NEW APPROACHES TO SPOTTING ENCLAVES OF THE ELDERLY WHO HAVE AGED IN PLACE[1]

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ABSTRACT

Across the nation, particular neighborhoods are evolving naturally into *de facto* retirement communities populated by elderly residents able to live independently. A visible manifestation of such aging in place is the naturally occurring retirement community (NORC)—a neighborhood not planned or intended for older people but where adults stay on and grown old while younger ones drift away. NORCs arise from a distinctive conjunction of demographic forces operating over time: initial cohorts settle in close proximity and collectively advance in age while subsequent, less settled cohorts depart. We illustrate the use of Census 2000 data for spotting and delineating incipient NORCs. We elaborate on their significance as potential target markets, both for community planners interested in centralizing service delivery to the elderly and for businesses offering types of services that can be bundled most profitably for these residential concentrations of elderly.

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I. INTRODUCTION

A noteworthy but understudied aspect of nationwide population aging is the nature and timing of its onset at local scales, such as neighborhoods and individual city blocks. In the future, the elderly share of the population will increase in most communities, but local patterns will vary widely and the consequences will differ from place to place. Inevitably, national concerns with accommodating an aging population (see, e.g., Lee and Haaga, 2002) will acquire a local focus, especially on the varied family and nonfamily circumstances surrounding the elderly household population.

Aging in place (AIP) is an identifiable process by which local residential enclaves of older persons materialize in communities and neighborhoods over time. AIP ensues as younger people move away and the older ones who remain become a growing share of all inhabitants. The process is apparent across the Plains States and Western Cornbelt but is most visible within declining central cities and aging suburbs. During the past century (especially following World War II), neighborhoods often were settled over relatively brief eras. As a result, particular generations happened to predominate within particular locales. The remnants of such neighborhood cohorts may remain visible decades later, despite the erosive effects of subsequent cohort succession. Suburbs that housed newly-settled young families in the late 1940s and 1950s are still inhabited by many of the same family members who have aged in place, along with later cohorts who have replaced some original settlers over time. Certain neighborhoods still retain much of their original single-generation look, even as the overall number of inhabitants dwindles.

Such elderly aging-in-place enclaves form interesting potential target markets for community planners and business enterprises. They constitute emerging--and largely foreseeable—local clusters of common needs, which may be amenable to centralized service delivery or marketing through public and private sector initiatives. What distinguishes such emerging elderly enclaves from otherwise comparable *destinations* of elderly migration is the accumulation through AIP of long-term residents with potentially distinctive economic profiles (e.g., homeowners with paid-up mortgages) and strong social ties to local neighborhoods and to one another. In short, we postulate that where cohorts have advanced in age together in a place, levels of homeownership with little or no mortgage indebtedness may be uncommonly high; and neighborhood social networks capable of strengthening word-of-mouth expansion of markets for products and services may be quite extensive.

A visible manifestation of AIP is the so-called “naturally occurring retirement community” (NORC)—a neighborhood not planned or intended for older people, but where adults have stayed on and

grown old as younger people move away. A NORC may materialize in a specific apartment building, or along a street of established family homes. What defines a NORC is residential persistence: that is, householders who have remained in their homes or apartments for many years, evolving collectively into a senior community.[2]

Census 2000 furnishes timely detailed local data for analyzing aging in place and spotting incipient NORCs at micro scales. In this paper, we first illustrate applications of demographic analysis and Census 2000 data to delineating and characterizing neighborhood enclaves of the elderly that are emerging through AIP. We then elaborate on their significance as potential target markets: for community planners centralizing service delivery to the elderly; and for businesses enterprises offering types of services that can be bundled most profitably for residential concentrations of elderly.

II. IDENTIFYING LOCALES OF AGING IN PLACE

NATIONAL PATTERNS

A summary profile of the long-resident elderly population shows that 7.4 million (one-third) of the nation's 22.6 million householders ages 65 and older have lived in the same residence for at least 31 years. Of these 7.4 million long-resident elderly householders, an estimated:

- 72% live in metropolitan areas;
- 17% live in central cities;
- 94% are homeowners (compared with 70% among their shorter-resident counterparts);
- 58% are members of family households and 42% of nonfamily households.

Well-defined locales of aging in place are at various stages of emergence across the nation. Spatial concentrations of the long-resident elderly householder population nationally are shown in Fig. 1, which maps all census tracts in which such householders comprise at least 15% of all householders. Clusters of such tracts are evident in and around particular metropolitan areas (e.g., Pittsburgh, Cleveland, Buffalo, New York, Boston); across central Connecticut, Massachusetts, and New York State; and in smaller clusters scattered across the Midwest, South, and West.

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[2] A study by The Robert Wood Johnson Foundation identified 5,000 apartment houses across the country that could be considered NORCs. By far the largest is Co-op City, a sprawling apartment complex in the northeast corner of Bronx County, NY that is home to nearly 8,000 people of retirement age, most of whom moved in during their working years after the apartment towers opened in 1968 and never moved out. (Feuer 2002).

Figure 1. Census-tract Concentrations of Long-resident Elderly Householders

LOCAL ILLUSTRATIONS OF AIP

Incipient NORCs are discernible within these clusters of tracts. Increasingly, these naturally occurring concentrations of elderly citizens have come to be regarded as naturally suited to centralizing supportive services to elderly residents.[3] More broadly, they offer novel opportunities to help prolong independent living in old age; and constitute readymade consumer markets for businesses seeking to target elderly consumers clustered together in a place (rather than dispersed across a community).

[3] In some cities (such as New York and Chicago) "NORC" is an official designation, and these communities receive funding for nursing visits, social activities, transportation, and other senior services. In New York, the Co-op Village Senior Care Program provides on-site supportive services to the elderly residents of this large NORC, enabling frail, isolated and often homebound seniors to remain in their own homes.

Table 1. Three Variants of Neighborhood Aging in Place:
Bronx County, NY, 2000

Indicator	Neighborhood Area		
	A	B	C
Total householders	666	217	347
% owners	65%	2%	51%
% renters	35%	98%	49%
Percentage of owners:			
Ages 65 +	59%	40%	51%
Moved in >10 years ago	38%	44%	43%
Percentage of renters:			
Ages 65 +	37%	84%	56%
Moved in >10 years ago	35%	44%	55%
Total population	1,284	255	830
In family households	698	67	474
In nonfamily households	399	188	174
In group quarters	187	0	182

Note: Area A is CT 293 block 3000; area B is CT 110 block 9006; area C is CT 289 blocks 4001 and 4002. Year moved in is for corresponding block group.

Source: Census 2000, SF1 Tables H16, P27; SF3 Table H38.

Three Bronx County, NY neighborhoods typify several variants of incipient NORCs (see Table 1). Area A (a single census block) has 666 householders, two-thirds of whom own their homes. Of these householders who own, most are age 65 or older (59%) and established residents (57%), having moved in over 10 years ago (our criterion for an incipient NORC).[4] Most persons are members of family households.

Area B (also one census block) has 217 households, virtually all renters. Most (84%) of renting householders are 65 or older, and many (44%) moved in over 10 years ago. Here, most persons are members of nonfamily households.

Area C (two neighboring census blocks) has 347 households, about equally divided between owners and renters. The majority of householders (51% of owners, 56% of renters) are age 65 or older. About half (43% of owners, 55% of renters) moved in over 10 years ago. Here, most persons are members of family households.

[4] Length of residence is based on block-group data. For the three areas examined here (A, B, and C), the block group data closely approximate the area itself.

It takes little imagination to envision plausible future scenarios for each of these areas. Tied to the neighborhood by ownership, length of residence, or both, significant numbers will continue to age in place. Mortality will transform family households into nonfamily households in place. Some individuals will join the group quarters population somewhere (not necessarily locally). Although their pace may vary somewhat from area to area, those transitions are inevitable. What distinguishes them here is how intensely *local* they are bound to be.

APPLICATIONS OF CENSUS 2000

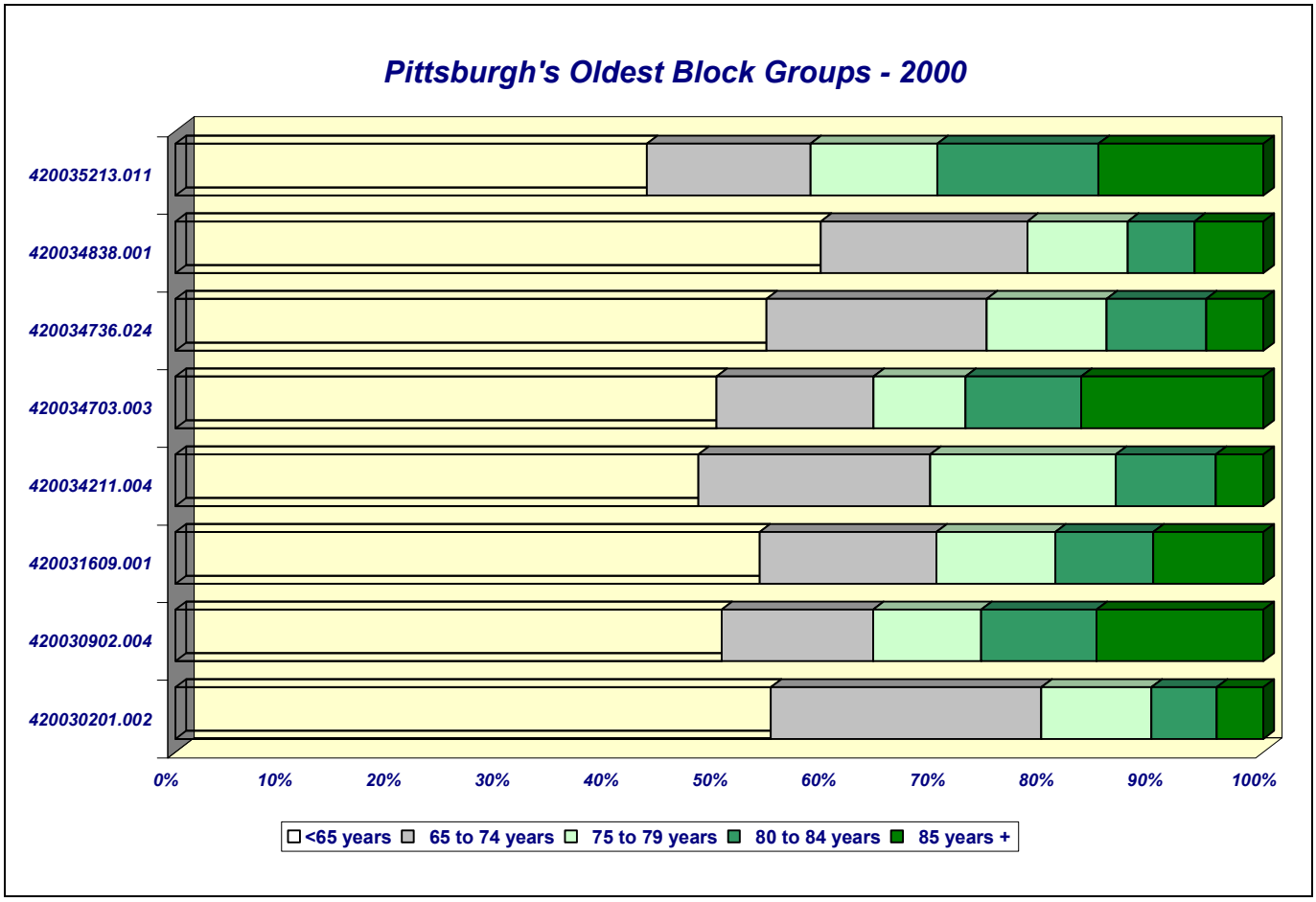
Our analyses of Census 2000 data furnish various points of departure for locating and characterizing emerging NORCs within enclaves of the elderly who have aged in place. For any particular geographic entity (or a universe of such entities), we start with the block-group level population, distributed by age (more finely detailed above age 65). Data in Figs. 2 through 5 reveal the locally diverse manifestations of AIP in several representative metropolitan areas.

In metropolitan Pittsburgh, population aging is more advanced than in most other regions (Morrison 2003). Through on ongoing regional exodus of population, older persons have come to be concentrated in many city and suburban neighborhoods over time. Specific local manifestations of population aging are shown in Figure. 2. Note that:

- Block groups with approximately the same share (55%) of residents ages 65 and older have widely differing concentrations of residents at the extreme elderly age range (85 and older).
- Among the elderly, persons under age 80 predominate in some block groups whereas persons over 80 predominate in others.

Similar patterns are evident in St. Louis, Buffalo, and Cleveland (see Figures 3 through 5). The gradations observable at the block group scale suggest a wide range of local circumstances, stemming perhaps in part from the historical complexity of settlement within each metropolitan area.

Figure 2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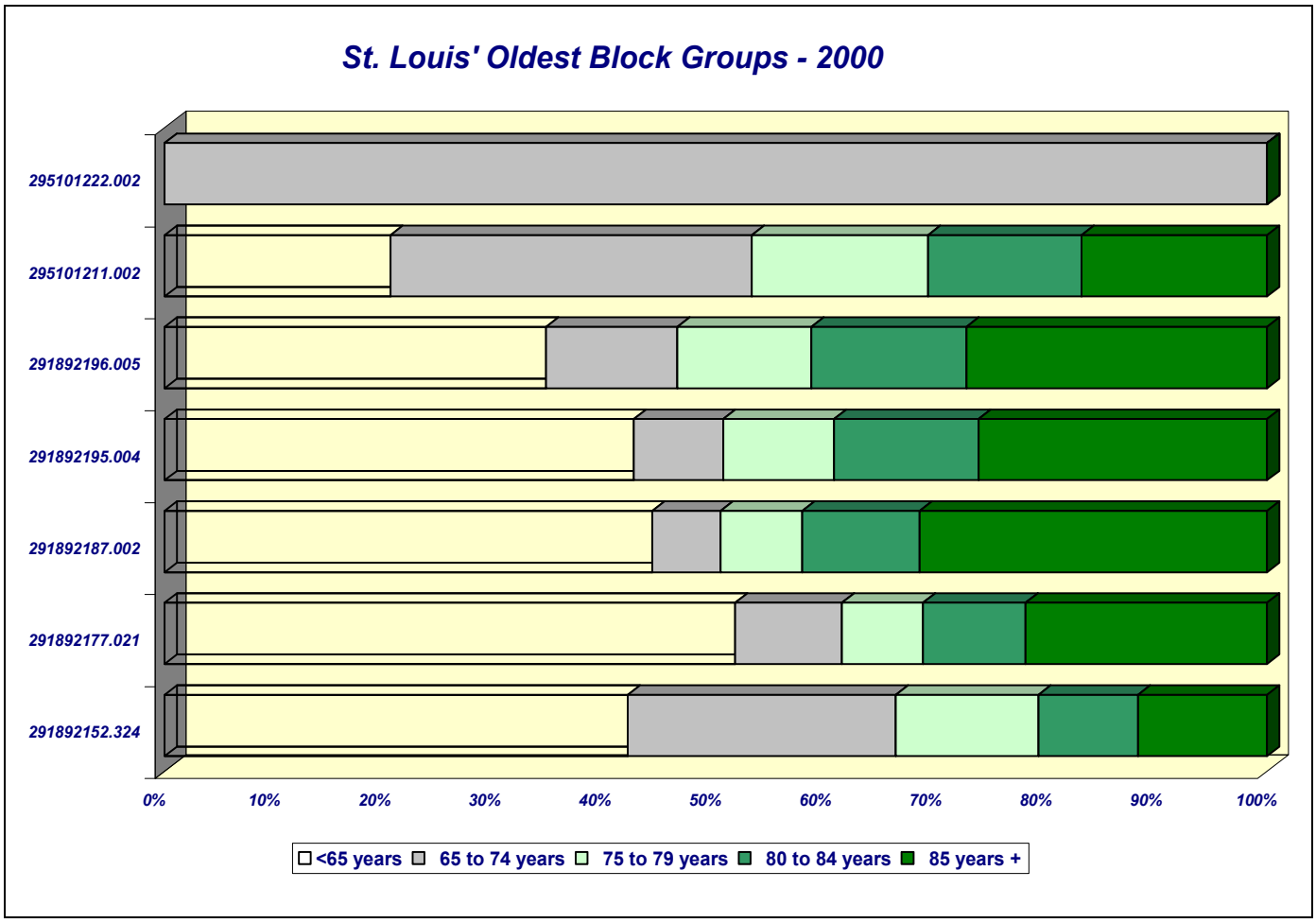
65 to 74 years
75 to 79 years
80 to 84 years
85 years +

Figure 3


St. Louis' Oldest Block Groups - 2000
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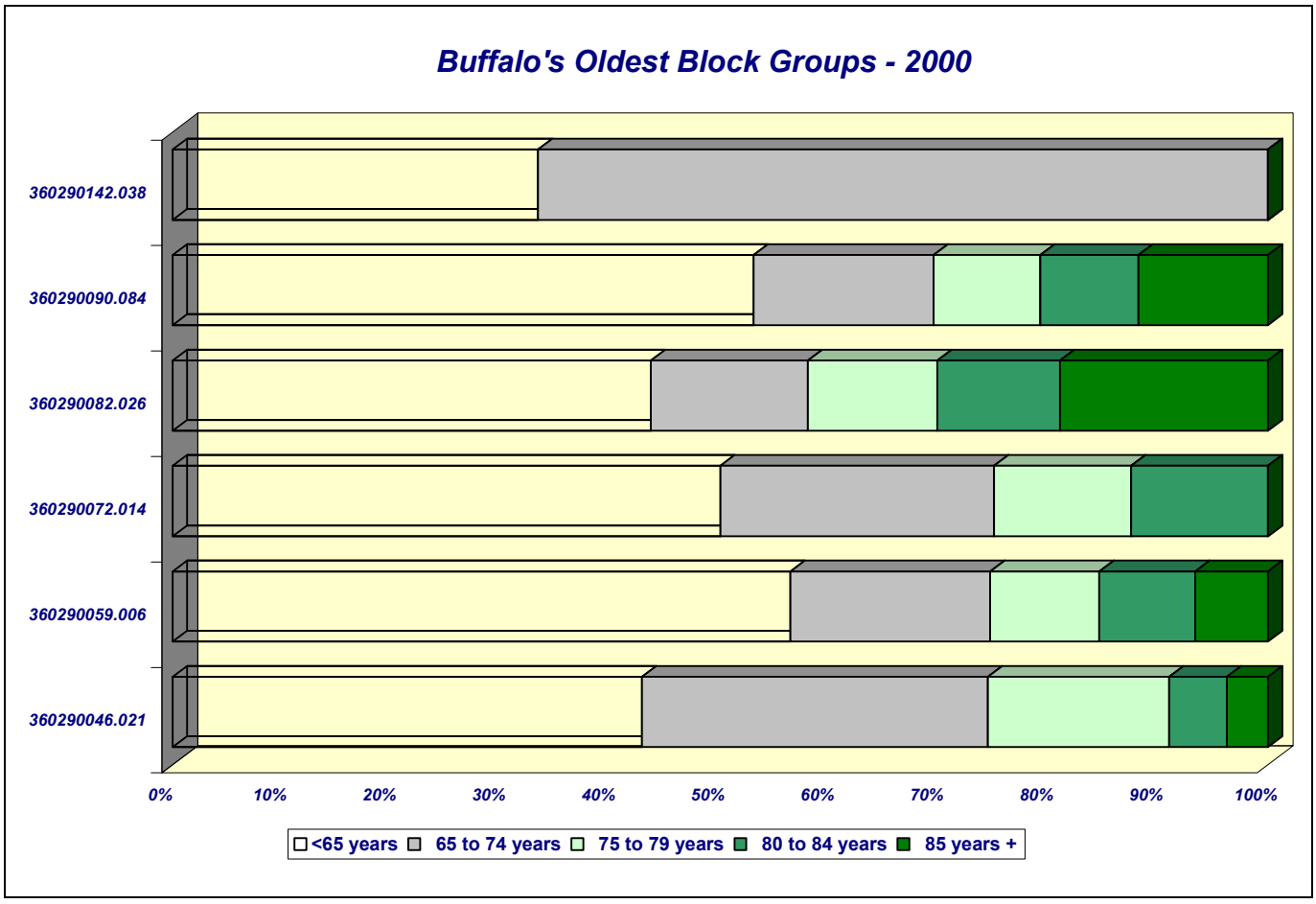
75 to 79 years
80 to 84 years
85 years +

Figure 4


Buffalo's Oldest Block Groups - 2000
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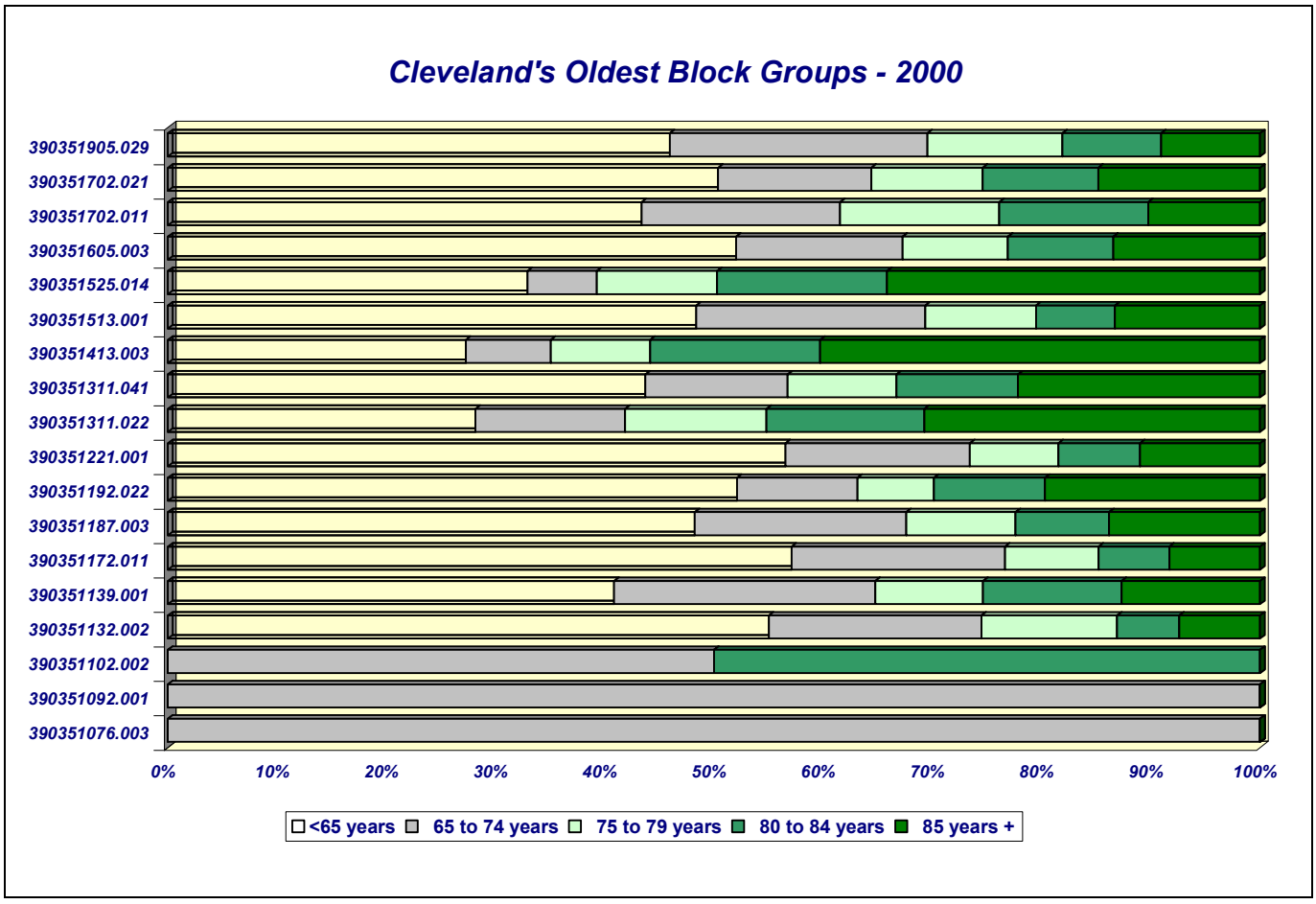
75 to 79 years
80 to 84 years
85 years +

Figure 5


Cleveland's Oldest Block Groups - 2000
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<65 years
65 to 74 years
75 to 79 years
80 to 84 years
85 years +

III. THE NORC AS A POTENTIAL TARGET MARKET

Highly concentrated enclaves of elderly householders are noteworthy target markets for both the public and private sectors. As the population ages nationwide, independent living will, as a rule, be more economical than other alternatives (e.g., nursing homes). Incipient NORCs may offer cost-effective settings for delivering health and supportive services programs to the elderly, prolonging independent living (see, for example, Lawler 2001). Much of the assistance that elderly households need is in the form of routine daily services, wherein economies of scale become critical. In 2002, Congress recognized the importance of testing these possibilities through one-year funding of five NORC demonstration projects within the Labor, Health and Human Services, Education, and Related Agencies Appropriations Bill.[5]

Likewise, certain businesses may favor such locations for establishing a neighborhood market presence, in order to capitalize on word-of-mouth referrals—for example, financial institutions marketing reverse mortgages to elderly homeowners.

In each instance, there are opportunities for applied demographers to address practical questions likely to be posed: What specific neighborhoods offer these emerging opportunities? How rapidly will they emerge in the future? What types of services are needed? How can economies of scale be achieved?

FACTORS BEARING ON SERVICE DELIVERY

Several important facets of AIP can be measured (or at least proxied) using Census 2000 data. In this section, we focus on specific measures that applied demographers can use to address the following:

1. Patterns of existing need. At any particular timepoint, a population aging in place is distributed across the functional stages through which its members eventually pass as individuals. At one extreme is the stage of being fully functional (defined, say, with reference to the gerontologists' "activities of daily living"). Subsequent stages would correspond to the progressive deterioration of that status, ending up in total dependence. From this perspective, a population aging in place would generate a distribution of needs that would change over time as a function of its changing distribution across functional stages.

Census 2000 provides four disability status measures that are potentially useful proxies for this distribution of needs. Each refers to the existence of a separate long-lasting condition: (1) blindness,

[5] Together, these five demonstrations, involving community-based providers from Cleveland, Baltimore, St. Louis, Philadelphia and Pittsburgh, made up the Administration on Aging-administered national NORCs pilot project to develop and test innovative NORCs service models. In 2003, Congress appropriated additional funding for NORC programs in Albuquerque, Atlanta, Chicago, Columbus, Detroit, Greater Washington, Las Vegas, Los Angeles, Minneapolis, and SE Florida (and for continued funding in Baltimore, Philadelphia, and Pittsburgh).

deafness, or a severe vision or hearing impairment (*sensory disability*), (2) a condition that substantially limits one or more basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying (*physical disability*), (3) a condition lasting 6 months or more that made it difficult to dress, bath, or get around inside the home (*self-care disability*), and (4) a condition lasting 6 months or more that made it difficult to go outside the home alone to shop or visit a doctor's office (*going outside the home disability*).

Table 2. Prevalence of Disabilities and Cardiac Hospitalizations
Among Elderly in Selected NORC Block Groups

Household population 65+	Elderly block groups with "younger" (A) vs. "older" (B) age distribution							
	Buffalo		Cleveland		Pittsburgh		St. Louis	
	A	B	A	B	A	B	A	B
Number	230	320	131	268	522	250	523	672
% of total population (all ages)	43.6%	56.4%	45.0%	47.9%	45.7%	49.8%	58.0%	57.4%
Household composition:								
% in family households	17%	39%	21%	22%	54%	48%	60%	50%
% in nonfamily households	83%	61%	79%	78%	46%	52%	40%	50%
Age structure:								
% ages 65-74	18.2%	14.3%	19.5%	11.0%	20.3%	13.9%	24.3%	8.1%
% ages 75-84	18.7%	23.0%	18.1%	17.2%	20.2%	20.5%	22.0%	23.2%
% ages 85+	6.6%	19.0%	7.4%	19.7%	5.3%	15.4%	11.7%	26.2%
Disabilities per hundred persons 65+								
All disabilities tallied	86.5	101.9	101.5	112.7	51.1	60.0	59.3	60.1
Sensory	12.2	13.8	0.0	10.4	10.0	12.8	9.8	14.6
Physical	35.7	44.7	43.5	46.6	22.8	24.4	22.6	24.1
Self-care	9.1	9.7	0.0	16.0	5.4	5.6	8.8	6.3
Go-outside-home	29.6	33.8	58.0	39.6	13.0	17.2	18.2	15.2
Cardiac hospitalizations annually per 100 persons 65+ (est.)	11	13	11	13	11	12	11	14

Note: Elderly block groups are Buffalo 59006 (A) and 82026 (B); Cleveland 1132002 (A) and 1192022 (B); Pittsburgh 4736024 (A) and 902004 (B); St. Louis County 2152324 (A) and 2195004 (B). Age structure measures include group quarters population.

Source: Census 2000 SF1, table P12, P38; SF3, tables P11, P41. See text for hospitalization estimates.

Table 2 illustrates their use in comparing block groups with uncommonly high percentages of elderly residents in the population. (Reference here is to the noninstitutional population, who may live in either a family or a nonfamily household situation; the latter usually is an elderly person living alone.) For each of four metropolitan areas (Buffalo, Cleveland, St. Louis, and Cleveland), we show two such

block groups that are broadly comparable in household composition (i.e., predominantly nonfamily or a mix of family and nonfamily households) and in the percentage of persons 65 and older (roughly half the population). For each pair, however, a markedly higher percentage of persons are *85 and older* in the "B" than the "A" block group of each pair. In Cleveland, for example, four-fifths of the noninstitutional elderly population are in nonfamily households, and persons 65 and older comprise 45%-48% of the entire population in each block group. Persons 85 and older, however, are a considerably higher percentage of the population in block group B (19.7%) than block group A (7.4%).

Also shown in Table 2 are tallies of disabilities per hundred elderly persons. These disability profiles reflect distributions of need among the elderly. (Note that a single individual may report multiple disabilities, which is why the tally of all disabilities may exceed 100 per hundred elderly.) Several clear patterns are discernible here:

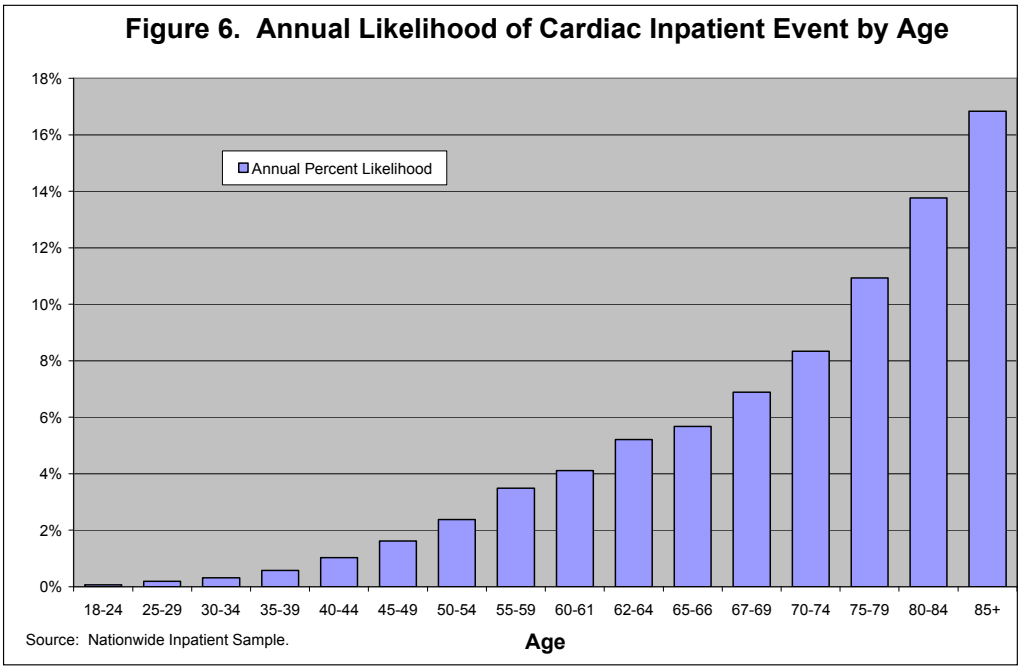
- Disabilities per hundred overall invariably is higher for the "older" (B) than the "younger" (A) block group of each pair. The difference is sizable in three of the four comparisons (but trivial in St. Louis).
- This pattern is generally consistent for each of the four specific disabilities shown. For sensory and physical disabilities, rates invariably are higher in the "older" block group of each pair. For self-care and go-outside-home disabilities, however, the pattern is somewhat inconsistent.
- Differences *among* the four pairs of areas are remarkable. For all disabilities, rates range from 87 to 113 in the two areas (Buffalo and Cleveland) where nonfamily household settings predominate; but from 51 to 60 in the other two (Pittsburgh and St. Louis), where family household settings are more typical.

These comparisons suggest the possibility of systematic variations in local patterns of need among the elderly, owing partly to the interplay of age structural and family support factors. If so, the Census 2000 measures used here may offer one tool for screening local enclaves of the elderly across the U. S. and elucidating these variations.

2. Impending needs with advancing aging in place. The Census 2000 cross-section of elderly age structure and household composition provides a basis for projecting impending service needs. As an illustration, we show estimated annual cardiac hospitalization rates per hundred elderly for each of the block groups in Table 2. We derive these estimates by applying age-gender-specific cardiac hospitalization rates from the Nationwide Inpatient Sample[6] to the varied age distributions of the block

[6] The Nationwide Inpatient Sample (NIS), part of the Healthcare Cost and Utilization Project sponsored by the Agency for Healthcare Research and Quality, is a publicly available database of hospital inpatient stays that can be

groups shown in Table 2. Because cardiac hospitalization rates are highly age-specific (see Fig. 6), the age structural differences between each pair of block groups implies noticeable differences (e.g., 13 vs. 11 per hundred) in the expected rate of elderly hospitalization annually for cardiac events.



As AIP advances with the passage of time, of course, the evolution of already-mature age distributions becomes predictable in the residentially stable NORC contexts. Age distributions like those summarized in Table 2 can be projected forward several years using straightforward demographic techniques. Such projections can form one basis for anticipating demographically-induced changes in hospitalization rates over time, as detailed in Bryan (2004).

3. *Household living arrangements*. People's expanding needs as they age are not uniform. They arise in a living environment with a host of features that may either exaggerate those needs or reduce them. Two important features are household living arrangements and accessibility to services. The capacity for independent living may well depend as much on those factors as on the physical limitations associated with age. The salience of household living arrangements is obvious, and we need to understand how those arrangements evolve as populations age in place and what their consequences are.

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used to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. The NIS contains data from over 7 million hospital stays from about 1000 hospitals sampled to approximate a 20-percent stratified sample of U.S. community hospitals.

A typical situation is that of an elderly couple aging in place, either lifelong renters or homeowners free and clear. The death of one spouse typically transforms this family household into a nonfamily one, which may well disrupt the capacity of the surviving spouse to continue living independently without assistance.

COMMERCIAL OPPORTUNITIES

Concentrations of senior citizens in one place also may prove profitable for businesses. For example, digital lifestyle technologies are being adapted to the needs of the elderly. Such technologies (incorporating networks of wireless sensors and fast Internet connections) could complement community service delivery and extend independent living in old age. One pilot project (GE's Home Assurance) builds on existing home security systems and deploys simple motion detectors to watch for abnormal behavior. Networked wireless motion detectors send data to a central device that resembles an answering machine, which transmits data within seconds to a server. Caregivers can log on to the server over the Internet to check up on someone or set up the system so it alerts them automatically by phone or e-mail.

NORCs offer natural points of entry into the types of elderly consumer markets that can be penetrated most effectively through personal recommendation. This suggestion extends a simple but compelling research finding: In most industries, there is a strong correlation between a company's growth rate and the percentage of its customers who are "promoters"—that is, those who say they are extremely likely to recommend the company to a friend or colleague (Reichheld, 2003). As noted earlier, 94% of the long-resident elderly population own their own homes, many of them free and clear. Financial institutions, certified financial planners, and other enterprises that rely heavily on such word-of-mouth promoters for new customers may find "promotion-friendly" social networks in place for reaching households with products tailored to their specific situations and needs (e.g., reverse mortgages).

AN ILLUSTRATION

In this section, we illustrate the steps involved in targeting such markets. In this illustration, we delineate a NORC with distinctive potential appeal as a target market for two products: (1) *reverse mortgages*, suited to the needs of elderly homeowners seeking a guaranteed lifelong income stream; and (2) *remote telemonitoring*, suited to the needs of adults concerned about elderly family members living alone. Our focus is Long Island, NY, where many suburban communities settled after World War II are evolving through aging in place into present-day NORCs.

Concentrations of elderly residents are scattered across Long Island. Our focus is Suffolk County (see Fig. 7), where a straightforward screening of census tracts using American FactFinder draws attention to one in particular (CT 1584.06) where 48% of the 7,418 residents are age 65 or older. A more highly detailed mapping reveals that the concentration of elderly is confined to 4 of the CT's 6 block groups (see Fig. 8).

Next, we assemble data from Census 2000 to characterize the 4 block groups that comprise this elderly enclave. These data (derived from SF1 tables P12, P30, and H16 and SF3 tables H38 and H94) show the following characteristics for the 2,992 householders:

- Most are elderly: 79% are ages 65 and older, and 54% are 75 and older;
- 94% of the householders 65 and older own their homes;
- 73% of the owner-occupied units are not mortgaged;
- 38% of householders moved in over 10 years ago.

The household situations of the 3,302 persons 65 and older are as follows:

- 56% are members of family households, almost exclusively married couples;
- 44% are members of nonfamily households, almost all living alone;
- 80% of these elderly lone individuals are women;
- Virtually none of the elderly residents (0.5%) are in group quarters.

These distinguishing characteristics suggest that the residents of this elderly enclave are likely, over many years of continuous residence, to have developed strong residential ties to their homes and strong social ties to local neighborhoods and to one another. Most will have accumulated significant untapped home equity, forming a potential market for reverse mortgages.

Presumably, the many lone individuals who currently live independently are the elderly parents or relatives of a younger generation of adult income earners (whose employment situations may interfere with elderly caregiving and supervision, especially at a distance). This younger generation forms a potential market for remote telemonitoring ("peace of mind") services, analogous to what daycare centers presently offer to working parents of young children. Such fee-based services utilize a password-protected home page capable of offering real-time video and data on the dependent family member.

Figure 7.

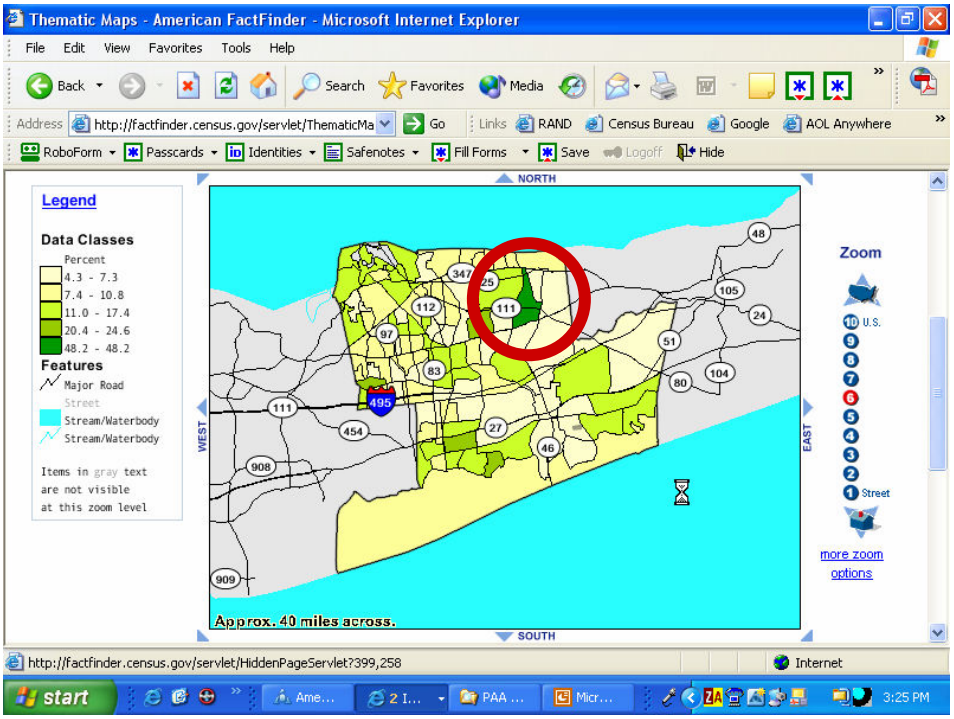
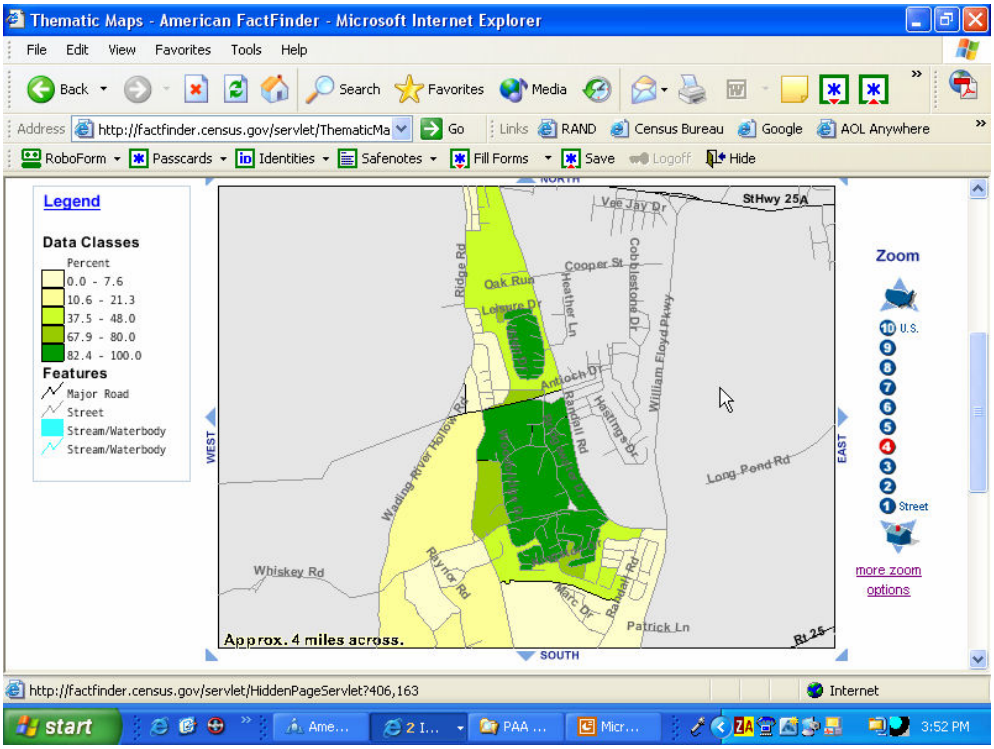


Fig. 8



Insofar as this NORC might offer a natural entry point for penetration through personal referral, a further demographic feature is noteworthy. Inevitably, mortality will alter household makeup, transforming residentially stable married couples into lone individuals. Reluctant to change residence following the death of a spouse, many such individuals might well be receptive to the idea of remote telemonitoring if they had prior personal familiarity with its possibilities. In all likelihood, such familiarity would be a prerequisite for tapping this source of continuing market growth. Cultivating that familiarity (e.g., via a local marketing strategy emphasizing pioneer subscribers as "promoters") could capitalize on these possibilities.

IV. CONCLUSIONS

Elderly aging-in-place enclaves form interesting potential target markets for community planners and business enterprises. They constitute emerging--and largely foreseeable—local clusters of common needs, which may be amenable to centralized service delivery or marketing through public and private sector initiatives. Where cohorts have advanced in age together in a place, levels of homeownership with little or no mortgage indebtedness may be uncommonly high; and neighborhood social networks capable of strengthening word-of-mouth expansion of markets for products and services may be quite extensive.

Census 2000 furnishes timely detailed local data for analyzing aging in place and spotting incipient NORCs at micro scales. Although still a work in progress, our applications of demographic analysis and Census 2000 data illustrated here offer other applied demographers a point of departure. We have devised procedures for spotting and delineating incipient NORCs, characterizing their potential needs, and evaluating their potential as target markets, both for community planners striving to centralize service delivery to the elderly and for businesses offering types of services that can be bundled most profitably for residential concentrations of elderly.

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