More than Just a Ramp - The Feasibility of Accessible Private Housing

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Abstract

As the private housing industry begins a recovery in earnest across the United States new home-building is on the rise again. However, there is a crucial element missing in the private home-building industry which is not being sufficiently addressed in this country. That crucial element is the inclusion of houses which address the needs of the disabled population. In an effort to maximize profits, private home-builders in many cities are primarily building only multi-level housing. This has several unintended consequences, one of which is the exclusion of people with disabilities, since such a home is largely unusable to members of that population. My research and inquiry focus on this unintended consequence because it is both an important fiscal and social issue which has largely gone unexamined.

The United States Department of Housing and Urban Development defines a disabled person as, "Any person who has a physical or mental impairment that substantially limits one or more life activities; has a record of such impairment; or is regarded as having such impairment". This definition by HUD further defines 'major life activities to include, "walking, talking, hearing, seeing, breathing, learning, performing manual tasks and caring for oneself" (Dept. of Housing and Urban Development, 2014). When private home-builders neglect to build accessible housing whole populations of people, and their family members, are being entirely shut out of those communities. For the purposes of my research I will be focusing on people who fall into the category of being limited by physical impairments; including that of the physically disabled persons and those with age-related limitations.

I would also like to clarify that this research is not governed by the scope of the laws, regulations or policies which are incorporated within the National Affordable Housing Act (NAHA), the Fair Housing Act (FHA) or the Americans with Disabilities Act (ADA). The NAHA is an income based program which has no authority over accessibility features of homes

within its jurisdiction; (HUD - National Affordable Housing Act, 2014). The Fair Housing Act (FHA), as updated and amended in 1988, declares that "no person shall be denied housing (or a mortgage loan) due to race, color, national origin, religion, sex, familial status or handicap". The FHA, however, exempts owner-occupied multi-family housing units of up to 4 units; and/or single family units sold or rented without the use of a broker. (U.S. Department of Housing and Urban Development, 2014). This has no bearing on regulation of accessible housing in the private market; especially with regard to the requirement to provide the building of such housing. The Americans with Disabilities Act of 1990 (ADA) applies to "equal opportunities of employment, public accommodations, commercial facilities and transportation". (U.S. Department of Justice, 2009). These ADA regulations do not have any relevance toward the private market housing industry with regard to accessibility requirements.

The effect of private market home-builders predominantly building multi-level homes has far-reaching consequences for society as a whole which must be addressed. Where a person lives directly affects many important aspects of their life, on both the physical and psychological levels. The physical level includes, but is not limited to, the logistical issues, including what school district their children attend; which voting district they are in; the amount of property taxes they pay; their property value and what transportation options they have. On the psychological level, addressing quality of life, Americans without disabilities can, for all intents and purposes, buy a home anywhere they want. They are constrained only by their financial limitations. Americans with disabilities however, do not have the same access to housing choices due to the restrictions imposed on them by the lack of available housing which is truly usable for them. Therefore, the purpose of this Capstone research is to examine the importance of this need more closely, as well as investigating the need for policies which will support accessible housing in the private market.

Accessible housing is defined as homes which are built (usually as single-story structures) to incorporate the use of Universal Design elements throughout. The study of this problem will be useful in proposing possible amendments to the Fair Housing Act that would track accessible home-building in the private sector, and policies directed towards encouraging builders to cooperate with more accessible building practices within the private market. Ideally I would propose that, in certain demographic areas (defined by a matrix of topography and density), the building department in that city would require twenty percent of all new single-family homes to be designed and built as both single-story and universally designed homes. Government officials and homebuilders alike need to turn their attention to building more "Inclusive Communities" where any citizen can reach the American Dream, including the dream of homeownership. This research is directed toward examining the need and urgency for such changes.

Background

Universal Design has been around for a long time, the phrase first being coined by architect Ronald L. Mace in the early 1960's (NC State University, 2014) and subsequently used by author of "Designing for the Disabled", Selwyn Goldsmith in 1963 (Universal Design, 2011) Universal Design emerged as a 'broader version' of previous 'barrier-free' elements of design and eventually established seven main principals. These principals are: Equitable use, flexible use, simple and intuitive design, perceptible information, tolerance for error, low physical effort, and having size and space for appropriate use of area (Center for Universal Design; NC State University, 2007). Universal Design is recognized on an International level as well, and many countries have contributed to the advancement of new and emerging Universal Design elements. The concept of Universal design has more recently evolved into what is now referred to as

"Lifespan Design", incorporating the everyday design elements of a home in a way that is functional to a user of any age or ability – to be used either throughout the resident's lifespan, or to be usable for the lifespan of the home when people of differing abilities abide there.

Universal Design was 'on the radar' with the passage of the Fair Housing Act in 1968, which took aim at ending discriminatory housing practices, as more Americans became aware of the need for changes in the housing industry. Universal design was utilized in shaping the laws governing public sector and multi-family building. The general public appears to be under the assumption that with the passage of the Fair Housing Act, expanded in 1988, and with the passage of the ADA in 1990, that these acts have adequately addressed the issue of housing discrimination for the disabled community. They have not. This current housing crisis within the private sector is clearly a case of 'discrimination by omission', which is not addressed in any manner by above mentioned government agencies. Echoing the same sentiment which drove the fight for public buses in the 1970's to be made accessible to all of the members of the public, this study likewise asks, "What good is a service or commodity to a certain population when it is unusable to them"?

When a family member is either born with a disability or becomes disabled often the home they are currently living in becomes inaccessible, or of limited use to that person. For example in a study on spinal cord injury 92% of patients that are discharged after injury are released to a private home (Alabama, 2002); which is very likely to be an inaccessible home. There are further statistics which indicate the scope of the need to provide more accessible housing. According to the National Spinal Cord Injury Association someone becomes paralyzed in the U.S. every 48 seconds. Eighty-two percent of all spinal cord injuries happen to males and the average victim of SCI is 33 years old (United Spinal Association, 2014). Fortunately, present-day medical advancements have allowed people with debilitating injuries to not only survive

their injuries, but to be rehabilitated and live more independent lives after recovery. People who have sustained a spinal cord injury do have resources to rebuild their lives, but not often the resources to rebuild the houses they live in. Unfortunately, the housing industry is hampering the efforts of persons with limited mobility from gaining achievements in independent living by not building the homes that are needed for this population.

Civil rights advocates have been fighting for years to gain greater employment rights for the disabled, stronger rights for Veterans returning to work, transportation options and for endless numbers of 'curb-cuts' to our sidewalks. As the disabled population is making strides in expanding their 'social footprint' and building more independent lives for themselves in society, the demand for accessible housing needs to expand with them accordingly – but the housing markets in many cities appear to be either unaware of this demand, or simply ignoring it. The disabled population's struggle for equality seems to closely mirror that of the struggle for civil rights during the 1960's. The rights being sought pertain to the conflict over equal rights for public transportation; equal access of public facilities; fair treatment by employers; fair treatment by businesses, and fair and equal consideration in home purchases. However, the disabled community needs the added provision of building new homes that are actually usable to them, without incurring large amounts of additional costs to remodel existing homes.

Other populations besides persons with disabilities that would be well served by accessible housing are the elderly, which is a rapidly expanding proportion of the U.S. population due to the aging baby-boom generation, and military veterans who are in desperately short supply of suitable housing when they return from service with life-altering injuries (U.S. Department of Housing and Urban Development, 2014). This study will also demonstrate how accessible housing is beneficial to the whole of society, not just to those with specific needs.

Stanley K. Smith, et al 2012 Study:

The need for more accessible housing in the U.S. private market is strongly supported by the Stanley K. Smith, et. al. article in the 2012 journal of "Housing Studies" (Vol. 27; No. 2). This article, entitled "Population, Aging, Disability and Housing Accessibility: Implications for Sub-national Areas in the United States" builds on the same authors' prior study (Smith et al; 2008) which estimates the likelihood that at least one disabled resident will occupy a newly built single-family detached dwelling over the expected lifetime of that house (estimated average of 100 yrs.). Basing the study on the expected lifetime of a house was determined to provide more relevant information for the estimates that were being sought to be measured than on other measures. In both studies there were two disability measures used, labeled as HHDIS-1, comprised of essential needs, and HHDIS-2 indicating beneficial needs (Smith S.K; et al, 2012).

- HHDIS-1 (Essential): Measured if a household member had a long-lasting condition that substantially limited one or more physical activities, such as walking, climbing stairs, reaching, lifting or carrying.
- HHDIS-2 (Beneficial): Measured if a household member had a condition lasting six months or more that made it difficult to dress, bathe or get around inside the home.

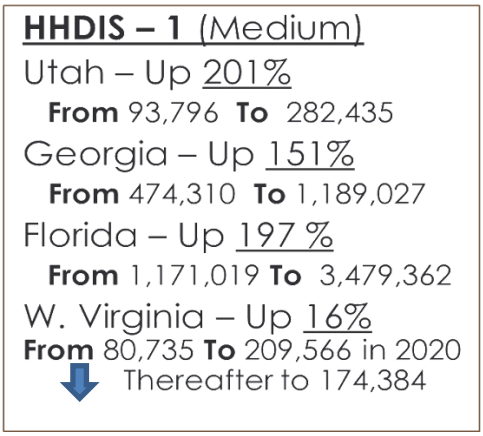
In the 2008 study by Smith, et al, if was found that using the HHDIS-1 measurement there was a 60 percent probability that a newly built single-family detached home would house a disabled person in this category. The second measure, HHDIS-2 resulted in a 25 percent probability.

The 2012 study here goes further than the previous study by making allowances for differences in demographics. This was accomplished by examining four varied states, chosen specifically for their distinct population characteristics of both 'age structure' and 'disability rate', per state.

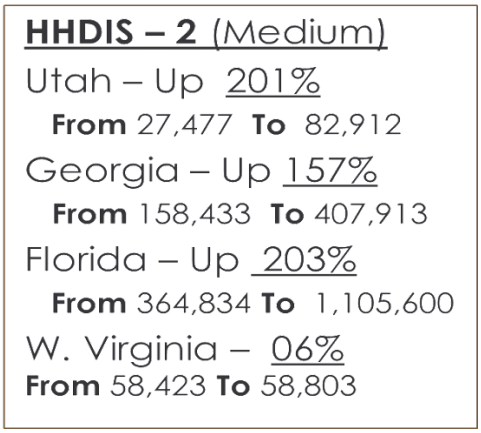
The states chosen were Utah, Georgia, Florida and West Virginia, represented visually in A1. These four states represent the four possible combinations of having either a younger or older

population (in 2000) and having either a lower or higher rate of disability. With these criteria used projections were made as to the number of households with at least one disabled resident, by state. One table was done to represent the HHDIS-1 measure (Fig. 1.1), and one table was done to represent the HHDIS-2 measure (Fig. 1.2). The results were as follows:

(Fig.1.1)



(Fig. 1.2)



Three scenarios were run in the 2012 Smith, S.K., et al study which included levels for low, medium and high estimates. The above figures (1.1 and 1.2) show the results for the 'medium' scenario.

Estimating the probability that a newly built single-family home will house a disabled resident is the first step of three steps used in this study. The other two steps require estimating the length of time that households remain living in that home and then estimating the average lifespan of that home. In the Smith, K.S.; et al (2012) study the length of time was broken out into age ranges; the averages of the length of those time periods households remain in their homes indicated the following results by state:

- Utah – 12.5 years
- Georgia – 12.0 years
- Florida – 10.7 years
- West Virginia – 16.7 years

The Smith 2012 study found that Florida seemed to be a much more 'migrant' state than most, and that West Virginia households tended to stay put longer than many other states. Average length of residence for single-family detached units, weighted by the age distribution of households with a disabled resident was calculated. One more additional step was added to account for the relationship of disability to length of time spent in a single household, since disability rates and housing turnover both increase with age, so the step of using weighted averages was therefore also used (See A2). The third condition to determine the information sought in this study also required the average lifespan of a newly constructed single-family home. This falls somewhere between 75 to 100 years, so an average midpoint of 87.5 years was used in this study (Fig. 1.3).

(Fig. 1.3) Probability of a single family home built in 2000 housing a disabled resident:

Utah: 87.5/**20.1** = 4.35
Georgia: 87.5/**19.1** = 4.58
Florida: 87.5/**15.1** = 5.79
W. Virginia: 87.5/**22.4** = 3.91

With all of these determinants now in place the following formula was then able to be used:

$$\mathbf{PROB = 1 - [(1-r)^x]}$$

For use in this study *r* represents the proportion of households with at least one disabled resident, and *x* is the average number of households living in a single-family detached house during its lifetime (also referred to as 'housing turnover'). The results for HHDIS-1 are shown in Fig. 1.4.

(Fig. 1.4) – Percentage of households with at least one disabled resident:

HHDIS-1 Group:
Utah : PROB = $1 - [(0.168)^{4.35}] = 1 - 0.449 = 0.551$ **55%**
Georgia: PROB = $1 - [(0.200)^{4.58}] = 1 - 0.360 = 0.640$ **64%**
Florida: PROB = $1 - [(0.207)^{5.79}] = 1 - 0.261 = 0.739$ **74%**
W. Virginia: PROB = $1 - [(0.290)^{3.91}] = 1 - 0.262 = 0.738$ **74%**

Using the second measure (HHDIS-2), the results of the probabilities using the same formula as in the prior group are shown here in Fig. 1.5:

(Fig. 1.5) – Percentage of Households with at least one disabled resident:

HHDIS – 2 Group:
Utah: = 20 %
Georgia: = 28 %
Florida: = 32 %
W. Virginia = 33 %

The results from Figures 1.4 and 1.5 tell us, for example, that in the state of Utah, there is a 55% probability that a single-family home built in 2000 will house a person with disability needs that are essential to life functions (HHDIS-1) and a 20% chance that this same house will have a resident with disability needs wherein it would be beneficial (HHDIS-2) for them to have an accessible house (Smith S.K.; et al, 2012).

The overall results of the Smith, K.S., et al study of 2012 show in all scenarios (low, medium or high) that the number of households with a disabled resident are projected to increase rapidly in three out of these four states in all three levels of projected measurement. In the medium and high levels all four states show large growth rates of this population. The low projection was the only scenario in which the population of West Virginia slows after 2020; but even so, the disabled population of household members still increased. The authors of the study concluded that it is "not *whether* the number of households with a disabled resident will increase over the next several decades, but by *how much"* (Smith S.K.; et al., 2012). The authors go on to state that they 'strongly urge' future planners and policy makers to address the need for more access features to be included and considered in the housing stock across the country.

Two other important points are briefly touched on in the conclusion of the Smith, S K. study, which includes the topics of architectural barriers causing seniors to fall, and the topic of

costs to renovate existing buildings as compared to building accessible features into new construction. Senior falls are significant because when seniors fall in their homes they often sustain serious injuries, which can be costly, as well as emotionally devastating. One study by the Center for Disease Control (CDC) (Center for Disease Control, 2014) indicated that data for falls may also be underestimated, since many senior falls go un-reported because elderly persons are fearful of being removed from their homes due to a fall. In 2010 both fatal and non-fatal falls for seniors added up to direct medical costs of $28.2 billion nationally (Center for Disease Control, 2014). One of the worst injuries for a senior citizen is a fall which fractures a hip. Over 90% of hip fractures in seniors are related to falls. One in five of those patients die within a year of such an injury. There has been a substantial increase in senior falls over the past decade; however there is no sufficient data available to link that with the increase in multi-story housing. As for the topic of the costs of renovation of existing homes this is included as the next topic of discussion.

Design, Methods and Procedure:

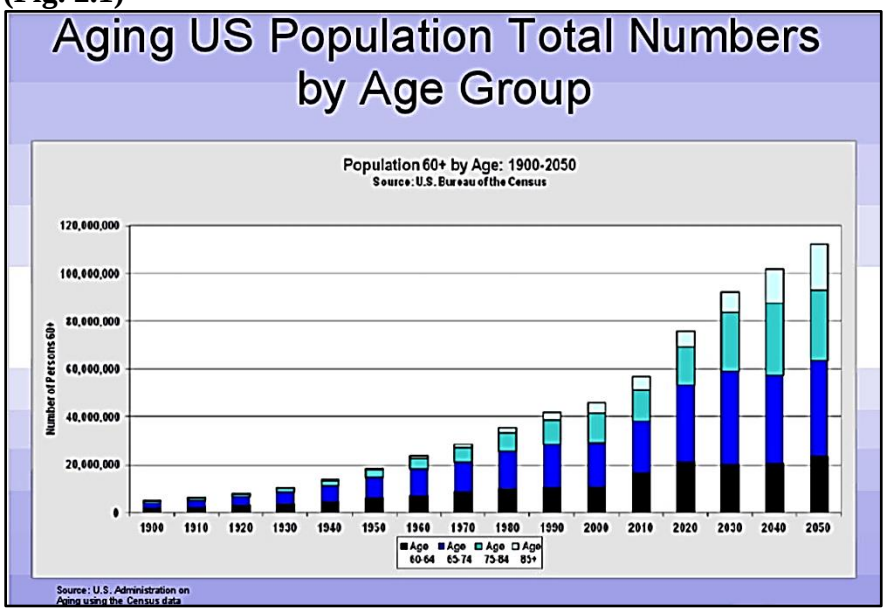
Included in this study are two models of Cost-Benefit analysis to show why building more accessible housing is economically desirable, as well as being socially beneficial. As an advocate for social change one of the best ways to gain the support of the political officials, who have the ability to implement the kinds of changes being sought, is to show the economic benefits of such changes. One cost-benefit analysis in this study highlights the economic feasibility of providing accessible homes in inclusive neighborhoods where in-home nursing care can take the place of more costly institutional nursing home care, if needed. This also has the social benefit of not excluding and isolating productive members of society.

The second cost comparison included in this study is that of building a new-construction house with accessible features compared to the cost of renovating an existing home to become accessible for a disabled user. In order to make an existing home usable the costs of the renovations needed are often quite prohibitive, and that makes the initial assumption that the home is situated on a home site that is level enough for access to being with. Additional anticipated benefits of building more accessible housing includes reducing the number of senior falls, and also creating more housing stock which is usable to the high number of disabled veterans currently unable to find appropriate post-injury housing.

The Aging U.S. Population:

The projected growth of the elderly in the U.S. is on a trajectory to nearly double between the year 2000 to the year 2050. (US Administration on Aging, 2012). As indicated in Figure 2.1 the elderly population (over age 65) in 2000 made up about 12% of the U.S. population. By the year 2050 it is projected to increase to over 22% of the population; with larger numbers in the oldest of the age groups (75 and up) than ever in U.S. history of tracking aging. When these staggering numbers are considered one has to contemplate where all of these seniors will live.

(Fig. 2.1)



American culture also takes a sharp departure from the 'norms' of many cultures across the rest of the globe by accepting the relegation of the elderly, in large part, to either 'Assisted Living Homes' or to 'Nursing Homes'. There are times when this is a needed place, for recovery, but over the decades it has become more and more of a place to 'warehouse' senior citizens.

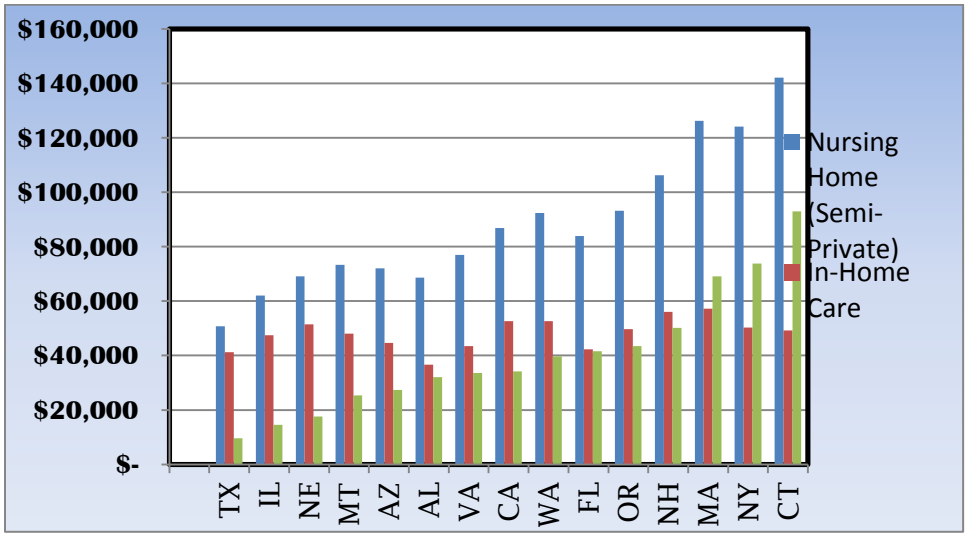
Many young people with rehabilitation needs (such as with spinal cord injuries) are also being kept in these homes – and away from their peers, because they have nowhere else to go. When a patient from a Nursing Home is scheduled to be released back into their home environment it is standard procedure to have an occupational therapist visit the home to be sure that the patient can conduct daily living skills there, and to live safely and independently. Many of the houses that these elderly were living in prior to the event that sent them to the nursing home do not provide the environment they now need to live safely on their own. If they do not have the resources to make their homes into a usable space then they will remain in the Nursing Home. If they are on Medicare or Medicaid then the government and taxpayers are picking up that tab. In the meantime that house remains empty and often loses resale value before eventually being sold off anyway.

To take a closer look at the costs involved with Nursing Home care in the U.S. and what that means to the taxpayers, and to the government, this study examined 15 States, representing various demographics and areas of the United States. As shown in Table 2.1 and Fig. 2.2, comparisons are shown between the annual average cost for Nursing Home care (in a semi-private room) versus the annual cost of In-Home care (some nursing included; as opposed to housekeeping, which is non-medical). This is the annual (2013) cost for one individual to receive care, either in the Nursing Home, or to receive In-Home care at their own residence.

(Table 2.1) 2013 Average Annual Costs (individual):

State	Nursing Home (Semi-Private)	In-Home Care	Difference
TX	$ 50,735	$ 41,184	**$ 9,551**
IL	$ 62,050	$ 47,476	**$ 14,574**
NE	$ 69,076	$ 51,480	**$ 17,596**
MT	$ 73,365	$ 48,048	**$ 25,317**
AZ	$ 71,996	$ 44,616	**$ 27,380**
AL	$ 68,620	$ 36,608	**$ 32,012**
VA	$ 77,015	$ 43,472	**$ 33,543**
CA	$ 86,815	$ 52,624	**$ 34,191**
WA	$ 92,345	$ 52,624	**$ 39,721**
FL	$ 83,950	$ 42,328	**$ 41,622**
OR	$ 93,258	$ 49,746	**$ 43,512**
NH	$ 106,215	$ 56,056	**$ 50,159**
MA	$ 126,290	$ 57,200	**$ 69,090**
NY	$ 124,100	$ 50,336	**$ 73,764**
CT	$ 142,168	$ 49,192	**$ 92,976**

(Fig. 2.2) 2013 Average Annual Costs (individual):



Noticeably there is a marked difference from state to state; Texas having the lowest difference in cost and Connecticut having the highest; with much of the east coast bearing the highest differences. The Chart in Fig. 2.2 illustrates the same information, in a different format.

The average rate of the disabled population across the U.S. being cared for in a Nursing home is currently about 6.5% (US Census Bureau, 2014). The difference in care costs per person (between Nursing Home cost and In-Home care costs annually) shown in Table 2.1 was then multiplied by the number of disabled people estimated to be in nursing homes by state, to show the projected savings in care costs (Table 2.3). This list in Table 2.3 has been ranked by which state would save the most amount of money (New York) to the state that would save the least amount; (Montana). Not surprisingly, the East coast, where space is at a premium, figures prominently in having the most to gain by not paying high nursing home care costs. The total of only these 15 States adds up to a potential savings of $389,822,319,189. This is of course assuming that 100% of the disabled population currently in nursing homes could be cared for in a private home setting, which is not a reality. However, if even 50% of that population could live at home (in an accessible house) that would still be a huge amount of savings.

(Table 2.3).

State	Population 2013	Disabled Pop. 6.5%	Difference per Person	Savings in Care Costs
NY	19,651,127	1,277,323	$ 73,764	**$ 94,220,472,582**
CA	38,332,521	2,491,614	$ 34,191	**$ 85,190,769,658**
FL	19,552,860	1,270,936	$ 41,622	**$ 52,898,894,030**
MA	6,692,824	435,034	$ 69,090	**$ 30,056,468,660**
CT	3,596,080	233,745	$ 92,976	**$ 21,732,693,715**
VA	8,260,405	536,926	$ 33,543	**$ 18,010,119,719**
WA	6,971,406	453,141	$ 39,721	**$ 17,999,229,152**
TX	26,448,193	1,719,133	$ 9,551	**$ 16,419,434,937**
IL	12,882,135	837,339	$ 14,574	**$ 12,203,375,307**
AZ	6,626,624	430,731	$ 27,380	**$ 11,793,402,733**
OR	3,930,065	255,454	$ 43,512	**$ 11,115,324,238**
AL	4,833,722	314,192	$ 32,012	**$ 10,057,912,063**
NH	1,323,459	86,025	$ 50,159	**$ 4,314,919,699**
NE	1,868,516	121,454	$ 17,596	**$ 2,137,096,490**
MT	1,016,165	66,051	$ 25,317	**$ 1,672,206,205**
			TOTAL	**$ 389,822,319,189**

The exact figures and data that are needed to create an accurate account of this scenario are neither currently tracked nor available. Bearing in mind that this is only a measure of 15 states; the savings on the National stage would be far, greater. Considering that the current National Debt is approximately $649 Billion the figure in Table 2.3 is more than half of amount of the National Debt. Interestingly too, as shown in Table 2.2, the state of Connecticut comes out with the highest cost difference between Nursing Home care and In-Home care costs – this state also happens to be the one with the highest number of Insurance companies, and where many Insurance companies got their start. Is this just a coincidence, or something more?

Discussion

The aging population is just one factor in the argument for more accessible housing. The housing needs of those with physical limitations are another factor. Spinal Cord injuries occur every day throughout the country and across all socioeconomic classes. Eighty-nine percent of Spinal Cord Injury (SCI) patients are released into the home they lived in prior to their injury; which is often not accessible. (United Spinal Association, 2014). Group homes often serve only as temporary housing for rehabilitation purposes and are not meant to be a long-term option for many disabled persons. Nursing homes have also taken on the role of housing the disabled, often also combined with rehabilitation efforts. Too often though, Nursing homes have ended up 'warehousing' many disabled populations simply because they have nowhere else to live that can accommodate their physical needs. This also becomes a financial drain on the Medicaid system – and as such, a drain on taxpayers as well. In addition to the financial burden there is a 'quality of life issue', namely the additional emotional burden on the disabled person who becomes socially isolated when there are no other options. Public housing facilities to accommodate disabled

persons currently have waiting lists that can take as long as four or five years to see any results from (National Fair Housing Alliance, 2012).

The kind of story told in a recent "NY City Lens" article (N.Y. City Lens, 2014) is becoming more and more common. This story profiles 26 year old Samson Delgado, paralyzed in an auto accident over a year ago. He has essentially been 'trapped' in a N.Y. City Nursing home, because he had nowhere else to go that was accessible to him. He has a grandmother in the area willing to take him in, but her apartment is not accessible for Samson. His SSI was not enough to pay for a market rate apartment and the State was not willing to pay that either. The waiting list was 1 to 2 years out for 'affordable housing', and affordable does not mean 'accessible'. The current Mayor of New York, Bill de Blasio, is beginning to pay attention to this dilemma, and the article also mentions the immense amount of savings that could be realized by providing the accessible (and affordable) housing that is needed for these citizens. Housing experts estimate that "10% - 15% of the current 123,000 nursing home residents of the state could and would like to live independently, if they were given the means" (N.Y. City Lens, 2014). This type of problem can be solved if the right solution can be agreed upon and applied. The disabled community needs their voice to be heard and the government needs to take action to create more inclusive communities and housing.

Another factor to consider is the fact that technology is not only making strides in medical advances to prolong the lives of those with Spinal Cord Injuries, but technology is also providing them with more opportunities than even a decade ago. There are more opportunities to find employment because so many jobs can be done on a computer, compared to past decades that relied heavily on physically demanding jobs to sustain a living wage. At the other end of the same spectrum assumptions should not be made too quickly that persons with disabilities are all "low income". The disposable income of persons with disabilities in the U.S. was approximately

544 Billion dollars in 2010 (The Return on Disability Company, 2013) . Just because a disabled person may not be low income however, still does not mean that they should be required to spend more money to live in an accessible home than anyone else.

Literature Review:

During my research on accessible housing I came across many "local news" articles and stories from both small and large cities across the country discussing the challenges and difficulties of finding accessible housing. There are many organizations operating on a local level that are making efforts to assist with either remodeling of homes for those in need, or helping to find resources for people seeking assistance with finding accessible housing. Often family members or non-profit groups step in to fill the void of care for those with accessible housing issues. There is also very little data available to document the growing difficulty, and the growing need, for the provision (or lack thereof) of accessible housing. There appears to be an assumption, even among some high ranking politicians, that the disabled population is readily being served when it comes to accessible housing, and they are 'shocked' to find situations to the contrary. A common theme in all of the articles I have come across is that "something needs to be done" about this silent housing crisis. The Smith, S.K, et al study included above is one of the few formal studies to focus attention on this problem. As more and more smaller community networks expand and reach out for others in the same situation to more likely it is that stronger coalitions will develop. This is not however, an excuse to wait until the problem reaches a crisis level to respond, if there is already an awareness of the need. Accessible housing will not 'spring up' overnight, so it needs the time and attention now to be implemented in a thoughtful manner.

Building Cost Comparisons:

In the course of pursuing my research with regard to accessible housing in the private market I found a common response (from able-bodied persons) to this housing dilemma to be, "Disabled residents can just remodel and existing home, right?" Another familiar refrain I heard often was, "How much can it cost? All you need to do is put in a ramp and a few grab bars". Communicating the fact that accessible housing involves much more than a 'ramp and a few grab bars' I undertook a comparison of housing costs for this research. This comparison was done on a local level, comparing the average costs in Bothell, Washington for a 2,000 square foot one story single-family house. Doing this comparison makes the assumption that this home is on a site conducive to the level grading needed to provide access to a driveway, garage and two entrance and egress points with few or no steps. Additional site grading would further increase the assumed costs. The itemized list of modifications considered in this comparison are listed in Table 2.5; also taken into account with these costs of renovation are the necessary demolition costs as well.

On average it costs a builder five percent more than 'traditional' building costs to incorporate Universal Design features into a newly constructed house (Center for Universal Design; NC State University, 2007). This is not nearly as expensive as the cost to add them later after the house has been built and lived in. Consider too that builders pay a lower cost for construction materials than the general public. The nominal charges that would be added to make a home accessible if built during initial construction could reasonably be incorporated into the sales price at the time of purchase. The example listed in Table 2.5 shows the added 'builder's cost' to be approximately $8,000; whereas adding the needed features with renovations will cost a buyer approximately $65,000. However, when adding features, such as wider hallways and doors during a renovation, demolition work has to be done before adding the new feature,

driving up the cost. Many people are unaware of the hidden infrastructure needed for some seemingly simple features. An example of this is seen with adding grab bars; the sheetrock (or drywall) must be thicker (5/8") than the standard sheetrock used which is 3/8" thick in order to safely support the grab bars. One of the more costly updates needed for accessible housing renovation is adding a roll-in or ('no step') shower; averaging about $12,000. A roll-in shower has been included because it is the best option for much of the disabled population, many of whom have a difficult time with transferring into and out of a conventional tub – even with grab bars. There are many disabled persons who can (some with assistance) transfer into a specially designed 'shower chair', meant for roll-in showers.

(Table 2.5)

Comparisson of Costs - Accessible Housing		
Features Needed	**Remodeling Costs**	**New Construction**
No-Step Entries/Ramps	$1,000.00	$300.00
Exterior Approach/Landscaping	$800.00	$100.00
Sub-Flooring Enforced (1 1/8")	$2,000.00	$500.00
Hallways (36" min - 42")	$5,000.00	$0.00
Min. 36" Wide Doors	$2,400.00	$200.00
Toilet Access Area	$2,000.00	$200.00
No-Step Shower	$12,000.00	$1,000.00
5/8" Drywall in Projected Grab Bar Locations / Plywood	$1,800.00	$500.00
Raised Outlets	$400.00	$0.00
No-Scald Valve for Water	$500.00	$500.00
Lower Thermostat Height/Sensor	$400.00	$200.00
Open Concept Kitchen	$15,000.00	$0.00
Plumbing to Accommodate Roll-Under Capability	$2,000.00	$600.00
Hardwood / Tile flooring	$9,000.00	$3,000.00
Lower Counters (50% of home)	$6,000.00	$0.00
Laundry Area (Front Load Mach)	$3,000.00	$0.00
No Grip Handles	$500.00	$500.00
Easy to operate Faucets	$1,200.00	$400.00
TOTALS	**$65,000.00**	**$8,000.00**
based on 2,000 sf single-story house		

Another small feature often overlooked when it comes to tubs, even if a person is able to transfer, is where the knobs and controls for the plumbing are typically located. Think about it for a moment. Also included in the list of renovation items is a 'thermostat sensor', because most thermostats are set at a level within the house that measures room temperature from an appropriate height from the floor to ceiling. Lowering the thermostat's location on the wall to better access controls also means adding a sensor at the appropriate wall height, to keep the temperature regulated accurately. Of course, more recently I have come across 'voice activated' thermostats which are new to the market (and more costly), so that may be another solution in the future.

Some builders have been incorporating specially designed and stacked closets into multi-level homes to accommodate a future elevator, if so desired in the future. While it is a step that appears to be well intentioned this thinking is potentially flawed. There is still the cost of adding and elevator, which, without a ready built shaft (for two floors) will cost an average of $20,000.00. Added to that is the fact that in an emergency, such as a fire in the house, this is the only means of egress for a person who may be dependent on a wheelchair. An elevator is not meant to be functional in a fire. Some city codes have addressed this issue with mandated fire sprinkler systems required in houses – especially houses with elevators. On the surface this may sound like a logical solution; however I believe that is not a realistic response when one takes human nature into account. If you were on an upper level of a house that is on fire how comfortable would you be waiting for the fire sprinklers to put it out? Human nature is to flee from danger – regardless of whether you are in a wheelchair or not.

In accordance with the figures presented in table 2.5 it would cost approximately $65,000 to renovate a 2,000 s.f. single-level home in Bothell, WA to make it accessible. Currently the average sales price of this size of home in the area is $320,000 (NWMLS, 2014). This means if

we follow the current train of thought by many that homeowners needing accessibility should 'just pay for a few renovations themselves'; then it is okay to ask a family with a disabled family member to pay $385,000 for a home that would cost another family, without a disabled family member, $320,000. This is the type of discrimination that is not being addressed within any current U.S. housing policies. Adding further slight to the disabled community is the fact that many of the families needing such a home are already facing higher than average medical bills; asking them to pay more for functional housing is simply heaping an additional burden onto them.

Expected Results and Limitations:

The main limitation of this study is that there was very little existing data to support the number of disabled persons who are being denied housing in the U.S. private market. The majority of the data I have found thus far focuses only on federally funded housing. It is also difficult to find data on "types" of housing. I also expected to find that many private home-builders and City officials have not given much thought to the housing issues and externalities that are resulting from building mostly multi-story housing; especially for the disabled population. This is difficult to prove and would require an intensive survey to collect information on. Many home-builders are reluctant to consider any measures which threaten to put even more regulations on them as to what and how they build. I believe that eventually, as more and more disabled persons become more independent the demand for accessible housing will gain a louder voice.

Part of finding the best solution is to think 'outside of the box' of traditional standards of building which may be restricting this growth towards the design of more "inclusive communities". The intention of working toward policy changes for private market housing is not

only to listen to the disabled community but to also to work in conjunction with builders and city officials to find a way for accessible housing to be beneficial for everyone, as well as for the general good of society. Builders who start following this idea may find that they gain positive support from the community. A limitation of this study is to find out at what policy-level changes need to be enacted into first in order to be the most effective. Is it best to start with national regulations or with local regulations?

Additional Considerations and Further Research:

There were several other considerations that came to my attention which need to be taken into account if housing policy is to truly support accessible housing. Each of these elements in and of themselves would be strong topics for further research to advance the cause of accessible housing. These considerations include the following; the structure and limitations of listing descriptions within the National Multiple Listing Systems (MLS); the methods and practices of home appraisals to assign accurate values to accessible housing; the lack of assistance and extremely long waiting lists from the Veteran's Administration for veterans needing accessible housing and examination of the serious flaws existing within the Department of Housing and Urban Development to report and act on complaints of housing discrimination, especially with regard to disability complaints.

Across the country there are thousands of what are referred to as "Multiple Listing Systems", used by real estate agents and brokers to list available homes and land for sale. They are directed by a National Listing Board; however there is some flexibility to address localized needs. One of the standing regulations includes strict limitation of descriptive words used when describing a house. There are dozens of words that agents and brokers are not allowed to use when posting a description of a listing, and they will be fined if they do so. Words such as

"wheelchair", "handicap" (even though this is politically incorrect, it could be used in the context of indicating accessibility) and even "family" are not allowed. There are ways agents have discovered to get around limitations to include homes with accessible features, such as including "ADA Compliant" or "ramp", to try to indicate accessibility. Initially this limitation was intended to protect people from discriminatory practices, but this has had the unintended consequence of making it more difficult to search for the features so desperately needed for those seeking accessible housing. Ideally the MLS should add categories that track features of accessible homes – to make it easier to find such homes. Imagine that someone has spent thousands of dollars making a home accessible and they end up selling it to someone who tears out all of the accessible features. This is likely to happen because nobody was able to see on the MLS search that this was equipped with such features that someone else really wanted. This brings us around to how to deal with the appraisal of an accessible house. If the nation is to build up more accessible housing stock, then a uniform standard for appraising these homes needs to also be developed. Currently there are no standard procedures in place to evaluate accessible features when appraising a house.

During my research I came across many stories involving Veterans who had been waiting in some cases up to four years to get into an accessible home after coming home from service with a debilitating injury. More investigation into the services available for veterans with accessible housing needs would likely prove to be very enlightening. I would recommend that such a study be undertaken by an outside, third party agency in order to be comprehensive and accurate. One reason for this is based on information that I became aware of in researching complaints of housing discrimination monitored by another federal agency, that of Housing and Urban Development.

In 2010 there were 1,799 complaints of housing discrimination filed with HUD (based on the laws of the Fair Housing Act), and of those only 55 cases went to court (National Fair Housing Alliance, 2012). That means that approximately only 3 percent of complaints even made it to the courts. These cases that do make it to 'court' are overseen by an Administrative Law Judge (ALJ) who is not even allowed to assign any punitive damages. In 2010, for the first time in history, the number of disability discrimination complaints (44%) has outnumbered other housing discrimination complaints, including those based on race (previously the most common complaint) (National Fair Housing Alliance, 2012). The complaints are tracked and processed by HUD, and the ALJ's overseeing the court cases are appointed by, and work for, the Federal government. This appears to be a clear case of 'the fox watching the hen house', which does little to instill confidence that a fair and accurate job is being done. The same sort of questions will need to be asked in the oversight of accessible housing standards in the private market. Who will be ensuring compliance and how will that be tracked?

Possible Solutions:

Ideally I would propose a National "Inclusive Community Building Standard" be required of private home-builders, to provide that twenty percent of all new housing stock is built as single-story and with a set standard of universal design features. This would have an added provision of houses falling within a certain population density level base on what city the building permit is issued in, so as not to unfairly burden more rural areas. As with many government programs incentives would need to be provided to for targeted groups to participate with new regulations. There are several types of incentives that could be made available for builders in order to comply with a new "Inclusive Community Building Standard". Another

benefit of the regulation of accessible home building would be the built-in data which is currently lacking in order to track and provide the needed quantities of accessible housing.

Of course what dictates much of the building industry (and the real estate market) in the private housing industry is the price of land upon which the homes are built on. This varies largely from city to city based on topography and density levels and fluctuates with the economy. A matrix could be created to combine data on topography and density in order to determine an accessible housing ratio for that area. For example, it's much more cost effective to build a single-story rambler in Texas than it is to build the same home in San Francisco or New York. Those two ratios would come out looking very different. These matrixes could be updated fairly easily from a national database.

Another possible solution to aid in accessible home-building is to offer zoning allowances for accessible housing. Most cities have a zoning restriction on the percentage of the lot that the house 'footprint' is allowed to cover. An accessible home could be granted a larger percentage of lot coverage. Another incentive that could be considered is building in a reduction or waiver of part, or all of the impact fees paid to construct a new home. Builders and lenders could be given tax credits for the building of accessible housing and on the loans for those homes. Better benefits for retrofitting existing homes, especially when it comes to veterans, would go a long way towards keeping those families independent. There could be a combination of the above proposed ideas, depending on the housing situation.

However change is structured it is clear that it needs to happen sooner rather than later, especially in consideration of the rapidly expanding senior population. It is also clear that housing policy has left the private market out in the cold when it comes to accessible housing. If we have made great strides as a society with granting public transportation rights to the disabled population, opening up more employment opportunities, creating curb-cuts in all of our

sidewalks for access to be granted to all, then isn't it time to consider where the disabled population is going to live? The other consideration worth mentioning as well is that housing policy needs to be inclusive; not relegating accessible housing only to certain limited areas. True, there are some 'senior housing' developments set aside only for residents of a certain age, but those are places people live in by choice. Senior housing may appeal to some groups because they don't want the noise or bustling activity that comes with young families. That is an option those groups have by having choices. It would be a mistake to build segments of accessible housing in a manner which relegates those with disabilities to remain segregated from the rest of the community. Every citizen should have the ability to live in whichever neighborhood they so choose, if they can afford to live there. Parents who have a child with a disability should not have to uproot their entire family and change school districts just because they could not find an accessible home to accommodate one of their children. Someone who has had a stroke should not be confined to only the first floor of their home, or face moving dozens of miles away because their home no longer works for them and they can't find anywhere else to live that meets their new needs.

Ethical Considerations

Just as important as the physical limitations being imposed by builders on the disabled community are the social ramifications of disregarding the need for accessible housing. It is not right, nor should it be acceptable, for builders and developers to be shutting entire groups of society out of neighborhoods simply by ignoring them because their needs are different than an "able bodied" individual. This is especially shameful if the main objective in ignoring this need is simply for builders and developers to be able to maximize their profits. If this is the case then

they are willing to deny human rights and dignity to those who would otherwise like to be a part of local mainstream communities (but are excluded) for the sake of profit.

When Wall Street bankers were 'called out on the floor' for being so willing to sacrifice the public's financial security at the expense of making the 'fat cats' of Wall Street even fatter there was outrage. In 2012 in Bothell, WA less than 3% of new houses being built were even built as a single story. Even so, being a single story does not make it 'truly accessible' home or usable by a certain population of persons; is that not considered discrimination? If this trajectory is not changed the builders, developers and City officials who are ignoring this issue today are likely going to be viewed as tomorrow's 'fat cats' and regarded by the public with disdain, just like the Wall Street bankers – accused of greed at any cost. It is also just as important that the disabled community finds a voice on this issue and a way to express that voice.

The undercurrent of my research is informed also by my readings of Martha Nussbaum's views of the Human Development Approach, as explained in her book "Creating Capabilities". Essentially the Human Development Approach always considers a person's dignity and asks, "What are they able to do and to be?" In the conclusion of her book Nussbaum states that, "We are living in an era dominated by the profit motive and by anxiety over national economic achievements". She goes on the state that "The purpose of global development…is to enable people to live full and creative lives, developing their potential and fashioning a meaningful existence commensurate with their equal human dignity" (Nussbaum, 2011). According to the human development approach, measures of GDP do not provide an accurate measure for quality of life. Another point made by Nussbaum that is applicable to this housing dilemma is that the U.S. has a 'tradition' of believing that rights are assumed to be secured if the state keeps their hands off. The Capabilities Approach however insists that "all entitlements involve an affirmative task for government: it must actively support people's capabilities, not just fail to set

up obstacles" (Nussbaum, 2011; pg. 65). This begs the question, "Does current U.S. housing policy actively support all people's capabilities"? From the research I have done I would say the answer to that is a resounding "No".

When considering all of the factors presented in this research it becomes clear that the deficit of accessible housing in the U.S. private market affects us all. The costs, both financially and socially are staggering. For a country that shows so much pride of independence shouldn't that be reflected in our housing policies as well? To support the freedom of those who have the ability to live independent lives, if given the environment to do so? That could be you, or me, tomorrow.

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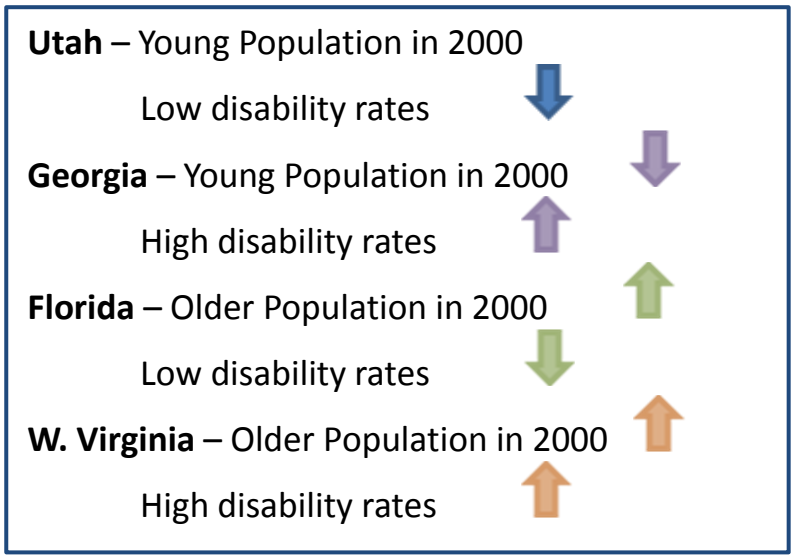
Appendix

A1 – Four States showing selections for age structure and disability rate: *(Smith, K, et al 2012 Study)*



A2 - Weighted average housing turnover (No. of years)

Year	Utah	Georgia	Florida	W. Virginia
2000	17.0	16.0	13.8	19.7
2010	18.1	17.7	14.4	21.0
2020	18.8	17.7	14.4	21.0
2030	19.5	18.5	14.8	21.8
2040	20.1	19.1	15.1	22.4
2050	20.6	19.4	15.4	22.8