

Active Living for Older Adults:

Management Strategies for Healthy and Livable Communities

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Active living is a way of life that integrates physical activity into daily routines. This guide, which is intended for local government managers and other local government leaders, offers strategies for designing communities that support “active aging—active living for older adults. In addition to encouraging physical activity, promoting active aging creates opportunities for older adults to remain active participants in civic life. Active aging can benefit both individuals and the entire community. For individuals, active living can improve health and overall vitality, increase independence, and foster greater social interaction. For local governments, promoting active living can make neighborhoods more livable for all ages, reduce costs associated with social services and health care, and yield a range of social and economic benefits by extending and expanding older adults’ contributions to civic life. Promoting active aging depends on a community’s ability to provide safe and walkable streets, a range of transportation options, and land use patterns that permit easy access to services and amenities. This guide explains the concept of active living and describes general strategies for beginning a local active aging initiative and specific strategies in key issues areas, including land use planning, streetscape design, transportation, housing, and promoting awareness.



A downloadable version of this report is available at bookstore.icma.org, item no. E-43140.

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This series of reports—supported by the Robert Wood Johnson Foundation as part of the Leadership for Active Living national initiative—highlights strategies for promoting active living and fostering healthy and livable communities. A free, downloadable version of this report is available online at bookstore.icma.org, item number 43140. For more information about ICMA's active living work or to request additional copies of this report, please email ICMA staff at activeliving@icma.org.

About Leadership for Active Living

A national initiative of the Robert Wood Johnson Foundation, Leadership for Active Living supports government leaders as they create and promote policies, programs and places to enable active living. The initiative supports community design that enables citizens to integrate physical activity into their daily routines to improve the health, well-being and vitality of communities. Leadership for Active Living partner organizations seek to:

- Educate leaders about the impact of community design on health.
- Provide information about policies and programs that support active living.
- Create tools and materials to help leaders implement active living strategies.
- Facilitate cooperative efforts between state and local leaders.
- Build a network to provide peer support for leaders working on active living issues.
- Help leaders generate community support for active living.

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I. Introduction: Active Living in an Aging Society

The baby boomer generation is aging. By the year 2030, the number of adults over the age of 65 will double in size to comprise approximately 20 percent of the United States population. Older adults over the age of 85 are the fastest growing segment of the older adult population and will comprise 5 percent of the U.S. population.¹

Collectively, aging baby boomers will be healthier, wealthier, and better educated—as well as more geographically, socioeconomically, and racially and ethnically diverse—than any preceding generation of older adults. Their decisions and preferences regarding the services they expect, where they choose to live, and the lifestyles they prefer to lead have already shaped the built and social landscape. As their preferences change in response to their evolving needs, they will continue to shape communities in these ways.

As this large cohort approaches retirement age, it will place a new array of expectations and challenges on the local governments that serve it. How and where older adults choose to age will impact communities at the neighborhood, municipal, and regional levels. Whereas many may opt to remain in their current homes or to relocate locally or as they age, others may choose to move to other communities, both near and far. These decisions will result in changes to the built environment and to service provision, political priorities, and economic strategies. Local governments, meanwhile, will need to assess the extent to which they are equipped to ensure the quality of life—and the choices—that the next generation of older adults will expect.

In addition, more so than any generation before them, aging baby boomers will want to remain active—both physically active and active in community life.² A community's ability to fulfill these ambitions will rely in large part on its ability to provide safe and walkable streets, a range of transportation options, and easy access to services and amenities, all of which will enable older adults to remain in their homes if they so choose. As older adults comprise an increasing proportion of the population, promoting “active living”—a way of life that integrates physical activity into daily routines—will become a significant political priority as well as a necessity to ensure a high quality of life.

By planning and designing communities in ways that allow older adults to lead active lifestyles, local governments can benefit both individuals and the entire community. For individuals, active living can improve health and overall vitality, increase independence, and foster greater social

interaction. For local governments, promoting active living can make neighborhoods more livable for all ages, reduce costs associated with social services and health care, and yield a range of social and economic benefits by extending and expanding older adults' contributions to civic life.

Ultimately, a focus on active living will help redefine what it means to retire and grow old. Besides regarding aging as simply a social services issue, communities now have an opportunity to strategically approach aging as a resource issue—that is, to face the challenge of allocating resources to ensure a high quality of life while also valuing older adults as resources themselves.

Purpose of this Guide

This guide, which is intended for local government managers and other local government leaders, offers strategies for designing communities that support “active aging”—regular physical activity and opportunities for older adults that will enable them to remain active participants in community life. This guide reflects a growing national focus on active living and builds on the recognition that:

- Regular physical activity can improve the health and vitality of an aging population
- The most important desire of older adults is to remain independent, and physical activity is a key driver of elder independence
- An active aging population may require less in the way of care and services and is more likely to contribute time and social capital to the benefit of the community
- A focus on active aging provides an effective lens through which a local government can assess its ability to respond to the needs of its older residents and, as a result, benefit people of all ages.

More generally, this guide can serve as a resource to help local governments plan for a growing aging population, particularly in the areas of land use, community design, and other complementary programs that promote physical activity. It also can help local governments identify ways to integrate aging considerations into policies and programs that benefit all generations.

Section II of this guide explains the concept of active living and its benefits to both individuals and communities. Section III describes first steps that a local government can take when developing policies and programs to promote active aging, and Section IV describes specific policies and programs to promote active aging in a number of key issue areas.

What Local Governments Should Know About Older Adults

1. *Older adults are a heterogeneous population with diverse, changing needs and abilities.*

By definition, the term “older adults” may encompass everyone over the age of 50 (the age at which some people are eligible for senior benefits) or adults over the age of 65 (the age at which one is eligible for full retirement benefits). However, age is proving less and less useful as an indicator of elder status. When planning for the upcoming demographic shift, local governments should consider the full spectrum of health, ability, and independence that characterizes older adults—from the majority who will remain healthy, active, and engaged in community life for extended periods of time to frail elders who may be homebound and more dependent on social services and health care.

2. *Older adults can experience a range of physical and psychological changes that may affect their lifestyle choices and daily decisions.*¹

Common changes experienced as part of the aging process may include:

- Reduced muscular movement and changes in posture
- Impairment of vision (including sensitivity to glare, diminished depth perception, and difficulty perceiving colors) and hearing loss
- Loss of balance and stability
- Difficulty navigating and orienting oneself
- Impaired judgment, reaction time, and ability to interpret changes in the environment
- Sensitivity to extreme temperatures and weather conditions
- Diminished endurance
- Increased risk of chronic disease
- Increased fears related to personal safety (e.g., fear of falling, crime, etc.)
- Depression resulting from isolation, physical issues, and loss of serotonin.

An understanding of these changes is particularly important when designing the built environment for an aging population. In some areas, such as streetscape or building design (see Section IV) attention to relatively small details regarding the changing needs and abilities of older adults can have a significant impact on the choices they make as part of their daily lives.

3. *The majority of older adults want to remain in their existing home or community:*

According to an AARP survey, at least 83 percent of adults over the age of 45 will want to “age in place” as long as possible,² and the vast majority of older adults currently do live at home in the community (as opposed to an institutional setting).³ A significantly smaller number of older adults will choose to move to one of a variety of age-restricted facilities, depending on their preferred lifestyle, needs, and abilities.⁴ Consequently, the bulk of the responsibility for promoting active aging will fall on local governments rather than private entities. In both cases, local governments will need to identify where older adults will live and ensure that services, amenities, social and recreational centers, and places of worship are easily accessible to older adults.

¹ Deborah Howe et al, *Planning for an Aging Society*. American Planning Association, Planning Advisory Service Report No. 451 (Chicago: American Planning Association, 1994), 9-14.

² AARP, *These Four Walls: Americans 45+ Talk About Home and Community* (Washington, DC: AARP, 2003)

³ Patricia Baron Pollack, *Liveable Communities: An Evaluation Guide* (Washington, DC: AARP Public Policy Institute, 2000), 4.

⁴ Examples of age-restricted communities include “active adult” retirement communities, assisted living facilities, continuing care retirement facilities and nursing homes.

II. The Benefits of Active Aging

What Is Active Living?

One way to measure a community’s level of preparedness for the coming “age wave” is to assess its ability to provide for active living. Active living refers to a way of life that integrates physical activity into daily routines. Individuals may achieve this in a variety of ways: walking or bicycling for transportation, exercise, or pleasure; visiting the park; working in the yard or garden; climbing stairs instead of using the elevator; or using recreation facilities or exercising as a way to socialize. Regardless of an individual’s choice of activity, the goal of active living is to accumulate the recommended 30 minutes of physical activity each day.³ Active living has received considerable attention as a way to address the dramatic increases in obesity and overweight—as well as related health concerns, such as chronic diseases—among individuals of all ages nationwide.

Multiple factors influence the extent to which older adults engage in physical activity and the types of activities they choose. Key factors include an individual’s health and ability, available opportunities for physical activity (both available facilities and programmed activities), companionship, and environmental factors that may either foster or discourage active lifestyles. As such, physical activity may be:

- Planned or programmed (e.g., visiting fitness centers, participating in fitness classes, or doing one’s own strength or stretching exercises); or
- Utilitarian (e.g., walking to the store or working in the garden).

In addition, physical activity sometimes serves more than one purpose, as in the case of joining a walking group for both social and physical activity.

The concept of active living, which incorporates a wider range of local government approaches than traditional health or social services, emphasizes incidental over planned physical activity and therefore focuses primarily on

the environmental factors that contribute to active lifestyles. However, it is important to recognize that older adults gain physical activity through a variety of means and that not all older adults can currently undertake physical activity as part of daily routines. Communities also should explore creative ways to increase physical activity among the frail elderly.⁴

Individual and Community Benefits

Individual Benefits

Communities that support active living also support their older residents. Remaining physically active later in life can improve quality of life during the aging process in a number of ways, including:

- *Health Benefits:* Research shows that regular physical activity can improve overall health, vitality, and psychological well-being and extend the amount of time that older adults are able to lead active and independent lifestyles. In addition, physical activity reduces the risk of falls and of many chronic diseases and complications resulting from certain chronic conditions.⁵
- *Independence:* The ability to move about comfortably and safely as part of daily routines can help adults live in the way that they choose and minimize their reliance on automobiles. Walkable communities with nearby services and amenities can reduce an individual's dependence on family, friends, and other individuals for daily activities, such as buying a loaf of bread or visiting the doctor or the bank.
- *Social Interaction and Engagement in Civic Life:* Activity-friendly communities reduce social isolation by providing regular opportunities to easily leave one's home and interact with other people. Physical activity can also double as a social activity.

Community Benefits

Communities that promote active living among older adults also stand to benefit. From a local government's perspective, creating aging-friendly and activity-friendly environments can enhance the quality of life for all ages. Addressing issues specific to aging and active living can easily dovetail with other local initiatives and need not require extra resources or additional layers of bureaucracy.

Overall benefits of promoting active aging may include:

- *Livable Communities:* Planning and designing communities so that they promote active aging can result in compact, walkable, mixed-use communities with a range of housing and transportation options. In this way, an active aging community is a "smart growth" community that benefits all ages.

- *Reduced Costs:* Although no conclusive proof exists just yet, it is likely that active living can help reduce the burden on both Medicaid and providers of health care and other services when older adults remain healthy, active, and independent.
- *Economic Benefits:* Studies show that older adults have substantial positive impacts on the economy.⁶ Active older adults can help revitalize communities and business districts with the revenue they generate, their purchasing power, and the jobs generated by the goods and services they demand. For instance, the large number of retirees represents a demographic that can revive sales during the 9-to-5 shopping day, which has become increasingly obsolete with changing lifestyles.
- *Older Residents as Community Resources:* Aging baby boomers will offer a wealth of skills, experience, and wisdom that they can contribute to benefit their community. As baby boomers wish to remain active beyond retirement, they can do so through volunteering, continued employment, looking after younger generations, and other civic activities.

III. First Steps: Getting Started on Active Aging

Everyday decisions by all sectors of local government can impact the extent to which a community can support active living. Local government managers and other local leaders are uniquely positioned to support active living by coordinating decision making across departments and disciplines, by promoting awareness of active living among government officials and residents alike, and by developing and implementing community design plans, strategies, and policies that support active living.

Policies and programs related to health, housing, planning, transportation, economic development, and recreation impact residents' abilities to remain active on a regular basis. For example, opportunities for active living can be determined by the design of a neighborhood or street, traffic patterns, the routes and frequency of public transportation, housing availability, the location of services and amenities, park and recreation planning, and the programming of community activities and services.

To enable older adults to live active, independent lives and remain engaged in their communities, it is important to rethink policies in transportation, land use, and housing while focusing on how decisions at the local level affect the growing number of older residents. These policies not only

impact the health and lifestyles of older adults, but also will affect a local government's ability to provide housing and services for older adults without exhausting developable land or overextending existing infrastructure and services.

This section describes the first steps that a local government can take to develop policies and programs to promote active aging. Initial activities include analyzing current trends at the local level, identifying potential partners and opportunities for collaboration, involving older residents in the decision-making process, and developing plans to address active-aging issues. Section IV builds on these recommendations by describing specific measures for promoting active aging in several key issue areas.

A. UNDERSTAND CURRENT TRENDS

1. Conduct a community analysis

Local governments should begin with an analysis of the distribution of population, services, and amenities as these considerations pertain to older adults and active living. After this initial analysis, the community can inventory available opportunities for active living community-wide.

- Where do the highest concentrations of older residents currently reside?
- Where do residents approaching retirement age currently live?
- Where are basic services such as health care facilities, supermarkets, restaurants, post offices, and libraries located?
- Where are senior centers and other venues for senior activities located?
- Where are parks, trails, and community gardens located?
- Which areas of the community have continuous networks of sidewalks?
- Which areas of the community are well served by public transportation?
- Which areas of the community are already compact, walkable, and mixed-use in character?
- Where are vacant or underutilized parcels of land located, and how large are these parcels?

2. Map opportunities and challenges

Using a geographic information system (GIS), a community can synthesize this information on a map to assess the availability of active living opportunities for its older residents.

Based on this information, a local government can begin to identify goals and targets for promoting active aging:

- Are there concentrations of older residents—now or in the future—that are underserved by basic services and amenities, such as sidewalks and parks?
- Are there areas that—based on neighborhood character and not necessarily on the number of older residents living there—should be targeted as places for older adults to age in place and remain active?
- Are there available opportunities to link existing senior residences to services and recreation opportunities by constructing trails or walking paths?

3. Identify and predict naturally occurring retirement communities

As part of this process, local governments should try to identify naturally occurring retirement communities (NORCs). NORCs emerge when large numbers of residents choose to age in place within a distinct geographic area, and may consist of areas as large as entire neighborhoods or as small as individual apartment buildings. It is especially important for local governments to identify NORCs because these concentrations of older adults may present opportunities for economies of scale in service provision and improvements to the built environment. For this reason, NORCs constitute ideal targets for developing plans to foster physical activity, and local governments would benefit from predicting where NORCs might occur in the future.

B. IDENTIFY PARTNERS AND COORDINATE EFFORTS

Planning for aging and active living must not take place in a vacuum. Local governments should work across departmental boundaries, levels of government, and institutions to identify opportunities for aligned interests and sharing resources. Local managers and other leaders need to ensure that all departments are aware of how they can promote aging-friendly places and active living. To foster collaboration, a local government might:

1. Communicate across departments

- Incorporate aging and active living considerations into all departmental decisions (e.g., planning, community development, public works, transportation and traffic engineering, housing, parks and recreation, social services)

- Develop department-specific checklists for addressing aging and active living issues
- Convene a multidisciplinary task force of local government officials and other interested parties to examine aging issues and active living
- Build political support for active living policies and strategies by educating mayors, city council members, and managers on issues that pertain to both older adults and the general population.

2. Identify and recruit partners from outside of local government

- Work with Area Agencies on Aging, health care providers, and other social service providers on active-aging initiatives
- Partner with community organizations and places of worship
- Collaborate with the metropolitan planning organizations (MPOs) on regional strategies
- Identify state resources and initiatives
- Identify national resources
- Collaborate with business improvement districts, Main Street programs, chambers of commerce, and business associations on strategies to bring older adults to downtowns and commercial areas (e.g., streetscape improvements, elder-friendly business certification, alternative transportation options)
- Partner with foundations and universities.

C. INVOLVE OLDER RESIDENTS

Local residents constitute valuable sources of information and should not be excluded from the decision-making process. Older adults—with their personal expertise on the improvements that can impact their daily lives and the available time to offer this input—can be especially valuable resources. Older residents can help identify key priorities within a community and can call attention to nuances at a neighborhood level that a local government might otherwise overlook. In particular, neighborhood associations and senior citizen groups, when they are able to educate themselves on the issues and provide input to local governments, can be valuable assets and allies. Moreover, many retirement communities and other older adult facilities have very active resident councils that sometimes pay for their own amenities.

For these reasons, local governments should:

1. Ensure that older residents are involved early in the decision-making process:

- Convene focus groups, task forces, and public forums to gather input from local residents
- Survey older residents on active living issues
- Work with older adult “user/experts” to identify key issues.

2. Ensure that older residents and community groups have the tools and knowledge necessary to participate.

- Provide training for older residents on general community-planning issues, available opportunities to participate, and where to go with concerns about community issues

Involving Older Adults in a Community Walkability Assessment—Richmond, Virginia

Community residents can directly influence their built environment by helping gather important information and then advocating for improvements. In Richmond, Virginia, a demonstration project of the American Association of Retired Person’s (AARP) “Active for Life” Campaign (which is cosponsored by the Robert Wood Johnson Foundation) is taking place in an East End neighborhood. A team of volunteers learned to use the Walking and Bicycling Suitability Assessment (WABSA) tool and, over the course of one summer, assessed 150 square blocks surrounding the 25th Street historic commercial area.

The assessment results were initially mapped on paper using colored pencils and were later mapped using GIS computer programs. Many of the retired residents who studied the maps with Active for Life staff quickly identified patterns of poor walkability between two elementary schools and many missing sidewalks near the area’s hospital. They also identified two five-point intersections that were challenging for both young and elderly pedestrians.

Through an “Active Living Tour,” city staff, citizens, and media traveled by bus around the city to study examples of good and bad walkability, including the audited East End neighborhood. Within a few weeks of that tour, city staff had improved one of the audited sidewalks along an arterial road. Most recently, city traffic engineers have arranged for almost two dozen engineers and planners to formally discuss ways to encourage and support these types of citizen-initiated assessment projects that will help the city better understand and improve walkability in Richmond.

Source: James Emery, University of North Carolina at Chapel Hill. Personal communication.

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- Develop “community checklists” on issues such as walkability and train older residents to assess active living opportunities in their own neighborhoods
- Provide bus tours for older residents and local officials to identify both good and bad active living features and services available within a community.

3. *Make it easier for older residents to provide input.*⁷

- Schedule important meetings during daytime hours
- Hold meetings and presentations at senior centers and other convenient locations
- Explore ways that information technology can allow older residents to participate from where they live.

D. DEVELOP AND IMPLEMENT PLANS

Currently, very few communities have detailed land use plans that directly address aging issues in any depth. However, changing demographics will necessitate a closer look at the needs of a growing aging population. For this reason, some communities are now studying the implications of an aging population as part of the process of updating their comprehensive plans. Others have developed plans on specific issues related to active living and aging. For example, a

Older Adult Transportation and Mobility Plans— Maricopa County, Arizona

The Maricopa (Arizona) Association of Governments (MAG) held a public forum in August 2000 to discuss the implications of the region's growing aging population and possible proactive responses by the county. The forum resulted in the formation of an Elderly Mobility Working Group made up of members from transportation and social services agencies; retirement communities; elderly advocacy groups; faith-based organizations; health care; and city, county, and state governments. Upon the recommendation of the Working Group, MAG began the process of developing a Transportation and Mobility Plan by gathering input from boomers and seniors through a series of small focus groups and regional forums and by distributing a Senior Mobility Questionnaire.

The Working Group also studied the issues in topic-based committees and consulted with local and national experts. The plan, which considers all modes of transportation, includes an analysis of walking and bicycling among older adults. It also provides general recommendations on pedestrian improvements, land use considerations, and transit amenities, as well as strategies for public involvement, education, and awareness.

Source: Maricopa Association of Governments. *Regional Action Plan on Aging & Mobility*. Phoenix: Maricopa Association of Governments, 2002.

community might prepare a plan on transportation and mobility for older adults (see sidebar) or plans that address housing for seniors or plans for specific neighborhoods with large populations of older adults.

IV. Strategies for Promoting Active Aging: Key Issue Areas

The manner in which communities have planned the form and function of the built environment since the middle of the last century has unintentionally engineered physical activity out of daily lives. Today, the majority of communities do not provide the range of choices necessary to promote or support active living. Rapid suburbanization, dispersed development patterns, the lack of sidewalks, separation of land uses, and automobile dependency have all resulted in minimal opportunities for physical activity as part of daily routines.

As an increasing number of older adults lose the ability or confidence to drive, communities will need to consider other transportation and land use options. The need for alternatives is especially critical for the majority of older adults and aging baby boomers who currently live in the suburbs, where driving is often the only transportation option.

Consequently, promoting “active” or nonmotorized transportation, supported by accessible public transportation and a range of housing choices, will become a crucial consideration for local governments. To ensure that active transportation becomes a viable and appealing alternative, communities also will need to address the density, connectivity, and overall appeal of the built environment.

A. CREATE SAFE AND COMFORTABLE WALKING ROUTES

Typically, an active living community is one in which active, or nonmotorized, transportation (i.e., walking or bicycling) constitutes a regular transportation option.⁸ Available data on transportation and mobility patterns among older adults indicate that a very small minority of seniors currently walk on a regular basis, while a vast majority (over 89 percent) rely on the automobile—either their own or those driven by other individuals—as a regular mode of transportation.⁹

Available data suggest that walking accounts for as little as 5 percent of all trips by older adults.¹⁰ Similarly, a recent survey of 10 communities by the AdvantAge Initiative found that only one (New York City) reported that a signifi-

cant number of older adults (26 percent) choose walking as their most frequent means of transportation.¹¹ These statistics reflect a generational shift, coinciding with rapid suburbanization, in which fewer people of any age walk as part of their daily routines and fewer children walk to school.

On the other hand, research also suggests that older adults will walk more often under certain conditions. In fact, some international studies show that, in countries such as Germany and the Netherlands, walking accounts for as much as one-half of all trips by older adults.¹² Moreover, other studies provide evidence that older adults walk more frequently than younger people.¹³

Adding to the growing imperative for viable active transportation are related safety concerns. High-profile accidents involving older drivers have fueled controversy about the safety risks posed by seniors behind the wheel. Meanwhile, pedestrians over the age of 65 comprise a disproportionate percentage of pedestrian fatalities in the United States. Although they currently comprise only 13 percent of the total U.S. population, older adults account for 21 percent of the nation's pedestrian fatalities.

Clearly, in order to increase the number of walking trips in this country, local governments will need to promote land use patterns and pedestrian and transportation infrastructure that makes walking safer, more comfortable, and more practical for older adults.

When asked why they do not walk, older adults cite reasons such as:

- Distance between destinations
- Difficulty walking
- Poor sidewalks
- A lack of places to rest
- Fear of crime.¹⁴

Decisions regarding small design details can influence the choices and quality of life of older adults on a large scale. Attention to streetscape design and amenities can improve older adults' ability and desire to engage in active living and community life, while a single design barrier can compromise an otherwise elder-friendly environment. For these reasons, local governments should pay close attention to the ways in which street and streetscape design can either encourage or discourage active living.

At the same time, it is important to recognize that creating appealing, activity-friendly places for older people ultimately benefits residents of all ages. Design strategies informed by the needs and abilities of older adults can also serve as general principles of good community design. For this reason, it is important to be creative, work across multiple agencies, and identify opportunities to combine active

living design for older adults with other, independently funded local initiatives. For example, design considerations for older adults frequently overlap with those for children, so a walk-to-school initiative¹⁵ might represent an opportunity for coordination and sharing resources. (See the Dunedin, Florida example on page 10.) Moreover, departments as diverse as public works, traffic engineering, and police departments should be aware of and collaborate on specific design issues that affect older pedestrians.

To create safe and comfortable walking routes for older adults, local governments can:

1. Improve and maintain sidewalks

A first step in designing streetscapes for active aging is to identify gaps in the existing sidewalk network. These gaps may include a complete lack of sidewalks in some areas or segments of sidewalk that are uneven or poorly maintained, thus increasing the risk of falling. Ideally, sidewalks should be wide enough to accommodate canes, walkers, and wheelchairs.¹⁶ Moreover, they should be clear of obstructions from signs, trees, fire hydrants, drainage, and other street elements.

Pavement materials should be nonslip and preferably semiporous; surfaces that are smooth and nonporous can become slippery when wet. Rough or unpaved surfaces can increase the risk of falls. Although useful in defining and enhancing the character of a streetscape, brick sidewalks merit some degree of caution because they pose a tripping hazard to older pedestrians and can be more difficult to maintain.

Because of vision impairment and difficulties with depth perception, abrupt changes in grade—such as steps, curbs, or raised edges alongside grass or planters—can be difficult for older adults to see and anticipate. Moreover, although ramps at curbside and at building entrances are good for wheelchairs, they can be difficult for many older adults to negotiate and perceive if they are either too steep or poorly differentiated from surrounding pavement types. (Visual or tactile clues, such as change in paving type or texture, can help individuals to anticipate a change in grade.) Ideally, both options—ramps and stairs with railings—should be provided to accommodate a range of abilities.

Local governments should pay particular attention to maximizing older adults' sense of safety and security. Many of the design strategies described above can help address older adults' fears of falling and crossing streets. In addition, regular maintenance of sidewalks and other infrastructure is essential to preserving this sense of safety. In addition to repairing uneven or deteriorating sidewalks, reliable snow and ice removal can ensure that older adults feel comfortable leaving their homes in all weather. Some communities

Dunedin, Florida—Communities for a Lifetime Initiative

Dunedin, Florida, is a small city of 35,000 located north of Tampa on the Gulf coast of Florida. Adults over the age of 60 account for approximately 40 percent of the population, which is higher than the Florida average. With a total land area of 10 square miles, the city is small and compact, and it is common to see residents of all ages walking as part of daily routines, such as shopping. With the goal of allowing older adults to remain in their homes with dignity, security, purpose, and independence, the city embarked on a citywide effort to assess its “elder-ready” status and begin a series of related improvements. The city also recognized that such efforts could help make the city friendlier to all ages.

A framework provided by the Florida Department of Elder Affairs as part of its Communities for a Lifetime initiative served as a starting point. During an assessment process that lasted seven months, the city completed the state’s “Community Report Card for Well Elders” and then expanded on this framework on its own initiative. The assessment process considered issues such as pedestrian friendliness, traffic, security, accessibility to businesses and transportation, land use and zoning, housing, lighting, and automobile travel. The city also produced maps that showed areas of high concentrations of adults over age 55 and the locations of services (supermarkets, pharmacies, restaurants), sidewalks, hospitals, and transit routes.

The city’s mayor, who was already committed to elder issues, was very influential in initiating the program, which also benefited from the strong support of the city manager and the city commission. The city appointed a coordinator for the program and placed an existing citizens advisory committee on aging in a lead role in the assessment process. The process involved the cooperation of multiple city agencies, including Planning and Community Services, the downtown development coordinator, the City Traffic Division, the City Streets Division, Leisure Services, the County Sheriff’s Department, and the City Fire Department.

The city has completed a number of short-term improvements, including adding an extra 15 seconds to some traffic signals, installing a pedestrian signal push button, widening

some sidewalks, adding ramps to connect sidewalks, installing emergency call-boxes, improving bus shelters, and installing audible four-way signals at certain intersections. The city also passed a \$10,000 property tax exemption for low-income older adults, increased the size of some street signs, and even increased the font size on public documents.

These improvements dovetailed with other city initiatives that promote active living for older adults. For example, the city realized that an independently funded walk-to-school program presented an opportunity to share resources and align goals by combining two initiatives to improve the pedestrian environment. Moreover, during the 1990s, the city undertook an extensive downtown redevelopment campaign, which included efforts to slow traffic with traffic-calming measures such as “chicanes” and “bulb-outs” and the redevelopment of underutilized properties.

The revitalization of downtown was spurred in part by the Pinellas Trail, a highly used multi-use path on a converted rail corridor that runs through the heart of downtown and is used by many seniors. A state-of-the-art senior center, constructed mostly with state funds, now backs up to the Pinellas Trail and sponsors activities, such as a walking club, that make use of the trail. Also popular with seniors is a converted boxcar—located behind the city’s historical museum and adjacent to the Pinellas Trail—that now houses a satellite post office (many seniors complained of the heavy doors of the main post office) and a coffee shop. In addition, local church volunteers now escort older adults on errands and visits to the doctor.

Having completed its assessment for well elders, Dunedin is now working to complete an assessment for frail elders under the leadership of the city’s ADA coordinator.

Sources: Peg Cummings, Communities for a Lifetime Coordinator; Bob Ironsmith, Downtown Development Director; City of Dunedin Elder-Ready Community Report Card for Well-Elders (Initial Assessment, January 2001); *New York Times* (May 5, 2002). “Florida Redoubles Effort to Accommodate Aged”

in colder climates—for example, Holland, Michigan and Klamath Falls, Oregon—have addressed this issue by installing heated sidewalks in business districts. Moreover, many communities now have mandatory snow removal ordinances that require residents to clear walkways within a specified period of time.

2. Design safe street crossings

For sidewalks and streetscapes to be of the greatest benefit, however, they need to be connected by traffic crossings that are safe, easy to navigate, and reasonably frequent. Crosswalks can pose significant obstacles to older pedestrians, who may move at slower speeds than the average pedestrian, for whom most crossing signals are designed. Some older adults also may have difficulty seeing and judging

both traffic signals and oncoming traffic. For these reasons, minimizing crossing distances and increasing the amount of time allowed for crossing are of central importance as a community’s population ages.

In general, narrow streets and short blocks make for the best pedestrian environments, but there are a number of strategies available for retrofitting existing street design.¹⁷ Traffic-calming measures, such as “bump-outs” or curb extensions, can not only reduce the speed of traffic but also can reduce crossing distances and allow pedestrians a better view of oncoming traffic. Altering curb design at intersections to tighten the turning radii also forces turning vehicles to slow down when rounding corners. Moreover, adding refuge medians in crosswalks can provide refuge and rest for pedestrians crossing wide or busy streets.

Another effective strategy is to focus on reprogramming and replacing existing crossing signals. Most crossing signals are coordinated with the average walking speed of a younger, healthier, more mobile pedestrian. As a community's population ages, it may be necessary to coordinate signals with the average walking speed of an older pedestrian.¹⁸ In addition, some communities have implemented four-way signals at busy intersections. For example, in an area of Arlington, Virginia that has large older adult population, the county introduced leading pedestrian intervals, which give pedestrians an additional 5 seconds to cross when all traffic lights are red.¹⁹ For little or no cost, reprogramming traffic signals can significantly improve the quality of the pedestrian environment for older adults.

In addition, a number of communities are utilizing new technologies to make crossing signals safer for visually and hearing-impaired pedestrians. For example, cities such as Cambridge, Massachusetts; Yakima, Washington; and Berkeley, California, now employ audible signals to accompany flashing "WALK" signals. Other communities—such as the campus of Michigan State University in East Lansing, Michigan—are experimenting with verbal/audible signals that include recorded instructions and cautions as part of a crossing cycle. Countdown signals, which provide a visual countdown of the time remaining to cross a street, are still being studied, and some results appear to be mixed;²⁰ however, many cities nationwide are implementing these signals. Finally, microwave or infrared technology can be used to automatically activate or even extend the duration of a "WALK" cycle if a pedestrian is detected in the crosswalk. (Los Angeles has experimented with such technology.)

3. Add streetscape amenities

Even if a community is entirely walkable, older adults still may not feel comfortable moving about on foot if there are reasons to be concerned about their personal comfort or safety. For this reason, close attention to streetscape amenities and safety issues, as well as the overall visual appeal of the pedestrian environment, can improve the walking experience of older adults.

Frequent benches and resting places are essential to making older adults feel comfortable while walking and also provide good venues for meeting and socializing. Benches are most effective when they are located in shaded areas and arranged at right angles to minimize uncomfortable twisting and turning during conversations. While some communities have provided flat benches without backs and "walls" designed for sitting in public spaces, benches with backs are most appropriate for older adults.²¹

Among other considerations for creating a sense of comfort and safety, ensuring that there are accessible public restrooms available in downtown districts—especially early in the morning before other facilities open—can ease other potential sources of anxiety about being away from home. Moreover, providing public telephones can also add to an individual's sense of safety.

Signage for streets and businesses should be legible for both older drivers and pedestrians. Many communities are replacing existing street signs with larger ones that include lettering of six inches or larger. In general, signs with sufficient color contrast, plain fonts (without serifs), and nonreflective surfaces are easiest for older adults to read.

Careful use of lighting can improve navigation and orientation while also addressing a range of safety concerns. In particular, it may be necessary to supplement overhead lighting with additional low-level lighting that highlights ground-level features that older adults may have difficulty discerning and anticipating. Lighting that is incorporated into design features—for example, stairs, walls, and walkways—can be particularly effective in improving orientation and navigation. In addition, some communities, such as Santa Rosa, California, have also introduced in-pavement lighting in crosswalks.

4. Address security concerns

Many communities employ strategies for enhancing security, both real and perceived, through urban design. Providing sufficient lighting is a simple way to improve security. Moreover, numerous resources provide guidelines for Crime Prevention Through Environmental Design (CPTED), which involves employing design elements that discourage criminal activity by increasing "natural surveillance" and by highlighting public routes and public/private boundaries and other design interventions.²² At the same time, however, people can be the best antidote to security concerns. Simply generating what Jane Jacobs called "eyes on the street" and establishing a sense of a caring community in which people look out for older residents can help address security concerns.²³ To supplement these strategies, safety training for senior citizens by local police departments can improve older adults' confidence in leaving their homes and going about daily tasks, such as banking and shopping. Moreover, some communities establish "senior patrol" units of senior volunteers to assist the police department with crime prevention and to identify issues of concern to older residents.

B. IMPROVE TRANSPORTATION OPTIONS FOR OLDER ADULTS

The availability of a quality public transportation system can help promote active living by encouraging walking as a complementary activity. However, encouraging older adults to use public transportation can be quite challenging, as evidenced by a recent AARP survey that found that less than 5 percent of older adults currently use public transportation as their usual mode of transportation. According to the survey, barriers to regular use of public transportation may include a lack of accessibility, inconvenient routes and levels of service, and fear of crime.²⁴ In addition, public transportation may be uncomfortable for older adults, especially for those with physical impairments, and it usually restricts access to restrooms for extended periods of time. Finally, and quite significantly, many older adults may be reluctant to utilize public transportation simply because it is a mode of transportation that they have never utilized or because they find a transit system difficult to navigate.

1. Evaluate existing transportation options

To increase the use of public transportation, local governments should consider the extent to which public transportation currently addresses the needs of older residents:

- Does the public transportation serve the geographical areas where many older residents live?
- How frequently does public transportation serve these areas?
- How far must an older resident walk to access public transportation?
- What are the primary pedestrian routes to transit stops, and how safe are they for older adults?
- Are transit stops accessible for a range of functional abilities?
- Do transit stops provide sufficient lighting, shelter, places to rest, and restroom facilities? Are these facilities well maintained?
- Are transit maps and information easy to access, read, and use?

2. Add more accessible routes and vehicles

Local governments also could consider issues such as the design and types of vehicles servicing older residents. Although the American Disabilities Act (ADA) requires transportation systems to be accessible to passengers of all abilities, some vehicles—such as low-floor buses—may be easier to access than others. Transit systems around the

country, including those in Washington, D.C., and Boston, have begun using low-floor buses on some or all routes.

For areas with high concentrations of older residents, public transportation agencies also might consider providing satellite bus routes that serve neighborhoods more directly. For example, the Village of Friendship Heights, Maryland provides free shuttle service in an area with a high percentage of older residents. The service includes regular schedules (every 20-30 minutes) and stops near most residential complexes in the Village. Other communities—such as Brookline, Massachusetts—supplement standard public transportation with low-floor "Elderbus" service on regular schedules and routes, often for a small fee per ride and sometimes in cooperation with Area Agencies on Aging or other partners.

Alternative transportation options, such as paratransit, ride sharing, and elder taxi service, also can improve older residents' access to activity-friendly places. Area Agencies on Aging, nonprofit providers, and public agencies should coordinate to improve service to places such as business districts, parks, trails, and senior centers. In addition, ride-sharing programs could be structured around opportunities for physical activity, such as group trips to a walking trail or shopping trips to a walkable business district.

C. SUPPORT HOUSING CHOICES

The location, composition, and design of a local housing stock can also influence the extent to which a community supports active aging. For example, locating new housing for older adults near key services, amenities, and transportation routes can improve older residents' ability and desire to walk as part of daily routines.

1. Update zoning to expand housing choices

Unfortunately, many walkable, mixed-use, and potentially aging-friendly communities are essentially off-limits to older adults because local zoning codes do not allow for a range of housing types. However, zoning changes to allow—or even encourage—accessory dwelling units on existing lots and shared housing for seniors can provide additional opportunities for older adults to move into activity-friendly neighborhoods and closer to family and friends.²⁵

2. Assess existing housing stock

Local governments also should assess the extent to which its existing housing stock meets the mobility needs and abilities of older residents and should review codes and ordinances to promote more affordable, senior-friendly housing

development. Housing that is not easily adaptable or does not permit the use of wheelchairs and walkers may restrict opportunities for aging in place and active living. While the presence of stairs in itself may foster physical activity, housing design that requires the use of stairs to reach bedrooms and bathrooms may not be appropriate for older residents. Communities might consider requiring a certain percentage of new housing to be universally accessible or easily adaptable, with bedrooms and baths on the first floor. Finally, new technologies in manufactured housing may increase opportunities for affordable housing that is easily adapted as functional abilities change.

D. ENCOURAGE DENSITY AND CONNECTIVITY

In general, activity-friendly communities have development patterns that enable residents to walk to a variety of routine destinations and services within a close radius.²⁶ Achieving this goal requires compact, interconnected neighborhoods with a mix of uses and higher densities, especially near transit and major roads. The resulting development patterns will increase opportunities and available routes for walking trips between residences, services, and amenities; increase the feasibility of public transportation service in these areas; and connect modes of transportation. These considerations are especially important in making walking a viable means of transportation for older adults. For these reasons, any effort to promote active aging should be accompanied by land use policies that foster additional density in strategic areas and connectivity between neighborhoods and destinations.

1. Promote mixed-use and compact development through zoning

Zoning codes should encourage development that combines residential, retail, and commercial uses within a small geographic area. In addition, land use regulations should allow a range of housing types (from single-family to congregate housing) and promote small lot size, narrow streets, short blocks, and human-scale development. In contrast, zoning codes that allow the separation of uses, multilane roads, and large-scale “superblocks” with infrequent through-streets can significantly reduce the incentive for walking, particularly among older adults.

2. Integrate new development into existing communities

Site selection for new development, especially housing in which seniors may choose to live, is critical to promoting active living. While it is possible to support active living to

some extent on “greenfield” sites, the opportunities for active living increase significantly when a new development is integrated, or “knitted,” into the existing fabric of a community. Local governments should pay special attention to the location of any housing development in which older residents may choose to live, favoring sites near shopping and services, transportation routes, parks, and senior centers. As a way of encouraging infill development in strategic locations, a local government should explore opportunities for the adaptive reuse of older structures—such as former schools and hospitals—to house older adults.

3. Use development incentives and guidelines

To encourage development in optimal locations, a local government might consider employing a range of development incentives, such as transfer of development rights (TDR), density bonuses, and traditional neighborhood design (TND) ordinances or overlays.

In addition, it is easier for a community to encourage certain types of development—and avoid wasted time and money in the approval process— if it already has in place a series of development and design guidelines to outline preferred types of development. For this reason, a local government might consider developing a series of guidelines specifically applicable to an aging population and active living opportunities. These guidelines might incorporate some of the strategies already outlined in this chapter, as well as the design considerations described previously. Many communities, such as Arlington, Virginia, require developers to provide sidewalks as part of the development process, and a community may wish to accompany such requirements with design guidelines that specify features such as sidewalk width and pavement type.

E. MAKE THE BUILT ENVIRONMENT MORE ATTRACTIVE

In addition to adapting overall sidewalk and street design to the specific needs of older adults, local governments can encourage active living among all ages by enhancing the overall appeal of the built environment. Attractive streetscapes and walkways can encourage more people to walk to their destinations. Vegetation, such as street trees or landscaping on sidewalks and medians, can soften a highway environment and buffer pedestrians from traffic. Especially important for older adults, street trees also can provide shade and reduce glare. In addition, façade improvements and windows on the street can encourage pedestrians to visit and explore commercial areas while

Promoting Awareness: Walking Programs in Nashville, Tennessee and Wheeling, West Virginia

Nashville: Walk for Active Aging Day

Nashville's Walk for Active Aging Day was initially conceived as part of Nashville's participation in Global Embrace, a World Health Organization event to encourage activity among older adults worldwide. The event occurs during Walk Nashville Week, an annual weeklong event to promote walking in the city. The event seeks to encourage more walking among older adults and gives participants the opportunity to complete surveys to assess walkability along the walking routes and to further identify overall barriers to walking. Participants receive technical assistance in completing the surveys and incentive giveaways to reward participation. The event also relies on volunteer leaders at several senior centers and senior residences, where the walk originated.

Walk Nashville Week is sponsored by the Community Health and Wellness Team, a coalition of citizens and agency representatives convened by the Metropolitan Health Department—as part of its “Healthy Nashville 2000” initiative—to reduce cardiovascular disease.

Sources: www.walkbikenashville.org; Community Health and Wellness Team, *Walk Nashville Week 2001: Report to the Public* (Nashville: Metropolitan Health Department, 2002); Partnership for Prevention, *From the Field: Four Communities Implement Active Aging Programs* (Washington, DC: Partnership for Prevention, 2002).

Wheeling: Wheeling Walks

Wheeling Walks is an eight-week media campaign that was initiated in 2001 to encourage residents to walk 30 minutes per day. The campaign especially sought to encourage regular walking among older residents between the ages of 50 and 65. In paid television and radio spots and in newspaper articles, the campaign emphasized the slogan “Isn't it about time you started walking?” In an effort to counter the notion that people are too busy to exercise, the campaign encouraged people to walk in 10-minute increments. The media campaign occurred in conjunction with community-wide walking events, endorsements of safe walking environments, and health messages from local physicians. A five-week follow-up campaign in spring 2002 reminded residents of the benefits of walking.

Governmental partners in the campaign included the City of Wheeling Mayor's Office, the city's sheriff and police departments, and the county health department. In addition, the campaign benefited from the support of local media outlets, hospitals, employers, the faith community, community groups, and West Virginia University's Department of Community Medicine. A \$350,000 grant from the Robert Wood Johnson Foundation provided financial support for the campaign. In total, the 2001 campaign encouraged 2,500 residents to participate and resulted in a 14 percent increase in walking.

Source: Partnership for Prevention, *From the Field: Four Communities Implement Active Aging Programs* (Washington, DC: Partnership for Prevention, 2002). See also: <http://www.wheelingwalks.org>.

adding a more consistent overall character to an area. Where possible, communities should encourage the placement of parking at the rear of buildings to reinforce the pedestrian character of a streetscape.

F. PROMOTE AWARENESS OF ACTIVE AGING

Even with appropriate active living opportunities in place, older adults may not take advantage of these opportunities unless they are well informed about available resources and the benefits of physical activity. When promoting active living, the most effective messages are frequently those that emphasize the salient benefits of physical activity such as “independence,” “fun,” “vitality,” and “being with other people.” To educate residents and promote general awareness of active living, a local government can (in partnership with community organizations):

- Market active living to older adults through senior newspapers, cable TV, resident associations, and other venues
- Actively promote walkable and livable neighborhoods to raise public awareness of the services and benefits they provide
- Partner with Area Agencies on Aging, nonprofit service providers, YMCAs, and other community organizations to promote physical activity
- Organize physical activity programs such as senior walking groups, community-wide walking programs, community gardening, and fitness classes
- Train older residents on security issues through a local police department
- Provide training to help older adults transition from driving to using public transportation and walking.

V. Conclusion

Now is the time for local governments to act to promote active aging. As the baby boomer generation ages, this profound demographic shift will have a variety of implications for local governments. Among other considerations, this population trend will require the rethinking of current policies and practices in land use planning, streetscape and sidewalk design, transportation, and housing.

By anticipating and planning for the coming demographic changes with a focus on active aging, local governments can ensure that their older residents live healthier, more active lives and age more gracefully and indepen-

dently. In achieving this goal, local government managers and other local leaders can seize the opportunity to foster additional collaboration across a variety of disciplines and governmental departments, while encouraging greater civic involvement by older residents. In the process, local governments can improve the quality of life for residents of all ages by creating more livable and vibrant communities.

ENDNOTES

- ¹ National Institute on Aging, *Older Americans 2000: Key Indicators of Well-Being* (Washington, DC: National Institute on Aging, 2000)
- ² For summaries of baby boomer preferences, see Del Webb, *Baby Boomer Report: 2003 Annual Opinion Survey* (Bloomfield Hills, MI: Del Webb, 2003) and AARP, *These Four Walls: Americans 45+ Talk About Home and Community* (Washington, DC: AARP, 2003)
- ³ U.S. Department of Health and Human Services, *Overweight and Obesity: At a Glance* (Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General, 2001).
- ⁴ For instance, physical activity programming may be incorporated into home health care and meals on wheels programs. In addition, communities could consider designing special outdoor spaces, such as courtyards, in areas where many frail elderly live. These spaces could include specially-designed benches, walker-friendly pathways and other specialized amenities.
- ⁵ U.S. Department of Health and Human Services, *Physical Activity and Health: A Report of the Surgeon General* (Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996)
- ⁶ For example, one study determined that Florida retirees have a \$69.9 billion impact on the Florida economy, including \$1.3 billion in direct benefits (e.g., tax revenue) and \$68 billion in indirect benefits (e.g., expenditures on food, housing, goods and services). See Fishkind & Associates, Inc., *Economic & Fiscal Impacts of Florida's Retirement Industry* (Orlando: Fishkind & Associates, 1998), as cited in Orange County (FL) Interim Commission on Aging, *Final Report* (Orlando: Orange County Government, 2001), 14.
- ⁷ Howe et al (1994) includes a useful chapter on strategies to encourage older adults to participate in public meetings.
- ⁸ While bicycling is a potential form of nonmotorized physical activity for some older adults, this report emphasizes walking due to its applicability to a broader range of ages and functional abilities. For more information on promoting bicycling, refer to the Pedestrian and Bicycle Information Center web site at <http://www.bicyclinginfo.org> and the National Center for Bicycling and Walking web site at <http://www.bikewalk.org>.
- ⁹ John Pucher and John L. Renne, "Socioeconomics of Urban Travel: Evidence from the 2001 NHTS," *Transportation Quarterly* 57, no. 3 (2003): 49-77.
- ¹⁰ AARP Public Policy Institute, *Understanding Senior Transportation: Report and Analysis of a Survey of Consumers Age 50+* (Washington, DC: AARP Public Policy Institute, 2002)
- ¹¹ AdvantAge Initiative, *National Survey of 10 Communities* (2003), as shared in personal communication with Mia Oberlink. See <http://www.advantageinitiative.org> for more information.
- ¹² Pucher and Renne, 70
- ¹³ According to studies from New Zealand and Great Britain, as summarized in Organisation for Economic Co-operation and Development (OECD), *Safety of Vulnerable Road Users* (Paris: Directorate for Science, Technology, and Industry, Scientific Expert Group on the Safety of Vulnerable Road Users, 1998) and Lawrence D. Frank and Peter Engelke, *How Land Use and Transportation Systems Impact Public Health: A Literature Review of the Relationship Between Physical Activity and Built Form*, Active Community Environments Initiative Working Paper #1 (Atlanta: Centers for Disease Control and Prevention, 2000).
- ¹⁴ AARP Public Policy Institute, *Understanding Senior Transportation*
- ¹⁵ Many communities have walk-to-school programs. Activities may include designing safe routes to schools, revising policies for selecting school sites, promoting physical activity among children and young adults, and organizing an annual "Walk-to-School Day." For more information, see the Pedestrian and Bicycle Information Center's Walk-to-School web site at <http://www.walktoschool-usa.org>.
- ¹⁶ For more detail and measurement specifications, see Diane Y. Carstens, *Site Planning and Design for the Elderly: Issues, Guidelines, and Alternatives* (New York: Van Nostrand Reinhold Company, 1987).
- ¹⁷ For more information, see U.S. Department of Transportation, Federal Highway Administration, *Highway Design Handbook for Older Drivers and Pedestrians* (Washington, DC: Federal Highway Administration, 2001) and Carstens (1987).
- ¹⁸ The Federal Highway Administration recommends assuming an average speed of 2.8 feet per second for older pedestrians (as compared to an average of 4 feet per second for all pedestrians).
- ¹⁹ Charlie Denney, Arlington County Department of Public Works. Personal communication.
- ²⁰ See, for example, Herman Huang and Charles Zeeger, *The Effects of Pedestrian Countdown Signals in Lake Buena Vista* (Florida Department of Transportation, 2000) and Jan L. Botha et al, *Pedestrian Countdown Signals: An Experimental Evaluation, Volume 1* (San Jose, CA: City of San Jose Department of Transportation, 2002)
- ²¹ For more information on bench design, see Carstens (1987).
- ²² For more information on CPTED, see National Crime Prevention Council, *Designing Safer Communities: A CPTED Handbook* (Washington, DC: National Crime Prevention Council, 1999) and the web site of the International CPTED Association (<http://www.cpted.net>), which includes a list of CPTED resources.
- ²³ Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961)
- ²⁴ AARP Public Policy Institute (2002)
- ²⁵ Accessory dwelling units may include attached or detached apartments (sometimes referred to as "granny flats"), as well as modular—or manufactured—housing that is designed for older residents and can be placed in the back or side yard of a single family home. (One example is ECHO housing, or "Elder Cottage Housing Opportunities.") Some communities have revised their zoning to permit accessory units, while some have amended statewide zoning statutes to enable accessory dwelling units. For more information, see Rodney L. Cobb and Scott Dvorak, *Accessory Dwelling Unit: Model State Act and Local Ordinance* (Washington, DC: AARP Public Policy Institute, 2000)
- ²⁶ A general rule of thumb holds that walking distance for pedestrians of all ages is generally within a one-quarter mile radius. See, for example, the Congress for the New Urbanism's Transportation Tech Sheet on "Ped Sheds," which is available at http://www.cnu.org/cnu_reports/CNU_Ped_Sheds.pdf.

ADDITIONAL RESOURCES

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Robert Wood Johnson Foundation. *National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older*. Princeton: Robert Wood Johnson Foundation, 2001.

U.S. Department of Transportation, Federal Highway Administration. *Highway Design Handbook for Older Drivers and Pedestrians*. Washington, DC: Federal Highway Administration, 2001.

USEFUL WEB SITES

AARP

<http://www.aarp.org>

Active Aging Partnership (National Blueprint)

<http://www.agingblueprint.org>

Active for Life

<http://www.activeforlife.info>

Active Living by Design

www.activelivingbydesign.org

Centers for Disease Control and Prevention – Healthy Aging

<http://www.cdc.gov/aging/>

Leadership for Active Living

<http://www.leadershipforactiveliving.org>

National Center for Bicycling and Walking

<http://www.bikewalk.org>

National Institute on Aging

<http://www.nia.nih.gov>

Pedestrian and Bicycle Information Center

<http://www.walkinginfo.org>