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Global Smart City  
Partnership Program

SILVER HUES:  
BUILDING  
AGE-READY CITIES  
**KOREA**  
**BACKGROUND  
PAPER**

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# SILVER HUES: BUILDING AGE-READY CITIES **KOREA** **BACKGROUND PAPER**

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## Abbreviations

GDP	Gross Domestic Product
GNAFCC	Global Network of Age-Friendly Cities and Communities
GNI	Gross National Income
IoT	Internet of Things
LED	Light-emitting diode
OECD	Organization for Economic Co-operation and Development

## Acknowledgments

This background paper was written by Myounggu Kang as an input to the global report, “Silver Hues: Building Age-Ready Cities” which was authored by a team led by Maitreyi Bordia Das and Yuko Arai with Terri B. Chapman and Vibhu Jain as core team members. The global report and this background paper are a production of the World Bank’s Urban, Disaster Risk Management, Resilience and Land Global Practice. The background paper is expected to be read in conjunction with the global report.

This paper has benefited from comments from Hoon Sahib Soh and Narae Choi. Adelaide Barra provided administrative support, Lisa Ferraro Parmelee gave editorial support, and Takayo Muroga Fredericks designed the report. We end with a final word of gratitude to Sameh Wahba, Michelle Morandotti, the World Bank Art Program, and the Global Smart City Partnership Program.

# Introduction

1



## 1.1. The Case Study Country

The Republic of Korea is located between China and Japan at latitude 33°-43° and longitude 124°-132°. As of 2019, the total population of the country was an estimated 51.7 million. Gross domestic product (GDP) per capita was \$31,762, and gross national income (GNI) per capita was \$32,115.

The capital city of Korea, Seoul, is located at latitude 37.5° and longitude 127°, in the northwest region of the country (figure 1.1). Seoul covers an area of 605.2 square kilometers and is divided into 25 districts. In 2019, more than half the total population of Korea—26 million people—lived in the Seoul Capital Region (Statistics Korea 2020).

**FIGURE 1.1. LOCATION OF SEOUL, KOREA**

SEOUL IN ASIA



SEOUL IN KOREA



SEOUL IN CAPITAL REGION



Source: Seoul Metropolitan Government 2009.

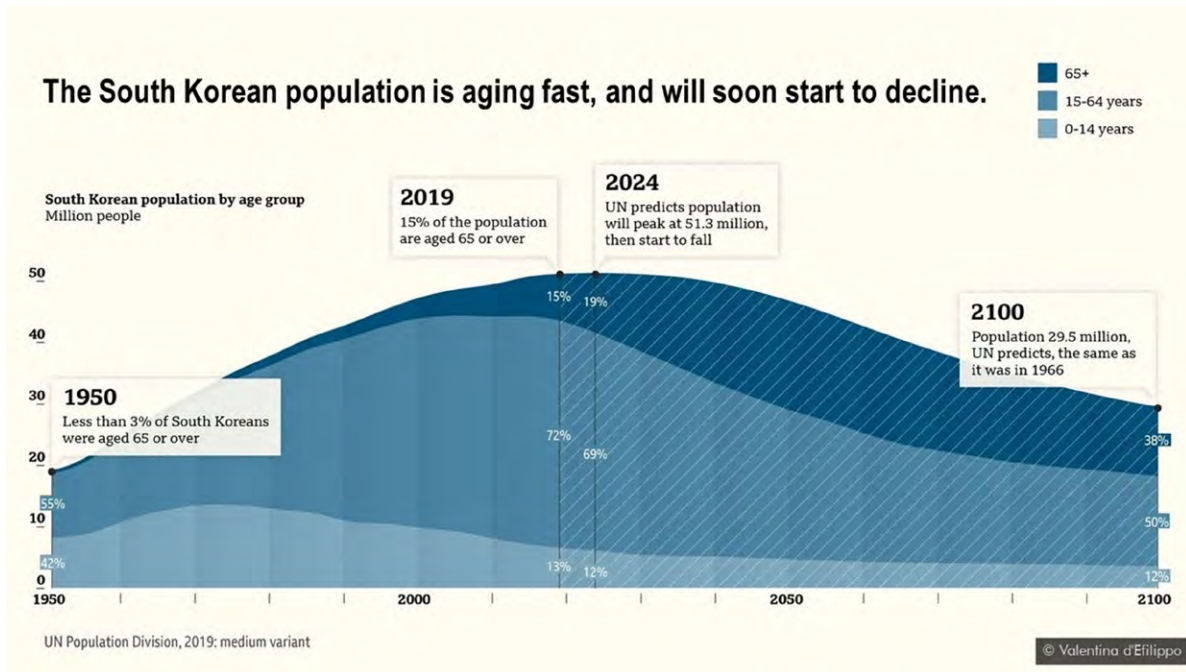
Seoul's climate is characterized by cold, dry winters and a hot, humid summer. The average January temperature is approximately  $-5^{\circ}\text{C}$ , and the average August temperature is in the upper 20s. Annual precipitation ranges from 900 to 1,500 mm. Up to three-fifths of the annual precipitation falls in June–August, during the summer monsoon. Occasionally, late-summer typhoons (tropical cyclones) cause heavy showers and storms. Precipitation in winter falls mainly as snow.



## 1.2 Overview of Age-Ready Development

The age composition of Korea’s population has transformed very quickly in the past 70 years. In 1950, less than 3 percent of the people were aged 65 or over, increasing to 15 percent today. The United Nations projects this group will comprise 40 percent by the mid-2060s (see figure 1.2).

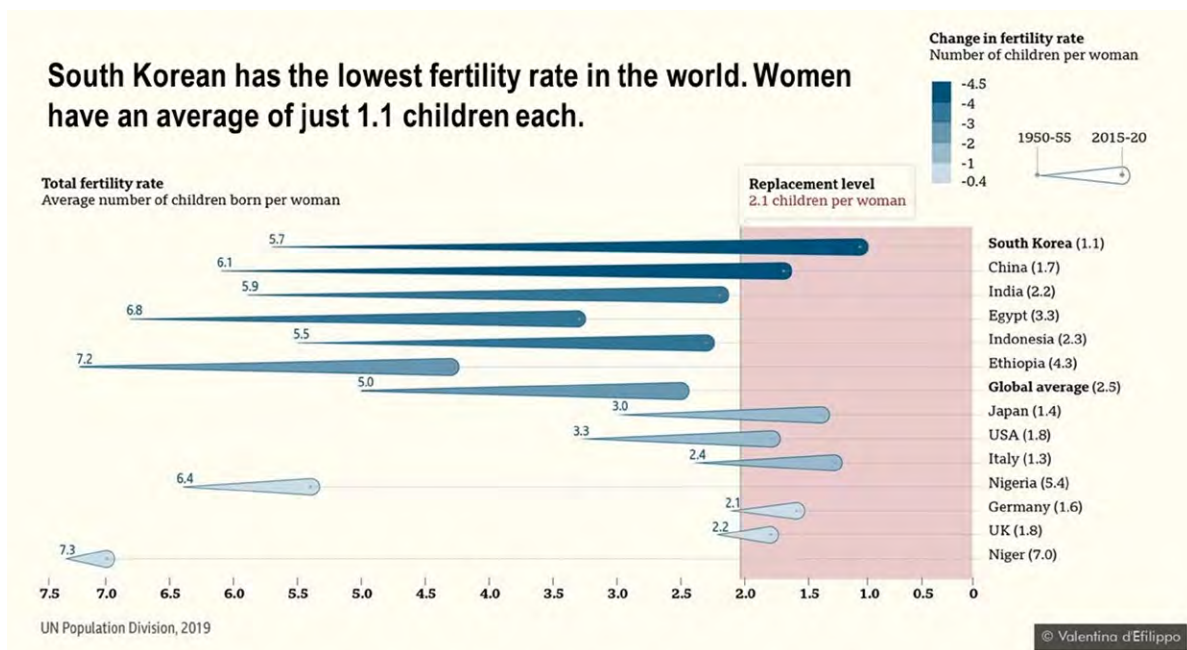
FIGURE 1.2. A CHANGING POPULATION



Source: Quick and d'Elilippo 2019.

Low birth rates, fewer marriages, and longer lives are driving the aging of the Korean population, which is happening faster than in any other developed country. Korea has by far the lowest fertility rate in the world, having declined rapidly from 5.6 children per woman in the 1950s to 1.1 today, as compared to the global average of 2.5 (see figure 1.3). Marriage rates also have plummeted. In 1970, 90 percent of Korean women aged 25 to 29 were married, but, by 2015, the rate had dropped to 23 percent.

**FIGURE 1.3. THE WORLD'S SMALLEST FAMILIES**



Source: Quick and d'Elfilippo 2019.

People in Korea are also living longer. Where life expectancy was around 42 years in the 1950s (37 for men, 47 for women), the country now has one of the highest life expectancies in the world. The average baby born there can expect to live to the age of 82 years (79 for men, 85 for women). The UN projects Korean life expectancy will continue to increase (UNSD 2020).

Given all these trends, the proportion of older persons in Korea—that is, the share of people 65 years old and over—has been increasing rapidly. In 2017, it reached 14 percent, which means the country had become an aged society, according to the UN's definition. By 2020, older persons in Korea numbered 8.1 million, representing 15.7 percent of the total population. By 2025—just five years later—Korea will have become a super-aged society, with older persons expected to comprise 20 percent or more (see table 1.1).

Korea's progression as an aging society has been heavily influenced by the size of its baby boomer generation (those born between 1955 and 1963). As of 2019, baby boomers were aged between 56 and 63 years, representing 14.3 percent of the total population. With the majority of baby boomers expected to retire or having retired already, the resulting social impact is expected to be significant, and the task of creating age-friendly cities has become an important one.

**TABLE 1.1. PROJECTIONS OF THE AGING TREND IN KOREA**

YEAR	TOTAL POPULATION (IN MILLIONS)	POPULATION AGED 65 YEARS AND OVER (IN MILLIONS)	PERCENTAGE OF TOTAL POPULATION
2000	46.1	3.4	7.3
2010	48.6	5.4	9.2
2020	51.8	8.1	15.7
2030	51.9	13.0	25.0
2040	50.9	17.2	33.9

Source: Statistics Korea 2019.

In Seoul in particular, a continuous influx of young people has resulted in the lowest proportion of older persons in Korea; otherwise, however, the aging trend in the city is similar to that of the rest of the country. In 2019, 1.4 million older persons lived in Seoul, and it is expected to become a super-aged society by 2027, with the older population reaching 2 million (see table 1.2). The characteristics of this population are summarized below.

**TABLE 1.2. PROJECTED AGING TREND IN SEOUL**

YEAR	TOTAL POPULATION (IN MILLIONS)	POPULATION AGED 65 YEARS AND OVER (IN MILLIONS)	PERCENTAGE OF TOTAL POPULATION
2000	9.9	0.5	5.4
2010	9.8	0.9	9.5
2020	9.6	1.5	15.4
2030	9.2	2.2	24.2
2040	8.7	2.8	32.3

Source: Statistics Korea 2019.

### Socioeconomic Challenges of Older Persons in Seoul

According to Seoul Statistics (2015), older persons living alone in Seoul in 2015 numbered 253,302, or 20.8 percent of Seoul's entire senior population of 1,215,529. In other words, one out of every five senior citizens in Seoul lived alone. Given that 25.6 percent of seniors were of low socioeconomic status, policies to address the challenges faced by those who live alone or in low-income families also need to tackle economic marginalization.

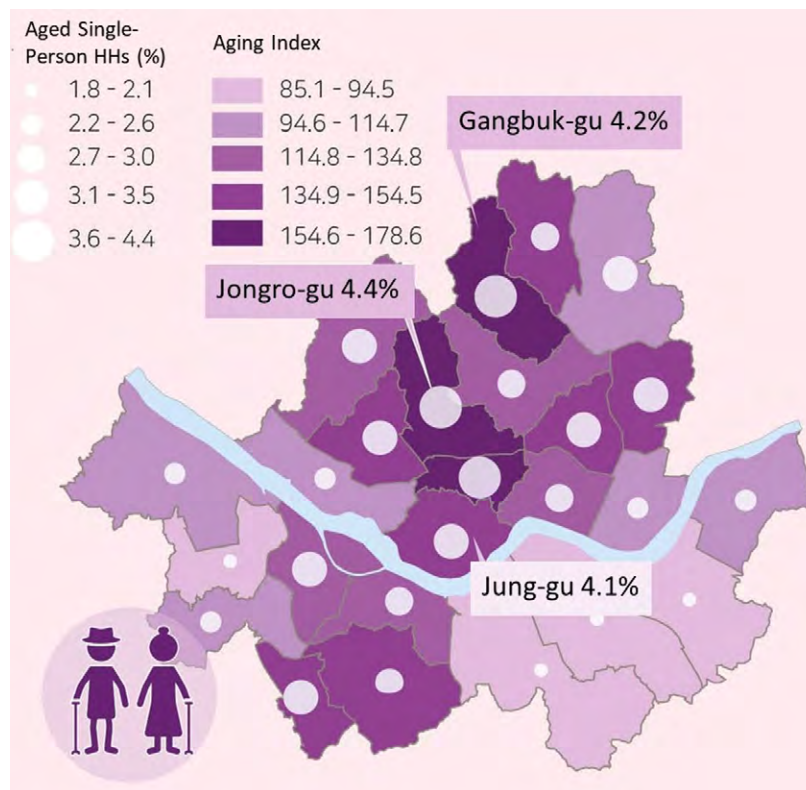
According to the 2018 Seoul Aged Survey of 3,034 older Seoul residents (Seoul Welfare Foundation 2018), 35.1 percent of this population had income-generating employment. The main reason for working, cited by 74.1 percent of respondents, was to "earn a living." Other reasons included earning pocket money (13.6 percent) and maintaining good health (8.1 percent). Older working people generally held low-income and unstable jobs, with those saying they were self-employed without employees comprising 38.8 percent; temporary workers, 25.5 percent; daily workers, 16.4 percent; commercial workers, 10.2 percent; self-employed with employees, 5.9 percent; and unpaid family workers, 1.9 percent. Altogether, 56 percent of older persons survey respondents with jobs indicated

their current job was the same as the one they had held for the longest period in the past, indicating that most had taken jobs that were extensions of their previous ones. The average monthly income of those who were currently working was 1.5 million won (approximately US\$1,300). When asked about their standard of living, 42.1 percent of the survey participants responded “medium-low” and 22 percent “low.” In other words, 64.3 percent of older persons respondents regarded their standard of living as low.

### Spatial Distribution of Older Persons in Seoul

The spatial distribution of older households (see figure 1.4) differs significantly between the Gangbuk region of Seoul (the northern area above the Han River) and the Gangnam region (the southern area below it). In 2018, the aging index of the Gangbuk region—that is, the number of older persons (65 years of age and over) per 100 youth population (under 15 years old) was 134.7, and for Gangnam it was 107.5—a difference of 27.2. The district with the highest aging index was Jung-gu in the Gangbuk region, at 178.6, and the lowest was Seocho-gu, in the Gangnam region, at 85.1 (Seoul Institute 2018).

**FIGURE 1.4. SEOUL'S AGING INDEX AND SPATIAL DISTRIBUTION OF OLDER PERSONS LIVING ALONE**

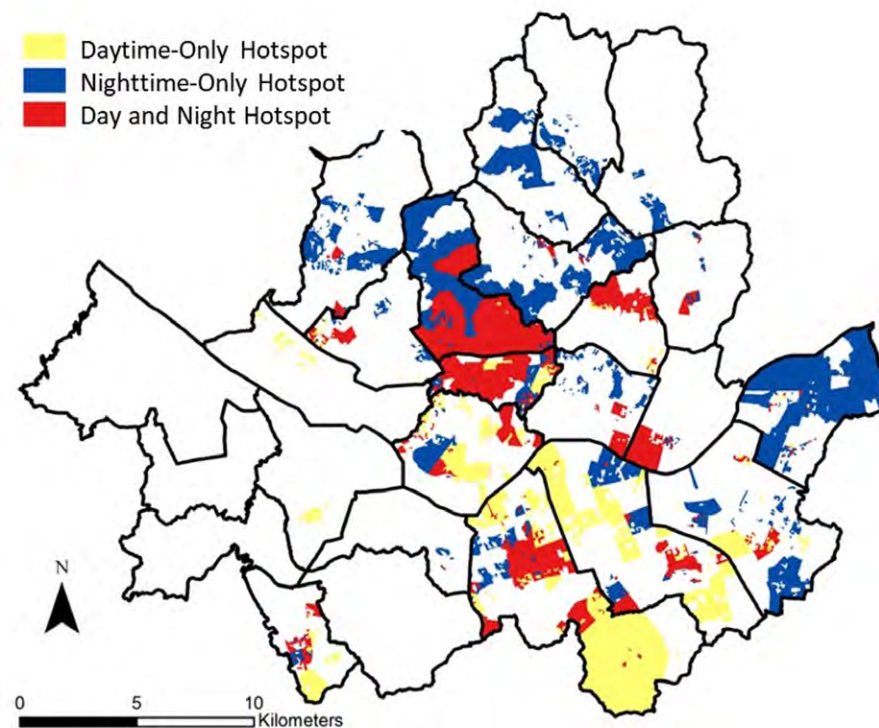


Source: Seoul Institute 2018.

The spatial distribution of the older population in Seoul can be divided in terms of “hotspots” during three different times of day (see figure 1.5). An aged hotspot is a place with a higher concentration of older persons than would be expected if they were randomly distributed.<sup>1</sup> Daytime-only hotspots with high concentrations of older persons are locations with high accessibility to hospitals, subway stations, and buses. Older persons tend to carry out activities close to the hospitals they visit or take buses or trains to engage in activities rather than stay close to home. The daytime-only hotspots in Seoul are all located in the rich neighborhoods, including Gangnam-gu, Seocho-gu, Yeungdeungpo-gu, and Yongsan-gu.

Nighttime-only hotspots, unlike the other time categories, are scattered, and can be interpreted as places of highly concentrated residence of older persons. The nighttime residential areas and daytime activity areas of older persons tend to be separate. Day-and-night hotspots, including Jongno-gu, Jung-gu, and Dongdaemun-gu, are all located in the old city centers of Seoul. They are generally close to traditional markets, which are typically located in the older areas of cities that are naturally home to many older persons.

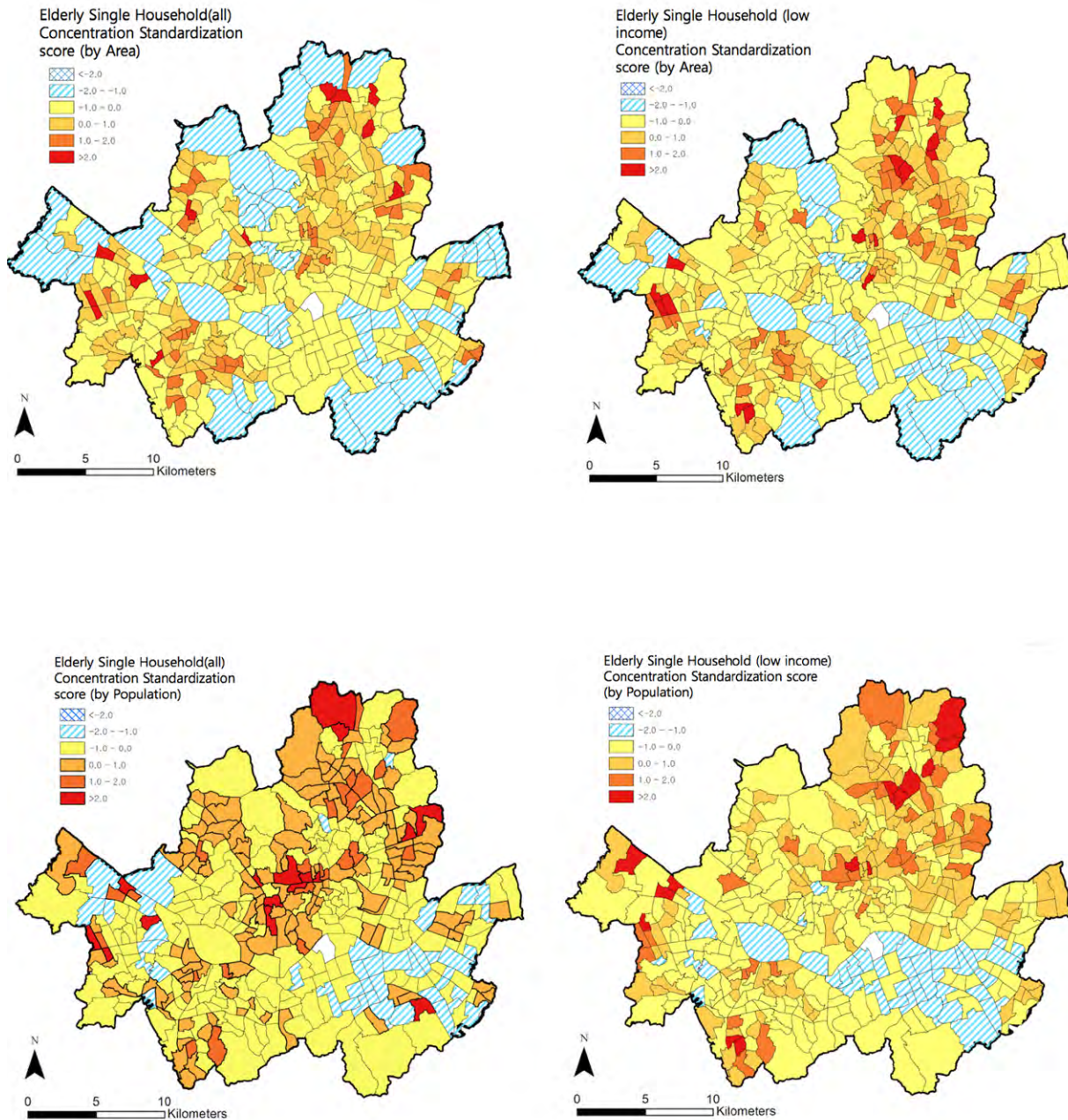
**FIGURE 1.5. HOTSPOTS OF THE AGED BY TIME**



Source: Updated from Lee and Choi 2018.

Two-thirds of low-income, older single-person households in Seoul are concentrated in one-third of the city, in poor neighborhoods with little access to public transit or adaptations for mobility (Cho 2014; see figure 1.6).

**FIGURE 1.6. DENSITY OF OLDER SINGLE-PERSON HOUSEHOLDS**



Source: Updated from Cho 2014.

## **Spatial Distribution and Poverty among Older Persons in Seoul**

The aging of the population and the increase in single-person households has led to lower economic status among older persons in Seoul, which will likely continue to decline in the future. In Korea, the poverty rate among the older population is very high compared to that of the other age groups in OECD countries, with approximately 43.8 percent older population earning less than 50 percent of the median income (National Assembly Research Service, 2019).<sup>2</sup> Even higher than the poverty rate of the overall older population is that of older single-family households, who are experiencing serious difficulties.

A number of factors contribute to a strong tendency among low-income people to be concentrated in certain areas and to their separation from higher-income groups. Often, this separation is the result of marginalized people involuntarily being “left behind” in certain areas where conditions are unfavorable in terms of education, health care, crime, and employment and where high-quality services and good opportunities are lacking. Making Seoul an age-ready city will require additional attention to many such facets of life where older persons, especially those living in single-person households, are concentrated.

## **Age-Ready City Development Policy in Seoul**

Since 2010, the Seoul metropolitan government has been formulating the 2020 Aging Society Master Plan as a medium- to long-term strategy to prepare for the aged society. The Basic Senior Welfare Act for an Age-Friendly Seoul City, created in 2011-12, forms the basis for this plan and was launched in conjunction with the Phase 1 Action Plan: Seoul Comprehensive Plans for Senior Citizens. In 2013, Seoul joined the Global Network of Age-Friendly Cities and Communities (GNAFCC), created by the World Health Organization in 2006.

GNAFCC proposed eight areas of consideration for the age-friendly city. They were modified to fit the conditions of Seoul, resulting in five areas: “leisure and culture,” “respect and intergeneration” (combining the “respect and social inclusion” and “communication and information” areas of GNAFCC), “community care,” “customized employment,” and “age-friendly environment” (combining “outdoor spaces and buildings,” “transportation,” and “housing”). A sixth area, “support for baby boomers,” was added to those in the GNAFCC guide, as the current baby boomer generation in Korea, now in its 50s, comprises the largest proportion of the population in Seoul and will soon become older.

Seoul City has taken an urban planning approach, beyond the sectoral approaches that focus on separate age groups, to creating a city environment that is convenient for people of all ages. The various projects initiated have included the Pedestrian-Friendly City Plan (2013), the Town Community Basic Plan (2012), the Shared City Plan (2012), the Comprehensive Plan for the Vitalization of Libraries and Reading Culture (2012), and the Ubiquitous Seoul Safety Service (2013). Together, they have been key drivers for achieving an age-friendly city.



**BOX 1.1 COVID-19 IMPACTS ON THE ELDERLY AND RESPONSE MEASURES**

The overall fatality rate of COVID-19 in Korea is 1.1%, but the fatality rate for those 70-79 years old is about 5.5%, and the fatality rate for those over 80 years old is 18.4%, making Corona 19 more fatal for the elderly (Ministry of Health and Welfare, 2021)

A group infection outbreak on a nursing facility for the elderly occurred in Seoul on July 19, 2020. A large number of infections occurred through various routes such as residents of nursing facilities, guardians, and neighbors of guardians. Accordingly, the Seoul Metropolitan Government immediately closed elderly care facilities and social distancing is required.

For the elderly, constantly moving of the body is important as an activity directly related to the healthy life. However, due to COVID-19, the old people have to live in self-isolation, and are experiencing a state of 'stop' and 'no activity'. This is detrimental to not only physical health but also mental health. As the severance get heightened, the relationship with other people also gradually became fragmented. Old people are experiencing loneliness, frustration, fear and anxiety.

In spite of many obstacles, old people are adapting and making efforts to lead an active life. Although the facilities are closed, they continue their physical activities and social relationship in their community's open space. Open space becomes more important in this disastrous pandemic situation. It becomes clear that age-friendly neighborhood development is more important than facility-oriented approach. Our cities need to be planned as a common which is easy to everyday life and activities of old people.



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# Current Age-Readiness

2

This case study focuses on the built environment in terms of three domains: aging in place, spatial accessibility and mobility, and social inclusion. Aging in place allows older persons to remain in familiar homes and surroundings. Spatial accessibility and mobility allow them access to destinations and facilitate getting around by providing age-friendly modes of transportation and making the urban environment barrier-free. A livable life also requires social inclusion instead of isolation. Older persons should be able to have connections with all generations of people.

## **2.1 Building Adaptive Cities to Enhance Age-Readiness**

In pursuing a policy of “aging in place” for its residents, Seoul has shifted its focus from creating a livable environment just for older persons to creating a community where people of all ages can reside happily together for their entire lives.

Among older respondents to the 2018 Seoul Aged Survey, 86.3 percent of those who assumed they were going to be at least half as healthy in the near future as they were at the time, they were interviewed preferred to stay at their “current residence.” This was followed by much smaller proportions who chose “moving to a house with a better living environment” (7.2 percent) or “facilities where services are provided” (6.4 percent; Seoul Metropolitan Government 2018a).

Even when presented with the assumption they would face difficulties with mobility, the majority of survey participants still indicated they wanted to live in their current residences (52.3 percent), mainly because they wanted “to spend the rest of their lives in a familiar and comfortable space” (76.5 percent; Seoul Metropolitan Government 2018a).

In response to such preferences, the Seoul metropolitan government is making efforts to support housing and home-based services for older persons and to create the conditions necessary for aging-in-community. Some of these efforts are discussed below.

### **Housing and Welfare-at-Home**

The Seoul metropolitan government has engaged in home repair support projects to improve the residential convenience of the low-income older persons regardless of whether they own, rent, or live in public housing. It also provides public rental housing, called “aged welfare housing,” that has been designed with older residents in mind. Welfare housing for older persons features nonslip flooring materials, safety lights, safety handles, no door thresholds, and height-adjustable washstands. Social welfare facilities, such as those providing medical, meal, and physical fitness services, are located on the lower floors.

The Borin House in Geumcheon-gu is an example of welfare housing for older persons. Designed for low-income older single-person households, Borin House has a community space on the first floor of the building and a roof garden. Free dementia prevention and health care programs are provided on a monthly basis. This one-room-type safe cohabitation housing project was initiated by Geumcheon-gu with the support of Seoul City, and 16 people had moved in as of 2015. Seoul City has announced plans to provide more units of this type of housing.



Barrier-free rail transportation system, at the station (left) and inside the train (right).

*Photo credit:* Korea Housing Builders Association 2016.

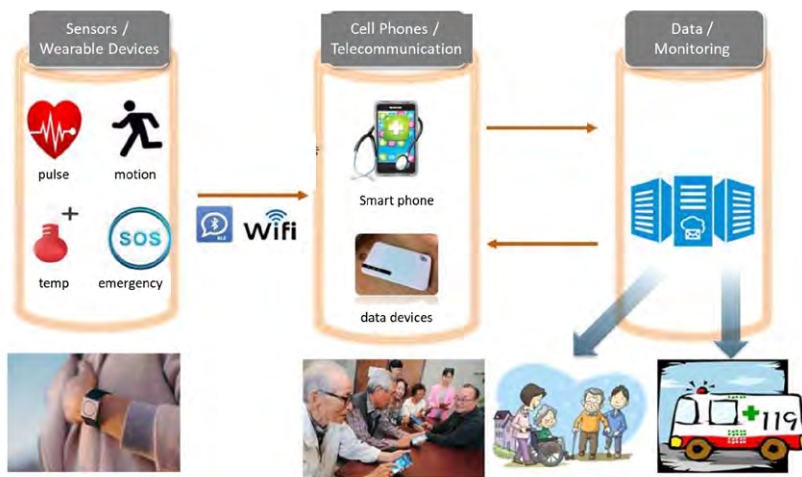
For older persons with physical and mental difficulties whose families are unable to look after them, the Seoul metropolitan government also operates “welfare-at-home centers” to help them enjoy their old age within the community. As of 2019, a total of 16,253 older persons were receiving a variety of welfare-at-home services at 821 centers. The centers host older persons who require help during the day or night or over short periods of time when their families may be absent. They also provide visiting care services to those with physical and mental disabilities. Support services, such as assistance with bathing, and nursing services that include health care, counseling, and education help older persons reside in their own homes and within the community.

*“Aged day care centers provide care in the day. There are programs for aged health. The centers are also helpful for the family members. Since the aged are in the center during the daytime, the family members can have their own time and manage their own lives.”*

Older Seoul resident  
Seoul Welfare Foundation 2015

Another means of supporting older persons at home was initiated in 2020, when Microsoft Korea, along with Mapo-gu, Seoul, began offering customized services to prevent mental disorders, such as depression and dementia, and provide care for those who suffer from them. These services include emergency response for older persons living alone. Through the use of “Azure Kinect,” a motion recognition device, as well as such wearable devices as the Samsung Galaxy Watch and artificial intelligence-enabled speakers, providers can comprehensively analyze the activities of older persons (detecting when they lie down, sit up, stand up, have meals, sleep, fall, have accidents, and so on), time spent in the residence, and the presence of guests (see figure 2.1).

**FIGURE 2.1. CONCEPTUAL DIAGRAM OF OLDER PERSONS LIVING MONITORING SYSTEM**



Source: Korea Communication Agency 2018.

In the 2030 Aging Society Master Plan, the Seoul metropolitan government has planned a number of new initiatives for support of older persons. These include expanding public care centers, a one-on-one family doctor system, and visiting caregivers. In addition, Seoul has built an online integrated care management system that provides health care monitoring services for approximately 200,000 older persons living alone in the city.

Seoul has also created, in cooperation with a private telecommunications provider, care plans for older persons with dementia and those living alone using the Internet of Things (IoT) and light-emitting diode (LED) sensors. If the system detects no movement of an older person living alone or with dementia, it sends a message to caregivers. With a motion range set, caregivers can be automatically notified when the person goes beyond the specified range.

*“Dying alone is a problem among single-living aged people. We have observed some cases of aged people discovered years after their deaths. The monitoring system can be a measure for preventing dying alone.”*

Older Seoul resident  
Seoul Welfare Foundation 2015

## Aging-in-Community

In an ongoing project to create age-friendly communities, the Seoul metropolitan government has focused on improving the physical environment, the provision of information and communication, and the social awareness of older persons outside their homes.

Among the various initiatives to improve the physical environment are increasing pedestrian safety and convenience, creating barrier-free environments to facilitate the use of medical assistive devices, and providing street benches for people rest on, along with nonslip mats and walking-stick holders. Aided by these improvements, older persons commonly and frequently use leisure facilities and outdoor spaces, including parks, trails, mountains, and playing fields, as well as health centers and public and private hospitals.

*“Small parks and sports facilities are places where we can share information and news with the people gathered there. The age-friendly development along the streams with nature-friendly rest spaces and sports facilities improves our health. The increase in cushioned polyurethane walking paths helps seniors with degenerative joint diseases.”*

Older Seoul resident  
Seoul Welfare Foundation 2015



aman30/Shutterstock

To improve communication and promote active aging and social awareness, the metropolitan government operates programs such as “senior homes,” which support the meeting and leisure activities of older persons in the community; “aged classrooms,” which operate a variety of learning programs of interest to older persons; and “aged welfare centers,” which provide information and services for improving older persons’s social participation and general welfare. As of December 2013, the welfare centers were being used by 46,060 people every day. They offer space rentals, movie theaters, art galleries, and libraries and calligraphy, Korean chess, cooking, and barista training, among other facilities and activities. Use of the various programs and facilities differs slightly by age, with the “old-old” (80 years of age or above) typically using the welfare centers for older persons, while the “young-old” (60 to 80 years old) use a variety of leisure facilities provided by community centers, including cultural facilities (cultural centers, art galleries, movie theaters, libraries) and exercise facilities (gyms, health clubs, swimming pools, golf courses).

Out in the community, older persons often use local stores. In the 2016 Seoul Aged Survey, 89.8 percent of respondents said they often used the shops in their neighborhoods, with 65.6 percent reporting using them once or twice a week and 14.6 percent saying they used them daily (Seoul Welfare Foundation 2016). In response to these preferences, the Seoul metropolitan government is supporting the development of age-friendly shops.

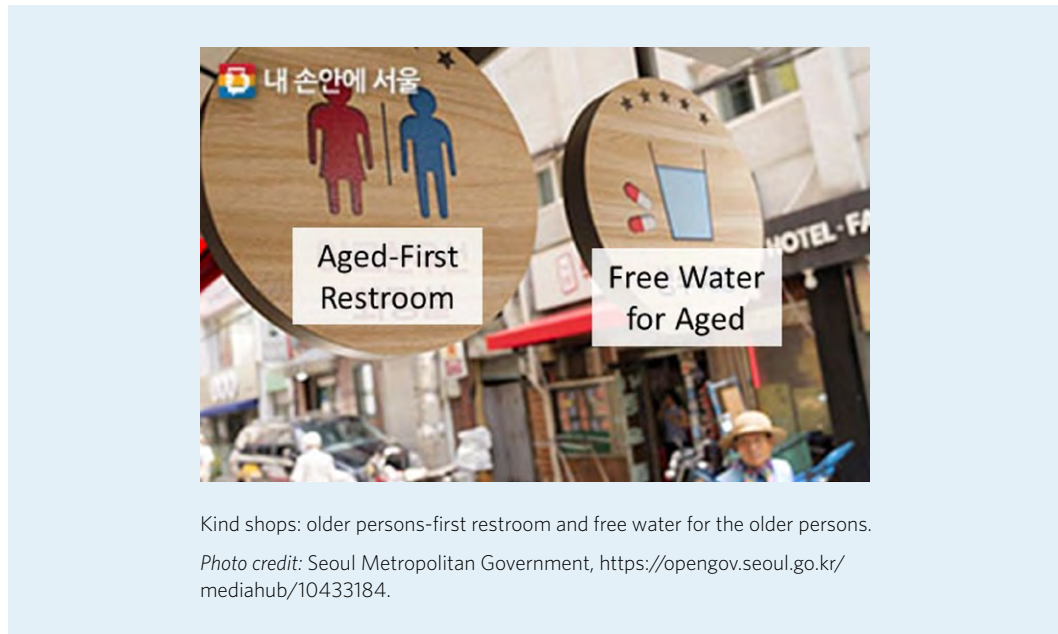
An example of this approach is a project called the “Age-Friendly Street,” the aim of which is to transform entire streets into “roofless welfare centers.” On Rakhee Street, depicted in figure 2.2, a “silver movie theater” and a “theater of romance” for older persons allow anyone over the age of 55 to view films for 2,000 won (approximately US\$1.70 in 2017). Theater officials have reported having 500–600 visitors per day, and some movies are so popular that people line up to watch them. Inside the theater, a section on “media art” allows the participants to restore old photographs.

Also provided by the Age-Friendly Street are variations on retail businesses that accommodate physical and emotional needs of older persons. A “kind shop,” for instance, may be equipped with older persons-first restrooms and an emergency cardiac center. To compensate for the losses in sight and cognitive ability that can come with age, signage and menus have text that is one and a half times larger than usual, as well as enhanced contrast in brightness and color saturation and enlarged photos. This is helpful not only to older persons but to those with poor vision and foreign visitors, as well. Cane holders placed in several locations encourage people to use canes more readily, which helps prevent falls. Kind shops may also provide services for older persons, such as water when they need to take their medicine.

FIGURE 2.2. AGE-FRIENDLY STREET (RAKHEE STREET)



Source: Seoul Metropolitan Government, <https://opengov.seoul.go.kr/mediahub/10433184>.



Kind shops: older persons-first restroom and free water for the older persons.

Photo credit: Seoul Metropolitan Government, <https://opengov.seoul.go.kr/mediahub/10433184>.

The Age-Friendly Street community project has had a positive effect on Rakhee Street merchants' image of their community, where a large older population lives or visits, and on their perception of older persons themselves. This has led in turn to improvement of the image of the regional community in general, the sense of community, and the life satisfaction of the local residents in their old age.



## 2.2 Building Productive Cities to Enhance Age-Readiness

People’s ability to move between their homes and workplaces, shops, schools, and health centers is essential to their quality of life. The freedom to go anywhere one wants extends beyond just linking specific services and locations and is important for people of all ages. The key to this freedom is accessibility—the degree to which a product, device, service, or environment is available to as many people as possible. Improving physical access to a space or service, which is just one component of accessibility, starts with acknowledging that the goal is to facilitate the movement of people, not cars or other vehicles.

Seoul aims to improve the accessibility of services and urban amenities for a broader segment of the population. It considers the needs of people of all ages and abilities in its planning for all modes of travel and ensures the connectivity and reliability of the transportation network as a whole. Improving accessibility requires seamlessly integrating land use, transportation, green infrastructure, and public space, and, in the process, increasing the age friendliness of public transit and making the urban environment barrier free.

### Public Transportation

According to the Seoul metropolitan government, most older persons in Seoul use public transit for mobility, with 36.2 percent using the subway and 26.2 percent the buses. In addition, 22.2 percent walk, 10.5 percent use personal vehicles, and 1.9 percent use bicycles. Older persons indicate that the main sources of inconvenience in going out are stairs and ramps (37.1 percent) and getting on and off buses and trains (7.6 percent; Seoul Metropolitan Government 2018b).

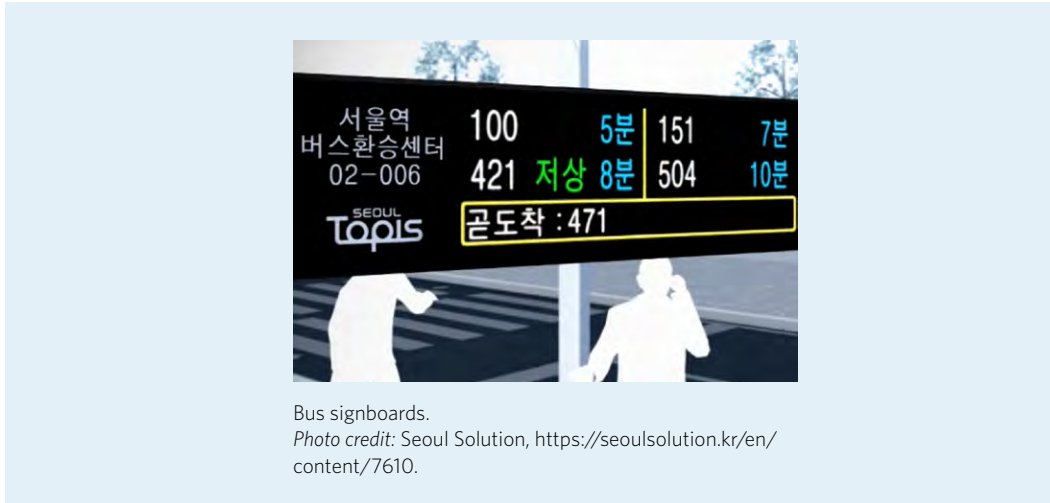
To increase the accessibility of public transit and the external environment, the Seoul metropolitan government has installed elevators, escalators, and safety handles in all subway stations. It has also reduced the cost of public transit to older persons, making the subway free in the entire country, including Seoul, for people aged 65 and over. To make it easier to get on and off buses, the city government announced plans to increase the proportion of low-floor city buses from 16 percent in 2016 to 81 percent in 2022.



Bus wheelchair lift (left), and wheelchair space inside the bus (right).

*Photo credit: Seoul Metropolitan Government.*

The government has also been improving access to public transit information. Older persons are often limited in their use of electronic devices, which makes it difficult for some to confirm transit times and bus routes, as younger people do on their mobile devices. The government has installed electronic signboards at all bus stops, which provide information on bus routes, expected arrival times, and crowding onboard the buses, as well as on concentrations of micro dust, which is a serious environmental issue in Seoul. Wi-Fi installed in the buses and bus stations enables passengers to use various online services while they are waiting for or riding on a bus.



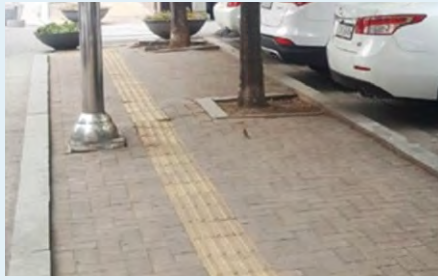
## Barrier-Free Environment

A barrier-free environment is already in place in Seoul through the application of universal design. Several years ago, the metropolitan government proposed a plan to expand universal design to all of Seoul, and various projects related to parks, roads, transportation, and buildings have proceeded accordingly, resulting in a general improvement to Seoul's living environment.

Beginning in 2017, developers were to apply the Seoul Universal Design Guidelines, created by the government and presenting a series of principles for public facilities and construction. The universal design encompasses 29 items that ensure the convenient use of streets, parks, plazas, and public places by everyone.

In the case of a public health center in Seongdong-gu, the new design involved removing the pedestrian obstacles in the external environment, placing floor signs for those with impaired vision, and installing safety handles and pedestrian-only sections to prevent falls; figure 2.3 shows examples of such changes at the health center and other locations. Furthermore, the readability of signage and information boards was improved for users with low cognitive ability. Interior designs also included elevators and better readability of guiding signs to classrooms, improving ease of mobility.

FIGURE 2.3. EXAMPLES OF UNIVERSAL DESIGN



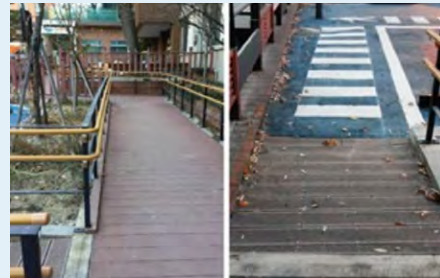
Uneven surfaces; pedestrian obstacles; guide blocks that are difficult to discern.



Pedestrian obstacles removed; ground leveled; sidewalk blocks and floor guides with varying degrees of contrast provided for those with poor vision.



Lack of safety handles; pedestrian walkway not separated from surroundings.



Double safety railings for people of different heights; pedestrian-only zone for safe passage.



Difficult-to-see guiding signs, lacking location information.



Guiding signs discernible from far away, containing various information.



Parking lots with no provision for pedestrian safety.

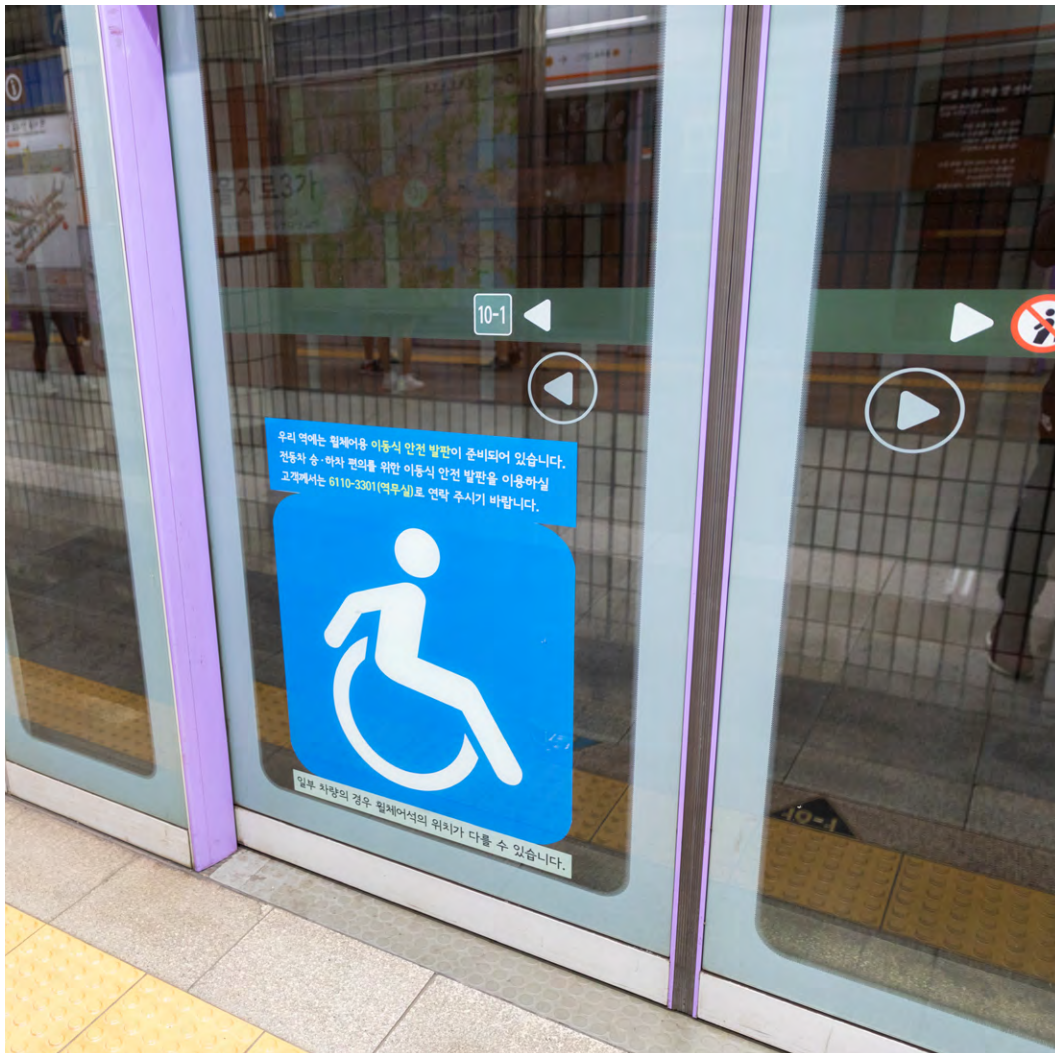


Pedestrian zones separated from parked cars, designed to accommodate various users.

Source: Seoul Metropolitan Government, <https://news.seoul.go.kr/culture/archives/75124>.

*“A barrier-free environment has removed all the obstacles for the aged people; they can continue to live where they have lived. They can live longer together with less burdening of their families. Most people want to stay where they are as they age.”*

Older Seoul resident  
Seoul Welfare Foundation 2015



2020/ Shutterstock

## 2.3 Building Inclusive Cities to Enhance Age-Readiness

The objective behind the “respect and intergeneration” goal of the 2020 Aging Society Master Plan is to improve society’s perception of older persons and expand opportunities for interaction and exchange between generations to develop an atmosphere of mutual respect. Seoul’s efforts to vitalize the social contributions of older persons and encourage an exchange of activities with other generations have involved identifying and supporting older individuals and groups who make social contributions and strengthening the role of the older persons in local communities. Intergenerational cultural and art activities and “open talk” events have received positive feedback from both the older and younger generations.

Older households express great anxiety about losing their acquaintances, as well as human and physical resource constraints they encounter or expect to encounter. To help them expand their social relationships, reduce anxiety, and resolve intergenerational conflict, the Seoul metropolitan government currently operates a range of projects, some of which are briefly described below.

**Residence sharing between older persons living alone.** As the number of older persons living alone has increased, so, too, has the necessity for and importance of services that support their health and safety. Many older persons demand generation-integrated housing and support for renovating their homes so they can continue to live in the same place. As people in Korea are wary of living with others they don’t know, implementing programs that involve co-living with strangers is difficult.

**Generation-linking activities.** In these programs, young and older persons form teams to increase intergenerational understanding through various activities. Youth who have participated emerge with more positive perceptions of older persons, along with a greater sense of generational solidarity and of community. Older participants see greater potential for older persons to make positive social contributions and gain in confidence.

**One-roof multigeneration home.** This approach to housing involves encouraging older persons residing near university districts to rent empty rooms to college students at affordable prices. The project helps older persons cope with their loneliness and young people to obtain affordable and stable housing.

**Second-Round Job Support Center.** Through this program, the Seoul metropolitan government is preparing for the soon-to-be older generation of baby boomers. Members of this age group, who tend to have relatively high education and expertise, become professional senior volunteers who participate in various social activities within the community, including health care, culture and arts, professional counseling, and education. The government also operates a variety of job programs, such as aged-aged care and public- and private-sector programs, and is currently establishing a comprehensive social participation model for older persons by creating a jobs bank for retired professionals.

**Club activities.** To expand the scope of social participation for older persons, the Seoul metropolitan government is supporting club activities for older persons, such as sports, arts, and music, among others.

# Conclusions and Recommendations

3

Livability for older persons is influenced by the physical and social environments in which they live their lives. Urban environments play an important role in active aging. An age-friendly city is a city that adapts its structures and services to be accessible to and inclusive of aging people with varying needs and capacities, enabling them to age safely in a place that is right for them. To build a convenient living environment that enables older persons to continue living in their communities, efforts are needed in the following areas.

### **Housing improvement**

As people grow old in their homes, their health begins to deteriorate, and the dangers posed by the residential environment increase in proportion to the aging of their bodies and minds. An ever-growing number of projects support simple home repairs in Seoul. These include, for example, informing older residents of home repair matters that require attention, provision of a guide that explains the areas requiring repair, and rental of the necessary equipment. Undertaken mainly by the city architectural department, housing improvement has traditionally been regarded only in terms of house repair or construction. For older persons in an urban neighborhood environment, however, work is required beyond the homes themselves. It needs to include improvements to open spaces and streets and the accessibility of shops and public services and calls for a demand-driven, multisectoral approach under urban planning.

### **Support for active aging**

Efforts to support active aging tend to focus on older person-only facilities, such as senior homes. Even among older persons, however, “young-old” people in particular enjoy various cultural and leisure facilities, and this trend is expected to increase. Rather than concentrating only on older persons, policy should provide for facilities that can be used by all generations. In addition, since many older persons continue to conduct active lives outside such facilities, support for active aging should be provided within communities and cities at large.

### **Age-friendly shops**

Both store owners and local residents have responded positively to age-friendly shops. Expanding this concept to other stores, taking into consideration business type, environment, and operational characteristics, would be beneficial. Engagement in such a project should be preceded by research to gain an understanding of the usage patterns of older persons by region and by store. Beginning with shops operated by older persons might yield the best results.

## Safe transportation

Of the various practical aspects of their lives, respondents to the 2018 Seoul Aged Survey expressed the most satisfaction with transportation; the outdoor environment also ranked highly. A transportation environment accessible to older and disabled people is already well established. The city has a high pedestrian accident rate, however, and a high accident rate generally for older persons and children, indicating a need for further prevention efforts.

Older drivers have been increasing in number, and older persons account for 33.9 percent of deaths in traffic accidents (Seoul Statistics 2015). This makes it imperative to include matters related to safety of older persons in the development of transportation policy. Such activities as the modification of relevant visual designs and the road environment and the production and distribution of safety guidebooks for older persons need to be part of the age-friendly city projects.

## Age-friendly public space

A common belief is that projects involving adaptations to public spaces require large budgets and implementation at the macroscopic level. Many projects needed for the construction of age-friendly environments, however, are small, can be executed through the use of diverse attainable resources, and do not cost a lot. One example is the installation of benches for those who have difficulty walking short distances, in locations designated by older members of the community. The innovation here is service provision from the point of view of the users rather than the providers, with other generations contributing to the effort.



Vittorijae / Shutterstock



## **Intergenerational communication**

Programs that encourage social relationships between youth and older persons, such as so-called generation-linking events, education on the social culture of mutual respect, and support for social participation of older persons, are being carried out, but only intermittently. Development is needed of more projects like the “one-roof multigeneration home,” which are ongoing and help all generations to socialize with and understand one another.

Programs related to the “respect and intergeneration” goal of the age-friendly city aim to improve society’s perception of older persons and develop an atmosphere of respect by expanding opportunities for interaction and exchange between generations. Although the social atmosphere of respect and regard for older persons is growing, many still feel generational conflict and prejudice toward them remains.

Older persons hope to participate directly in solving age-related problems, offering their own opinions. The exclusion of and discrimination against older persons in the course of policy establishment and execution is a crucial problem.

## **Effective information delivery**

Old age is a time when people are acutely in need of information on government policies and private services, but various challenges associated with aging create obstacles to obtaining it. Without an effective information delivery process, older persons cannot benefit from the policies and services available to them. There have been many cases in the health area in which programs were short on applicants because they were insufficiently publicized. Most older persons in Seoul, for example, were unaware of a program available to provide financial support to help them meet medical expenses and pay for care and nursing services. Active information delivery by service providers is vital.

## **Role of government and civil society**

Governments and voluntary organizations are responsible for the regular and reliable distribution of information to the public. It is incumbent on them, along with the private sector, to remove the communication barriers—particularly those related to poverty and low literacy—that progressively cut older persons off from others. One requirement for reconnecting older persons with the rest of society is widespread public access to the internet, at no or minimal charge, in public places such as government offices, community centers, and libraries.

Decisions regarding the supply, organization, and financing of many social services fall to the national rather than local governments, although public decision makers and the private and voluntary sectors at the city level do have an influence on the number, scope, and location of services provided. The delivery of the services within a city is carried out by local people in local establishments, with community-based for-profit and volunteer groups playing an important role in providing support and care; and civil society plays a role in providing financial support and volunteer work.



**Annex**

Main Report  
Executive  
Summary

## Main messages

- 1.** The world is becoming increasingly urban and older. This growing confluence of urbanization and aging is uneven, and cities and countries are at different points on the two trajectories.
- 2.** Since aging is a dynamic yet linear and relatively predictable process, age-readiness can, with the requisite political will, technical expertise, and creative use of resources, be planned for and implemented.
- 3.** Older persons constitute a growing market for goods and services related to health care, leisure, and information and communications technology (ICT). But they are a diverse group, differing not only by the countries and cities in which they live, but by income, wealth, gender, age, ethnicity, and disability status, among other attributes. The profile of older persons in a city or neighborhood affects the demand for city infrastructure and services and the manner in and extent to which they contribute to the economy and society.
- 4.** Cities and towns are enablers that provide opportunities for older persons to lead full, productive, and dignified lives, but they also present insurmountable barriers unless their leaders make intentional investments in age-readiness.
- 5.** Actions that lead to age-readiness are not just good for older persons; they create public goods with wide-ranging social and economic advantages that benefit, for instance, persons with disabilities, persons carrying heavy loads, or those who may be temporarily disabled by illness.
- 6.** Cities can make progress toward age-readiness, especially in the built environment, with the help of actions in six areas: universal design, housing solutions, multigenerational spaces, physical mobility, technology, and efficient spatial forms.

## Introduction

Cities and countries the world over are at the cusp of epochal global trends whose impacts are likely to be more intense and more far-reaching than those of similar trends in the past. The simultaneity of the demographic transition, deepening urbanization, a technological revolution, frequent shocks brought on by health and climate emergencies, mean that we will need to plan for an older and more urban future.

Cities are often identified by their age profiles: they are reified as “young cities” or “old cities.” This is because city leaders are cognizant of the profiles of their constituencies, and the demographic profile of a city has a bearing on the demands on its leaders and on the policies and programs they put into place. Awareness of the demographic profile is not enough to spur action in response to demographic change, though. That awareness needs to be accompanied by concrete steps taken through policies and programs.

**Silver Hues: Building Age-Ready Cities** is intended as a policy document that helps articulate the idea of “age-readiness” while building on the idea of “age-friendliness.” It highlights the varied trajectories of aging and urbanization and draws on the experiences of older and more urban countries to show how others can become “age-ready.” It is intended for cities and towns as they prepare for an older urban age, offering examples and options to help younger cities visualize age-readiness while focusing primarily on the built urban environment. Its main audience is intended to be policymakers, city leaders, and implementing agencies, but it is also expected to be useful to researchers, nongovernmental organizations, the private sector, and communities.

**This report** fills four gaps in the policy literature on aging:

- The literature so far has focused on the dependency ratio and its impact on the economic growth of aging economies, on social protection, especially in terms of pensions and the health and care needs of aging countries. It has not paid attention to urban planning and governance in the wake of demographic changes.
- The policy literature has focused on the implications of aging at the national, subnational, and regional levels but not at the city level.
- Even such literature as exists on aging in urban areas comes mainly from countries in the Organisation for Economic Co-operation and Development (OECD) because rates of both aging and urbanization are high in these countries. There is little evidence from, or guidance for, cities that may be young currently but will see their populations aging in the coming decades.
- Finally, the policy literature has not addressed the issue of the built urban environment and the ways in which it needs to adapt to be ready for an aging city.

While envisioned for cities that will see varying degrees of aging in the next few decades, this report is also grounded in the ambition of the Sustainable Development Goals to “leave no one behind,” and especially in SDG 11: “Make cities and human settlements inclusive, safe, resilient and sustainable” (UN/DESA, n.d.c). Furthermore, its publication coincides with the United Nations Decade of Healthy Aging (2021–2030) and is anchored in the World Bank’s overarching program on inclusive cities.

## Why Focus on “Age-Ready” Cities?

The trajectory of aging varies by city and country. Some cities are old, others are getting older, and still others are young. Cities that are already aged have likely put in place infrastructure and services to cater to their populations. Those that are aging or can envision an older resident profile in their futures are often putting in place mechanisms to deal with the new profile; the benefits of an age-ready city are clear to them. But why should the younger cities and countries care about aging that will occur several decades later when they have other pressing problems to deal with today? We offer six reasons in this report.

- 1. The age-readiness of a city has universal benefits.** Investments in age-readiness have universal and wide-ranging benefits that go beyond older age groups. This assertion does not detract from the fact that older persons may have distinct needs and can make unique contributions, but it maintains that accessible infrastructure, for instance, benefits diverse groups of individuals—caregivers pushing strollers, travelers wheeling heavy luggage, or persons who may be convalescing and need extra help in getting around.
- 2. A strong overlap exists between aging and disability.** An estimated 15 percent of the population worldwide have disabilities, and over 46 percent of persons aged 60 years and over have one or more. Just as the gains of the disability rights movement have benefited older persons disproportionately, so too will investments that help older persons benefit persons with disabilities. This includes investments in accessible signage in public places and in better acoustics in public buildings, among other improvements.
- 3. There is some evidence that the benefits of accessibility to society outweigh the costs.** While robust cost-benefit analyses are hard to come by, a study commissioned by the U.S. Department of Justice to assess economic effects of changes to the Americans with Disabilities Act (U.S. Department of Justice, n.d.) is instructive. It found that the changes were “expected to generate total benefits to society that are greater than their measurable costs under all studied scenarios” (ibid.). Furthermore, putting accessibility features in place during construction often has economic and social advantages over retrofitting. This is especially important in resource-poor environments less likely to have the wherewithal to retrofit expensive infrastructure once it is in place.

FIGURE E.1. WHY FOCUS ON AGE-READY CITIES?



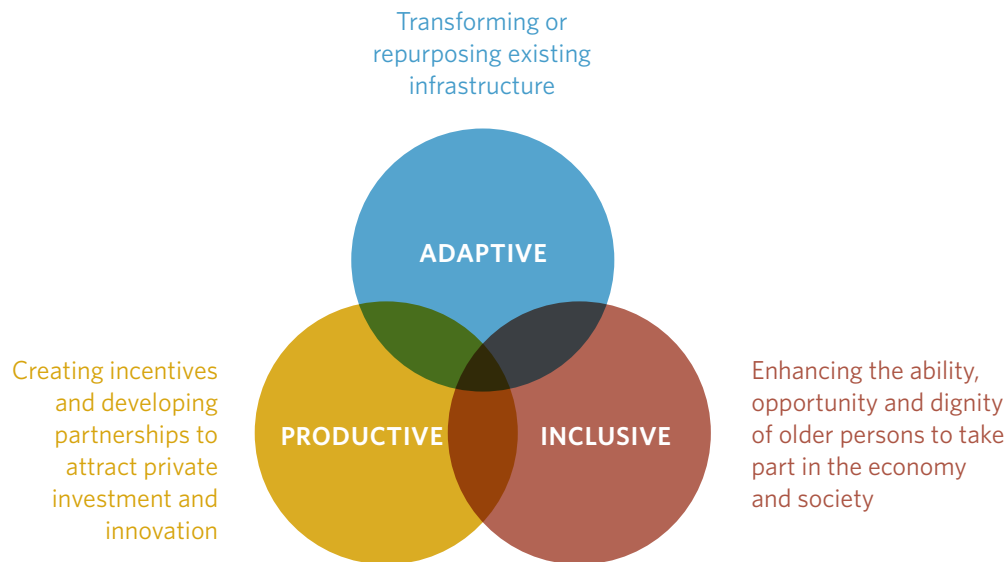
- 4. Older persons constitute a large and growing market for goods and services.** The existing literature associates a likely slowdown in economic growth with aging, but there is also increasing evidence that the impact of aging is contingent upon myriad factors, and generalized statements about its negative economic impacts do not always hold. Economies with high proportions of older persons are untapped and growing markets for such areas as health care, housing, ICT solutions, and leisure, and they present a huge opportunity for entrepreneurship and innovation. The terms “silver economy” and “longevity economy” signal the market potential of goods and services targeted to aging populations (Donovan 2020; Coughlin 2019; Coughlin and Lau 2006).
- 5. Intergenerational transfer of resources occurs in both directions—young to old and old to young.** Older persons are portrayed in the policy and popular literature primarily as recipients of fiscal and social transfers, with their role within families highlighted in terms of their care needs. In fact, transfers occur in both directions, in economies with strong systems of social pensions, older persons who have accumulated assets over their lifetimes transfer both income and wealth to the next generation. The nonmonetary role of older persons is equally salient. Not only are they the providers of child care in many societies, enabling younger generations—especially women—to stay in the labor market; they are also a source of cohesion and cultural continuity in families and the society.
- 6. Many cities pride themselves on a vision of being “cities for all.”** Vision statements of cities across the world emphasize the ideal of an “inclusive city.” Most countries and cities are cognizant of their age structures and are committed to catering to diverse age groups. In rapidly aging cities, older persons and their families can form a strong constituency that demands more policies and programs that benefit them. In societies with strong norms of filial piety and reverence for elders, governments are under additional pressure to address the needs of older persons. Both the ideal of caring for diverse population groups and the political imperative of inclusion make age-readiness a priority for most cities. They may, however, need to make tradeoffs between competing priorities, and political will and a robust social contract will determine success.

This report argues that the age-readiness of cities is contingent upon the extent to which they are **adaptive**, **productive**, and **inclusive**.

- In being **adaptive**, a city transforms or repurposes some of its existing infrastructure and services to respond to the new challenge of aging.
- In being **productive**, the city sharpens its competitive edge through incentives for innovation that will drive the development of new products and services catering to the growing demands of and for an aging population.
- In being **inclusive**, the city “enhance[s] the ability, opportunity and dignity of individuals and groups disadvantaged on the basis of their identity, to take part in society” (World Bank 2013) by working toward inclusion in the spatial, social, and economic realms (World Bank 2015).

The attributes of being adaptive, productive and inclusive however, are interdependent (as figure E.2 shows) and interventions that advance one aspect often have implications for the other two.

**FIGURE E.2. ATTRIBUTES OF AGE-READY CITIES**





## Building Age-Ready Cities

*Why not begin with an activity as old as the human race: asking the advice of the oldest people you know? Because older people have one thing that the rest of us do not: they have lived their lives.*

—Karl Pillemer  
“Ask the Aged”

This report argues that an adaptive, productive, and inclusive city can transform itself to become age-ready. One of the overarching messages is that actions taken toward age-readiness are not just good for older persons; they have wide-ranging benefits that can lead to a better city for all. The report highlights six thematic areas relating to age-readiness that draw from the WHO Age-Friendly Cities framework (WHO 2007, 9) but focus

FIGURE E.3. SIX ACTION AREAS TO ENHANCE AGE-READINESS IN CITIES



primarily on the built environment. They include, as figure E.3 shows, universal design, housing solutions, creating multigenerational spaces, enhancing the physical mobility of older persons, use of technology, and the possibility of efficient spatial forms.

- 1. Universal design toward age-readiness:** The idea of universal design was first articulated by Ron Mace in 1997 (Mace 1998) and is upheld by seven principles: equitable use, flexibility in use, simple and intuitive design, perceptible information, tolerance for error, low physical effort, and size and space for approach and use (Connell et al. 1997). The experience of the user is central to good design. Entry points for universal design include, among others, the preparation of building codes and regulations and the encouragement of their application not only to the creation of new buildings and public spaces but also to the reconstruction and retrofitting of existing ones.
- 2. Housing solutions for age-readiness:** Living arrangements of older persons vary across different circumstances, cities, and countries, ranging from independent living to living in institutional settings to co-residing with families. Some older persons have the means and the ability to choose between aging in place and moving to an institutional care setting. Others do not, or they may live in cities with limited options and have to deal with basic, affordable housing (Molinsky and Airgood-Obyrcki 2018). These older persons often live in areas that present greater barriers to aging in place comfortably and safely because of poor-quality habitations and unsafe conditions and in areas that are prone to environmental and other hazards. Such areas may also lack services (Rodwin and Gusmano 2006; Smith 2009). Regardless, for cities to cater to their older residents, homes and other spaces need to be adapted to their physical and cognitive needs so they can lead independent, safe, and dignified lives.
- 3. Creating multigenerational “spaces”:** Decision makers in families, neighborhoods, and societies often believe older persons are best kept safe by confining them rather than integrating them (Papke 2020). Not only do older persons prefer “multigenerational spaces,” however, but evidence increasingly indicates that segregation is deleterious to their well-being and to society as a whole. The loneliness and isolation experienced by older persons living in segregated facilities, for example, can be attenuated by providing mixed-generation spaces (see Kang 2021 for Korea). Opportunities exist to provide multigenerational spaces in housing and community facilities, and the city has a preeminent role in offering incentives for the creation of such spaces, as well as in directly supporting them.
- 4. Age-readiness through improved transportation:** Being able to get around to meet basic needs, engage in employment and recreation, and obtain services is essential for the well-being of all individuals. Older persons, however, have different patterns of mobility from younger ones in terms of where they go, how far they travel, at what times, how frequently, for what purposes, and using which mode of transport (Loukaitou-Sideris and Wachs 2018). Understanding these patterns and behaviors is very important to predict the use of transportation, as well as for devising policies



Sunil Iodhwal / Shutterstock

for fare setting and transportation vouchers, among others. It is also important for the design of, for example, public spaces like waiting areas, walking paths, accessible entrances, and signage.

5. **Making technology work for age-readiness:** Technology is a boon, as has been amply demonstrated during the pandemic; it can ease the lives of everyone, and older persons are no exception. It also supports their caregivers and service providers, enables them to live independently longer, and enhances social connections and access to services, with huge impacts on their overall well-being. Yet technology can also be a bane, intensifying gaps in access between those who are conversant with and can afford it and those who are not and cannot. In addition, older persons tend to be less digitally literate than their younger counterparts, which makes them more susceptible to cybercrime.
6. **Efficient spatial forms:** Spatially concentrating resources and services can facilitate accessibility (particularly for those with limited mobility) and reduce the environmental footprint, and it is often cost effective, particularly in aging and shrinking cities. Transit-oriented development is one approach to achieving such efficient spatial forms. Even in the context of the pandemic, where city planners are revisiting the idea of compact cities, the benefits of urban forms that promote walkability, accessibility, and mixed land use spaces can be wide ranging.

An age-ready city is, at its core, an inclusive city. In taking action towards age-readiness, cities move closer towards a goal that most of them espouse—building a city for all. Yet, older persons, like others, are not identified only by their age. They also have other characteristics—gender, disability status, location, income, marital status, and living arrangements, to name a few. As mentioned earlier, they contribute to society and the economy and often have political and social influence on the manner and extent to which city politicians deploy policies. All these possibilities can become reality only if cities take intentional action to ensure that older persons have the ability, opportunity and dignity to lead fulfilling lives. The issue of violence against, and ill-treatment of, older persons

deserves special mention because evidence indicates that such violence and victimization is pervasive and likely increasing, especially in light of the restrictions and vulnerabilities imposed by COVID-19 (Elman et al. 2020; Pillemer et al. 2016; WHO 2020b).

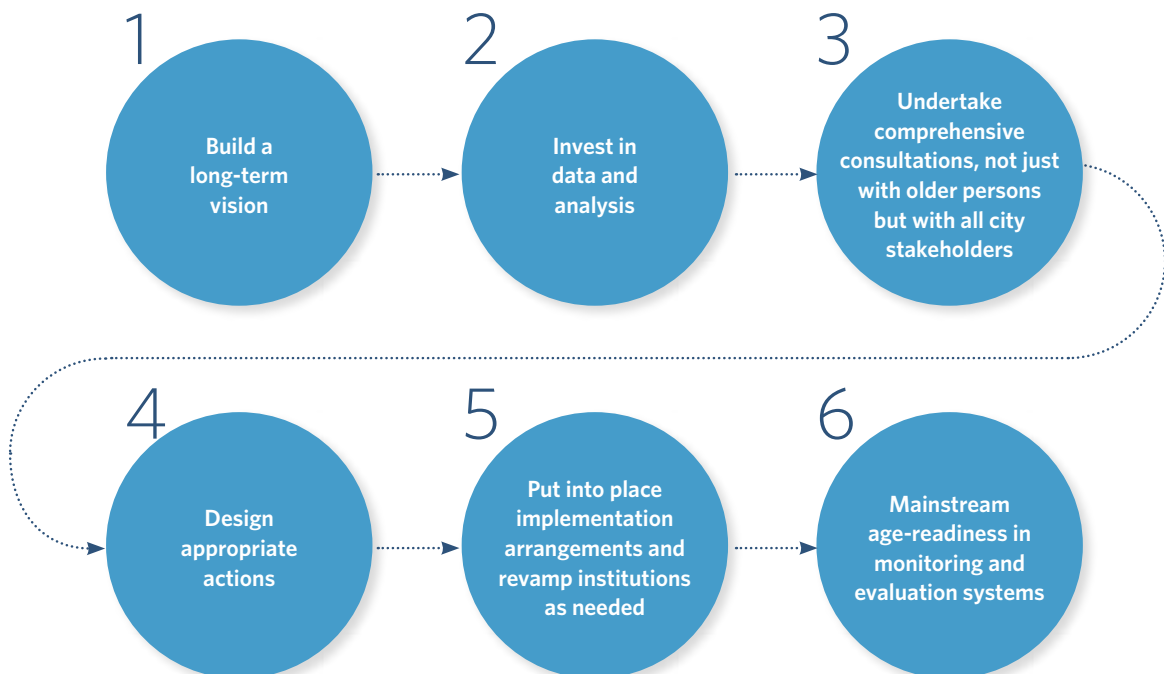
Citizen voice and participation are essential to building age-ready cities. This includes the participation of not just older persons but anyone who is invested in the age-readiness of the city. Such participation is essential for a city to secure public support for investments in age-readiness, which has universal benefits. It is part of building a wider social contract and consensus around the idea of an age-ready city.

## How Can Cities Advance toward Age-Readiness?

It is relatively easy to point to areas in which cities and other tiers of governments can intervene to bring about age-readiness. It is more difficult to suggest how this can be done. This report proposes six stylized steps to that end as figure E.4 illustrates.

- **First, build a long-term vision.** Often, building age-readiness is a matter not of making large financial investments but of recognizing its importance and centrality to future actions. Vision statements are statements of intent and ambition on the part of the government.
- **Second, invest in data and analysis.** Overall, city-level data are scarce, especially in non-OECD countries. An essential condition for evidence-based policy action, then, is the production of robust data and upstream analysis that identify city-level demographic trends and define the issues at hand, as well as the core needs of an age-ready city.

FIGURE E.4. SIX STEPS TOWARD AGE-READINESS



- **Third, undertake comprehensive consultations, not just with older persons but with all stakeholders in the city.** Such consultations are important in devising a social contract that ensures all residents are invested in the vision of an age-ready city. Consultations are also important to detect any resistance and understand its source. Consultations would benefit the design, sequencing, and implementation of any reform actions.
- **Fourth, design actions toward age-readiness.** How will a city mainstream aging issues into its overall policy framework? Will it design special programs? Will it focus on mainstreaming aging issues into existing programs? How will it adapt buildings and other infrastructure for universal accessibility? Will it need to retrofit infrastructure? What will be the role of the public and private sectors, of communities, academia, civil society, and external bilateral or multilateral institutions? These are questions the city will need to consider as it designs the actions it will take.
- **Fifth, put into place implementation arrangements and revamp municipal-level institutions to respond to the need for age-readiness, because the proof of policy actions is in their effective implementation.** Such implementation takes place through existing systems, augmented systems, or reformed systems. It includes provision of services, contracting, management, and quality control and enforcement mechanisms. Overall, gearing institutions toward changing populations makes the institutions more responsive to their needs but can be politically, bureaucratically, and financially challenging.
- **Sixth, mainstream age-readiness in monitoring and evaluation systems.** This is best achieved when cities are at early stages of aging, so that monitoring systems can be built into investments that seek to build age-readiness. Cities can also make use of community monitoring mechanisms that engage older persons to buttress the top-down monitoring systems.

To summarize, *Silver Hues: Building Age-Ready Cities* illustrates the rationale for, and chalks out the contours of, age-readiness. It argues that planning for an aging city makes both economic and social sense. It profiles older persons as a diverse, growing cohort whose members are active agents in their social and political environments. It also shows that the availability, affordability, and accessibility of infrastructure and services can aid its transformation toward age-readiness. As more of its residents become aged, the city will, inexorably, have to address the challenges of an altered demographic reality, which makes early planning and implementation essential. In this context, COVID-19 presents an opportunity and an imperative to reimagine the city. Concomitantly, it presents a unique chance to integrate age-readiness into the new imagination. This may include expanding walkable spaces, improving street accessibility features, rethinking the design and layout of nursing homes, devising intergenerational housing solutions that benefit both older persons and young, integrating older persons into built and social environments, making greater investments in the care sector, addressing the gender dimensions of caregiving for older persons, and investing in technology solutions, among others. It is important, however, as cities pivot to a new reality after the pandemic that they keep age-readiness in mind.

## Endnotes

- <sup>1</sup> That is, if a cell has an unusually higher number of older persons, then the cell is identified as a hotspot for older persons. A cell with a high value of the aged is interesting but may not be a statistically significant hotspot; to be statistically significant, a cell should have a significantly high value of the aged and be surrounded by other cells with high values of the aged. The local sum for a cell and its neighbors is compared proportionally to the sum of all cells; when the local sum differs greatly from the expected local sum, and when that difference is too large to be the result of random chance, the cell is identified as a hotspot.
- <sup>2</sup> The poverty rate is the ratio of the number of people (in a given age group) whose income falls below the poverty line. OECD's poverty line is taken as 50% of the median income. (Source: oecd.org)

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