



# Building Homes for Aging Owners

## Emerging Perspectives

October, 2018  
Austin | Texas

WAAO CoCreating

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# Copyright

*Cover Photo: Mueller neighborhood with the iconic airport tower and the community gardens.*

*Credit: Ani Colt*

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# Dedication

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This white paper is dedicated to public officials, developers, and home builders who see the potential value in designing and building homes that are easily adaptable by homeowners of all circumstances and stages of life.

It is also dedicated to those people in the housing industry who are motivated to create and implement new designs, innovations, and solutions to the issues identified and discussed herein.

This paper is dedicated to those of us over 65 and those working to help us. Also, we dedicate this paper to our friends and family who will, if they are lucky, be elders too.

Importantly, it is dedicated to those who will hear our **Call to Action** and will act to facilitate the modifications in home design that meet the varying needs and circumstances of all home dwellers.

# Acknowledgements

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Joy Stone, Rita Livingston, Karen Shaffer, and Rick Krivorniak for review and editing.

The members of our Qualitative Conversation: Rob Corbett, Cynthia Alexander, Dr. Barbara Manroe M.D., Maria Salis, PhD, and Dennis Mick.

We also thank those who offered suggestions and all our friends and neighbors who are members of the various elder activities in which we are involved.

We acknowledge the wonderful CalAtlantic employees who worked with us and made suggestions that made this paper better: Eric Eakin, Meggie Weirich, Michelle DeKay.

This is a **WAAO CoCreating** “We are all in this together” project.

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*Candidate for Travis County Commissioner, James Nortey, speaking and listening to Wildflower Terrace residents. Wildflower Terrace is a 55+ Active Living apartment complex in the Mueller neighborhood of Austin, Texas. Photo Ani Colt*

# Call to Action

## QUESTIONS

- 1. We have childhood homes, homes to raise our children and for many, a different home for our elderhood. This raises the question, “Why can’t one house be adaptable for all stages of life?”**
- 2. How can we improve the prospects for more graceful living while aging in place, in well-suited homes, in an intergenerational, diverse, and strong neighborhood?**
- 3. What changes do we make to accommodate an aging population as uncertainty intensifies in our political, economic and physical environment?**

The early reviewers of this paper tell us the recommendations for changes in building practices in this paper all make sense. These recommended options can be added into the design elements of most homes, in a new paradigm, one where homes are built to be safe, welcoming, and easy to adapt to all stages and circumstances of life.

We ask, “What issues, regulations, and processes are hindering making the reasonable changes recommended in this paper?” How do building codes, land use regulations and the permitting process get in the way of building better and more innovative housing units that work for all stages of life?

In this paper we mention that the City of Austin is a key partner in creating the Mueller experiment. Over half of the housing units built in Mueller could not be permitted or built elsewhere in the city because of restrictions in the zoning and building codes. How can the City use the lessons learned in the Mueller experiment to continue to modify processes to allow innovation in making single family homes and other housing units work for all stages and circumstances of life and for the community? How can the City of Austin and the other municipalities and communities help promote Universal Design similar to how it is used around the world? As an example we offer New Zealand’s [Lifemark Design Standards](#).

As you are reading this paper, we call on you to think about what you can do to contribute to creating the shifts needed to institute these changes. We call on the developers, the designers, the builders, and the residents of the housing world to work to forward these changes. We call on our fellow elders to help lead the charge.

In the Mueller neighborhood, there is still considerable open space left for housing construction! How can we cut through the barriers and lead the way so these remaining properties contain homes suitable and adaptable for all stages of life. Or do we acquiesce to comments we have heard as we prepared this white paper over the last months, “It’s too late. We can’t make any changes in Mueller.” Let us co-create the changes in housing that will serve us in all stages and circumstances of life.



# Foreword

## MUELLER

The housing design concepts discussed in this paper are universal. However this paper focuses on application of these concepts in the Mueller Development in Austin, Texas. Mueller is an amazing laboratory in new urban design and living.

The authors of this paper have chosen to lead the aging in place discussion as the experiment progresses.

## First Step

As we went through the process of preparing this white paper on Aging-in-Place in single family homes, we recognized that aging-in-place was one important piece of a larger, almost universal, discussion. We express the bigger discussion as:

“How do we design housing and infrastructure in communities so we can accommodate people of various circumstances through all stages of life?”

WAAO CoCreating looks forward to consulting with others to shift the paradigm in this broad discussion. We will be looking at co-housing, multi-family housing, active transportation, and end-of-life opportunities.

Because we have limited this paper to an aging in place focus, as you read we expect you will be asking many “What about...?” questions. Please take the time to document your questions and send them to us at

[WAAO.CoCreating@gmail.com](mailto:WAAO.CoCreating@gmail.com)

## Qualitative Research

This paper includes the qualitative experience of over 5 years of living with and listening to friends and neighbors age 55+ residing in the Mueller community.

We live with and hear about issues related to:

- desire to stay healthy,
- frustrations with the design or homes and apartments
- declining health,

- declining mobility, with more people needing canes, walkers, and wheelchairs to get around,
- declining flexibility to reach, get up from falls, etc.,
- illnesses, surgeries, and the efforts to recover from them, and
- the dying process.

The paper reflects the authors' experiences as two 70 plus year olds looking for a home in Mueller that would be adaptable to serve our age-related changes over the coming years. We note that current data shows that one out of four 65 year olds is currently expected to live into their 90s.

Some of the ideas, quotes, and suggestions in this paper were generated in a two hour qualitative discussion with five Mueller elders ages 64 to 89 on April 6, 2017. The discussion was lead by Ani Colt and hosted by CalAtlantic Homes at the Mueller CalAtlantic Homes model home.

While Building Homes for Aging Owners is of global importance, this paper focuses on the Mueller development in Austin, Texas. The authors and participants in this effort live and work in Mueller and most of the recommendations were developed from experiences which occurred in Mueller.

## Aging in Austin

In the second decade of the 21st century, the size of the baby boomer generation is bringing issues related to aging acutely into view, and Austin has committed to becoming an age-friendly city. Austin has the nation's fastest growing population

of people 55 to 64, and the second fastest growing population of people 65 and over (US Census: 2010).

In 2012, Mayor Lee Leffingwell formed a Task Force on Aging. In 2016, the City Council adopted the Age-Friendly Austin Plan, including it in the Imagine Austin Comprehensive Plan, and formed a City Commission on Seniors. However, neither the Austin Task Force on Aging nor the Age-Friendly Austin Action Plan Executive Summary specifically address building housing suitable for aging in place.

## Aging in Mueller

People started moving to the Mueller development in 2007 when the first homes became available. Wildflower Terrace was the only building for 55+ year olds and has attracted residents from all over Texas and the US since it opened in 2012. In Wildflower Terrace, 85% of the apartments rent below market rate and 15% are at market rate. Late in 2017 a second 55+ building opened, Greystar's Overture Mueller. Overture is more upscale, with more amenities and higher rents. Wildflower Terrace and Overture promote their buildings toward Active 55+ adults. There is little building owners can do to enforce this "Active" identification. In addition, those who are active one year may not be active in following years.

Though many baby boomers were involved in Mueller's goals and design, and many live here now, aging in place has not been promoted as a critical home design element. However, more recently, older Mueller residents have helped raise the awareness of, and the need for, homes and services in support

of elders. The sheer number of baby boomers moving to Austin – and into Mueller – has begun to tip the scales.

Many of us moved to Mueller to be near family. The appeal of a new urbanist design and the unique features and location of Mueller create an unusual opportunity to live in a diverse, well planned community in an urban area. Many hope to stay in Mueller and in a current residence, i.e., “aging in place.”

At Wildflower Terrace, the first 55+ Active Adult residence in Mueller, the age range for residents is late 50s to 90s. The new Overture Mueller, a more upscale 55+ Active Adult apartment complex, likely will see the same demographic. Many who seek apartments at these facilities are beyond the “Active” designation yet they need a place to live.

## **Brief History of Mueller**

In the mid-1990s the City of Austin began planning what to do with its Mueller Airport property. A new airport at the former Air Force base was due to open in 1999. The surrounding neighborhood residents were invited to engage in this process. Together they set a number of social, environmental, and economic goals for the new development. The body of knowledge and ideas supportive of aging in place had not yet reached a critical level of awareness.

## **The Authors**

Ani Colt, and Preston “Ty” Tyree, co-authors of this paper, are key figures in the drive to make Mueller more cognizant of the need to address aging in place. To help create a voice and actions around aging, Ani initiated the formation of the Mueller Neighborhood Association's Aging&Neighborhood Committee early in 2015. Ty joined the committee the spring of 2016. A major objective of this committee is to “Pave the way for Mueller residents, should they so choose, to stay at Mueller for the rest of their lives.”

## Intention of this Paper

With this growing awareness of the needs of those aging in place, and the opportunities and challenges which should be addressed, CalAtlantic Homes asked the authors to assemble elders and lead a “qualitative conversation” with and about these issues. The Product Development department wanted to hear firsthand about elders’ needs and ideas in order to gain a greater understanding of how home design and construction details can affect abilities to function with:

- more ease,
- less chance for injury, and
- a higher quality of life.

This paper is intended to further the conversations and provide ideas that can help create happier and healthier living as the elderhood years progress.

As the Baby Boomer population moves into their 60s and 70s, the value of being able to age in place is gaining greater attention and importance. Determining how this can be facilitated in the design of new homes, before construction starts, provides both opportunities and challenges for home builders.

The developers of Mueller did include one apartment building, opened in 2012, for people 55+ years old. Three of the participants in the qualitative conversation live in this 55+ building. In addition, Ani Colt, co-author of this paper, lived in an apartment in this building from the spring of 2012 to the fall of

2017 when she moved into single family yard home on Vaughan Street in Mueller.

We note that much of industry housing information, analysis and insights for the growing elderhood market is focused on senior multi-unit buildings and elderhood communities that combine independent living, assisted living and nursing home facilities.

Alternatively, this paper focuses on single-family homes in neighborhoods. It explores how home design can increase livability, ease aging, provide safer and easier mobility and remodeling for aging in place when and if needed. Much of the information about interiors included in this document can also apply to apartment complexes for elders.

**We intend this paper to be an important step for Mueller Elders to speak up and help move the process of accommodating aging in place and community forward. We thank CalAtlantic Homes for their interest and support. There is still time to impact some dwelling units in Mueller and we hope to see our recommendations affect future building practices in other communities.**



*Home dwellers of various ages and stages of life work together to create a vibrant and involved neighborhood on the former Robert Mueller Municipal Airport property. Home owner “1” above loves his single story home. “2” is a married working mother living in a three story town house. “3” was unable to find a one story home so bought a master down two-story home and basically lives on the first floor.*

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# Aging in Place

The terms “Aging in Place” and “Aging in Community” are often used without distinguishing between them.

We make a distinction in this paper, with

- **aging in place** referring to being able to age in a specific home with adaptations to adjust to changing needs, and
- **aging in community** meaning to move within a current community to receive the help needed when experiencing late life conditions which cannot be managed in the home.





*Previous page: Photo by Michelle DeKay*

*This page: Community gardens in John Gaines Park; Photo by: Ani Colt*

# Universal Design



Wisdom Crew at B.D. Riley's Irish Pub

## DEFINITION

**How to design all products, environments and communications so they are usable by all people without adaptation or specialized design.**

The need for homes that accommodate all stages of life has been addressed by numerous institutions for over 25 years. However, the Mueller Design Book and some of the New Urbanist Design principles used to design and build in Mueller do not incorporate the needs of aging in place and can even be seen as obstacles to Universal and Aging in Place design. Most specifically, in Mueller the requirement that all homes would be a foot and a half or more above the sidewalk level causes unintended accessibility consequences as house designs were forced to meet this constraint.

## Universal Design

How we change Mueller is addressed by universal design.

**Universal Design is a framework for the design of places, things, information, communication and policy to be usable by the widest range of people operating in the widest range of situations without special or separate design.** (institute for Human Centered Design)

The concept is also called inclusive design, design-for-all, lifespan design or human-centered design. For more information about Universal Design click on this link to the Institute for Human Centered Design:

[History of Universal Design](#)

Appendix 4.3, the last section of this paper lists all of the internal links with associated URLs.

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# The Baby Boomers

## WHO ARE THEY

1. Started turning 70 in 2016
2. Have trillions of dollars in IRAs
3. Don't want to get old
4. Motivated to stay healthy and active



Diane and Rob exercising with health striders.

## Aging Considerations

*The aging of the Baby Boomers is creating change in our society, economy and communities. The Baby Boomer generation started turning 70 in 2016. One reason this is important is because of the large investment accounts (IRAs) that are scheduled to be liquidated over the span of the coming twenty years. Estimates of these accounts vary widely, but they are generally estimated to be between \$1 trillion and \$7 trillion. These same baby boomers are expected to live longer than their predecessors, thus for some these trillions of dollars may run low or "out".*



Cynthia, Cleveland and Ani preparing for a conference on aging.

## What We Hear

“As ‘seniors’ too often we do not look ahead to aging and thus we don’t do enough planning ahead for the adjustments, changes and life work of the years where the body seems to get weaker....”

“I did not want to join AARP as it made me sound old.”

“I have a poster in my office that says: ‘Don’t call me a Senior.’”

“I turn 70 this year, and I am proud of it.”



*Mueller neighbors enjoying a Friday night boomer gathering.*

## What is Recommended

There are many phases of aging. Different responses are required for the different stages.

Servicing those of us who wish to live our elder lives in a single-family home means our homes must be able to adjust to:

- changes in our abilities to function and desire to remain mobile,
- diseases and infirmities,
- post surgery recovery periods, and
- life events that may require wheelchairs and other assistive devices.

*A growing percentage of the total US population is moving into the age group commonly called Seniors or the term the we like to use, **Elders**. Language is critically important and many people do not like the term “Seniors” or don’t call themselves seniors until well into their 70s or even their 80s. For our purposes, elderhood is defined as the years 65 and up and includes the passages from active living to frail and failing. This massive portion of the population cannot be combined in a single cohort.*

## The Aging in Place Buyer

There comes a time when many elders, usually empty nesters, decide to move to warmer climates, to be closer to family, and/or simply to find homes that are more suitable for their elderhood years. Many intend to live in their new homes for the rest of their lives, if possible. When they select their new homes, they may have no current need to accommodate wheelchairs, walkers, and the like; yet they may recognize the likelihood of these needs over the course of years in a new home.

The coming of the *Baby Boomers*' elderhood is changing things by their sheer numbers. Their life expectancies are increasing which suggests many of them will live well into their 80s and beyond.

It is in our best interests to keep our aging population healthy and fit. It means we can:

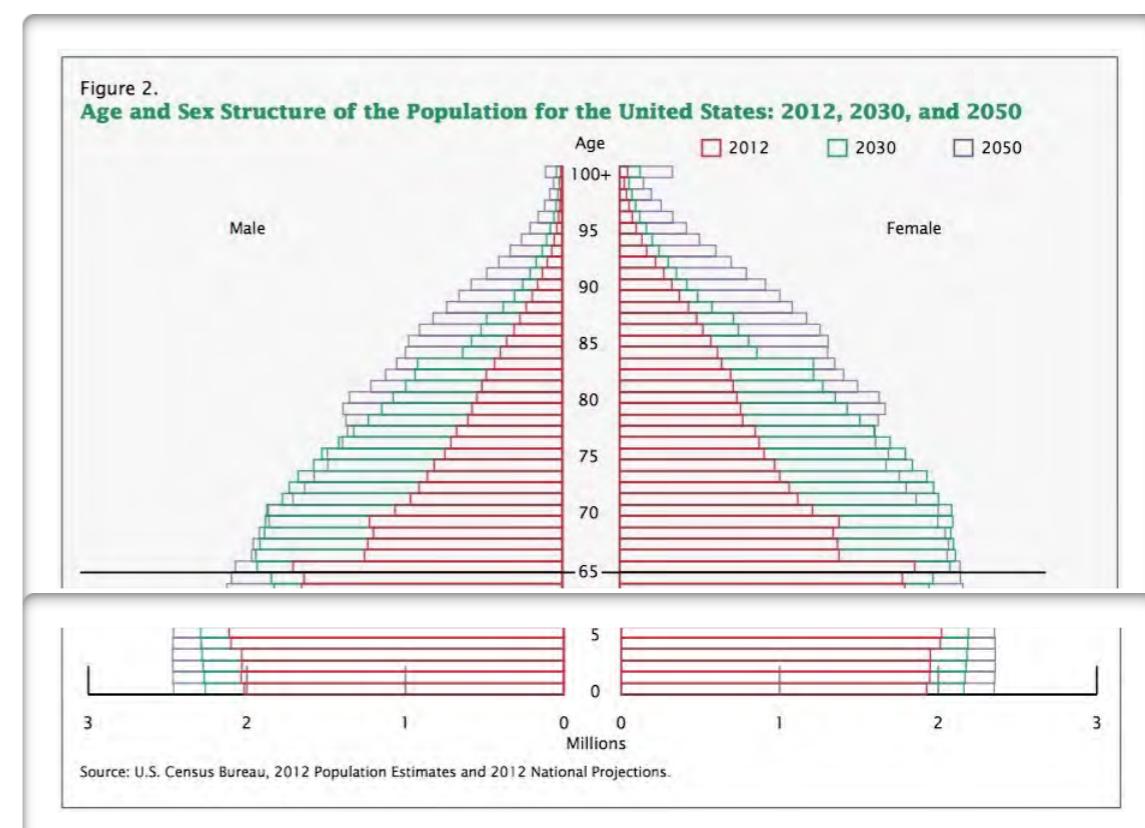
- reduce the need for subsidized health care,
- reduce the need for long term care facilities, and
- realize productive employment well beyond age 65.

## What does this mean for the housing industry?

The housing industry can help by designing more adaptable homes that:

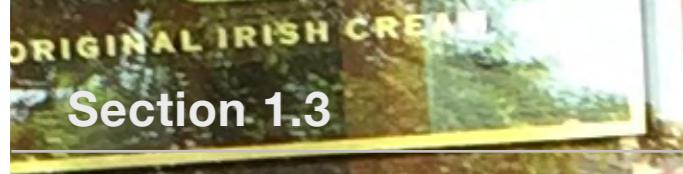
- can accommodate wheelchairs and other mobility devices,
- provide space for aging homeowners to share their homes,

- allow for live in helpers who share the home and expenses,
- provide elevators or lifts that allow access to multiple level buildings,
- offer proven designs like stacked flats and co-housing units.



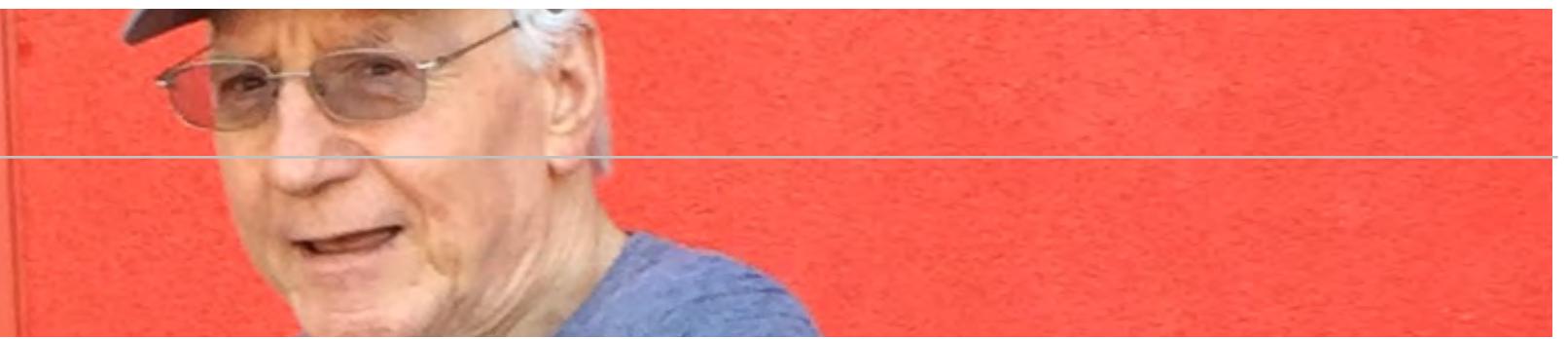
This chart from the U.S. Census Bureau indicates how the population demographics will change over the next 30+ years. The baby boomer bulge will create an over 65 cohort that is 20% of the population, up from 13% in 2012.

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## Section 1.3

# People Change



## ISSUES

1. Physical abilities
2. Cognitive abilities
3. Changing relationships
4. Opportunities

*Roy, the man pictured here, is a wonderful friend and inspiration to the authors of this report. He fell and broke his back six years ago while working in his yard. Since then he uses a power wheelchair for mobility.*

*While we talk about the adaptations that make aging in place easier, we emphasize that all designs must accommodate all people in all circumstances.*

Throughout the sections of this paper that deal with homes, we will use the convention:

- Aging Considerations,
- What We Hear, and
- What is Recommended.

Here we use it to address the changes that are inevitable with aging.

### *Aging Considerations*

*Over our elderhood decades our abilities to lift, reach, stoop, grasp, stand, walk, and balance change. The abilities to buy food and prepare meals, to manage our homes, “papers”, bills, and electronics decline. Hearing may deteriorate. Cognitive, emotional and psychological changes come as we lose abilities and lose friends and family. The effect of these changes can be just as difficult as physical changes. Yet, for many, these years also offer opportunities.*

*Some elders choose to, or by necessity, move into senior living communities. These senior living situations offer certain advantages yet lack the advantages of intergenerational communities.*

*Single-family homes in intergenerational communities offer advantages especially when the homes can be easily adapted as elders' needs change and health issues change.*

*Through the lens of the home, the factors that contribute to aging can be explored. We age faster and get sicker and weaker if we live in homes where we can too easily:*

- *become isolated,*
- *find cooking too much of a chore,*
- *not get enough light,*
- *not get out and get fresh air and exercise.*

*All these and more are influenced by where we live and the design of a home.*

*Homes cannot be dangerous. As we age we become more fragile and bumps and scrapes that were shrugged off when younger become more serious. Sharp edges on kitchen cabinets can cause a significant scrape that easily can become infected.*

## *What We Hear*

*"My skin has gotten so thin that just the slightest bump can cause a big, ugly bruise."*

*"I've gotten shorter and less able to reach the top shelf in the cabinets."*

*"Lifting a container of liquid requires both hands now so I don't have an extra hand to steady myself on the stool."*

*"I don't see as well as I did and I need more light to judge where to step."*

*"I bump into the edges of tables and counters more than I did. I've got one cabinet edge above my island that is just the right height to hit me in the head. And it is sharp! I've the scars to prove it!"*

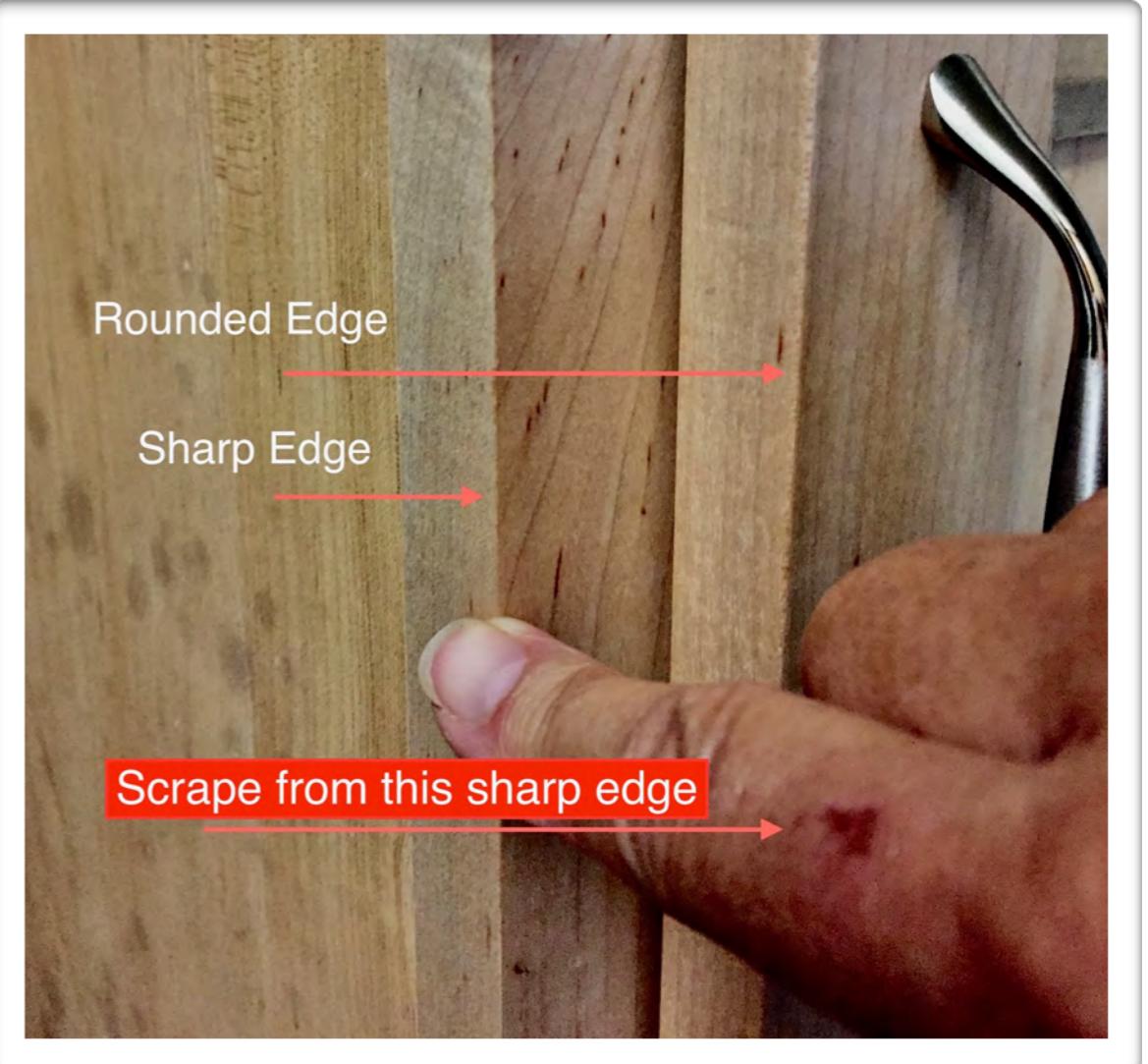
## What is Recommended

Using a young married couple as the “design” homeowner can lead to issues that become insurmountable to their child born with a disability, their child who is disabled through injury, friends in a wheelchair, or even one of them when they sprain an ankle and have to use crutches. The inevitable decline as people age just exacerbates these effects.

Designers and builders must be held accountable to provide buildings without inherent dangers.

As an example, one of our recommendations is that all edges on cabinets, doors, facings and counters should be smooth and rounded. All corners that protrude should be rounded off with a relatively large radius curve.

Sharp edges and square corners are inherently dangerous and should be eliminated.



*Edges on all woodwork like cabinets, shelves, and window sills should be rounded enough so they will not scrape or cut when a person accidentally brushes their edge.*

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# Qualitative Conversation

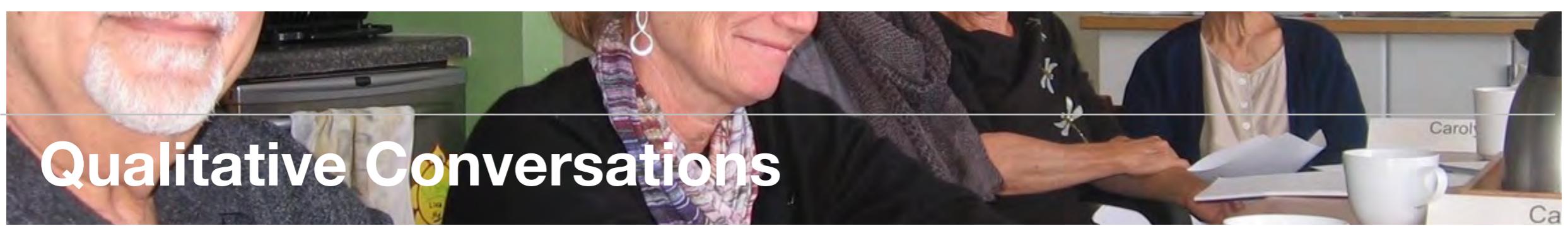
Through the process of Qualitative Conversation (a slightly different form of Focus Group), we can gather empirical information about a subject which is difficult to gain through quantitative analysis. We listen to the consumers, the people who are living in the world that we need to evaluate.





*Above: Sunrise view of pond in southeast greenway of Mueller.*

*Previous page: Photo of qualitative research respondents for local yoga studio.*



# Qualitative Conversations

## ABOUT PARTICIPANTS

1. Neighborhood residents
2. Over 60
3. Different lifestyles
4. Female and male
5. Different histories
6. Different abilities

## Methodology

As noted previously in this paper, the CalAtlantic Product Development department expressed an interest in hearing a number of local Mueller residents discuss their thoughts, feelings, and ideas about the issues and opportunities for developers and builders to create more aging-friendly residential dwellings.

Ani Colt worked with Michelle DeKay of CalAtlantic to define the structure of the meeting and to invite the participants. In preparation for the session, Ani Colt shared a paper with Eric Eakin titled: "[Aging in Place Survey Report](#)." It is dated October, 2015, and was prepared by Marianne Cusato, HomeAdvisor Expert and Professor of Practice at University of Notre Dame's School of Architecture. Some of the content of this paper was used for specific questions in the discussion.

Eric Eakin and Meggie Weirich of CalAtlantic Product Development, and Michelle DeKay were observers as was Kathy Sokolic, a Real Estate agent and homeowner in Mueller. The group discussion was recorded, and Ty Tyree took notes.

The facilitated discussion lasted about two hours and included a break for lunch. Significant issues and factors affecting the aging process were discussed.

This paper brings in conversations and qualitative listening and living experiences that go far beyond the two-hour conversation heard by the CalAtlantic Homes team gathered on the day of our group conversation. However, this initial meeting helped give a framework to our future conversations.

Introductory lifestyle questions were provided by Ani Colt. Further discussion focused on how changes in building and design practices can improve the quality of life of older individuals. Various questions were provided by Eric Eakin. A number of participants offered insights into how current building practices can create dangerous situations for older individuals.

## Participants

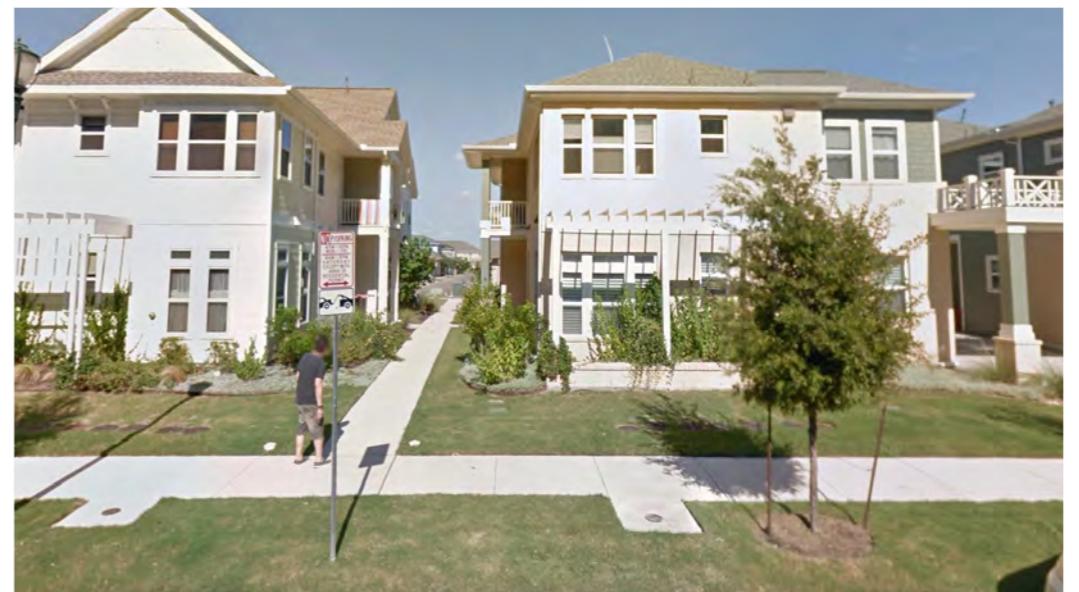
For traditional focus groups recruiting was done with the intention that the participants do not know each other before entering the facility. For this Qualitative Conversation, friends and neighbors within the Mueller Community were recruited. This generated an ease and sense of our all being in this together. Our participants live in a variety of residences. Three live in Wildflower Terrace, a 55+ independent living apartment building; one lives in a Streetman built condo on Mattie Street, and one in a single floor/single family home on Scales Street (see photos).

The life experience among the five elders recruited for the session is immense. Respondents included: Rob, an 89 year old architect and Maria, a 64 year old Latina Linguistics Professor at University of Texas. Cynthia, age 69, is a minister and pastors a African-American church on Austin's east side. Dennis, in his mid 60s, was a marketing executive at 3M for 40 years, and Barbara, in her 70s, had careers as a Neonatal MD and an Attorney.

Over the two hour discussion, we barely scratched the surface of their wisdom.



*Wildflower Terrace at Berkman Drive and Tom Miller Street*



*Streetman Condominium on Mattie Street*



*Streetman Home on Scales Street*

## **The Community**

Mueller is an unusual community. Built on 711 acres of an old municipal airport it is a true New Urbanist project with commercial retail and office properties, 19 restaurants, grocery stores, a hospital, university research facilities, and a school district performing arts center and middle school site. Housing includes single family detached dwellings, row houses, multi-family condominiums, and apartment buildings with commercial establishments on the ground floor. It has 140 acres of green space with five major parks and numerous walking and riding facilities separated from the road system. The residential facilities are 25% affordable including both owned and rented units. There is a style book that drives the type and look of buildings in the

community. This book was developed prior to the first building and was most recently updated in 2017.

Currently the community is approximately half built out and when complete will have approximately 15,000 residents and 15,000 jobs. It has two 55+ apartment buildings with approximately 500 units one of which is Wildflower Terrace where some of our participants live. The rest of the community has a diverse mix of individuals of many ages, races, ethnic backgrounds, socio-economic situations and living arrangements. Mueller is a laboratory of what a community can achieve with good intentions and good planning.

Builders in Mueller include some of the biggest residential builders in the United States and some custom builders as well. There is still property that has not been committed so we expect changes to happen before the community is built out in approximately 5 years.

**Ani Colt** moderated the conversation and also gave input and ideas for discussion as a person in elderhood and a Mueller elderhood activist.



*Joan pilots Elaine and Polly in a TrikeShaw. Cycling Without Age, ATX, a non profit, offers free rides to elders to help them get out into the community. Cycling Without Age is an international organization. Photo by: T. Tyree*

# Findings and Discussion

**We have childhood homes, homes to raise our children and for many, a different home for our elderhood. This raises the question, “Why can’t homes be adaptable for all stages of life?”**

**How can we improve the prospects for more graceful living while aging in place in well-suited homes within a locally age diverse and strong neighborhood?**





*Above: New single family home being constructed in Mueller by CalAtlantic.*

*Previous: Framing going up on this foundation.*

# Outside the House

## CONCERNS

1. Lot Size
2. House Placement
3. Sidewalks
4. Porches
5. Doorways
6. Driveways

## *Aging Considerations:*

*Loneliness and social isolation represent important health risks in the elderly. Lot size or house placement that creates barriers to viewing and casual conversations between neighbors reduces the social interactions of the owners. This link provides some background. [New Research](#).*

*Ease of access for homeowners and guests must be a key consideration when planning lots and house design. Location of the house on the lot can be critical to making a house accessible in the future.*

*Site topography can cause issues with accessibility. However, with proper planning these issues can usually be alleviated easily with on-site solutions.*



## What We Hear

“Porches should be big enough so you can sit out and talk with your neighbors on the sidewalk and even watch the cars go by.”

“Please tell me why you have to step up four inches from the porch to get in the front door.”

“I fell because the driveway was so steep. I fell so hard I had to call 911.”

“I like the security of having a railing, even going down the few steps at the front porch, but for my friends in wheelchairs I wish there were no steps at all.”

*Which entryway would you prefer if you had a choice and wanted to age in place?*

“I told our broker that we would not consider the sites on Berkman so high above the street. Sure you can get in through the garage, but what if we want to park in front or have visitors?”

“People who have wheelchairs have to call in advance and come through the garage. I feel that entry through the garage can sometimes make those with mobility limitations feel if it were a ‘servant’s entrance’.”

“We gave our neighbor an easement across our property so they could build a ramp to their home.”

“Sure would be nice to have a door where we can install a pet door for our dogs. The biggest concern my mother-in-law has about pet doors is that a burglar could easily get into the house through that door or passageway.”



## What is Recommended

### The Lot and Approaches:

Small lots in urban settings lend themselves to frequent communication between neighbors. Well-placed doors and porches influence the ability to see and interact with neighbors. Porches should be designed to encourage casual interaction with people walking in front of the house.

On a small lot, with the house close to the sidewalk, raising the floor level slightly above the sidewalk level gives a sense of privacy without removing the sense of community. The level

change should allow the ability to interact with people passing along the sidewalk.

Sometimes the level change cannot be adjusted due to water drainage in the area. If the level change is drastic enough to cause mobility issues, many times the lot can be graded (landscaped) so that mobility is aided rather than hindered

### Placement on the Lot:

The Mueller Design Book stipulates lot size, setbacks and more. The cost of lots and other factors are working against an increasingly obvious need: Make home placement and designs so that wheelchair and walker access may be added.

We recommend advocating for more lots where easier access is assured.

The Mueller Design Book as revised in 2017 suggests that single-family homes be placed on the lot so that a ramp can pass between the two adjacent homes to access a suitable doorway.

### Entry to the Home

#### Front Steps and Railings

By code, front steps must be consistent in height and have a hand rail if there are five or more steps of equal depth. To accommodate an aging population, hand rails should be mounted on all steps.

Hand rails should extend above and below the flight of steps so they can be gripped before the first step and released after the last step.



*Lots being prepared for infrastructure improvements in Mueller.*

## Porches

Porches should be designed to allow a grouping of furniture so people can sit in small groups and interact with neighbors on the sidewalk. The threshold should be level or at least low enough to get a walker or wheelchair in and out easily. One



*Nice landscaping contributes to the feel of a neighborhood.*



suggestion would be to create only a 1-1/2" (instead of the typical 3-1/2") difference in level between interior of home and exterior porch so that a small concrete ramp or transition strip can easily be added if needed.

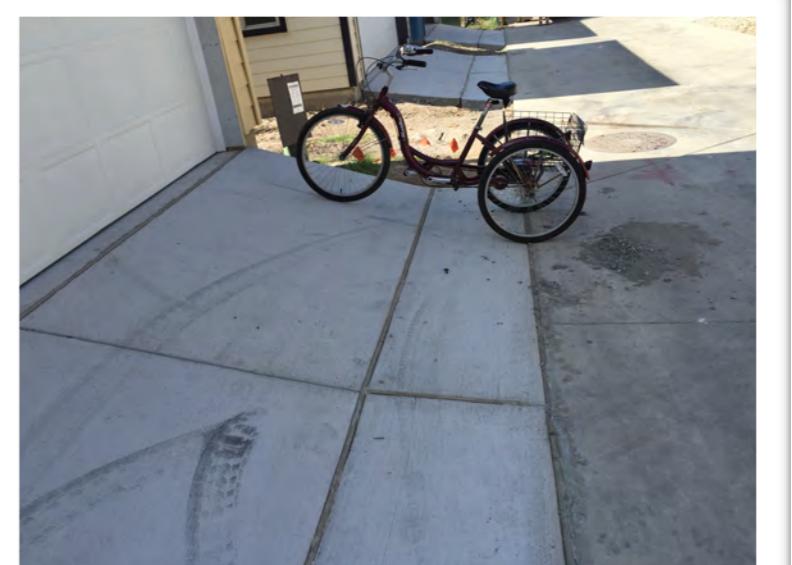
## Exterior Doorways

All exterior doors should allow for ease of opening, and provide adjacent interior space to be opened, closed, locked and unlocked by a person with an assistive device. One suggestion might be to design for a minimum of a 24" wall return immediately adjacent to the door handle for easier maneuvering.

## Pet Doors

In June of 2017, *The Sunday New York Times* had a section on “Well Pets” with a cover story “Partners In a Healthier Life”. There is a lot of research on pets as companions. For

*This driveway is so steep that a normal automobile will hit bottom while entering or exiting.*



active elders pets are great for getting them out walking. For those less able, a leisurely stroll with their dog can be important. Doorways designed to be adapted for a future pet door or for a “Catio” (a screened porch accessible through a pet door) is a concept our group discussed as a desirable design feature. Doorways designed for easy pet accessibility, but with sturdy intrusion deterrent are available.

## Garage Entry

In Mueller, the door between the garage and home is often the only place a wheelchair can enter a home, this can make visitors feel like second class citizens. A homeowner should not have to rely on the garage entry door to be the only accessible entry. We advocate for ADA accessible entries to be created from either the sidewalk or the alley.

## Driveways

In Mueller the length and slope of the apron entrance to the garage is often too short and much too steep to provide easy and safe entry. Obviously this is determined by lot size, house placement and alley configuration. However, any design changes that could help insure a safer entry from the alley to the garage should be considered. It appears that builders can apply for a waiver to the “height above the sidewalk requirement.” If the City of Austin or Architectural Review Committee had made CalAtlantic and the other builders aware that this was a possibility, adjustments could have been made before the slab was poured. If builders are made aware that adjustments can be made for site-specific conditions, especially regarding

accessibility, they will be much more likely to seek this approval and make adjustments during the process. Even six inches lower would make a significant difference in the slope of the driveway.

While garage entry doors meet the *Visitability* code in Austin, and is perhaps adequate for active homeowners, to be truly accessible the slope of the driveway must be shallow enough to allow access with assistive devices. Motor vehicles carrying a power wheelchair frequently have low clearances making a steep slope on a driveway problematic.

## Austin Visitability requirements

There is good documentation of Austin's efforts to make homes easily accessible for guests and family members with disabilities.

[Visitability Staff Report, December 2013](#)

[Visitability Ordinance, January 2014](#)

The first link gives some policy background and the second link is the specific ordinance language adopted by the Austin City Council.

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# Inside the House

## UNIVERSAL DESIGN PRACTICES

1. No-Step Entryways
2. One Story Living
3. Wide Doorways and Hallways
4. Open Floor Plan
5. Non-Slip Flooring
6. Reachable Controls and Switches

## *Aging Considerations*

The width of doorways and how easy or difficult they are to operate can make a significant difference to an aging home dweller. Hallways, room layouts, the arrangement of furniture, and many more simple design elements all have impact on those living with the issues of aging. Over the years, many of us may:

- face the recovery process from surgery,
- experience the wobbles or stiffness or various illnesses,
- have to rearrange furniture to accommodate changing circumstance,
- find climbing stairs much harder or impossible,
- require a cane, walker, or wheelchair,
- lose interest in food preparation and cooking,
- find it hard to reach items stored deep in closets, high on shelves or in the back of lower cabinets.

Stiff hands can make grasping and turning knobs difficult. Arthritis can make once simple tasks more difficult.

For elders especially, the joy of living in a home is increased when one can conveniently store treasured holiday decorations collected over the years and tall items like vacuum cleaners. Being able to easily plug in electronics to charge is a boon.

## What We Hear

“We could not find a one story house or one with the master down. At least our new home has a small bedroom and full bath on the first floor should one of us become unable to use the stairs temporarily.”

“Mueller just doesn’t have many one story floor plans, but my sister and her husband are very lucky. They found one.”

“We love our Streetman Home. It has a super layout, all on one floor, perfect layout, a smaller carbon footprint and our social circle dramatically increased. It’s been very good for us.”

“Looking at the layout for our new home, I can’t find any place that would work for adding an elevator.”

“I love this open floor plan and can see how it will make life easier.”

“The rise of the stairs in this new house are higher than where I use to live. My knees can tell the difference. It is just a harder climb and going down the stairs is also more difficult.”

“I have my Christmas decorations stored back under the stairs. I love it.”

## What is Recommended

**Wheelchairs:** Homes should be built to be more adaptable for wheelchairs. To allow aging in place often means the home will eventually need to adapt to someone using a wheelchair. For two story homes this translates to designs:

- with a first floor bedroom and full bath,
- space for a bedroom and bath to be added later,
- space where an elevator can be added later,
- stairwell that allows for a lift to be added.

**Doorways:** Many homes have interior doorways which are too narrow to accommodate a wheelchair.

- Frame doorways so that they can be widened, or
- Make all doorways ADA Compliant. Modern public buildings now have standard 32" door openings.

**Door Handles:** Lever handles are recommended for all doors inside the home. They are easier for all and make a significant difference to those with arthritic fingers or wrists.

**Hallways:** Hallways should meet minimum design standards from ADA particularly on the ground floor of a multistory house. We suggest that all hallways be a minimum of 42" wide (rough, or frame to frame). ADA requires a minimum of 36", but builders have found that even this is not enough for many situations. Typically 42" allows maneuverability anywhere within a hallway.

Houses that meet this 42" standard on the upper floors provide maneuverability when a lift or elevator is installed.

Add wall blocking in all hallways (especially long hallways) for future grab bar placement. (More on grab bars later.)

**Stairways:** While a case can be made for elders living in single level homes, the reality is many single family homes (or attached homes and condos) will continue to be two or more stories, especially in areas with high land value and in high density neighborhoods.

Stairs can be an asset. Going up and down stairs may mean keeping yourself stronger and more able. However, there are design characteristics which influence the ability to safely and comfortably walk up and down stairs.

What can make stairs easier to use or at least more adaptable as we age?

- handrails on both sides of the stairs for support or to stay steady,



- on stairways with landings the handrails above and below the landing should be on the same side so it is not necessary to switch sides when carrying something up or down stairs,
- while the general rule (in the US) is 7-11 (a 7 inch rise and 11 inch run), to ease use of the stairs a low rise and deeper run is suggested.

The first thought a home designer or architect might have when reading this recommendation is that deeper treads and lower risers take up more space within the footprint of the home which



*Chair lifts and simple mechanical elevators can be added into most typical two story houses. Floor plans should make lifts or elevators possible.*

can be used elsewhere for better monetary return. However, the space beneath the stairs can be used as additional storage or as a powder room. Home buyers may see the storage or guest restroom as a bonus that offsets the additional space required for a longer stair run.

## A Lift or an Elevator in a Home's Future?

A floor plan can be designed so that an elevator can be installed in the future. Different layouts can make it easier or more difficult and costly to install an elevator or a lift on the stairs. As baby boomer age and demand increases, new innovations are likely.

**Some options.** Ideally stairs should be designed so a lift can be added easily if necessary.

The Mueller Design Book revised in 2017 suggests that stacked closets be built into multi-story designs to allow for installation of elevators. "Stacked closets" are simply a closet on the second floor designed directly above another closet of the same size on the first floor, and allowing for the width, depth, and structural integrity (slab & frame) of an elevator.

However, as we will discuss in the storage section of this document, closets and places to put things help keep the homes more convenient, less cluttered, and thus safer. Stacked closets are one option to prepare for a future elevator. We feel that other design options may be better.

## Flooring Aging Concerns

*The issue of hard floors or carpeting comes up again and again. We found this website which discusses the issues in detail: [Best Flooring for the Elderly](#). Issues include cost, stains, ease of cleaning and a soft landing when someone falls. Allergies and collecting dust are also concerns. Floors with non-slip surfaces are key.*

*Hard floors mean harder surfaces to fall on. Our research suggests cork floor may be a good alternative to wood or tile. Cork floors may not work well with wheelchairs.*

## What We Hear

“In my balance class they emphasized getting rid of all the area rugs. Preventing falls is so important when it comes to aging in place.”

“We chose tile for most of our first floor because it is smooth and less expensive than wood. We have carpet on the stairs and the second floor. We did select the tight weave carpet because it has proven to be safer.”

“We went to Home Depot and they estimated being able to pull out all the carpets and put in a wood floor for about a third of the cost of having the builder do it during construction. Seems like a waste.”

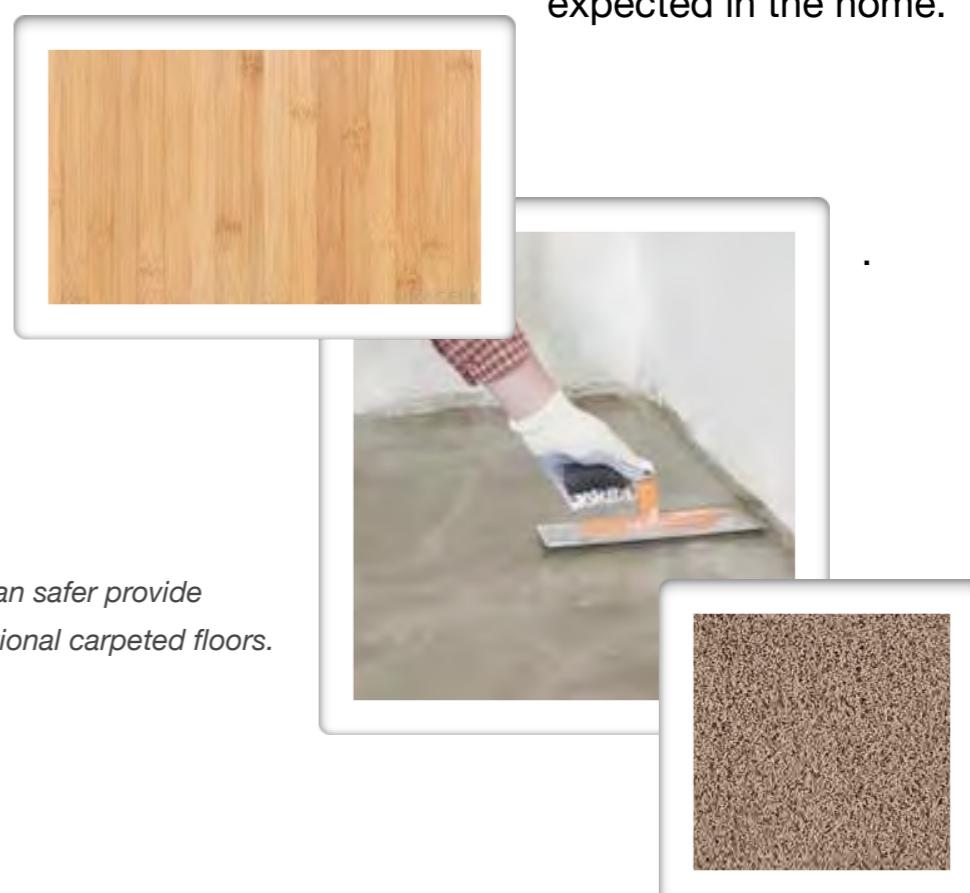


*Different surfaces can safer provide alternatives to traditional carpeted floors.*

## What is Recommended

As we age, choices in flooring present not just aesthetic issues but also matters of safety and health. Flooring should be non-skid and easy to clean. Carpets and rugs, especially small rugs, present tripping hazards. Heavily textured floors can be difficult to clean, pose a safety hazard, or make it difficult for maneuvering a walker, or a wheelchair inside the home. Several attractive, safer alternatives need to be available at varying price ranges.

Cork floors are frequently considered as an alternative to carpets because they are softer than wood or tile while still being easy to maintain. Cork may not be a good alternative if wheelchairs are expected in the home.



## Storage

### Aging Concerns

*Many elders intentionally downsize when moving later in life, taking advantage of the move to sort and cull through the many possessions accumulated over the years. This increases the intrinsic value of those items that are saved and moved.*

*In their new home photos of family that have been hanging on the wall need to find a new treasured place. Seeing wall or hallway galleries can be great for guests as well as homeowners.*

*As we age, getting things put away and out of the way becomes more important. Clutter can contribute to a fuzzy state of mind. More obviously, it means more opportunity to stumble. Pantries and closets can be designed to make it easier or more difficult to put things away and reduce clutter.*

**Research** backs up the saying that a cluttered house leads to cluttered minds. Confusion and sense of not being as mentally clear is scary. Designing a residence to more easily minimize clutter can be one way to help minimize “mind clutter” and opportunities to fall.

### What We Hear

“Three of the people in our Qualitative Conversation lived in an apartment complex. In the five years since this building was open, the cabinets and lack of usable pantries have been complained about over and over.”

“A great front hall closet should not be a luxury.”

“Too often linen closets are designed so that items are high up, low down or deep into a stack of items. We elders have many health-related items that need to be stored somewhere convenient. A large enough and well-designed linen closet can provide a space for more than just linens.”

## What is Recommended

**Coat Closets:** Coat closets serve many functions, and if they are large enough they are good first floor storage areas. A coat closet under the stairway means storage for things like seasonal decorations.

**Linen Closets:** A generous and well thought out Linen closet makes a huge difference.

*The kitchen section contains additional comments on storage.*



Photo from  
Pinterest.com

## Light, Windows, and Lighting Aging Considerations

*As we age, our eyes undergo many changes that impact the ability to see clearly. The amount of light, placement of lights, the type of light bulbs used (often dictated by the type of fixture), all have an impact on the ability to see well.*

*Better lighting can significantly improve state-of-mind. Many elders are home more hours of the day and week than younger folks. Good lighting is better for everyone.*

*Proper lighting for work areas in the kitchen or office area makes life easier and safer.*

*Most of us do better with sun light. Obviously window placement effects many things in a home including the amount of light and whether the sun shines in.*

*Being able to see the street, trees, grass, outdoor planting and the sky all influence our sense of well being. Windows that open easily can provide fresh air.*

*As we mentioned earlier, being able to see neighbors from one's homes can mitigate feelings of isolation.*

*Some issues to address:*

- *lighting features on the ceiling and high up create the issue of how to change a light bulb that is out of reach,*
- *placement of windows affects privacy,*

- Having sun shine through the window can be great in cooler months. It may mean you have to keep the blinds closed all day in the summer to keep a house cool. Obviously, this varies by areas of the country.

“By the time you reach 80, you need 6 times more light than you did in college!” [25 Lighting Tips for Seniors](#)



## What We Hear

“I moved from an apartment that had great sunlight into one that has none. It has been a real adjustment. Maybe that contributed to my being sick the first fall in Austin.”

“The blinds in my current home are so hard to operate, I just leave them in the same place all the time.”

“Why couldn’t they have made the window above the sink a little lower so I could see out. My neighbor in the similar condo building across the way has a kitchen sink window she can see out of.”

“Our windows are terribly hard to open and close.”

*These two condos face each other. The owner on the right can’t see out her kitchen window because it is too high.*

## What is Recommended

Proper lighting in all rooms is important, as is placement of light switches. Switches should be located so we can light the room before we go in and turn it off as we leave. A switch that controls a lamp (wall socket) might be better than just one for the overhead light.

**Windows:** Windows need to be easy to open, close and lock. Offering casement windows throughout the house allows those who might have difficulty raising a typical double-hung window to still open the window for fresh air.

In two story homes window placement can ease or deter where an elevator can be added in the future.

**Kitchen Windows:** Consider designs so the kitchen sink has a window with a view.

**Blinds and Other Window Treatments:** For home owners who choose to have blinds installed, pre-wiring for remote control so window treatments can be closed remotely or shut automatically at prescribed times makes daily life easier.



Future west facing windows.

## Electrical: Aging Considerations

*Placement of light switches, electrical outlets, controls and sensors becomes even more important when household members are aging. Issues such as accommodating to changes in lighting, glare, and color contrast, impact ease of functioning.*

*Each home and room needs to make sense. It sounds obvious that near the doorways to rooms is the right choice for most light switches. Multiple locations can ease life, too.*

*When the main living area of a house is accessible from the garage and the front door, a 3-way switch installation makes life much easier. Other considerations such as the height of the switch and location of the switch with regard to possible furniture placement need to be considered.*

*Toggle switches take more precise aim and can be harder to use than the plate rocker switch, which is recommended for elders.*

*The aging of the baby boomers is fueling the development of health related technology. These technologies are a big business opportunity, promising more tech and electronics innovations to keep people healthier and safer in their homes.*

## What We Hear

“Sometimes I use my cane to turn the lights on and off. Plate rocker switches make this possible.”

“The light switch in my bathroom is hard to reach from the door. I’ve gotten used to it, but it is just stupid. And, darn, there simply are not enough electrical outlets in the bathroom for this day and age.”



*Examples of ways to place charging cables out of sight and still be usable.*

## What is Recommended

**Electronics:** Installing several device charging stations around the home, where the cords do not create their own mess or hazard, can make a world of difference. We like the idea of a drawer or cabinet with a multi-port charging station inside.

**Wifi:** One of our research participants said it seems logical for homes built to be pre-wired for easy WiFi setup thus eliminating the cords and associated accessories that come with installing wifi.

**Health Monitoring:** The tech world is growing so fast, and health monitoring devices are being developed to be placed in the home. Some homes are currently being wired to allow home health monitoring on a real-time basis. We suggest strategic placement of electrical floor outlets for the use of future health and life-monitoring equipment.

## Kitchen

### Aging Considerations

*The aging process really hits home in the kitchen. Whether one is cooking alone, with a loved one, neighbors or entertaining, we spend a lot of time in the kitchen.*

*For aging adults, it's quite easy for a kitchen to become a nightmare, particularly because we are more likely to live alone later in our lives.*

*While safety, as well as convenience, are driving factors in kitchens, in many ways it is the kitchen's importance as the heart of a home and a place to have happy experiences preparing, serving, and sharing meals that count.*

*If we lose the joy of preparing, serving, and eating; our mental, emotional, and physical health suffers; thus, a well functioning and convenient kitchen can make a big difference to our health and sense of well being.*

*When cooking becomes a chore or just too much work, we tend to buy frozen, pre-prepared, and take-out food. As a result, food appeal is diminished and our bodies suffer the consequences of poor nutrition.*

*As elders, we are more likely to start a kitchen fire or otherwise be injured while prepping food. The stove may be left on or food can burn and smoke up a room or start a fire. We may be less able to take quick or appropriate action in the case of a fire. Our many medications may affect cognition.*

*Balance issues affect us. Not only are those of us over the age of 65 more likely to be injured in a kitchen fire, we are more likely to suffer a fall injury due to:*

- *loss of strength and flexibility,*
- *limited ability to reach high, low and into deep the under-the-counter cabinets,*
- *the added effort to get back up from a crouched or kneeling position,*
- *use of stepping stools to reach into higher cabinets.*

*Safety, reach, and height are important when it comes to appliances. As we age there is also a greater propensity to have trouble using ovens and microwaves that are either too low or too high.*

*We can easily get confused and fail to remember where things are stored when everything is stored behind cabinet doors. This causes us to spend more time searching through the cabinets.*

*As we get frailer, the ability to climb up on stools become less and less safe. Stooping down low can be just as hazardous; it is so easy to strain a back.*

*Space to maneuver in the kitchen is important particularly when the dishwasher or oven doors are open.*



*Note the faucet controls in the front of the kitchen sink.*

## What We Hear

“I am tall and the doors on my over counter cabinets hit me in the head. I took them off and now not only do they not hit me in the head, but I can see what is in the cabinets.”

“The cabinets are too tall, so I store things in my dishwasher.”

“I got down on the floor to get something, and I couldn’t get back up!”

“CalAtlantic moved our kitchen island out 9 inches to give us more work area and safety!”

“I was emptying the dishwasher and turned around suddenly and tripped over the door and fell on my hip. Fortunately, I braced my landing and did not break anything. Big bruise on my hip though, that and feeling stupid.”

“The home I owned as a single mom in the suburbs of New York, had only a few drawers and no pantry. I’m thrilled to have them in the new home we are building.”

“I get down on my hands and knees, and I can hardly get back up afterwards. It’s the toughest exercise I have. It’s not much fun to be on my hands and knees to get the next bottle of juice when I can hardly get back to standing position.”

“I’m worried about the day my back will go out when reaching down and into the under counter cabinet to get my pots and pans.”

“In Wildflower Terrace we have frequent fire alarms because of the smoke from stoves that are left on by accident. It’s so easy to get distracted and smoke up the whole kitchen.”

“The microwave is up too high. Why should I have to work so hard just to use it.”

“My microwave is over the stove which means it is too high for me to see into it or read all the buttons.”

“It is just plain dangerous to have to reach over hot burners to turn the stove off.”

“The counter is a little too high for comfortable chopping, and I’m almost 6 feet tall.”



*When dishwasher and oven are placed opposite each other they can cause conflicts when open.*

## What is Recommended

**Stove:** controls in front and on top of the stove: thus there is no reaching over hot burners or pans. The design must also keep children away from the controls. When we think about more technology in the future, it seems logical that stoves burners could have a sensor that will turn them off if left on without anything on the burner. There is something similar for irons.

A built-in microwave atop the base cabinets or over an oven, instead of above the stove, would allow for easier use.

**Counter Heights:** The recommendation is that kitchens counters should have varying heights, particularly offering lower counters for those people that require a sitting area in order to prepare meals. There are counters that have adjustable heights suitable for people of different heights and for various uses. See these links to:

[Tall Life](#)

[Contemporist](#)

**Sinks:** A kitchen sink that is mid depth (not too deep and not too shallow) appears to be optimal for convenience while not causing back pain by being too deep.

Storing things under the kitchen sink is common. A roll out design can make things easier to find and reach.

Design the area under the sink so it can be adapted for someone in a wheelchair.

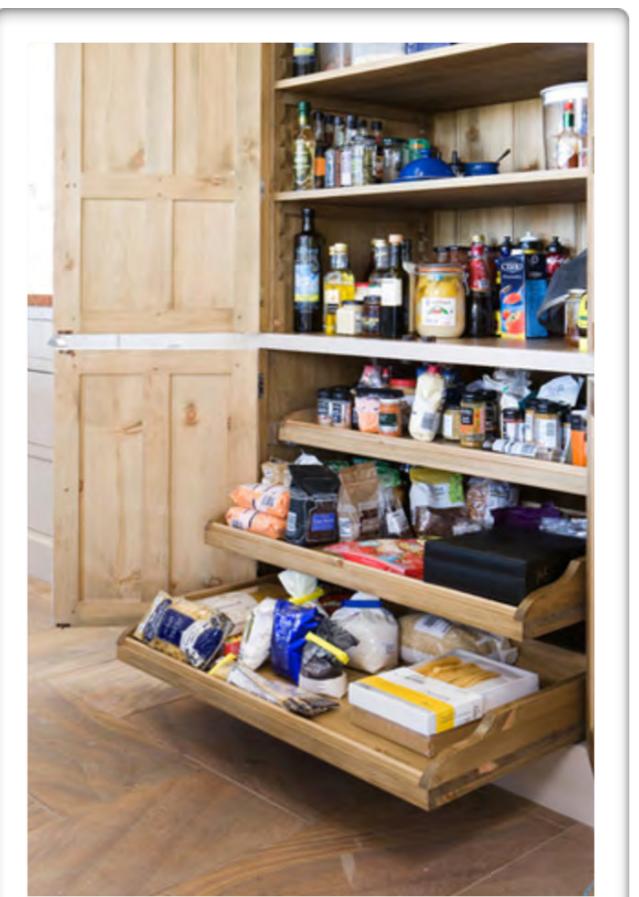
## Cabinets and Pantries

Pull handles vs knob handles for cabinets are easier to operate with stiff or frail hands. They need to be functional, not just attractive.

Well-placed cabinets with plenty of drawers, including those for pots and pans, makes a huge difference in everyday life. Drawers for pots and pans can help eliminate many of the stooping and reaching hazards.

A generous well-placed pantry can be easier to access than lots of below counter and above counter cabinets. A pantry is such a wonderful thing if it is placed right and designed so that things are easy to locate and reach.

Because cabinets are either above or below the counter space, the pantry

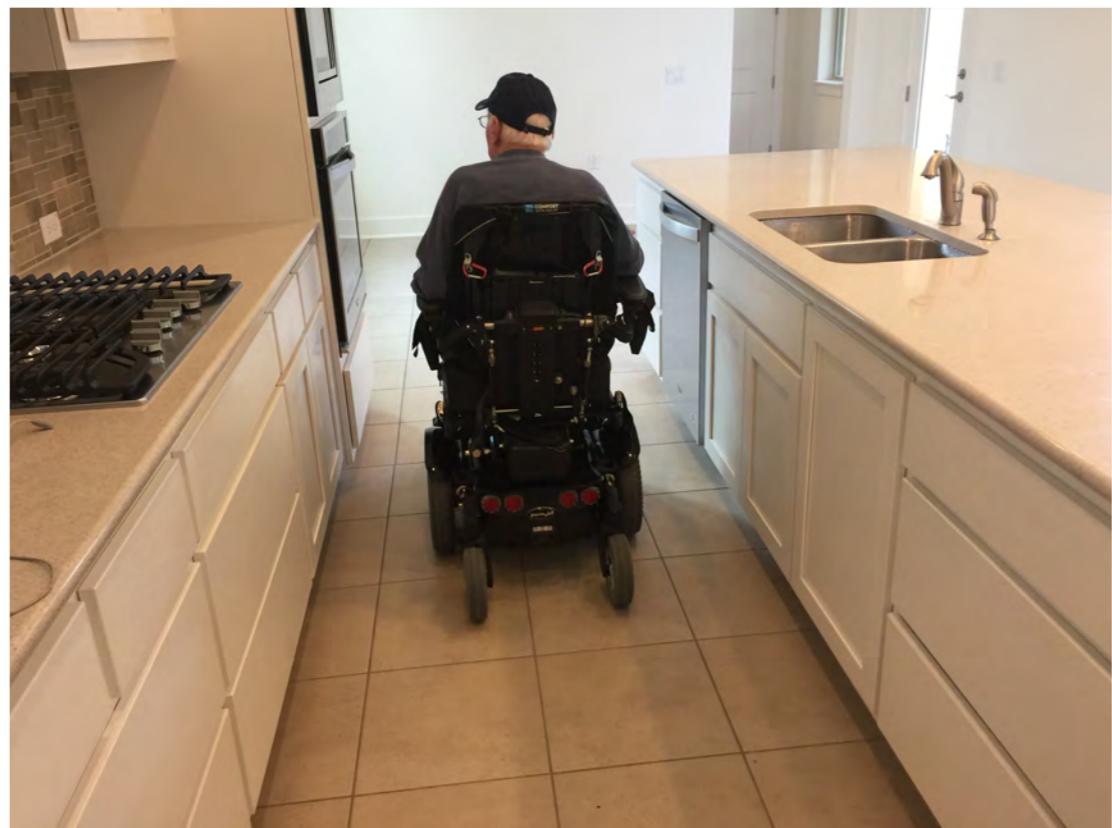


*This pantry shows how rollout drawers help accessibility.*

may be the only place things are stored at the more convenient mid-body height. Large and well-designed pantries are used for more than food. A roll out design can mean more things are easier to find and reach.

For some homes adding a Butler's Pantry with additional prep space and a sink would be desirable. Another option would be to design one wall in the living area adjacent to the kitchen with plumbing stubbed in so homeowners could install an additional prep area adapted to those with disabilities.

A number of counters should have shelves that can be pulled out at counter level or low enough to allow use by a wheelchair user.



**Spacing:** Distances between the kitchen counters or between the wall area and the island need to be wide enough to safely open oven doors to take out hot food. The dishwasher should have ample room to walk around when the door is open during the filling and emptying process.

When possible, it is recommended to have at least 48" between facing cabinets to allow for ample maneuvering space for someone in a wheelchair or when a dishwasher or oven is open. This generous spacing also allows for more than one person to work on food prep at the same time

**Laundry:** Should be on the same floor as the master bedroom to keep elder owners from having to use the stairs with a load of laundry. If this is not possible then a laundry chute may be an acceptable alternative. A dumb waiter arrangement works to move loads between floors. It may be time to bring these back. It is fun to think these "old" design ideas could be reinstated.

The spacing for the washer and dryer should be designed so reaching to the back or to the bottom is less likely to hurt a back. Single unit or stacked designs may be best. Shelving above the washer and dryer should be high enough to accommodate the platforms prevalent with newer models but low enough to reach easily.

*Roy tests out the spacing between the wall cabinets and the island.*



Grab bars come in many designs. We expect more and more attractive ones to be available in the future.



## Bathrooms

### Aging Considerations

*Bathrooms and kitchens are the most dangerous areas of homes. As people move into their advanced years, bathroom safety takes on greater significance. All of the surfaces are hard. With elders, falls are more likely to cause injuries. In addition, elders tend to use the bathroom more often and frequently during the night.*

*Consideration should be given to the space for maneuvering, the size of the medicine cabinet, counter heights and convenience of drawers and cabinets, knobs, handles and use of the sink.*

*There should be no sharp edges in the bathroom!*

*Well placed and attractive grab bars are an important safety feature.*

*Much of what was said in the section on Kitchens, applies here, too. Like in the kitchen, a good bathroom design and layout can increase safety and ease a transition for it to become wheelchair accessible.*

*Bathtubs offer advantages. Soaking in a bath can be one of the better ways to relax, refresh and sooth aching muscles, arthritis, and more. Bathtubs that are too high off the floor and too deep, as well as those that are too low, can be more difficult to get in and out of for everyone, not just the elderly. Many elders simply stop taking baths which is a shame as bathing has many health and comforting attributes.*

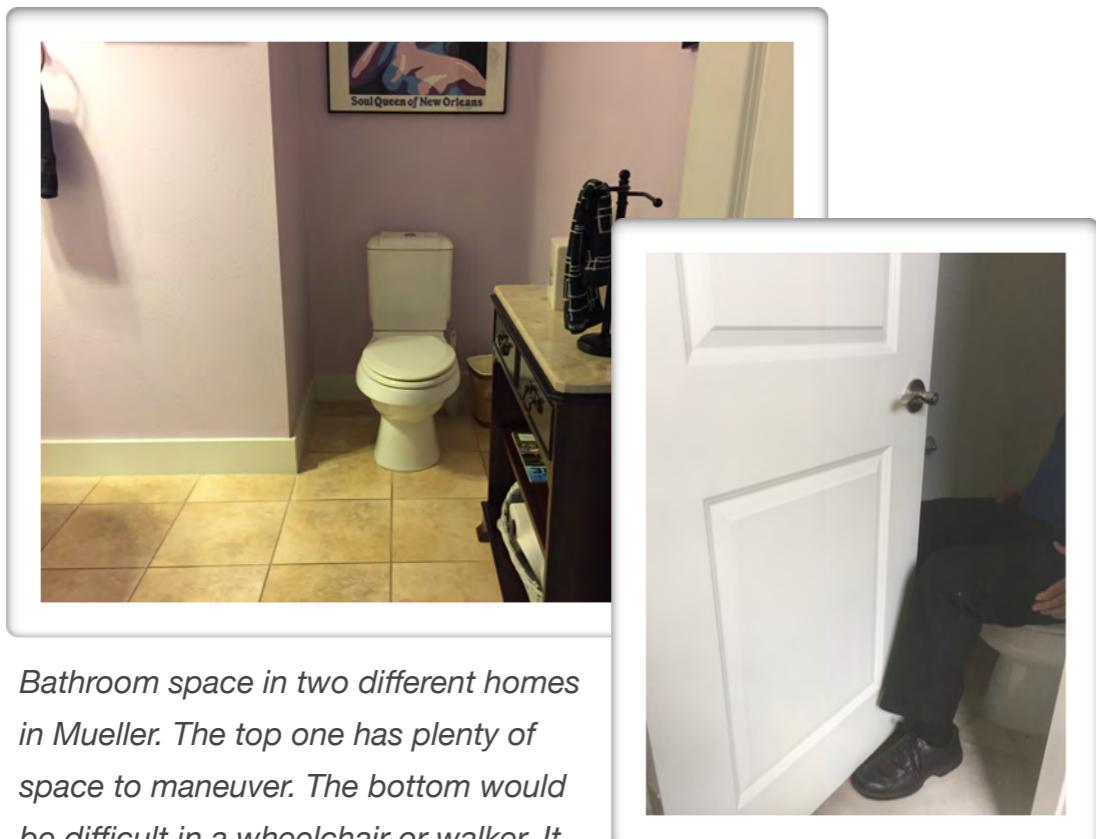
## What We Hear

“When you fall in a bathroom all you have is hard surfaces to land on.”

“At least design showers not to stub your toe. And have something to hold onto. When there is nothing to hold onto as I step in, it feels a little tentative.”

“The built-in medicine cabinets in my new house are smaller than in my apartment. That’s ridiculous.”

“I realized I tend to use the handicapped toilets in public rest rooms. Because of the height of the toilet, I can get up easier. Using the grab bars may be next.”



“This whole thing about little rooms for the toilet means just one more door to open, corner to turn and light to turn on.”

“If it weren’t a bit sad, I’d really laugh about how much more effort it takes to rollover and stand up to get out of the tub now. I reach for the towel rack, which I know I can’t put that much pressure on. Because I feel in danger, I rarely take baths now unless I am also using mineral salts to soothe one ache or pain or another.”

“The tub in our new home is way too deep and small, too high and hard to get in and out of. I doubt we will ever use it.”

“I hit my head on the door of the linen closet above my toilet. It was my fault because I left it open. I thought of it when we saw our new house. The cabinet stuck out from the wall even further than mine. An accident waiting to happen.”

“In our new home, I don’t have the room I had in my apartment. I worry someone can walk in and bump me if I am standing at the sink.”

“I’m looking at the floor plan for the bathrooms. None of them have room to add my small but handy shelves where I put things I use often but don’t want on the counter.”

“Why the big mirrors? How many of us have great bodies that we want to see naked?”

## What is Recommended

**Size:** Some homes have master bathrooms that are huge. Many other bathrooms are too tight. There is not space to place an

added cabinet. More importantly, they would be very hard to use if someone needs a wheelchair, even temporarily. Consider giving more footage to the bathrooms.

**Doors:** Provide more space for the bathroom door to open and close. The bathrooms in many Mueller homes do not allow for the door to be open or closed when you are standing at the sink.

**Pocket Doors:** The inclusion of pocket doors in bathrooms can add a sense of space and flexibility and allow more space for walkers and wheelchairs.

**Medicine Cabinets:** Many people, and especially elders, need a spacious and well organized medicine cabinet. It seems there are more pills, portions, supplements and prescriptions as we get older. Keeping all of this organized and easy to see can save a life.

**Linen Cabinets:** Great to have them in every bathroom, but when over the commode they should be designed so it is unlikely anyone will hit their head.

**Toilets:** Toilet height is a critical issue for getting up and down. Commodes that are slightly higher are better for elders. There is less stress on knees and backs. A home for elders would benefit from all toilets being at handicapped heights of 17 to 19 inches.

**Sinks and Counter Heights:** These are important and much that was said about the kitchen applies to the bathroom. We

note that wheelchair accessible kitchen and bathroom sinks are available.

**Showers and Bathtubs:** As people age they tend to give up baths as it becomes harder to get in and out of the tub and easier to slip and fall. Thus, showers may be preferable for elders for many reasons, and curb-less ones are better because of less chance for tripping. They can be adapted or used as is by those in wheelchairs or using walkers for support. A built-in seat may or may not be desirable given future users may need a special type of seat.

Designing the tub space for a walk-in tub in the future is suggested. With the growing baby boomer market, we can assume new design and price advantages will become available.

**Mirrors and Lighting:** Having big mirrors is not necessarily a desired elder feature. We may not like to see our aging selves all over the bathroom and when getting out of the shower or tub.

Having good lighting and being able to get close to a mirror is important.

Light switches need to be really easy to get to and near the door especially at night when elders make trips to the bathroom.

**Grab Bars and Railings:** The Austin Visitability Ordinance requires blocking for Grab Bars in first floor bathrooms. We suggest blocking in halls, second floor bathroom and wherever they may make a difference. Participants in our Qualitative

Conversations questioned why attractively designed Grab Bars could not become standard feature in all new homes.

- In hallways

The cost of this additional blocking is minimal to a builder as the "waste" associated with most wood framing can be efficiently recycled for the between stud blocking. This also adds value to the home as grab bars can be securely placed throughout most of the home as necessary in the future.



Examples of more attractive grab bars.

Although many consumers recoil at the thought of grab bars, which are often associated with nursing homes and elderly-care facilities, such perceptions are outdated. The new models that are now on the market are much more attractive than they used to be. More recent models, are designed to complement the other items in your bathroom and can be easily installed as long as the walls have blocking. While the verdict is out on if and when grab bars may be installed, it is suggested that wall blocking for secure installation of grab bars be installed:

- Throughout all bathrooms (all walls)
- In areas of the bedroom where beds might be placed
- At garage entry door and front and rear doors

## Bedrooms

### Aging Considerations

*The bedroom can become a place of isolation and should be a place full of light with appropriately sized windows. Bedrooms also need good lighting for evening hours. Proper lighting contributes to nighttime safety.*

*It is nice if owners can see something pleasant out the window if they become bedridden for a period of time. However, when people are ill or bedridden, they may want to be able to make the room dark.*

### What We Hear

“I want my bedroom filled with light but with shades or blinds so I can block the light when I need to.”

“I’m going to spend a lot of time in the bedroom, it needs to easy to clean, comfortable and easy to get around in.”

“I need a bedroom downstairs so I don’t have to go upstairs to take a nap. Also, my mother is 85, and she can’t climb the stairs in my house. She needs a place to stay when she visits us.”

“Sometimes I use my nightstand for leverage to get out of bed. I can only imagine how important it would be if I had a bad back or some other condition.”

## *What is Recommended*

Bedrooms floors need to be non slip and flat to be less likely to cause a tripping hazard.

When we get ill and as we get frailer, we need help to get from the bed. Depending on the layout, having wall blocking on some walls is suggested for future grab bars.

Closet doors should be easy to operate and not interfere with normal movement within the room.

Having the light switch connected to an electrical outlet near the bed can be very beneficial.



It is so nice to have windows to let the light in and to see outside!

## House Sharing

### Aging Considerations

*The Housing Sharing trend is growing among elders as the demand increases and the technology to find roommates becomes more available on a local basis. We expect to see this movement grow.*

*Buying a house you realize you can share at some point can offer many benefits for elders. We may want house sharing to relieve isolation, help with the chores and cooking, to look out for one another, or to help cover expenses. Some folks may be able to stay in homes they have outgrown if they share them or rent out space to cover living expenses.*

*In our Qualitative Conversation several folks have been actively looking for home share opportunities and ask that stand alone homes be designed so that they can more easily be shared.*

*The affordability of sharing is important as is the sharing of the work to keep a home functioning, clean, and happy. The security of having other caring people around can make a qualitative difference in our life.*

*Sharing meals, kitchen clean up, expenses, chores and looking out for one another becomes a necessity for some people in order to be able to stay in their homes vs. moving to some kind of senior living facility. Some senior living facilities have dining rooms to get people out of their apartments for sociability, to save them the work of cooking, and in hopes residents eat at least one healthy meal a day.*

## What We Hear

*“Mary Jo and Scott were 20 years younger than I when I moved in with them at age 50. They had purchased a home that would work for sharing. Scott worked out lots of ‘musts’ and found a house that had them. This was over 20 years ago now. He was thinking that in the future several elders could buy and live in it together. The idea has been around a long time.”*

*“We hear people talking about shared space living in an effort to make cooking and dining less isolated activities.”*

*“We looked for a home designed so we could rent out several rooms on the second floor or even the whole second floor.”*

*“The second floor or even a third floor can be used by ‘younger’ people who still are comfortable with frequent use of stairways.”*

## *What is Recommended*

Homes that have a bedroom on the first floor suggest the opportunity that the upper floor(s) can be used exclusively by home sharers. Some may even want some kind of planning for addition of kitchen facilities in the future.

While this concept needs further exploration, at a minimum: homes need several full bathrooms, more than one living space and a large kitchen so that two to four people can prepare food at the same time. Having a place to plumb in a second kitchen is another idea

At least one bedroom in addition to the master bedroom should have a full bath attached. One or both of these bedrooms should be on the ground floor.

Plentiful kitchen storage is even more important if and when people share their homes. In addition, shared homes may require two refrigerators.



Mueller's Southwest Greenway path overlooking the pond and the houses on Tom Miller Street. Will the last houses in Mueller be more suitable for an aging population?

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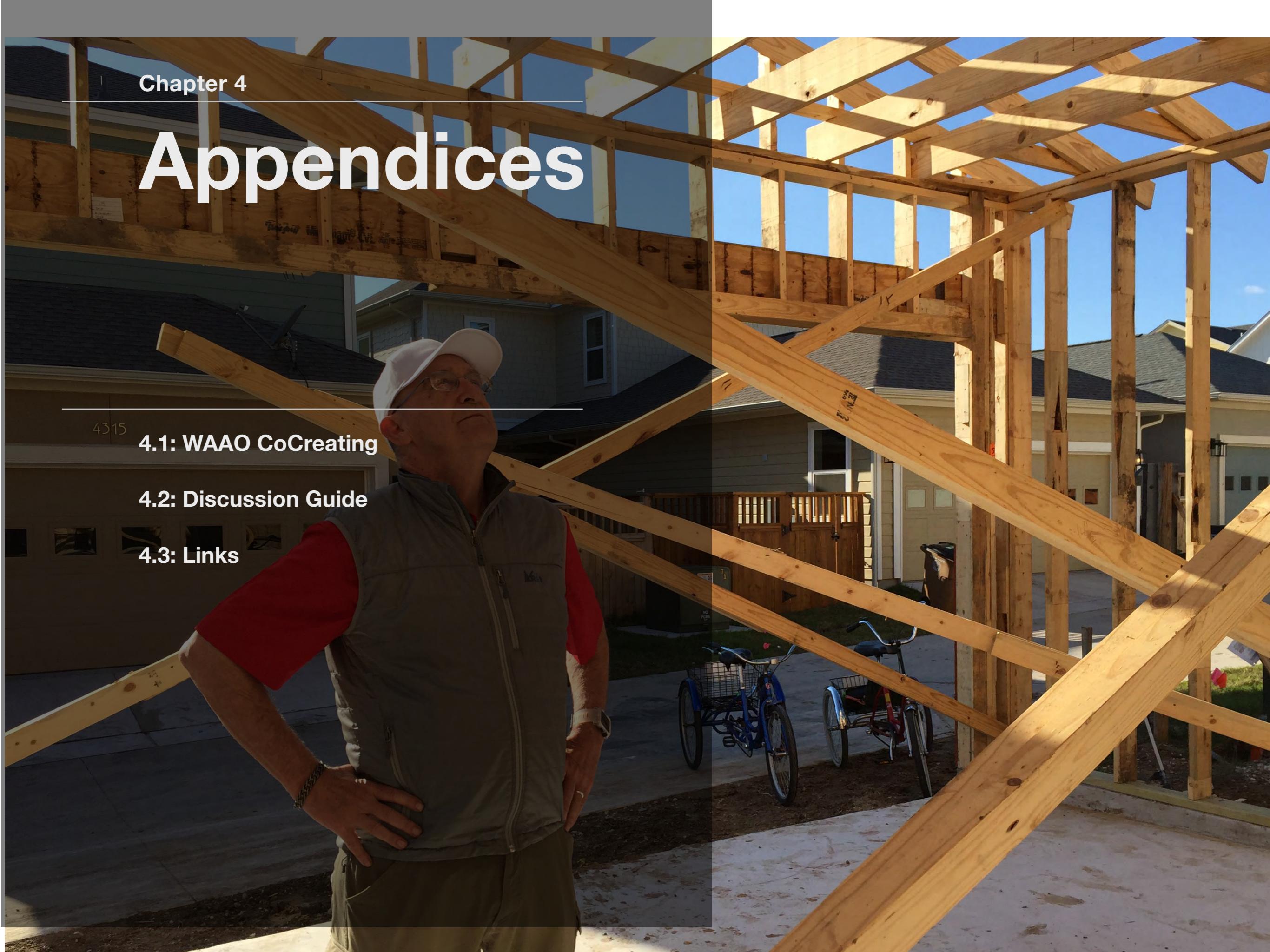
# Appendices

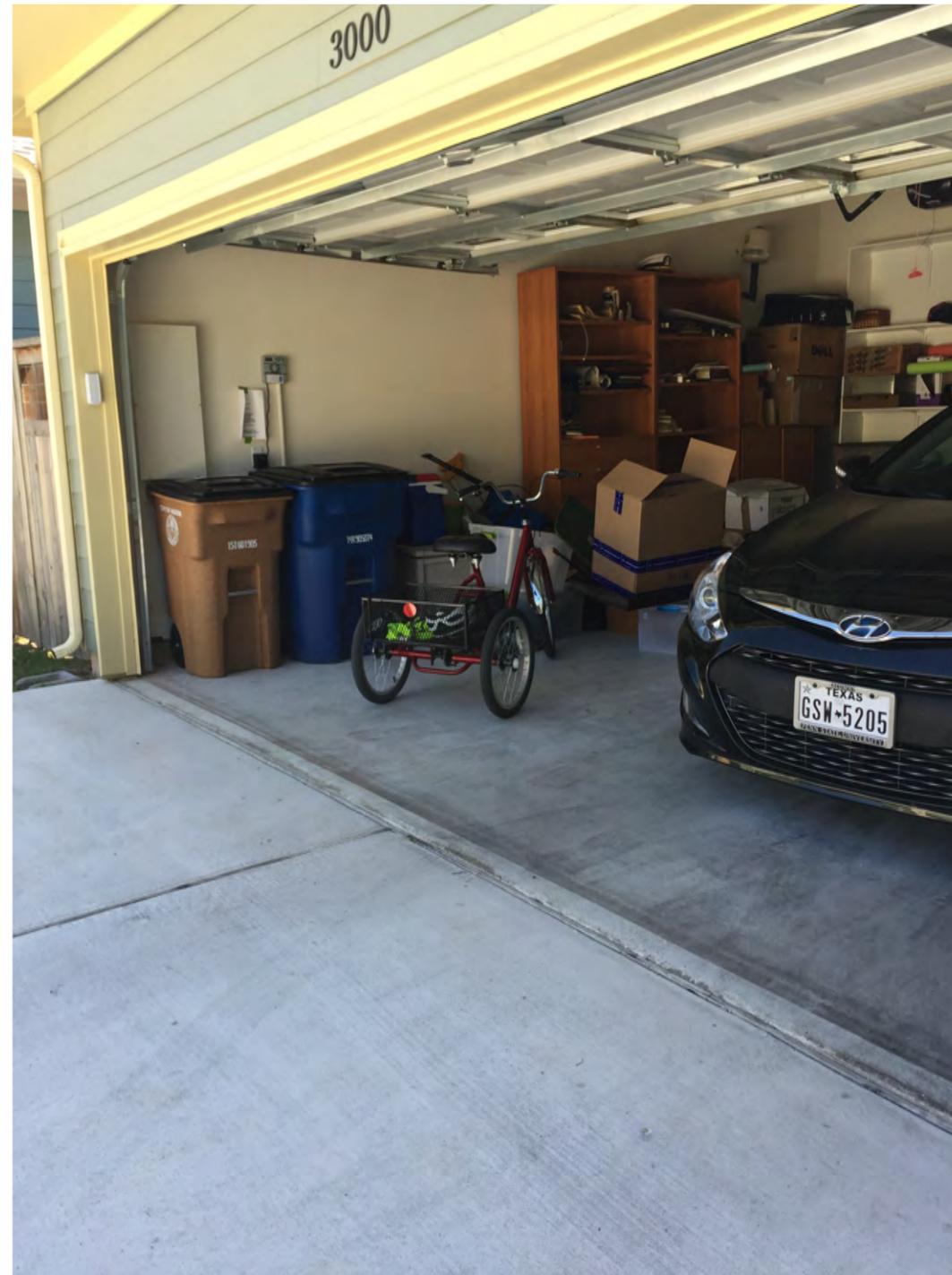
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**4.1: WAAO CoCreating**

**4.2: Discussion Guide**

**4.3: Links**





*Garages should have space for storing bicycles and tricycles.*

## Section 4.1

# WAAO CoCreating

### WHAT IS WAAO?

1. WAAO stands for “We Are All ONE.”
2. WAAO is pronounced WOW!
3. Our mission is to CoCreate positive changes within the community through interaction with civic and business leaders and other entities.
4. We help translate universal principles to help empower neighborhood communities.



*In the picture above, three fingers up stands for a “W” and the thumb and little finger touching is an “O” ... the symbol for WE ARE ALL ONE! We believe trikes provide a great opportunity to explore a community. Reducing the use of an automobile and providing low impact exercise is an important benefit of introducing trikes.*

## How this Paper Came to Be:

In March of 2017, after a six month search to buy a home in the Mueller Neighborhood of Austin, TX, Ani Colt and Preston “Ty” Tyree, committed to purchasing a house from builder CalAtlantic Homes. Because of the tight real estate market in Mueller, they selected a two story home with a suitable layout that met many of their current needs. The slab for the home was about to be poured as discussions began. Questions arose on how to make this home meet their needs as they aged. In addition, as leaders of the Mueller Neighborhood Association’s Aging&Neighborhood Committee, Ani and Ty want to be able to demonstrate a wheelchair accessible home.

As two active and healthy 70-somethings, Ani and Ty asked about the options they had to make this home meet their needs as they grow older and less able. CalAtlantic Homes Product Development realized that this was an opportunity to hear not just from these buyers but other elders living in Mueller to talk about their experiences and how housing design features can help ease their older years.

## WAAO CoCreating

Ani and Ty are also the principals of WAAO CoCreating LLC (WAAO CoC), a consulting team dedicated to the ideals of co-creation and the tenet that *We Are One (WAAO) and all in this together.*

Ani Colt, one of the co-founders of WAAO, has a strong and diverse background using qualitative research to develop new products and evolve established brands in the ever changing marketplace. She owned Ann Scheib Associates; a New York based new product and qualitative research consultancy.

Moving to the Mueller Neighborhood in the spring of 2012, Ani saw the need to advocate for Mueller’s elders and baby boomers. Since then, Ani has been an advocate for aging in place needs and other positive aging opportunities. She frequently speaks up at meeting of the Austin City Advisory Commission that oversees the Robert Mueller Airport Development plans and practices.

Recognizing that the issue of aging in Mueller was not receiving enough consideration, she started a new Mueller Neighborhood Association Committee, Aging&Neighborhood (MNA A&N) in 2015. Several of her Aging in Mueller articles have been published in *The Front Page Flyer*, the neighborhood association newsletter.

Among the goals of the A&N committee are:

*“Pave the way for the Mueller population to stay in Mueller for the rest of their lives, should they choose.”*

Early in Ani’s Mueller work, it became apparent there is no reliable demographic data on the number of elders living in or moving to Mueller. She felt that the qualitative understanding of

the 60 and over residents is even more important and she began her research into this issue.

Preston “Ty” Tyree, the other co-founder of WAAO, is an engineer with a strong background in marketing and business development as well as in traffic safety, particularly as it applies to our most vulnerable road users. He has presented work sessions on American with Disabilities Act (ADA) requirements for commercial buildings and their interface with the transportation system.

He is a nationally recognized traffic safety expert and works as an expert witness in traffic crash cases.

\* \* \*

For Ani and Ty, a couple living in Mueller, the issue of homes for the aging population is critical to their friends, neighbors, and themselves.

\* \* \*

TRIKES: You will see various photos with trikes in this white paper. When Ani Colt’s son gave her a trike and she started riding in early 2014, she took on bringing Trikes to Mueller. Ani and Ty are Co-Founders of Trike Neighborhoods.

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# Discussion Guide



## CONVERSATION

This document served as the guide for the conversation held at CalAtlantic.

- I. INTRODUCTION (15 minutes) (Note: Times are approximate.)
  - A. How This Happened to Happen Today
  - B. Food will come about 1PM
  - C. Ani's Role and Perspective on Today
  - D. How Focus Groups work:

AND: This group is different because we know one another
- E. Introduction of Participants 3 minutes each)

Please give your name, where you live and how long you have lived in Austin, include where you lived immediately before moving to Mueller.
- F. Intention of the Group Today - to be paraphrased
  1. Q&A discussion to help the builder better understand the concerns and needs of potential clientele within a loosely-defined phase third stage of life. (I call it Elderhood -- 60 plus)
  2. Address current industry standards as they relate to ease-of-living and mobility....we are talking residential construction to meet the needs and concerns of home dwellers. NOTE: We are not talking apartment buildings today. Single and small coops are the category.

## II. General Information

### A. In a few words --

1. What kind of dwelling do you live in now?
2. What do you like most about it?
3. What one thing would you change to make it more livable as an eldering person? You will have the opportunity to address other things later.

### B. Writing Assignment:

1. Thinking what would make your home a better place to “age in place,” please these write down any specifics you would really want to share today: just enough to remind you so we are sure to cover it.

## III. Eric's Questions

### A. “Thinking about Mueller and Aging in Place, the architectural design and community requirements, what are the immediate needs? (Note Rob and Dennis will be more informed than Cynthia)

### B. Using the HomeAdvisor article, written by Marianne Cusato, pass out list.

## IV. Discuss

### A. Intro to list: While this is a great list, it is hearing you talk about these things that can help designers get a better understanding and feel for things.

1. How many of agree with most or all of the projects items listed within the article?
2. What items or areas of concern does the home-building industry typically fall short within this conversation?
3. How does it affect quality of life when these items are not addressed during design and construction?
4. How does it affect quality of life when these items are addressed?
5. How can the home-building industry have a better understanding of these needs and concerns?
6. Possible items to discuss:
  - a) Adding grab bars or in-wall blocking for grab bars in bathrooms
  - b) Where else might this be needed?
  - c) Adding an exterior ramp to the entrance
  - d) Would the front entrance be preferential, or would entry through the garage? Is a ramp taking up much of a front yard a concern?

- e) Increasing width of doorways and openings
- f) How wide do doorways and openings need to be to comfortably maneuver with mobility-aiding equipment
- g) Adding lever-handled doorknobs
- h) Raising fireplaces for ease-of-use
- i) Offering raised hearths to use as a rest or seat
- j) Pre-wire options for medical systems
- k) Electrical outlets located in floor or specific locations along walls

7. Anything else that someone might be concerned with or have direct experience with.

### **What would you add to this?**

#### **V. Wrap Up Discussion**

- A. Given this discussion, what else comes to mind as important for Aging in Place
- B. Anything on your list not discussed?
- C. Anything our observers would like to ask?

#### **VI. Thank you and Closing Comments**

Note:

- Given the small group at times I may encourage Ty and me, as well as Kathy Sokolic (realtor) to contribute.
- I also have a list of things the manager of Wildflower Terrace and I put together yesterday, input from the new Mueller Design Book, about to be released and items others have mentioned to me.
- And, with the all-in-one room setup, we can open it up so Eric and Meggie can ask and discuss with the “respondents.”

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# Links

## LINKS

1. Lifemark Design Standards
2. History of Universal Design
3. New Research
4. Visitability
5. Visitability
6. Home Elevator
7. Home Care
8. Clutter Affects Your Brain
9. 25 Lighting Tips
10. Tall Life
11. Contemporist

*The following list includes all the links in the document. Listed by page and link on the page.*

**Page: viii Link: LifeMark Design Standards**

*URL: <http://www.lifemark.co.nz>*

**Page: 04 Link: History of Universal Design**

*URL: <https://www.humancentereddesign.org/universal-design/history-universal-design>*

**Page: 13 Link: Aging in Place Survey Report**

*URL: <http://www.homeadvisor.com/r/2016-aging-in-place-report/#>*

**Page: 19 Link: New Research**

*URL: [http://www.prnewswire.com/news-releases/ibm-study-sheds-new-light-on-loneliness-in-the-aging-population-300455011.html?mc\\_cid=6176a5b3f7&mc\\_eid=e3c5c0d200](http://www.prnewswire.com/news-releases/ibm-study-sheds-new-light-on-loneliness-in-the-aging-population-300455011.html?mc_cid=6176a5b3f7&mc_eid=e3c5c0d200)*

**Page: 20 Link: Austin Visitability Document**

*URL: <http://www.austintexas.gov/edims/document.cfm?id=202500>*

**Page: 20 Link: Austin Visibility Ordinance**

URL: <http://www.austintexas.gov/edims/document.cfm?id=205386>

**Page: 28 Link: Home Elevator**

URL: <https://www.easyclimber.com>

**Page: 29 Link: Best Flooring for the Elderly**

URL: <http://flooring-professionals.com/flooring-resources/best-flooring-for-the-elderly/>

**Page: 30 Link: Clutter Affects Your Brain**

URL: <https://lifehacker.com/how-clutter-affects-your-brain-and-what-you-can-do-abo-662647035>

**Page: 32 Link: 25 Lighting tips for seniors**

URL: <https://www.lampsusa.com/blogs/how-to-and-tips/14251557-25-lighting-tips-for-seniors>

**Page: 38 Link: Tall Life**

URL: <https://tall.life/adjustable-height-kitchen-island/>

**Page: 38 Link: Contemporist**

URL: <http://www.contemporist.com/kitchen-design-idea-adjustable-height-island/>



Many of the home exterior and interior photos in this document were taken of the home pictured above. It is located in Mueller/Austin, TX. That's Ani Colt, the home owner (with Preston "Ty" Tyree) on Ruby II and Michelle DeKay of CalAtlantic Homes on Big Blue. These are two of trikes in the sharing program of Trike Neighborhoods.

We are grateful for all the photos in this document and recognize that we have not consistently given photo credits. Many are from the internet and many were taken by Ani Colt or Preston "Ty" Tyree.

The first edition of this white paper is being published as our world deals with the aftermath of Hurricane Harvey and severe weather impacts causing devastation across the globe. As our population ages, the necessity to anticipate and provide for these types of challenges increases. The conversation about Aging in Place and Aging in Community needs to continue as we face an uncertain future.

Our intent is to make this a living document. We welcome your comments and suggestions about changes and additions to this paper.

**WAAO CoCreating**

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**Version 1.0, September 2, 2017**

A PDF file of this paper including the latest revisions is available for a \$35.00 fee.

A printed version is also available. Please contact us for pricing.

**WAAO CoCreating** is a consulting team dedicated to empowering neighborhoods to create positive futures. While we focus on the elders in our communities, honoring their talents and addressing their needs; we are grounded in intergenerational partnerships. As elders we bring diverse experience in multiple disciplines including new product development and active transportation infrastructure.

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