that controlling for the proportion of renters in a tract may have taken away some of the effect some variables—such as the median household income and shares of the population that are black or Latino—had on a tract's odds of receiving a NU development, including the SFD variable captures much of the same information. Indeed, replacing the SFD variable with the homeownership rate variable yields nearly identical results, with the only notable difference being a slightly weaker relationship between the median household income and the likelihood of receiving a NU-designed project. However, although the median

household income variable's p-value increases from 0.43 to 0.56, the variable again becomes significant at the 5 percent level once adding weights to the model.

It is surprising that none of the locational variables are significantly associated with NU development. Looking at the maps in Figures 4.1 and 4.2, it would seem that NU-designed projects would be more likely to be inside tracts crossing activity centers and in tracts located within I-285. However, once the other variables are added to the model, any effect these locational variables have on NU development becomes negligible. NU development's weak relationship with expressway access points is explained by the changing geography of NU development across time periods. This is discussed in more detail in the following section. In the case of activity centers, this is no doubt due to the inclusion of the interaction term. Before this term is added to the model, the proximity to activity centers variable has a positive relationship with the probability of NU development at a significance level under 1 percent, but after the inclusion of the interaction term, the significant relationship disappears. As for the ITP/OTP variable, the weak relationship can be explained by the abundance of NU developments constructed outside the Perimeter. Many OTP municipalities—including Alpharetta, Duluth, Dunwoody, Kennesaw, Lawrenceville, Marietta, Norcross, Roswell, Sandy Springs, Smyrna, and Woodstock—have undertaken ambitious downtown redevelopment plans that incorporate NU principles.

Both Charles (2013) and Hanlon (2015) found single-family home redevelopment to positively associate with income in the inner suburbs of Chicago and Baltimore, respectively. However, this study finds the opposite relationship with NU (re)development in Atlanta's northern inner suburbs, lending support to linkages scholars have made between New Urbanism and gentrification (Busch 2015; Fraser et al. 2013; Gonzalez and Lejano 2009; Markley and Sharma 2016; Pyatok 2000). Specifically, poorer neighborhoods in my study area are more likely to receive NU-designed projects, and the high prices of these developments portend rising property values that may displace lower-income residents living nearby. Although threats of displacement may be

mitigated (though probably not eradicated) if NU developers designated affordable units for existing residents, none of the projects included in this analysis advertise that they include subsidized units.

The value-to-rent ratio does not significantly impact a neighborhood's likelihood of receiving a NU-designed project, even though its coefficient is positive and its p-value is fairly low at 0.156. The weakness of this relationship may be in part due to using census tracts as the unit of analysis. Tracts predominated by expensive owner-occupied housing, for example, may encircle a single low-rent apartment building in a peninsula arbitrarily jutting out of one of its extreme ends, and the data would show a high value-to-rent ratio. Although all variables in this analysis are subject to the modifiable areal unit problem (see Openshaw 1983), the value-to-rent ratio may be especially sensitive to this kind of bias, since the value-to-rent ratio does not account for vast differences that exist in many tracts between the number of rental units and the number of owner-occupied housing units.

Tracts with greater proportions of black residents and Hispanic residents are less likely to receive NU-designed projects, coinciding with the findings of Charles (2013). She concluded that this may be because in-movers to suburban redevelopments are not as attracted to racial and ethnic diversity as in-movers to central-city redevelopment projects supposedly are. I would agree that the history of (white) suburban homebuyers' aversion to diversity may partially explain why NU developers would bypass neighborhoods with high minority populations. However, considering the results of the model's interaction term, this explanation is incomplete. The interaction term shows a strong positive relationship for tracts with high Latino populations, but only if these tracts are in or near desirable suburban places with shopping, dining, and/or entertainment venues. Rather than indicating a market responding to preferences for diversity, this finding suggests that NU developers and suburban governments are not just targeting activity centers for redevelopment but are targeting activity-center neighborhoods *with* high Latino populations. This lends statistical support to the

case studies and news reports noting that NU-designed redevelopment has contributed to the gentrification of working-class Latino communities near Metro Atlanta's suburban downtowns. As such, the tenure security of a population with comparatively low access to personal automobiles who live near relatively accessible suburban locations may be in jeopardy at the hand of New Urban-designed projects.

Both change variables have weak relationships with NU development. The weak relationship for median home value change can be explained by how the effect this variable had on a tract's likelihood of receiving a NU-designed project changed between time periods. This is discussed in the following section. The change in the white population may not have been significantly related to NU development because it was moderately correlated with median household income, percent black, percent Latino, and median home value change. Thus, even though descriptive statistics show that tracts with NU lost a noticeably lower percentage of their white population during the previous decade compared to tracts without NU, this difference can be explained by these other factors.

GLM 2 and ANOVA

According to GLM 2, only two variables changed significantly in how they related to NU development: proximity to an expressway access point and change in median home value during the previous decade. The change from a significant (at 10 percent significance) negative relationship between a tract's proximity to the expressway and its likelihood of receiving NU development during the first time period to a non-significant relationship during the second time period may reflect a growing emphasis on locating more NU-designed projects in places with convenient highway access. More likely, though, this changing relationship is an outcome of a combination of new types of neighborhoods receiving NU development and coincidence. Referencing Figures 4.1 and 4.2, it can be seen that the vast majority of NU-designed projects during the first time period are in

tracts either within I-285 in DeKalb or in activity centers that happen to be away from highways, such as in Duluth, Marietta, Norcross, Smyrna, and Woodstock. It seems that the places promoting NU happened to be places that do not cross highways. Of course part of this is due to how census tracts are arbitrarily drawn, but it also may reflect the fact that early NU projects were often part of downtown redevelopment initiatives. And most suburban downtowns in this region have major highways running *around* them, not through them.

In the second time period, by contrast, many more projects pop up in tracts crossing the highway, such as in Cumberland and Town Center in North Cobb, Perimeter Center in Fulton and DeKalb, Northlake in DeKalb, and near North Point and Windward in North Fulton. Notably, ARC differentiates these types of activity centers from suburban downtowns. Whereas ARC categorizes suburban downtowns as "town centers," these other types are considered "regional centers," meaning they usually specialize in retail and/or office uses. In Garreau's (1991) terms, these regional centers may very well be considered "edge cities" (Garreau actually lists Cumberland and Perimeter Center as examples of edge cities), and as such, it is not surprising that they have been built up along expressways. What is notable here is that while suburban downtowns continue to use NU as a method for revitalization, regional centers seem to be an emerging target for NU practitioners. This is in line with proposals to use NU as a strategy to retrofit suburban malls and office parks, which tend to dominate the landscapes of edge cities (Dunham-Jones and Williamson 2011). Future research should explore the possibility of NU redevelopment moving from suburban town centers to regional centers.

During the first time period, tracts that experienced higher median home value change during the previous decade were significantly more likely to receive NU-designed projects. However, during the second time period, this relationship is no longer significant. This perhaps suggests that identifying where to construct NU projects has not relied as much on the outlook of local property markets following the housing crash. During the housing boom, NU developers targeted

neighborhoods with appreciating housing prices—much like conventional developers—since investing in these neighborhoods is typically safer. However, this metric may have less importance after the crisis as entrepreneurial governments offer more incentives to encourage the revitalization of flagging housing markets and as developers search for new neighborhoods that do not yet have NU projects. In sum, NU developers may be less selective and more adventurous in choosing where to locate their projects since the recession. Worth mentioning one more time, though, is that we must not rely too heavily on these results since the ANOVA indicated no significant differences between how GLMs 1 and 2 fit the data.

Although this analysis may suggest slight changes in NU's inner-suburban geographies before and after the crisis, the overall picture that is emerging is one of continuity. The results from GLM 2 and the ANOVA suggest that the geography of NU in Atlanta's northern inner suburbs has thus far remained fairly unchanged, at least at the census-tract level, despite the growing number of NU-designed projects since the housing crash. I offer three possible explanations for this. First, the small number of tracts with NU-designed projects within each time period (30 out of 271 and 36 out of 202) make establishing statistical significance especially challenging. An analysis with a larger study area, with more NU projects, and perhaps at a finer spatial scale may have yielded more significant results.

Second, in the earlier years of NU's implementation in this region, policymakers and developers may have targeted poorer neighborhoods for the purpose of revitalization, where, I argue, it was more politically feasible to introduce NU in its experimental phase. The history of NU in this region is still fairly young though, and following the crisis, developers are still, by and large, following the same geographic patterns. But as NU continues to gain more visibility, it is not difficult to image new geographies of NU that have not yet noticeably materialized. For example, more affluent homeowners in parts of the region—though certainly not in all of it (see Rosas 2015)—may eventually warm

to the idea of NU development being located nearby, which would allow developers a wider range of inner-suburban neighborhoods in which to construct these projects. However, with the second time period consisting of only the years spanning from 2008 to 2015, it is probable that my analysis has been conducted too early to detect NU's potentially changing geographies.

Finally, there is the possibility that a limited number of neighborhood types—at least as I have defined neighborhoods in this study—are suitable for NU development. In other words, there may be little reason to expect the geography of NU to change at all. For example, in Atlanta's northern inner suburbs, it may be that local officials and private developers are only interested in applying NU principles in neighborhoods that have older housing stock, lower shares of SFD housing units, lower household incomes, lower black populations, and larger Latino populations in activity-center neighborhoods. Hence, despite the changing ways developers and officials have looked at NU since the recession, perhaps their opinions on *where* to locate NU projects has not changed much.

Concluding Remarks

As more suburbs have been confronted with socioeconomic and racial/ethnic change in the years leading up to and following the housing crash, the prospect of suburban redevelopment along NU principles has gained increased attention from policymakers across the nation. Local officials from multiple municipalities have adopted infill NU as an entrepreneurial strategy to combat decline and to promote environmental sustainability (at least nominally). Yet, as Hanlon (2015) has noted, there is need for more analyses on the impact such redevelopment initiatives have on the communities receiving these projects. This thesis moves toward that goal by using statistical analysis to examine the geographies of infill NU in one metropolitan area before and after the recent crisis. Results suggest that NU-designed redevelopment initiatives may be

targeting neighborhoods with older housing stock, more attached housing units, lower household incomes, smaller shares of black residents, and larger Latino populations in neighborhoods near desirable shopping locations. As such, residents in these neighborhoods, especially renters, should keep a vigilant eye on announcements for new projects and be prepared to defend their communities if necessary. Also, proponents of sustainable development should critically assess how infill projects affect the communities where they are being constructed because the push for environmental sustainability in the suburbs may be jeopardizing the sustainability of certain communities.

Building from the groundwork laid by this study, I propose two paths for future academic investigation. First, my methods can be extended to examine NU's geographies in other regions. Whereas NU in Atlanta's northern inner suburbs may be employed as a revitalization strategy targeting Latino neighborhoods near activity centers, policymakers in places with different socioracial histories will likely experiment with NU in different ways. If NU is being employed to gentrify prime areas occupied largely by marginalized groups at a more systemic level, then it would be worthwhile to explore which groups in other regions live in targeted communities. In order to build a broader understanding of NU and its impacts, it will be imperative to understand NU within its many local contexts. Second, a closer (and more critical) look is needed into both the effects these projects have on the neighborhoods in which they are being constructed and where displaced residents are moving. As central cities continue to gentrify and as suburbs now follow down that same path via NU redevelopment, it will only become more critical to build a more complete understanding of NU's role in the dialectical relationships between (re)investment and disinvestment, affluence and poverty, and accessibility and isolation across metropolitan space.

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