SEOUL'S POLICY SHARING INITIATIVE
Located in the heart of the Korean peninsula, Seoul is a city with an exceptional natural environment with the Han River traversing some 41.5km through the city center along with an abundance of green space covering 27% of the total area.

It is also the 600-year-old capital of the Republic of Korea, a political, economic and cultural center with a long history and the heart of the Korean economy, which accounts for 23% of its gross domestic product. Seoul, an international city with 15 million foreign tourists visiting Seoul in 2018 and where the world’s 3rd largest number of international conferences were held on a UIA basis, has been recognized as the world’s smartest city, ranking 1st in seven consecutive years since 2003 in the e-government assessment conducted by Rutgers University in the United States for 100 major cities around the world.

It is only recent that Seoul has grown into the city it is today. Seoul, which was in ruins by war over 50 years ago, was a poor city with a GNP of only $82 per person, a city suffered from environmental pollution and epidemics. However, just three to four decades after the end of the war, Seoul has grown into a huge city where 10 million people can live comfortably. It has solved a host of city problems such as slums, housing shortages, water shortages, garbage, traffic congestion and security issues in a short period of time, and has become a smart and sustainable city.

This kind of development experience and knowledge in Seoul will be important intellectual assets that can be developed without trial and error for many cities that begin urbanization. Accordingly, Seoul city is pursuing the “project to expand Seoul city’s excellent policies overseas,” which shares Seoul’s development experience and knowledge with the world’s cities. To this end, we are carrying out a variety of projects such as capacity building programs for overseas partner cities, policy consulting, dispatch of experts, and knowledge sharing through online and offline channels.

Also, Seoul is leading the global city development agenda as the chair city of WeGO, CITYNET, and ICLEI. In addition, it has established an “Urban SDG Knowledge Platform” with UN ESCAP and CITYNET to lead the sharing of knowledge in world cities. Seoul city hopes that these efforts can contribute to the development of global cities as sustainable cities.

- December 2019 -

<Details: Provided by Seoul Policy Archive (www.seoulsolution.kr)>
Seoul is a place of life where mountains and rivers are harmoniously mingled and the natural landscapes are beautiful and the population of ten million lives safe and healthy. In order to achieve the sustainable development of Seoul, Seoul city is continuously striving to reduce greenhouse gases and streamline energy, and by introducing state-of-the-art ICT technology, it efficiently manages the entire city, including transportation, water management, and city safety.

- **Location:** Basin-shaped city located in the center of the Korean peninsula
- **Population:** 10,049,607 people (Q4 2018)
- **Area:** 605.24 km²
- **Major river:** Han River
- **Major mountains:** 26 mountains including Nam Mountain, Bukhansan Mountain, Gwanaksan Mountain, Dobongsan Mountain, Umyeonsan Mountain, and Buramsan Mountain

### 03. International Evaluation of Seoul

- **Ranked 1st** in the World E-Government Assessment (Rutgers University, USA) for 7 consecutive years (2003 to 2016)
- **Ranked 3rd** place to hold international conferences (UIA 2018)
- **Ranked 6th** in global competitiveness (Japan The Morit Memorial Foundation 2017)
- **Ranked 7th** in the World’s Smartest Cities (USA <Forbes> 2017)
SEOUL’S POLICY SHARING INITIATIVE

History and Status of Seoul

Population

10.04 million people

- Total population: 10,049,607 people (Q4 2018)
- No. of households: 3,792,104 households (2018)

Industrial economy

KRW 372 trillion

- Regional GDP: KRW 372,110 billion (2017)
- No. of businesses: 822,000 (2017)

Urban Development and Housing

3.64 million houses

- No. of National houses: 3,644,101 houses (2016)
- Housing supply rate: 96% (2016)
- Public Rental Housing: 294,227 houses (2018)

Culture/Tourism

13.24 million people

- No. of foreign tourists: 13.24 million people (2018)
- International conferences held: 526 (2018)
- Public libraries: 160 (2017)
- Cultural properties: 1,770 (2017)

Environment

16.4 ㎡

- Park area per person: 16.4㎡/person (2016)
- Residential waste: 9,608 tons/day (2016)
- Waste recycling: 39,119.8 tons (2016)
- Food waste: 2,871.7 tons/day (2017)
- Fine dust: 22 ㎍/㎥ (2018)
- Power consumption: 46.3 million MWh (2016)
- Water consumption: 1,104,270,000 ㎥ (2017)
- Sewage pipes: 10,701 km (2017)
- Water pipes: 13,571 km (2018)

Transportation

3.12 million vehicles

- No. of vehicle registrations: 31.2 million vehicles (2019)
- Traffic volume: 32.3 million traffic/day (2016)
- Driving speed: 24.3 ㎞/h (city center 17.9 ㎞/h) (2017)
- Road rate: 22.71% (2017)
- No. of subway lines: 9 lines (2017)
- Total length of subway extension: 331.6 ㎞ (2017)
- Subway ridership: 7.7 million per day (2017)

Welfare benefits

260,000 people

- No. of basic living security benefit beneficiaries: 264,227 people (2017)
- No. of social welfare facilities: 7,514 per 100,000 population (2015)

International exchanges

58 cities

- Sister and Friendship Cities: 68 cities (Fab. 2019)
- International organizations membership in: 36 organizations

ICT

94.8%

- (Administrative) Information disclosure rate: 95.4% (2018)
- Smartphone users: 96.9% of Seoul citizens (2017)
- Free public WiFi: 2,694 regions / 8,679 AP installations (2017)
- Free smartphone charging stations: 5,700 units installed in 390 locations (2016)
- CCTV integrated control center: 25,070 centers (365 days / 24 hour operation) (2016)
- High Speed Communication Networks (e-Seoul Net): 35 institutions, 183 ㎞ (2016)
- Seoul Data Center: 1,065 Integrated Management Systems (2016)
- Mobile app service: 42 services in 11 sectors (2017)

Transport

77.7 points

- Traffic safety index: 77.7 points (2017)
- No. of crimes: 342,105 cases (2016)
- 119 rescue services: 163,055 cases (2017)
- Damage from storms and floods: KRW 44,613,000 (2017)
- No. of fires: 6,368 cases (2018)

Urban safety

77.7 points

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- No. of crimes: 342,105 cases (2016)
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SEOUL’S POLICY SHARING INITIATIVE

06. Administrative Organization Status

Seoul’s City’s Organization

Seoul metropolitan government
- Main Office
  - 3 deputy mayors
  - 6 offices
  - 5 headquarters
  - 14 buildings
  - 11 committee advisors
- City council
  - 3 corporations
  - 32 direct agencies
  - 47 subsidiaries
- Number of city employees
  - 18,538

Autonomous districts (Gu)
- District offices
  - 25 districts
  - 147 divisions
  - 841 department
- Community Health Centers
  - 25 centers
  - 14 department
- Dongs
  - 424 Dongs (average 17 Dongs per district)
- Number of district employees
  - 34,698 people
- District subsidiaries
  - 3 subsidiaries
  - Seodaemun Museum of Natural History, Mapo Cultural Library, Sdonga Book Museum

As of August 2019 <Source: Seoul City’s Organizing Officer>
07. Seoul's Budget for 2019 at a Glance (by Sector)

KRW 31 trillion
Net (13.8%)

KRW 35 trillion
Total (12.3%)

Social Welfare
KRW 11 trillion 35.0%
• Residence KRW 1 trillion
• Health KRW 461.8 billion
• Senior citizens KRW 2 trillion
• Low income group KRW 2 trillion
• Education KRW 391.9 billion
• Disabled people KRW 958.6 billion
• Women's childcare KRW 2 trillion

Education Office and Autonomous Region (Gu)
KRW 7 trillion 24.2%
• Education Office Support KRW 3 trillion
• Autonomous Region (Gu) Support KRW 4 trillion

Environmental Protection
KRW 2 trillion 9.1%
• Climate environment KRW 467.4 billion
• Water and sewerage KRW 1 trillion
• Park green space KRW 1 trillion

Transportation
KRW 2 trillion 7.4%
• Parking lot KRW 111.9 billion
• City railway KRW 835.7 billion
• Public transportation KRW 968.9 billion
• Road construction KRW 430.3 billion

City Safety
KRW 1 trillion 4.7%
• Fire safety KRW 203.6 billion
• Facility management KRW 686.4 billion
• Flood defense and water control KRW 616.8 billion

City Planning and Housing Maintenance (redevelopment)
KRW 1 trillion 3.2%
• Residential environment KRW 742.7 billion
• City redevelopment (maintenance) KRW 277.3 billion

Culture and Tourism
KRW 794.4 billion 2.5%
• Tourism promotion KRW 64.4 billion
• History and culture KRW 234 billion
• Sports promotion KRW 202.8 billion
• Culture and art KRW 293.3 billion

Industrial Economy
KRW 657.7 billion 2.1%
• Industrial development (promotion) KRW 338.6 billion
• Job creation KRW 226.1 billion
• Public economy KRW 56.6 billion
• Social economy KRW 34.4 billion

General Public Administration

<table>
<thead>
<tr>
<th>Administrative Operating Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>KRW 1 trillion 831.7 billion 5.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Administration</th>
</tr>
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<tbody>
<tr>
<td>KRW 778 billion 2.4%</td>
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<table>
<thead>
<tr>
<th>Reserve fund</th>
</tr>
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<tbody>
<tr>
<td>KRW 246.1 billion 0.8%</td>
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<table>
<thead>
<tr>
<th>Financial activity</th>
</tr>
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<tbody>
<tr>
<td>KRW 934.4 billion 2.9%</td>
</tr>
</tbody>
</table>
Seoul's urban history can be traced back nearly 2,000 years, when the Baekje capital, Wiryeseong, was located on the banks of the Hangang River in southeastern Seoul. Since then, today's city development began in 1394 when Seoul became the capital of the Joseon Dynasty (1392-1913).

With the opening of the port at the end of the 19th century, Seoul began to shape the modern city by introducing electricity, railroads, trams, parks, waterworks, schools and hospital facilities. However, it was followed by the Japanese colonial ruling period (1910-1945), and as industrialization gradually progressed, rogue settlements were formed all over the city, and the outskirts were rapidly incorporated into new dwellings. After the liberation in 1945, it was renamed Seoul Metropolitan City, and was devastated by the Korean War (1950 to 1953). Once a war-ravaged city in the 1950s, Seoul grew rapidly into a world-class city along with rapid economic growth. The industrialization that European countries achieved in 100 years took less than 30 years in Korea, and Seoul has become a smart city that can easily serve a population of 10 million people overcoming city problems in over half a century.

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Seoul’s development phase can be divided into three main stages. In the 1960s and 1970s, due to a massive influx of people and a lack of infrastructures, Seoul experienced serious city problems such as traffic congestion, environmental pollution, unauthorized settlements, and housing shortages. In order to solve these problems, Seoul city focused on the construction of basic infrastructures, such as road expansion, the construction of public apartments in unauthorized settlement areas, and the construction of Cheonggye Elevated Highway and Yeouido.

In the 1980s and 1990s, active city improvement and beautification policies were implemented with the hosting of the 1986 Asian Games and the 1988 Olympics. A comprehensive development plan for the Hangang River, the construction of the Gangbyeonbul-ro and Olympic-daeoro along the Hangang River, the opening of subway lines 2 to 8, and the construction of large-scale apartment complexes in Gangnam, Mok-dong, Godeok, Gaejo, and the Sanggye area in response to the explosive demand for housing by the middle class were carried out. With the construction of large-scale infrastructures, Seoul has established a significant level of city infrastructures, such as public transportation, roads, and water and sewerage. Still its indiscriminate development policies have resulted in the destruction of the natural environment, the damage of historical resources, and the destruction of communities. In the 2000s, the development of IT technology and increased citizen demands for life quality, Seoul’s city management approach has changed into a sustainable city and a state-of-the-art IT city. A wide range of park creation projects were carried out, such as the restoration of the Cheonggyecheon Stream and Seoul Forest, and the electronization of the entire Seoul city’s administration was carried out. In recent years, as economic growth has slowed down and the social environment has changed such as aging population the paradigm has changed with city regeneration, and the Seoullo 7017 and Remake Seewon plaza Development Plan were promoted.

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Seoul’s Urban Development Phase and Major Policies

The 1st phase: City Infrastructure Expansion Period (1960 to 1980)

Characteristics
- 1960s: Restoration and development centered around the city after the end of the war
- 1970s: Dispersion of central functions and population projected outwards to ease excessive city concentration

Main projects
- Enacted the Land Compartmentalization and Rearrangement Projects Act (1966)
- Cheonggyecheon Stream Overpass Construction (1967)
- Completed Guro-dong Export Industrial Complex (1967)
- Opening of Hangang River’s main bridges (Yanghwada, Hannam, Jamil, Cheonho: 1966 to 1974)
- Established Yeouido’s Comprehensive Development Plan (1969)
- Designated Development Restriction Zones (1971)
- Announced Yongdong and Jamil District Development Plan (1973)
- Subway Line 1 opened (1974)
- Designated Nanjido Landfill Site (1977)

The 2nd phase: City Growth Period (1980 to 1990s)

Characteristics
- 1980s: Implemented city landscapes improvement projects and redevelopment of underdeveloped areas in preparation for international events
- 1990s: Large-scale maintenance projects were implemented to systematically repair rapidly aging city areas

Main projects
- Enacted the Housing Site Development Promotion Act (1980)
- Promoted the Hangang River Comprehensive Development Project (1982 to 1986)
- Constructed the Jamsil Sports Complex (1982)
- Opened Subway Lines 2,3 and 4 (1984 to 1985)
- Established a plan for residential complexes including Mok-Dong and Sango-dong (1985)
- Implemented Separate Garbage Collection System (1992)
- Opened Subway Lines 5,6,7 and 8 (1990 to 1996)

The 3rd phase: Sustainable Development Smart City (2000 to present)

Characteristics
- Emphasis on history, culture and sustainable development values
- Smart Seoul (electronization of the entire Seoul city’s administration)
- Paradigm shift to city regeneration

Main projects
- Creation of Nanji Ecological Park (2002)
- Reorganization of Public Transportation System (2004)
- Low Emission Project of diesel vehicles (2005)
- Creation of Magok Smart City (2007 to 2016)
- Preservation of Seoul City’s History and Culture (2013)
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- Preservation of Seoul City’s History and Culture (2013)
- Compressed Sanitation System (2011 to 2015)
- Enacted the Basic Ordinance on Sustainable Development in Seoul (2017)
Seoul will achieve compact city development by utilizing limited resources efficiently and rationally, and create a happy city where people and nature coexist by pursuing environmentally sound and sustainable development.

Housing supply rate: 96% (2017)
Seoul is a very compact and efficient city in terms of land use. As one of the world’s most densely populated cities, there is less land consumption per person. If Seoul had been developed at the same density as Western cities, the forests seen above would have disappeared. Instead, the forests would have been developed as urban space. Furthermore, the spread of land use would have increased the burden on transportation and infrastructure and increased environmental pollution. One of the biggest achievements of Seoul’s compact urban development is green Seoul as an “invisible” true beauty. Compact city development has dramatically reduced Seoul’s carbon dioxide emissions per person. The share of public transportation in Seoul is over 2/3. This is due to the efficient, convenient and eco-friendly public transportation system, thanks to the use of compact and systematic land. This created a world-class, low-carbon city, Seoul.

The beginning of Seoul’s transformation into one of the world’s most sustainable modern cities was originated from Seoul’s City Basic Plan, announced in 1966. Through this plan, Seoul predicted rapid growth, establishing a spatial order instead of the chaotic development that was prevalent at the time, and securing city spaces to accommodate the growing population, while designating a green belt on the outskirts to lay the groundwork for the coexistence of humans and nature. Furthermore, by envisioning a plan for the sub-city center, it has increased the efficiency and effectiveness of the supply of infrastructure such as transportation and water and sewerage.
Seoul has established and has been operating a basic system of urban planning that will not be shaken after 100 years in order to resolve problems caused by rapid growth and prepare for the coming era of low growth.

**Seoul's Urban Planning**

The Seoul Plan (City Basic Plan) is the highest level statutory plan in the sector of Seoul City-Planning. The 2030 Seoul Plan, established in 2014, is the 4th city basic plan established since its inception in 1990. It contains the future vision, direction of development, and space management guidelines of Seoul, which 250 individuals and experts participated in.

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**Future Visions (Images)**

Happy citizen city with communication and respect

**Planning by Core Issues**

People Centered City | Global Co-prosperity City | Culture City | Peaceful City | Community City

**Space planning**

Space Structure | Detailed Tasks | Regional Design

* Detailed Information: Refer to the Urban Planning Brochure

Living Zone Plan

The Living Zone Plan is a citizen eye-level plan that was established for the first time in 2017, with a range of “Living Zones,” a space where citizens live their daily lives. Over the past three years, 34,833 opinions have been collected from 4,479 residents, and a total of five regional living zone plans and 116 areal living zone plans have been prepared.

**Seoul Urban Planning Charter**

The charter, which consists of 10 articles, serves as the constitution of Seoul’s urban planning and presents a consistent principle that will not change even as times change.

01 Nature Environment Conservation City

Seoul’s natural environment preserves its unique ecological and landscape values. By protecting and restoring internal and external mountains, the Hangang River and streams, we shall establish and strengthen Seoul’s environmental identity and symbolism, and create a healthy city where citizens can easily access nature in their daily lives.

02 History and Culture Preservation City

As Seoul’s history and culture is precious cultural heritages of the Republic of Korea, where the long history of our nation has been accumulated, we shall preserve them perfectly and bequeath them for our future generations. Furthermore, we shall creatively utilize the historical and cultural heritages of tangible and intangible materials to create future value that enriches the cultural life of citizens and contributes to city revitalization.

03 Public and green transportation city

To ensure the use of all citizens and to reduce environmental pollution and traffic congestion, we shall create roads and transportation systems centered on public transportation. We shall increase the convenience of using green transportation such as walking and bicycles, and create street environments that prioritize the safety and comfort of pedestrians ahead of vehicles.

04 Public Safety City

We shall create a city that is safe from disasters through urban planning that conforms to the natural terrain and restores water circulation. We shall establish a risk management system that can prevent and minimize a variety of disasters and recover quickly. We shall create a bright and vibrant city environment where we can live with a peace of mind not having to worry about crime.

05 Eco-friendly Energy Saving City

Development activities such as new construction shall respect the given natural environment conditions and pursue sustainable development by utilizing renewable energy to reduce building energy consumption. In particular, public buildings and facilities lead the way in energy saving.

06 Harmonious landscape city

Buildings, facilities, and structures shall harmonize with Seoul’s natural environment and historical landscape, and harmonize with the surrounding buildings. We shall overcome the uniformity of city and residential environments and create diverse and unique landscapes that make use of the characteristics of each region.

07 Convenient City Anywhere

We shall plan city space structures so that residences and workplaces are close to each other, reducing the costs of commuting for citizens and promoting balanced development between regions. By constructing a variety of commercial and cultural facilities in the vicinity of station areas, we shall make city spaces that are convenient for walking anywhere.

08 City with characteristics of each place

We shall maintain the diversity of areas by protecting the unique characteristics of each area of Seoul and the memories of the community. We shall improve the quality of city regeneration and environmental maintenance, and promote specialized regional development by creating places with a diverse value of life and experience of the times.

09 City of Participation and Communication

We shall ensure that all citizens participate voluntarily and democratically in the process of establishing urban planning so that a wide range of interests can be reflected. We shall contribute to revitalizing the local communities by establishing cooperative systems that allow continuous communication between local residents and public authorities.

10 City of Caring and Coexistence

We shall aim for a socially integrated city plan where a variety of classes and generations can get along together. We shall create welfare living environments that give priority to the disabled, the elderly, children, and pregnant women, and will be an international city that embraces differences in nationality, race, language, religion and culture and respects diversity.
03. Seoul's Houses

Housing Supply Rate

Seoul suffered a housing shortage as housing demand exploded during the period of high growth. The government has supplied large apartment complexes since the late 1960s to alleviate chronic housing shortages. As a result, Seoul’s housing supply rate has reached 96% as of 2017.

Housing Ownership Rate

- Own House: 43.3%
- Leased House (on deposit money basis): 25.7%
- Monthly Rental House: 27.8%
- Free (Leasehold): 3.1%

Seoul's housing type has changed significantly. By 1970, more than 80% of houses in Seoul were single-family houses, and apartments stood around 4%. However, due to the supply of large apartment complexes since the mid-1970s, single-family houses decreased by 28.7% as of 2018 and apartments soared to 42.2%, making it the typical residential form in Seoul.

Housing Type Trends

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>1980</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartment</td>
<td>42.2%</td>
<td>17.8%</td>
</tr>
<tr>
<td>Multiplex housing</td>
<td>17.8%</td>
<td>28.7%</td>
</tr>
<tr>
<td>Single family house</td>
<td>25.7%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Row house (Townhouse)</td>
<td>3.1%</td>
<td>2%</td>
</tr>
<tr>
<td>House within commercial building</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Seoul Housing Policy Division

The housing ownership rate (percentage in which people live in their own houses) of Seoul citizens stood at 42% as of 2018, and 58.4% of them live in rental housing.

Source: Housing Promotion Brochure 7p
Public Rental Housing

In the event that there is an insecurity problem of low-income households due to the surge in housing prices and rental fees, Seoul city contributes to housing stability for the common people by supplying a variety of public rental housing types. In recent years, we have been expanding the supply of customized rental housing by life cycle of the citizens, given that the number of elderly and single-person households continues to grow and young people are suffering from high unemployment and housing costs.

Customized rental housing by income group from the low-income group to the middle class

We contribute to the housing stability of the common people by supplying various types of rental housing, ranging from construction-type rental housing in which Seoul city constructs newly through housing site development, purchase type rental housing in which Seoul city purchases re-developed and re-constructed apartments or existing multi-household houses and leases them again, and lease-type rental housing in which Seoul city rents existing houses from landlords and uses them as rental housing.

Housing Welfare Policy

Classification

<table>
<thead>
<tr>
<th>Type</th>
<th>Content</th>
<th>Supply area</th>
<th>Lease term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent lease</td>
<td>For low-income households and medical recipients less than 1st quartile of income</td>
<td>Exclusive use area less than 59 ㎡</td>
<td>30 years</td>
</tr>
<tr>
<td>Public rent</td>
<td>Migration Countermeasures Officer, Subscription Deposit Subsidy</td>
<td>Exclusive use area less than 114 ㎡</td>
<td>20 years</td>
</tr>
<tr>
<td>National Rental Housing</td>
<td>For the common people with less than 10% of workers’ average income</td>
<td>Exclusive use area less than 59 ㎡</td>
<td>30 years</td>
</tr>
<tr>
<td>Long-term leased house (on deposit money basis)</td>
<td>Leased house (on deposit money basis) for up to 20 years for the middle class</td>
<td>Exclusive use area less than 114 ㎡</td>
<td>20 years</td>
</tr>
<tr>
<td>Happy Housing</td>
<td>Happy Housing (on deposit money basis) for the housing stability of young people</td>
<td>Exclusive use area less than 114 ㎡</td>
<td>10 years</td>
</tr>
<tr>
<td>Re-development rental</td>
<td>Rental after purchase of private re-development houses</td>
<td>Exclusive use area less than 59 ㎡</td>
<td>30 years</td>
</tr>
<tr>
<td>Rental after purchase of multi-household houses and studios (new or renovation)</td>
<td>Rental after purchase of private multi-household houses and studios (new)</td>
<td>Exclusive use area less than 114 ㎡</td>
<td>20 years</td>
</tr>
<tr>
<td>Happy Housing</td>
<td>Happy Housing for the housing stability of young people</td>
<td>Exclusive use area less than 114 ㎡</td>
<td>10 years</td>
</tr>
<tr>
<td>Youth houses in studio districts</td>
<td>Housing for young people aged over 19 years old and under 30 years old</td>
<td>Exclusive use area less than 59 ㎡</td>
<td>30 years</td>
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<tr>
<td>Long-term security housing</td>
<td>Deposit security rental (supported from national budget)</td>
<td>Exclusive use area less than 114 ㎡</td>
<td>20 years</td>
</tr>
<tr>
<td>Rental after deposit money-based leases of existing houses</td>
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<td>Exclusive use area less than 114 ㎡</td>
<td>20 years</td>
</tr>
</tbody>
</table>

Housing welfare system

Seoul city operates nine residential welfare centers in four regions, managing rental housing close to customers, and establishing a regional housing welfare system to provide better housing management services to improve the life quality for residents.

By expanding the supply of customized rental housing for the niche, we contribute to the stability of housing for various citizens who have not been satisfied with existing public rental housing.

Seoul’s Policy Sharing Initiative

Seoul’s Urban Planning and Housing Policy

Source: Seoul Housing and Communities Corporation
Seoul has made continuous efforts to create a living place where all citizens can live in a comfortable environment. We are creating a vision of a city where the working place and the living place coexist harmoniously, a livable city though large-scale land development and urban development to promote the balanced development of underdeveloped areas and urban development projects considering regeneration and development.

As a top city globally, which earned recognition in 2018 for its excellent urban regeneration policies by winning the Lee Kuan Yew World City Prize—the equivalent of the Nobel Prize for city administration—Seoul Metropolitan City is a leader for cities around the world.

Cheonggyecheon Stream Restoration Project

Cheonggyecheon Stream, which flows through the center of Seoul city, went through the stream covering project by section from 1925 to 1977 and virtually lost its function as a stream. As a result, safety problems on the covered structures and aging overpasses have been a long-standing challenge for Seoul city. In order to resolve this problem, Seoul City carried out the Cheonggyecheon Stream restoration work from 2003 to 2005, demolishing the Cheonggye Overpass that covered Cheonggyecheon Stream and restoring natural, historical and cultural resources to make it a vibrant place (many other awards in addition to the 2007 Asian Engineering and Civil Engineering Competition Award).

Seoulllo 7017

The Seoul Station Overpass was a symbol of modernization and the 1st image of Seoul city to come face-to-face with at Seoul Station since its completion in May 1970. However, it was judged to be in a D class state after undergoing a precision safety diagnosis in 2006 and was on the brink of demolition. In order to recycle this Seoul Station Overpass and use it as a catalyst for the regeneration and revival of the surrounding areas of Seoul Station, the ‘Seoulllo 7017 Project’ was carried out from 2014 to 2017. The Seoul Station Overpass has now been transformed into an energetic and attractive walkway where people can relax, walk and have a variety of experiences.

Magok Smart City

Magok Smart City installed intelligent CCTVs around schools, parks and residential passages so that police officers of the control centers can be notified and dispatched in case of emergencies. In order to provide rapid disaster detection and situation information, we monitor the level of rainwater pipes and sewage pipes due to localized heavy rains in real time, and conduct video monitoring around major roads in case of disaster.

Magok Smart City built broadband high-speed information and communication infrastructure by laying out communication lines and optical cables throughout Magok Smart City and connecting on-site facilities and integrated control centers with wired and wireless connections.

Magok Smart City provide real-time traffic flow and convenient traffic information. We collect and process traffic information in real time of bypasses in the district, bottlenecks, accident points and intersections, and congestion estimates, and provide them in conjunction with the Seoul Transportation Information Center. We also provide control services against illegal parking and stopping in major commercial areas, traffic congestion areas and alleys.

Creation of Nanji Ecological Park

In 1978, Seoul city, which had been struggling with waste disposal due to the side effects of rapid growth and urbanization, reclaimed a variety of wastes generated in Seoul by designating ‘Nanjido,’ a flood plain created in the lower Hangang River, as a landfill site. In the 1990s, about 10 years later, Nanjido was transformed into a land of death where leachate flowed and odors and harmful gases were generated. Also, the water quality and air of the surrounding Hangang River were contaminated and even the ecosystems of nearby areas were destroyed.

To resolve this problem, Seoul city began working since 1991 to revive Nanjido and transform it into an eco-friendly park. After about 10 years of planning, design and construction from 1991 to 2002, Nanjido was revived as an eco-friendly residential complex, an ecological park, and World Cup stadium. In particular, Nanji Ecological Park has become a popular attraction of Seoul visited by approximately 10 million people per year due to a variety of programs, performances, and the operation of camping grounds and park golf course (2010 UN-HABITAT Special Award).

Digital Media City (DMC)

Digital Media City (DMC), which was born through the redevelopment of Nanjido, an old landfill, and the surrounding area became a new eco-friendly, future-oriented city center. It was established on 569,925 m² of land in Sangam-dong, a gateway to the northwestern part of Seoul. With the basic plan established in 2001 and construction work for its infrastructure started in 2002, DMC has developed into a top-class digital media and entertainment cluster and a state-of-the-art content development, production, and distribution complex where environment and technology, culture and industry, and investment and innovation converge. Occupied by approximately 550 businesses, DMC supports active networking and exchange among its tenants by providing them with the best possible environment for business activities. It also offers high value-added services for advanced information media users, thus playing the role of a hub for key information technologies and R&D activities in Northeast Asia.

Dongdaemun Design Plaza (DDP)

Dongdaemun Design Plaza (DDP) project was initiated as a regeneration project to restore the Dongdaemun area and turn it into a city center after Dongdaemun Stadium lost its functionality as a sports facility. The image of the Dongdaemun area as a commercial district for the fashion industry was being diminished due to the haphazard way in which street vendors flooded into the area and it began to make the area look like a slum. After Dongdaemun Stadium was demolished in 2007 and construction work started in 2009, DDP was finally opened in March 2014 as a cultural complex. DDP—where a variety of cultural events are held, such as exhibitions, fashion shows, new product releases, forums, and conferences—is a center for the fashion and design industries that promotes the sharing of knowledge through new exhibitions and provides a wide range of content to develop design experience.
Seoul, where people and people, people and nature live in harmony, creates a convenient and safe public transportation center city and a pleasant environmental city with advanced public transportation systems and environmental policies.

Public Transportation Share
65%
01. Transportation Policies

Since incomes have increased since the 1980s, ownership of cars has exploded. In 2017, the number of cars increased more than 10 times compared with 1983, while the roads increased only 1.2 times, congesting the city. Accordingly, a host of policies have been implemented to reduce the use of cars and to promote the use of public transportation.

Currently, Seoul has an advanced public transportation system that allows citizens to go anywhere without a car, and is a benchmark for many overseas cities.

### Traffic Status in Seoul

<table>
<thead>
<tr>
<th>Traffic Volume</th>
<th>Traffic Speed</th>
<th>No. of Car Registrations</th>
<th>Public Transportation Use Rate</th>
<th>Satisfaction Level with the Use of Public Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,243 km (2017)</td>
<td>22.71% (2017)</td>
<td>11 times increased compared with 1983</td>
<td>65% (2017)</td>
<td>80.9% (2015)</td>
</tr>
</tbody>
</table>

### Transportation Share Rate (2017)

- **Subway**: 39.9%
- **Bus**: 25.1%
- **Car**: 24.4%
- **Taxi**: 6.5%
- **Others**: 4.1%

### Transportation Policies

- **Total Subway Extension Length**: 338.4 km (2017)
- **No. of Subway Lines**: 10 Lines (2018)
- **No. of Subway Passengers**: 5.11 million people / day (2018)
- **No. of Buses in Service**: 7,405 buses (2017)
- **No. of Bus Routes**: 354 routes (2017)
- **No. of Bus Passengers**: 4.07 million people / day (2018)

*Source: Seoul Transportation Policy Division*
“Bus QuasiPublic Operating System” to provide reliable service
Since 2004, Seoul city has implemented the Bus QuasiPublic Operating System, by which Seoul city is in charge of routes, operation methods, operation evaluation, financial support and so on, and private companies are in charge of route operation, vehicle management, and transportation workers management, providing safe and convenient transportation services to citizens.

Bus Comes First, Bus Rapid Transit (BRT)
By installing exclusive bus lanes that only buses in the city can pass, the bus can arrive on time and the speed of buses has been greatly improved, increasing citizen satisfaction.

Arrival on time 87.3% (2006) to 91.2% (2015)
Satisfaction 59.2% (2006) to 80.79% (2016)

Bus Information Terminal (BIT)
Bus information terminals installed at bus stops tell you in how many minutes the bus will arrive and whether there are any open seats. You can also check the arrival information on your smartphone.

Smart Transportation Card (T-money)
Seoul city has introduced a transportation card that allows you to use buses, subways and taxis with a single card. The Smart Transportation Card of Seoul city provides discounted fares even when changing between buses and subways, enhancing the convenience of public transportation.

Transportation card use rate (2017)
Subway 100%  
Bus 98.8%  
Taxi 70.7%

Owl Bus (Late-Night Bus)
Exclusive bus for late-night and early morning time zone (23:30-06:00) and we are operates on nine routes derived from big data such as midnight mobile phone calls and call taxi usage.

Squirrel Bus (Commuter Bus)
Typical demand-response bus service that operates repeatedly only for sections where the crowdedness inside buses is extremely heavy during the rush-hour.

Green Transport Zone
In order to create a people-centered, safe and comfortable Seoul where citizens can live conveniently without cars, we designated 16.7km² inside the Hanyangdoseong, the Seoul City Wall in Seoul as the nation’s 1st green transport promotion area in March 2017. By reorganizing the city road space, we curb the demand for cars and make the city more convenient for public transportation, pedestrians and bicycles.

Seoul city’s Intelligent Transport System (ITS): Transport OPeration and Information Service (TOPIS)

Unmanned Control
• Violation of exclusive car lane
• Violation of car parking and stopping

Bus Operation
• Operation Status (GPS on bus)
• Real-time bus location

Road Traffic
• Road situation (CCTV)
• Traffic information collection
  • Speed, traffic volume, taxi GPS

Transportation card

Integrated traffic situation management and traffic flow monitoring
• 24-hour traffic condition monitoring in case of congestion with traffic signal control, and guidance on bypass in case of emergency
• Providing real-time traffic flow to traffic users through TOPIS website, road lights, traffic broadcasting network, mobile Apps, ARS, navigation, Social media, etc.

Road Traffic Management
Real-time traffic volume / speed / collection and processing of sudden information, control of a variety of on-site devices and improvement of road traffic flow

Systematic bus operation management
and public transportation integration services
• Real-time management of over 9,000 buses in Seoul
• Providing users with bus arrival information and traffic flow information
• Scientific bus operation management and bus company assessment such as vehicles passing through bus stops without stopping and deviation from the route

Unmanned Control System
• Control on vehicles in violation of exclusive bus lanes and illegal car parking and stopping
• Automatic charging system from control to fine payment

Big Data Analytics Services
Support for the establishment of scientific traffic policies through analysis of all traffic-related data (traffic cards, real-time driving data, speed by road, sudden information, etc.)

Traffic Forecasting Services
Implementing traffic forecasting services for citizens to avoid congestion in advance beyond the limits of real-time traffic information services

<Source: Seoul Transportation Policy Division>
We have established a system to prevent incidents, accidents, and inconveniences so that citizens can use the subway with peace of mind.

By installing subway safety doors at all stations, we prevent track falls and noise and provide a pleasant subway environment.

We crack down on activities that cause inconvenience to citizens, such as selling goods inside trains, begging or causing problems.

We have CCTVs in operation at all stations and have installed more than 9,000 emergency call devices.

In order to use the subway in the middle of the night with peace of mind, we have designated safe zones in stations around adult entertainment districts to increase the brightness of the lights and to monitor them intensively with CCTVs.

- **Safe subway to use with peace of mind**
- **Subway safety doors for citizens’ safety and health**
- **Subway sheriffs for monitoring subway order**
- **Safety facilities for preventing inconveniences and accidents**
- **Citizen relief safe zones on platforms**

**Platform air quality**

<table>
<thead>
<tr>
<th>Noise level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.9%</td>
<td></td>
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</tbody>
</table>

**Subway CCTV Installation Status**

- **13,732 units** (2017)
- **11,856 units inside stations** (2017)
- **1,876 units inside trains** (2017)

**Subway Sheriffs**

149 people (2014) ➞ 323 people (2017)

**Safe Zones**

79 locations in 40 stations (2017)
Seoul is pursuing a project of less nuclear power plant to energy crisis and climate change.

Reducing one nuclear power plant is Seoul’s regional energy policy, which seeks to reduce energy usage and increase renewable energy production by engaging citizens to replace the 2 million TOE, the amount of energy produced by one nuclear power plant.

From 2012 to 2014, Seoul succeeded in producing or reducing 2 million TOE of energy as a result of the 1st phase of the project to reduce one nuclear power plant. Since July 2014, we have been promoting the 2nd phase of the project, “Energy Saving City, Seoul,” which aims to be an energy-producing city, a city that is safe from power crisis, and a city that coexists with other regions.

Like the 1st phase project to reduce one nuclear power plant, we have prepared “Energy-Saving City Seoul: July 2014 to 2020” together with citizens from the beginning to the main direction of the project and how to proceed. We gathered the opinions of citizens through social fiction, policy debates, and online surveys, and reviewed the value, policy goals, and detailed tasks to be pursued in the 2nd phase for reducing one nuclear power plant by the executive committee.

In order to reflect the opinions of all levels of society and to introduce overseas excellent policies and new energy technologies, we made extensive efforts such as consulting with the Seoul International Energy Advisory Council and holding the International Energy Conference. From January to June 2014, through 24 planning meetings including the Nuclear Power Plant Reduction Executive Committee for the second phase of planning, two civil debates, and one forum, targets such as the achievement of 20% electricity independence, energy production and savings of 4 million TOE and reduction of 10 million tons of CO2 gas were established.

### Energy Policies

<Source: Seoul Environmental Policy Division>

#### Consumption Status by Energy Source

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>26.6%</td>
<td>26.6%</td>
<td>26.6%</td>
<td>26.6%</td>
<td>26.6%</td>
<td>26.6%</td>
<td>26.6%</td>
</tr>
<tr>
<td>City gas</td>
<td>41.3%</td>
<td>41.3%</td>
<td>41.3%</td>
<td>41.3%</td>
<td>41.3%</td>
<td>41.3%</td>
<td>41.3%</td>
</tr>
<tr>
<td>Others</td>
<td>1.7%</td>
<td>1.7%</td>
<td>1.7%</td>
<td>1.7%</td>
<td>1.7%</td>
<td>1.7%</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

#### Renewable energy status

<table>
<thead>
<tr>
<th>Classification</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy</td>
<td>256</td>
<td>233</td>
<td>238</td>
<td>293</td>
<td>335</td>
<td>316</td>
<td>351</td>
</tr>
<tr>
<td>Final Energy</td>
<td>15,496</td>
<td>15,548</td>
<td>15,398</td>
<td>15,077</td>
<td>15,189</td>
<td>15,434</td>
<td>14,990</td>
</tr>
<tr>
<td>Use rate</td>
<td>1.7%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.9%</td>
<td>2.2%</td>
<td>2.04%</td>
<td>2.34%</td>
</tr>
</tbody>
</table>

<Source: Citizen’s White Paper for Reducing One Nuclear Power Plant, from 2012 to 2016>
### Performance of One Nuclear Power Plant Reduction Project

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Production and Saving (Unit: 10K TOE)</th>
<th>Power Independence Rate (Unit: %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>330</td>
<td>2.95</td>
</tr>
<tr>
<td>2017</td>
<td>518</td>
<td>4.5</td>
</tr>
</tbody>
</table>

*Temporary decrease due to reconstruction of Seoul Combined Cycle Power Plant, expected 13% at the time of completion (end of October 2019)*

### Energy Independence

- **Total energy production and saving**: 4.5 million TOE
- **Achieving power independence rate by 2020**: 20%
- **Greenhouse Gas Reduction**: 11 Million Tons CO₂ / eq.

### State of Citizen Participation: One less nuclear power plant project goes with citizens

#### Major policies to reduce of one less nuclear power plant (as of Dec. 2018)

- **Solar Power Plants**: 91,098 locations
  - Solar power supply to private facilities: 89,507 locations
  - Solar power installation in public facilities: 1,597 locations
- **582 locations including fuel cells, co-generations, small hydropower**
- **595,706 locations for existing buildings and houses**
- **8,629 cases for green building designs**
- **256,843 people in the transportation sector**
- **8,420 good stores to save energy**
- **185,053 participants in energy education and tour programs**
- **343,000 people in the creation of the Seoul Energy Welfare Fund and welfare projects**

### 2020 goals for the 2nd phase upgrade project to one less nuclear power plant

- **81,067 people for the training of Green Leader**
- **334 organizations participating in the Energy Conservation Practice Contest Project**
- **141,183 people for the Energy Guardian Angel Group**
- **2020 goals for the 2nd phase upgrade project to one less nuclear power plant**

#### Solar Power Plants

- **582 locations**
- **595,706 locations for existing buildings and houses**
- **8,629 cases for green building designs**
- **256,843 people in the transportation sector**
- **8,420 good stores to save energy**
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#### Energy independence

- **Total energy production and saving**: 4.5 million TOE
- **Achieving power independence rate by 2020**: 20%
- **Greenhouse Gas Reduction**: 11 Million Tons CO₂ / eq.
03. Waste Policies

In the 1970s and 1980s, with the economic development of Seoul, the amount of waste generated increased significantly as consumption increased. However, Seoul dramatically reduced the amount of waste generated in the 1990s by implementing the separate garbage collection and waste pay-as-you-go system. As of 2015, 68% of household waste is recycled and its 24% are incinerated. In addition, Seoul has been reborn as a city where resources are recycled through waste recycling and policies, such as using heat generated from incineration as a source of heating for neighboring houses.

**Volume - based fee system**

Significantly Reduces Waste Discharge Amount and Increases Recycling Rate

- **Recycling** 68%
- **Incineration** 24%
- **Landfill** 8% (2015)

Recycling rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Recycling</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>68%</td>
<td>3,088</td>
</tr>
<tr>
<td>2018</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
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</tr>
</tbody>
</table>

Population Change and Waste Generation in Seoul

Trend of household waste generation amount

- **Generation amount**
- **Landfill amount (volume)**

Implementation of waste pay-as-you-go system

- 1995: 15,377
- 2014: 9,429
- 2015: 719

<table>
<thead>
<tr>
<th>Year</th>
<th>Generation amount</th>
<th>Landfill amount (volume)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
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<td>1998</td>
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<td>2000</td>
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<tr>
<td>2002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
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<tr>
<td>2010</td>
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<tr>
<td>2012</td>
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<td>2014</td>
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<tr>
<td>2015</td>
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</tbody>
</table>
Seoul citizens can recycle their recyclables by discharging separately recyclable paper, cartons, plastics, bottles, metals and vinyl by type.

Seoul city is implementing the residential recycling station project where residents directly bring recyclables to mobile segregation discharging locations for residential areas and urban lifestyle housing, and as of 2017, 2,092 locations are in operation.

Seoul city is promoting city mining projects that extract and recycle rare metals from waste home appliances and provide jobs to the socially vulnerable. To this end, Seoul City Metal Recovery Center (SR Center) was established in 2009, effectively reusing discharged home appliances.

Seoul city operates resource recovery facilities to address the sanitary disposal of household waste and the shortage of landfills.

### Performance of Seoul City Metal Recovery Center

<table>
<thead>
<tr>
<th>Year</th>
<th>Waste home appliance (tons)</th>
<th>Waste cell phone (10 thousand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1,920</td>
<td>20</td>
</tr>
<tr>
<td>2010</td>
<td>1,878</td>
<td>19</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

### Efficiency of city mining

- **5g** of gold from 1-ton gold mine
- **20g** of gold from 1 ton of home appliances
- **52g** of gold from 1 ton of PCs
- **400g** of gold from 1 ton of mobile phones

### Distribution Status of Resource Recovery Facilities

- Gangnam Resource Recovery Facility Processing Areas
- Nowon Resource Recovery Facility Processing Areas
- Mapo Resource Recovery Facility Processing Areas
- Yangcheon Resource Recovery Facility Processing Areas

### Operation status of resource recovery facilities

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility size</td>
<td>400 tons/day</td>
<td>750 tons/day</td>
<td>800 tons/day</td>
<td>900 tons/day</td>
</tr>
<tr>
<td>Project costs</td>
<td>KRW 31.8 billion</td>
<td>KRW 166.5 billion</td>
<td>KRW 74.2 billion</td>
<td>KRW 101.1 billion</td>
</tr>
<tr>
<td>Site area (building area)</td>
<td>14,627 m²(13,166 m²)</td>
<td>58,435 m²(30,558 m²)</td>
<td>46,307 m²(20,035 m²)</td>
<td>63,818 m²(27,195 m²)</td>
</tr>
<tr>
<td>Waste volume (amount)</td>
<td>103,798 tons</td>
<td>203,635 tons</td>
<td>186,082 tons</td>
<td>244,746 tons</td>
</tr>
<tr>
<td>Waste incineration volume (amount)</td>
<td>104,343 tons</td>
<td>203,066 tons</td>
<td>182,959 tons</td>
<td>243,270 tons</td>
</tr>
<tr>
<td>Electricity production</td>
<td>12,951,034kW</td>
<td>32,579,072kW</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Electricity sales volume</td>
<td>5,946,444kW</td>
<td>14,436,402kW</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
04. Water and Sewerage Policies

Seoul City’s Water Supply Status 2016
- 10.05 million people using water
- 100% water supply rate
- Production facility capacity 4.8 million m³/day (advanced water treatment 3.75 million m³/day)
- Average daily production of 3.2 million m³/day (up to 36.4 million m³/day)
- Daily average water supply per person: 309L (up to 35.6 million m³/day)
- 6 intake stations
- 100% water-supply reservoirs (capacity 2.42 million m³/day)
- 346L

Thorough Water Quality Management from Water Source to Water Tap

Seoul City’s Waterworks Office boasts thorough water quality management and crisis management systems, from water sources to water taps. In order to supply Arisu, which is the tap water in Seoul and the world’s most safe water, we are conducting water quality tests on 171 items above the WHO recommended level. In addition, we conduct water quality tests directly on 220,000 households every year on five major items: residual chlorine, turbidity, hydrogen ion concentration, iron and copper.

State-of-the-Art Systems for Best Tap Water Production and Reliable Supply

Main systems for tap water production and supply management

<table>
<thead>
<tr>
<th>Water Purification</th>
<th>Water Supply Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Water Purification Treatment System</td>
<td>Continuous (non-stop) water supply system through the expansion of reservoir.</td>
</tr>
<tr>
<td>Chlorine Dispersion Injection System</td>
<td>Dual-pipe System</td>
</tr>
<tr>
<td>Membrane Filtration Water Purification Facilities</td>
<td>Arisu Integrated Information System</td>
</tr>
<tr>
<td></td>
<td>Seoul Waternow System</td>
</tr>
<tr>
<td></td>
<td>Water Supply Geographic Information System</td>
</tr>
<tr>
<td></td>
<td>Mobile Arisu</td>
</tr>
</tbody>
</table>

Seoul City manages the water supply scientifically and systematically by applying operating systems utilizing state-of-the-art water purification technologies and IT technologies throughout the entire process to provide delicious and healthy water production and safe and reliable tap water.

50 years ago, Seoul experienced severe water shortages and river pollution due to poor water and sewerage facilities. Since the 1960s, however, we have continued to install water purification plants, sewage treatment centers, and water and sewerage facilities, achieving a 100% water supply rate in 1991 and a 100% sewerage rate since 1998. Today, Seoul has established a state-of-the-art system to systematically manage the water supply and sewerage facilities to reliably supply world-class tap water with a population of 10 million people. In addition, it manages five million tons of sewage, manure, and wastewater per day by hygienic and safe handling to restore ecosystems and maintain a pleasant living environment.
Seoul City has replaced aging water pipes that cause leaks and rust in the supply of tap water, blocked complex water networks, and established flow meters and flow monitoring systems to raise flow rates to the world’s highest level. In addition, with the operation of scientific water supply, Seoul’s water prices are lower than in any other city in the world.

**Effect of Flow Rate Improvement**

<table>
<thead>
<tr>
<th>Leakage reduction 11.5 billion tons</th>
<th>95.1% (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget savings of KRW 3.48 trillion</td>
<td>55.2% (1,000)</td>
</tr>
<tr>
<td>Reduction of water purification plant facilities: 10 locations → 6 locations</td>
<td></td>
</tr>
</tbody>
</table>

**Management system to improve water flow rate**

- **Waterworks Block Management**: Each water supply network is divided into 100 large, medium and small blocks to facilitate leak exploration and usage analysis.

- **Water supply pipeline maintenance**: Replacing leaky pipes due to elapsed service life with durable, anti-rust stainless steel pipes, ductile cast iron pipes, etc. (98.7% complete by 2018)

- **Scientific supply volume management**: Accurately managing the inflow and outflow volume by installing flow meters and flow monitoring systems in water pipes, water supply zones, blocks, booster stations, and reservoirs.

**Comparison of water and sewerage charges by world countries**

<table>
<thead>
<tr>
<th>2014-2015, Inspector: GWI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water supply</td>
</tr>
<tr>
<td>Sewerage</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**Seewage, Repository of Resources**

In 2015, sewage treatment centers became energy production bases for producing renewable energy using the resources generated by sewage treatment processes.

**Energy Independence Plan of Sewage Treatment Center**

<table>
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<tbody>
<tr>
<td>51.7%</td>
<td>55.8%</td>
<td>73.4%</td>
<td>103.3%</td>
</tr>
</tbody>
</table>

Water is the source of life, and clean water is our healthy future. Seoul operates four sewage treatment centers to purify contaminated water such as household sewage into clean water. In addition, Seoul’s sewage treatment centers are being transformed into complex cultural spaces such as parks and sports facilities, and community-friendly facilities that adopt a variety of eco-friendly methods.
A city that is safe from crime and disaster, and a city that implements an effective citizen participation administration! Seoul is enhancing the city's competitiveness with citizen safety and smart administrative services.
Without safety, we cannot guarantee the quality of life of citizens or the competitiveness of our city. Seoul city is responsible for the safety of its citizens by designing a city so that citizens can live safely and peacefully, and by establishing advanced disaster response systems. Thanks to these efforts, Seoul was selected as the world’s 3rd safest city in the survey of the 2016 World Crime and Safe Cities conducted by Numbeo (www.numbeo.com), which is the world’s largest city and country comparison statistics site.

Crime Prevention Through Environmental Design (CPTED) refers to a design that prevents crimes and prevents the opportunities of crime occurrences by reducing criminal sentiment. Seoul has applied crime prevention city designs to areas with high crime rates. Starting from Yeomli-dong in Mapo-gu in 2012, the project has proven its effectiveness through analysis by the Korea Criminal Policy Research Institute.

Seoul currently has 49,184 CCTVs installed and operates CCTV integrated control centers in 25 autonomous districts. Each autonomous district control center monitors CCTVs for 24 hours a day, 365 days a year, and in the event of an emergency, works with fire and police stations to go to the scene immediately.

- Installation of sports facilities, LED security lamps, CCTVs, reflectors, painting with prominent colors, and building local community networks
- Significantly reduced number of crimes after application of design / improvement of residents’ satisfaction (83.3%) and awareness of crime prevention effect (78.6%)
- 5,720 people on-site visits from 260 institutions / Introduced to the Society of UK Crime Prevention Centers (DAC, Design Against Crime), documented and benchmarked
Seoul Emergency Operations Center

Seoul city has established an advanced disaster response system to quickly protect the safety of its citizens, anytime, anywhere, 24 hours a day. The 119 Fire and Disaster Prevention Center effectively responds to a variety of disaster situations and contributes to the specialization of emergency rescue through the Golden Time Target System and the dispatch order automation system.

Introduction of Golden Time Target System

Seoul city has introduced the Golden Time Target System to save lives and prevent disasters. By establishing a golden time for each type of disaster and improving the system of emergency rescue and responsible agencies, we are promoting on-site arrival within seven minutes from the time of reporting.

24-hour monitoring system

The Fire Department and the National Police Agency monitor 18,521 CCTVs’ video data in real time. Through this, we support appropriate disaster response activities such as monitoring rivers and dangerous areas across the country, identifying real-time on-site situations, and securing the evacuation time for Golden Time.

Disaster Response Flow Chart

Golden time dispatch manual of emergency rescue agencies

Securing Golden Times by Disaster Type
Seoul introduced state-of-the-art IT technology in the administration to provide prompt and accurate administrative services, implementing an efficient and transparent citizen participation administration. It has been recognized as the world’s smartest city, ranking 1st in seven-consecutive years since 2003 in the e-government assessment conducted by Rutgers University in the United States for 100 major cities around the world.

Also, Seoul established the WeGO (World Smart City Organization) in 2010 to promote exchange and cooperation among global city electronic governments in order to enhance administrative efficiency and transparency by strengthening digital capacities and to bridge the information gap in cities around the world.

### Efficient City Management

**E-government infrastructure**

470 kinds of information systems have been established and operated in all sectors of city administration such as urban planning, culture, tourism, transportation, and housing for the purpose of administrative efficiency using IT.

#### Solving city problems with big data

- Optimal route analysis and route determination of late-night buses using big data
- Analyzing traffic accidents for the transportation vulnerable and reducing traffic accidents
- Provision of commercial sphere analysis services to foster and protect livelihood-type self-employed workers

#### City management using the Internet of Things

- Smart road lighting, trash cans, parking information notification

- Road lighting that detects the movement of people and objects and is automatically controlled

  - 20% brightness with no vehicle movement
  - 100% brightness when a vehicle is in motion

#### E-government infrastructure

- mVoting
- Democracy Seoul
- Dasan Call Center
- EungDapSo (Response Station)
- Smart Complaints Report

#### Electronic tax payment

- Open data square
- Integrity construction administrative system

#### Establishing 470 kinds of information systems

- Environment
- Cultural
- Tax
- Housing
- Safety
- Transportion
- Efficiency
- Citizen Participation
- Transparency
mVoting
Smartphone app developed to collect the opinions of citizens in the process of policy in real-time voting method, citizen participation voting app that anyone can easily question and vote.

EungDapSo (Response station)
Online system, which combines 31 existing complaints reception channels into one channel, allowing citizens to receive complaints and proposals from all sectors using the Internet, mobile, social media, and telephone of response station (EungDapSo).

Smart Complaints Report
You can report a variety of inconveniences such as facilities, transportation, environment, etc. on your smartphone on site. The location of the report can be displayed on the map, and it can be reported with an on-site photograph, which is also used as basic data for analyzing local pending issues and making policy decisions.

Democracy Seoul
Under the catchphrase, “Bring the policy I imagined to reality!”, as a citizen proposal system where all citizens can suggest ideas and make them into policies.

Dasan Call Center
System that integrates a variety of telephone numbers of Seoul City and ward offices into the telephone number 120, and processes complaints quickly and accurately 24 hours a day with a single phone call. It provides services such as telephone and text consultation, sign language consultation for the deaf, and foreign language counseling for foreigners.

Digital Civic Mayor’s Office
System that integrates and visualizes in real time the 10 million pieces of data managed in 167 systems (Open Data Squares, Traffic Information Center, Integrated Safety Situation Room, etc.) of each department of Seoul city and 800 CCTVs at Seoul’s important zones and provides information on major policies and promoting projects of Seoul city.

Electronic Tax Payment (E-TAX)
Convenient tax-paying system that pays utility bills imposed by Seoul city, Seoul city-affiliated organizations, and 25 autonomous districts through a variety of online media.

Open Data Square
Website that provides citizens with Seoul’s public data in the form of raw data. It currently offers 4,607 datasets and 8,813 free services in 10 sectors including transportation, the environment and city management.

Integrity Construction Administrative System
The construction information management system, which manages construction projects transparently and systematically, and the information of the payment e-baro system, which guarantees the payment of construction work, can be disclosed to citizens in real-time through construction notifications, resulting in an anti-corruption transparent construction administration.
Rapid urbanization is taking place around the world. The proportion of city populations in the world has reached 54% in 2014, up from 30% in 1950 and is expected to reach 66% by 2050 (UN, 2014). Sudden city population concentrations cause a variety of problems due to lack of infrastructure. As a result, many cities are suffering from housing shortages, water shortages, traffic congestion, and an increase in crime rates. Seoul is a city that has overcome these city problems in a short period of time and has grown to a world-class level. Accordingly, Seoul’s development experience and knowledge can be helpful to cities with similar problems. In this connection, Seoul city is pursuing the “Project to Share Seoul City Excellent Policies with Overseas,” which shares Seoul’s excellent policies with foreign cities. This is being realized through short- and long-term overseas city officials’ capacity building programs, policy consulting, dispatch of experts, knowledge sharing through on-line and off-line channels, and other projects.

<Source: Seoul Overseas City Cooperation Officer>
In order to share Seoul city’s experience and knowledge of city development with overseas cities, Seoul city has established the Seoul Policy Archive and provided DB for city policies. Seoul Policy Archive is also used as a communication channel for overseas cities.

The Global City Policy Sharing Online Platform, jointly established and operated by Seoul City, UNESCAP and CityNet, was developed to seek concrete implementation measures at the city level for the Sustainable Development Goals (SDGs: Sustainable Development Goals, 2016 to 2030) and to solve a variety of city problems in the Asia-Pacific region. It aims to contribute to the sustainable development of world cities by sharing excellent policies by city and strengthening cooperation among world cities and international organizations.

Seoul city operates the Seoul Policy Consulting Group (researchers, professors, etc.), which consists of experts with knowledge in city policy. When requested to share the policies of foreign cities, we immediately dispatch experts in the relevant sectors in order to conduct site research, policy consulting, and advising.

Seoul city offers various medium- and short-term training programs free of charge to share the city’s experience and knowledge of city development and to strengthen the policy capabilities of foreign city officials.

**Short-term programs (7-10 day courses)**
- Sectors: Transportation, E-government, City Management, Water Supply
- Lectures on Seoul’s Excellent Policies and Site Trips
- Operating Institution: Seoul International Training Institute (Human Resources Development Institute)

**Long-term program (2-year course)**
- Sectors: Internship course for urban planning and city administration
- Masters Degree Course for Urban Planning and Internship Course for City Administration
- Operating Institution: University of Seoul

Seoul Policy Sharing Initiative: Project to share Seoul City's excellent policies with foreign countries
Overseas Expansion
Status of Seoul's Excellent Policies

Transportation (24)
- China (Beijing)
- New Zealand (Wellington)
- New Zealand (Auckland)
- Malaysia (Kuala Lumpur)
- Colombia (Bogota)
- Thailand (Bangkok)
- Greece (Athens)
- Mongolia (Ulaanbaatar)
- Malaysia (Kuala Lumpur)
- Ivory Coast (Abidjan)
- Saudi Arabia (Mecca)
- Malaysia (Malacca)

Water Supply (4)
- Egypt (Cairo)
- Azerbaijan (Baku)
- Philippines (Metro Manila)
- Ghana (Accra)
- Sri Lanka (Colombo)
- Vietnam (Danang)
- Indonesia (Bandung)
- Colombia (Ministry of Finance)
- Kenya (Nairobi)

E-government (8)
- Peru (Chancha mayo)
- Indonesia (Central Java)
- Papua New Guinea (Port Moresby)
- Brunei (Brunei)
- Republic of Mozambique (Maputo)
- Ethiopia (Addis Ababa)
- India (Mumbai)
- Colombia (Ministry of Information and Communications)

City railway, Light railway (8)
- Bangladesh (Chittagong-Chinhaikastar)
- Myanmar (Yangon)
- Vietnam (Ho Chi Minh City)
- Colombia (Colombia Development Bank)
- Indonesia (Jakarta)
- Philippines (Metro Manila)

Environment (2)
- China (Hunan Province/Hebei Province)
- Philippines (Metro Manila)

Fire Fighting (1)
- Bangladesh (Fire and Disaster Prevention Agency)

Urban Planning (2)
- Vietnam (Danang)
- Myanmar (Hantawadi and southern Yangon)

Education (2)
- Ethiopia (Addis Ababa)
- India (Panaji, Simla, Hubley)

Content Development (2)
- Case Book Production
- ITS guidebook development

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