2014

Local Environment of Neighborhood Naturally Occurring Retirement Communities (NORC) in a Mid-Sized U.S. City

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Journal of Housing for the Elderly

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Abstract

As the U.S. population ages, almost half of elderly householders have lived in their current home for more than twenty years and a significant majority wish to remain in their current residence or community for as long as possible as they age. Concern with how communities will cope with these trends has led to a growing interest in naturally occurring retirement communities (NORC), i.e. neighborhoods or housing complexes that house a concentration of older adults, and their potential to enhance efforts to support aging-in-place. In this paper, we examine the local built and social environment of neighborhood NORCs in Tallahassee, Florida, a low-density mid-sized city. We find that a large proportion of NORCs are located in neighborhoods with an urban form, or physical design, that is presumed to be less supportive of active aging and with poor access to amenities, such as grocery stores, pharmacies, and parks. Another substantial portion of NORCs are located in neighborhoods with some aspects of a supportive urban form. We also find that NORCs are over-represented in neighborhoods featuring low residential turnover and above average homeownership rates. This suggests a potential for collective action to facilitate aging-in-place even in neighborhoods thought not to have supportive physical environments.
Introduction

By 2030, the number of Americans over the age of 65 will dramatically increase to seventy-two million people, representing almost twenty percent of the U.S. population (Federal Interagency Forum on Aging-Related Statistics 2010). Many of these seniors will rely on their community residential setting, such as their current home and its surrounding environment, an assisted living facility, or an alternative housing option, to meet their physical and social needs as they age (Redfoot and Houser 2010; AARP Public Policy Institute 2010). As a result, interest in the local environments which best support the needs of an aging population is growing among scholars and practitioners in a variety of fields, including urban planning, social work, and health.

The growth in the elderly population requires not only more assisted living facilities and other alternative residential options, but also requires finding additional ways to improve support for older adults who wish to remain in their current home or community (AARP Public Policy Institute 2010). The elderly are the most residentially stable age group in the United States, indicated by the forty-eight percent of householders, aged sixty-five or older, who have lived in their current home for more than twenty years (Harrell and Houser 2011, p. 515). And, surveys consistently indicate that a significant majority of them wish to remain in their current home or community for as long as possible as they age, often known as aging-in-place (AARP Public Policy Institute 2006; Bayer and Harper 2000; Keenan 2010).

Concern about how communities will respond to these trends has led to a growing interest in naturally occurring retirement communities or NORCs, i.e. developments that are “not planned or designed for older people, but which over time come to house largely older people” (Hunter &
Gunter-Hunt, 1985, p. 4). The geographic scale of NORCs range from a small apartment complex to an entire neighborhood (p. 4). This clustering of older adults can facilitate the efficient and affordable provision of social and in-home health services, and the construction of infrastructure to support walking and the use of alternative transportation modes. This in turn may help older adults transition away from dependence on private motor vehicles. NORCs may emerge as a result of a significant number of householders aging-in-place within a development to which they moved as younger adults, or may form as older residents increasingly move to particular apartment buildings or neighborhoods.

Evidence is growing about the opportunities and challenges of supporting older adults in “vertical” NORCs, which are located in small-area, geographically bound, high-density residential environments, such as apartment complexes. Less is known about how to support aging-in-place in “horizontal” NORCs, which are low-density neighborhood settings predominantly consisting of single-family homes and other low-rise residences. The dense concentration of older adults in a tightly bound area characteristic of vertical NORCs may increase the likelihood of social interaction among residents as part of daily routines and provide greater economies of scale in social service provision, as compared to horizontal neighborhood NORCs (Bronstein and Kenaley 2010).

There is growing awareness however that the neighborhood environment plays an important role in making places more “livable”, “elder-friendly”, or “healthy”, for the elderly aging-in-place (e.g., Feldman and Oberlink 2003; Kihl et al. 2005; Alley et al. 2007; n4a 2007; Abbott et al. 2009; n4a 2011). A recent review of the literature on neighborhood environments and the health
of older adults finds evidence across a number of studies that neighborhoods with a more accessible built environment support greater levels of walking among older adults (Yen, Michael, and Perdue 2009, p. 457). Walking in turn is the most common form of physical activity among aging Americans (Barnes and Schoenborn 2003) and numerous studies have documented the benefits of regular physical activity for healthy aging (Pate et al. 1995).

The form of the built environment such as sidewalk and street connectivity for convenient and safe walking, public transit accessibility, mixed land uses for better proximity and accessibility to commercial and public activities, and a variety of housing options for older adults, are all important factors in aging well, in addition to services and social opportunities, for older adults (Howe 2012; Kochera, Straight, and Guterbock 2005). Previous research indicates that these physical features are more likely to be found in older neighborhoods developed prior to the 1970’s (Miles, Song, and Frank 2010; Song 2005). However, models of neighborhood change predict that some of these older neighborhoods may be less desirable (Temkin and Rohe 1996), as indicated by lower home values (Fitzpatrick and Logan 1985), and may present a challenging social environment for elderly residents, if the population becomes more diverse. Recent qualitative evidence indicates the potential challenges elderly residents may face, if their neighborhood experiences an influx of younger neighbors with a different cultural and socioeconomic background (Housel 2009).

The purpose of this research is to examine the built and social environment of neighborhood NORCs in a mid-sized city, Tallahassee, Florida, which is a prime example of an urban setting which consists predominantly of post-World War II low-density development and limited public
transit. We explore the extent to which the area’s existing neighborhood NORCs exhibit features of the built and social environment that support aging-in-place well. Neighborhoods vary considerably and not all of them provide the amenities for high-quality independent and healthy living among the elderly (Golant 2008).

Three research questions drive our exploration. First, are neighborhoods with a concentration of older adults, or neighborhood NORCs, more likely to display urban form features associated with “livability” and healthy communities than Tallahassee and Leon County’s neighborhoods in general? Second, are NORCs in neighborhoods with a supportive urban form more likely to provide other features, such as better access to commercial establishments, grocery stores, and parks, that facilitate aging-in-place well as compared to NORCs in neighborhoods with a less supportive urban form? Third, to what extent do NORCs in neighborhoods with a supportive urban form also feature aspects of the social environment that may benefit or undermine the health and well-being of older residents? The social environment includes factors such as economic deprivation, mix of household types, residential stability, and homeownership.

In this study, we do not test whether the neighborhood built or social environment influences the likelihood of aging-in-place. Elderly householders’ decisions to remain in their current home or move is influenced by a variety of factors, including their health, marital status, location of children, and the appropriateness of their current home (Erickson et al. 2006; Choi 1996). Exploring the extent to which the neighborhood built and social environment influence residential decisions is beyond the scope of this paper, but is important to explore in the future.
Background

Active aging and the built environment

In response to demographic trends showing the rapid aging of America, there has been a growing emphasis over the past decade on helping create and retrofit neighborhoods that are more age friendly and therefore more sustainable and livable. Such neighborhoods typically feature an urban form that supports pedestrian mobility and social interaction, accessibility and connectivity to services and amenities, safety, and social diversity (Talen and Koschinsky 2011; Miles, Song, and Frank 2010; Miles and Song 2009). The physical characteristics of this form are referred to as traditional features of the built environment, including compact development; sidewalks, short blocks, connected streets, and other features to promote walkability; a mixture of residential and commercial land uses within the community to meet the daily needs of residents; a mixture of housing types to address a diversity of household incomes and needs; and public transit (NRDC 2012; Congress for the New Urbanism 1996). These characteristics are in contrast to typical suburban physical features now criticized by many current planners, including cul-de-sacs and the separation of residential and commercial land uses, which were initially designed to improve the safety and privacy of residents within their neighborhood (Southworth and Ben-Joseph 1995; Miles-Doan and Thompson 1999; Duany, Plater-Zyberk, and Speck 2000).

Traditional urban features are thought to support ‘active aging’ and enhance mobility and accessibility among the elderly, especially as their ability to drive declines. ‘Active aging’ refers to “the desire and ability of older adults to integrate physical activity into daily routines, such as walking for transportation, exercise, or pleasure. Active aging may also include engagement in economic or socially productive activities…” (Michael, Green & Farquhar, 2006, p.734). A
recent literature review finds that elements of urban form such as housing density, street connectivity and land-use diversity are associated with higher levels of walking across a number of studies (Yen, Michael, and Perdue 2009). Furthermore, when neighborhoods include a mix of commercial and residential land uses, residents are more likely to live near a variety of desirable destinations, which has been found to encourage physical activity. Close proximity to department stores, grocery stores, and shopping centers is associated with greater physical activity among the elderly in several studies (King et al. 2003; Cao, Mokhtarian, and Handy 2010; Michael et al. 2006), particularly walking for shopping, personal services, and other errands (Ahrentzen 2010; Patterson and Chapman 2004).

Two studies in Portland, Oregon however did not find a significant difference in walking frequency between older residents living in urban neighborhoods considered to be more livable and those living in suburban-style neighborhoods (Patterson and Chapman 2004; Nagel et al. 2008). One found that a greater number of commercial establishments in a neighborhood encouraged more walking only among those who already showed some walking activity (Nagel et al. 2008). The other, a study focusing on women over the age of 70, found that recreational walking was equally common in suburban-style neighborhoods and more urban-style neighborhoods, but that the urban women in their sample walked for more reasons than the suburban women, and they routinely walked to more community services (Patterson and Chapman 2004).

Other studies find that the physical attractiveness of an area, such as its cleanliness, appearance of buildings, and safety features, are also important determinants of the non-auto mobility of older adults (Ahrentzen 2010; Michael, Green, and Farquhar 2006; Cunningham and Michael 2004).
Given the significant length of time that typical elderly householders, particularly homeowners, have lived in their current residence (Harrell and Houser 2011; Aurand and Reynolds 2013), a substantial proportion of neighborhood NORCs are likely to be found among older neighborhoods, with traditional features of urban form, built decades ago. In a study of Portland and Atlanta, Miles, Song, and Frank (2010) found that neighborhoods built before the 1970’s were more likely to exhibit traditional features. Research by Song (2005) in five urban counties indicates that, over time, pedestrian accessibility to commercial land uses and bus stops has been declining and distances from homes to stores has been increasing. Presumably as a result of seniors aging-in-place in older neighborhoods, Giuliano (2004, p. 201) found that the elderly are more likely to reside within half a mile of a transit stop than non-elderly.

However the senior population is rapidly growing in suburban locations and it is therefore likely that some proportion of NORCs will be found in suburban neighborhoods with a built environment that is not as supportive of active aging (Golant 2009). Frey (2010, p. 85) suggests that “baby boomers may be considered the first suburban generation” as they, as well as their parents, are more suburbanized than younger metropolitan age groups. During the 2000s, the number of metropolitan suburban seniors aged 65 years and older grew by more than fifteen percent, which is significantly higher than the four percent growth in seniors living in primary cities. During this same time period, the number of suburban pre-seniors between the ages of 55 and 64 grew by more than forty-seven percent, representing the fastest growing age group in metropolitan suburbs (Frey 2010, p. 86). This age group will dramatically increase the number of suburban seniors in the coming years. Among the hundred largest U.S. metropolitan areas,
seventy-one percent of residents over the age of 65, as well as between the ages of 55 and 64, live in a suburb.

*Active aging and the social environment*

Given the length of time that many seniors have lived in their current residence, the residential environment around them may be changing or has changed – physically, demographically, and economically. Ecological models of neighborhood change posit that economic and social factors shape the spatial organization of neighborhoods (Temkin and Rohe 1996; Fitzpatrick and Logan 1985). They assume that successively older neighborhoods are of successively lower quality with regard to housing and infrastructure. When new residential neighborhoods are created, they attract households with the income and wealth necessary to occupy the new housing found within them. Some of the housing units these households leave behind are occupied by households who previously resided in a slightly older neighborhood, initiating a process of moves among neighborhoods of successively older age. Berry (1976, p. 419) describes this process as “when new construction proceeds at a rate exceeding the rate of growth of demand, downward pressure will be exerted upon housing prices in successively older neighborhoods, and neighborhood succession will take place as social groups filter up the scale of housing age and quality.”

A potential result of these neighborhood transitions is a demographic and economic shift among neighborhoods, if successively older neighborhoods consist of successively lower quality housing. Because elderly householders are more likely to have lived longer in the current home, and in older homes, than younger householders (Aurand and Reynolds 2013), we would expect
some of them to be subjected to neighborhood change. Older communities with a large proportion of elderly may be less desirable than more recently built communities, as indicated by lower home values and rents (Fitzpatrick and Logan 1985), and potentially as a result, consist of a more socially diverse population among its younger, more recent households. Studies of America’s suburbs indicate that the oldest, inner-ring suburbs, which are home to growing numbers of elderly, are more likely to have experienced economic decline than newer communities (Hanlon 2008). At the same time, they have become more racially diverse (Puentes and Warren 2006).

These changes in the social environment may influence active living among the elderly. Qualitative studies highlight the potential challenges long-term elderly residents may face as new, younger neighbors with different social and economic backgrounds, and different behaviors, move to their neighborhood (Housel 2009; Mason 2005). These challenges, including a greater fear of illicit activities occurring in the neighborhood, cause some long-term elderly residents to alter their physical behavior, such as changing their walking behavior and staying closer to home (Ross 2000; Ross and Mirowsky 2001).

*Aging-in-place by choice?*

Some elderly populations may not be voluntarily aging in place but rather are unable to move out of their neighborhood environment. Black, elderly, and low-income households in particular face constraints on their residential mobility options. Black householders are less likely than white householders to change residences in a given year, regardless of their preferences (Crowder 2001; South and Deane 1993). Among older householders, Sabia (2008) found that
black homeowners and those with less education were less likely to change residences, keeping constant other explanatory factors such as structural deficiencies in the home. In an older study, Burkhauser, Butrica, and Wasylenko (1995) found that elderly homeowners in distressed neighborhoods were twenty-six percent less likely to move than elderly in “secure” neighborhoods, and the difference was even more significant among extremely low-income elderly homeowners (p. 375 and 376). Based on these mobility studies, we expect that some neighborhood NORCs, particularly those of lower income, are the result of elderly householders who age-in-place because their residential options are constrained.

Neighborhood stability studies also indicate that some seniors may be stuck in place, rather than aging-in-place by choice. Neighborhood stability, often measured by the percentage of residents who have lived in the neighborhood for more than five years and the homeownership rate, has been found to have different impacts in affluent neighborhoods as compared to poor neighborhoods. Cagney, Browning, and Wen (2005) found that neighborhood stability was negatively associated with self-rated health among elderly individuals, but that the relationship was positive in affluent neighborhoods. Similarly, Ross, Reynolds, and Geis (2000) concluded that residential stability in affluent neighborhoods was associated with low psychological distress, but with higher distress in poor neighborhoods. Simply put, affluent households have the resources to move to a more favorable location, if their current neighborhood does not give them satisfaction (Schwirian and Schwirian 1993).

**Methods**

*Location*
Tallahassee, Florida, a typical post-World War II mid-sized city and the only incorporated city within Leon County, is home to 176,843 of the county’s 270,409 residents. Established in 1825, the city did not see substantial growth until the mid 20th century. Only six percent of its current housing units were built prior to 1950. Another thirty-six percent were built between 1950 and 1980. The city’s fastest growing decades, with regard to housing, were the 1980’s and 1990’s during which more than forty percent of the current housing stock was built.

Measuring Urban Form

The neighborhood built environment consists of multiple dimensions, each potentially represented by a range of measures. Therefore, we first classify neighborhoods into a typology based on a number of physical characteristics of their urban form, using parcel-level and street network data from the Tallahassee-Leon County GIS program and block-group-level data from the 2006-2010 U.S. Census Bureau’s American Community Survey (ACS). Any delineation of neighborhood boundaries is subject to error, given the difficulty in identifying where some neighborhoods end and others begin. Based on data considerations, we use census block-groups to represent neighborhood boundaries. Block-groups contain between 600 and 3,000 people and are often thought to best represent a resident’s immediate neighborhood. We decided not to use census tract boundaries to define neighborhoods because we would run the risk of covering up important variation in some dimensions of urban form within the tracts (Song and Knaap 2004). We also decided against using census blocks to represent neighborhoods because key ACS variables were not available at the block level. We acknowledge that residents may perceive the geographic scope of their neighborhood differently from block-group boundaries. Future studies exploring residents’ perceptions therefore should consider using resident-defined neighborhoods.
‘Livable communities’ is a movement that is raising awareness of an urban form that is thought to allow for active aging. Similar to the urban planning concepts of New Urbanism and Smart Growth, a livable community is defined as one that is compact and consists of mixed-use development; a convenient street design, which allows for physical activity and pedestrian access to shopping, open space, and other amenities; a variety of housing types; and public transit options (Kochera, Straight, and Guterbock 2005; Kihl et al. 2005; Alley et al. 2007, p. 15). We calculated twelve measures, which have been used in previous research (Song 2005; Miles and Song 2009; Miles, Song, and Frank 2010), to operationalize these features of urban form.

The first six measures capture the degree of mixed land use within neighborhoods. A commonly stated feature of post-World War II urban development is its segregation of land uses, where residential uses are separated from commercial and other land uses (Krizek 2003). However, a review of the academic literature on travel behavior indicates that a diversity of land uses is associated with fewer vehicle miles traveled and more walking (Ewing and Cervero 2010). The six measures of land use are acres of commercial land, number of small-scale stores and restaurants, acres of parks and outdoor recreational space, acres of single-family residential land, acres of multi-family residential land, and acres of agricultural land.

Two measures capture the street connectivity within neighborhoods, which is a significant feature of street design. The first measure of street connectivity is the ratio of intersections to the total number of intersections plus cul-de-sacs. A higher ratio indicates better street connectivity (Song 2005). Cul-de-sacs, which disconnect neighborhood streets from one another, are thought
to discourage walking and increase reliance on the automobile. Meanwhile, a greater number of intersections indicate shorter blocks and a grid-like street pattern, which provides greater street connectivity and, in turn, encourages walking (Krizek 2003; Song 2005). The second measure is street density, or the miles of neighborhood streets per square mile of land.

Two measures capture the variety of housing options within neighborhoods. A neighborhood with a variety of housing types is thought to provide households of different incomes with housing options (Aurand 2010), as well as provide housing alternatives for older adults who may wish to give up their single family home, but remain in the same community in a different type of housing unit (AARP Public Policy Institute 2010). The two measures are the number of single-family housing units and the number of housing units in multi-family structures (apartment buildings).

Two additional variables capture other important neighborhood features. The first measure is the median lot size of single-family homes, as a measure of residential density. Higher density encourages walking, as well as makes the provision of supportive services to older adults and public transit more efficient (Rodriquez et al. 2009; Kochera, Straight, and Guterbock 2005). The second measure is the number of bus stops within neighborhoods. Public transit may reduce the dependency on automobiles and provide older adults with more options for travel.

Table 1 provides the descriptive statistics for the twelve measures of urban form. Similar to Miles and Song (2009), we use factor analysis to combine these measures into a smaller number of physical dimensions from which to describe the neighborhoods. The six dimensions are
ruralness, high-density dwellings (multifamily structures), street connectivity, commercial activity, mixed land use, and single-family residential. We then use cluster analysis to categorize neighborhoods based on these dimensions.

Insert Table 1.

We identified six neighborhood types from our analysis (see Figure 1), which we validated with observations of publicly available maps and field visits to a selection of neighborhoods. These types are:

Type 1 – Urban Commercial, with Some Residential: These block groups are characterized by a significant number of small-scale commercial establishments and bus stops. They typically have high street connectivity. They also include a mix of single-family and multi-family housing. Slightly more than thirty-five percent of the housing stock in a typical urban commercial neighborhood is single-family, detached homes with a median lot size smaller than the suburban and rural neighborhood types (Table 2). Most of these neighborhoods are located in the urban core (Figure 1), but a few represent hubs of economic activity within more residential areas outside of the core.

Type 2 – Urban Mixed Residential: These block groups are characterized by high street connectivity indicative of an urban environment, but with far fewer small-scale establishments and bus stops. These block groups include a mix of housing types, but single-family homes are usually more prevalent than other housing types. Slightly more than seventy percent of the housing stock in the typical urban mixed residential neighborhood is single-family, detached dwellings, also with a smaller median lot size (Table 2). Figure 2 is an example of such a neighborhood. Many of these neighborhoods are located just beyond the urban core.

Urban commercial and urban mixed residential neighborhoods are older than the others. The median year built for housing in these neighborhoods is 1967 and 1973, respectively (Table 2). As found in other studies, an older era of development is a good proxy for the more traditional urban form characteristics of such neighborhoods, such as higher density and connectivity and a mix of residential and commercial land uses (Miles, Song, and Frank 2010; Song 2005; Berrigan and Troiano 2002).

Type 3 – Rural: These block groups consist of parcels that are predominantly zoned for agricultural use, as well as large lot single-family dwellings. They have low street connectivity.
Type 4 – Rural Developments: These block groups are characterized by clustered rural residential development that is much more dense than rural block groups. They typically have a low street connectivity. These clustered developments provide a mix of housing types, including mobile homes and apartments.

Type 5 – Suburban, Single Family: These residential block groups are characterized by a housing stock that is predominantly single-family detached-homes, low street connectivity, and very few small-scale commercial establishments or restaurants. The typical block group has no bus stops. Figure 3 is an image of Piney Z, a suburban, single family neighborhood in Tallahassee.

Type 6 – Multifamily Residential: These block groups are characterized by a housing stock that is predominantly in multifamily structures. The typical block group includes a small number of bus stops and small-scale commercial establishments. As a whole, they exhibit lower street connectivity than urban commercial and urban mixed residential neighborhoods. Figure 4 provides an example of a multifamily residential neighborhood dominated by an apartment complex, with little street connectivity.

Social Features of the Neighborhood

To examine neighborhoods’ social features, we use a variety of socioeconomic measures from the ACS, including household income distribution, race, the percentage of households consisting of a single-parent with children, and the homeownership rate. We calculated the percentage of households who moved-in twenty or more years ago, as well as the percentage of those who moved-in fewer than five years ago, as a measure of neighborhood stability. These social variables capture the economic status and residential stability of the neighborhood, which are indicators of potential collective efficacy. Collective efficacy is the perception of mutual trust
among residents that results in them acting on behalf of one another (Sampson, Raudenbush, and Earls 1997; Cohen, Inagami, and Finch 2008). We then identified appropriate neighborhoods as low income, high income, lower than average homeownership, minority, high percentage of single-parent households, high residential turnover, and high long-term residency.

To determine the income distribution within neighborhoods, households with less than $25,000 of income were considered low-income. $25,000 was the upper limit of the 2006-2010 ACS income category that included the current U.S. poverty threshold for a family of four. Households with more than $100,000 of income, or four times the low-income threshold, were considered high income. Households with income between $25,000 and $100,000 were considered lower-middle or upper-middle income. A neighborhood was low income or high income, if either of the respective income groups consisted of the largest percentage of the neighborhood’s households. We determined a neighborhood to have lower than average homeownership, if the homeownership rate was less than 65.1%, the national average according to the 2010 U.S. Decennial Census.

Neighborhoods were identified as minority neighborhoods, if the percentage of the population that was minority was above the 75th percentile. Similarly, neighborhoods were considered to have a high percentage of single-parent households if the percentage of households with a single-parent was greater than the 75th percentile. Neighborhoods were designated as ‘high residential turnover’ or ‘high long-term residency’ if the percentage of householders who had moved-in less than five years ago or moved-in more than twenty years ago was greater than the 75th percentile, respectively.
Identifying Neighborhood Naturally Occurring Retirement Communities (NORCs)

Using data from the U.S. Decennial Census, we identify NORCs at the block-level, which is the smallest geographic unit within the U.S. Census. We then locate these blocks within their respective neighborhoods. We identify NORCs by block, rather than block-group, because aggregation to the block-group eliminated many of the NORCs seen at a finer geographic scale. Even though NORCs are identified at the block level of geography, we use block-groups to describe their residential environment. Residents likely consider their neighborhood as extending beyond their immediate block. Also, more data are available for block-groups than for individual blocks.

We define NORCs as blocks in which at least forty percent of the householders, or heads of household, are sixty years of age or older. We removed blocks with fewer than 15 total households from our analysis. Therefore, our NORCs consist of at least six heads of household who are sixty years of age or older. We identified 385 blocks that met our definition of a NORC. Figure 5 shows the distribution of them by neighborhood type.

Analysis

We use a series of descriptive tables to answer our research questions. First, we describe the distribution of neighborhoods across the six neighborhood types to answer the question: Are neighborhoods with NORCs more or less likely to contain features of urban form associated with
livability and healthy communities? Second, we compare access to commercial establishments, grocery stores, and parks for NORCs by neighborhood type to explore whether neighborhoods with a supportive urban form provide other amenities for aging-in-place well. Finally, we examine the neighborhood social environments of NORCs and consider whether neighborhoods with supportive urban form also feature aspects of the social environment that may undermine or benefit the health and well-being of older adults.

Findings

Our study finds that thirty percent of Tallahassee and Leon County householders over the age of 60 years live in a NORC (Table 3). Understanding the residential environment of these blocks is important, because not only do they contain 7,645 elderly households, but this population stands to benefit from the economies of scale that organizations and local jurisdictions may be able to take advantage of to support active aging among concentrations of neighboring elderly households.

Our study also finds that neighborhoods that contain NORCs are over-represented in the suburban single family and rural categories, two neighborhood types that are less supportive of active aging, as well as in the urban mixed residential category, a neighborhood type that has more of the urban form features that are supportive of active aging, compared to Tallahassee and Leon County neighborhoods in general. Twenty-four percent of neighborhoods with NORCs fall in the suburban single family category, compared to seventeen percent of all neighborhoods in the county, and nine percent of neighborhoods with NORCs are rural (Table 3). Another twenty-eight percent of neighborhoods with NORCs fall in the urban mixed residential category.
compared to twenty-six percent of all county neighborhoods. *Suburban single family* neighborhoods have the low residential density and street connectivity associated with low levels of walking and casual social encounters, and few housing alternatives for older adults wanting to move to a smaller house in the same area. *Rural* neighborhoods have even lower residential density with low street connectivity. In contrast, neighborhoods classified as *urban mixed residential* have the higher street connectivity associated with ease of walking and casual social encounters, and a somewhat more diverse housing mix. Although these neighborhoods have few commercial establishments and bus stops within them, their location near the urban core in close proximity to areas classified as *urban commercial* provides them greater access to amenities than more suburban places enjoy.

Twenty-five percent of neighborhoods with NORCs are in the *rural developments* category, which is characterized by low street connectivity and clusters of single-family homes, mobile homes or apartments that are more dispersed than in *suburban* neighborhoods (Table 3). An additional five percent of neighborhoods with NORCs are *urban commercial* neighborhoods, the category associated with high street connectivity and a larger number of commercial establishments and bus stops; features associated with high levels of walking, mass transit use, and casual social encounters. These neighborhoods also have a greater mix of housing.

Neighborhoods with NORCs are under-represented in the *multifamily residential* category, which may be the result of Tallahassee’s population consisting of a large number of university students to whom many apartment complexes are marketed. These neighborhoods typically contain at least some aspects of an urban form supportive of active aging. Although these
neighborhoods exhibit lower street connectivity than urban neighborhoods, they also include more bus stops and small-scale commercial establishments than all but the urban commercial areas. Eight percent of neighborhoods with NORCs are located in multifamily residential neighborhoods.

**Insert Table 3.**

As shown in Table 4, NORCs located in neighborhoods with the least supportive urban form also provide poor access to other amenities. NORCs in suburban single-family neighborhoods not only have few neighborhood commercial establishments and bus stops, but are more than a mile from the nearest park, large grocery, pharmacy, and convenience or small grocery store, on average. NORCs in rural developments are more than two miles from each of these, on average, with the exception of the nearest park which is an average of one mile away. NORCs in rural neighborhoods have the longest distance to any of these amenities. For example, the typical rural NORC is approximately four miles from the nearest large grocery store or pharmacy and almost three miles from the nearest convenience store. Rural neighborhoods with NORCs cover a much larger area of land compared to the other types of neighborhoods so the fact that NORCs in rural areas have more small-scale commercial establishments in their neighborhood than NORCs in suburban single-family and rural developments neighborhoods is misleading. These establishments in rural neighborhoods are not convenient to all residents of the ‘neighborhood.’

NORCs in urban commercial neighborhoods, which arguably provide the most supportive urban form for active aging, have the closest proximity to amenities. In addition to featuring a far
greater number of commercial establishments and bus stops within the neighborhood. NORCs in
neighborhoods classified as *urban commercial* are located, on average, only slightly more than
half a mile from the nearest park, pharmacy, and convenience store (Table 4). This distance
represents a ten minute walk for a typical person walking three miles per hour. In contrast, the
average distance from NORCs in *urban mixed residential* neighborhoods to a convenience store
or pharmacy is slightly more than one mile and eight-tenths of a mile, respectively and these
neighborhoods only have about four bus stops on average. Even in Tallahassee’s urban
neighborhoods, NORCs are not typically within walking distance of a large grocery store. The
average distance to the nearest grocery store is almost three-quarters of a mile in *urban
commercial* neighborhoods and more than a mile in *urban mixed residential* neighborhoods.

NORCs located in *multifamily residential* neighborhoods have somewhat better access to
amenities than those in *urban mixed residential* neighborhoods, but not as good as those in *urban
commercial* neighborhoods. They have more bus stops in their neighborhood and are in slightly
closer proximity to a grocery store and pharmacy than NORCs in *urban mixed residential*
neighborhoods. However, they are typically further from the nearest park and have a slightly
less supportive urban form, because of lower street connectivity.

**Insert Table 4.**

As for the social environment, NORCs are under-represented in economically disadvantaged, as
well as residentially unstable, neighborhoods and over-represented in economically strong,
residentially stable neighborhoods. Even though twenty-one percent of Tallahassee and Leon
County’s neighborhoods are low-income, only five percent of NORCs are in them (Table 5). Only four percent of NORCs are in neighborhoods with high residential turnover. NORCs are also under-represented in minority neighborhoods and those with a high percentage of single-parent households.

**Insert Table 5.**

Furthermore, even though only eleven percent of Tallahassee and Leon County’s neighborhoods are classified as high income, twenty-three percent of NORCs are located in high income neighborhoods (Table 5). And more than forty-five percent of NORCs are found in the quarter of all neighborhoods that have high long term residency, and only twenty-six percent are located in the fifty-six percent of neighborhoods that feature below-average homeownership rates. Previous studies find that length of residency and home ownership decrease the likelihood that residents will move (Sommers and Rowell 1992; Miller et al. 1999; Oldakowski and Roseman 1986). Therefore our findings suggest a potential for strong neighborhood attachment among NORC residents.

Table 6 provides the distribution of NORCs across socioeconomic indicators within neighborhood types. *Urban commercial* neighborhoods, which provide the most supportive urban form for active living and closest proximity to amenities, are less likely to provide a residentially stable environment. With the exception of NORCs in *multifamily* neighborhoods, those in *urban commercial* neighborhoods are the most likely to be in a neighborhood with high residential turnover and least likely in a neighborhood with high long-term residency. With
regard to neighborhood income, the NORCs in urban commercial neighborhoods are diverse. They are the most likely NORCs to be in a low-income neighborhood, but are also the most likely NORCs to be in a high income neighborhood. Interestingly, only one high income urban commercial neighborhood exists, but it contains seven blocks defined as NORCs. This neighborhood has a higher than average homeownership rate. This urban commercial neighborhood is unique in that it sits to the north of the urban core and contains a housing stock predominantly of single-family homes. The eastern portion of this neighborhood, however, is a commercial area that contains a large number of commercial establishments.

Insert Table 6.

Urban mixed residential neighborhoods, which also provide elements of a supportive urban form but with slightly less accessibility to amenities, are more likely to provide NORCs with a residentially stable environment. Fifty-nine percent of NORCs in urban mixed residential neighborhoods are in neighborhoods with high long-term residency, the highest percentage of all six neighborhood types (Table 6). Only thirty-six percent of NORCs in this neighborhood type are located in neighborhoods with below average homeownership rates. These indicators of potential neighborhood attachment suggest that aging-in-place initiatives in urban mixed residential neighborhoods are more likely to benefit from collective efficacy than efforts in urban commercial neighborhoods, where NORCs are less likely to be found in residentially stable neighborhoods. Similar to the concentration we found in urban commercial neighborhoods, all twenty-two NORC blocks in high-income urban mixed residential
neighborhoods are concentrated in only three neighborhoods, which also have higher than average homeownership rates.

More than half of the NORCs in our study are located in rural, rural developments, and suburban single family neighborhoods, which do not provide an urban form supportive for active living, but are more likely to provide a residentially stable environment. All of the NORCs in rural neighborhoods and eighty-two percent of those in rural developments are located in neighborhoods with above average homeownership rates (Table 6). Also, half of NORCs in rural and rural developments neighborhoods are in neighborhoods of high long-term residency (Table 6). These social factors, as well as the physical clustering of housing typical in rural developments neighborhoods (as opposed to rural neighborhoods), suggest that many NORCs in rural developments potentially have strong collective efficacy which would support aging-in-place initiatives.

Suburban single-family neighborhoods also provide a potentially supportive social environment for aging well, as indicated by residential stability. Thirty-nine percent of NORCs in suburban neighborhoods are in neighborhoods with high long-term residency (Table 6). Ninety-three percent of suburban NORCs are in neighborhoods that have an above average rate of homeownership. Only one suburban NORC is in a neighborhood of high residential turnover. In addition to these indicators of neighborhood attachment and residential stability, homes in suburban neighborhoods are often clustered within subdivisions, which may provide for a common perception of neighborhood boundaries and a group identity among residents, which may lead to a greater sense of community (Bronstein and Kenaley 2010).
Existing studies suggest that the effect of residential stability may be different between low-income and affluent neighborhoods. It may have positive effects on individual well-being in affluent neighborhoods, but negative effects in low income neighborhoods, because residents of the latter may not have resources to move to a different environment and are therefore not aging-in-place by choice (Ross, Reynolds, and Gei 2000). Studies also suggest that the mutual trust that facilitates collective efforts on behalf of the population as a whole is less likely to be found in neighborhoods with a high level of economic disadvantage (Sampson, Raudenbush, and Earls 1997). When categorized by both long-term residency and income status, almost thirteen percent of NORCs are located in neighborhoods where residential stability is likely to have positive effects on individual well-being, i.e. that are high income with high long-term residency, while less than one percent are in neighborhoods that are low income with high long-term residency and therefore less likely to reap the benefits of residential stability at the neighborhood level (Table 5).

Table 6 shows that NORCs in neighborhoods with high-income, high long-term-residency are found in urban mixed residential, rural developments, and suburban single family neighborhoods. Almost twenty-five percent of NORCs in rural developments are in high-income, high long-term-residency neighborhoods, further evidence that while rural developments do not provide convenient access to amenities, some may provide a beneficial social environment in which older adults are choosing to age-in-place. Interestingly, these twenty-two NORC blocks in rural developments are concentrated in four neighborhoods. The NORCs in high income, high long-term residency urban mixed residential and suburban
neighborhoods are similarly concentrated in two and one neighborhood(s), respectively, indicating that an aging-in-place initiative could benefit from potential collective efficacy, as well as the economies of scale of a greater geographic concentration of older adults. The only NORCs in low-income, high long-term-residency neighborhoods are found in rural developments. These few NORCs are in neighborhoods that provide older adults with poor access to amenities, as well as have social characteristics shown to be negatively associated with well-being.

Discussion

The purpose of this paper was to examine the physical and social environments of NORCs in a mid-sized, low-density city. We found that even Tallahassee and Leon County NORCs located in urban commercial neighborhoods do not necessarily have a diverse mix of destinations favored by older adults, such as convenient access to grocery stores, other stores, restaurants, a library, post office, church, or community center (Nagel 2008, p. 462). This lack of convenient access even in the central core is typical of low-density cities predominantly developed after World War II. Future research is needed to learn of walking levels among older adults in the different neighborhood types found in low-density cities and explore strategies designed to support healthy aging-in-place. Physical activity is an important determinant of health at all ages. Therefore, neighborhood initiatives that build on the strengths of the physical and social neighborhood environment are an important health resource for residents.

Our six neighborhood types capture more variation in urban form than previous neighborhood studies regarding older adults (Satariano et al. 2010; Cao, Mokhtarian, and Handy 2010;
Ahrentzen 2010; Lynott, McAuley, and McCutcheon 2009). Future research should determine whether the perceptions of older adults differ across types of neighborhoods regarding the importance of neighborhood-based opportunities for physical activity and social encounters, as well as accessibility and attractiveness. For example, are older residents of NORCs in urban mixed residential neighborhoods more satisfied with their neighborhood-based opportunities than those in suburban single-family neighborhoods or rural developments? What is the role of the neighborhood environment in the level of residential satisfaction among older adults? Erickson et al. (2006) found that lower levels of neighborhood satisfaction were a predictor of an older adult considering a move, but not related to an actual move, suggesting that other factors beyond neighborhood satisfaction drive residential mobility among older adults.

There is a growing interest in how best to support active living among older adults. We think that neighborhoods, particularly those with NORCs, are a useful focus for such efforts. Different types of neighborhoods with NORCs will require different strategies, pursued at different scales, depending on their physical and social environment, as well as the capacities and needs of the older adults themselves.

By looking further at both the urban form and social environment of neighborhoods, we can identify locations that may be particularly conducive to certain kinds of efforts to support active aging and aging-in-place. For example, some neighborhoods may be more conducive to community-based, collective efforts, such as the Village concept, than other neighborhoods. The Village model typically follows a grassroots, member-based model of organization, which is initiated and overseen by residents (McDonough and Davitt 2011). Funding for the services
provided to members, such as transportation and recreational activities, often comes from membership dues and charitable donations (Greenfield et al. 2013). Further evidence is needed comparing the extent to which residents of different neighborhood environments are able to generate the collective efficacy and financial support necessary for an approach like the Village concept. Other neighborhoods may be more conducive to a NORC Support Services model, which typically follows a case management and social services model predominantly supported by social services agencies with funding from government and foundation grants (Greenfield et al. 2013). These programs may be more successful than the Village concept in neighborhoods with fewer internal financial resources and less collective efficacy. Other neighborhoods possibly should rely more on city-wide social and transportation services, given low indicators of collective efficacy.

Modifications to physical features of a neighborhood to support active aging often benefit a larger population than just the elderly. Zoning changes could allow for commercial activities that are currently prohibited, as well as allow for a greater diversity in housing types to provide residents with more housing options. Meanwhile, sidewalk investments could make walking safer and more attractive for all ages.

Given the large number of neighborhoods with a physical form that is not supportive of active aging, retrofitting all of them with public infrastructure investment is not feasible. Further research is necessary to develop criteria for public investment decisions. For example, sidewalk investments may provide greater benefits in urban mixed residential neighborhoods, because
they are more likely to connect residents to other destinations, than in clustered rural developments.

This paper highlights the range of neighborhood environments in which NORCs are located, recognizing significant differences in their physical and social characteristics. Future research should build on these descriptions by focusing on older adults’ perceptions and preferences for these environments, as well as by focusing on the neighborhood factors that result in successful neighborhood interventions in different neighborhoods with different characteristics. Through this knowledge, we can better support active aging among residents who wish to age-in-place.
References


Figure 1 – Neighborhood Types in Tallahassee and Leon County
Figure 2 – Urban Mixed Residential Neighborhood

Figure 3 – Suburban, Single Family Neighborhood
Figure 4 – Multifamily Residential Neighborhood
Figure 5 – NORCs Distribution and Neighborhood Type
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mixed Land Uses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres of commercial land</td>
<td>42.16</td>
<td>65.93</td>
<td>0.00 – 480.12</td>
</tr>
<tr>
<td>Number of small-scale stores and restaurants</td>
<td>5.13</td>
<td>8.43</td>
<td>0.00 – 50.00</td>
</tr>
<tr>
<td>Acres of parks and outdoor recreational space</td>
<td>4.40</td>
<td>22.18</td>
<td>0.00 – 237.03</td>
</tr>
<tr>
<td>Acres of single-family residential land</td>
<td>306.74</td>
<td>442.04</td>
<td>1.74 – 3,091.40</td>
</tr>
<tr>
<td>Acres of multi-family residential land</td>
<td>20.26</td>
<td>43.60</td>
<td>0.00 – 467.08</td>
</tr>
<tr>
<td>Acres of agricultural land</td>
<td>852.09</td>
<td>3,616.40</td>
<td>0.00 – 32,852.95</td>
</tr>
<tr>
<td><strong>Street Connectivity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion intersections out of intersections,</td>
<td>0.78</td>
<td>0.10</td>
<td>0.61 – 1.00</td>
</tr>
<tr>
<td>cul-de-sacs, and dead-ends</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood street miles per square mile of land</td>
<td>14.21</td>
<td>8.22</td>
<td>0.75 – 41.60</td>
</tr>
<tr>
<td><strong>Residential Type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of single-family units</td>
<td>428.79</td>
<td>279.51</td>
<td>12.00 – 1,659.00</td>
</tr>
<tr>
<td>Number of multi-family units</td>
<td>216.95</td>
<td>286.68</td>
<td>0.00 – 1,482.00</td>
</tr>
<tr>
<td>Median lot size of single-family units (acres)</td>
<td>0.45</td>
<td>0.56</td>
<td>0.03 – 4.29</td>
</tr>
<tr>
<td>Number of bus stops</td>
<td>4.47</td>
<td>5.68</td>
<td>0.00 – 38.00</td>
</tr>
</tbody>
</table>
Table 2 – Select Housing Characteristics by Neighborhood Type

<table>
<thead>
<tr>
<th></th>
<th>Type 1 Urban Commercial</th>
<th>Type 2 Urban Mixed Residential</th>
<th>Type 3 Rural</th>
<th>Type 4 Rural Developments</th>
<th>Type 5 Suburban Single Family</th>
<th>Type 6 Multifamily Residential</th>
<th>All Neighborhoods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median % Single-Family, Detached Homes</td>
<td>35.50</td>
<td>70.59</td>
<td>75.50</td>
<td>46.67</td>
<td>91.80</td>
<td>14.30</td>
<td>57.73</td>
</tr>
<tr>
<td>Median Lot Size of Single-Family Homes (in acres)</td>
<td>0.23</td>
<td>0.25</td>
<td>2.18</td>
<td>0.30</td>
<td>0.36</td>
<td></td>
<td>0.27</td>
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</tbody>
</table>
### Table 3 - Distribution of Neighborhoods and Heads of Households across Neighborhood Type

<table>
<thead>
<tr>
<th></th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
<th>Type 6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban Commercial</td>
<td>Urban Mixed Residential</td>
<td>Rural</td>
<td>Rural Developments</td>
<td>Suburban Single Family</td>
<td>Multifamily Residential</td>
<td></td>
</tr>
<tr>
<td># of Neighborhoods</td>
<td>8</td>
<td>45</td>
<td>10</td>
<td>52</td>
<td>30</td>
<td>27</td>
<td>172</td>
</tr>
<tr>
<td>% of Total Neighborhoods</td>
<td>4.65%</td>
<td>26.16%</td>
<td>5.81%</td>
<td>30.23%</td>
<td>17.44%</td>
<td>15.70%</td>
<td>100.00%</td>
</tr>
<tr>
<td># of Neighborhoods with NORCs</td>
<td>5</td>
<td>30</td>
<td>10</td>
<td>27</td>
<td>26</td>
<td>9</td>
<td>107</td>
</tr>
<tr>
<td>% of total Neighborhoods with NORCs</td>
<td>4.67%</td>
<td>28.04%</td>
<td>9.35%</td>
<td>25.23%</td>
<td>24.30%</td>
<td>8.41%</td>
<td>100.00%</td>
</tr>
<tr>
<td># of Heads of Household (age 60+) in NORCs</td>
<td>535</td>
<td>1,805</td>
<td>229</td>
<td>1,630</td>
<td>2,464</td>
<td>982</td>
<td>7,645</td>
</tr>
<tr>
<td>% of County’s Heads of Household (age 60+)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.07%</td>
<td>6.99%</td>
<td>0.89%</td>
<td>6.32%</td>
<td>9.55%</td>
<td>3.81%</td>
<td>29.62%</td>
</tr>
</tbody>
</table>

Note: a. Percentages do not add to 100%, because the denominator is county total.
<table>
<thead>
<tr>
<th></th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
<th>Type 6</th>
</tr>
</thead>
<tbody>
<tr>
<td># Neighborhood commercial establishments</td>
<td>42.24</td>
<td>2.91</td>
<td>6.55</td>
<td>1.94</td>
<td>1.44</td>
<td>5.36</td>
</tr>
<tr>
<td></td>
<td>(10.35)</td>
<td>(3.75)</td>
<td>(7.04)</td>
<td>(2.45)</td>
<td>(2.69)</td>
<td>(7.28)</td>
</tr>
<tr>
<td># Neighborhood bus stop</td>
<td>12.41</td>
<td>3.63</td>
<td>0.00</td>
<td>1.78</td>
<td>1.10</td>
<td>6.59</td>
</tr>
<tr>
<td></td>
<td>(7.85)</td>
<td>(3.81)</td>
<td>(0.00)</td>
<td>(3.47)</td>
<td>(2.23)</td>
<td>(4.90)</td>
</tr>
<tr>
<td>Avg. distance from NORC to nearest park in miles</td>
<td>0.57</td>
<td>0.68</td>
<td>2.50</td>
<td>1.00</td>
<td>1.15</td>
<td>1.06</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td>(0.59)</td>
<td>(1.63)</td>
<td>(0.81)</td>
<td>(0.58)</td>
<td>(0.52)</td>
</tr>
<tr>
<td>Avg. distance from NORC to nearest large grocery in miles</td>
<td>0.74</td>
<td>1.12</td>
<td>4.21</td>
<td>2.27</td>
<td>1.33</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>(0.42)</td>
<td>(0.56)</td>
<td>(2.63)</td>
<td>(2.79)</td>
<td>(0.64)</td>
<td>(0.32)</td>
</tr>
<tr>
<td>Avg. distance from NORC to nearest pharmacy in miles</td>
<td>0.50</td>
<td>0.86</td>
<td>3.80</td>
<td>2.25</td>
<td>1.17</td>
<td>0.69</td>
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<tr>
<td></td>
<td>(0.35)</td>
<td>(0.41)</td>
<td>(1.75)</td>
<td>(2.80)</td>
<td>(0.60)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>Avg. distance from NORC to nearest convenience store or small grocery</td>
<td>0.51</td>
<td>1.08</td>
<td>2.89</td>
<td>2.27</td>
<td>1.28</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.64)</td>
<td>(2.27)</td>
<td>(2.51)</td>
<td>(0.67)</td>
<td>(0.50)</td>
</tr>
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</table>

Note: Standard deviation in parentheses.
Table 5 – Distribution of Neighborhoods and NORCs across Neighborhood Social Environments

<table>
<thead>
<tr>
<th></th>
<th>Low Income</th>
<th>Minority</th>
<th>High Single-Parent Household</th>
<th>Lower than Average Homeownership</th>
<th>High Income</th>
<th>High Residential Turnover</th>
<th>High Long Term Residency</th>
<th>High Income and High Long Term Residency</th>
<th>Low Income and High Long Term Residency</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Neighborhoods</td>
<td>36</td>
<td>42</td>
<td>43</td>
<td>97</td>
<td>19</td>
<td>43</td>
<td>43</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>% of Total Neighborhoods</td>
<td>20.93%</td>
<td>24.42%</td>
<td>25.00%</td>
<td>56.40%</td>
<td>11.05%</td>
<td>25.00%</td>
<td>25.00%</td>
<td>4.07%</td>
<td>1.16%</td>
</tr>
<tr>
<td># of NORCs</td>
<td>19</td>
<td>45</td>
<td>39</td>
<td>101</td>
<td>90</td>
<td>16</td>
<td>176</td>
<td>49</td>
<td>3</td>
</tr>
<tr>
<td>% of total NORCs</td>
<td>4.94%</td>
<td>11.69%</td>
<td>10.13%</td>
<td>26.23%</td>
<td>23.38%</td>
<td>4.16%</td>
<td>45.71%</td>
<td>12.73%</td>
<td>0.78%</td>
</tr>
<tr>
<td>% Low Income (#)</td>
<td>Urban Commercial</td>
<td>Urban Mixed Residential</td>
<td>Rural</td>
<td>Rural Developments</td>
<td>Suburban, Single Family</td>
<td>Multifamily Residential</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
<td>-------------------------</td>
<td>-------</td>
<td>---------------------</td>
<td>-------------------------</td>
<td>-------------------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.53% (4)</td>
<td>3.97% (5)</td>
<td>0.00% (0)</td>
<td>10.11% (9)</td>
<td>0.00% (0)</td>
<td>4.55% (1)</td>
<td>4.94% (19)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Minority (#)</td>
<td>0.00% (0)</td>
<td>27.78% (35)</td>
<td>0.00% (0)</td>
<td>10.11% (9)</td>
<td>0.90% (1)</td>
<td>0.00% (0)</td>
<td>11.69% (45)</td>
<td></td>
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</tr>
<tr>
<td>% Single-Parent Household (#)</td>
<td>0.00% (0)</td>
<td>18.25% (23)</td>
<td>5.00% (1)</td>
<td>8.99% (8)</td>
<td>1.80% (2)</td>
<td>22.73% (5)</td>
<td>10.13% (39)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Lower than Avg. ownership (#)</td>
<td>58.82% (10)</td>
<td>35.71% (45)</td>
<td>0.00% (0)</td>
<td>17.98% (16)</td>
<td>7.21% (8)</td>
<td>100.00% (22)</td>
<td>26.23% (101)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% High Income (#)</td>
<td>41.18% (7)</td>
<td>17.46% (22)</td>
<td>15.00% (3)</td>
<td>32.58% (29)</td>
<td>26.13% (29)</td>
<td>0.00% (0)</td>
<td>23.38% (90)</td>
<td></td>
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</tr>
<tr>
<td>% High Residential Turnover (#)</td>
<td>17.65% (3)</td>
<td>3.97% (5)</td>
<td>0.00% (0)</td>
<td>1.12% (1)</td>
<td>0.90% (1)</td>
<td>27.27% (6)</td>
<td>4.16% (16)</td>
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<td></td>
</tr>
<tr>
<td>% High Long-Term Residency (#)</td>
<td>29.41% (5)</td>
<td>58.73% (74)</td>
<td>50.00% (10)</td>
<td>49.44% (44)</td>
<td>38.74% (43)</td>
<td>0.00% (0)</td>
<td>45.71% (176)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% High Income and High Long-Term Residency (#)</td>
<td>0.00% (0)</td>
<td>12.70% (16)</td>
<td>0.00% (0)</td>
<td>24.72% (22)</td>
<td>9.91% (11)</td>
<td>0.00% (0)</td>
<td>12.73% (49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Low Income and High Long-Term Residency (#)</td>
<td>0.00% (0)</td>
<td>0.00% (0)</td>
<td>0.00% (0)</td>
<td>3.37% (3)</td>
<td>0.00% (0)</td>
<td>0.00% (0)</td>
<td>0.78% (3)</td>
<td></td>
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</tr>
<tr>
<td>Total NORCs</td>
<td>17</td>
<td>126</td>
<td>20</td>
<td>89</td>
<td>111</td>
<td>22</td>
<td>385</td>
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