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The Greying of American Cities: Evaluating Built Environment Indicators for Ensuring an Age-Friendly City

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The Greying of American Cities: Evaluating Built Environment Indicators for Ensuring an Age-Friendly City

A thesis submitted in partial satisfaction of the requirements for the degree Master of Urban and Regional Planning.

by

Valerie Joy Coleman

2015

ABSTRACT OF THE THESIS

The Greying of American Cities: Evaluating Built Environment Indicators for Ensuring an Age-Friendly City

by

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Master of Urban and Regional Planning
University of California, Los Angeles, 2015

Professor Leobardo F. Estrada, Chair

The American elderly population is growing at unprecedented rates, six times faster than the rest of the population, and by 2050, cohorts 65 years and older will have doubled (Krout & Wethington, Eds., 2003). In a few short years, they will account for 24% of the population, yet cities have not planned for this silver tsunami. There is an urgent need to ensure the age-friendliness of our cities.

This research begins with a literature review that focuses on the impact of the built environment, specifically with regards to seniors. The literature review serves a secondary role, creating an initial list of criteria around the needs of an aging population in the central city. Based on this list of built environment focused criteria, 88 potential indicators were developed and shared with 34 aging experts; professionals within the fields of aging and the built environment.

The iterative survey process suggests that there are 24 key indicators that aging experts

consider the most effective in creating an age-friendly city. Indicators were chosen based on their relative measurability, sensitivity to change, and action oriented and were ranked according to the following purposes: city policy, city implementation and infrastructure, greatest number of seniors served, and city-to-city comparison.

The thesis of Valerie Joy Coleman is approved.

Anastasia Loukaitou-Sideris

Fernando Torres-Gil

Leobardo Estrada, Committee Chair

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2015

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DEFINITION OF KEY TERMS

Accessory Dwelling Units (ADU): technical definitions vary slightly by each jurisdictions zoning code, but in general an ADU is a smaller, secondary dwelling unit on the same lot of an existing home. Generally it includes its own facilities (sleeping, cooking, and sanitation) and is designed for residential occupancy, independent of the primary dwelling unit (Bureau of Development Services, 2013).

Age-friendly Community: per the World Health Organization, a community that adapts its structures and services to be accessible to and inclusive of older people with varying needs and capacities, recognizes active aging is a lifelong process, that an age-friendly city is not just "elderly-friendly", and emphasizes enablement rather than disablement (WHO, 2007).

Aging in Place: is a complex term that can refer to a range of concepts, including: housing and the support services that allow residential independence; environmental gerontology and the role between physical competence and the built environment; and the supports or choices available to seniors, that allow for "a sense of identity both through independence and autonomy" (Wiles et al., 2011, p. 357). In its most basic sense, and specifically within this study, aging in place is defined as being able to remain "living in the community, with some level of independence, rather than in a residential care" (Wiles et al., 2011, p. 357).

Built Environment: broadly defined as the human-made, arranged, maintained, or controlled space in which people live, work, and recreate on a day-to-day basis (McClure & Bartuska, 2007; Roof, MS & Oleru, 2008). For this study, the built environment includes everything beyond the private sphere including sidewalks, street and traffic furniture, bus stops, publicly accessible spaces such as parks and green spaces but excluding privately owned businesses and residential properties.

Granny Flat: another term for an accessory dwelling unit (ADU), the term has been considered derogatory, yet is an old concept, dating back to 1760's Britain and more recently in Australia.

Indicator: a sign that shows the condition or existence of something; a device that shows a measurement (Merriam-Webster, n.d.).

Paratransit: an alternative form of transportation, offering specialized and door to door service, and provided as a supplement to traditional transportation options, specifically for disabled adults and seniors. Typically managed at the local level (either by a nonprofit or city agency), paratransit services and facilities ensure all Americans have access to transit (Mooney & Dupes, 2008).

Placemaking: is a holistic and hands-on approach for improving a neighborhood, city, or region, placemaking "refers to a collaborative process by which we shape our public realm…more than just promoting better design, placemaking facilitates creative patterns of use, paying particular attention to the physical, cultural, and social identities that define a place and support its ongoing evolution (Project for Public Spaces, n.d., para. 1)."

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INTRODUCTION

Americans are aging in record numbers, thanks to advances in public health, improved nutrition, the reduction of infant mortality, and the significant increase in life expectancy (Pew Research Global Attitudes Project, 2014). By 2050, the number of older Americans (65 years and older) will more than double, growing from the current 40 million to 88 million (Werner, 2011). Also, in 2011 the first wave of the Baby Boomer generation hit retirement age (65 years old). In addition to having a substantial impact demographically, this generation will not be satisfied aging the way their parents did. Every generation shapes the socio-cultural landscape, institutions, and expectations as they age and the Baby Boomers are no different. Boomers do not consider themselves old, prefer an active independent lifestyle, and are, in general, more educated than their parents. As a result, new concepts of aging are emerging.

There have been some accomplishments with regards to research on aging in place within the private sphere, such as retrofitting existing housing to meet changing needs or the development of new senior housing, yet little research focuses on the public sphere from a comprehensive, aging in place perspective. Age-friendly city planning is a complimentary component to truly achieving aging in place, as strategies focused on one's home has a limited impact for seniors who are unable to safely walk in their neighborhood, find reliable transportation to desired locations, or easily access community services.

The peak of functional capacity is reached in early adulthood but most people's physical

abilities are constantly changing and range somewhere between full and limited capacity, either temporarily or permanently. However, the built environment is typically designed only with peak functionality in mind. The declining capacity of an aging population is largely determined by lifestyle factors, such as social, economic, and environmental elements. Furthermore, the rates of decline, as well as an elderly person's corresponding level of independence, are influenced and may even be reversible through the promotion and design of an age-friendly environment. Considering that aging is a lifelong process and that physical capacity is a fluid and constantly changing status, establishing an "age-friendly" city offers benefits beyond the elderly population (WHO, 2007).

Whether the built environment of a region supports an aging population will be one of the most important determinants in whether seniors remain within their communities or are forced to move. Some states, most notably Florida, have long recognized this, having catered to and encouraged building specifically for the elderly as early as the late 19th century (Trolander, 2012). Much has been written about the impact of the built environment on people, with a smaller amount focusing specifically on seniors. Aging as a demographic phenomenon and the associated impacts are generally covered within certain fields, such as public health, social services, gerontology, and the housing industry. Yet, this issue has been slower to reach the field of planning and as a result, has so far developed only minimal approaches to addressing this change. This can be attributed both to the lack of awareness of the importance of the issue as well as a lack of accessible and reliable tools by which cities could measure and improve their overall age-friendliness. There are some notable exceptions, including: the recent publication of an online age-friendly neighborhood

measurement tool by the American Association of Retired Persons (AARP); a guide to creating age-friendly communities by the American Planning Associations' (APA); the 37 communities that have sought to incorporate community based aging strategies modeled after the World Health Organization's "Global Age-Friendly Cities"; cities that have focused on the aging population through public health initiatives, such as Los Angeles' and Seattle's Healthy Aging Initiative; and others that have incorporated aging within more comprehensive planning documents, such as Atlanta's Lifelong Community, Age-Friendly Honolulu, and Age Friendly NYC.

The need exists to develop a comprehensive list of indicators that focus specifically on characteristics of the built environment that help the elderly. Utilizing the extensive research already developed around the impact of the built environment on people, especially the elderly, this index would serve as a measure for the overall age-friendliness of a community. The goal of this research is to create a reliable and effective list of age-friendly indicators for policy makers, city planners, and aging advocates. This list would not only measure the age-friendliness of a city, but also would serve as a framework and guide in improving and ensuring that the environment supports all ages. Obviously no one list of indicators will work for every city, as each city has unique geography, weather, economic conditions, and demographics, but it can serve as a framework based on the range of city priorities, capacity, and challenges. Similar to the walkability movement and its efforts to map and encourage increased pedestrian activity, there is a growing need for a consistent age-friendly index that allows cities to compare their built environment conditions to those of other cities. However, there has been no research that focuses specifically on existing age-friendly

indicators, which are currently unique to each city that develops them, to assess how effective these indicators are for creating a general age-friendly tool for other cities.

The purpose of this research is to compile a list of built environment indicators and to assess their usefulness, as determined by a selected group of experts on aging and the built environment. Through expert ranking, this paper seeks to identify age-friendly indicators, and to determine priorities for planners to use in creating an age-friendly city tool. The field of age-friendly communities is relatively young and constantly evolving. Age-friendliness as a policy priority is anticipated to grow rapidly in the next five to ten years and there will be a continued need for thoughtful research. Relying on a broad range of professionals, the majority of whom have 10-50 years of experience in their field, this study seeks to explore which of the existing indicators are judged as the most effective for creating an age-friendly community. This is just one step in a newly developing field and hopefully this thesis serves as a springboard for continued research.

This study is broken up in the following sections: a literature review that focuses on the impact of aging in America, the relationship between the built environment and an aging population, and the challenges associated with aging in place; the research question; a four step methodology process; data analysis of the ranked indicators; policy recommendations; and concluding thoughts.

LITERATURE REVIEW

Aging in America

Born post World War II between the years 1946-1964, baby boomers were the largest

generation of Americans born in US history and currently constitute 24% of the total population (CNN, 2014). This is a markedly different generation than their parents; in fact, it's been argued that they have had a profound impact on every stage of life they migrate through, often challenging the social systems, attitudes, and assumptions of previous generations. A 2012 panel of aging professionals noted that during the boomer birth explosion, none of the necessary infrastructure was ready. According to Rowley (2012), "…there weren't enough hospitals or pediatricians. There weren't enough bedrooms in our homes. There weren't enough schoolteachers or textbooks or playgrounds. The huge size of this generation has strained institutions every step of the way" (para.7). In general, boomers are more educated, have traveled more, have more disposable income, are less likely to think of themselves as seniors, and have no interest in being put out to pasture upon retirement (Rowley, 2012; Queenen, 2011). As argued:

> A new model of life is emerging…people want to distribute the longevity bonus. They are going back to school at 40 and coming back from illness to run a marathon at 80. They are beginning as late bloomers and hitting their stride in later years. The new model of life means aging isn't an isolated zone in 'Seniorville'. We are thinking about people as beginners again and again. (Rowley, 2012, para. 4)

Even with this growing trend, Americans are surprisingly laissez faire about aging. According to Pew Research, the US is one of very few countries where a large majority of the public believes that individuals are solely responsible for their own well being as they age. Such attitudes may be the result of a relatively slow aging process, in that the impact of the boomer generation is still a few years off when compared to many Asian and European countries (Pew Research, 2014).

However, it is important to acknowledge that while this study focuses on seniors as a

cohesive demographic, in fact they are an incredibly heterogeneous group, with differences associated to specific age cohorts, ethnicities, origin of birth, sexual orientation, political affiliation, abilities, religion, and more. Furthermore, the term "senior" minimizes obvious differences, as generalizing any group of people who have more than a 40-year age span is extremely problematic. The 60-70yr demographic varies tremendously from the 80-90yr demographic, not unlike the way 10-20yr olds differ from 30-40yr olds. In fact, according to Krout and Wethington (2003), "there is probably no other cohort of the population with such broad diversity of individual problems and needs, and these individual differences increase with age" (pg.3).

While recognizing the challenges that come with using such limiting terms as senior or elderly, this study will continue to employ such terms interchangeably for the sake of simplicity and the shared meaning they comprise. The premise of this study is that built environment improvements for an elderly population (say 80-90yr olds) also greatly benefits younger seniors, disabled adults, single parents, tourists, and children. Hopefully, as recognition of the importance of this work increases, research will increasingly focus on specific age brackets within the larger senior demographic.

Aging in Cities

The urban demographic is rapidly aging and it behooves cities to prepare for the changing needs of 11 to 24% of their population. This thesis incorporates and focuses on an issue that addresses two growing trends, aging and urbanization. James Coughlin (2013) notes that in the past, the approach to addressing aging has been:

> …kinder and gentler approaches to aging and urban living. However, aging and the city can no longer be defined as only an issue that is 'good' to do. The rapid aging of the population calls for action and urgency…Does anyone believe that the next generation of 'old' comprised of the largest and loudest generation – the baby boomers – will be as polite and patient as their parents? (para. 2)

The US Census shows that about three-fourths of older Americans live in low-density suburban or nonmetropolitan areas, are typically a heterogeneous demographic, and are generally wealthier than seniors in central cities (Coughlin and Lacombe, 1997). A majority of seniors own the homes they live in; the national home-ownership rates of people aged 62-74 years old is 81% and for ages 75-84 it is 77%. However, the majority of seniors who are renters live in central cities, a fact that has considerable implications for cities and housing policy (Lawler, 2001). Some researchers argue that the rural-urban dichotomy is problematic and that in fact, it should be viewed as a continuum. (Menec, et al., 2011). Theoretically, such an argument is compelling but when considering specific city infrastructure and conditions, as is the case of creating potential indicators for age-friendly cities, focusing on one type of built environment setting (central-city urban, suburban, or rural) is more effective. Therefore, while an aging-friendly environment is just as critical for suburban and rural seniors, the focus of this research proposal will be on the central city elderly population, for the following reason: implementation is easier in a dense area. Considering the history of suburban developments where the intentional design emphasis was on low-density, single-family homes, and car-centric sprawl, suburban landscapes face exceptional challenges in developing age-friendly infrastructure. Within a central city, installing benches at bus stops could be considered "low hanging fruit" with regards to design interventions. However a suburban community may have a very limited transit service, therefore building a better

transit system would be required before considering the availability of bus benches.

In the long term, built environment indicators developed for a central city could serve as a model and framework from which to develop both a suburban and rural version. Central cities, due to their increased density, spatial proximity, and currently established infrastructure (such as sidewalk networks and robust public transit), hopefully require a smaller set of changes to increase the ability of safely aging in place. Recent surveys also show that there is a significant need within cities; of the over 10,000 local governments asked whether they were considering preparing for their aging population, only about 46% had begun to address this issue (Task Force on Vital Aging, 2008). While the survey does not elaborate on what governments determine as preparing for an aging population should be, generally social services, health services, and community based services take priority over built environment considerations.

Nexus of Land-Use, Urban Form, and Health

Our modern day public health and city planning systems were born from the sanitation reform movement in central cities during the 1800's, as physicians began to associate disease with the surrounding urban geography. The rapid and devastating spread of communicable disease epidemics were thought to be caused by 'miasma' or diseased air, blamed on urban density with its lack of light and space. Such beliefs led to the development of localized public health systems, as well as planning laws and codes for tenement housing in central cities (Frank et al., 2003). Some of the earliest codes of professional planning focused on building setbacks, ensuring light requirements, and zoning, all of which sought specifically to

address health and safety issues. Zoning specifically became the tool by which cities were able to spread out the dense inner cores, tear down the tenements and create decentralized and single use residential districts, such as garden cities and suburbs (Frank et al., 2003). Seen as accomplishing both public health and moralistic goals, zoning was the primary instrument used in the early 20th century first by New York, followed later by most American cities, to regulate and guarantee "the health, safety, morals, comfort, and convenience, and welfare of the community" (Hall, 2014, p. 61).

The right of municipalities to manage land use through zoning was clarified and enforced by the Supreme Court, with the case of Euclid v Ambler (1926). The decision fell in favor of the protection of low-density, single-family homes in a hierarchical zoning method referred to as Euclidean zoning. Since then, zoning has impacted almost every aspect of the residential landscape, from the construction of affordable units, the requirements for senior housing, the approval (or denial) of age-segregated housing to the density and location of such housing in relation to transit (Adler, 2006). Even the term, single "family" housing, harkens back to a previous era and the heterosexual nuclear family; a mother at home raising children while the father went off to work. Yet, housing and community needs have changed considerably, with declining family sizes, a larger proportion of single-person households, and a transition in planning away from car dependent communities in favor of denser, amenity rich, and vibrant urban cores. Many communities, urban planners, and researchers are reconsidering traditional zoning practices, with the recognition of the significant impact that zoning ordinances can have on communities (Pollak, 1994). Additionally, the extent to which zoning or planning policy supports alternative housing can have an impact on a

family's capacity to ensure aging in place, either for themselves or family members. The latest approach has been the construction of accessory dwelling units (ADU), modeled after the "granny flats" that originated in Australia. A granny flat is a much smaller residential unit located on the same parcel as the existing home, and typically requires a change in zoning regulations (Keenan, 2014; Mclaughlin, 2014).

The Built Environment, Health, and Lifestyle

A wealth of research specifically examines the impact of the built environment on the health and lifestyles of residents. Having access to parks and green space as well as sidewalk networks provides important health benefits to all age groups, and has shown to have an impact on mental health, social connection, and fitness (Abbott et al., 2008; Loukaitou-Sideris et al., 2014; Frank et all., 2003). Furthermore, transportation and traffic issues present unique challenges for the aging population, from their continued reliance on the private car and safety concerns on public transportation, to the timing of crosswalks, and trip hazards associated with cracked and ill-maintained sidewalks (Coughlin and Lacombe, 1997; Wachs, 2014). Housing is also a critical aspect of aging in place, particularly with regards to its location, quality, and accessibility. As explained in a report on aging in place from Harvard University, "issues of senior housing and senior health can not be dealt with in isolation. In fact they can not easily be separated" (Lawler, 2001, p. 5).

Maintaining a social network is critical for seniors aging in place, as it promotes self-sufficiency, keeps people in their homes and/or their communities, and offsets social isolation, which can have terrible health consequences for the elderly (Lawler, 2003) . People

develop strong connections to place and form important relationships with communities, neighbors, and friends, all of which help to sustain and support healthy aging (APA, 2014). It is estimated that currently 90% of adults aging in place rely on help from informal caregivers, such as family, friends, and volunteers (HUD, 2013). When seniors age in their homes, are supported in meeting as many of their daily needs as possible, and are only supplemented with additional in-home caregiving services (typically family and friends), the costs savings are significant as compared to moving to institutionalized long-term care. Generally, the most robust networks are those within the communities that seniors are currently living in and by moving out, they often lose these informal support services and social networks, resulting in a greater need for paid services and supports.

The concept of "third spaces" is a crucial consideration for older adults. Third spaces refers to the social relationships and neighborhood networks that can be established and maintained within parks and open spaces; making these spaces extremely important as seniors are often at risk for isolation and depression (Loukaitou-Sideris et al., 2014). Assessing and ensuring that a park or open space is accessible for all ages is important, yet there has been very little research about this aspect, short of the recent book by Loukaitou-Sideris, Levy-Storms and Brozen (2014). Furthermore, if third spaces are to be formed in any public area that is conducive to social interaction and convenient for residents, it is important to look at these spaces holistically. For example, in addition to the location and condition of a park, cities should also address transportation access that will bring people to parks, sidewalk connectivity and conditions, and issues of safety and lighting within and surrounding the park.

Aging in Place

Seniors are often the "most stable forces in the neighborhood, (and when they) are forced to move out in search of more adequate and affordable health and housing services, communities suffer" (Lawler, 2001, p. 12). Additionally, a New York Academy of Medicine report on resilient communities found that in disasters, the most resilient survivors and the majority of responders were seniors (Goldman, et al. 2014). Research shows that as many as 90% of older Americans intend to age in place, whether this means their private home or within the same community (Harvard GSD, 2014). In addition to the social services and individual support systems that are needed for seniors to remain independent, there are also the externalities of aging in place, which impact the greater community. Lawler (2001) points out that as a senior's "health deteriorates, their inability to maintain their home and subsequent deterioration of the housing stock negatively affect the community's health" (p. 12). Aging in place is the most cost-efficient option for both seniors and their families. It can also offer significant savings to Medicaid, of which 62% of current spending is on long-term care services by just 39% of institutional recipients (HUD, 2013; Ng et al., 2010). As a state managed program funded jointly by the federal and state funds, currently Medicaid is the primary payer of long-term care for low-income seniors. Even with the increase of community based service options (due to the 1999 Olmstead Case), there is significant unmet need for long-term services, as evidenced by a 30% increase in average wait-list times (Ng et al., 2010). Yet, all predictions point to an increased need in long-term housing as boomers transition from independent living to requiring daily support, a fact that greatly challenges future Medicaid spending.

Aging at home is also the preferred option by most seniors. The American Association of

Retired Persons (AARP) reported in 2000 that the desire to remain in their current residence for as long as possible becomes more prevalent as age increases: with 75% of people in ages 45-54 years, 83% of people in ages 55-64 years, 92% of people in ages 65-74 years, and 95% of those aged 75 or older expressing the preference of remaining at home (Lawler, 2003; Harrell et al., 2014).

Successfully aging in place requires awareness of the unique needs, supports, and necessary modifications both to the private and public sphere. From fall prevention and in home services to access to fresh food, safe neighborhoods, and reliable transportation, seniors may have similar needs as other adults but often have unique challenges in achieving those needs. There are often assumptions or misconceptions around those needs, with seniors typically lumped in the 'vulnerable population' category, with little additional thought. A great example is the common perception that transit dependent elderly will 'give up' driving as they age and move voluntarily to transit oriented neighborhoods. However, research shows that seniors are the most automobile-dependent population in the US with the oldest groups constituting the highest proportion of trips in autos. In fact, transit and autos are not substitutes but often compliments, with active seniors using both in greater numbers (Wachs, 2014). Considering transportation for an aging population requires planners and policy makers to think outside of the auto/transit dichotomy. Some of the greatest accessibility challenges for seniors are the lack of transportation alternatives, lack of awareness about options, conditions of sidewalks and street connectivity, availability of bus benches and shelter, and the timing of a cross walk.

Aging in place means that seniors are able to live as independently as possible, in the community of their choosing. Yet, the ability to age independently assumes seniors have real choice in the decision making process, regardless of income. Ensuring choice requires public and private support, agency, funding, and accessibility; considerations that often fall within the realm of city government and are reflected in a community's built environment. Great examples are city funded neighborhood-based programs, which serve as critical support networks for aging residents, providing free or discount home modifications, community engagement opportunities, educational and resource assistance, and meal services.

While many disciplines address very specific aspects of creating age-friendly environments, there is no comprehensive study that approaches age-friendly research from a citywide perspective with a focus on the built environment and aging. Additionally, the established research and recommendations tend to be unique to the discipline from which they originate, rarely connecting complimentary efforts and thereby reinforcing a silo approach to urban aging. What is missing from the literature is established criteria for what constitutes an age-friendly city, specifically from the broader perspective of the built environment. Efforts to develop, measure, and assess built environment indicators that support an age-friendly city would move this field forward considerably.

RESEARCH QUESTION

In recognition of the impact this growing demographic will have on American cities in the coming years, this thesis intends to answer the following question: What are the best built-environment indicators that cities can use to improve the lives of their elderly residents?

METHODOLOGY

The methodology for this research consists of four steps. First, to look at relevant research and prior efforts to conceptually define age-friendly. Second, to select a list of suggested indicators. Third, to engage aging experts to select the "best" indicators in a two-step process. Finally, to analyze the findings.

STEP 1: Establishing Criteria

The viability of built environment indicators for an aging urban population is based on a variety of assumptions, some of which have been covered extensively by previous authors and researchers. With this first step, the goal is to establish a list of potential criteria that will serve as indicators for the following surveys. Therefore, the first step of the methodology is to conduct a literature review based on the following premises:

- The first premise is that the built environment has a direct impact on accessibility, the health, and quality of life of its citizens, and this is particularly true for the elderly population.
- The second premise is that the elderly population is a unique user of the built environment, with different needs, challenges, and requirements than other users.
- The third premise is that indicators can be established and serve as a measure for the conditions of a city's built environment, as experienced by an aging population.
- The fourth assumption is that indicators can serve as measurable tools to guide cities to implement, assess, and improve the overall age-friendliness of a city.

To develop a knowledge base around the impact of the built environment on seniors, as well as the needs, challenges, and capacities of aging adults, the author conducted a review of the

existing literature. Using combinations of the keywords, "seniors, elderly, older adult, accessibility, housing, naturally occurring retirement communities, transportation, built environment, aging in place, livability, open space, parks, age-friendly, zoning, community development, universal design, mobility, services, disaster, emergency preparedness", I searched primarily within Academic Search Complete, Melvyl, Ebsco, university book catalogs (UCLA, city library branches, and inter-library university loans), bibliographies of relevant research, and newspaper articles. This research occurred over the course of five months and I only excluded articles or research that focused solely on the medical or individualized social considerations of aging and offered no applicable insight on aging within the context of the built environment. Articles that focused primarily on aspects not covered in this research occasionally provided additional insight, such as informing an overall understanding of aging and therefore contributed to this research. For example, an article on making a home accessible focuses on the private sphere, which was not a focus of this study. However, the article also elaborated on the physical challenges faced by many seniors, such as the need for a step-less entry, well-lit walkways, and handrails for fall prevention, all of which translate as public accessibility needs and offer insight into the general accessibility needs of seniors.

This study also reviewed the age-friendly plans of various agencies, focusing on any city developed aging plan, reports that addressed the built environment from an aging perspective, and frameworks that sought to address aging within the built environment. Content was found in journals in a broad range of disciplines, including urban planning, gerontology, social welfare, medicine, sociology, public health, and architecture, as well as a

wide variety of planning documents, age-friendly plans, and frameworks. To develop a list of established and recommended built environment indicators, I focused on the following seven age-friendly frameworks and the age-friendly plans of three different cities.

Age-Friendly Frameworks

These are guides established by various organizations and meant for city leaders, aging advocates, and/or urban planners to incorporate within their own efforts at establishing a community based age-friendly plan or practice.

World Health Organization's (WHO) "Global Age-Friendly Cities: A Guide"

Developed in 2006 and originally established in 33 cities across 22 countries, the program's goal was to guide and engage cities to become more age-friendly. The WHO defines an age-friendly city as one that (2007):

- Adapts its structures and services to be accessible to and inclusive of older people with varying needs and capacities
- Recognizes active aging is a lifelong process, that an age-friendly city is not just "elderly-friendly"
- Emphasizes enablement rather than disablement

While often used as the template for a number of American city plans, notably Portland, New York, and San Francisco, the framework was developed very broadly as a tool for both developed and developing countries and therefore offers little with regards to measurability. It also only directly addresses the built environment in three of the eight categories: outdoor spaces and buildings, transportation, and housing.

AARP Network of Age-Friendly Communities is an affiliate of the WHO aging program and seeks to foster increased participation in the program through initiatives within their Public Policy Institute, as detailed in more depth below. Currently 37 communities, representing 26 million people, have joined the network, with three communities having reached phase two of the improvement process as defined by WHO (AARP Livable Communities, 2014).

AARP's Public Policy Institute (PPI) has recently developed an index to measure "community livability across the United States", releasing two documents that were helpful with this research. One focused on determining community preferences of older adults and the other is the Livability Fact Sheet series, eleven fact sheets focused on various community components such as density, street trees, and form based code that can help ensure an age friendly city (Harrell et al., 2014). This past April, the AARP launched an online neighborhood based measurement tool, the "Livability Index: Great Neighborhoods for All Ages". Based on data from the American Census Survey within eight categories (housing, transportation, neighborhood characteristics, environment, health opportunity, and civic social engagement), the index allows users to measure criteria within their communities. While this actual index was not available during the thesis research, the various documents and AARP research that supported this work were available and contributed to this study.

American Planning Association's (APA's) "Aging in Community Policy Guide" is the only framework to date that is specifically targeted towards planners, focusing primarily on the built environment with aging in mind. Suggestions for ensuring an age-

friendly community are split up in six categories, which include: housing, transportation, land use, economic well-being, community engagement, and community assets and support. Each category includes multiple clearly defined action items (APA, 2014).

"Best Cities for Successful Aging" is the second annual report developed by the **Milken Institute** that ranks metropolitan areas on their age-friendly capacity, using data focused within eight categories, including: health care, wellness, living arrangements, transportation, financial characteristics, employment, educational opportunities, community engagement, and overall livability. The report lists the top 20 large metro areas and the top 20 small metro areas (presumably based on population, although the methodology doesn't define large vs. small), as well as a "Mayors Pledge" which the advisory committee hopes will unite "city leaders around a commitment to enhance aging lives and enable older adults to contribute to our cities and a better future for all ages" (Chatterjee & King, 2014).

"Placemaking for an Aging Population: Guidelines for Senior-Friendly Parks" is a very recent publication from **University of California Los Angeles** professors and staff. Focusing on open space and parks, the report analyzes the value of parks for seniors, shares case studies, and provides design guidelines for creating senior friendly parks (Loukaitou-Sideris et al., 2014).

"Resilient Communities: Empowering Older Adults in Disaster" was an emergency preparedness report developed by the **New York Academy of Medicine** that specifically focused on older adults. Although the primary focus of the report was very

specific, disaster management and the aging population, the scope incorporates preparedness, community participation, services and programs, as well as post-disaster recovery. Disaster management is an often-overlooked yet critical component to planning age-friendly communities (Goldman et al., 2014).

Age-Friendly City Plans

In addition to the guides, there are a handful of cities that are developing and implementing citywide comprehensive aging plans, of which I'll focus on three: New York City, Atlanta, and Portland. Many of the indicators shared in the surveys were from these three cities, as they were some of the earliest adopters of age-friendly plans; Portland specifically was the first in the United States. All three of these cities have also followed up years after the plans were enacted to evaluate results and develop next steps. Recently, more cities have either started the long process of developing a plan or have recently implemented an age-friendly plan, including Honolulu, San Francisco, Kansas City, Philadelphia, Los Angeles, Chicago, and Seattle. These regions present a great opportunity for continued research in the years to come, as they develop, implement, assess, and evaluate their aging plans.

"Age-Friendly Portland" was the first American city to capture data aimed at establishing the WHO's framework. A collaborative development effort between the Institute on Aging and Portland State University in 2006, the Age-Friendly Portland Plan was officially launched in 2013. The plan uses the same areas as the WHO, choosing to break up two of the combined areas, resulting in ten key domains, including: housing, transportation, outdoor spaces and buildings, respect and social inclusion, civic participation

and volunteerism, employment and economy, social participation, community and information, community services and health services. Each domain includes additional action items as well as partners for potential collaboration. Notably, one of the goals of this plan is to ensure that the indicators are measurable, to allow for monitoring for progress along with an implementation guide detailing each indicator and the respective timeline (The Age-Friendly Portland Advisory Council, 2013).

"Age-Friendly NYC" is a collaboration between the New York Office of the Mayor, New York City Council, and the New York Academy of Medicine, overseen by the Age-friendly New York City Commission, which promotes "an age-in-everything agenda that challenges everyone from government, businesses, residents, and civic and cultural institutions to consider how older adults can be better integrated into every facet" (The Office of the Mayor, et al., n.d.). The plan was enacted in 2009, is loosely modeled after the WHO's guidelines, and has 59 initiatives focusing on four areas, including: community and civic participation, housing, public spaces and transportation and health and social services. Additionally, in 2013 the Commission reviewed the plan, providing an update on the 59 initiatives with current results and anticipated next steps.

"The Lifelong Communities Initiative", managed by the Atlanta Regional Commission, was the creation of a collaborative effort between the Atlanta Metropolitan Planning Organization and the Area Agency on Aging, and was first implemented in five communities in 2009. Unique in that it is a regional plan, currently the commission works with ten counties on the following three core areas: housing and transportation options,

healthy lifestyles, and expanding access to services. The Lifelong Communities principles are integrated in their regional transportation and development plan, Plan 2040. While not based on the WHO's guidelines, many of the specific elements are similar such as the emphasis on social interaction, connectivity, and pedestrian access and transit (Keyes & Berger, 2013).

STEP 2: Developing Indicators

From the literature review, it became clear early on that there is very little that broadly addresses the impact of the built environment on an aging population, especially within the public realm. The goal of the second step was to compile all indicators and research from the literature review into a comprehensive list of potential age-friendly indicators. Currently there is abundant information on aging and services (the nature, provision, and measurability of services), on aging and housing (primarily within the private sphere, a focus on design and accessibility within the home), and to a lesser degree, aging and transportation (conditions, access, and use of transit, driving, and alternative forms of transportation). Perhaps as a result, the majority of the age-friendly plans tended to focus on the biopsychosocial components of aging, specifically the interactions and development of seniors within the social environment. Biopsychosocial indicators within established age-friendly plans included social service programs and priorities, health related metrics and outcomes, and strategies that address increased social engagement. Specific examples of biopsychosocial programs include meal delivery, mental health services, diabetes management, and education to prevent financial fraud.

I focused particularly on indicators that address the built environment and the public realm,

are implemented and/or managed by a city agency, are measurable, actionable, and sensitive to change. The result was a comprehensive list of 88 potential indicators which were all obtained from the literature review, the seven age-friendly frameworks, and three age-friendly plans (Appendix A). The full list of 88 indicators were grouped within seven broad categories and additional subcategories as a means to organize, ensuring that participants were never choosing from a list of more than five at a time. The categories were developed as away to group indicators and were based on indicators with a similar focus or topic areas (such as green spaces, transportation, or housing) or requiring similar implementation strategies (city infrastructure, assessments, or policy). The seven broad categories included city policy and planning, citywide assessments, city managed programs, outdoor public spaces, safety, emergency preparedness, and active transportation infrastructure.

Using a Delphi Survey, participants were given all 88 indicators in the first round of the survey and were asked to rank and rate them within the seven categories, based on their priorities (see Appendix A). From those results, I eliminated the lowest ranked indicators, resulting in 38 indicators for the second round of the survey.

However, there was a lot of grey area in determining which indicators best fit the requirements above, with a small number of indicators that met both the above criteria yet were also primarily program based or biopsychosocial in nature; in those cases, I chose to include them. The purpose of the survey was to provide as broad a range of indicators as possible to professionals and experts to rank according to what they thought was most effective, valuable, or measurable. Therefore, I erred on the side of including more, rather

than less, indicators.

The program-related indicators included were ones that I felt would impact the built environment, would be managed by a city agency, and were measurable (such as "increase involvement of elders in community based decision making"). I did not include many others, such as "develop new ways to include older adults in the social fabric of the city", "foster the ability of older adults to contribute to communities through new and existing programs", or "encourage equity and sustainability by considering the aging of the population" because they did not meet those criteria (The Age-Friendly Portland Advisory Council, 2013).

Additionally, I avoided indicators that focused on the private sphere or interests, such as business owners, private property, or requests of the general population, since the focus of this research was the public realm and city management as they intersect with the built environment. Examples of excluded indicators included: "requiring that building addresses be legible to those with limited vision", "educating businesses on the value of an age-friendly business", "allowing pets in housing of older adults", "use language that is preferable to older adults, such as 'honored citizens'", or "develop an approach to fostering employment for older adults with existing organizations, as well as providing paths to innovative entrepreneurial activities, including businesses at home." Even though economic or employment related activities were measurable, could be managed by a city agency (such as a work force development department), and would have an impact on the fabric of a community, there was not a strong enough connection to the built environment. Additionally, all of the above placed requirements on private entities (businesses, citizens, or

property) with no clear mechanism to implement, measure, or assess.

STEP 3: Participants + Surveys

The third step focused on developing the survey design and establishing the list of potential survey participants.

Selection of Expert Participants

With an established list of indicators, I developed an initial group of 51 professionals as potential survey participants, through an informal snowball technique (through contacts and requests of referrals), my personal professional network, and authors of compelling projects, reports or papers discovered during the literature review. Of the initial list of 51, 34 experts contributed to the first survey and 30 contributed to the second survey. Participants were given all 88 indicators in the first survey and, using a Delphi method, asked to rank them within categories, based on their priorities (more below in Survey).

The goal was to include participants who were familiar with the aging population and as well as the built environment, specifically as it impacts users ability to successfully and independently age within their communities. I was familiar with a little more than half of the experts on the initial list, either former colleagues, advisors, or professors, while the other half of the people were new contacts, acquired either through referrals or from reading their work. In an attempt to have a broad range of perspectives and experiences, contacts were assigned to one of three categories, as follows:

> **Academics**: participants are professors or researchers affiliated with a research based institution and primarily conduct research related to aging and

the built environment. Examples include a gerontology professor, researcher of transportation issues, and a social welfare professor specializing in the aging population.

Design: participants that have design related backgrounds and develop and/or implement physical structures relate to seniors and the built environment. Examples include architects, general contractors, planners, and urban designers.

Practitioners: participants whose primary role involves developing, executing, and managing direct services related to aging and the built environment. Examples include the director of an aging agency, direct service providers, and the executive director of an aging in place organization.

There were a number of participants who fit more than one category, and the categories themselves often overlap. However, for the sake of data analysis and ensuring a range of perspectives, I chose one category per participant, either one that best defines their overall approach (if known) or their most recent endeavor. The majority of participants (74%) had 10 or more years of experience in their field**.** Details on the participants, including their positions, organizations, location, and other relevant notes can be found in the Appendix B**.**

Since the recruitment relied primarily on a snowball technique with known professional contacts, 77% of the participants were from California, 46% were from San Francisco, and 26% were from Los Angeles County. The advantage of relying on participants who were former colleagues, share similar professional networks or were recommended by colleagues resulted in a higher than expected response rate. The first survey had a response rate of 68% (or 34 out of 51 participants), while the second survey saw a return response rate of 88% or

30 out of the original 34 participants.

Limitations

Having a majority of the participants from California, specifically San Francisco and Los Angeles, definitely adds a bias to the ranking, most likely reflected with indicators that refer to housing affordability (or lack thereof), emergency management, and transit options and availability. Additionally, the geography, weather, and challenges faced by the coastal California cities are likely unique to the West Coast and should not be seen as a generalization for other cities without further research. However, the ranking does offer insight into the priorities of professionals within similar geographic areas.

Additionally, a number of participants expressed concern, had questions or shared comments about the language used. As this research incorporates multiple disciplines, at times terms familiar with one field were unfamiliar to professionals within another field. While much effort was made to keep the language as simple as possible, there were certain terms that were unavoidable, especially given the small space available with online surveys, including terms such as "granny flats" and "built environment". In those situations, the author provided definitions. However, age-friendly planning is multidisciplinary by design, therefore it was not surprising that the planners struggled with the terms and language that is more common with gerontologists and vice versa.

Survey Design

With an initial list of 88 indicators and 34 aging and built environment participants, I set up

the survey process using the Delphi method. An iterative process that generally involves two to four rounds of questions, the Delphi method is ideal for complex problems where there is no consensus regarding either the nature of the problem at hand or the components. A technique that utilizes group judgment, each successive round asks experts to reconsider their prior answers based on additional information provided (Loukaitou-Sideris, 2000). Generally the first round is much broader, while successive rounds involve a more limited range of topics explored in an increasingly structured format. The key components in developing a successful Delphi method include the selection of panelists based on their knowledge of the area and problems to be considered, a series of questionnaires that allow for feedback, and the analysis of the responses based on the feedback (Masser & Foley, 1987).

Software

In choosing an online format for the first survey, ideal characteristics required included a user-friendly interface that would be able to track respondents by email, unlimited questions, and affordability. As the first survey was relatively simple to design, Google Forms was the best fit: it was free to use, automatically collects emails, has unlimited questions, and has a very user-friendly interface. Additionally, Google Forms offered additional tools within the subcategories that were useful, including randomizing indicators and categories, ability to require responses, and respondents were only allowed to rank a required number of indicators (as prompted by question). Participants had a week to fill out the survey and many left additional comments, which were extremely useful (see Appendix C and further discussed in data analysis).

For the second survey, the research design required for the questions was considerably more complicated and necessitated a new survey format. I needed an affordable platform that allowed answers to be piped (answers to prior questions automatically populating the next question), an unlimited number of questions, and user friendly; after much research, up with SurveyGizmo was the best fit (Vanek, n.d.).

Initial Survey

With an initial list of 88 indicators, I created seven broad categories, most with additional subcategories in order to organize the indicators, ensuring the participants were ranking between three to five indicators at each time. The categories were developed based on indicators having similar focus or topic areas (green spaces, transportation, or housing) or implementation strategies (city infrastructure, assessments or policy). The seven broad categories included city policy and planning, citywide assessments, city managed programs, outdoor public spaces, safety, emergency preparedness, and active transportation infrastructure. Six out of seven of the categories also had two to five subcategories that helped further define and combine similar indicators. For example, within the outdoor public spaces category was a subcategory of gardening, which then had four indicators that specifically addressed public gardens. An additional goal of breaking up the indicators within categories and subcategories was to keep the online survey easy to read by ensuring that each section asked participants to rank no more than three to five indicators at a time. Below is an example of the categorization of four indicators, as designated by the bullet points (See Appendix A).

Figure 1.1: Example of category, subcategory, and indicators (first survey)

IV. OUTDOOR PUBLIC SPACES

1. Increase access to and use of green space
    - Include accessible public restrooms in parks and public areas
    - Build pocket parks
    - Ensure accessibility to green spaces within the city, such as bus routes, accessible sidewalks and pathways
    - Ensure age friendly parks including handrails, lighting, accessible benches, shade, and clear markers

Simplifying language as much as possible, I removed urban planning terminology such as FAR, Complete Streets and form based zoning in exchange for common explanations and simplified sentences; for example, "Ensure one time and occasional events adhere to accessibility standards" became "Ensure that public events are accessible".

Second Survey

Of the original 88 indicators shared in the first survey, 38 were the highest ranked according to participants. Therefore, the second survey was designed with 38 unique indicators in four primary categories, with 14 indicators used in more than one category. The categories were based on four age-friendly objectives, including: city policy, city implementation and infrastructure, greatest number of seniors served, and city-to-city comparisons. More specifically, participants were asked which of the following indicators would best achieve the goal (or category), while ensuring that the indicator is measurable, sensitive to change, and actionable. Combining both similar and dissimilar indicators within the same category required a different process of prioritizing for participants. Rather than choosing the highest ranked indicator from a list of similar indicators, as they had done in the first survey, the second survey asked participants to rank a diverse range of high priority indicators (as

established by the initial survey) against other highly ranked indicators in achieving a specific goal. Once answered, the chosen indicators automatically populated the next question, which prompted participants to "please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics".

Each category following this same pattern, beginning with a large number of indicators, asking participants to eliminate roughly half, then reduce indicators down to five, and finally allocate a percentage of estimated resources to the remaining five indicators (see Appendix F). The objectives for the second round of survey questions included: remove the indicators from categories to see how that would change the prioritization; increase pressure to chose among increasingly compelling indicators; and introduce the idea of limited resources and how that would further narrow the list of potential indicators.

Five weeks after the first survey participants were emailed the results table (see Appendix D) and were requested to complete the second and final survey within two weeks. Of the original 34 participants, 30 completed the second survey. Since the second survey was a continuation of the first, the language stayed the same.

Limitations

The response rate was lower than the first survey, which was disappointing but not surprising. All participants are extremely busy individuals and based on some of the comments from the first survey, not everyone agreed with the survey methods or saw the

value in the ranking process I was requesting of them.

One participant didn't agree with the survey format, specifically that answers were required of all questions (due to the answer piping function of the survey design), preferring to be able to skip questions, and therefore refused to take the survey. Also, a coworker of an original first survey participant (rather than the participant) filled out the second survey. As the goal of the Delphi method is for the same participants to contribute through all stages, I omit this person's data for the second survey.

The software survey formatting was difficult and unfortunately there were a number of unexplained complications within the first day, which three participants alerted me to. After working with SurveyGizmos' help desk, the survey was fixed and thankfully the three participants agreed to retake.

Finally, there was an error within the city-to-city comparison, in that the same indicator was listed twice, once as "Assessment: review policies regarding city wide codes & policies in relation to senior housing & assess barriers to increase supply" and again as "review policies regarding city wide codes & policies in relation to senior housing & assess barriers to increase supply" which was a typing error.

STEP 4: Survey Analysis

The final step involved analyzing the participant's responses from the two surveys.

Once all participants had ranked the indicators from the first survey, I organized each subcategory separately, and based on the ranked value provided (with one being the highest priority and three to five being the lowest priority), created an average for each indicator per subcategory. Indicators that were ranked the lowest in value were the highest in priority and therefore were automatically included in the second survey. Indicators that were ranked lowest priority, such as third out of three or fourth out of five, were eliminated for the second round. The second survey included all indicators that were chosen as first priority in all categories, and many second ranked priorities were included as well, based on a natural break in the values of the indicators.

However, not all of the subcategory indicators were as easily eliminated: nine subcategories had averages among indicators that were very close, with very little difference in the ranked value, and were therefore difficult to eliminate with confidence. In those situations, I re-analyzed the rankings based on another system as a way to better understand the participants' priorities. In those situations, all indicators that were ranked first or second priority were assigned a value of one and for rankings of third, fourth, or fifth priority, were assigned a value of zero. The goal was to determine which indicators were most frequently chosen as participants' first and second choices. For example, within the category of Safety and the subcategory of Trainings, there was a tie between two of the highest prioritized indicators; engage elders in emergency preparedness training (a 2.26 ranked average) and train first responders about specific needs for older adults (a 2.26 ranked average). To determine whether one indicator was ranked consistently first or second more frequently, I re-analyzed the rankings based on the method outlined above, resulting again in a tied score;

engage elders in emergency preparedness training (0.62 highest priority ranking) and train first responders about specific needs for older adults (0.62 highest priority ranking). This told me that both indicators were ranked as first or second priorities in the same proportion and therefore both were considered the highest prioritized indicators for this specific subcategory. The table of highest-ranking indicators can be found in Appendix E.

While the data analysis below is focused primarily on the highest ranked indicators from the second survey, it is important to acknowledge that all the indicators from the first survey were pulled directly from age-friendly plans, age-friendly frameworks, and current research, and as such, ultimately are valuable indicators. Additionally, the remaining 38 indicators that made up the second survey had been the highest ranked among participants and in some cases comments were left that revealed how difficult it was to further prioritize at that point. For example, referring to indicators within the Safety category, a participant noted, "I think all of these are a priority 1 or 2"; within the Funding Priorities category another commented, "All are important so it was hard to rank", additional comments include, "These are all important – probably equally important" and "my responses feel misleading as even the #4 priority is an important overall priority in planning for aging populations"(See Appendix D).

However, the goal of this research was to establish a concise list of the highest ranked indicators based on established age-friendly plans, age-friendly frameworks, and current research which would be prioritized by a well-selected group of aging professionals. To achieve that goal, below is an analysis of the highest ranked indicators, the lowest ranked indicators, or any suggested indicators, and the resource allocation associated with the

highest indicators all from the second survey. Additional analysis looks at the participant's professional categories (academic, design, or practitioner) and their associated highest-ranked indicators within the city-to-city category.

DATA ANALYSIS

The data analysis section is divided into four major sections: prioritizing city policy; prioritizing city implementation and infrastructure; prioritizing the most seniors served; and prioritizing city-to-city comparisons. Following those sections I also provide an analysis of the responses based on the respondents professional categories.

I. Prioritizing City Policy Indicators: Highest ranking, lowest ranking, suggestions, and resource allocations

Survey participants were asked: Which indicators are the most effective policy priorities for a city to focus on, based on the following criteria: that the indicators are measureable, sensitive to change, and actionable. Participants were given a list of 14 indicators, in addition to an "other" category, and asked to choose no more than seven. Table 1.1 lists the highest ranked indicators from that first round.

Table 1.1: Highest Ranked City Policy Indicators

CITY POLICY: Highest Ranked Indicators	
Assessment: Review policies regarding city wide codes & policies in relation to senior housing to assess barriers to increase supply	**67%**
Increase involvement of elders in community-based decision-making	**67%**
Assessment: assess the transportation infrastructure available in all areas of the city	**60%**

Funding for public & private transportation services: prioritize affordability & range of transportation options	**57%**

With regards to City Policy, housing and transportation (range of options, affordability & infrastructure) are seen as key areas among participants. All are measurable, sensitive to change, and actionable. Perhaps not surprising, as both are considered critical for successful aging in place. Considering that the majority of respondents were from San Francisco and Los Angeles, two cities experiencing a severe housing crisis that disproportionately impacts those living on a fixed income, it is not surprising that housing is a major issue. Also, both cities have challenges associated with transportation infrastructure. Los Angeles's size and relatively late start with public transportation infrastructure (compared to other US cities) creates challenges in ensuring all areas of the city are connected while San Francisco's unique geography creates challenges in that the hilly terrain can create isolation for seniors who may not be able to leave their house or access a bus stop a few blocks away.

Looking at the broader categories, participants selected assessments, funding priorities, and engagement, which are measurable and actionable, potentially sensitive to change. Assessments appear to be a popular city policy tool, as a way to better understand the current situation in order to suggest possible improvements. With regards to funding priorities, this can be seen as evidence of the growth of public private partnerships within cities as the struggle to provide similar or increasing services with dwindling resources, assuming the partnership achieves the goals of affordability and options. Previous indicators had specifically focused on funding for public transportation, yet received a lower ranking during the initial survey and ultimately was dropped. Finally, engagement emerged as an

important issue with 20 out of 30 participants advocating for including seniors in the decision making process, which has important policy implications.

Table 1.2: Lowest ranked City Policy indicators

CITY POLICY: Lowest Ranked Indicators	
Develop & foster community resilience to respond to unexpected events	**30%**
Ensure accessibility to green spaces, such as bus routes, accessible sidewalks, and pathways	**20%**

Based on the criteria given in evaluating (that they be measurable, sensitive to change, and actionable), these two indicators do not meet all the criteria. Develop and foster community resilience is a very difficult indicator with regards to measurement and being sensitive to change. Measurements for determining resilience can be subjective and vary greatly depending on the disaster or unexpected event. With regards to being sensitive to change, only following a disaster would a city be able to determine the success based on the resilience and recovery for a community. However, even then it would be very difficult to isolate this indicator from all other variables.

Similarly, ensuring accessibility to green spaces does not easily fit the criteria. As an actionable task it is difficult to define, difficult to establish with consistency, and would be difficult to measure. For example, the task of defining what constitutes green spaces, may vary city to city; for some cities that may include parklets, green alleys, and walking trails, whereas other cities may choose to focus only on city owned and operated park property only. Additionally, should access to the green spaces be measured using a constant measurement of distance from the green space and transit access or some other metric? Evaluating and ensuring accessibility for public streets also has challenges, as the term accessible can mean different things for different populations and abilities, which can

become problematic when trying to compare different cities based on different conditions.

It is important to note that although these were the lowest ranked indicators within this category, they still have relatively high scores, with nine out of 30 respondents selecting these items as important priorities. However, green spaces and emergency preparedness could not compete against housing, transportation, and senior engagement. Unexpected and infrequent events, such as unpredictable disasters, are always likely to be lower priority, especially when compared to an immediate housing crisis.

Table 1.3: Additional City Policy indicators (offered as "other")

CITY POLICY: Additional Suggestions from Participants
Training for staff on the needs of older adults
Availability of community service centers or activities at local library, etc.

It is unclear what staff this participant is referring to, but presumably city department staff trained to be sensitive to the needs of older residents. Training for staff could be seen as a general requirement for various city departments with one of two goals, either those that interact with the elderly population in any capacity, such as public works and the assessors office or departments that primarily work with the elderly, such as paratransit services. Either goal would require two very different strategies and attempting both would not necessarily minimize the amount of work needed, as the content for both trainings would be distinctive. The scope of work that would need to be established is significant, including developing, implementing, evaluating, and updating trainings regularly, and tailored to specific departments. For cities that already have robust diversity training programs, there may be opportunities to incorporate aging issues and considerations in existing training frameworks.

The second suggestion recommending availability of community service center is more straightforward and similar to an indicator included in second survey, ensuring that libraries are age friendly hubs.

Prioritizing City Policy Indicators: Resource allocation of highest ranking

Survey Participants were asked: From a list of seven items that were selected "if you had the resources (funding and staffing) to immediately address five of these topics, which ones would you tackle first?"

Based on those five, participants were then asked: "Please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics." Table 1.4 below lists the highest rated five indicators and the resource allocation averages and medians based on participant ranking.

Table 1.4: Estimated Resource Allocation (out of 100% of resources): **in order of most participant votes**

CITY POLICY: Estimated Resource Allocation per indicator	Aversage	Median
Assessment: Review policies regarding city wide codes & policies in relation to senior housing to assess barriers to increase supply	**19%**	**20%**
Increase involvement of elders in community-based decision-making	**16%**	**10%**
Encourage co-housing & other models	**22%**	**20%**
Assessment: assess the transportation infrastructure available in all areas of the city	**21%**	**20%**
Collaborate with agencies on improving delivery of services	**26%**	**30%**

The indicators that received the most resource allocations (total votes, not necessarily highest amount of resource allocation) generally matched the highest ranked indicator list,

Table 1.1**.** However, funding for public and private transportation dropped off, which was surprising. While it is clearly an important indicator for participants, it is much harder to establish a percentage of resource allocation. Also, perhaps respondents were aware of the large amounts of transportation funding available and therefore chose not to prioritize spending more on those types of projects.

Co-housing was elevated in this exercise as a new addition. Again, as a housing related issue it could be the nature of the cities interviewed, especially considering that building new senior housing is incredibly difficult in San Francisco. This possibly demonstrates an interest in alternative housing models, of which both Los Angeles and San Francisco are actively exploring. The greatest difference in resource allocation is between increasing the involvement of elders and collaborating with agencies on improving services, which does not appear among the highest ranked indicators in Table 1.1. Presumably collaborating with agencies involves a greater financial commitment (either through staffing or direct funding) on behalf of the city, either through contracts, explicitly defined partnerships, or coordination.

II. Prioritizing City Implementation and Infrastructure: Highest, lowest, suggestions, and resource allocations

Survey participants were asked: which indicators are the most effective for a city to implement and monitor, based on the following criteria: that the indicators are measurable, sensitive to change, and actionable.

For the first round, participants were given a total of 17 indicators, with an "other" option, and told to chose no more than eight. Below are the highest ranked indicators based on the first round of responses.

Table 2.1: Highest ranked City Implementation and Infrastructure indicators, according to survey participants

CITY IMPLEMENTATION: Highest Ranking Indicators	
Ensure that sidewalk is accessible, level, and pedestrians are prioritized	**67%**
Improve street lighting, street connectivity & street conditions	**60%**
Extend pedestrians crossing time and include countdown clocks	**60%**
Offer loan assistance for home repairs & modifications	**60%**
Implement flexible zoning for mixed-use & intergenerational uses	**57%**
Train 1st responders about specific needs for older adults	**57%**

What stands out the most with regards to city implementation and infrastructure, is that street conditions are a priority for participants, with three of the six highest-ranked indicators addressing this general issue. The assumption is that there is a big need for this type of work, either as an immediate need or with ongoing improvements. Also, two of those three include an emphasis on pedestrians, either as a priority or with regards to the crossing times. Again, this could be attributed to either the strengths of the primary cities reflected, such as the mild year round Los Angeles weather, the walkability of San Francisco or the challenges of the primary cities, such as Los Angeles struggle with walkability and infamous sidewalk conditions. There could also be an assumption that older people substitute walking when no longer able to drive. The three transportation related indicators (ensure that sidewalk is accessible, improve street conditions, and extend pedestrian crossing time) are all actionable, measurable (although ensuring sidewalk accessibility may be the most challenging), and sensitive to change.

Offering loan assistance for home repairs and modifications speaks to the prevailing goal of aging in place and offers direct support to seniors. It is interesting to note that once again this is a reflection of the limited capacity of the city to provide this support since this is a loan rather than a service. Historically, some form of home modifications focused on fall preventions was a service many cities provided free of service to low-income seniors, either directly through low-cost grants, or through community partnerships, such as the more than 190 affiliates of the national organization, Rebuilding Together (Rebuilding Together, n.d.).

Implementation of a flexible zoning code for mixed-use and intergenerational uses reflects the growing interest in alternative housing solutions as a response to the housing crisis that many dense suburban cities are experiencing. Efforts to change zoning codes and ordinances can allow for "granny flats", co-housing options, and increased flexibility about the placement of senior housing.

Also, training first responders about specific needs for older adults as a priority with implementation is somewhat surprising, in that emergency preparedness tends to rank slightly lower than housing or active transportation related needs. Again, this ranking could have to do with the fact that most participants were from San Francisco and Los Angeles, where earthquakes are a real concern for many city leaders and have been fairly consistent occurrence over the last couple of years in Los Angeles.

Table 2.2: Lowest ranked City Implementation and Infrastructure indicators

CITY IMPLEMENTATION: Lowest Ranked Indicators	
Provide technical assistance for developing senior housing	**23%**
Ensure libraries are age-friendly hubs	**20%**

While housing has consistently ranked highest in general, the technical assistance for developing senior housing ranked lower. While it is an actionable task, it is a difficult indicator to measure. Measuring per technical assistance provided does not necessarily translate to actual housing units, which also makes it difficult to track changes over time.

Additionally, perhaps it was too obscure regarding what types of technical assistance would be provided and who would be receiving the technical assistance. For most cities, affordable senior housing is a priority, in which case affordable developers already have the expertise and technical abilities. Also, the higher-ranking housing indicators typically address alternative solutions around housing and as this indicator focuses specifically on developing new senior housing, perhaps it is seen as less of a priority.

While in the lowest rankings, ensuring libraries as age-friendly hubs was still prioritized by 20% (six people) of the participants, but when compared to highest ranked indicators (Table 2.1), it appears to be a less critical need. Additionally, perhaps this indicator would benefit from having some clarity around what being an "an age-friendly hub" means.

Table 2.3: Additional City Implementation and Infrastructure indicators (offered as "other")

CITY IMPLEMENTATION: Additional Suggestions from Participants
Provide moderate levels of funding for home repairs & modifications (no repayment required)

A great comment on the loan/repayment component of an existing indicator, perhaps in recognition that previously, home safety modifications for fall prevention was a service many California cities provided free of service to low-income seniors, either directly through loans or through the funding support tos community based organizations (Casteel et al., 2004;

National Council on Aging, n.d.; "Rebuilding Together," n.d.).

Prioritizing City Implementation and Infrastructure Indicators: Resource allocation of highest ranking

For the next round of prioritizing, participants were given the list of eight indicators they had previously chosen and prompted with, "you selected the following indicators; if you had the resources (funding and staffing) to immediately address five of these topics, which ones would you tackle first?"

Those five topics were then automatically fed into the final question within this section, with the following prompt, "Please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics."

Table 2.4: Estimate Resource Allocation (out of 100% of resources): **in order of most participant votes**

CITY IMPLEMENTATION: Estimated Resource Allocation per indicator	Average	Median
Improve street lighting, street connectivity & street conditions	**25%**	**20%**
Offer loan assistance for home repairs & modifications	**29%**	**20%**
Train 1st responders about specific needs for older adults	**21%**	**10%**
Integrate long term care settings into neighborhoods	**33%**	**30%**

Improve street lighting, street connectivity, and street conditions received more resource allocations (in total quantity not total value) than prior rankings (see Table 2.1) which could indicate that participants assumed the task would require significantly more resources to ensure. This indicator also meets the criteria for critical implementation (per prompting in survey) such as measurability, sensitive to change over time, and is actionable in that it

addresses immediate concerns.

Interestingly, integrate long term care settings into neighborhoods becomes a resource priority although it was not one of the highest ranked indicators (Table 2.1), which means it garnered more participants allocating resources than others, as well as receiving the highest amount of resource allocation. Presumably with the recognition that long-term care is becoming a critical issue for communities and that the costs associated with achieving that goal could be quite larges.

Additionally, the first two indicators (improve street lighting and offer loan assistance) address more immediate concerns and challenges and fulfill the actionable criteria. The last two indicators (training first responders and integrating long term care) are more future oriented as long-term implementation projects and therefore more geared towards the criteria of measurability (number of responders trained and long-term care settings within neighborhoods) and are sensitive to change over time.

III. Prioritizing the Most Residents Served: Highest, lowest, suggestions, and resource allocations

Survey participants were asked: Which of these indicators would impact the greatest amount of seniors and/or residents. Please choose from the following 11 indicators, including an optional "other", picking no more than five (please refer to Appendix F for actual survey). From that ranking, the following list includes the highest ranked indicators.

Table 3.1: Highest ranked indicators that serve the greatest number of seniors, according to survey participants

GREATEST NO. SERVED: Highest Ranking Indicators	
Offer home safety modifications & fall prevention services	**73%**
Availability of alternative transportation options	**67%**
Increase involvement of elders in community-based decision making	**60%**
Maintain a clearinghouse (phone & online) for aging related info	**57%**

The indicators chosen in this category all have the potential to serve a large amount of people, were the highest ranked of all categories, and are diverse in their topic and process. Broadly, the priorities include home repair, transportation options, engagement and general support – a very distinct range of indicators. All indicators are actionable, the majority are clearly measurable (with increasing involvement of elders possibly being the exception), and sensitive to change.

Offering home safety modifications recognizes that aging in place has the capacity to serve the greatest number of needy seniors, as opposed to moving into institutional settings, which only serves a fraction of the elderly population. It also was the highest ranked (meaning greatest consensus) of all indicators so far.

Availability of alternative transportation was chosen over "provide seniors education about all transportation options" (which was also within the same category) presumably because having actual options is a higher priority than educating on what is currently available. Perhaps experts also perceived seniors as having unique needs that may or may not be met by current transportation services, or the need to expand current alternative transportation programs such as paratransit.

Increasing involvement of elders has the distinction of potentially serving seniors immediately through engagement and can be seen as an empowering component, in that seniors are active in the planning that will potentially affect them. Additionally, as a demographic, older Americans are a powerful force; they are the most likely to vote, with 61% (65 years and older) voting in the 2010 election (Brandon, 2012).

Maintaining a clearinghouse would potentially serve a large number of seniors in that it is theoretically available to every senior, caregiver, or case manager. This ensures that existing services are accessible, utilized, and efficiently distributed.

Table 3.2: Lowest ranked Greatest Number of Seniors Served indicators

GREATEST NO. OF SENIORS SERVED: Lowest Ranked Indicators	
Minimize impact of gentrification on older adults	**30%**
Engage elders in emergency preparedness training	**30%**
Increase access to farmers markets & community gardens	**27%**
Libraries as age-friendly hubs	**27%**

While still a priority (in that almost a third of participants ranked it as such), minimizing impact of gentrification is a difficult indicator to measure or even fully define, such as: steps to implement (per actionable criteria), how to define and recognize gentrification (per sensitive to change criteria), ways to prevent, ways to measure success, being able to compare with other cities, etc. Undoubtedly minimizing gentrification is a critical concept and offers the opportunity to serve a large number of seniors, implementing such a task would be incredibly difficult for a city department to manage.

When compared to the highest-ranked indicators in this category (Table 3.1), increasing

involvement of elders in community-based decision could be seen as a broader more comprehensive and inclusive indicator as opposed to focusing specifically on emergency preparedness. Also, it is both difficult to measure and to determine what is an actionable step in achieving this goal.

Increasing access to farmers markets and ensuring libraries are age-friendly hubs, while important, perhaps are not considered core issues especially when compared to transportation, fall prevention in ones' home and access to information and support. Additionally, there is a challenge of measurement, such as is this indicator based on the total number of farmers markets, senior visits to farmers markets, or the relative accessibility of farmers markets? The actionable criteria would depend on the measurement. Determining change over time would also pose a challenge; in defining what type of change exactly would a city would be looking for?

Finally, ensuring that libraries are age-friendly assumes an increase or changing of services, whereas a clearinghouse is providing what is already available. For cities with dwindling budgets and diminishing programmatic support, perhaps that consideration lowers the ranking relative to other options. Age-friendly libraries are more difficult to evaluate with regards to the criteria of being sensitive to change, in that once the libraries are assessed and improved, there is little to track beyond that (as the indicator is currently written).

Table 3.3: Additional Greatest Number of Seniors Served indicators (offered as "other")

GREATEST NO. OF SENIORS SERVED: Additional Suggestions from Participants
A range of affordable & appropriate housing options

While various indicators address aspects of this in other categories, a participant felt that this goal specifically has the capacity to serve the greatest amount of seniors, which is a great point. The challenge with this task however, is how broad it currently reads, creating challenges in defining, measuring, and implementation. This sentence could be considered as four core concepts: ensuring access to a range of affordable housing, ensuring access to a range of appropriate housing (assuming appropriate is based on physical abilities), developing affordable housing, and developing appropriate housing options for various physical abilities.

Prioritizing the Greatest Number of Seniors Served: Resource allocation of highest ranking

As participants narrowed a list down to five, they were next asked to allocate an estimated amount of resources they would prioritize towards implementing and managing the following indicators, assuming they had 100% of resources (staffing and money) to start out with and to dedicate to the following areas. Total values should reach 100%, although the survey format had no mechanism to ensure that. Similarly, participants were not required to allot money to each indicator they had chosen.

Table 3.4: Estimate Resource Allocation (out of 100% of resources): **in order of most participant votes**

GREATEST NO. SERVED: Estimated Resource Allocation per indicator	Average	Median
Offer home safety modifications & fall prevention services	**29%**	**30%**
Availability of alternative transportation options	**26%**	**30%**
Increase involvement of elders in community-based decision making	**20%**	**20%**
Maintain a clearinghouse (phone & online) for aging related info	**17%**	**15%**

Offering home safety modifications received the greatest number of participant votes as well as the highest value of resource allocation within this category, demonstrating that this approach has the capacity to serve a large amount of folks in their homes and within their communities. As one potential solution to affordable housing, this indicator is more affordable, when compared to new construction.

The indicators with the greatest value of resources allocated (offer home safety modifications and availability of alternative transportation) both address the housing and transportation issues, which results from this survey have shown repeatedly to be participants highest priorities, yet also tend to be more tangible results oriented items. With both indicators, an agency presumably could quantify before and after results. Whereas the next two indicators, increase involvement of elders and maintain a clearinghouse, tend to be more subjective and would be difficult to measure and quantify the results, yet clearly represent priorities, as evidenced by being the top indicators.

IV. City-to-City Comparisons: Highest, lowest, suggestions, and resource allocations

Survey participants were asked: Please choose which of these indicators would be most useful in comparing the age-friendliness of various American cities to each other, keeping in mind the following criteria: that indicators be replicable, measurable, data is easy to collect, and sensitive to change.

Table 4.1: Highest ranked City-to-City Comparison indicators, according to survey participants

CITY-TO-CITY COMPARISON: Highest Ranked Indicators	
Ensure existing parks are age-friendly, such as handrails, accessible benches, shade, lighting, & clear markers	**67%**
Funding for public & private transportation services: prioritize affordability & range of transportation options	**63%**
Ensure safe & connected pedestrian pathways throughout the city	**63%**
Assessment: Assess the transportation infrastructure available in all areas of the city	**63%**
Review policies regarding citywide codes & policies in relation to senior housing & assess barriers to increase supply	**60%**
Implement flexible zoning for mixed-use & intergenerational uses	**60%**

Results reflect a wide range of issues, from a variety of categories within the first survey, including transportation, green space, sidewalks, housing zoning, policy, and pedestrian pathways. All of them were infrastructure and policy focused, and had less of an emphasis on programs or services, which makes sense as a tool for measuring and comparing cities relative age-friendliness. Additionally, all indicators represent broader concepts but are both actionable and measurable, resulting in a final product that could be tracked over time. All of the indicators focus on addressing existing conditions, which is perhaps more realistic and manageable for comparing cities, as opposed to developing new systems or infrastructure.

The two indicators assessing the transportation infrastructure and funding for public and private transportation services compliment each other; the first indicator would be able to efficiently inform the implementation of the second indicator, each supporting the larger goal of improving transportation services for seniors. Similarly, implementing flexible zoning could be a result of reviewing policies regarding citywide codes.

Table 4.2: Lowest ranked City-to-City Comparison indicators

CITY-TO-CITY COMPARISON: Lowest Ranked Indicators	
Design new parks & gardens specifically with aging & accessibility in mind	**27%**
Increase access to farmers markets & community gardens	**7%**

Increasing access to farmers markets and community gardens was surprisingly low, perhaps for a couple reasons: it is difficult to establish a measurement that allows a city-to-city comparison (number of markets or gardens does not speak to quality of, access to, or priority among residents towards); "increase access" is very open ended and subjective; oftentimes these spaces are managed by nonprofits and not city agencies, therefore would not be a city to city comparison; or perhaps, while undoubtedly important, gardens and green space indicators are consistently lower priorities when compared to transportation and housing issues.

Also it is surprising that designing new parks and gardens was significant but did not rank as high as other indicators in creating a tool for city-to-city comparison, perhaps because it focuses on new parks. From a city funding perspective, it could be a challenge to make a compelling case for developing a park specifically designed for one demographic using public funding – ideally, public parks should be inclusive. If designed with aging and accessibility in mind but with a different narrative, such as an "all ages and all abilities" park, perhaps it would be more compelling. Noting that the indicator focused on ensuring existing parks are age-friendly has consistently ranked higher may suggest that had this indicator included the re-design of existing parks, it would have ranked higher.

Table 4.3: Additional City-to-City Comparison indicators (offered as "other")

CITY-TO-CITY COMPARISON: Additional Suggestions from Participants
More universal access to free and low cost Internet
Training of staff on needs of older adults

More universal access to free and low cost Internet is an interesting suggestion. While not typically specified in age-friendly plans or research, internet access is becoming increasingly recognized as a utility (Bennett, 2014). However, there are additional challenges with the growing digital divide, and while access to free internet is important, having access to a computer, education that addresses use, how to manage privacy, and how to avoid scams are also critical components. There is a growing (primarily for profit) industry that it very interested in the ways online access and tools can support seniors, such as caregiving based on video monitoring (Stout, 2010).

Table 4.4: Estimate Resource Allocation (out of 100% of resources)

CITY-TO-CITY COMPARISON: Estimated Resource Allocation per indicator	Average	Median
Funding for public & private transportation services: prioritize affordability & range of transportation options	**31%**	**30%**
Review policies regarding citywide codes & policies in relation to senior housing & assess barriers to increase supply	**20%**	**20%**
Ensure existing parks are age friendly, such as handrails, accessible benches, shade, lighting, & clear markers	**19%**	**20%**
Assessment: Assess the transportation infrastructure available in all areas of the city	**14%**	**10%**
Implement flexible zoning for mixed-use and intergenerational uses	**24%**	**20%**

The resource allocation reflects the highest ranked indicators (Table 4.1), with the exception of ensuring safe and connected sidewalks, which drops out. While specific and measureable, ensuring safe and connected sidewalks is a difficult indicator to manage with regards to costs.

The greatest amount of resource allocation was for funding for public and private transportation services, which was three times greater than the lowest resource allocation, assessing the transportation infrastructure. While both are very complimentary, an assessment could be seen as an annual endeavor, generally undertaken by a consultant or small team of city transportation planners, while funding for public and private services is a much broader goal, that incorporates a range of services and the affordability of such options.

Finally, that the remaining three indicators have the same median resource allocation of 20% (review policies regarding citywide codes, ensure existing parks are age friendly, and implement flexible zoning for mixed-use) leads one to conclude that either all three have similar prioritization according to the participants or that the relative costs and labor involved would be similar. All three would require an assessment of the current situation (such as current housing policies, current conditions of parks, and current zoning requirements) with additional steps based on those results.

V. Rankings Based on Participants Professions

Participants were chosen based on their experience both with the aging population as well as their familiarity with the built environment, specifically as it impacts users ability to successfully and independently age within their communities. Contributors were assigned one of the following three categories, academic, design, or practitioner. While many participants fit more than one category, for data analysis purposes, I chose one category per

participant; either the category that best defines their overall approach (if a known contact) or their most recent endeavor .The highest ranked indicators based on the three professional categories can be seen in Table 5.1.

Table 5.1: Highest Ranked Indicators Based on Professional Categories

Top Ranked Indicator	Academic (n=10)	Design (n=6)	Practitioner (n=14)
Ensure existing parks are age-friendly, such as handrails, accessible benches, shade, lighting & clear markers	**90%**		
Ensure safe & connected pedestrian pathways throughout the city	**90%**		
Funding for public & private transportation services: prioritize affordability & range of transportation options		**100%**	
Ensure safe & connected pedestrian pathways throughout the city		**100%**	
Assess: review policies regarding citywide codes & policies in relation to senior housing & assess barriers to increase supply			**85%**
Maintain a clearinghouse (phone & online) for aging related info			**69%**
Assess the transportation infrastructure available in all areas of the city			**69%**

Academics

Of the two highest-ranked indicators among academics, both involve ensuring conditions are age-friendly: that existing parks are age-friendly and that pedestrian pathways are safe and connected. Presumably both would also require an assessment of current conditions, which would inform the improvements. While ensuring parks are age-friendly is more specific and targeted in focus, ensuring safe and connected pathways is much broader and impacts areas beyond just the pathways themselves. Both address the idea of accessibility and fall prevention in public spaces.

Design

Ensuring safe and connected pedestrian pathways as a priority can be seen as encompassing both design and implementation elements; as urban design and architecture often considers the efficient movement of people through spaces, implementation follows through on effective and thoughtful design. Similarly, this is a basic and critical, yet often overlooked, priority that directly impacts the accessibility in many other ways, including neighborhood walkability, access to green spaces, public spaces, and ability to access transportation. This indicator was also a priority among academics, the only shared indicator across the three professions.

Transportation has consistently been one of the highest-ranked indicators (in addition to housing) throughout both surveys yet there must be another perspective as practitioners chose a very different transportation priority. Perhaps the difference is the mention of public and private funding options. Considering that the majority of design and implementation professionals would work for nonprofits, for profit companies, or their own firms[1], these are the professionals most often responsible for the design and/or the implementation of public and private partnerships (PPP). As cities increasingly turn towards PPP's as ways to cut costs and manage projects efficiently using innovative approaches, it would make sense that a PPP approach to transportation would be either more familiar or preferred within this category. Finally, this indicator also represents a broader approach to addressing transportation issues, which may be more of a compelling perspective for these professionals.

It was quite surprising that the above two indicators, funding for public and private transportation services and ensuring safe and connected pedestrian pathways, were chosen

[1] As is the case for nine out of ten of participants in round one, six out of six of round two participants.

by all design professionals surveyed. The next highest were three indicators that had 71% of design ranking as a priority, and three indicators received 0% of ranking as a priority (see Appendix G). The design professionals' rankings were the most consistent out of the three categories; however, whether these results are due to the professionals' career perspective or due to a small sample size is unclear.

Practitioner

Of the top indicators for practitioners, two out of three involve an assessment of current practices, such as housing policy in relation to increasing senior housing or citywide transportation infrastructure, which is interesting considering that neither the design or academic participants prioritized assessments. For a practitioner, determining a new strategies next steps depends on an understanding of the current situation and by this ranking, practitioners show that they feel more confident about next steps when the current situation is understood (Lindblom, 1959).

Not surprisingly, housing and transportation are two of the three top indicators, although arguably maintaining a clearinghouse for aging related info would also include both housing and transportation related information. From the comments, survey rounds, and various categories of prioritization, it has become evident that these are the two top priorities for professionals working with seniors on a day-to-day basis. Whether housing and transportation represents priorities in all urban city centers or are more heavily weighted in San Francisco and Los Angeles (the two dominant cities in this survey) is hard to determine.

Finally, all three indicators would most likely be managed by three different agencies, assigned according to established agenda of city agencies. Which brings up an interesting challenge; incorporating aging concerns within the context of the departments' work will most likely not be consistent as it may not be seen as pressing as other challenges each respective department faces and will be implemented based on the department's discretion. For example, a city's aging services department would most likely manage the clearinghouse of aging related information: age-friendly indicators would clearly serve the department's mission and impact the primary population of that department as well. However, assessing a city's transportation infrastructure for an aging population would be managed by a transportation department, which serves a broad population base and is most likely juggling a variety of priorities, of which may or may not have previously included age-friendliness. Therefore, important considerations include ensuring agency buy-in, incorporating aspects into existing frameworks wherever possible, and providing support on what defines age-friendliness within the context of the department's work. Additionally, for both housing funding and transportation systems, cities are often juggling multiple levels of government (local, state, and federal) with regards to oversight, funding, and regulations, all of which can create a coordination challenge.

POLICY RECOMMENDATIONS

Based on the lessons learned from the literature review, the current age-friendly frameworks, and the analysis of the survey rankings, I conclude that developing a general age-friendly city index is both possible and an important next step. Secondly, that such an index can be adapted based on the particular context of each city.

Creation of an "Age-Friendly Index"

After reviewing the broad range of existing indicators, the goal of this research is to assess the feasibility of a reliable, measurable, and research based Age-Friendly Index. A universal tool, the index would serve as the preliminary guide for a city to both assess and ensure their communities are age-friendly.

Incorporating a built environment perspective, it should contain a minimum amount of indicators (say 30-40) to ensure that: implementation is manageable; measurements and evaluations are conducted regularly and consistently with minimal burden on the city; to allow for a greater sense of accomplishment initially; and to encourage cities to adapt and grow the Age-Friendly Index to best meet their needs. The index should be organized based on a general range of categories typical to cities and managing departments, such as housing, transportation, infrastructure, green spaces, policy, emergency management, and safety. This would allow a city to delegate and collaborate with relevant departments. While managed by a city department, it would require partnership with local community-based organizations, such as a university, neighborhood association, or nonprofit. Age-friendly planning can be seen as an enhancement of existing city planning efforts, such as combining indicators with existing efforts like the Complete Streets Initiatives. An Age-Friendly Index based on best practices, research, and successful implementation would provide communities with an accessible and tangible model to replicate.

The Age-Friendly index would serve cities with the following goals: 1) to assess the

condition of the built environment; 2) allow for city-to-city comparisons; 3) provide tangible, actionable, and research based options for improvements; and 4) ensures that the indicators are both measureable and replicable. The index would serve as a tool for cities with an aging population to engage in the discussion of measuring and improving the age-friendliness of their city. Even cities with a limited institutional capacity can use this index as a launching pad to create effective indicators and tangible results.

The Age-Friendly Index: a flexible tool for cities

It may seem contradictory to advocate both for a generalist approach to age-friendly planning with the index, followed by an approach that advocates for plans that prioritize and incorporate the unique challenges and strengths of each city. Nonetheless, I believe that both recommendations serve complimentary goals, specifically by: securing resident buy-in, community stewardship, and the long-term sustainability of an age-friendly city.

First, a general Age-Friendly Index would serve as a starting point in creating an age-friendly community, as well as a way to broadly compare various cities. Intended to be a manageable and concrete approach for city agencies, long-term sustainability requires that residents feel ownership around this work, as opposed to a mandate handed down from above.

Therefore, creating a collaborative local task-force in order to evaluate and implement a site specific approach empowers a community to directly address local concerns, ensures that improvements are site specific, and through the process, creates and maintains community based stewardship, resulting in increased community investment in both the index and the

outcomes. No general template can be an effective tool for all cities. Rather the best role it can serve is as a guide, allowing each city to expand the index to best suit their unique circumstances, priorities, and capacities.

Secondly, encouraging a localized expansion of an Age-Friendly Index would encourage: place-based solutions, providing cities the opportunity to share and learn from distinct approaches; encourage competition among cities; as a marketing strategy for tourists and residents; and would encourage the participation of local businesses and private interests in becoming age-friendly.

Furthermore, an accessible and efficient Age-Friendly Index would also serve as an empowering community based planning tool. Indicators have the potential to inform, educate, and embolden various city actors in creating a more age-friendly city. This work could inform new and existing city plans among a broad range of city departments. It would also allow residents to use the results for advocacy on behalf of funding, support, and direct improvements. Community groups could use the indicators as opportunities for creating more inclusive neighborhoods, either through placemaking, community block grants, or other locally based opportunities.

In summary, future efforts within the field of age-friendly planning should be focused on creating a general index that incorporates research based indicators that are measurable, actionable, sensitive to change while also allowing for city specific approaches.

CONCLUSION

Research Summary

Conducted over the course of six months, the goal of this research was to determine which age-friendly indicators were the most effective at improving the lives of urban seniors. I was motivated by an interest in whether a general age-friendly guide and ranking could be available to cities, such as a walkability score. Focusing specifically on the built environment and its impact on an aging population, 88 indicators were drawn from an extensive literature review, existing age-friendly city plans, and age-friendly guides. Indicators were chosen based on the following requirements: addressed public space and/or the built environment, would be implemented and managed by a city agency, and were included in an existing plan or recommended in current research. Compiled into a two-part survey based on the Delphi method, aging experts went through an iterative process of prioritizing, ranking, and ultimately eliminating indicators based on a variety of criteria.

Survey participants are professionals familiar with both with the aging population and the built environment. Using a snowball technique both with colleagues and new contacts, 34 agreed to participate in the first survey and 30 for the second survey. Participants represent a broad range of professions and were classified within three categories: academics (professors or researchers affiliated with a research institute), practitioners (primary role involves developing, executing, and managing direct services), and designers (from a design related background, develops and/or implements physical structures).

The first survey categorized the 88 indicators within seven general categories, including city

policy and planning, citywide assessments, city managed programs, outdoor public spaces, safety, emergency preparedness, and active transportation infrastructure. The highest ranked 38 indicators comprised the second survey and were sorted within four categories, including: city policy, city implementation and infrastructure, serving the greatest number of seniors, and city-to-city comparison.

Results: Age-Friendly Indicators

The following list represents the highest ranked indicators that were considered the most effective at ensuring an age-friendly city. These indicators were considered measurable, actionable, and sensitive to change, and most appropriate for the following categories:

- **City Policy:** review policies regarding city wide codes and policies in relation to senior housing to assess barriers to increase supply; increase involvement of elders in community-based decision making; assess the transportation infrastructure available in all areas of the city; and funding for public and private transportation options: prioritizing affordability and range of options.
- **City Implementation and Infrastructure:** ensuring that sidewalks are accessible, level, and pedestrians are prioritized; improve street lighting, street connectivity, and street conditions; extend pedestrian crossing time and include countdown clocks; offer loan assistance for home repairs and modifications; implement flexible zoning for mixed-use and intergenerational uses; and train first responders about specific needs for older adults.
- **Greatest Number of Seniors Served:** offer home safety modifications and fall prevention services; assess availability of alternative transportation options; increase involvement of elders in community-based decision making; and maintain a clearinghouse (phone and online) for aging related info.
- **City-to-City Comparisons:** ensure that existing parks are age-friendly, such as

handrails, accessible benches, shade, lighting, and clear markers; funding for public and private transportation options, prioritizing affordability and range of options; ensure safe and connected pedestrian pathways throughout the city; assess the transportation infrastructure available in all areas of the city; review policies regarding city wide codes and policies in relation to senior housing to assess barriers to increase supply; and implement flexible zoning for mixed-use and intergenerational uses.

Results were also analyzed based on the professional categories of survey participants, with the following indicators as the highest ranked per category:

- **Academics:** ensure existing parks are age-friendly, such as handrails, accessible benches, shade, lighting, and clear markers, and ensure safe and connected pedestrian pathways throughout the city.
- **Designers:** funding for public and private transportation options, prioritizing affordability and range of options, and ensure safe and connected pedestrian pathways throughout the city.
- **Practitioners:** review policies regarding city wide codes and policies in relation to senior housing to assess barriers to increase supply; maintain a clearinghouse (phone and online) for aging related info; and assess the transportation infrastructure available in all areas of the city.

An Age-Friendly City Benefits Everyone

Additionally, the language should be inclusive and focus on these improvements as being beneficial for all ages, not just senior. There are two compelling reasons for this: first, there is a danger of this type of planning to become patronizing, especially as the field of aging moves more towards a social justice framework with a language based in rights, empowerment, and autonomy. Secondly, it is much more difficult to build the momentum required to develop and implement an age-friendly plan within a city if it is seen as being

beneficial to only one portion of the population. An example of this is Kansas City's "Communities for All Ages": through various community stakeholder meetings, the earliest organizers realized that focusing on seniors did not engage residents. Once they changed the language to be inclusive rather than focused on one demographic, the community engagement greatly increased, and they've been able to greatly expand their original program to include other communities.

Implications

There is a dearth of research on the relationship between aging and the urban built environment. Additionally, until now there has been no study of existing age-friendly city plans, either with the goal of creating a general guide or evaluating the effectiveness of established indicators. The list above is an informative first step, but is a drop in the bucket when considering the big picture: American cities are aging rapidly yet little is being done to prepare for this coming wave.

Aging Cities

I recently had a conversation with two urban planners working for the City of Los Angeles Planning Department (LAPD). I asked if the department had ever considered doing an assessment or incorporating age-friendly indicators within their work. Not only had they never considered the issue, the planners were unclear of what implementation would look like, why it would be a priority, and expressed concern that age-friendly approach to planning would be too limited of a focus. When asked what it would take for LAPD to consider incorporating age-friendly best practices within citywide planning efforts, they

responded with pressure outside of the agency, such as advocacy groups, an elected official, or the Mayor's office. While this was an informal conversation and not necessarily a reflection of the entire department, it serves as a compelling example of the challenges in advocating for and creating age-friendly cities.

Even with a large, forward thinking city-planning department with a significant senior population, the concept or necessity of an age-friendly city was unfamiliar to both professionals. This disconnect reflects a larger issue; aging and the impact it will have on cities is not widely recognized, anticipated, or incorporated within city planning efforts. For reasons such as this, establishing best practices is a critical next step within this field.

Next Steps

In many ways, this research has revealed more questions than it answers. The study's resulting list of indicators is only a starting point, which has revealed many opportunities for continued research, including: the process by which cities initiate and implement age-friendly plans, the short and long term success of established indicators, the prioritization of age-friendly indicators by seniors, the economic benefits associated with being age-friendly, what defines success for an age-friendly plan, and the challenges associated with implementing an age-friendly framework. Indeed, it is an exciting time to be interested in aging and planning. With the baby boomers just past the retirement threshold, the need for this type of work will only increase. Similar to the walkability index, an Age-Friendly Index can serve the role of raising awareness and advocacy around a city designed for all ages, from babies to centenarians.

APPENDIX

A. Complete List of Indicators (67)

B. Survey Participant Details (71)

C. First Survey Template (73)

D. Comments, First Survey (90)

E. Highest Ranked Indicators, Survey #1 (97)

F. Survey #2 Template (103)

G. Highest Ranked Indicators, Survey #2 (114)

APPENDIX A: list of original indicators

I. CITY POLICY AND PLANNING

All the following categories focus specifically on land use zoning or policy based tools that cities can use to assess and improve their age friendliness.

1. Residential Zoning

1. Encourage co-housing and other housing models
2. Allow granny cottages and accessory dwelling units
3. Encourage smaller and compact development
4. Increase residential density
5. Provide technical assistance for developing (senior) housing

2. Zoning Changes

1. Discourage development of seniors only communities
2. Implement flexible zoning to allow for mixed-use and intergenerational uses
3. Remove definitions of "family" from zoning codes

3. Policy

1. Ensure events are accessible
2. "one time and occasional events"
3. Prevent effects of gentrification on older adults
4. Target section 8 housing vouchers to seniors at risk for eviction
5. Tax abatements for developments that is accessible or near transit
6. "exceeds minimum accessibility requirements"

II. CITY WIDE ASSESSMENTS

Assessments can be useful tools for cities to determine the strengths and challenges with regards to specific aspects of developing an aging-friendly framework

1. **Ensuring Access to Amenities:** Identify locations that lack adequate services and infrastructure that specifically impact seniors

2. **Affordable Housing:** Review policies regarding city wide codes and policies* in relation to senior housing, and assess barriers to increasing supply
   around fair housing, green building, urban renewal, visit-ability, affordability

3. **Transit Accessibility:** Assess that transportation infrastructure available in all areas of the city

4. **Walkability:** Assess street connectivity within neighborhoods, including facilities and spaces frequented by seniors and recommend site specific improvements

III. CITY MANAGED PROGRAMS

1. Resource Assistance

1. Create a directory of age-friendly resources and activities
2. Maintain a clearinghouse (phone and online) for aging related information
3. Manage a website of community-wide opportunities for older adults

2. Educational Programs

1. A guide to planners and developers regarding best practices for age-friendly housing
2. Develop best practices for improving accommodations for people with disabilities at all public gatherings
3. Launch a city-wide age-friendly educational campaign
4. Eviction prevention services and education for seniors
5. Provide education about all transportation options

3. Neighborhood Focused Programs

1. Initiate demonstration projects and design competitions to encourage innovative approaches to housing shared and intergenerational
2. Integrate hospitals and long term care settings into neighborhoods
3. Encourage intergenerational interactions, programs and spaces

4. Home Modification Programs

1. Offer home safety modifications and fall prevention checklist for seniors
2. Offer loan assistance to seniors for home repairs and rehabilitation
3. Provide home energy efficiency modifications
4. Collaborate with health agencies on improving delivery of services

5. Community Engagement Programs

1. Develop community based outreach to check in on seniors
2. Older adults consult on specific plans, policies, and codes, to ensure an aging perspective
3. Increase involvement of older adults into civic affairs and policy making

IV. OUTDOOR PUBLIC SPACES:

1. Increase access to and use of green space

1. Include accessible public restrooms in parks and public areas
2. Build pocket parks
3. Ensure accessibility **to** green spaces within the city, such as bus routes, accessible sidewalks and pathways
4. Ensure age friendly parks including handrails, lighting, accessible benches, shade, and clear markers

2. Promote opportunities for social interaction

1. Libraries as age friendly hubs
2. Neighborhood schools utilized as multi-functional facilities

3. Benches in front of parks, bus stops, stores, churches, libraries, post office, and restaurants
4. Place permanent interactive equipment in public spaces (such as chess table)
5. Seating at natural activity nodes*
6. with arm rests/back rests (leave out b/c include in recommendation?)

3. Gardening

1. Develop opportunities for gardening
2. Create and disseminate guidelines for accessible raised garden beds
3. Increase access to farmers markets and community gardens
4. Develop senior designed park or garden within location of senior centers or housing

V. SAFETY

1. Ensure gathering spaces and parks offer clear visual viewing
2. Increase safety on public transit by training drivers, local policy, and information for seniors
3. Increase street lighting, street connectivity, and improve sidewalk conditions
4. Redesign intersections at key locations to improve pedestrian safety
5. Support and increase community policing

VI. EMERGENCY PREPAREDNESS

1. Training

1. Engage elders in emergency preparedness training
2. Disaster planning for all providers of essential services
3. Train first responders about specific needs of older adults
4. Increase disaster planning for senior housing providers

2. Process

1. Ensure existing plan includes assisting vulnerable populations in emergencies
2. Develop and foster community resilience to respond to emergencies
3. Support community providers to expand reach during disasters
4. Consult on elders and providers about public shelters
5. Establish disaster pharmacy law to require distribution of medication during state of emergency

VII. ACTIVE TRANSPORTATION INFASTRUCTURE

1. Walking

1. Separate pedestrians from vehicles, such as traffic islands, wider sidewalks, and bike lanes
2. Ensure safe walking routes to common destinations
3. Extend pedestrian crossing times and include countdown clocks
4. Restricting vehicle access in high pedestrian areas

2. Conditions of Public Streets and Sidewalks

i. Policy Strategies

1. Implement traffic calming measures
2. Ensure that active transportation (biking, walking, public transit, etc.) is available in all areas of the city
3. Ensure that sidewalk meets width for wheelchair, pavement is smooth, level, non-slip, and that pedestrians are prioritized

ii. Design Strategies

1. Benches in bus shelters and at all public transit locations
2. Make sure that sidewalks connect to common spaces used by seniors
3. Ensure that street signage is present and legible
4. Implement car-free zones

3. Driving

1. Advance warning of crossroads, well marked streets, condition of roads, and traffic calming measures
2. Driver safety courses for seniors
3. Address the needs and capacities of older drivers

4. Public Transportation

i. Funding Priorities

1. Prioritize funding for accessible and integrated transportation system
2. Prioritize affordability of options
3. Prioritize reliability & frequency

ii. Accessibility of Transit

1. Age-friendly vehicles, priority seating on buses
2. Bus shelters, lights, accessible location and conditions of bus stops
3. Large writing on all bus signs
4. Relocating bus stops to far side of intersection

5. Alternative Transportation

1. Foster the use and availability of alternative transportation options, such as van transport systems
2. Policies that create incentives for private resources to support specialized transit
3. Taxi voucher program for seniors unable to use public transit

First	Last	Title	Organization	Academic	Practitioner	Design/ Implementation	Location	Survey #1	Survey #2	Notes
Gretchen	**Addi**	Architect	IDEO			x	San Francisco, CA	x	x	referred, specializes in aging in place design
Rick	**Appleby**	Program Support Analyst	SF Dept of Aging and Adult Services		x		San Francisco, CA	x	x	former colleague
Rachel	**Caraviello**	Director of Programs	Affordable Living for the Aging		x		Los Angeles, CA	x	x	colleague, design & gerontology degrees
Alan	**DeLaTorre**	Research Associate	Institute on Aging, Portland State University	x			Portland, OR	x	x	Worked on Portland's age-friendly plan
Daphne	**Dennis**	Social Services Manager	City of West Hollywood		x		Los Angeles, CA	x	x	referred
David	**Erby**	Research Professor	University of Michigan	x			Ann Arbor, MI	x	x	referred, transportation planner with focus on aging population
Leo	**Estrada**	Professor, Urban Planning Dept	UCLA	x			Los Angeles, CA	x	x	thesis advisor, specializes in the aging population among other topics
Ruth	**Finkelstein**	Associate Director	Columbia Aging Center, previously	x			New York, NY	x	NO	also serves as Associate Director of the International Longevity Center, Columbia Aging Center
Valerie	**Fletcher**	Executive Director	Institute for Human Centered Design			x	Boston, MA	x	NO	referred, universal design
Rachel	**Fontenot**	former VP/Owner	Ageless Construction			x	San Francisco, CA	x	x	former colleague, previously owned construction firm that provided aging in place modifications
Mary	**Gerber**	Aging in Place Installer	Consultant		x		San Francisco, CA	x	x	former colleague
Lindsay	**Goldman**	Project Director	New York Academy of Medicine			x	New York, NY	x	NO	Project Manager for NYC's age-friendly plan
Jen	**Gray**	Program Director	Rebuilding Together SF		x		San Francisco, CA	x	x	former coworker
Anne	**Hinton**	Executive Director	SF Dept of Aging and Adult Services		x		San Francisco, CA	x	x	Overseeing SF's age-friendly plan
Marie	**Jobling**	Executive Director	Community Living Campaign		x		San Francisco, CA	x	x	former colleague
Rose	**Johns**	planning analyst	SF Dept of Public Health		x		San Francisco, CA	x	x	referred, currently managing SF's age-friendly plan
Jacqueline	**Jones**	Executive Director	NEXT Village		x		San Francisco, CA	x	NO	referred
Claudia	**Kawas**	Professor, School of Medicine	University of CA, Irvine	x			Irvine, CA	x	x	Conducts research on aging populations, interview on CBS
Laura	**Keyes**	former Community Development Manager	Atlanta Regional Commission	x			Dallas, TX	x	x	previously worked on Atlanta's age-friendly plan; currently getting a PhD and that focusing on age-friendly communities
David	**Knego**	Executive Director	Curry Senior Center		x		San Francisco, CA	x	x	former colleague
Kathryn	**Lawler**	Aging and Health Resources Manager	Atlanta Regional Commission		x		Atlanta, GA	x	x	previously worked on Atlanta's age-friendly plan
Lene	**Levy-Storm**	Associate Professor	UCLA	x			Los Angeles, CA	x	x	specializes in aging populations, co-wrote a book about age-friendly parks
Shireen	**McSpadden**	Deputy Director	Services		x		San Francisco, CA			former colleague
Patricia	**Moore**	President	Moore Design Associates			x	Phoenix, AZ	x	x	referred, specializes in aging in place design
Karen	**Nemsick**	Executive Director	Rebuilding Together SF		x		San Francisco, CA	x	x	former boss, manages aging in place modifications and repairs

John	**Pynoos**	Professor of Gerontology, Policy & Planning	University of Southern California	x			Los Angeles, CA	x	NO	focus on housing and an aging population, coined term "Peter Pan housing"
Anne	**Romero**	Project Manager	SF Mayor's Office of Housing			x	San Francisco, CA	x	x	former colleague, Planning graduate degree and part of aging SF working group
Marisol	**Sanchez**	Resident Services Coordinator	West Hollywood Community Housing Corporation		x		West Hollywood, CA	x	someone else, toss out data	referred
Elizabeth	**Savage**	Director	Human Services and Rent Stablization, City of West Hollywood		x		West Hollywood, CA	x	x	currently developing an aging in place housing strategy for the City of West Hollywood
Kat	**Sawyer**	Founder	Groundswell Rainscapes			x	San Francisco, CA	x	x	former coworker, background in architecture and trades, managed aging in place program
Susanne	**Stadler**	Principal	Stadler Architecture			x	San Francisco, CA			referred, specializes in aging in place design
John	**Stevens**	former owner	John Stevens Construction Company			x	Martinez, CA	x	NO	former colleague, did aging in place as a General Contractor and then managing a nonprofit
Fernando	**Torres-Gil**	Professor, Social Welfare and Public Policy	UCLA	x			Los Angeles, CA	x	conse	thesis advisor, specializes in the aging population
Marty	**Wachs**	Professor Emeritus, Urban Planning Dept	UCLA	x			Los Angeles, CA	x	x	transportation planner with research experience planning for an aging population
Elaine	**Wethington**	Professor, College of Human Ecology	Cornell University	x			Ithaca, NY	x	x	co-writer of "Residential Choices and Experiences of Older Adults: Pathways to Life Quality"
Orlanda	**Wilson**	General Contractor/Owner	That's Women's Work Construction Firm			x	San Francisco, CA	x	x	former coworker, general contractor and experienced with aging in place modifications
Brad	**Winick**	Consultant and Adjunct Professor	Univeristy of Illinois, Chicago; Age-Friendly Chicago Advisory Board	x			Chicago, IL	x	x	aging planner, professor and currently working on board of Chicago's age-friendly plan
				12	**15**	**10**				

APPENDIX C: First Survey Template, Google Forms

AGING & THE BUILT ENVIRONMENT

This study seeks to assess current age-friendly indicators, focusing specifically on the US built environment*, using two primary sources: various age-friendly plans and established aging in place research. In the first round of surveys, the goal is to prioritize previously established indicators based on effectiveness, feasibility, and importance. While there are a lot of great models being developed, either they are very broad (WHO Aging Cities Plan) or very city specific (NYC's Age-Friendly Report); this research aims to develop built environment indicators that are in between, and are both measurable and specific, yet can be applied to multiple cities creating a consistent way to determine and compare different cities "age-ability".

*Built Environment refers to human made public structures and infrastructures, excluding private (houses, businesses) structures and social services (direct service, care giving, etc.)

* Required

1. **First, Last Name** *

2. **A little about yourself!**
   How many years have you worked with the aging population and/or in your field?

3. **How old are you?** *
   Check all that apply.
   - [ ] 18-24 yrs old
   - [ ] 25-34 yrs old
   - [ ] 35-44 yrs old
   - [ ] 45-54 yrs old
   - [ ] 55-64 yrs old
   - [ ] 65-74 yrs old
   - [ ] 75-84 yrs old
   - [ ] 85 yrs or older

A General Framework for American Cities

When considering the following priorities, focus on selecting criteria that would be most beneficial in developing a consistent framework for American cities in general.

APPENDIX C: First Survey Template, Google Forms

CITY POLICY & PLANNING

4. **Residential Zoning** *

Prioritize with #1 being the highest priority, #5 the least priority. *granny cottages are smaller houses built next to or behind a house, either for income or multigenerational housing.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority	#5 Priority
Increase residential density					
Encourage co-housing & other models					
Allow granny cottages*					
Technical assistance for developing senior housing					
Encourage smaller, compact development					

5. **General Zoning** *

Prioritize with #1 being the highest priority and #3 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
Implement flexible zoning for mixed-use and inter-generational uses			
Remove definitions of "family" from zoning codes			
Discourage development of seniors only communities			

6. **Policy** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Ensure all public events are accessible				
Tax abatement for developments that are accessible or near transit				
Minimize impact of gentrification on older adults				
Target section 8 housing vouchers for seniors at risk for eviction				

APPENDIX C: First Survey Template, Google Forms

7. **Comments (optional)**

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CITY WIDE ASSESSMENTS

Assessments can be useful for cities to determine the strengths and challenges with regards to specific aspects of developing an aging-friendly framework.

8. **Prioritize with #1 being the highest priority and #4 being the least priority.** *

Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
TRANSIT ACCESSIBILITY: Assess the transportation infrastructure available in all areas of the city.				
ACCESS TO AMENITIES: identify locations that lack adequate services & infrastructure that specifically impacts seniors.				
WALKABILITY: Assess street connectivity within neighborhoods & recommend site specific improvements				
AFFORDABLE HOUSING: Review policies regarding city wide codes & policies in relation to senior housing & assess barriers to increase supply.				

9. **Comments (Optional)**

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CITY MANAGED PROGRAMS

APPENDIX C: First Survey Template, Google Forms

10. **Resource Assistance** *

Prioritize with #1 being the highest priority and #3 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
Maintain a clearinghouse (phone & online) for aging related info			

APPENDIX C: First Survey Template, Google Forms

	#1 Priority	#2 Priority	#3 Priority
Manage a website of opportunities for older adults			
Create a directory of age-friendly resources			

11. **Educational Programs** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Launch a city-wide age-friendly campaign				
Eviction prevention services and education for seniors				
A guide regarding development best practices for age-friendly housing				
Best Practices for improving accessibility at all public gatherings				

12. **Neighborhood Focused Programs** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Integrate hospitals & long term care settings into neighborhoods.				
Initiate demonstration projects & design competitions to encourage innovative approaches to housing.				
Collaborate with agencies on improving delivery of services				
Encourage intergenerational interactions, programs, & spaces.				

13. **Home Modification Programs** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
Offer loan assistance for home repairs & modifications			
Offer home safety modifications & fall prevention services			
Provide home energy efficiency modifications			

APPENDIX C: First Survey Template, Google Forms

14. **Community Engagement Programs** *

Prioritize with #1 being the highest priority and #3 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
Consult older adults on specific plans, policies, and codes to ensure an aging perspective			
Develop community based outreach to support seniors aging in place			
Increase involvement of elders in community based decision making			

15. **Comments (optional)**

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OUTDOOR PUBLIC SPACES

16. **Increase access to and use of green space** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Ensure existing parks are age friendly, such as handrails, accessible benches, shade, lighting & clear markers				
Ensure accessibility to green spaces, such as bus routes, accessible sidewalks & pathways				
Include accessible public restrooms in parks & public areas				
Build pocket parks with seating				

APPENDIX C: First Survey Template, Google Forms

17. **Promote opportunities for social interaction** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Place permanent interactive				

APPENDIX C: First Survey Template, Google Forms

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
equipment in public spaces (such as chess table).				
Libraries as age friendly hubs.	◯	◯	◯	◯
Benches in front of parks, bus stops, stores, libraries, churches, & restaurants.	◯	◯	◯	◯
Neighborhood schools utilized as multi-functional facilities.	◯	◯	◯	◯

18. **Gardening** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Increase access to farmers markets & community gardens	◯	◯	◯	◯
Create & disseminate guidelines for accessible garden beds	◯	◯	◯	◯
Design new parks & gardens specifically with aging and accessibility in mind	◯	◯	◯	◯
Develop opportunities for food gardening	◯	◯	◯	◯

19. **Comments (optional)**

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SAFETY

APPENDIX C: First Survey Template, Google Forms

20. *

Prioritize with #1 being the highest priority and #5 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority	#5 Priority
Increase safety on public transit & at bus stops					
Ensure gathering spaces & parks offer clear visual sight lines					

APPENDIX C: First Survey Template, Google Forms

	#1 Priority	#2 Priority	#3 Priority	#4 Priority	#5 Priority
Redesign intersections at key locations to improve pedestrian safety					
Support community policing					
Improve street lighting, connectivity and conditions					

21. **Comments (optional)**

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EMERGENCY PREPAREDNESS

22. **Training** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Train 1st responders about specific needs for older adults				
Increase disaster planning for senior housing providers				
Providers of essential services to seniors should have a disaster plan				
Engage elders in emergency preparedness training				

APPENDIX C: First Survey Template, Google Forms

23. **Process** *

Prioritize with #1 being the highest and #5 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority	#5 Priority
Consult with elders & providers about public shelters					
Coordinate disaster plan with pharmacies to allow medication distribution					

APPENDIX C: First Survey Template, Google Forms

	#1 Priority	#2 Priority	#3 Priority	#4 Priority	#5 Priority
during state of emergency					
Support community providers to expand reach during disasters					
Develop & foster community resilience to respond to emergencies					
Ensure existing plan includes assisting vulnerable populations in emergencies					

24. **Comments (optional)**

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TRANSPORTATION

25. **Walking** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Restrict vehicle access in high pedestrian areas				
Separate pedestrians from vehicles				
Ensure safe & connected pedestrian pathways throughout the city				
Extend pedestrians crossing times & include countdown clocks				

APPENDIX C: First Survey Template, Google Forms

26. **Conditions of Public Streets & Sidewalks: Implementation Strategies** *

Prioritize with #1 being the highest priority and #3 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
Implement traffic calming measures.			

APPENDIX C: First Survey Template, Google Forms

	#1 Priority	#2 Priority	#3 Priority
Ensure that active transportation is available in all areas of the city			
Ensure that sidewalk is accessible, level and pedestrians are prioritized			

27. **Conditions of Public Streets & Sidewalks: Design Strategies** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Benches in bus shelters & at all public transit locations				
Implement car-free zones				
Make sure that sidewalks connect to common spaces				
Ensure that street signage is present & legible				

28. **Driving** *

Prioritize with #1 being the highest priority and #5 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority	#5 Priority
Services to counsel older adults on when to stop driving					
Ensure accessible parking spaces at new & existing facilities					
Advance warning of crossroads, well marked streets & traffic calming measures					
Driver safety courses for seniors					
Provide seniors education about all transportation options					

APPENDIX C: First Survey Template, Google Forms

29. **Comments (optional)**

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PUBLIC TRANSPORTATION

30. **Funding Priorities** *

Prioritize with #1 being the highest priority and #3 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
FUNDING FOR PUBLIC & PRIVATE SERVICES: prioritize affordability and range of transportation options			
FUNDING FOR INFRASTRUCTURE: improve accessibility & integration of current public & private options			
FUNDING FOR BUSES: improve reliability & frequency of city bus system			

31. **Accessiblity of Transit** *

Prioritize with #1 being the highest priority and #4 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority	#4 Priority
Large writing on all bus signs				
Relocating bus stops to far side of intersection				
Bus shelters, lights, accessible location & conditions of bus stops				
Age-friendly vehicles, priority seating on buses				

APPENDIX C: First Survey Template, Google Forms

32. **Alternative Transportation** *

Prioritize with #1 being the highest priority and #3 being the least priority.
Mark only one oval per row.

	#1 Priority	#2 Priority	#3 Priority
Incentivize private resources to			

APPENDIX C: First Survey Template, Google Forms

	#1 Priority	#2 Priority	#3 Priority
support specialized transit			
Taxi voucher program for seniors unable to use public transit			
Availability of alternative transportation options			

33. **Comments (optional)**

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THANK YOU!

34. **Do you believe that there is an important consideration or potential indicator left out? Please share!**
(with regards to the built environment specifically)

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Google Forms

APPENDIX D: Comments, first survey

Compiled Feb 21st, 2015
(Only changes made were minor spelling errors)

COMMENTS: CITY POLICY & PLANNING

I am not a proponent of utilizing the term "Granny" for cottages on primary residential properties. I find the name pejorative and limiting for other family members who could benefit from the opportunity to live, privately, in proximity to family.

Likewise, I encourage that in asking for an individual's numeric marker, the question be "What is your age?"

Responding is tricky because San Francisco is so built out already, is so densely built already, has more people sharing/ living in apartments because of the tech boom, has huge eviction rates when property owners want rent controlled apartments back on the market, etc. Also, so many buildings are designated as 'historical', so modifications and improvements are tough to do, and the building permit process has a huge backlog because of all of the building and modifications going on around town.

Gentrification is the most urgent issue...

I do not have a background in Urban Planning, so I'm somewhat unfamiliar with some of the concepts and do not fully understand your instructions. What does it mean to have "... a consistent framework for American cities in general." I've answered the best of my knowledge.

Unlike in the post WW II economy, there will not be a boom of three-tiered housing for elders who are aging. The City of West Hollywood is developing an Aging in Place strategic plan to identify ways in which to cope with the increase in aging community members, programs for them, and ways to help them make good decisions in the later years, whether to stay strong in their homes or to move to a setting where they can receive care. Unfortunately, there are less government resources and a high level of senior hardship/cost of housing. One solution, although not embraced enough, is co-housing or shared housing. For that, however, the current infrastructure needs to be habitable and accessible. That is less expensive for governments, but has a lot of complexity, too, to accomplish with private business (landlords).

Minimize impact of gentrification is quite broad and, I would think, includes targeted housing assistance. Also, while Section 8 may be the only option in many places, it also seems to be of somewhat limited use. My impression is that there are a variety of housing situations that may require more flexible spending/assistance to stay in the home -- for example, senior may need only a few months of assistance (e.g., to offset an expensive medical bill). In a city like SF, we also see a fair amount of assistance with behavioral issues

that can impact housing and lead to eviction (e.g., bed bug removal, coaching to reduce hoarding/cluttering).

I'm responding to specific conditions in San Francisco rather than larger areas such as the Bay Area or other metro areas.

"smaller, compact development" seems to refer to housing units (smaller) and planning (compact) which are two units. My answer was based on the unit of measurement being the home unit, not the neighborhood/region unit.

Cities should incentivize accessible/universally designed/adapted private residences through discounted permit fees or property tax brakes.

COMMENTS: SAFETY SECTION

I would differentiate between safety and security. They are not the same thing.

How options are implemented makes a huge difference in how I would prioritize an option. For example, redesigning intersections to improve ped safety would be high priority but there is not much that can be done at most intersections without the great expenditure.

I think all of these are priority 1 or 2

What is safety? Safety from falling? Safety from being mugged? Safety from knowing where to go? These are too many things mixed together.

COMMENTS: HOME MODIFICATION SECTION

The Home Mod Section instructions has an error: #4 should be #3.

I found most of the items listed to the left in most of the questions to be rather meaningless platitudes and I had difficulty ordering my priorities. My ordering is not very strong in terms of my preferences and I do not in the end feel that if I listed one item second and another third that the order is very important or significant. Many of the items seemed too similar to me to differentiate in a meaningful manner.

I really feel like my reliability in answering these questions is compromised as the response categories read like a list of age-friendly best practices. Also, my knowledge of local actions may lead to biased responses for the national perspective that was requested.

There is a tremendous need to define 'age friendly'. Mostly this is seen as the same as accessible but this is just the baseline.

SF has huge problems with age friendly businesses, like coffee shops, etc. They are full to the brim with tourists, are loud, many are old and not accessible.

Again, my ordering was forced by the exercise and I have no basis by which to truly prioritize these statements.

In an urban environment, pocket parks are a terrible idea. That land use takes away from affordable housing opportunities - and housing is a key to stability, not a park.

Aging is a broad experience physically and mentally and much of what should be prioritized depends on the physical health of individuals. Creating a livable environment in the public realm should focus on universal design rather than design specific to an aging population.

It is vitally important that all people consider emergency preparedness as a process of empowerment rather than thinking of disasters as an individual experience to be feared. Neighborhoods are being offered a unique opportunity to function as a collective cohesive unit and that includes utilizing the strong connections that seniors have in their long time neighborhoods.

Pay attention to not separate families and keep elders connected to their family or advocates in case of disaster.

fyi- as you know, much of SF is build on steep, steep hills. Seniors often have to walk down very steep hills to access public transportation, and then walk back up those hills with their groceries, etc.

I think you meant "counsel" rather than "council."

I'd be interested in the statistics of dangerous driving on older drivers versus distracted drivers. There is a huge emphasis on elders stopping driving but there is far more room for improvement on everyone driving safely and great public transportation options for all. I think there is a lot of ageism at work in prompting older drivers to be fearful of driving when what they need to fear is bad distracted drivers of all ages.

Who are seniors? How do you define this group?

Many seniors are fearful of any attention spent on THEIR OWN driving...as all are fearful that driving privileges will be taken away. So safety should begin with talking to them about other forms of transportation so they give up driving on their own and don't view loss-of-driving as a take-away.

COMMENTS: ABOUT PRIORITIES

Public Busses are now free to seniors in SF (there's a financial eligibility test, but it's very generous)

All are important so it was hard to rank.

It is difficult to assign priority scores when in some cases I think things have equal priority and in other cases the items are not mutually exclusive. For example, in the citywide assessments section transit accessibility and access to amenities have significant overlap.

I ranked affordable housing #4 because I don't think city codes create the most significant barrier to adding to the supply of affordable housing. I think policies could continue to incentivize affordable housing, but the best use of org/people's time is advocate for greater financial resources. People will build and developers will work around codes as long as there is financial incentive/feasibility.

My responses feel misleading as even the #4 priority is an important overall priority in planning for aging populations.

These are all important--probably equally important.

Amenities need a definition, this is very cultural.

Walkability and transit centers are major issues in the quality of life and isolation of seniors.

COMMENTS: ALTERNATIVE TRANSIT

We have taxi vouchers and as of march 1, public transit will be free to seniors whose income is under $66,k (i think)

The issue is not to identify the program as a priority but to improve the quality of the delivery of the services. LA does have a taxi voucher program, for example, and it is inefficient, unfriendly, and ineffective.

Terms like making available alternatives are too vague for this to be a meaningful survey. Incentivizing private resources is a meaningless phrase.

I have heard (anecdotally) in San Francisco that there is a need for more wheel chair equipped vans and taxi drivers who are willing to help collapse wheelchairs

Most seniors that I know have huge issues with transportation including cost, timeliness and accessibility. They do not feel safe getting on or off of public busses and feel likely to have a bad fall if they try to utilize them.

Boundaries between public and private transport are blurring. Ride sharing services have to be involved in this survey.

COMMENTS: FINAL COMMENT BOX
Do you believe that there is an important consideration or potential indicator left out? Please share!

Education for younger people on the needs of people in late life.

Senior & disabled transportation need enhancement- as in more vehicles, more drivers, and a relaxing of the rules. For example, paratransit may take you to the store, but they won't carry your groceries up the three flights of stairs to your apartment. gov. transit for seniors should also include hiring a rider to help with those tasks while the driver stays on the bus. I would drill down a bit more when it comes to the tasks that are needed when dealing with senior

transit. SF has horrible problems with crime on the buses. Many, many people get robbed (of their cellphones, their purse, etc) WHILE they are riding. a bus approaches a stop and a thief will grab a persons phone right out of their hand and jump off the bus. so, safety WHILE riding is just as important as safety while waiting for the bus.

I found most of the questions to be too vague, to platitudinous to believe that my answers could possibly contribute in any way to useful policymaking.

steps without rails
pedestrian crossings that light up
wheel chair "parking" in grocery stores that have mobile shopping carts
heavy entry doors to stores
unlighted streets
high curbs around parking lots

For public monies to be used to rehab existing housing, there would need to be income verification - and that is unlikely. When residential properties turnover, there should be a "Silver" review that the building is upgraded at least to some extent with ramps and handrails.

Nothing i can think of left out; just the obvs qualifying info on my perspective-- a) i'm considering san francisco or another densely populated urban environment in my answers. b) i'm generally a cynic. c) i'm generally practical vs theoretical.

It is very difficult to answer these questions in the abstract for a "generic" city. A key aspect is missing in the methodology of this survey -- which is that the recommendations be based on an assessment of existing assets and challenges in the specific place -- of the specific older people. Its arbitrary prioritizing abstract options irrespective of situation. In NYC -- parking at facilities means little when most people don't have cars. In a very sprawling city where land has so little value that parking lots are huge and there's no public transit, this might be important. Also, in many domains, there are broad, vague options that are inclusive of other, more specific options. And lastly, there is the prioritization of the possible -- many times, one step is possible while another is completely out of reach. Does that mean the possible should be ignored in favor of the optimal?

Less isolation, more intergenerational approaches to housing and community and retail
how to leverage older population in support of community needs - givers, not just takers

Financial education on home maintenance, loans, and determining when (physically or financially) it's time to move out of the large family home and into senior housing.

I didn't know what "locate bus stops at far end of intersection" meant or why it is important. Maybe reword to make this more clear. Otherwise, the indicators for the built environment look great!

range of housing options in all communities
Building new homes so a person/family can live on first floor
provide incentives for universal design

connectivity should be included as in Broad band tech

Nothing left out. Great survey. Overall my responses we based on: that there are existing systems that include accommodations made in every day life for both youth and disabled people - which seniors can benefit from. My suggestions are about, in my view, what seniors-only can benefit from. Thank you for doing this and good luck!

I think someone has to step and prioritize broadband internet access and learning opportunities for all, including seniors and adults with disabilities as a way for people to stay connected despite current physical barriers and future disabilities of our folks.

APPENDIX E: Highest ranked indicators, first survey

RANKINGS: Items were ranked by 34 participants, with 1 being the highest priority and 3-5 being the lower priority (depending on the number of items per category). Items with the lowest score indicate the higher priorities.

I. CITY POLICY & PLANNING

Table 1.1: Residential Zoning

Encourage co-housing & other models	Technical assistance for developing senior housing	Encourage smaller, compact development	Allow granny* cottages	Increase residential density
2.35	**2.85**	**3.09**	**3.18**	**3.53**

**granny cottages, also known as accessory dwelling units refers to small additional houses on property. Term was developed specifically in Australia as a housing option for senior family members.*

Table 1.2: General Zoning

Implement flexible zoning for mixed-use & intergenerational uses	Remove definitions of "family" from zoning codes	Discourage development of seniors only communities
1.15	**2.12**	**2.74**

Table 1.3: Policy

Target Section 8 housing vouchers for seniors at risk for eviction	Minimize impact of gentrification on older adults	Ensure all public events are accessible	Tax abatement for developments that are accessible or near transit
2.15	**2.15**	**2.85**	**2.85**

II. CITY WIDE ASSESSMENTS

Table 2.1: Assessments

AFFORDABLE HOUSING: Review policies regarding city wide codes & policies in relation to senior housing & assess barriers to increase supply	**TRANSIT ACCESSIBLITY:** Assess the transportation infrastructure available in all areas of the city	**ACCESS TO AMENITIES:** Identify locations that lack adequate services & infrastructure that specifically impacts seniors	**WALKABILITY:** Assess street connectivity within neighborhoods & recommend site specific improvements
1.85	**2.41**	**2.79**	**2.94**

III. CITY MANAGED PROGRAMS

Table 3.1: Resource Assistance

Maintain a clearinghouse (phone & online) for aging related info	Create a directory of age-friendly resources	Manage a website of opportunities for older adults
1.71	**1.91**	**2.38**

Table 3.2: Educational Programs

Launch a city-wide age-friendly campaign	Eviction prevention services & education for seniors	A guide regarding development best practices for age-friendly housing	Best practices for improving accessibility at all public gatherings
2.03	**2.32**	**2.41**	**3.24**

Table 3.3: Neighborhood Focused Programs

Collaborate with agencies on improving delivery of service	Encourage intergenerational interactions, programs, & spaces	Integrate hospitals & long term care settings into neighborhoods	Initiate demonstration projects & design competitions to encourage innovative approaches to housing
2.26	**2.47**	**2.47**	**2.79**

Table 3.4: Home Modification Programs

Offer home safety modifications & fall prevention services	Offer loan assistance for home repairs & modifications	Provide home energy efficiency modifications
1.29	**1.94**	**2.76**

Table 3.5: Community Engagement Programs

Increase involvement of elders in community based decision making	Develop community based outreach to support seniors aging in place	Consult older adults on specific plans, policies, and codes to ensure an aging perspective
1.88	**2.06**	**2.06**

IV. OUTDOOR PUBLIC SPACES

Table 4.1: Increase access to and use of green space

Ensure existing parks are age friendly, such	Ensure accessibility to green spaces, such	Include accessible public restrooms in	Build pocket parks with seating

as handrails, accessible benches, shade, lighting, & clear markers	as bus routes, accessible sidewalks, & pathways	parks & public areas	
1.76	**2.12**	**2.50**	**3.62**

Table 4.2: Promote opportunities for social interaction

Benches in front of parks, bus stops, stores, libraries, churches, & restaurants	Libraries as age friendly hubs	Neighborhood schools utilized as multi-functional facilities	Place permanent interactive equipment in public spaces (such as chess table)
1.85	**1.97**	**2.82**	**3.35**

Table 4.3: Gardening

Design new parks & gardens specifically with aging & accessibility in mind	Increase access to farmers markets & community gardens	Develop opportunities for food gardening	Create & disseminate guidelines for accessible garden beds
1.88	**1.97**	**2.76**	**3.38**

V. Safety

Table 5.1: Safety

Increase safety on public transit & at bus stops	Improve street lighting, connectivity, & conditions	Redesign intersections at key locations to improve pedestrian safety	Ensure gathering spaces & parks offer clear visual sight lines	Support community policing
2.41	**2.47**	**2.50**	**3.79**	**3.82**

VI. Emergency Preparedness

Table 6.1: Processes

Ensure existing plan includes assisting vulnerable populations in emergencies	Develop & foster community resilience to respond to emergencies	Support community providers to expand reach during disasters	Coordinate disaster plan with pharmacies to allow medication	Consult with elders & providers about public shelters

			distribution during state of emergency	
1.94	**2.85**	**3.15**	**3.26**	**3.79**

Table 6.2: Trainings

Engage elders in emergency preparedness training	Train 1st responders about specific needs for older adults	Providers of essential services to seniors should have a disaster plan	Increase disaster planning for senior housing providers
2.26	**2.26**	**2.50**	**2.97**

VII. Transportation

Table 7.1: Walkability

Ensure safe & connected pedestrian pathways throughout the city	Extend pedestrian crossing times & include countdown clocks	Separate pedestrians from vehicles	Restrict vehicle access in high pedestrian areas
1.71	**1.97**	**2.91**	**3.41**

Table 7.2: Conditions of Public Streets & Sidewalks: Implementation Strategies

Ensure that sidewalk is accessible, level, and pedestrians are prioritized	Ensure that active transportation is available in all areas of the city	Implement traffic calming measures
1.21	**2.03**	**2.76**

Table 7.3: Conditions of Public Streets & Sidewalks: Design Strategies

Benches in bus shelters & at all public transit locations	Make sure that sidewalks connect to common spaces	Ensure that street signage is present & legible	Implement car-free zones
1.76	**2.03**	**2.68**	**3.53**

Table 7.4: Driving

Provide seniors education about all transportation options	Advance warning of crossroads, well market streets, & traffic calming measures	Ensure accessible parking spaces at new & existing facilities	Driver safety courses for seniors	Services to counsel older adults on when to stop driving
2.32	**2.82**	**3.00**	**3.26**	**3.59**

VIII. Public Transportation

Table 8.1: Funding Priorities

FUNDING FOR PUBLIC & PRIVATE SERVICES: Prioritize affordability & range of transportation options	**FUNDING FOR INFRASTRUCTURE:** Improve accessibility & integration of current public & private options	**FUNDING FOR BUSES:** Improve reliability & frequency of city bus system
1.82	**2.09**	**2.09**

Table 8.2: Accessibility of Transit

Age-friendly vehicles, priority seating on buses	Bus shelters, lights, accessible location & conditions of bus stops	Large writing on all bus signs	Relocating bus stops to far side of intersection
1.68	**1.76**	**3.21**	**3.35**

Table 8.3: Alternative Transportation

Availability of alternative transportation options	Taxi voucher program for seniors unable to use public transit	Incentivize private resources to support specialized transit
1.65	**2.09**	**2.26**

Built Environment Indicators - Final Survey

Prioritizing City Implementation & Infrastructure

Page description:

1. What is your name? *

VALIDATION **Min. answers = 5** *(if answered)* Max. answers = 8 *(if answered)*

2. **Prioritizing City Implementation & Infrastructure**

Which indicators are the most effective for a city to implement and monitor, based on the following criteria: that the indicators are **measurable, sensitive to change, and actionable.**

From the following, please pick no more than 8. *

- ☐ Target section 8 housing vouchers for seniors at risk for eviction
- ☐ Train 1st responders about specific needs for older adults
- ☐ Ensure age-friendly vehicles, priority seating on buses
- ☐ Implement advance warning of crossroads, well marked streets & traffic calming measures
- ☐ Integrate long term care settings into neighborhoods
- ☐ Design new parks and gardens specifically with aging and accessibility in mind
- ☐ Install benches in front of parks, bus stops, stores, libraries, churches, & restaurants
- ☐ Improve street lighting, street connectivity & street conditions
- ☐ Implement flexible zoning for mixed-use and intergenerational uses
- ☐ Ensure that sidewalk is accessible, level and pedestrians are prioritized
- ☐ Offer loan assistance for home repairs and modifications
- ☐ Provide technical assistance for developing senior housing
- ☐ Ensure libraries are age friendly hubs
- ☐ Extend pedestrians crossing time & include countdown clocks
- ☐ Maintain a clearinghouse (phone & online) for aging related info
- ☐ Remove definitions of "family" from zoning codes
- ☐ Increase safety on public transit & at bus stops
- ☐ Other

Prioritizing the First 5 Projects - City Implementation & Infrastructure

Page description:

VALIDATION Max. answers = 5 *(if answered)*

PIPING Piped Values From Question 2. (**Prioritizing City Implementation & Infrastructure** Which indicators are the most effective for a city to implement and monitor, based on the following criteria: that the indicators are **measurable, sensitive to change, and actionable.**

From the following, please pick no more than 8.)

3. You selected the following indicators; if you had the resources (funding & staffing) to immediately address **5** of these topics, which ones would you tackle first?

Please only pick 5 topics max.

*

Resource Allocation - City Implementation & Infrastructure

Page description:

PIPING Piped From Question 3. (You selected the following indicators; if you had the resources (funding & staffing) to immediately address **5** of these topics, which ones would you tackle first?

Please only pick 5 topics max.

)

Prioritizing Resource Allocation

You selected the following indicators; please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics.

Please allocate percentages based on the perception of costs and resources they would require (recognizing that this is just a generalization).

Total values should equal 100%.

Prioritizing City Policy

Page description:

APPENDIX F: Second Survey Template, Survey Gizmo form

VALIDATION **Min. answers = 5** *(if answered)* Max. answers = 7 *(if answered)*

4. **Prioritizing City Policy**

Which indicators are the most effective policy priorities for a city to focus on, based on the following criteria: that the indicators are **measurable, sensitive to change, and actionable.**

From the following, please pick no more than 7. *

- ☐ Minimize impact of gentrification on older adults
- ☐ Ensure existing parks are age friendly, such as handrails, accessible benches, shade, lighting & clear markers
- ☐ Encourage co-housing & other models
- ☐ Ensure existing plan includes assisting vulnerable populations in emergencies
- ☐ Ensure accessibility to green spaces, such as bus routes, accessible sidewalks, and pathways
- ☐ Collaborate with agencies on improving delivery of services
- ☐ Funding for public & private services: prioritize affordability and range of transportation options
- ☐ Create a guide regarding development best practices for age-friendly housing
- ☐ Ensure that sidewalks connect to common spaces
- ☐ Develop & foster community resilience to respond to unexpected events
- ☐ ASSESSMENT: Assess the transportation infrastructure available in all areas of the city
- ☐ ASSESSMENT: Review policies regarding city wide codes & policies in relation to senior housing & assess barriers to increase supply
- ☐ Increase involvement of elders in community-based decision-making
- ☐ Launch a city-wide age-friendly campaign
- ☐ Other

Prioritizing the First 5 Projects - City Policy

Page description:

VALIDATION Max. answers = 5 *(if answered)*

PIPING Piped Values From Question 4. (**Prioritizing City Policy**

Which indicators are the most effective policy priorities for a city to focus on, based on the following criteria: that the indicators are **measurable, sensitive to change, and actionable.**

From the following, please pick no more than 7.)

5. You selected the following indicators; if you had the resources (funding & staffing) to immediately address **5** of these topics, which ones would you tackle first?

Please only pick 5 topics max.

*

Resource Allocation - City Policy

Page description:

PIPING Piped From Question 5. (You selected the following indicators; if you had the resources (funding & staffing) to immediately address **5** of these topics, which ones would you tackle first?

Please only pick 5 topics max.

)

Prioritizing Resource Allocation

You selected the following indicators; please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics.

Please allocate percentages based on the perception of costs and resources they would require (recognizing that this is just a generalization).

Total values should equal 100%.

Prioritizing the Most Residents Served

Page description:

VALIDATION **Min. answers = 5** *(if answered)* Max. answers = 5 *(if answered)*

6. **Serve the most amount of seniors and/or the most equitable distribution:** which of these indicators would impact the greatest amount of seniors and/or residents.

Prioritizing based on serving the most people possible:
Please choose from the following, specifically keeping in mind the indicators that will serve the greatest number of people, based on equity and overall number served.

Please pick no more than 5. *

- ☐ Increase involvement of elders in community-based decision-making
- ☐ Minimize impact of gentrification on older adults
- ☐ Benches in front of parks, bus stops, stores, libraries, churches, & restaurants
- ☐ Maintain a clearinghouse (phone & online) for aging related info
- ☐ Engage elders in emergency preparedness training
- ☐ Availability of alternative transportation options
- ☐ Libraries as age friendly hubs
- ☐ Provide seniors education about all transportation options
- ☐ Offer home safety modifications and fall prevention services
- ☐ Increase access to farmers markets & community gardens
- ☐ Develop & foster community resilience to respond to emergencies
- ☐ Other

Resource Allocation - Most Residents Served

Page description:

PIPING Piped From Question 6. (**Serve the most amount of seniors and/or the most equitable distribution:** which of these indicators would impact the greatest amount of seniors and/or residents.

Prioritizing based on serving the most people possible:
Please choose from the following, specifically keeping in mind the indicators that will serve the greatest number of people, based on equity and overall number served.

Please pick no more than 5.)
Prioritizing Resource Allocation
You selected the following indicators; please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics.

Please allocate percentages based on the perception of costs and resources they would require (recognizing that this is just a generalization).

Total values should equal 100%.

Prioritizing City to City Comparisons

Page description:

VALIDATION **Min. answers = 5** *(if answered)* Max. answers = 7 *(if answered)*

7. **Comparing the Age-Friendliness of Various Cities:** Please choose which of these indicators would be most useful in comparing the age-friendliness of various American cities to each other, keeping in mind the following criteria: indicators that are replicable, measurable, data is easy to collect, and sensitive to change.

Prioritizing City to City Comparisons

Please choose of the following indicators that would be best served comparing the age-friendliness of various American cities. Keep in mind the following criteria: replicability, measurability, sensitive to change.

Please pick no more than 7.

*

- ☐ Review policies regarding citywide codes & policies in relation to senior housing & assess barriers to increase supply
- ☐ Maintain a clearinghouse (phone & online) for aging related info
- ☐ Install bus shelters, lights, accessible location & conditions of bus stops
- ☐ Implement flexible zoning for mixed-use and intergenerational uses
- ☐ Improve street lighting, street connectivity & street conditions
- ☐ ASSESSMENT: Review policies regarding city wide codes & policies in relation to senior housing & assess barriers to increase supply
- ☐ Design new parks and gardens specifically with aging and accessibility in mind
- ☐ Ensure accessibility to green spaces, such as bus routes, accessible sidewalks, and pathways
- ☐ Funding for public & private services: prioritize affordability and range of transportation options
- ☐ Increase access to farmers markets & community gardens
- ☐ Ensure safe & connected pedestrian pathways throughout the city
- ☐ Ensure existing parks are age friendly, such as handrails, accessible benches, shade, lighting & clear markers
- ☐ ASSESSMENT: Assess the transportation infrastructure available in all areas of the city
- ☐ Other

Prioritizing the First 5 Projects - City to City Comparisons

Page description:

VALIDATION Max. answers = 5 *(if answered)*

PIPING Piped Values From Question 7. (**Comparing the Age-Friendliness of Various Cities:** Please choose which of these indicators would be most useful in comparing the age-friendliness of various American cities to each other, keeping in mind the following criteria: indicators that are replicable, measurable, data is easy to collect, and sensitive to change.

Prioritizing City to City Comparisons
Please choose of the following indicators that would be best served comparing the age-friendliness of various American cities. Keep in mind the following criteria: replicability, measurability, sensitive to change.

Please pick no more than 7.
)
8. You selected the following indicators; if you had the resources (funding & staffing) to immediately address **5** of these topics, which ones would you tackle first?

Please only pick 5 topics max.
*

Resource Allocation - City to City Comparisons

Page description:

PIPING Piped From Question 8. (You selected the following indicators; if you had the resources (funding & staffing) to immediately address **5** of these topics, which ones would you tackle first?

Please only pick 5 topics max.
)
Prioritizing Resource Allocation
You selected the following indicators; please allocate an estimated amount of resources you would prioritize towards implementing and managing the following indicators, assuming you have 100% of resources (staffing and money) to dedicate to these following topics.

Please allocate percentages based on the perception of costs and resources they would require (recognizing that this is just a generalization).

Total values should equal 100%.

Thank You!

Thank you for taking this survey! Your expertise and opinions are greatly appreciated! I will follow up with you by May with the results.

APPENDIX G: Highest ranked indicators, second survey

Table 1.1: Highest ranking City Policy indicators

CITY POLICY: Highest Ranked Indicators	
Assessment: Review policies regarding city wide codes & policies in relation to senior housing to assess barriers to increase supply	**67%**
Increase involvement of elders in community-based decision-making	**67%**
Assessment: assess the transportation infrastructure available in all areas of the city	**60%**
Funding for public & private services: prioritize affordability & range of transportation options	**57%**

Table 1.2: Lowest ranking City Policy indicators

CITY POLICY: Lowest Ranked Indicators	
Develop & foster community resilience to respond to unexpected events	**30%**
Ensure accessibility to green spaces, such as bus routes, accessible sidewalks, and pathways	**20%**

Table 1.3: Additional City Policy indicators (offered as "other")

CITY POLICY: Additional Suggestions from Participants	
Training for staff on the needs of older adults	3%*
Availability of community service centers or activities at local library, etc.	3%

*constitutes 1 person out of 30

Table 1.4: Estimate Resource Allocation (out of 100% of resources): in order of most participant votes

CITY POLICY: Estimated Resource Allocation per indicator	Average	Median
Assessment: Review policies regarding city wide codes & policies in relation to senior housing to assess barriers to increase supply	**19%**	**20%**
Increase involvement of elders in community-based decision-making	**16%**	**10%**
Encourage co-housing & other models	**22%**	**20%**
Assessment: assess the transportation infrastructure available in all areas of the city	**21%**	**20%**
Collaborate with agencies on improving delivery of services	**26%**	**30%**

Table 2.1: Highest ranking City Implementation indicators, according to survey participants

CITY IMPLEMENTATION: Highest Ranking Indicators	
Ensure that sidewalk is accessible, level, and pedestrians are prioritized	**67%**
Improve street lighting, street connectivity & street conditions	**60%**
Extend pedestrians crossing time and include countdown clocks	**60%**
Offer loan assistance for home repairs & modifications	**60%**
Implement flexible zoning for mixed-use & intergenerational uses	**57%**

Train 1st responders about specific needs for older adults	**57%**

Table 2.2: Lowest ranking City Policy indicators

CITY IMPLEMENTATION: Lowest Ranked Indicators	
Provide technical assistance for developing senior housing	**23%**
Ensure libraries are age-friendly hubs	**20%**

Table 2.3: Additional City Implementation indicators (offered as "other")

CITY IMPLEMENTATION: Additional Suggestions from Participants
Provide moderate levels of funding for home repairs & modifications (no repayment required)

Table 2.4: Estimate Resource Allocation (out of 100% of resources): in order of most participant votes

CITY IMPLEMENTATION: Estimated Resource Allocation per indicator	**Average**	**Median**
Improve street lighting, street connectivity & street conditions	**25%**	**20%**
Offer loan assistance for home repairs & modifications	**29%**	**20%**
Train 1st responders about specific needs for older adults	**21%**	**10%**
Integrate long term care settings into neighborhoods	**33%**	**30%**

Table 3.1: Highest ranking indicators that serve the greatest number of seniors, according to survey participants

GREATEST NO. SERVED: Highest Ranking Indicators	
Offer home safety modifications & fall prevention services	**73%**
Availability of alternative transportation options	**67%**
Increase involvement of elders in community-based decision making	**60%**
Maintain a clearinghouse (phone & online) for aging related info	**57%**

Table 3.2: Lowest ranking Greatest No. of Seniors Served indicators

GREATEST NO. OF SENIORS SERVED: Lowest Ranked Indicators	
Minimize impact of gentrification on older adults	**30%**
Engage elders in emergency preparedness training	**30%**
Increase access to farmers markets & community gardens	**27%**
Libraries as age-friendly hubs	**27%**

Table 3.3: Additional Greatest No. of Seniors Served indicators (offered as "other")

GREATEST NO. OF SENIORS SERVED: Additional Suggestions from Participants	
A range of affordable & appropriate housing options	3%*

*constitutes 1 person out of 30

Table 3.4: Estimate Resource Allocation (out of 100% of resources): in order of most participant votes

GREATEST NO. SERVED: Estimated Resource Allocation per indicator	Average	Median
Offer home safety modifications & fall prevention services	**29%**	**30%**
Availability of alternative transportation options	**26%**	**30%**
Increase involvement of elders in community-based decision making	**20%**	**20%**
Maintain a clearinghouse (phone & online) for aging related info	**17%**	**15%**

Table 4.1: Highest ranking City-to-City Comparison indicators, according to survey participants

CITY-TO-CITY COMPARISON: Highest Ranked Indicators	
Ensure existing parks are age friendly, such as handrails, accessible benches, shade, lighting, & clear markers	**67%**
Funding for public & private services: prioritize affordability & range of transportation options	**63%**
Ensure safe & connected pedestrian pathways throughout the city	**63%**
Assessment: Assess the transportation infrastructure available in all areas of the city	**63%**
Review policies regarding citywide codes & policies in relation to senior housing & assess barriers to increase supply	**60%**
Implement flexible zoning for mixed-use & intergenerational uses	**60%**

Table 4.2: Lowest ranking City-to-City Comparison indicators

CITY-TO-CITY COMPARISON: Lowest Ranked Indicators	
Design new parks & gardens specifically with aging & accessibility in mind	**27%**
Increase access to farmers markets & community gardens	**7%**

Table 4.3: Additional City-to-City Comparison indicators (offered as "other")

CITY-TO-CITY COMPARISON: Additional Suggestions from Participants	
More universal access to free and low cost internet	3%*
Training of staff on needs of older adults	3%

*constitutes 1 person out of 30

Table 4.4: Estimate Resource Allocation (out of 100% of resources): in order of most participant votes

CITY-TO-CITY COMPARISON: Estimated Resource Allocation per indicator	Average	Median
Funding for public & private services: prioritize affordability & range of transportation options	**31%**	**30%**
Review policies regarding citywide codes & policies in relation to senior housing & assess barriers to increase supply	**20%**	**20%**
Ensure existing parks are age friendly, such as handrails, accessible benches, shade, lighting, & clear markers	**19%**	**20%**

Assessment: Assess the transportation infrastructure available in all areas of the city	**14%**	**10%**
Implement flexible zoning for mixed-use and intergenerational uses	**24%**	**20%**

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