

Aging in Place: From Private Porches to Inclusive Communities

SA407

Saturday, June 23, 2018 @ 1:45 PM – 3:15 PM

1.50 Learning Units

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The fine print:

- 1. Identify a time when you or someone you know has been limited because of an architectural barrier within your or their own home**
- 2. Discuss walkability and ease of access to services / community amenities in your neighborhood**
- 3. Identify a time when you have been enabled by good design**



Susan Daniels/E+/Getty Images

The fine print:

3 “OPPORTUNITIES”

- 1. Identify a time when you or someone you know has been limited because of an architectural barrier within your or their own home**
- 2. Discuss walkability and ease of access to services / community amenities in your neighborhood**
- 3. Identify a time when you have been enabled by good design**

Course / Learning Objectives

- Begin to **identify** architectural barriers and other potential dangers for aging populations commonly found within apartments, homes, and neighborhoods
- Learn to **design** practical interventions that can be implemented in existing housing units and communities to enable safe aging in place
- Gain an **understanding** of simple architectural techniques in the design and construction of new residential housing units and communities that will facilitate aging in place without the need for future costly modifications
- **Explore** the ways you can use research-based findings to advocate for age-friendly changes within your practice and among colleagues



Speakers List

- Jason Wheeler

Executive Director, ASSIST Inc, Salt Lake City, Utah

- Keith Diaz Moore, AIA

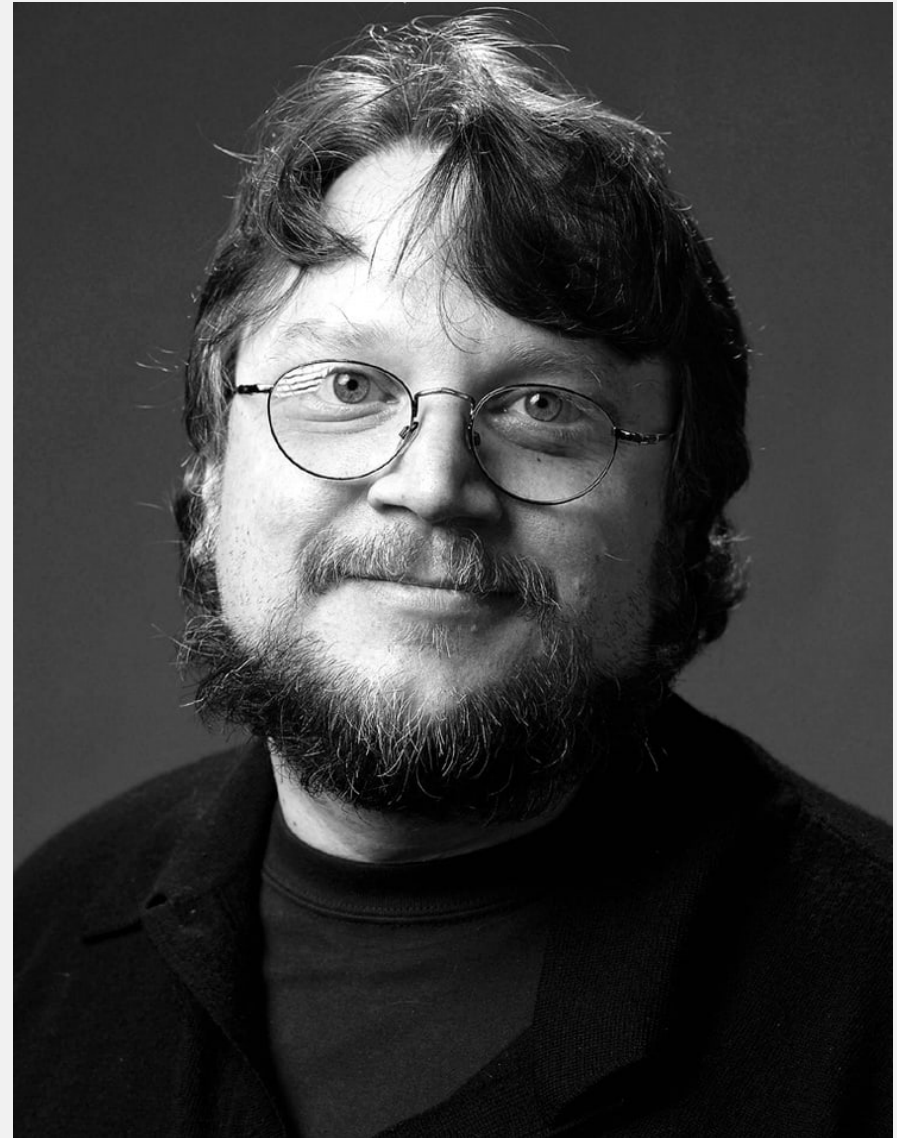
Dean, College of Architecture and Planning, The University of Utah

- Ivis Garcia-Zambrana, AICP

Assistant Professor, City & Metropolitan Planning, The University of Utah



Keith =



Ivis =



Jason =





Identify a time when you or someone you know has been limited because of an architectural barrier within your or their own home (3 minutes)

The empirical imperative

A'18 AIA Conference on Architecture 2018
June 21-23, New York City

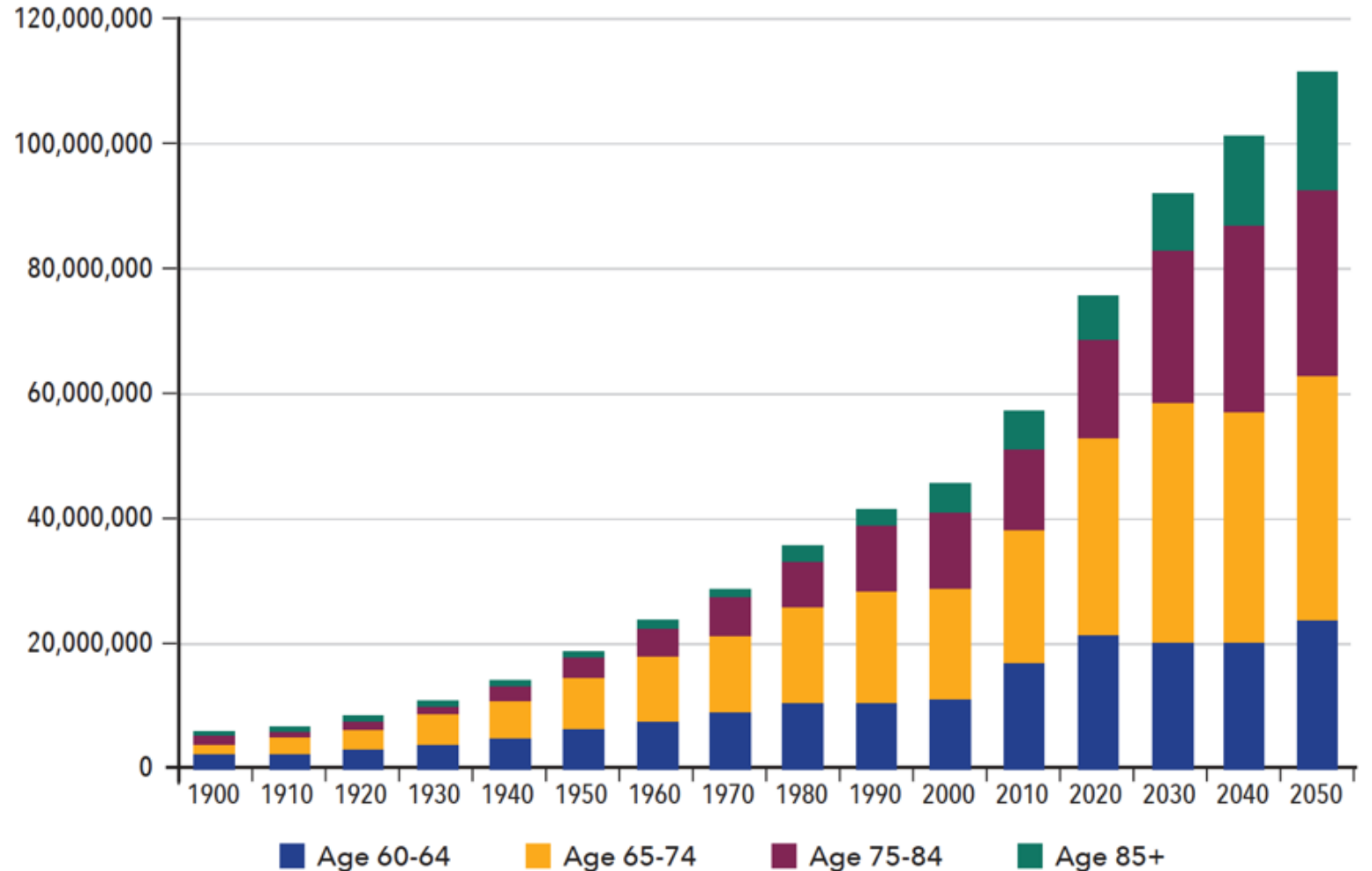
We all know it's coming...



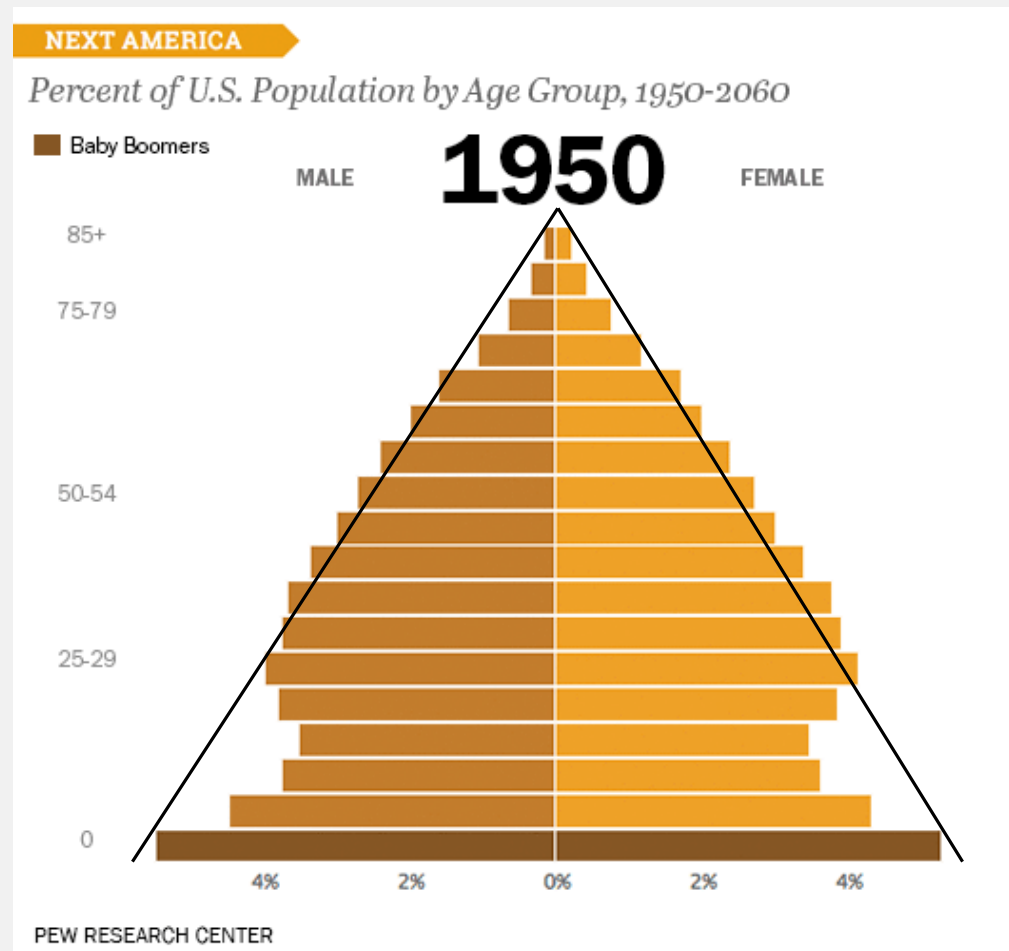
Aging Society

Population 60+ by Age: 1900-2050

Source: U.S. Bureau of the Census



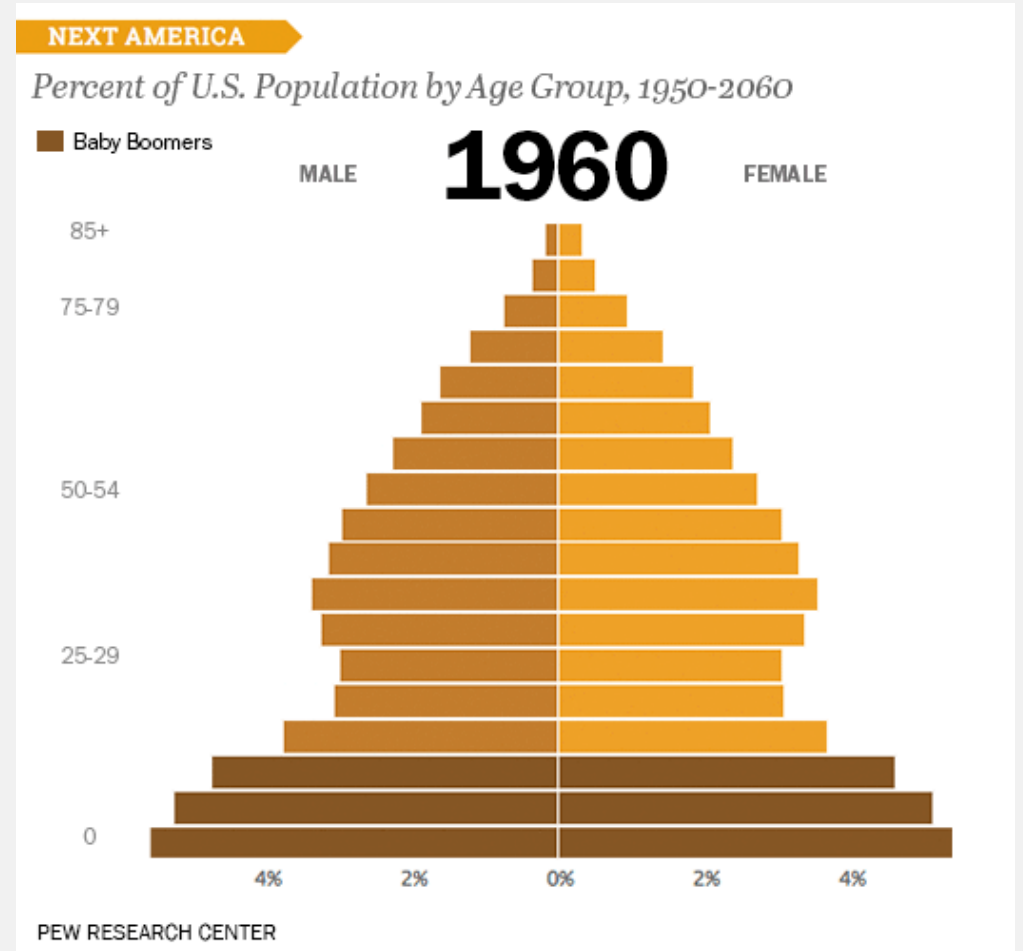
Aging Society



Aging Society



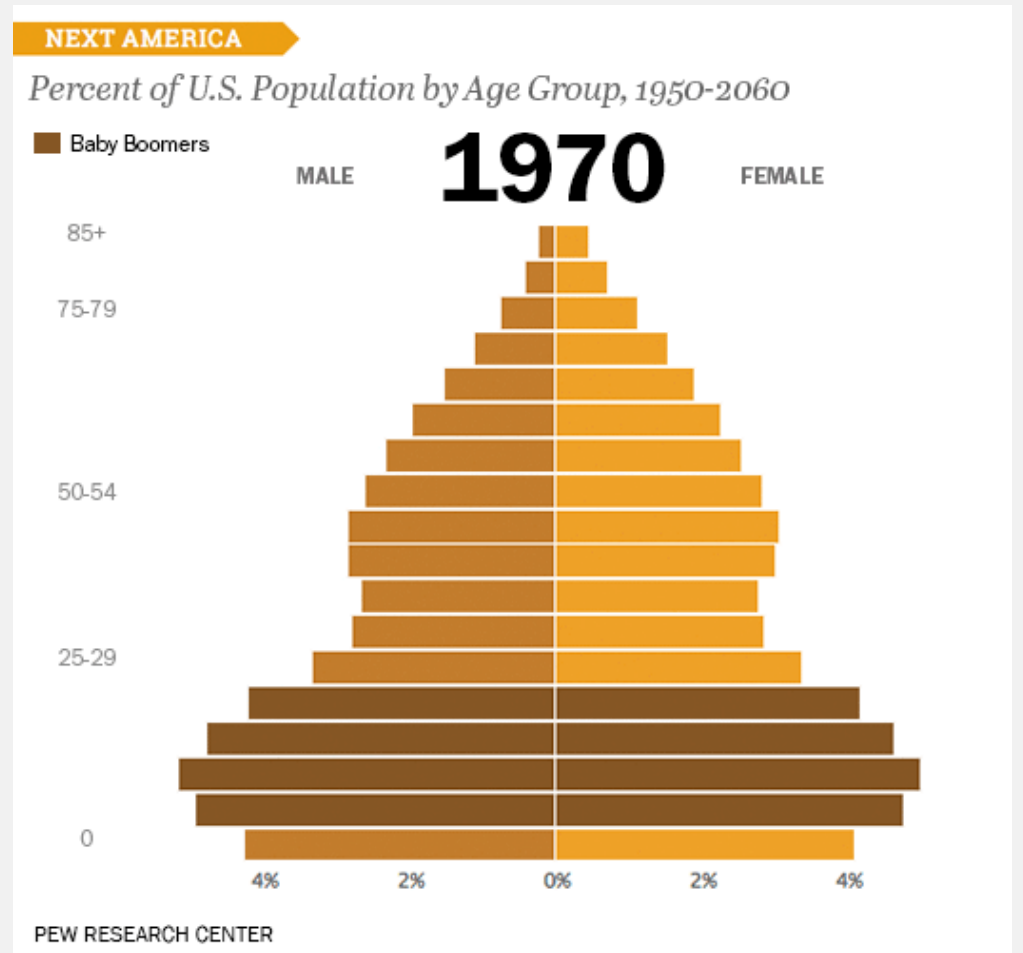
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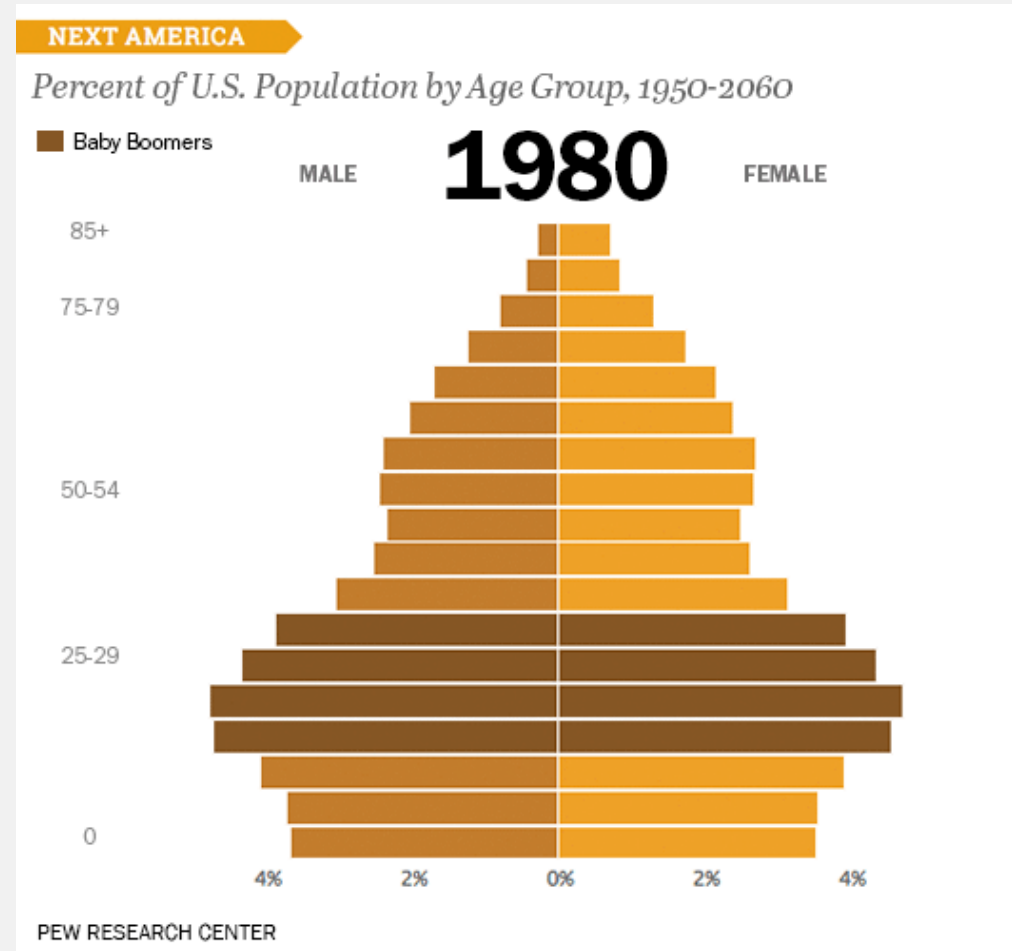
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Aging Society



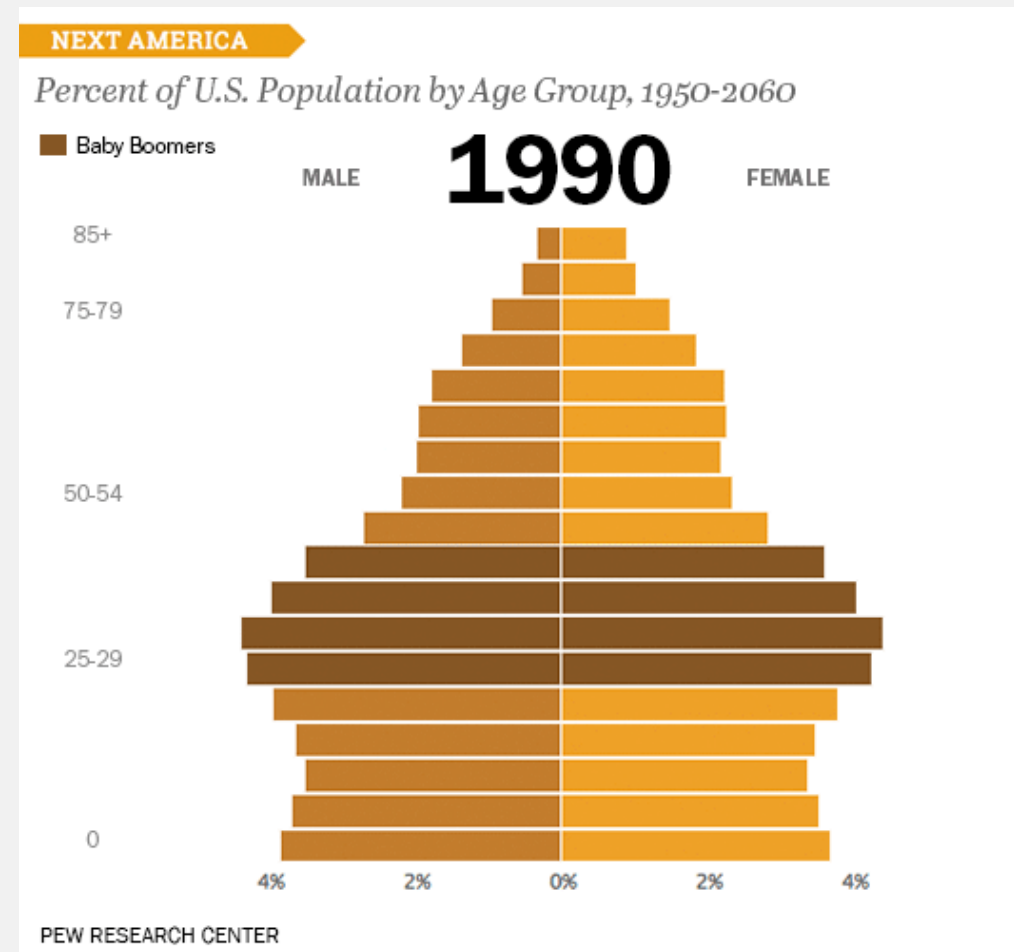
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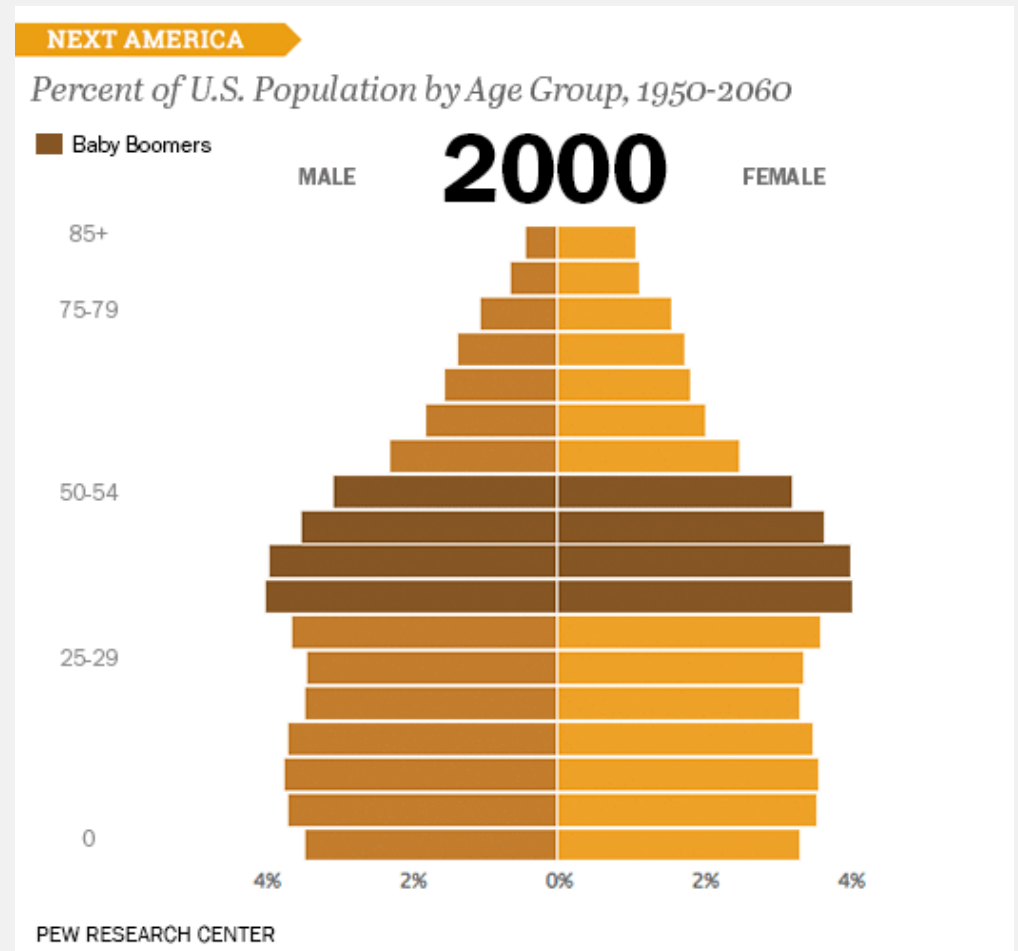
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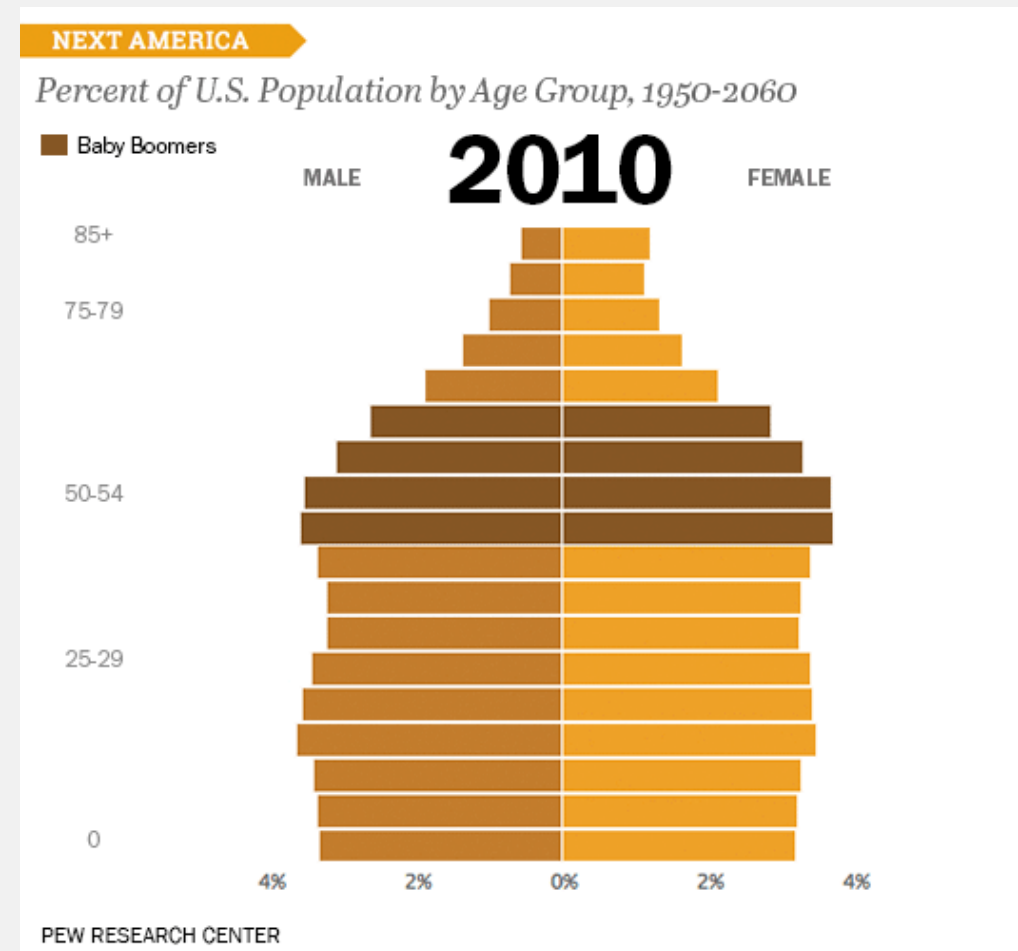
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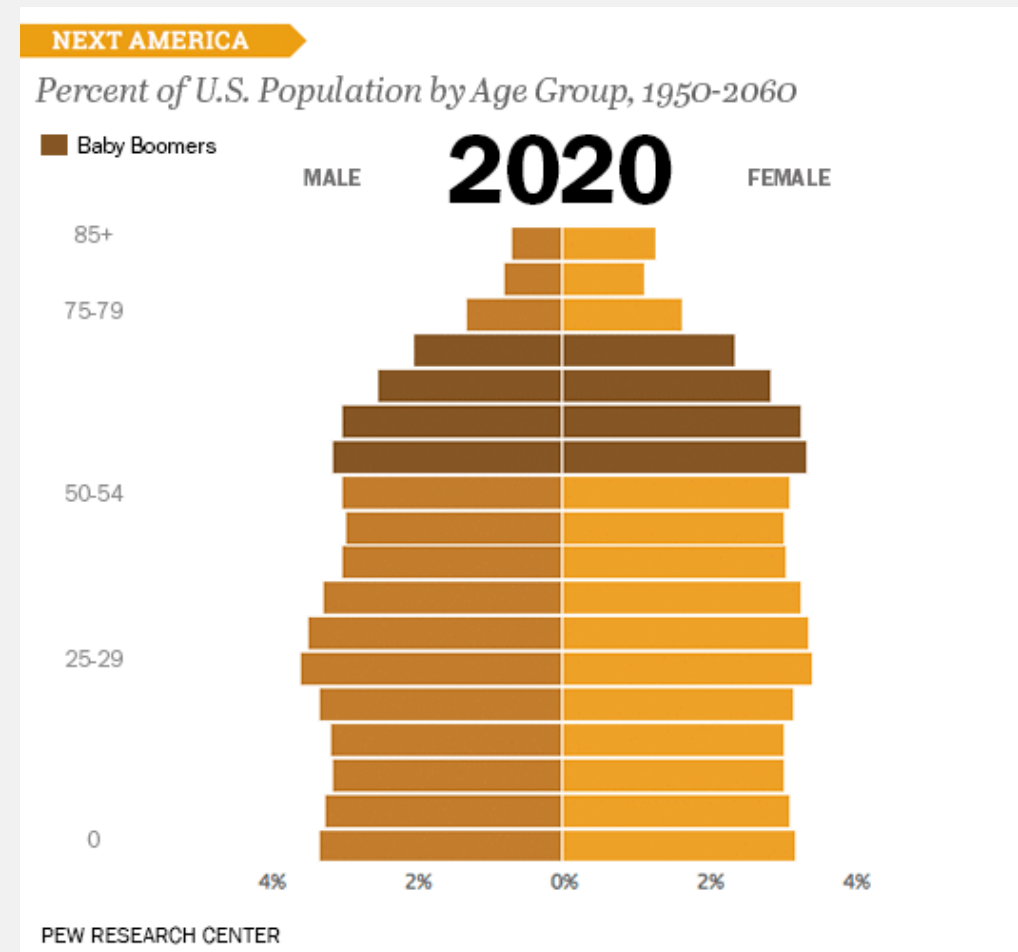
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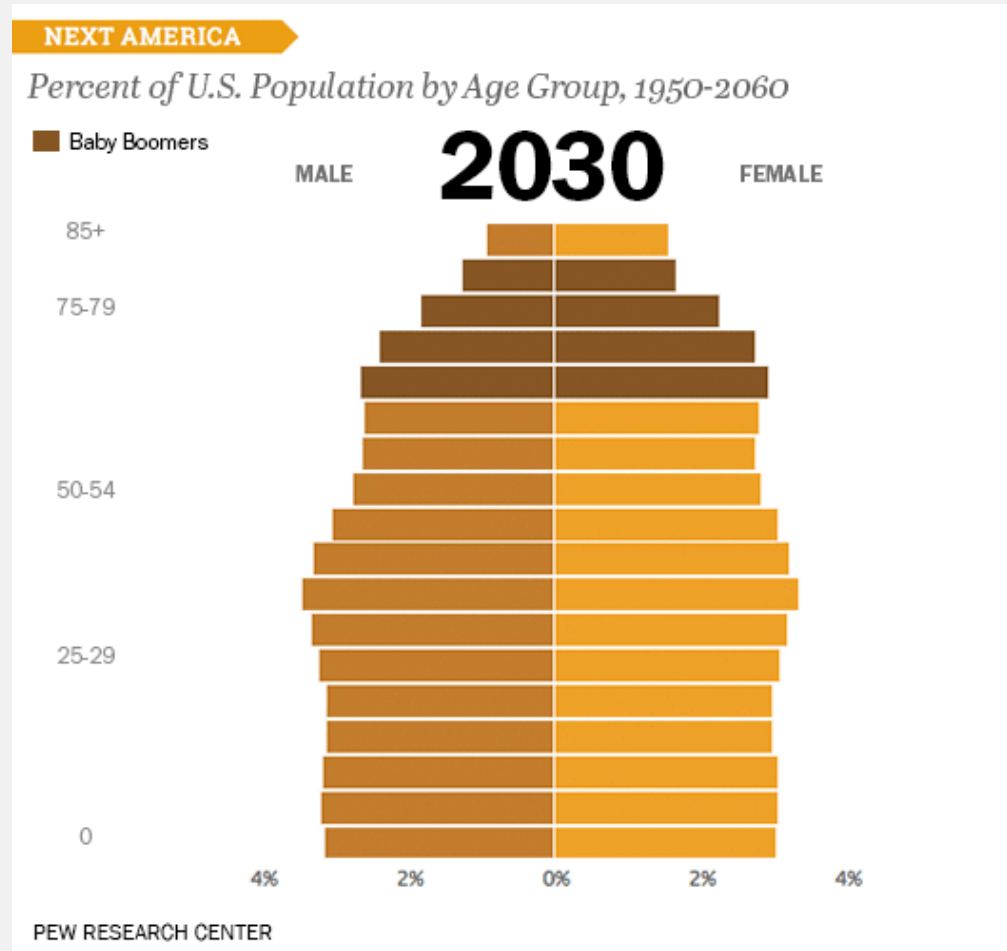
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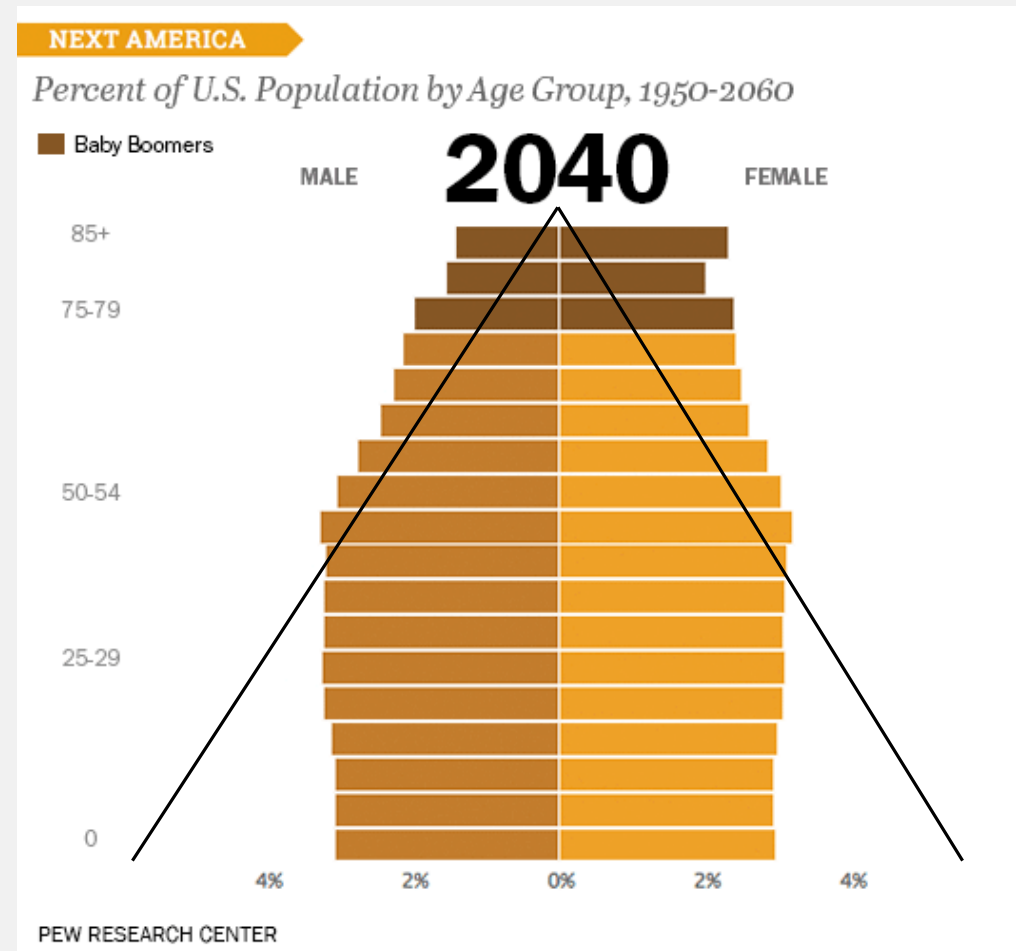
Aging Society



Aging Society



Aging Society



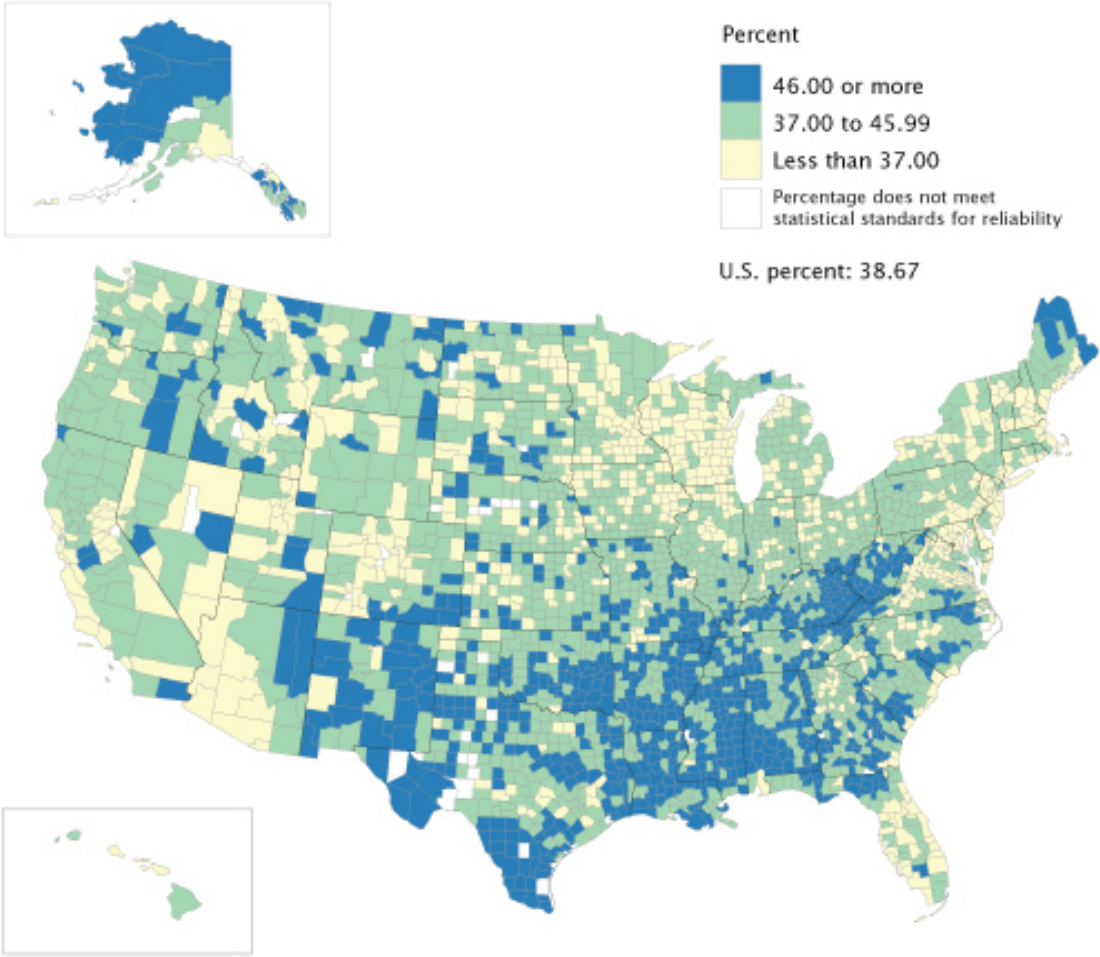
Optimal Aging

- “refers to...aging under development-enhancing and age-friendly environmental conditions”
- (Baltes & Baltes, 1990: 8)



Optimal Aging

Percentage of County Population Age 65 and Over With a Disability: 2008–2012

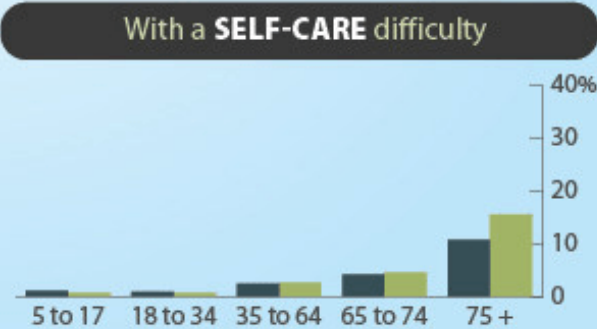
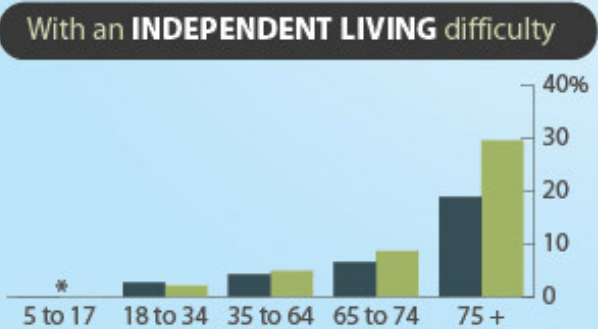
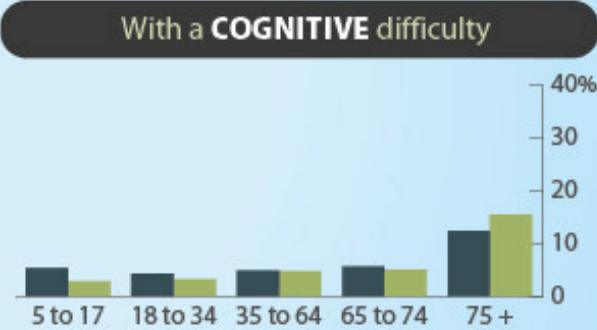
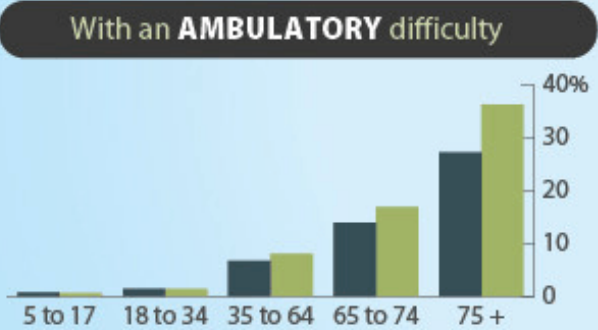
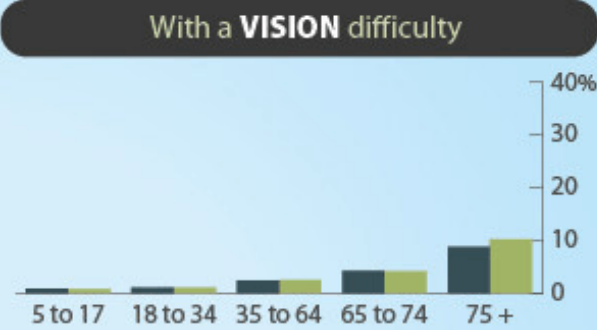
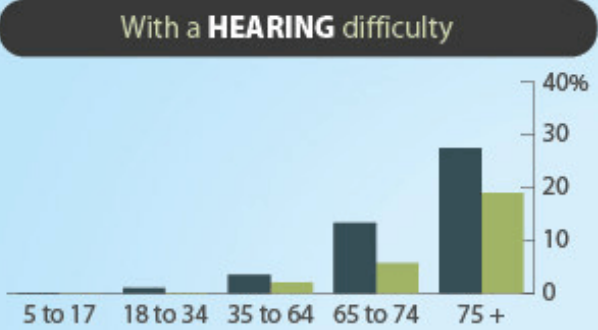


Optimal Aging

How Common Are Specific Disabilities by Age?

Percentage of civilian noninstitutionalized population

Male Female



* Data not collected for this age group.

Optimal Aging

SENIORS AGREE

88% “What I’d really like to do is to stay in my *current residence* for as long as possible.”

89% “What I’d really like to do is to remain in my *local community* for as long as possible.”

THE FACTS

70% of adults over 65 will need long-term services and supports at some point in their lifetimes

\$146B amount Medicaid spends for long-term services and supports

44K older adults are experiencing homelessness

1.8M senior households suffer severe rent burdens

Optimal Aging

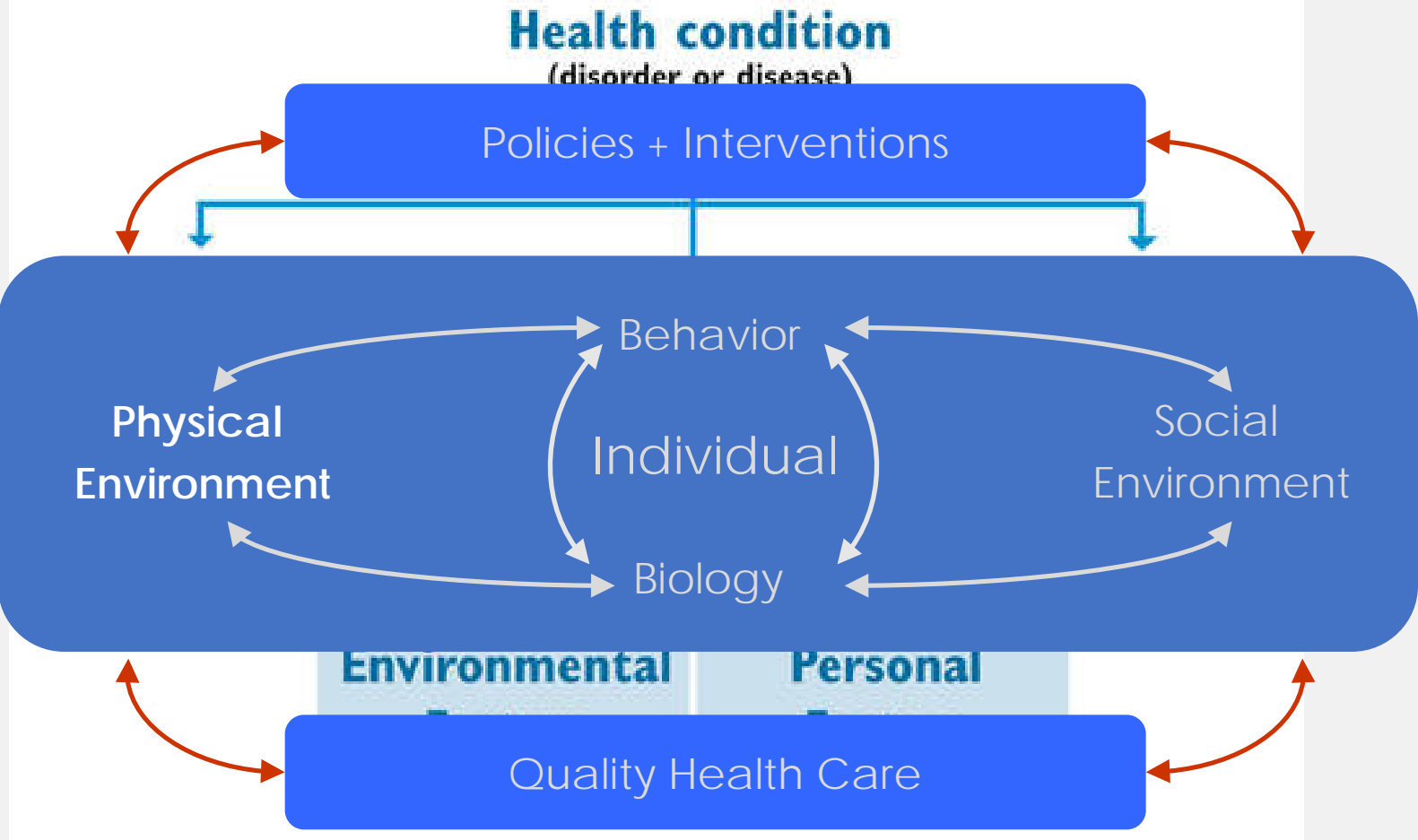
Most people want to “Age in Place”

- Continuing to live in one’s own **home** and **neighborhood** safely, independently, and comfortably regardless of age, income, or ability level

(The National Aging in Place Council, 2013)

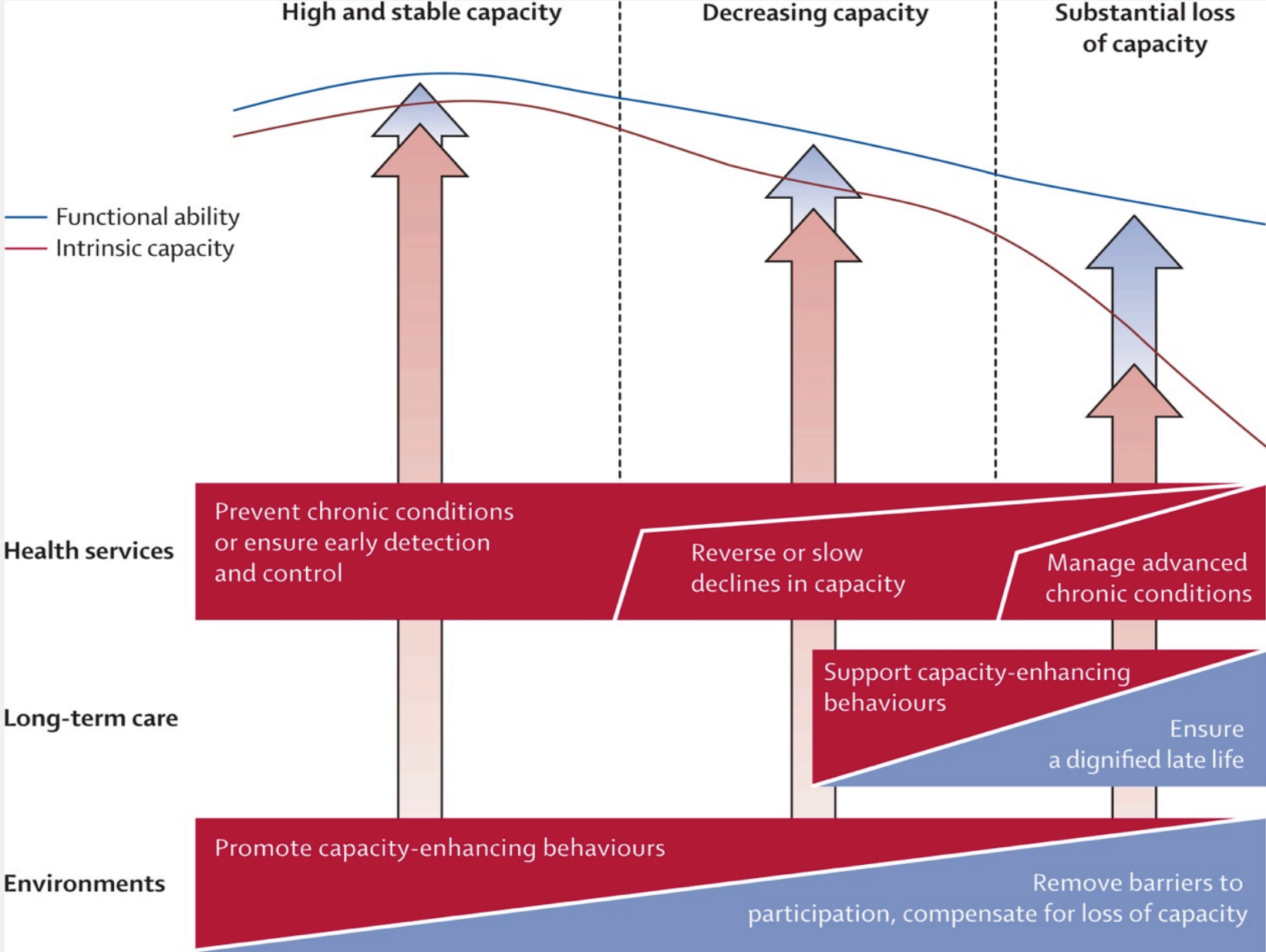


Optimal Aging



International Classification of Functioning, Disability and Health (ICF Model)
Determinants of Health
Healthy People 2020

Optimal Aging





**Discuss walkability and ease of access to services /
community amenities in your neighborhood (3 minutes)**

Eliminating architectural barriers through strategic intervention...

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**46% of
people with
disabilities
report
feeling
isolated
from their
community**



**Architectural
barriers are
the most
frequently
cited cause
of isolation**







How did this happen?

- Frost footing requirements push floors out of the ground



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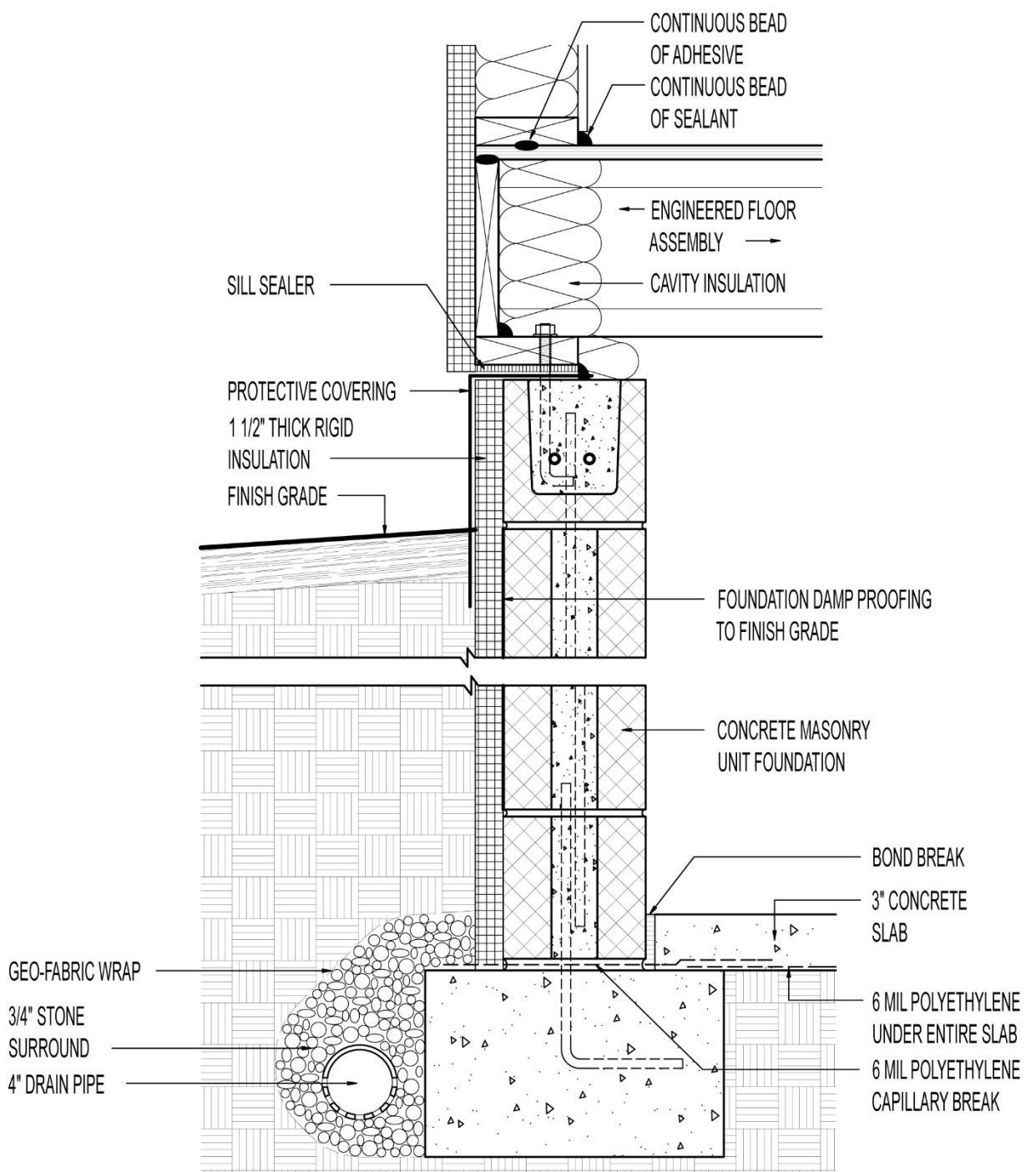


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PARK
CITY

MIDWAY →

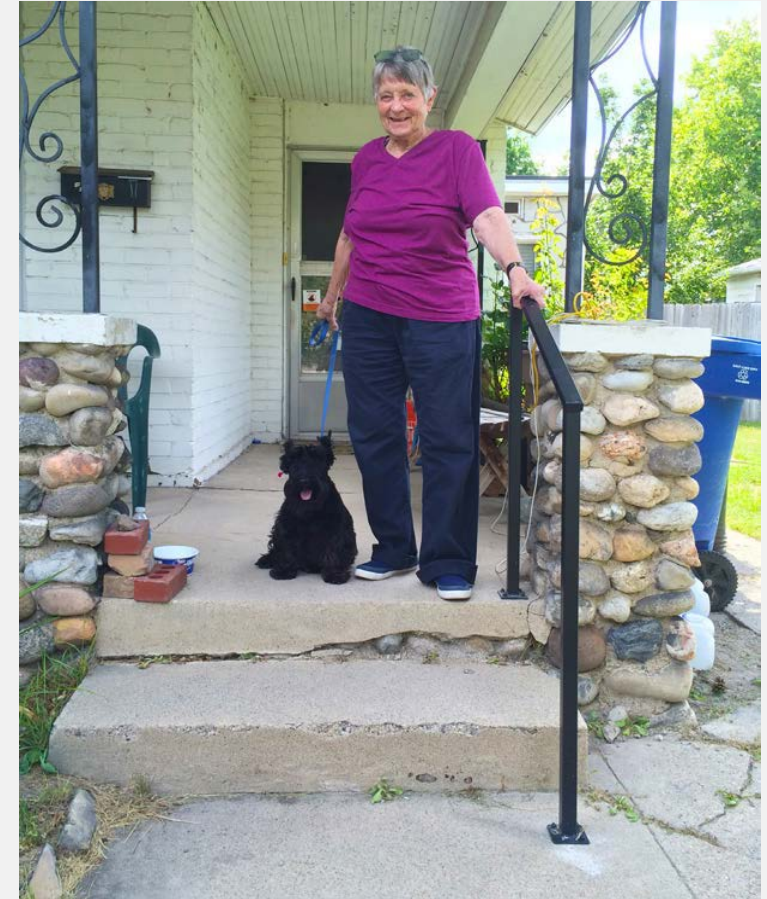
← PARKWAY



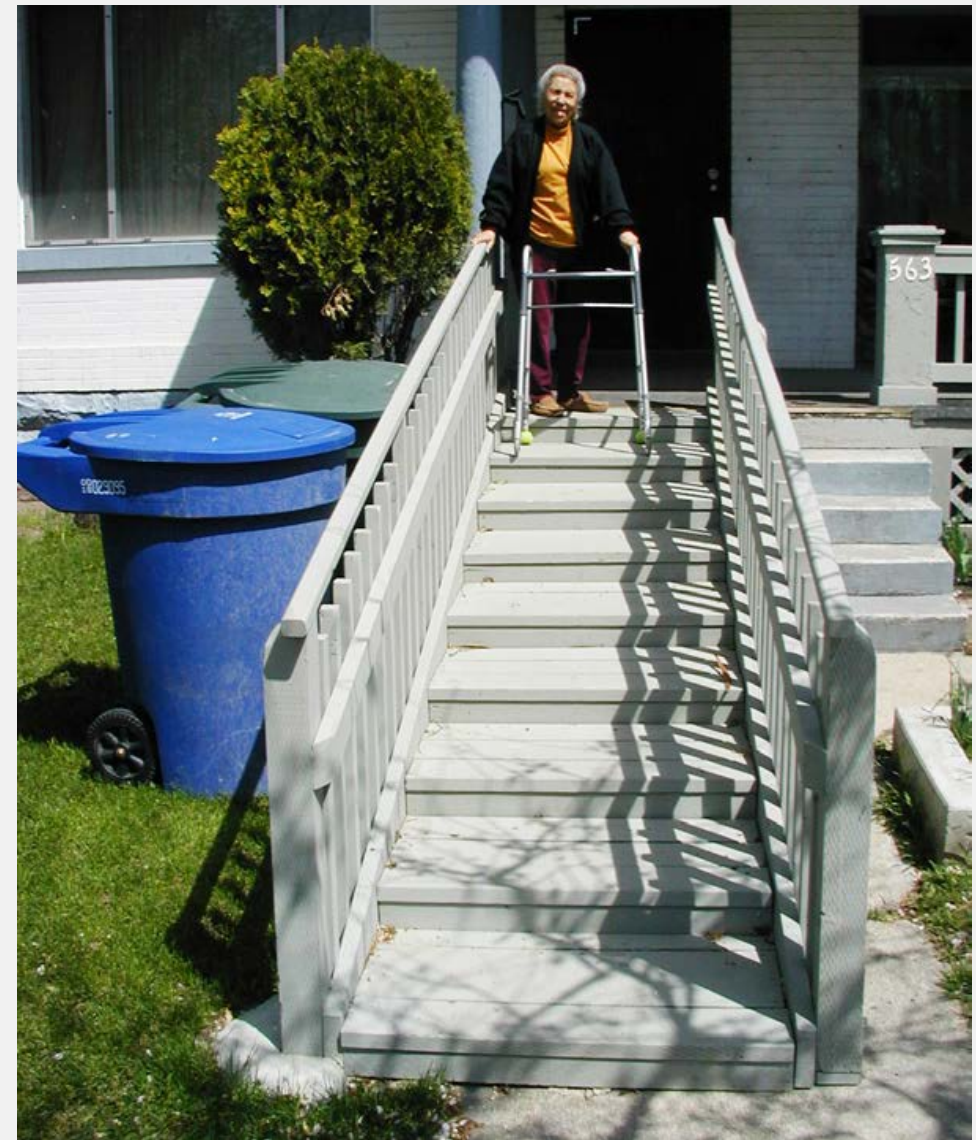




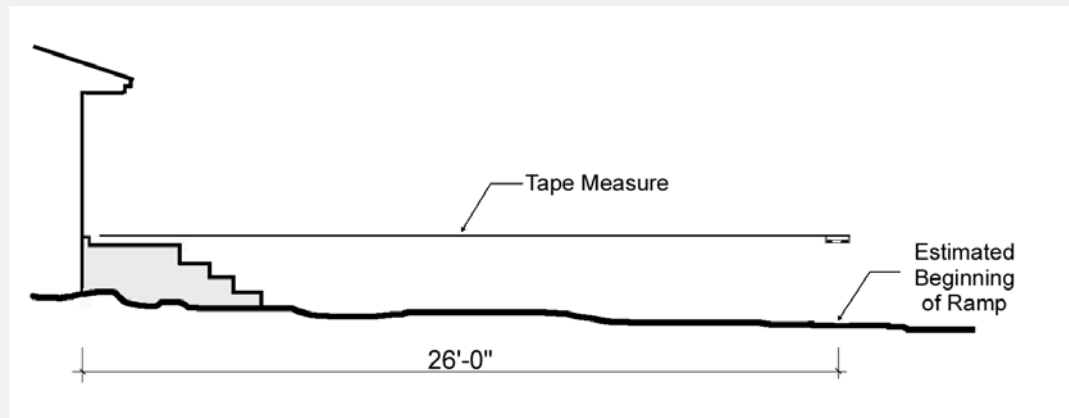
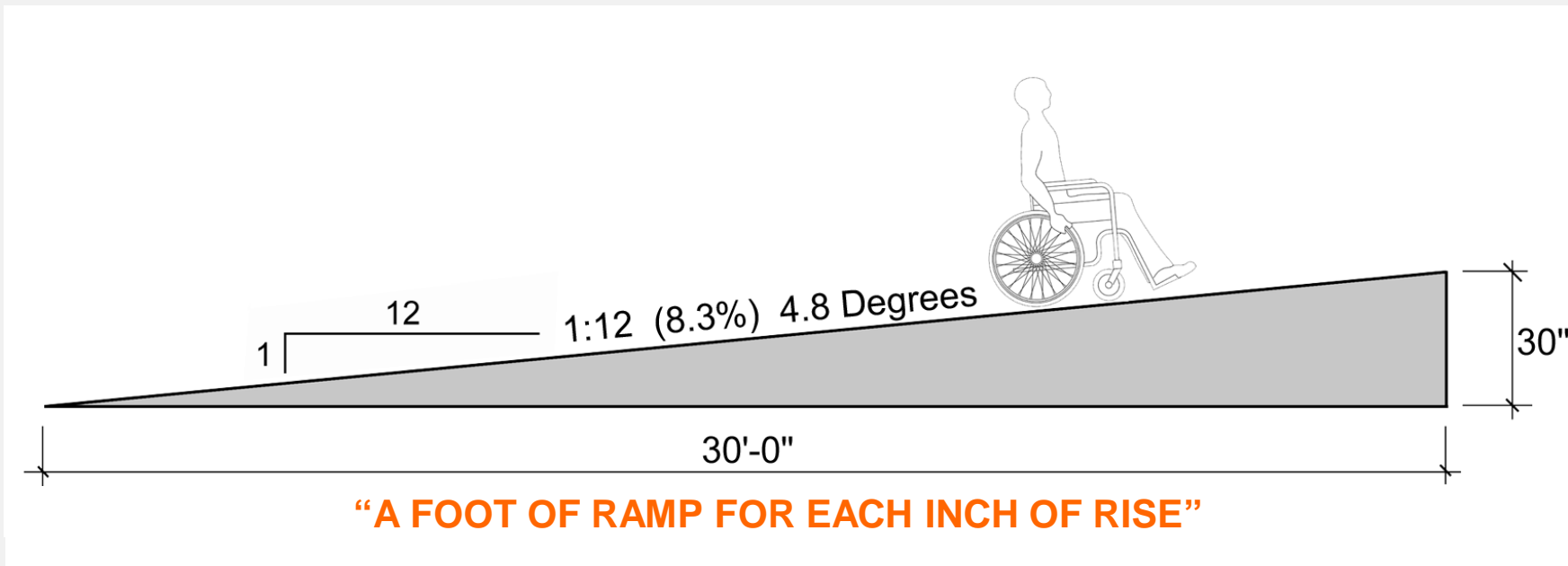
Architectural Barriers – Home Entry



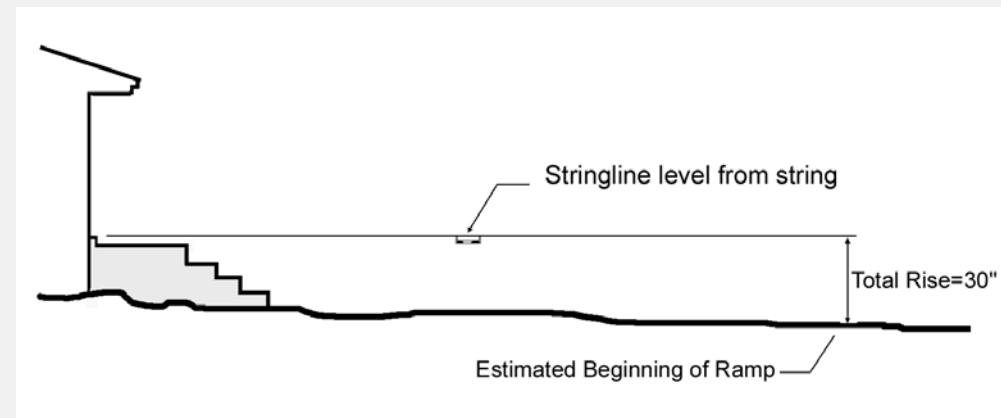








Estimating beginning of ramp



Measuring the total rise

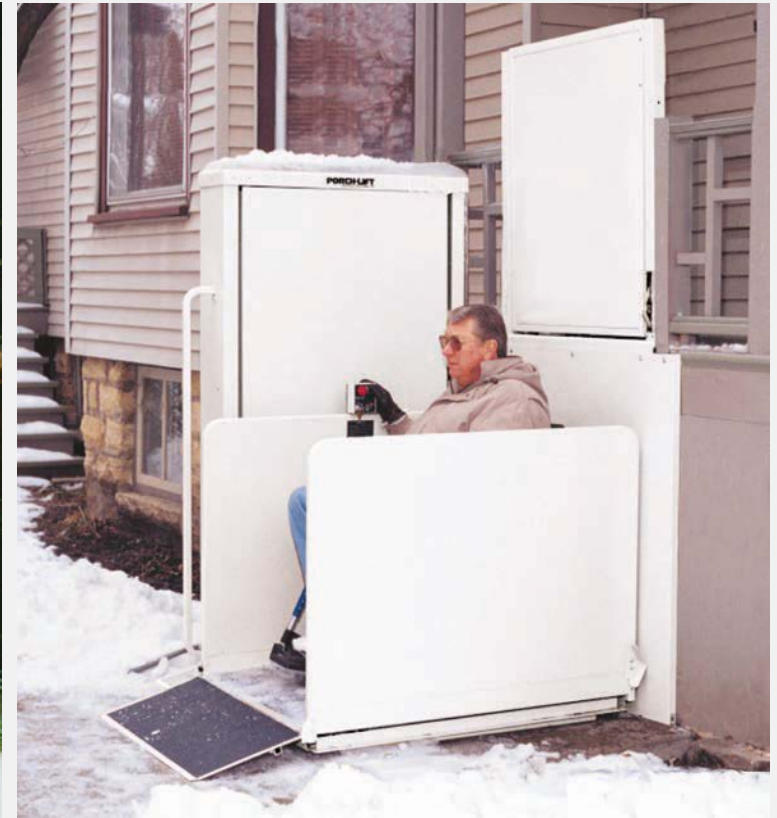


SLOPE
=
1:2



Architectural Barriers – Home Entry

Vertical Platform Lifts (VPL)



How did this happen?

- Frost footing requirements push floors out of the ground
- **Land scarcity and larger home sizes encourage multi-story construction**





Architectural Barriers – Interior Access



Interior Handrails







How did this happen?

- Frost footing requirements push floors out of the ground
- Land scarcity and larger home sizes encourage multi-story construction
- **Post World War II construction efficiencies have largely dictate currently accepted building standards**

Architectural Barriers – Interior Access

Widen Doors & Clearing Hinges







Architectural Barriers – Bathroom

High Rise Toilets/Risers



Architectural Barriers – Bathroom

Grab Bars



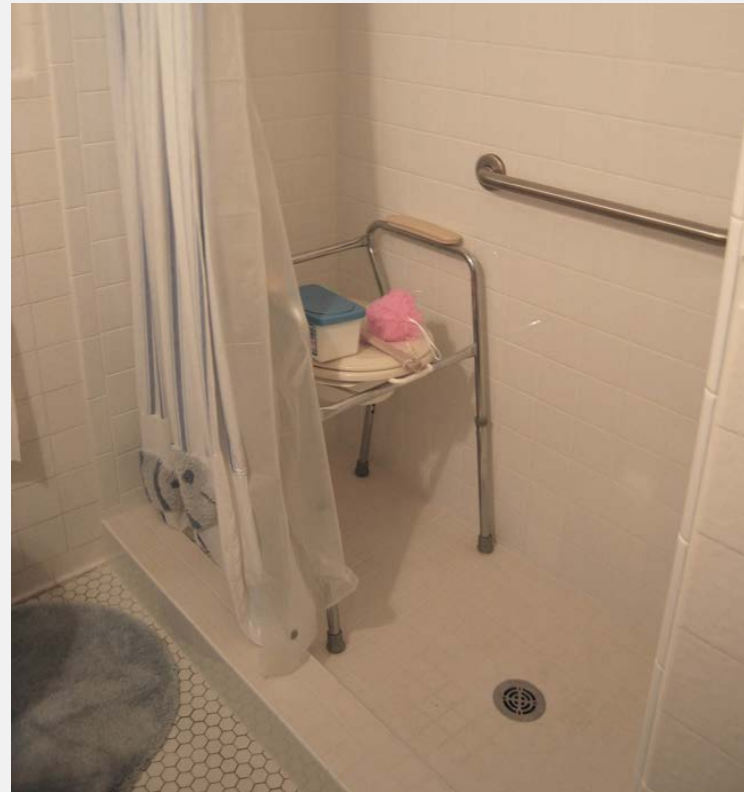
Architectural Barriers – Bathroom

Tub Cut & Walk-in Tub



Architectural Barriers – Bathroom

Curb Shower



Architectural Barriers – Bathroom

Roll-in Shower



Architectural Barriers – Bathroom

Fixed & Hand-held Shower



Architectural Barriers – Bathroom

Shower Chairs & Benches



Architectural Barriers – Bathroom

Roll-under Sinks



Architectural Barriers – Kitchen

Counter Tops & Cook Tops



Architectural Barriers – Kitchen

Oven/Breadboards & Drawers



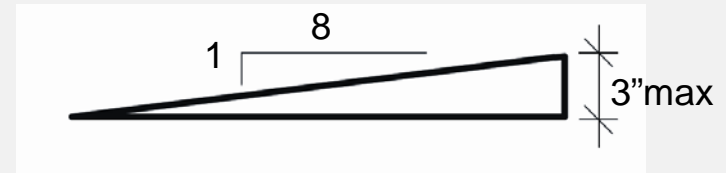
How did this happen?

- Frost footing requirements push floors out of the ground
- Land scarcity and larger home sizes encourage multi-story construction
- Post World War II construction efficiencies have largely dictate currently accepted building standards
- **ADAAG doesn't apply to homes**

“A FOOT OF RAMP FOR EVERY INCH OF RISE”



Standard Ramp – 1 in 12
Up to 30' linear distance



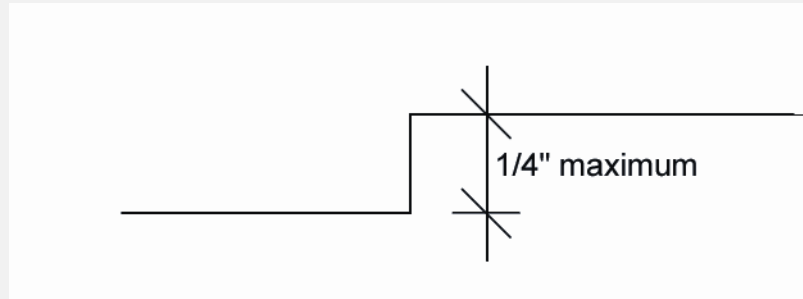
Threshold Ramp
Up to 3" rise



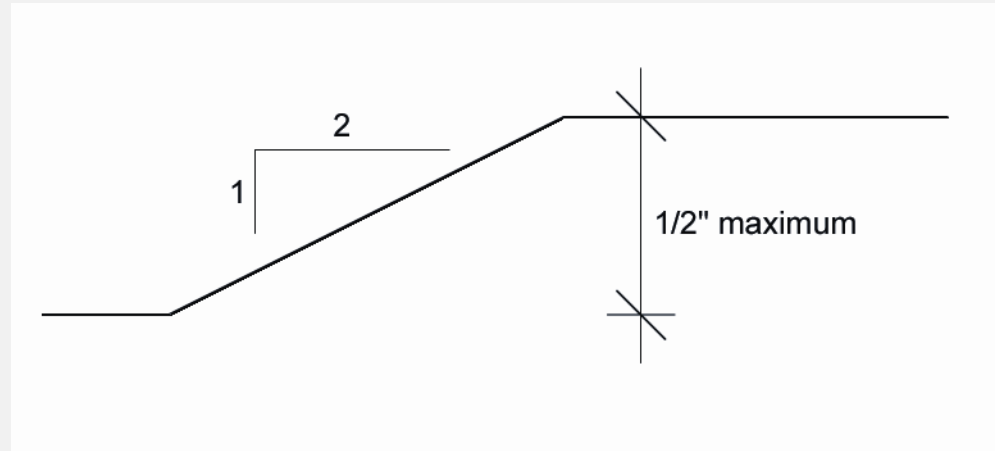
Sloped Pathway – 1 in 20
No distance limit



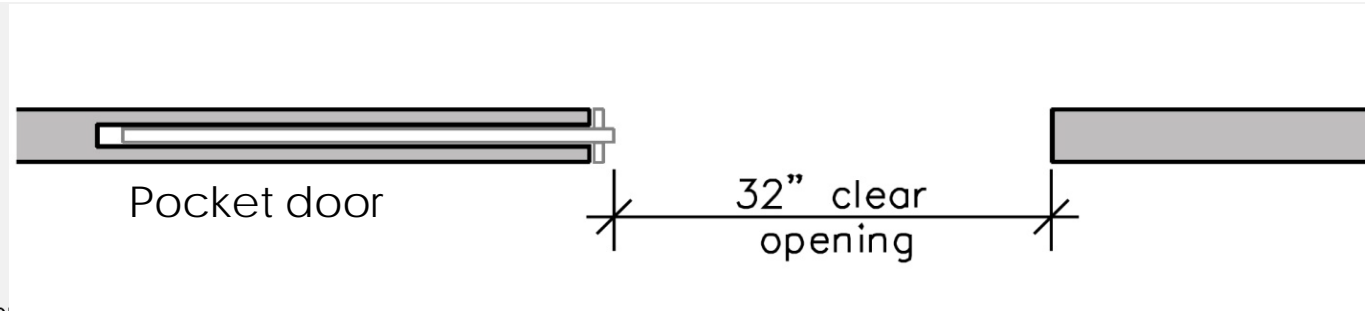
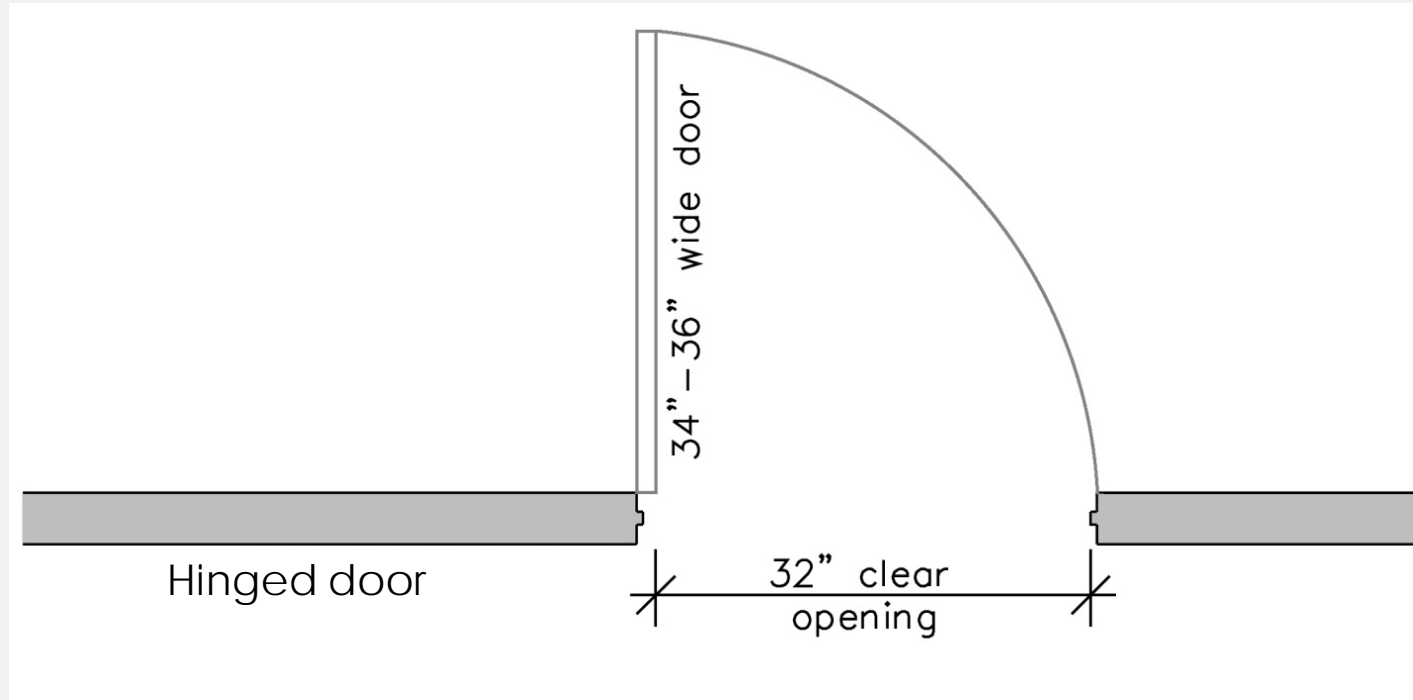
Wedge Ramp
Up to 6" rise

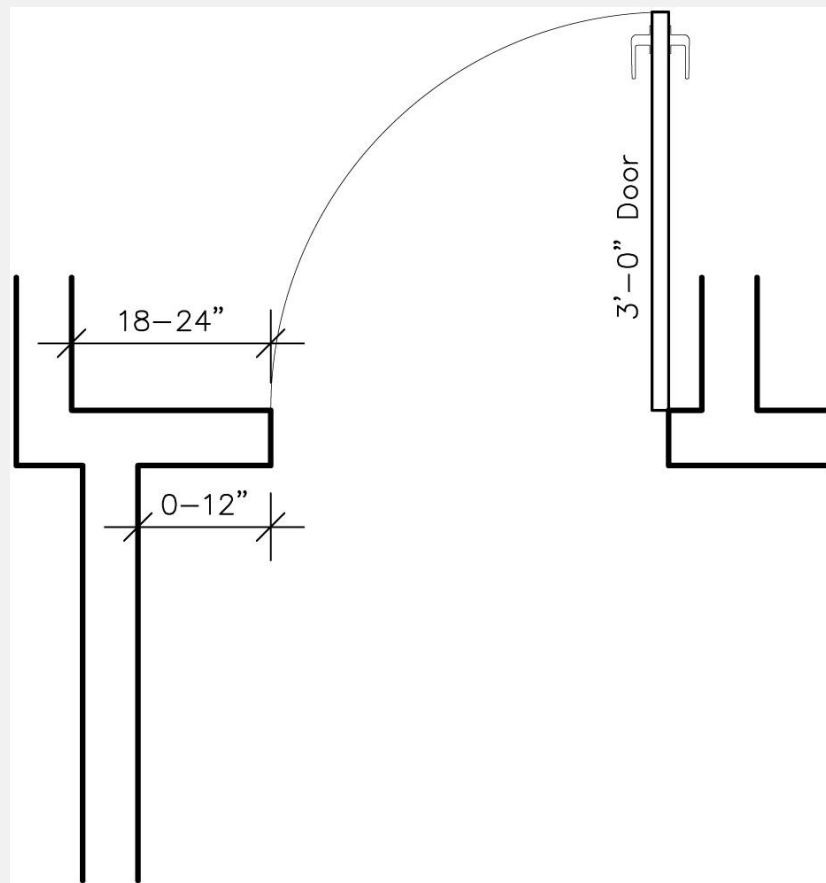


Vertical Rise

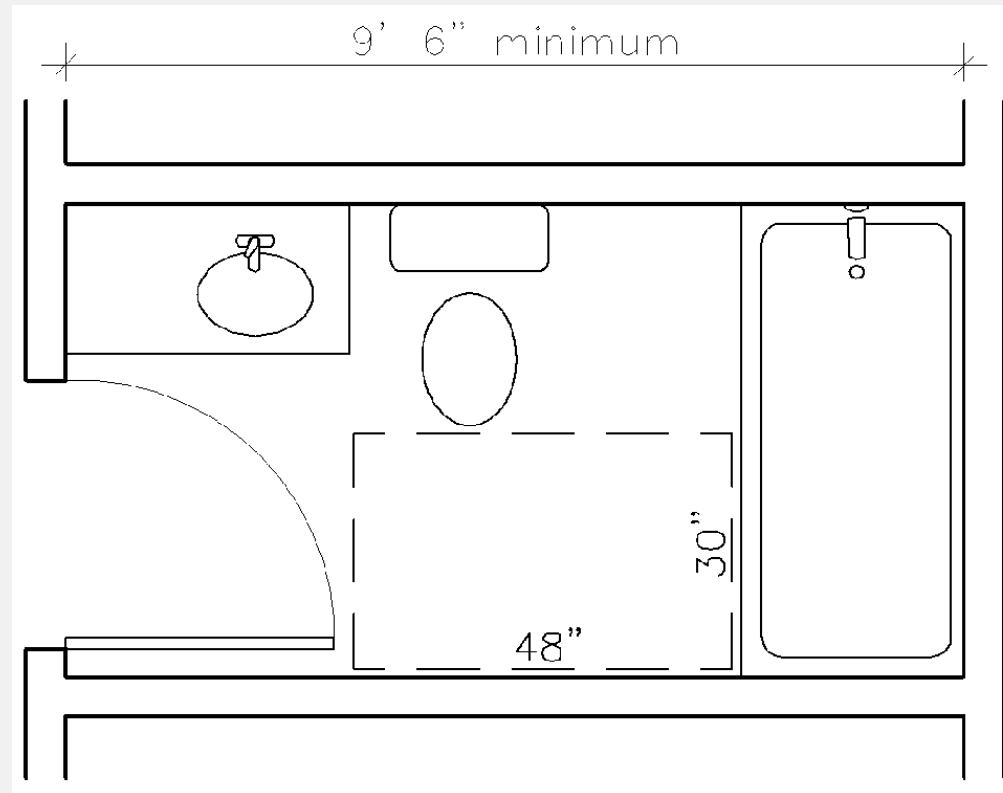


Beveled Rise

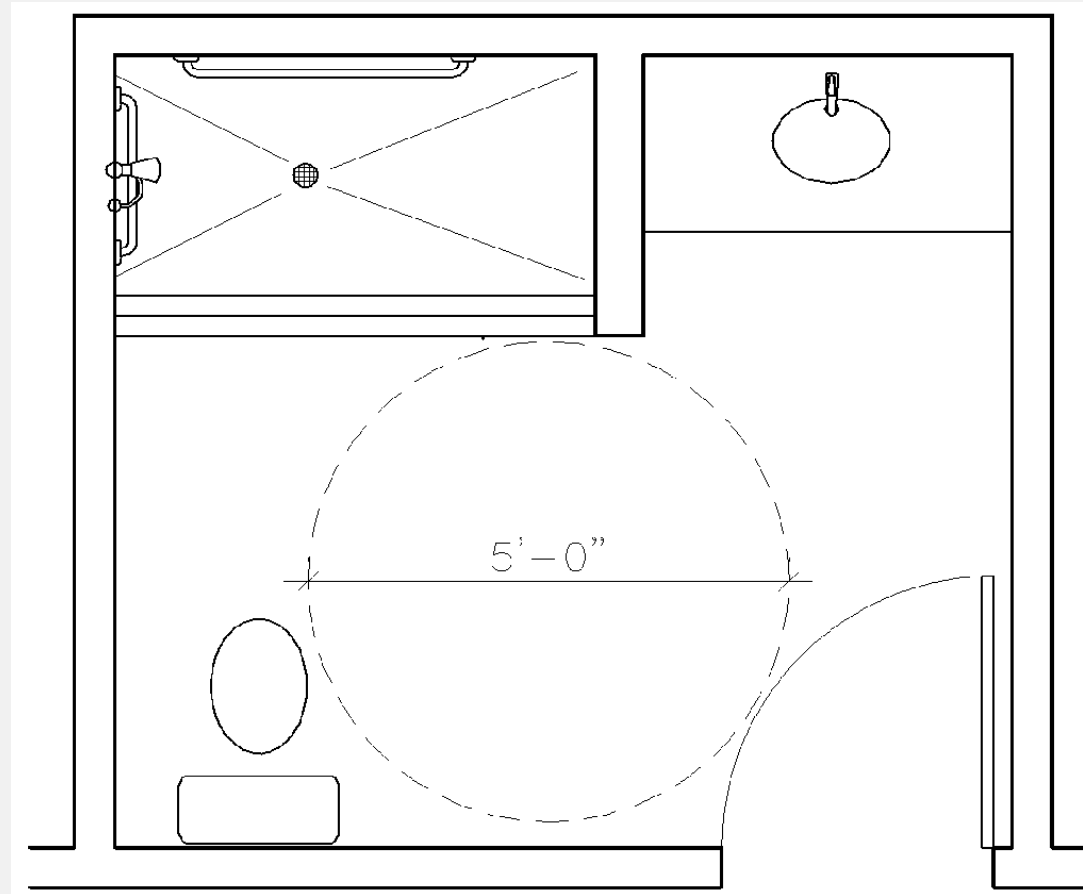




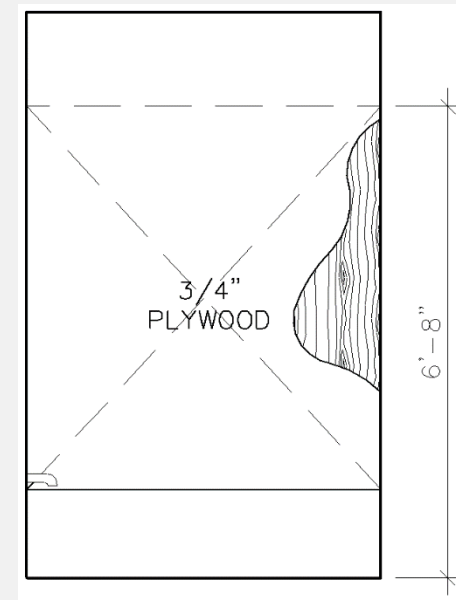
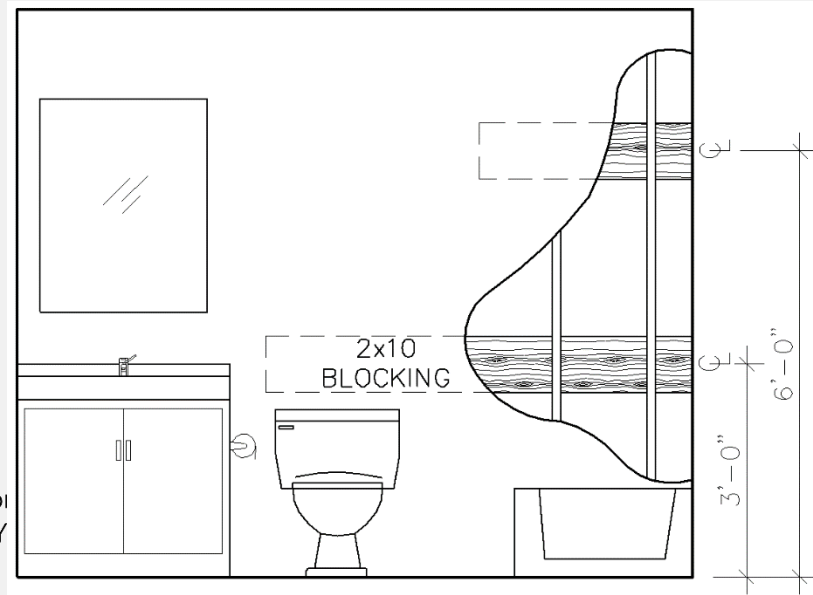
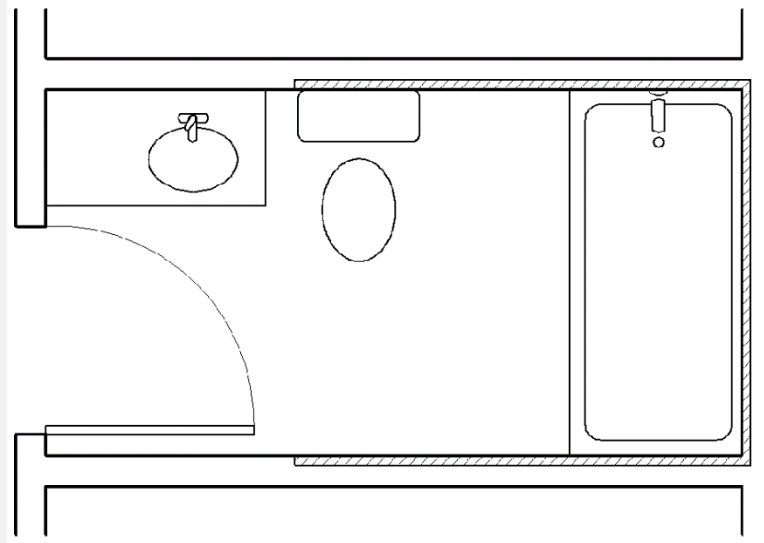
Space required next to door handles varies between push and pull sides

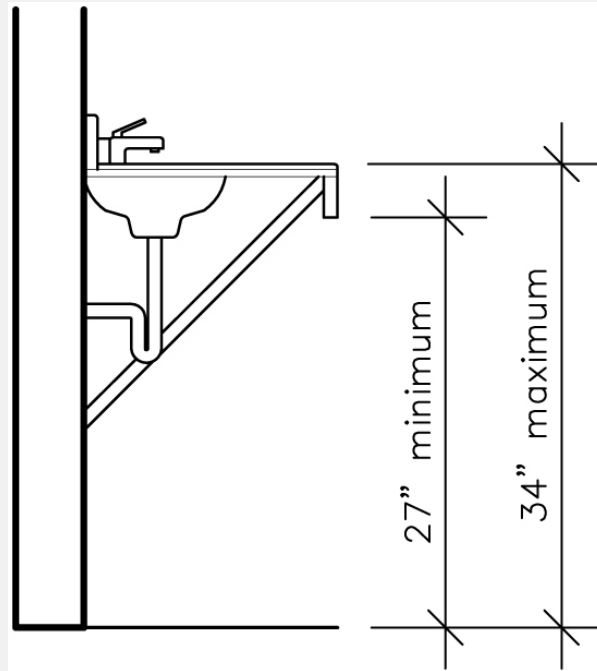


30" x 48" clear space beyond the door swing



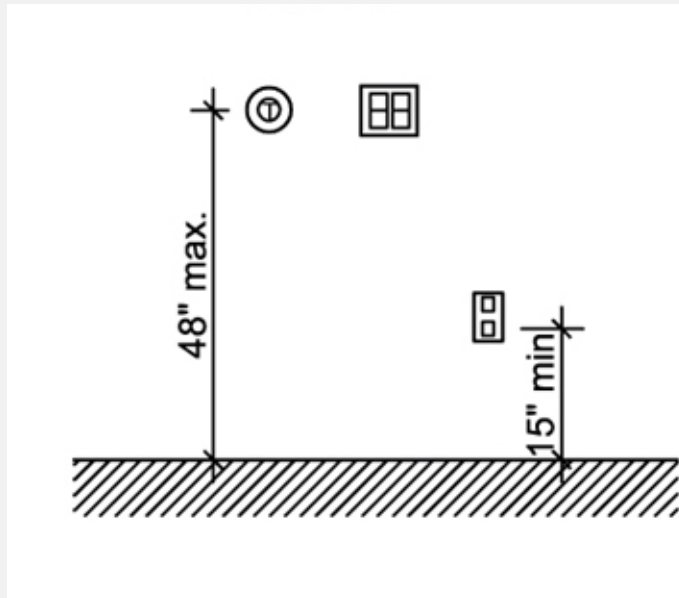
5' diameter wheelchair turning space





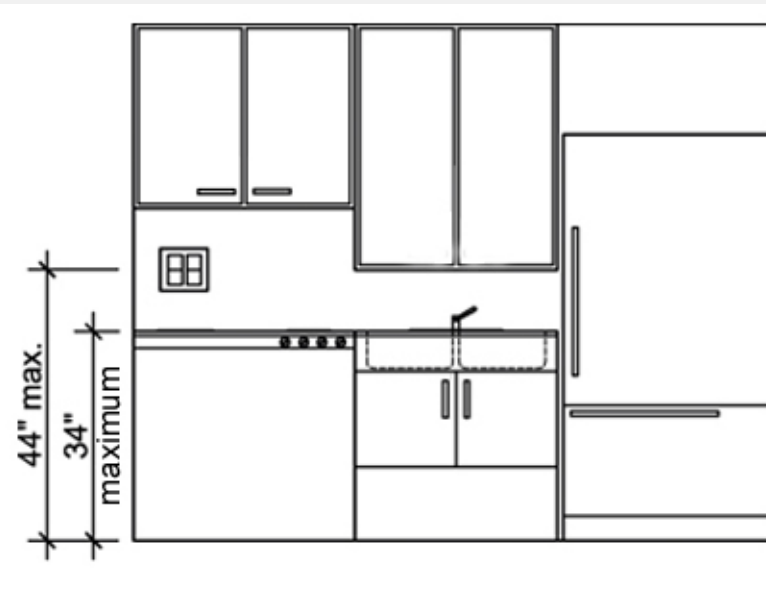
Knee clearance and counter height

Usable



- All controls, switches, and outlets must be a minimum of 15" and a maximum of 48" above the floor. A 30" x 48" clear floor space for parallel or forward approach is required at controls.

Accessible



- Appliance and fixture controls and window operating hardware to be in an accessible locations and reachable heights and not require tight grasping, pinching, or twisting of the wrist.
- Controls above counters shall not be more than 44" above the floor.

Architectural Techniques for New Housing

No-Step Entry



Front Door

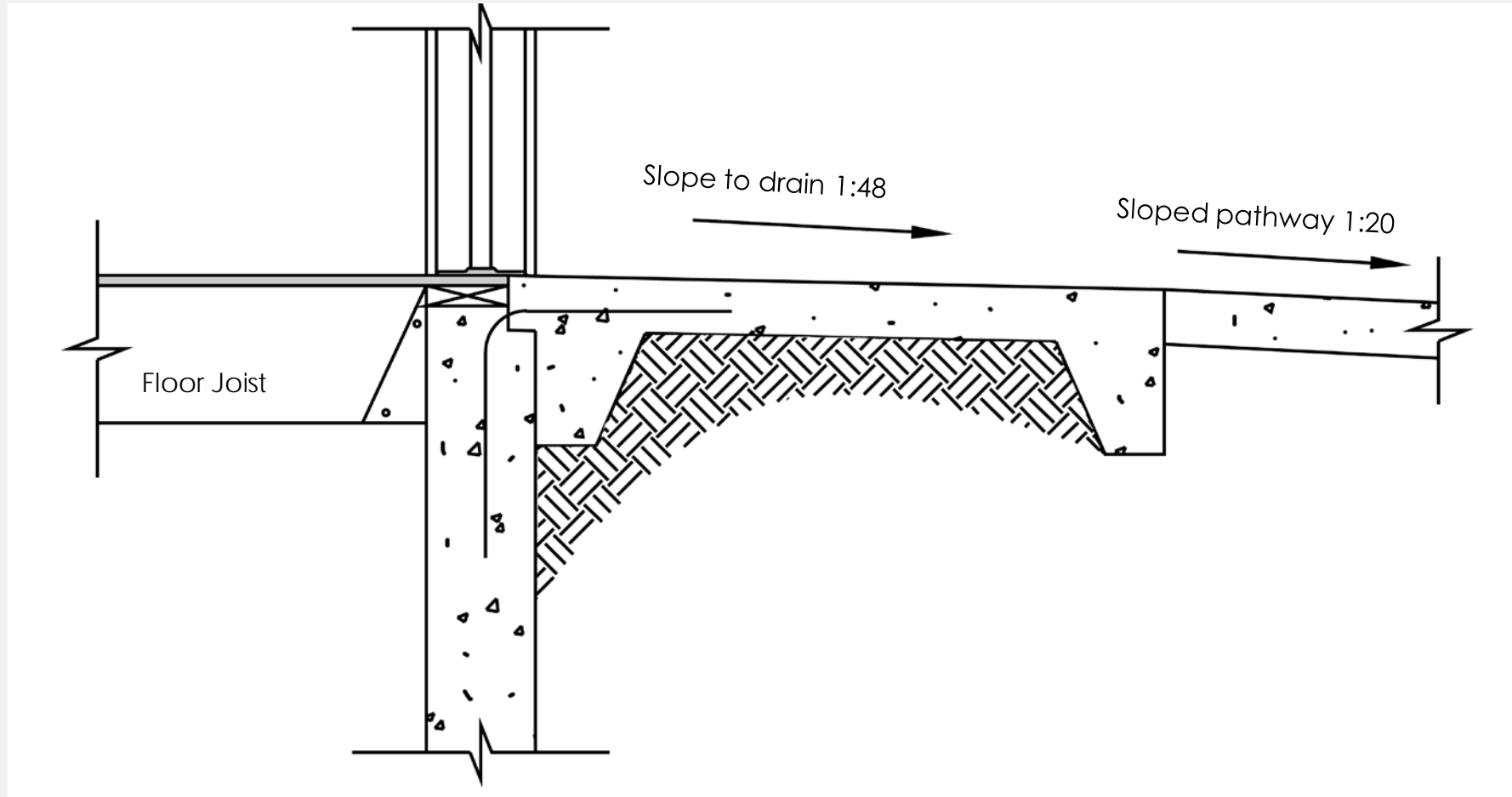


Side Patio



Garage Entry

New Construction – Zero step entries





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Architectural Techniques for New Housing

Adequate Doorways



Low threshold



Clear passage space

Architectural Techniques for New Housing

Usable Bathrooms



High and low sinks



Transfer bench

Architectural Techniques for New Housing

Reachable Switches, Outlets, and Controls



Architectural Techniques for New Housing

Wider Hallways



Architectural Techniques for New Housing

Accessible Outdoor Living or Patio





Identify a time when you have been enabled by good design (3 minutes)



The study, & preliminary findings...

Defining Mobility



- Travel behavior (planning)/ Universal design (Architecture)
- Relative ease of movement & freedom of movement in all of its forms (Satariano et al., 2012)
- The ability to meet the basic needs to **access goods, activities, services, and social interactions** (Mollenkopf, 2005)
- Quality of life
- Mobility is essential to older adults due to their limited, or gradually reducing physical and cognitive abilities

Life-space Assessment (May et al. 1985)

1) Five concentric zones:

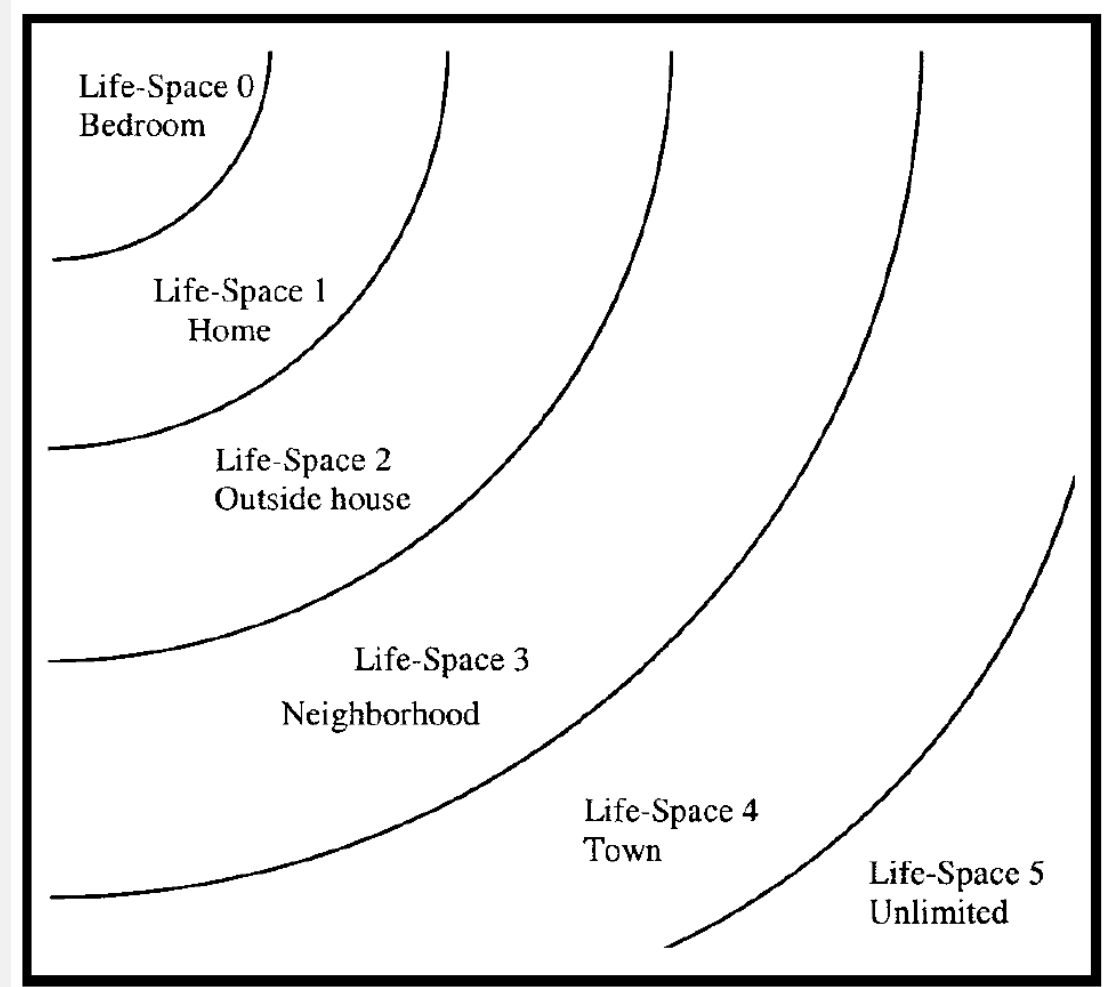
Bedroom(level 0)→ Home

→ Outside house → Neighborhood

→ Town → Outside Town

2) Frequency of travel

3) Degree of independence



Life-space Mobility and Aging in place

Life-Space Assessment (May et al., 1995) at 5 life-space level

| Life-Space Level | Frequency | Independence |
|-------------------------|-----------------------------|--|
| Within each life-space, | How often did you get there | Did you use any personal assistance or equipment |

Life-Space *Mobility* Assessment at neighborhood, city & region

| Life-Space Level | Place | Frequency | Independence | Mode |
|-------------------------|------------------|-----------------------------|--|-----------------------|
| Within each life-space, | Where did you go | How often did you get there | Did you use any personal assistance or equipment | How did you get there |

+ Any place you want to go but can't? Why? What would make it easier?

Research Design

- Surveys and semi-structured interviews
- 50 low-income older adults
- Home accessibility modifications

Salt Lake County, Utah
Assist Inc.
University of Utah



Multnomah County, Oregon
Unlimited Choice Inc.
Portland State University



Life-space Mobility and Aging in place

- Salt Lake County Context

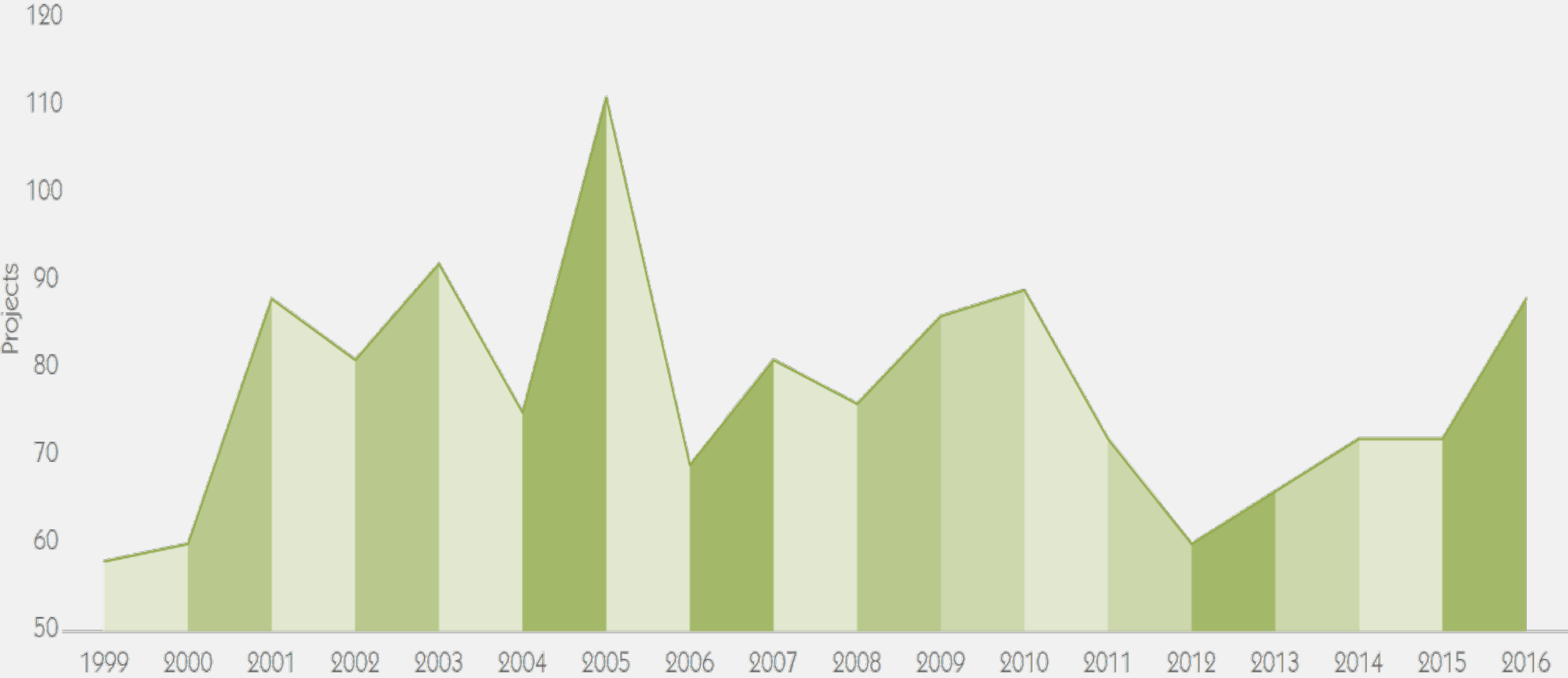


Ramp designed for the Lopez Family

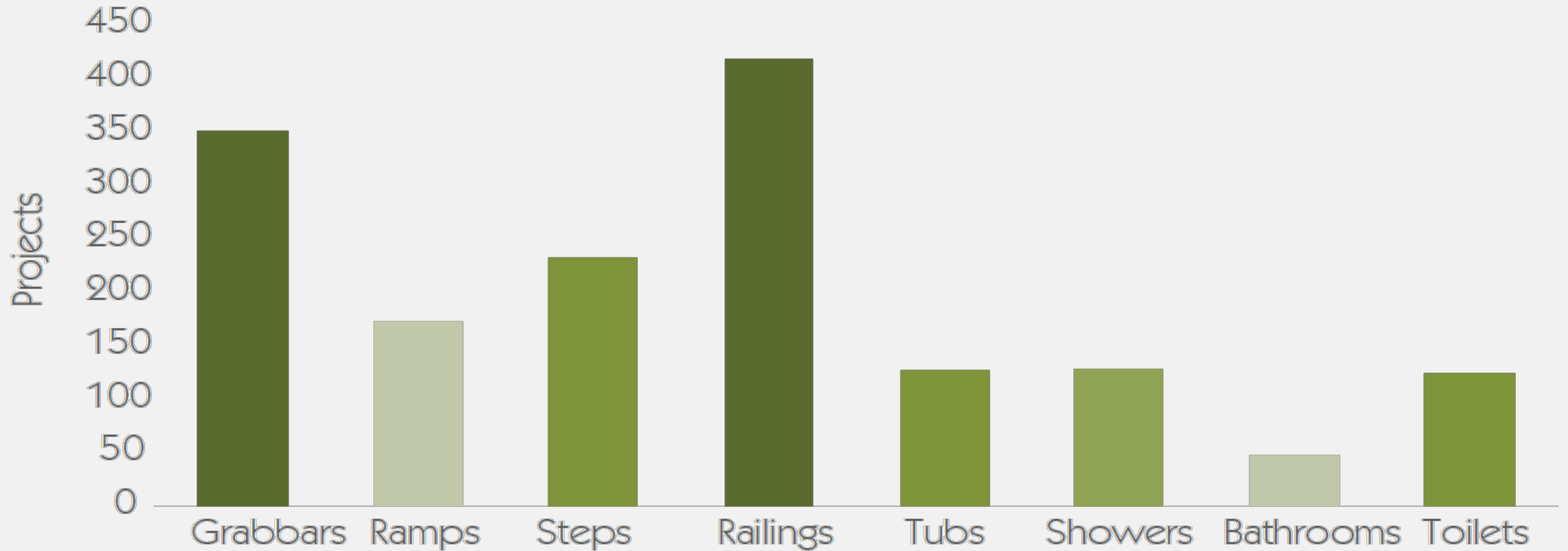
Accessibility modifications done by ASSIST



1,397 Total Accessibility Projects Since 1999



Accessibility Modifications by Type



Life-space Mobility and Aging in place

Step 1. Neighborhood boundary mapping

- The area around one's house
- Subjectively named and defined
- Where performing routine tasks
- Social constructions
- Relationships between place & people



Life-space Mobility and Aging in place

Step 2 - Interview

- Life before and after the home modifications
- Aspects of satisfactions & limitations
- Mobility on a typical day/week/month
- Barriers to get around
- Use of public transportation
- What does 'Aging in place' mean to you?



Life-space Mobility and Aging in place

Step 3 - Survey

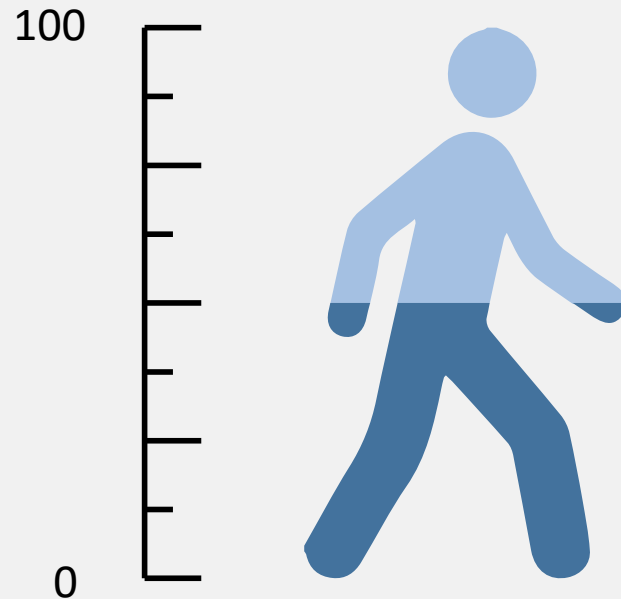
- Socio-demographics
- Home modifications
- Home & neighborhood satisfaction
- Mobility
- Aging in place
- **Life-space Assessment – May et al.**
- Neighborhood Environment Walkability Scale (NEWS) – Sallis et al.
- Instrumental Activities of Daily Living Scale (IADL) – Lawton & Brody

Preliminary Results – The Participants

95% Strongly agree they would like to remain in their current home **as long as possible**.



87% have lived in their home for 20+ years.
70% have a **walkscore** below 50.



88% Strongly agree they would like to remain in their home even if they were **seriously ill**.



What do you like about your home?

1. Housing **Affordability**



2. Personal **Safety & Security**



3. Housing **Quality**



What do you wish was different about your home?

ACCESSIBLE DESIGN!



Tell us about **Home Modifications**

“ I had the railing there, you know, that gave me support...
And it's nice to have it for other people if they come to visit
me because I have a lot of elderly friends that need it also. ”

- Shelby Jean Hill

“ They've helped—they've saved a lot of falls. ”

- Judy Osborne

“ I had fallen. And I got stuck in the tub. And when they came
out and put that in, that makes it much, much easier. ”

- Rosie Chavez

Tell us about **Aging in place**

“ Oh. Aging in my home? It’s hard. It’s a challenge. ”

- Merrilee Wyatt

“ I imagine I could probably live here for another 10, 15 years, easy. Whatever happens. And I would definitely want to stay in the neighborhood. It's an amazing, kind—a lot of kind people. ”

- Judy Osborne

Tell us about **Public Transportation**

“ I take it because I feel quite safe. It's more convenient. I don't have to fight to traffic, and it's cheap.

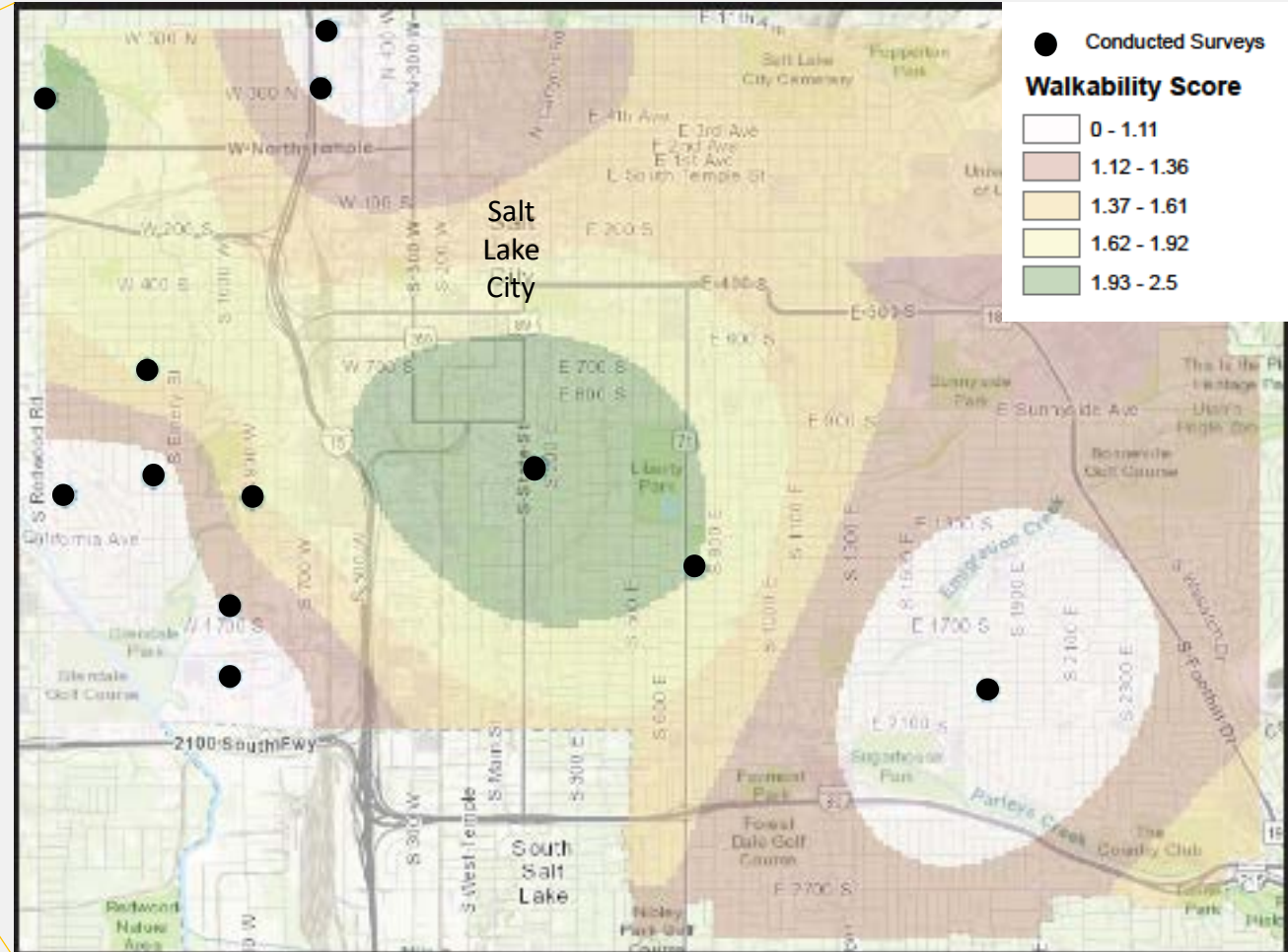
10 years ago, I started to ride TRAX. I learned that from my teenagers (grandchildren). ”

- Dora Broberg

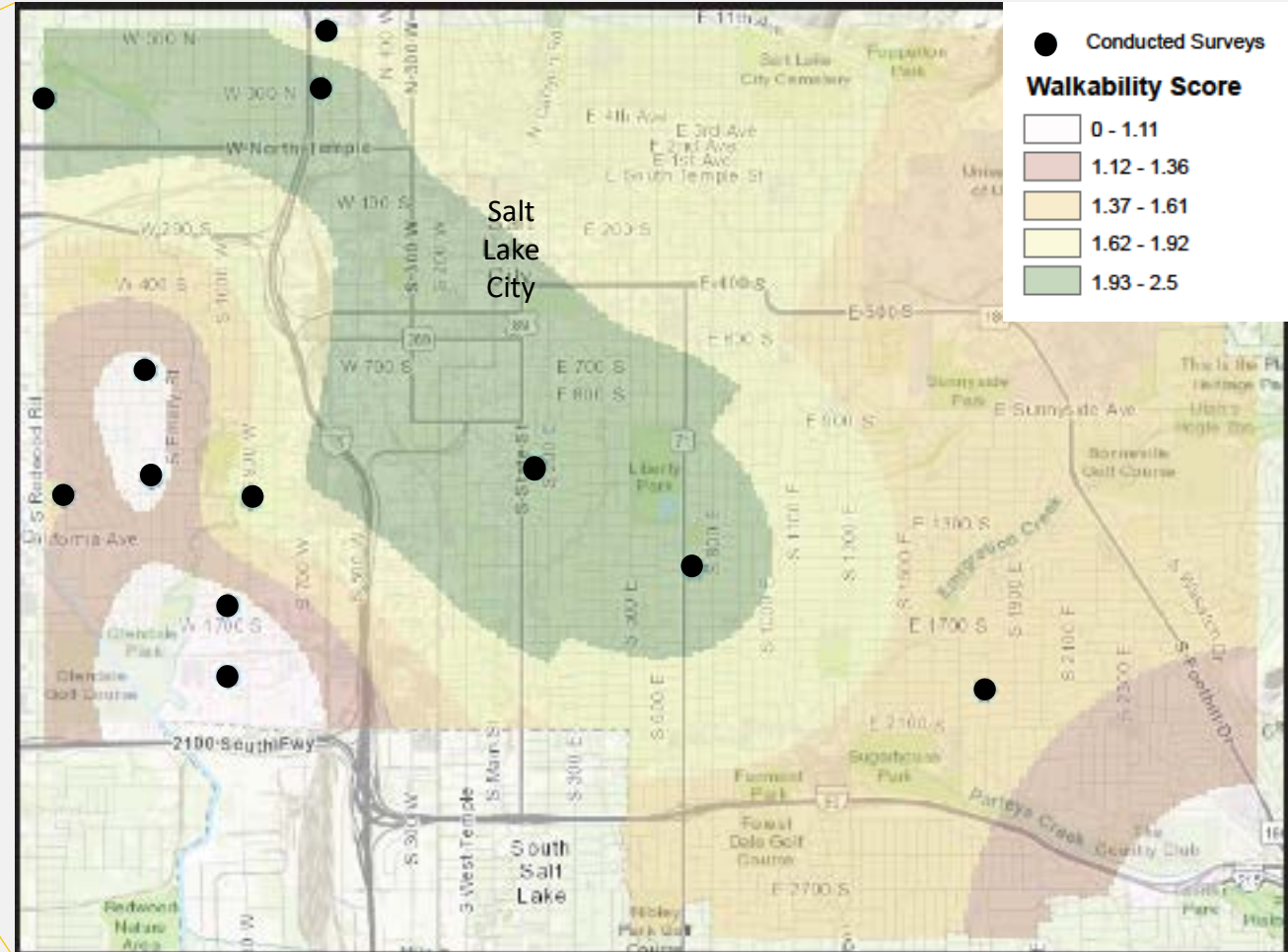
“ Why I don't use it? Because it's really not accessible. You'd have to walk from here over to there. ”

- Anna Marie Simons

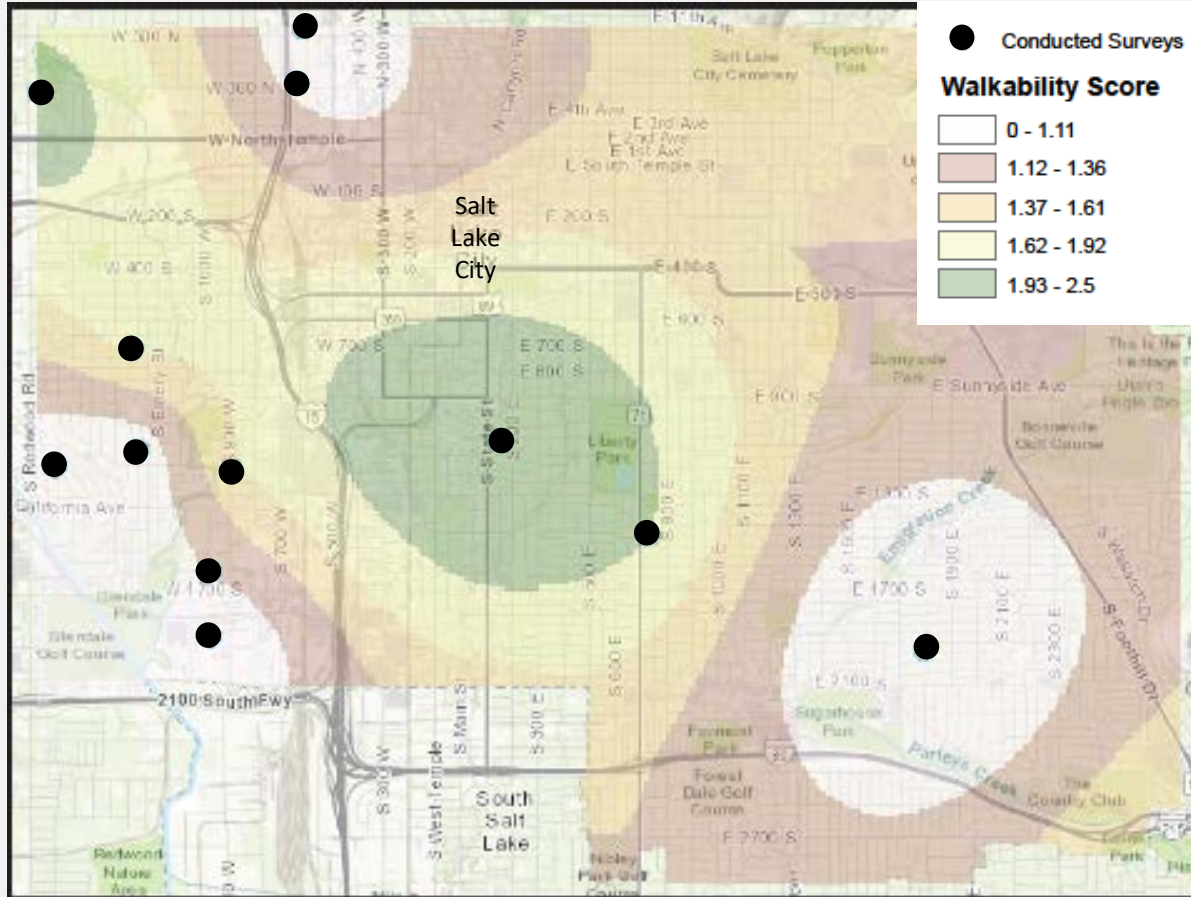
Perceived Proximity to Amenities (NEWS)



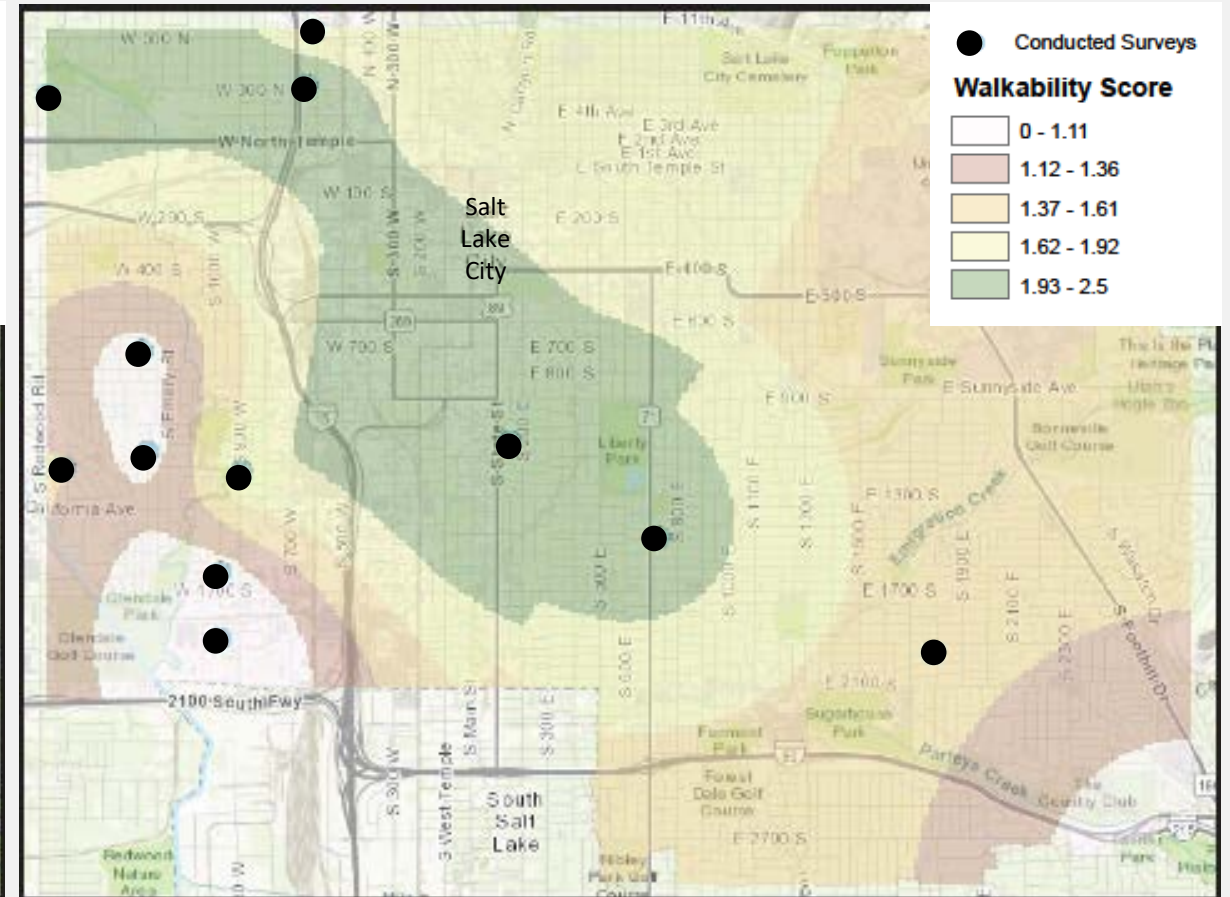
Actual Proximity to Amenities



Correlation - 0.7 Moderately High



Perceived Proximity



Actual Proximity

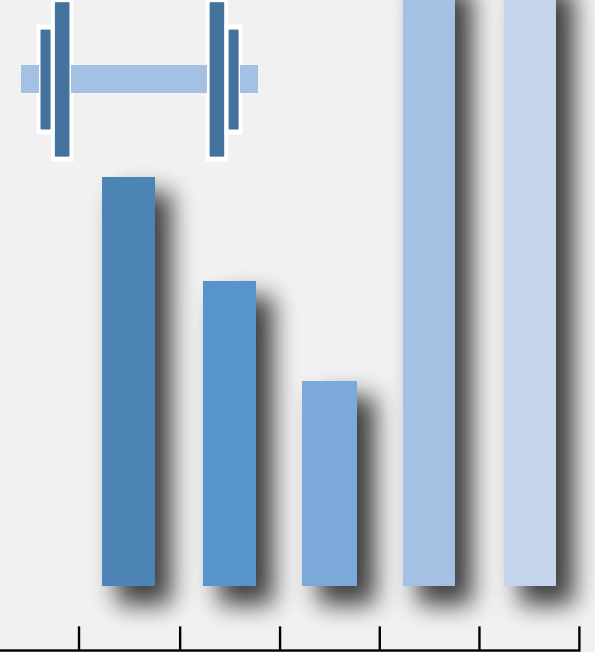
Walking Distance to...



Fast Food
Restaurant

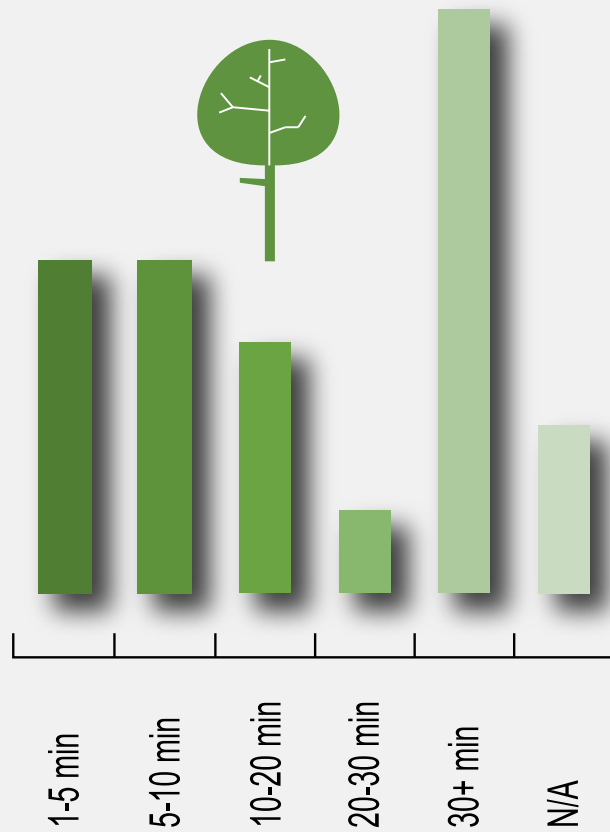


Non-Fast Food
Restaurant

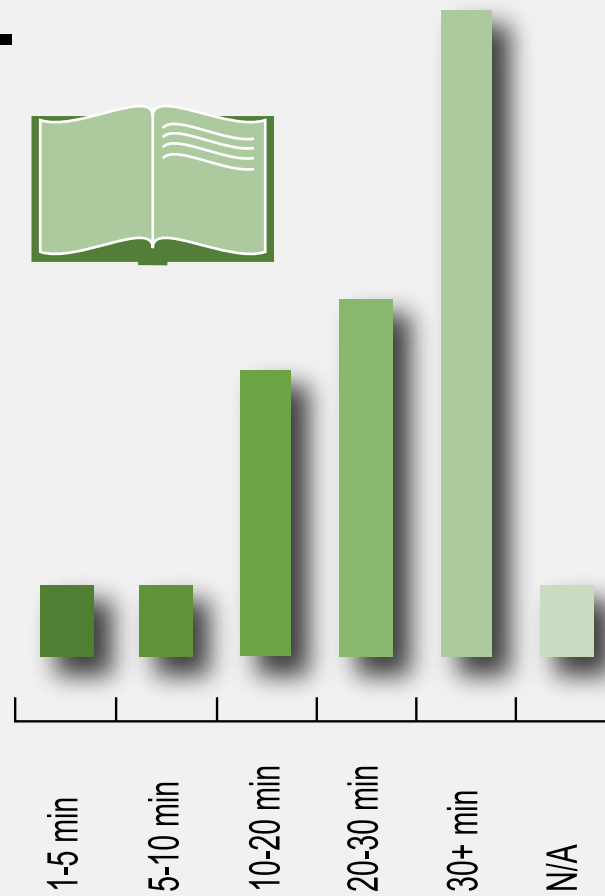


Gym / Fitness
Facility

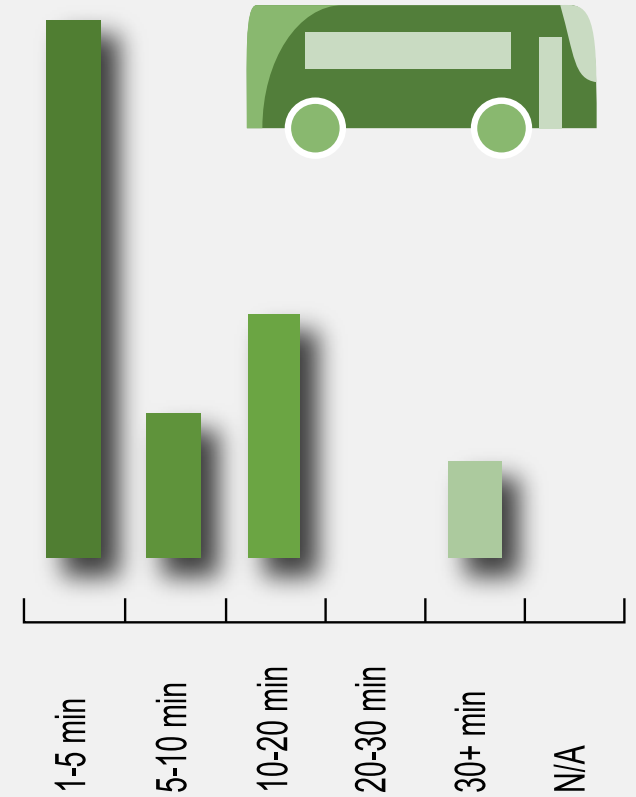
Walking Distance to...



Park

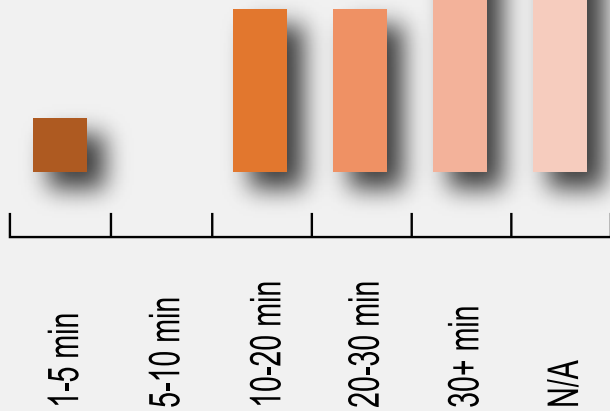
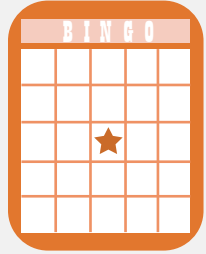


Library

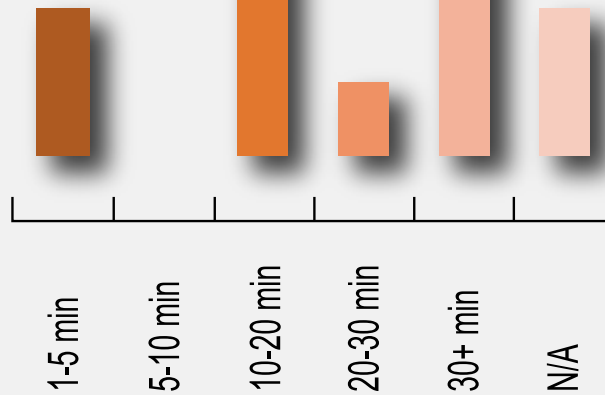


Transit Stop

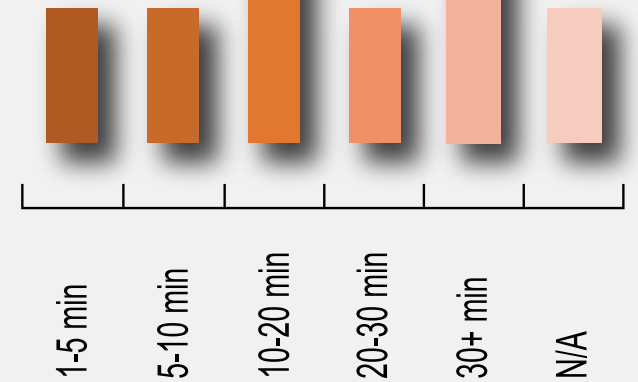
Walking Distance to...



Senior Center



Post Office



Pharmacy

Life-space Mobility and Aging in place

- Assists: Improve understandings of the clients' needs that can lead to improved service delivery
- Policy Makers: Use the tools, framework, and findings to better inform the growing needs for improving accessibility of home and neighborhood environments, including the connections between individuals' home, transit systems, and services.

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Thank you!