Discussion Paper

Housing for Minnesota's Aging Population

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Housing for Minnesota's Aging Population: Discussion Paper

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Introduction & Summary

Baby boomer retirement over the next twenty years will usher in a major demographic shift in Minnesota, with adults at least age 65 increasing from 12% to 20% of the state's population. Boomers have dominated the housing market throughout their adult lives, and will likely continue to do so as they begin to retire this year.

Traditional forms of senior housing, however, do not match the preferences of most baby boomers and younger seniors. Older adults primarily own single-family homes and desire to remain there as they age. Nevertheless, health and activity limitations generally increase with age, and the current housing stock is not equipped to enable an aging population to remain in their homes and communities. Very few single-family homes units are built to be accessible, but an estimated 60% of these units will house at least one person with a disability over the unit's lifetime. Over 300,000 older Minnesotans now report a need for housing repair or modification to remain in their homes.

At the same time, the State is seeking community-based alternatives to senior housing and care in an effort to control burgeoning long-term care costs. This juncture presents an opportunity for the Minnesota Housing Finance Agency to support a new paradigm of senior housing, one which both meets the desires of seniors and boomers to remain in the communities and social networks they've chosen and aids the state creating a more cost-effective housing and care system for seniors. Core universal design components can underpin an effort to design and build homes that enable all types of households—seniors, families with children, people with disabilities—to live with ease in their communities.

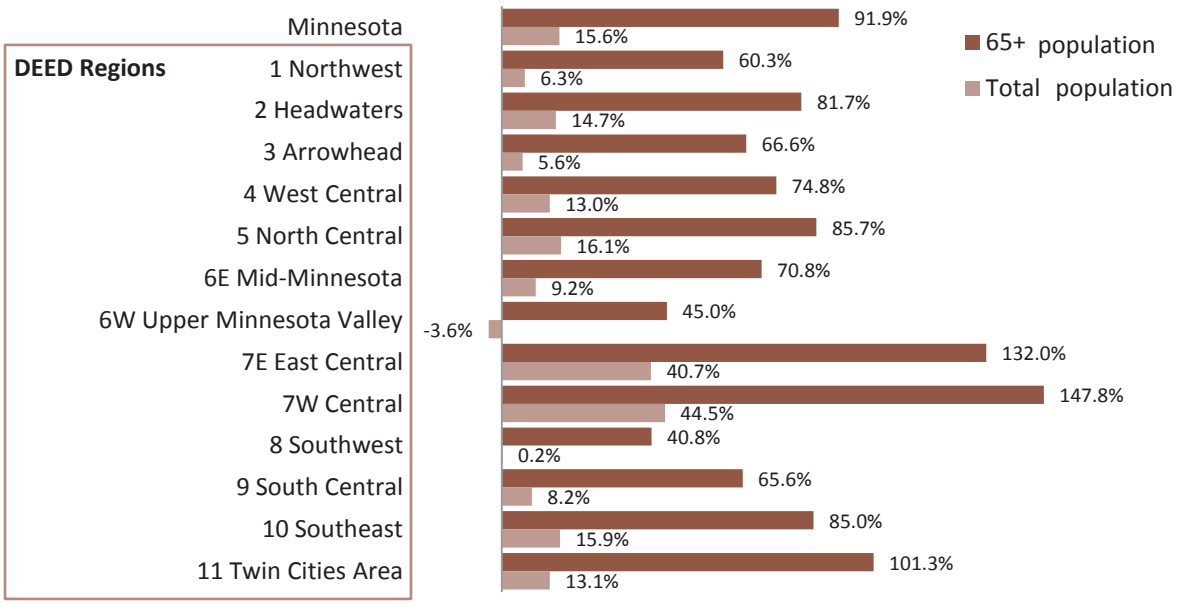
I. Minnesota's Aging Population

In 2010, nearly 680,000 seniors and 1,470,000 baby boomers live in Minnesota. By 2030, the expected senior population will be nearly 1.3 million, or 20% of the state's population (as compared to 12% in 2010). However, these seniors and baby boomers are not distributed evenly throughout the state. While less than half (47%) of the state's total population lives outside the seven-county Twin Cities metro area, over half of seniors (55%) and over half of boomers (58%) live in non-metro Minnesota. Baby boomers—the seniors of 2030—also make up a significant proportion (26 to 31%) of suburban and exurban populations.

Over the next twenty years, Minnesota's total population is projected to increase by about 16% while its senior population will nearly double. Given the large size of the boomer cohort and decreasing birth rates across the state, the State Demographic Center projects that the older-adult cohort is expected to grow faster than the overall population in all regions of the state[1], as shown in Figure 1. The most explosive growth in the total and senior populations is expected in Central Minnesota, while regions like the Twin Cities area will experience a sizable but more moderate overall growth, with a doubling of the senior cohort. Still other areas face zero or negative population growth along with increasing numbers of seniors.

Looking at individual counties, Maps 1 and 2 show the proportion of each county's population that is age 65 and older in the years 2010 and 2030 (projected). Currently, counties coded in yellow in Map 1 and stretching from St. Cloud into southeastern Minnesota have a younger and

Figure 1: Projected total and senior population growth (2010-2030), by region [1]



[1] Minnesota State Demographic Center (June 2007). Population Projections 2005-2035.

faster-growing population than other areas of the state, with seniors making up 15% or less of the population. In most other counties, seniors are 15 to 25% of the population, with just 15 counties having populations where over 30% of the population are seniors. Counties in slow-growth regions with a lower proportion of seniors are predominantly home to a college or university, e.g. Bemidji State University in Beltrami County and Southwest State University in Lyon County.

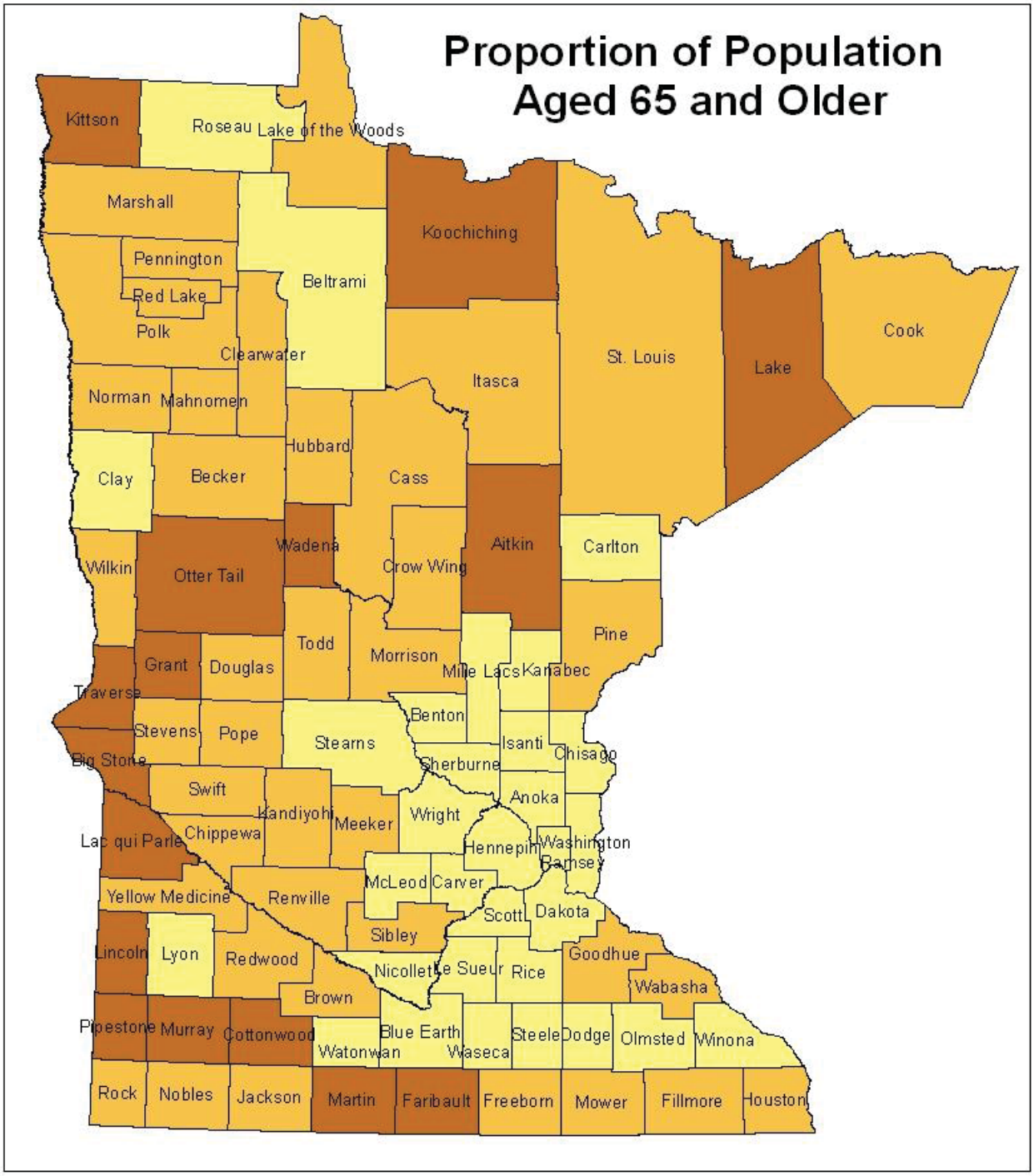
By 2030, shown in Figure 3, only three counties are projected to have populations in which seniors account for 15% or less of the population, and the younger central and southeastern regions of the state will reach the proportion of seniors that other regions experienced in 2010 (15 to 25%).[2] In fact, by 2030, seniors will account for nearly 40% of the population in Aitkin, Cook, and Kittson counties.

Rates of increase in the senior population between 2010 and 2030 also vary across the state (see Map 3). Counties with older populations in 2010 will continue to age, with increasing numbers of seniors in older age cohorts, including ages 75 to 85 and 85+; however, they will have smaller increases in the overall senior population. Counties with lower proportions of seniors in 2010, in contrast, are projected to experience a dramatic aging trend. In eighteen counties—most of which are located in central and southeastern Minnesota—the number of seniors will more than double in the next 20 years. In fact, Scott County is anticipating a 255% increase while Traverse County, with its already older population, is projected to begin the trend toward a numeric and proportional decrease in its senior population.

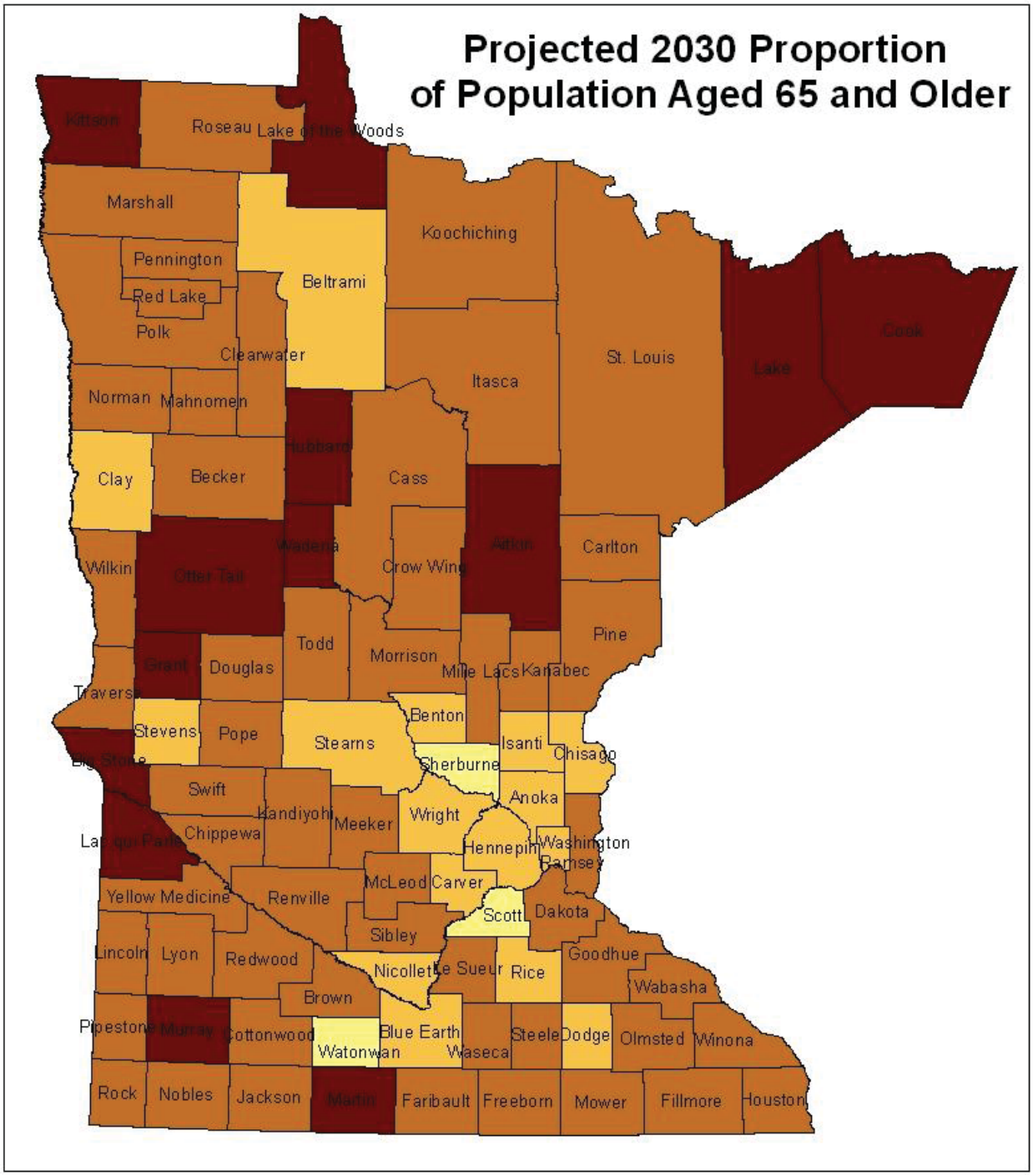
In general, varying growth rates and proportions of seniors by county mean that communities are and will continue to experience the aging of the population to varying degrees. The elderly dependency ratio, which is the number of persons aged 65 or over per 100 persons in the population aged 15 through 64 years, provides one indicator of the extent of the financial and direct care burden on working adults in counties throughout Minnesota. For example, the statewide elderly dependency ratio in 2008 was 18.4 but, by county, the measure ranges from 9.9 to 51.8. Counties around the Twin Cities area, central and southeastern Minnesota have ratios under 20, while counties on western edge of the state typically have ratios above 35. By 2030, the statewide elderly dependency ratio will increase to 34.0, with counties ranging from 19.9 to 76.4. (A table with county-level elderly care ratios and other indicators is included in Appendix A.)

[2] Minnesota State Demographic Center (June 2007). Population Projections 2005-2035.

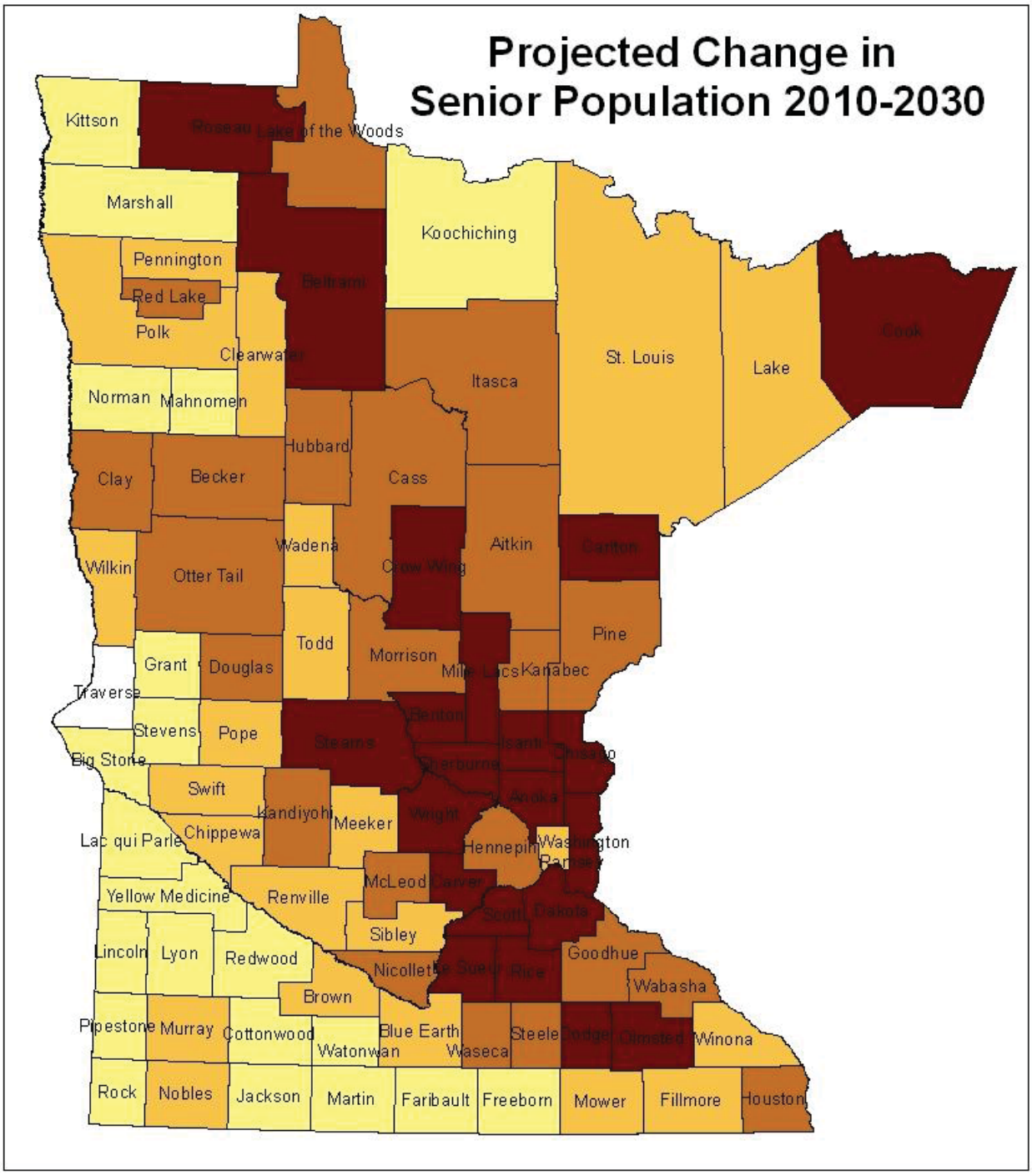
Map 1


Proportion of Population Aged 65 and Older
Kittson
Roseau
Lake of the Woods
Marshall
Koochiching
Pennington
Beltrami
Red Lake
Polk
Clearwater
St. Louis
Lake
Cook
Itasca
Norman
Mahnomen
Hubbard
Clay
Becker
Cass
Aitkin
Carlton
Wilkin
Otter Tail
Wadena
Crow Wing
Pine
Todd
Morrison
Mille Lacs
Kanabec
Grant
Douglas
Traverse
Benton
Stevens
Pope
Stearns
Isanti
Chisago
Big Stone
Sherburne
Swift
Anoka
Kandiyohi
Meeker
Wright
Lac qui Parle
Chippewa
Hennepin
Washington
Ramsey
Yellow Medicine
Renville
McLeod
Carver
Scott
Dakota
Sibley
Lincoln
Lyon
Redwood
Nicollet
Le Sueur
Rice
Goodhue
Wabasha
Brown
Pipestone
Murray
Cottonwood
Blue Earth
Steele
Dodge
Olmsted
Winona
Watonwan
Waseca
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Houston
Proportion of Population Aged 65 and Older (2010)
30.1% - 40%
20.1% - 30%
15.1% - 20%
6.5% - 15%
0 12.5 25 50 Miles
Source: Minnesota State Demographic Center
Minnesota Housing
Finance Agency

Map 2


Projected 2030 Proportion of Population Aged 65 and Older
Kittson
Roseau
Lake of the Woods
Marshall
Koochiching
Pennington
Beltrami
Red Lake
Polk
Clearwater
St. Louis
Cook
Lake
Itasca
Norman
Mahnomen
Hubbard
Clay
Becker
Cass
Aitkin
Carlton
Wilkin
Otter Tail
Wadena
Crow Wing
Pine
Todd
Morrison
Grant
Douglas
Mille Lacs
Kanabec
Traverse
Benton
Stevens
Pope
Stearns
Isanti
Chisago
Sherburne
Swift
Anoka
Kandiyohi
Meeker
Wright
Chippewa
Hennepin
Washington
Ramsey
McLeod
Carver
Yellow Medicine
Renville
Scott
Dakota
Sibley
Lincoln
Lyon
Redwood
Nicollet
Le Sueur
Rice
Goodhue
Wabasha
Brown
Pipestone
Murray
Cottonwood
Watonwan
Blue Earth
Waseca
Steele
Dodge
Olmsted
Winona
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Houston
Proportion of Population Aged 65 and Older (2030)
30.1% - 40%
20.1% - 30%
15.1% - 20%
10.5% - 15%
0 12.5 25 50 Miles
Source: Minnesota State Demographic Center
Minnesota Housing
Finance Agency

Map 3



Projected Change in Senior Population (2010-2030)

- 95.9% to 255.4%
- 68.8% to 95.8%
- 49% to 68.7%
- 19.1% to 48.9%
- -13.3%

0 12.5 25 50 Miles

Source: Minnesota State Demographic Center

Minnesota Housing Finance Agency

Non-metro population will continue to be older than the total population because retirees are moving to non-metro counties[3] and because older people make up larger share of population in population loss counties.[4] In addition, migration patterns change with age, with older adults less likely to migrate than younger cohorts, but more likely to migrate to rural non-metro-adjacent counties, especially if they have adult children nearby. Compounding this trend as boomers reach retirement, boomers have historically had higher rural migration rates than other generational cohorts.[5]

Within metropolitan areas, a recent study examining 2005 Current Population Survey data from U.S. metropolitan areas including the Twin Cities, found that just two percent of all empty-nest retirement-age suburban homeowners can be expected to move to an urban area; seniors and empty-nesters in suburbs are at least as likely to move to a small town as to the city.[6] Surveys of seniors and boomers in Minnesota confirm that preference.[7]

Policy Implications:

Given the size of the senior and boomer cohorts, older adults will dominate the housing market in the state for the next twenty to thirty-five years. Builders and remodelers, as well as public officials, will need to tune into this aging population to find efficient and multi-purpose housing and care solutions that meet the needs of an aging population while contributing to a future housing stock that is attractive and adaptable to Minnesota's future population. Safe and connected sidewalks, doors with easily-maneuverable lever handles, and entrances that accommodate strollers as well as wheelchairs are examples of features worth investing in because they enhance life for people of all ages and abilities.

And, as noted earlier, communities throughout Minnesota are and will continue to experience this demographic change in different ways. In some communities, the next twenty years will feel like a sprint toward an older demographic, while in others it will feel like the second half of an endurance race. Effective policy responses should therefore recognize that requests for assistance may vary in tone and emphasis and, to the extent possible, provide flexibility for various types and levels of responses throughout the state.

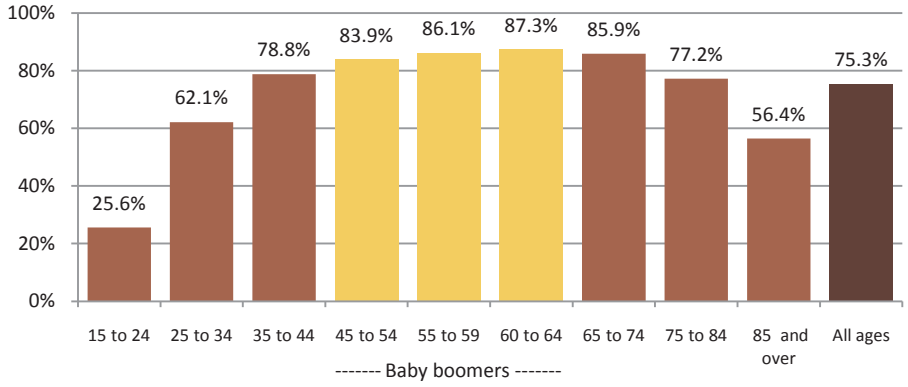
[3] Cromartie and Nelson (2009).
[4] Jones, Kandel, and Parker (2007).
[5] Cromartie and Nelson (2009).
[6] Englehardt (2006).
[7] Ecumen (2007).

II. Seniors' and Boomers' Homes

Responding to the housing needs of an aging population requires understanding of the population beyond its numeric dominance throughout the state. To meet projected market demands in a cost-effective manner, examination of current housing types, levels of satisfaction, and future housing preferences of today's seniors and boomers is essential.

Housing types: At any given time, only a small number of older adults live in nursing homes, assisted living facilities, or other care facilities. In fact, a recent study of the need for long-term care found that elders 65 years old today will need an average of three years of long-term care (nursing facility, home care, or informal care).[8] In 2009, 27,444 senior Minnesotans were in 281 nursing facilities[9]; this total constitutes 4% of all seniors in the state. Assisted living provides housing and care for an estimated 57,261 Minnesota seniors (8%).

Figure 5: Minnesota homeownership rates, by age (2006-2008)[10]



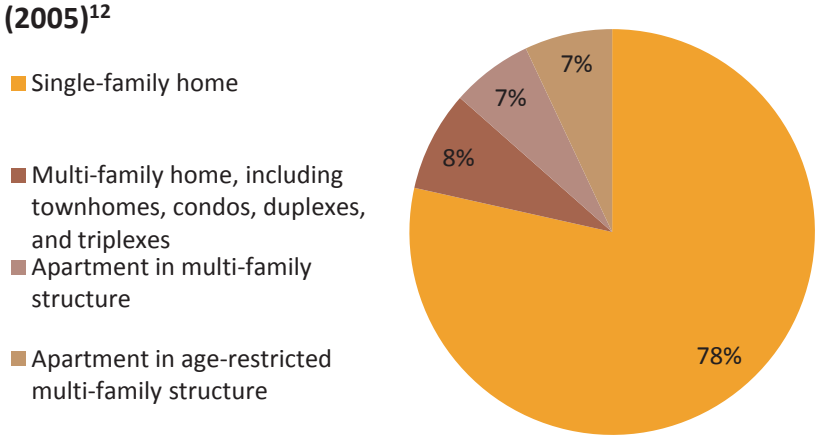
The remaining 88% of seniors are in more traditional housing. Overwhelmingly, seniors and boomers are owners of single-family detached homes. As shown in Figure 5, baby boomers and seniors have home ownership rates exceeding the state rate of 75%.[10] Ownership rates decrease as seniors age and sell their homes, but an estimated 20% of householders age 65+ carry a mortgage on their home.[11]

Older Minnesotans who rent in Minnesota reside in a range of housing types, with about one third in low-density rentals (e.g. townhomes and triplexes), one third in larger multi-family properties, and the remaining third in age-restricted multi-family properties. As shown in Figure

[8] Kemper, Komisar, and Alecxih (2006).
[9] Harrington, Carrillo, and Blank (2010).
[10] American Communities Survey (2006-2008).
[11] Harvard Joint Center for Housing Studies (2006), MetLife (2009).

6, this means that 7% of older Minnesotans reside in age-restricted multi-family rental properties.[12]

Figure 6: Current residence of Minnesotans, age 55+ (2005)[12]



The age and condition of the housing stock in regions around the state varies significantly. In southwest and west central counties, and along the Iowa border, the median age of the housing stock is currently around 50 to 60 years. In counties surrounding Hennepin and Ramsey counties, and in retirement destination areas around Bemidji and Brainerd, the median age of housing is only about 15 to 30 years.[13] In general, the condition of rural housing has improved over the past century, but research finds that senior homeowners tend to live in the oldest homes in the community[14] and are less likely to move than older adults in urban areas.[15]

Satisfaction with housing: Housing type, however, does not appear to have a significant influence on satisfaction with current housing. Adults 55 and older are generally very satisfied with their current housing, ranking their satisfaction at an average of 8.7 out of 10 (10 being highly satisfied) in 2009.[16] In addition, the level of satisfaction with their housing increases with age, as shown in Table 1.

Table 1: Senior and boomer satisfaction with current housing, by age cohort[16]

Age of Respondent	Percent of respondents rating housing satisfaction at least 8.0 of 10.0
45 to 54 years	75
55 to 64 years	82
65 to 74 years	85
75+ years	86

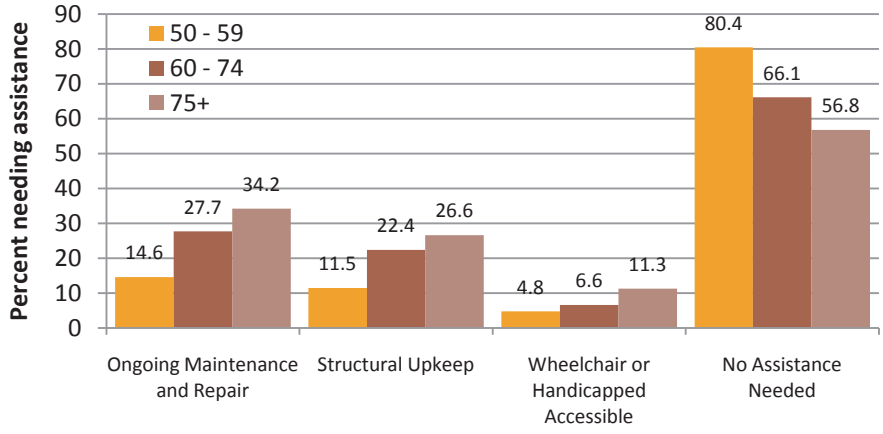
Satisfaction with housing is related to housing's perceived impacts on wellbeing, access to social and civic opportunities, and monetary benefits to

[12] Minnesota Board on Aging (2005). Survey of Older Minnesotans. Table 59: Live in Senior Housing, Table 60: Housing Tenure.
[13] American Community Survey, 2006-2008.
[14] Strathers (2009).
[15] MN Board on Aging (2005). Survey of Older Minnesotans. Table 63: Planning to Move.
[16] MetLife Mature Market Institute and National Association of Home Builders (2009).

residents[17]. In detailed surveys of seniors in five communities and housing settings across the United States, residents reported that both renting and ownership had a positive impact on wellbeing, both provided social and civic opportunities for residents, and both provided monetary benefits. Elderly Minnesota residents receiving assisted living services in their homes also overwhelmingly report satisfaction with care received (99%) and that their lives are better because of the assistance (85%).[18]

High satisfaction is common even when assistance is needed to maintain the home. Forty percent of older Minnesotan noted that they needed some type of assistance to remain in their home. Most common types of assistance needed were maintenance and repair (23.8%), structural upkeep (18.9%), and accessible features (6.9%).[19] Respondents who were female, lived alone or had lower incomes were more likely to report need for assistance to remain in their home. Shown in Figure 7, the need for home modification also increases with age, with twice as many modification needs reported by adults age 75 and older as by respondents age 50 to 59.

Figure 7: Older Minnesotans' need for home repair or modification to remain in home, 2005[19]



Moving and future housing preferences: Associated with reported high levels of satisfaction, the Minnesota Board on Aging found that 80% of older Minnesotans have no plans to move.[20] Relocation can be traumatic for older adults, even within continuing care retirement communities (CCRCs), because it is seen as disempowering and final[21] or because the move was precipitated by a "shock," such as loss of a spouse or caregiver.[22] Older adults may voluntarily

[17] Altus and Matthews (2002).
[18] Minnesota Department of Human Services (2009).
[19] Minnesota Board on Aging (2005). Survey of Older Minnesotans. Table 64: Percent Needing Assistance to Stay in Own Home.
[20] Minnesota Board on Aging (2005). Table 63: Planning to Move.
[21] Shippee (2009), Coughlan and Ward (2007), Heisler, Evans, & Moen. (2004).
[22] Calvo, Haverstick, and Zhivan (2009).

move to CCRCs to maintain autonomy and increase social integration as they age, but transitions within CCRCs often reflect administrative decisions and may result in decreased social integration and satisfaction. Movement from independent living to assisted living or to nursing care is especially traumatic, as independent living is a symbol of retaining control.

Demonstrating this tendency, 62% of older Minnesotans expressed concern about living in a nursing home some day.[23] Additionally, a senior housing provider study in Minnesota found that, even if they or their spouse have a debilitating illness, 89% of Minnesota boomers want to live at home, with just 3% stating a preference for "active adult" communities, 1% for assisted living, and 0% for nursing homes.[24] Nearly two thirds (65%) want a combination of professional and family care in their own home. (These preference rates for assisted living are lower than those found in national studies, where boomers reported preference for assisted living at five to eight percent, and nursing homes at two to three percent.[25])

When older adults consider relocating, reasons for moving can be grouped into pull factors and push factors, with push factors dominating: [26]

- **Pull Factors** include proximity to grown children, church, shopping, or health care (24%).
- **Push Factors** include the desire to reduce housing costs, including maintenance (76%).

Studies also reveal a preference for low-density neighborhoods and communities in small towns and suburban areas. A randomized phone survey of Minnesota baby boomers revealed a preference for rural locations (52%), followed by suburban neighborhoods (37%) and urban neighborhoods (10%).[27]

When older adults' examine a range of housing-care combinations, assisted living is favored by the oldest households (especially those with the oldest person over 85) and when there are no adult children nearby; however, this preference is unaffected by the presence of difficulties with activities of daily living.[28] Shared housing, or the "Golden Girls"/roommate model, is favored by households with difficulties with activities of daily living and households with non-resident children. Supported housing, or in-home care, is favored as a second choice by households having difficulties with activities of daily living.

Policy Implications:

Most baby boomers clearly want to stay in their current homes (typically single-family) and communities. If services are needed, they want them provided by family, friends and

[23] Minnesota Board on Aging. 2005 Survey of Older Minnesotans. Table 77: Concerned about ending up in a nursing home.
[24] Ecumen (2007).
[25] Kane, Chan, and Kane (2007).
[26] Bailey and Gilmore (2004), Kane, Chan, and Kane (2007).
[27] Ecumen (2007).
[28] Shafer (1999).

professionals in their homes. Consequently, meeting the market demand for the senior housing of the future requires solutions that address single-family homes; concentrated senior housing, especially in larger multi-unit properties, is likely a limited part of the solution.

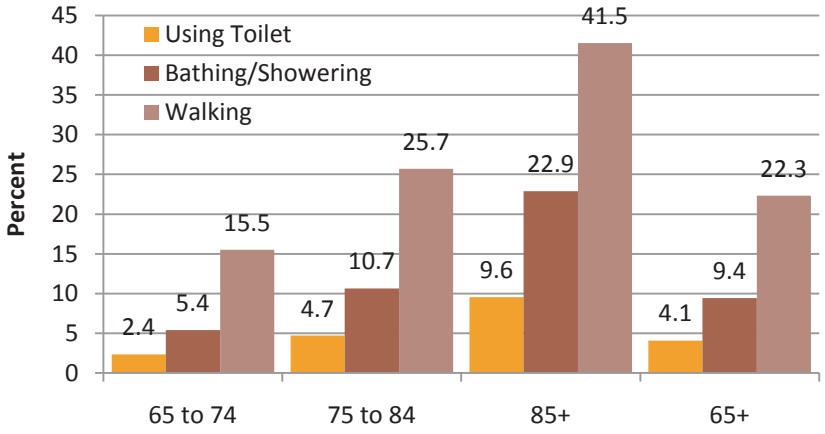
Additionally, helping seniors maintain their independence requires coordinated housing and support services. The wellbeing that seniors feel in their homes is often directly connected to their ability to remain as independent as possible. When the solution demands some ongoing services, a plan for those services should be in place in conjunction with any home modification activities. In addition, identifying and prioritizing naturally occurring retirement communities (Census tracts or places where 25% of the population is seniors) may help to build in efficiencies in service delivery.

III. Meeting Seniors' Housing Needs

As people age, they are more likely to experience health or mobility limitations.[29] At the same time, the current senior and boomer population predominantly own and plan to remain in homes that are not designed for people with disabilities. This incongruence points to an unprecedented need for home modifications and forward-thinking design in new homes.

Housing and disablement: Environmental factors like home and neighborhood design set the threshold for when limitations become a disability and, correspondingly, when assistance is required.[30] For example, someone who has difficulty getting in/out of bathtub may be considered disabled; however, the same person may not be considered disabled if a grab bar enabled the individual to perform the task without other assistance. As reported in the Medicare Beneficiary Survey (2007) and shown in Figure 7, over nine percent of adults age 65+ have difficulty bathing or showering,[31] both activities with which grab bars could be beneficial. Twenty-two percent have difficulty walking and could benefit from zero-step entrances and main-floor baths and laundries.

Figure 8: Medicare recipients with difficulty performing selected activities of daily living, 2007[29]



Also demonstrated in Figure 8, activity limitations and need for assistance also increase with age. Correspondingly, areas of the state in which older cohorts are larger will likely have higher levels of disability and needs for home modification compared to regions with senior populations dominated by younger cohorts. For example, in 2030, seniors will make up about 24% of the population in both West Central and the Headwaters (Bemidji) regions of the state. However, seniors at least age 85 will make up 5.7% of the population in the west central region

[29] Medicare Beneficiary Survey (CDC/NCHS).
[30] Stineman (2001), Stineman, Ross, Masilin, and Gray (2007).
[31] Medicare Beneficiary Survey (CDC/NCHS).

and only 2.8% around Bemidji, indicating that modification needs per senior may be higher in west central Minnesota.

Beyond individual disability rates, however, housing researchers have recently turned to using household disability rates instead of individual disability rates due to their better fit with housing units. Household disability rates, or the percentage of households with at least one person with a disability, are approximately twice that of individual rates and increase as the household ages. Using medium assumptions regarding rates of disability and the number of different households that could reside in a single-family home during its lifetime, there is a 60% probability that, during its expected lifetime, a newly-built single family house will house at least one resident with a physical limitation disability, and a 27% probability of housing at least one resident with a self-care limitation, such as using the toilet.[32] When disabled visitors are accounted for, probabilities rise to 91% and 53%, respectively. Consequently, the current stock of housing will not meet the needs of the aging baby boomers without some intervention.

Housing design for healthy living and healthy aging: Affordable housing with good initial design or home modifications can significantly increase the length of time residents can live safely and independently in their homes. Design modifications can potentially prevent a disability from occurring, stop or slow the process of disablement, or possibly even reverse the disablement process. In a controlled study of accessibility modifications in the homes of older adults with mobility limitations,[33] older adults with baseline modifications such as railings and bathroom modifications were less likely than their counterparts without modifications to experience subsequent decline in functional ability two years later. (However, there may be a health or disability threshold after which modifications reap a limited benefit.)

Factors strongly associated with having residential modifications are health conditions, older age, and living alone. Other factors involved in the decision to have home modifications include residents' and family members' level of awareness, affordability, and beliefs of beneficiality of modifications.[34] These factors concerning home-modification decisions hint at some of the barriers to having one's home modified. Lack of resources or information for home modification, lack of expertise/training for professionals, inertia on part of homeowners/homebuyers were reported in a national study.[35] Also prominent is homeowners' desire to maintain "normal" or "non-disabled" perception. New homebuyers also demonstrate reluctance to incorporate accessibility features (or accessible-ready features); most homes are

[32] Smith, Rayer, and Smith (2008).
[33] Liu and Lapane (2009).
[34] Kutty (1999), Pynoos (1993).
[35] Stafford and Harlan-Simmons (2003).

purchased by younger adult households, who are unaware or in denial of future needs at purchase.[36]

To overcome perception barriers to home modifications, Universal Design may provide a framework for construction and modification that meets the needs of seniors without placing emphasis on disabilities or limitations. Rather than being geared solely to older adults and people with disabilities, universal design features are intended to have general utility and market appeal. Universal design focuses on design beyond the "average adult user model" of conventional design, creating models with broader performance capabilities for the population as a whole, including children, short and very tall adults, those with temporary limitations like pregnancy or a leg injury, and persons who are frail or have various disabilities.[37]

Core components of universal design are non-intrusive and non-specific, improving ease of living for people. These core elements include at least one zero-step entrance, a bath and bedroom on the main level, and broad blocking in walls around toilet, tub, and shower allowing for future placement and relocation of grab bars. (The key with grab bars is having the bathroom framed so that they can be added in the future at minimal cost.) Other examples of universal design features include multiple countertop heights, wide doorways, lever faucets, and a curbless shower with handheld adjustable shower head.

While modifications can be expensive, several assessments have found that universal design feature costs are minimal if incorporated into the construction of new units, but can be substantial if added to existing homes.[38] Although a handrail installation may add only $100 to a new construction project, major structural renovations to an existing home to accommodate handrails can cost $50,000 or more. However, even the cost of major modifications should be evaluated in the context of costs of other housing options, e.g. nursing home care at $64,000 to $74,000 per year. [39]

Along with structural modifications for ease of mobility, telehealth services and televideo assessments for home modification have also proven effective in providing assistance to more remote or underserved populations.[40] Remote (televideo) assessment of home modification needs for older adults are slightly less accurate in identification of problems, but were as effective as in-home inspections in finding agreement on solutions. Remote assessments also involve significantly less cost for residents in rural and other underserved areas.[41]

[36] Lemmon (2007).
[37] Lifetime Homes (no date).
[38] Pynoos and Nishita (2003), Duncan (1998), Lansley et al (2004).
[39] MetLife Mature Market Institute (2005).
[40] Minnesota Department of Health (2008).
[41] Sanford and Butterfield (2005)

Senior and boomer preferences in housing design: Overlapping with some Universal Design components and directly connecting with seniors and boomers' desire to increase ease of living in their own homes, older adult buyers prefer features that enable them to 1) reduce maintenance, energy costs, or physical strain, and 2) maintain the "family home" role, having space for guests and family events.

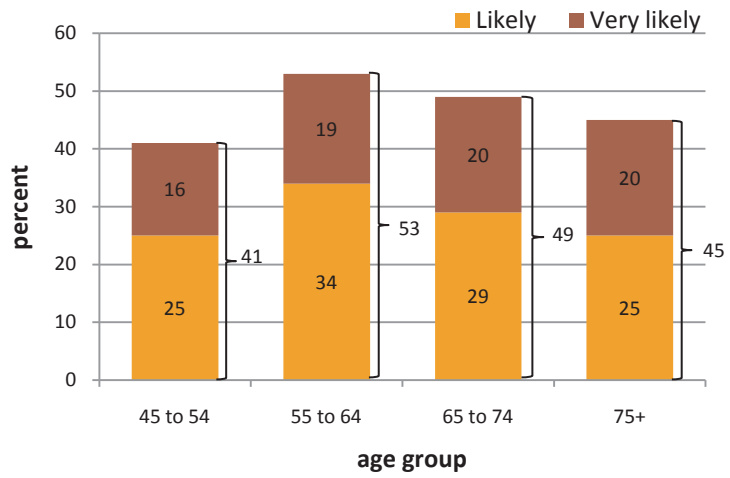
Boomers prefer homes that are:

- larger (3-4 bedrooms),
- high-tech (broadband internet and security systems), and
- low maintenance or energy efficient.[42]

Respondents connected technology to both social interactions and to current or future home health care needs.

Additionally, a 2006 national research study of over 6,000 householders age 45+ points out that only 5% of upper Midwestern adults age 45+ want to downsize when they next move.[43] About one-third (32%) desire two bedrooms, nearly half (47%) prefer three bedrooms, and 18% want four bedrooms in single-family detached homes. Sixty-four percent also want one-story homes, but respondents show little interest in high-profile accessibility features. When the question was framed without reference to universal design, however, 42% of upper Midwestern householders age 45+ stated they were likely or very likely to purchase a home with universal design features (Figure 9). Householders age 55-64 were more likely to say they would

Figure 9: Likelihood of purchasing a universal-design home, by age group[42]



[42] National Association of Home Builders (2009). Survey of builders and buyers age 45+.
[43] Wylde (2008).

purchase a universally designed home than were householders ages 75+. Declining interest with age is primarily a result of older households being less likely to purchase a new home than younger households.

Explaining the lack of interest in overt accessibility features, homebuyers of all ages buy, build, and remodel homes that demonstrate their independence and ability to provide for themselves.[44] As such, they do not generally choose products or designs that appear institutional (e.g. rails in hallways) or emphasize need for assistance (e.g. grab bars or roll-in showers) unless a household member has an immediate need for those products or designs.

Also worth noting: Seniors and boomers are supported by federal law in their desire to receive care in their homes even as disability levels increase. The 1999 *Olmstead* Supreme Court decision[45] mandated that services be provided to people in the "most integrated setting" in keeping with the Americans with Disabilities Act's integration mandate.

Comparing modifications with other housing and care options: As noted previously, home modifications can be expensive if work cannot be done in conjunction with larger home renovation projects or if homes are not designed to facilitate accessibility features. However, compared to more traditional models of housing and care for aging or frail adults, modifications with appropriate home care can preserve a sense of independence while saving money for older adults, their families, and the State.

Table 2 compares the estimated annual costs associated with long-term care options in Minnesota. While individual needs affect the care required, the housing choices for persons with high needs represent vastly different costs.[46] The third column, High with home care and Adult Day Care, most closely reflects seniors and boomers stated desire for a combination of professional and family care in their home and community. This option also presents a more cost effective choice for seniors, with expenses approximately 42 to 45% lower than nursing home care and 17 to 20% lower than professional home care alone. (Adult day services provide health, social, and therapeutic activities in a supportive group environment.)

Reliable studies documenting the value of reductions in level or type of care needed as a result of home modifications are not yet available. However, because the home environment determines when a limitation becomes a disability, it is reasonable to assume that a successful home modification could reduce reliance on some high-intensity (and high-cost) services[47]. This could create potential savings for the family and/or the state when the individual is Medicaid

[44] Golant (2007).
[45] Olmstead v. L.C. and E.W. (98-536) 527 U.S. 581 (1999).
[46] The Gerontology Institute, University of Massachusetts Boston, and Wider Opportunities for Women (2009), Genworth (2010).
[47] Lansley et al (2004), Tanner, Tilse, and de Jonge (2008).

eligible. However, even in cases where the total cost of modification and home care is equal to the cost of long-term care in another setting, it is important to note that the modification allows the family or community to retain a home that is in better condition and is more marketable than the non-modified housing would have been.

Table 2: Estimated Annual Long-Term Care Costs at Public Reimbursement and Private Pay Rates in Minnesota (2008)[46]

	Level of Need for Long-Term Care:				
	Low	Medium	High with home care & Adult Day Care	High with professional home care only	High with Nursing Home Care
Hours Per Week	6	16	36	36	
Public Rates: All of Minnesota	$7,008	$18,701	$36,758	$46,024	$66,795
Private Rates: Twin Cities (11 Counties)	$8,311	$22,231	$40,288	$48,492	$73,175
Private Rates: Balance of Minnesota	$7,262	$19,514	$34,974	$43,798	$60,225

Policy Implications:

Overall, the pattern of increasing disability with age has specific implications for estimating housing modification and care needs in different regions of the state. Areas that have a higher proportion of the population that is over 75 or over 85 may have higher demands than the overall senior population would suggest. Varying needs and geographic realities may demand consideration of a broader set of eligible activities in home modification and rehabilitation projects. For example, creating accessory units (i.e. mother-in-law apartments) within larger suburban homes can support family caregiving while maintaining a sense of privacy for family members. However, in more geographically isolated areas, equipping homes with telehealth (or telehealth-ready internet connections) more effectively promote independent living.

Because the living environment sets the threshold for disability and service/care responses, home designs should be as accessible as possible. However, the existing housing stock does not meet the needs of an aging population and, in fact, contributes to the disability level of aging adults. Certain housing designs, such as split levels or split entries, should be discouraged and phased out because they create an environment with a very low threshold at which a limitation becomes a disability, thus requiring modification or assistance. Floor plans like split levels inhibit livability as designed and would involve very expensive modifications to meet even the core universal design requirements.

Related to universal design, quality design that facilitates daily living is clearly welcome and desired, but accessibility features should not be prominent or visible corrections to the existing structure. For example, bathrooms should be framed so that grab bars can be installed without

extensive work or expense; alternate entrances or berms integrated into the landscaping should be considered in place of prominent ramps. Significant effort may be required to educate homebuilders and remodelers on flexible design strategies and non-intrusive alternatives to institutional products, among other topics. Coordination with other home modification funders and specialists, including DEED and statewide Centers for Independent Living, could build expertise and control costs across the industry. In addition, connecting builders to forward-thinking disability specialists or occupational therapists on an ongoing basis could help to form relationships that facilitate responsible and individualized solutions to housing and care problems.

Finally, selling universal design may require new language and new angles. Concepts such as easy living, convenience, enablement, and young family-friendly design may be more convincing to seniors and new homebuyers who may otherwise feel that they are compromising their housing desires. For example, the same zero-step entrance that prevents falls for seniors also prevents falls for toddlers, and more easily accommodates strollers than traditional step entrances. Open floor plans enable caregivers of children and older adults to work in the kitchen and maintain a line of sight to the living room.

IV. Applications to the Minnesota Market

In Minnesota, the percentages of older adults who report a need for home repair or modification may appear small, with five to eleven percent of adults by age reporting a need for accessibility modifications (see Figure 7 on page 10).[48] However, when these percentages are applied to the total number of persons in these age groups, the scope of the need is substantial. As shown in Table 3, applied to 2010 population estimates from the Minnesota State Demographic Center, over 300,000 older adult households need assistance with structural upkeep or repair and 100,000 need wheelchair or handicapped accessibility modifications. In addition, the numbers are likely to grow as the baby boomers age into the 75+ age group.

Table 3: Estimated older Minnesotans needing assistance with selected home maintenance tasks[48]

Age Cohort		People (2010)
50-59	Total Population	763,130
	Need assistance with ongoing maintenance and repair (14.6%)	111,417
	Need assistance with structural upkeep (11.5%)	87,760
	Need assistance with wheelchair or handicapped accessibility (34.2%)	36,630
60-74	Total Population	631,250
	Need assistance with ongoing maintenance and repair (27.7%)	174,856
	Need assistance with structural upkeep (22.4%)	141,400
	Need assistance with wheelchair or handicapped accessibility (6.6%)	41,663
75+	Total Population	327,640
	Need assistance with ongoing maintenance and repair (34.2%)	112,053
	Need assistance with structural upkeep (26.6%)	87,152
	Need assistance with wheelchair or handicapped accessibility (11.3%)	37,023
All 50+	Total Population	1,722,020
	Need assistance with ongoing maintenance and repair (23.1%)	398,326
	Need assistance with structural upkeep (18.3%)	316,312
	Need assistance with wheelchair or handicapped accessibility (6.7%)	115,316

In addition, considering these self-reported need estimates in the context of older adults' consistently high satisfaction with their current housing, it is possible that structural repair and modification needs are underestimated.

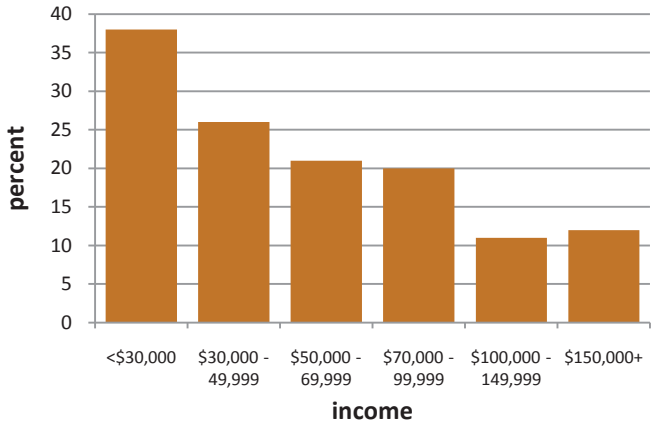
Special considerations for the low- to moderate- income housing market: Assisted living, with little government regulation or financing (as compared to other housing-care options for seniors), has grown where the population can afford this more expensive care option; assisted living facilities and services are disproportionately located in areas with higher educational attainment, income, and housing wealth.[49] Thus, low-income aging adults, including minorities

[48] Minnesota Board on Aging (2005). Survey of Older Minnesotans. Table 64: Percent Needing Assistance to Stay in Own Home.
[49] Stevenson and Grabowski (2010).

and people in rural areas, have substantially less access to assisted living services due to financial resources and proximity issues. These adults are more likely to move directly from their homes to nursing homes (which are heavily funded with public dollars), both because of the dearth of other housing options and because the individual is likely to be more frail once they move.

Limited access to housing and care options can contribute to expensive undercare and overcare in underserved populations.[50] For older adults with some care needs, both overcare (e.g. nursing home care when 24-hour care is not needed) and undercare (e.g. limited or no home care despite need) result in greater health care costs for individuals and society over their lifetime. This under- or overcare can be more prevalent in areas underserved by mid-level care services, including home care.

Figure 10: Percentage of adults 65+ with activity limitations, by income[51]



Compounding the impact of over- or under-care on overall health care costs and Medicare spending, data from the Center for Medicare and Medicaid Studies and large independent studies have found that income is inversely related to activity limitations in older adults.[51] In other words, higher levels of disability are associated with lower incomes and vice a versa. As shown in Figure 10, 38% of older adults with incomes below $30,000 report limitations that affect daily activities; the rate decreases by almost half for those with mid-range incomes, and is nearly halved again for persons with high incomes.

Clustered housing with services may present an affordable housing option for lower-income seniors with service needs and preserve (or create) service efficiencies for long-term care

[50] Lawler (2001).
[51] Wylde (2008).

providers.[52] However, considering the various impacts of resident income and asset levels on eligibility for housing subsidy or health services, coordination of housing finance and health service provision can be extremely difficult.[53] A new paradigm of senior housing, with coordinated services and housing supports in the resident's home, needs to be investigated.

Policy Implications:

Although multi-family rental units may not be the primary avenue of senior housing in the future, it may be a key component of Minnesota Housing's strategy for serving seniors. Because about half of low-income seniors are renters, new construction and modification projects in rental units that serve seniors should respond appropriately to the higher levels of disability in the lower-income population (versus levels in all seniors and the general population). ADA minimum requirements may not be adequate.

Financing mechanisms should not dissuade older adults from participating in programs designed for them. Requirements such as extended residency or repayment due in full when the unit is no longer the primary residence are reasonable in most circumstances, but may prevent seniors and their families from seeking assistance with necessary modifications. In addition, home values of lower-income senior homeowners can be minimal, especially in greater Minnesota; thus, modification financing tied to housing value could be problematic.

Conclusions

Minnesota's aging seniors and baby boomers are bringing to bear new demands on the state's housing and services. While the needs are extraordinary and immediate, Minnesota Housing has the opportunity to contribute to solutions that are both responsive and responsible. Being responsive to the needs of seniors and the State's budget goals, Minnesota Housing can work quickly to coordinate housing initiatives with senior care initiatives, and develop program guidelines that encompass the range of housing and care solutions that can help seniors remain safely and affordably housed in their communities throughout the state. Being responsible to customers and funders, Minnesota Housing can also develop and adapt quality housing that meets the needs of people of all ages and abilities, creating a backbone of flexible and affordable housing options for Minnesotans—now and in the years ahead.

[52] Golant (2008).
[53] Evashwick and Holt (2000), Ormond et al (2004).

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Appendices

A: County Indicators

B: Select Universal Design Elements for All Housing

Appendix A: County Indicators

	Senior Population						Housing				Selected Health & Care Services			
County	Elderly Depen-dency Ratio (2008)	Seniors (2010)	Pct. Of County Pop. (2010)	Seniors (2030 projected)	Pct. Of County Pop. (2030 projected)	Pct. Change in Senior Population (2010-2030)	Median Age of Housing Stock (2010)	Federally Subsidized Housing Units (2010)	Senior Housing Cooperatives (2010)	NAHB Aging in Place Certified builders and remodelers (2010)	Hospitals (2010)	Hospital Beds (2010)	Nursing Home Beds (2009)	Assisted Living Providers (2008)
AITKIN	43.1	4050	24%	7310	38%	80%	35	115	0	0	1	24	153	4
ANOKA	12.3	33310	9%	77870	19%	134%	28	1232	1	2	2	546	523	29
BECKER	26.5	5670	17%	10370	26%	83%	35	346	0	2	1	87	381	8
BELTRAMI	19.8	5480	12%	11090	20%	102%	30	412	0	0	1	118	220	16
BENTON	15.1	4590	10%	10210	18%	122%	29	364	0	0	0	0	427	11
BIG STONE	44.5	1220	23%	1680	33%	38%	53	94	0	0	2	40	119	2
BLUE EARTH	16.1	7100	12%	11980	18%	69%	40	553	2	0	1	272	380	14
BROWN	28.7	4720	18%	7380	27%	56%	51	277	2	0	3	111	359	9
CARLTON	22.4	5350	14%	10610	23%	98%	42	277	0	0	2	67	268	18
CARVER	11.7	7700	8%	24490	16%	218%	22	465	0	3	1	109	249	12
CASS	30.6	5790	19%	10490	29%	81%	32	190	0	0	0	0	136	8
CHIPPEWA	30.7	2470	19%	3860	29%	56%	52	205	0	0	1	30	163	5
CHISAGO	15.1	5690	10%	15290	17%	169%	23	381	1	2	1	61	218	8
CLAY	18.1	6940	12%	12310	18%	77%	39	415	0	0	0	0	389	12
CLEARWATER	30.2	1550	18%	2500	26%	61%	38	99	0	0	1	25	111	1
COOK	25.3	1110	20%	2320	37%	109%	33	93	1	0	1	16	47	0
COTTONWOOD	33.2	2420	21%	3210	27%	33%	53	162	0	0	2	43	197	3
CROW WING	28.3	11070	17%	21970	28%	98%	33	585	1	2	2	204	354	21
DAKOTA	12.3	38870	9%	96860	20%	149%	26	1028	8	10	2	207	1074	40
DODGE	18.3	2470	11%	5120	18%	107%	38	228	0	0	0	0	116	4
DOUGLAS	30.0	6640	18%	12480	27%	88%	32	424	0	0	1	127	389	15
FARIBAULT	34.5	3210	21%	4320	29%	35%	60	212	0	0	1	43	248	4
FILLMORE	29.2	4010	18%	6210	26%	55%	60	329	0	0	0	0	328	8
FREEBORN	30.7	6360	20%	8920	28%	40%	54	324	1	0	1	77	394	6
GOODHUE	23.6	7450	16%	14590	26%	96%	41	815	1	0	3	89	655	8
GRANT	39.5	1370	23%	2010	31%	47%	52	815	0	0	1	20	90	2
HENNEPIN	15.8	131510	11%	229170	19%	74%	43	8694	22	30	11	5275	7141	159
HOUSTON	25.5	3310	16%	6180	28%	87%	44	184	0	0	0	0	210	3

	Senior Population						Housing				Selected Health & Care Services			
County	Elderly Depen-dency Ratio (2009)	Seniors (2010)	Pct. Of County Pop. (2010)	Seniors (2030 projected)	Pct. Of County Pop. (2030 projected)	Pct. Change in Senior Population (2010-2030)	Median Age of Housing Stock (2010)	Federally Subsidized Housing Units (2010)	Senior Housing Cooperatives (2010)	NAHB Aging in Place Certified builders and remodelers (2010)	Hospitals (2010)	Hospital Beds (2010)	Nursing Home Beds (2009)	Assisted Living Providers (2008)
HUBBARD	33.6	3840	20%	6520	30%	70%	33	233	0	0	1	50	82	8
ISANTI	15.2	5030	11%	13360	19%	166%	28	299	1	0	1	86	293	4
ITASCA	28.1	8290	18%	14450	30%	74%	37	572	1	0	3	104	352	23
JACKSON	32.4	2070	18%	2790	24%	35%	56	112	0	0	1	20	112	5
KANABEC	22.4	2590	15%	5070	24%	96%	34	173	0	0	1	49	77	3
KANDIYOHI	24.0	6580	16%	11530	26%	75%	37	629	1	0	2	220	448	19
KITTSON	39.0	1040	24%	1390	37%	34%	50	149	0	0	1	15	129	2
KOOCHICHING	31.3	2780	20%	3940	30%	42%	43	257	0	0	1	49	171	3
LAC QUI PARLE	36.5	1640	23%	2170	33%	32%	63	94	0	0	2	32	163	1
LAKE	32.1	2420	21%	4000	33%	65%	47	81	0	0	1	25	192	5
LAKE OF THE WOODS	33.4	880	20%	1530	34%	74%	34	32	0	0	1	15	50	1
LESUEUR	21.3	4190	14%	8350	23%	99%	39	284	1	0	1	24	197	3
LINCOLN	43.5	1360	23%	1620	27%	19%	55	98	0	0	2	46	149	2
LYON	22.6	3530	15%	5150	21%	46%	43	460	0	0	2	74	221	4
MAHNOMEN	22.0	900	18%	1340	26%	49%	45	71	0	0	1	18	48	0
MARSHALL	30.2	1790	18%	2560	26%	43%	45	64	0	0	1	20	85	1
MARTIN	32.8	4120	20%	5920	30%	44%	58	404	1	0	1	57	290	4
MCLEOD	35.0	5710	15%	10290	23%	80%	37	460	1	0	2	115	303	8
MEEKER	25.0	3850	16%	6380	23%	66%	40	182	0	0	1	38	218	3
MILLE LACS	25.6	4430	15%	9380	23%	112%	33	503	0	0	1	28	301	4
MORRISON	24.0	5240	15%	9920	25%	89%	36	567	0	0	1	49	262	10
MOWER	30.0	6870	17%	10250	25%	49%	56	159	1	0	1	82	340	13
MURRAY	35.3	1840	21%	2790	33%	52%	54	92	0	0	1	25	124	2
NICOLLET	18.3	3580	11%	6570	18%	84%	36	184	1	0	1	17	135	5
NOBLES	27.5	3440	17%	5350	26%	56%	53	346	1	0	1	64	207	2
NORMAN	34.9	1340	19%	1780	25%	33%	53	96	0	0	1	14	180	0
OLMSTED	18.1	17940	12%	38470	21%	114%	30	1265	3	2	3	2012	636	25
OTTER TAIL	32.4	11810	20%	21330	33%	81%	41	671	1	0	2	137	824	22
PENNINGTON	23.5	2250	16%	3760	25%	67%	40	141	0	0	1	99	137	3
PINE	23.6	4780	16%	9150	25%	91%	35	401	0	0	2	40	141	5

	Senior Population						Housing				Selected Health & Care Services			
County	Elderly Depen-dency Ratio (2009)	Seniors (2010)	Pct. Of County Pop. (2010)	Seniors (2030 projected)	Pct. Of County Pop. (2030 projected)	Pct. Change in Senior Population (2010-2030)	Median Age of Housing Stock (2010)	Federally Subsidized Housing Units (2010)	Senior Housing Cooperatives (2010)	NAHB Aging in Place Certified builders and remodelers (2010)	Hospitals (2010)	Hospital Beds (2010)	Nursing Home Beds (2009)	Assisted Living Providers (2008)
PIPESTONE	35.7	1970	21%	2600	28%	32%	54	61	0	0	1	44	201	3
POLK	26.4	5280	17%	8340	24%	58%	47	336	0	0	2	92	432	9
POPE	33.8	2290	20%	3790	30%	66%	47	149	0	0	1	34	190	4
RAMSEY	19.4	61590	12%	92620	19%	50%	49	4593	7	6	7	2014	3314	57
RED LAKE	25.7	810	19%	1370	30%	69%	48	117	0	0	0	0	45	1
REDWOOD	31.5	3070	20%	4130	27%	35%	52	184	1	0	1	25	294	4
RENVILLE	29.4	3020	18%	4520	26%	50%	54	239	0	0	1	35	285	6
RICE	17.1	7740	12%	15280	19%	97%	36	889	3	0	2	136	456	15
ROCK	31.6	1750	18%	2560	26%	46%	53	110	0	0	1	28	193	3
ROSEAU	18.8	2160	13%	4320	23%	100%	33	168	0	0	1	25	104	2
SAINT LOUIS	23.0	31300	16%	49490	24%	58%	53	2321	2	3	8	1132	1701	78
SCOTT	9.9	10050	7%	35720	13%	255%	16	426	0	0	2	142	363	12
SHERBURNE	11.0	7880	8%	23060	14%	193%	18	489	1	4	1	54	416	6
SIBLEY	24.0	2440	16%	3820	24%	57%	53	166	0	0	1	20	144	4
STEARNS	17.6	17380	11%	35480	19%	104%	31	1225	1	1	5	592	461	13
STEELE	21.0	4930	13%	9580	21%	94%	43	461	2	0	1	43	248	10
STEVENS	25.3	1470	15%	1840	18%	25%	46	154	0	0	1	54	104	2
SWIFT	28.0	1880	17%	2860	29%	52%	55	182	0	0	2	46	113	7
TODD	25.9	4110	16%	6830	26%	66%	44	253	0	0	1	34	173	3
TRAVERSE	51.8	900	25%	780	26%	-13%	54	36	0	0	1	25	91	0
WABASHA	24.9	3450	15%	6080	24%	76%	40	132	0	0	1	31	173	2
WADENA	35.4	3060	22%	5150	34%	68%	42	157	0	0	2	89	266	3
WASECA	20.9	2800	14%	5280	25%	89%	46	157	1	0	1	35	175	3
WASHINGTON	12.7	24530	10%	62510	21%	155%	22	1087	1	3	2	183	606	20
WATONWAN	33.4	2110	19%	3140	31%	49%	55	196	1	0	2	50	146	1
WILKIN	24.9	1080	16%	1810	28%	68%	48	108	0	0	1	25	120	3
WINONA	20.0	6700	14%	11060	22%	65%	50	380	0	0	1	99	490	7
WRIGHT	12.9	11950	9%	34810	16%	191%	20	409	0	1	2	104	510	12
YELLOW MEDICINE	34.9	2010	20%	2800	29%	39%	57	152	0	0	2	55	192	3

Sources & Definitions in County Indicators Table

- Elderly dependency ratio: The number of persons aged 65 or over per 100 persons in the population aged 15 through 64 years. Minnesota Department of Health, 2009 Minnesota County Health Tables: Demographics Table 3. (Analysis based on 2009 Census Estimates).
- Seniors (2010 and 2030): Persons 65 years and older. Minnesota State Demographic Center (June 2007). Population Projections 2005-2035. www.demography.state.mn.us/resource.html?Id=1916.
- Median Age of Housing: U.S. Census Bureau, 2006-2008 American Community Survey. Detailed table B25037. Median year structure built by tenure.
- Federally Subsidized Housing Units: All subsidized housing units and vouchers funded by USDA Rural Development or the US Department of Housing and Urban Development (HUD). Rural Development property data provided by Minnesota Rural Development Office July 19, 2010. HUD units identified through the Multifamily Assistance and Section 8 Contracts Database, available online at http://www.hud.gov/offices/hsg/mfh/exp/mfhdiscl.cfm.
- Senior Housing Cooperatives: Number of self-identified senior co-operatives by county as of July 20, 2010. Senior Cooperative Foundation, http://www.seniorcoops.org/list.php.
- NAHB Aging in Place Certified builders and remodelers: Number of builders or remodelers certified by the National Association of Homebuilders as Aging in Place Specialists as of August 2, 2010. http://www.nahb.org/generic.aspx?sectionID=717&genericContentID=8484.
- Hospitals, Hospital Beds, Nursing Home Beds, and Assisted Living Providers: Licensed or registered providers of these services as included in Minnesota Department of Health Healthcare Provider and Facility Directory, updated August 6, 2010. http://www.health.state.mn.us/divs/fpc/directory/fpcdir.html.

Appendix B: Select Universal Design Elements for All Housing

Excerpted from "Residential Rehabilitation, Remodeling and Universal Design," The Center for Universal Design, North Carolina State University College of Design (2006). Available online at: http://www.ncsu.edu/www/ncsu/design/sod5/cud/pubs_p/docs/residential_remodelinl.pdf.

Entrances

1. Accessible parking convenient to dwelling (covered from the elements)
2. Accessible path of travel to dwelling from parking or drop off area (slope of 1:20 or less eliminates the necessity for handrails, except when needed by a specific individual)
3. At least one entrance without steps and flush or low profile threshold
4. Minimum 5-feet X 5-feet maneuvering space at stepless entrance
5. 36-inch minimum exterior door with lever hardware
6. Movement sensor light at entrance
7. A sidelight or a peephole at 42 and 60 inches above the floor
8. Ambient and focused lighting at keyhole
9. High visibility address numbers

General Interior

1. Hall width 42 inches minimum (interior accessible route is 36 inches)
2. Interior door width 32-inch minimum (requires 34 or 36-inch wide door), equipped with lever hardware
3. Flush transitions between floor surfaces (maximum of 1/2-inch rise)
4. 5 pounds maximum force to open doors
5. 18-inch minimum space at latch side of door
6. 5-feet X 5-feet maneuvering space in each room (after furniture is placed)
7. Increased number of electrical outlets for additional lighting and alarm indicators, especially in bedrooms
8. Electrical outlets at 18-inch minimum height
9. Light switches 44 inches maximum above floor
10. View windows at 36-inch maximum sill height and large enough to use as an escape route in the event of an emergency
11. Crank operated (casement) or light weight sliding windows
12. Closet rods adjustable from 30 inches to 66 inches above the floor
13. Loop or other easy-to-use handle pulls on drawers and cabinets
14. High contrast, glare free floor surfaces and trim
15. Low pile carpet or smooth anti-slip flooring
16. High-speed Internet access data connection port and cabling

Bathrooms

1. 60-inch diameter turning circle
2. 30-inch X 48-inch area of approach (forward or parallel, depending on fixture type) in front of all fixtures
3. Toilet more usable by many if positioned in a 5-feet X 5-feet space with centerline 18 inches from sidewall
4. 32-inch minimum lavatory counter height with lever faucet control
5. Adaptable cabinets to reveal kneespace under lavatory. Exposed piping in kneespace should be padded or concealed.
6. When tub or shower are installed, select models designed to accept a portable bench or bathing seat
7. Curbless or roll-in shower plus standard tub
8. Offset single-lever controls in tub and shower to minimize stooping, bending, and reaching

9. Adjustable height hand-held shower head in addition to standard fixed shower head
10. Anti-scald devices on all plumbing fixtures
11. Enlarged reinforced areas around toilet and bathing fixture to provide secure mounting locations for grab bars and shower seats
12. Mirror to backsplash at lavatory
13. Contrasting color edge border at countertops

Kitchens

1. 60-inch diameter turning space
2. 30-inch X 48-inch area of approach (forward or parallel, depending on fixture type) in front of all appliances
3. Cooktop or range with front- or side-mounted controls and staggered burners to eliminate dangerous reaching
4. Front-mounted controls on washer and dryer
5. Adaptable cabinets to reveal kneespace (when needed) at sink and under work surface near cooking appliance
6. Variable height sink adjustable between 32 and 40 inches
7. Exposed piping and any sharp or hot elements in any kneespace should be padded or concealed
8. Single-lever faucet controls
9. Full height pantry cabinets for high and low storage.
10. Adjustable height shelves in wall cabinets
11. Refrigerator / freezer with frozen food storage in the bottom or side-by-side refrigerator / freezer
12. Variable height counter surfaces or adjustable through a range of 28 to 40 inches
13. Base cabinets with pullout shelves or drawers
14. Contrasting color edge border at countertops
15. Microwave oven at countertop height with uninterrupted counter surface or pull out shelf to support the safe transfer of hot and / or heavy cookware
16. Under cabinet glare free task lighting