

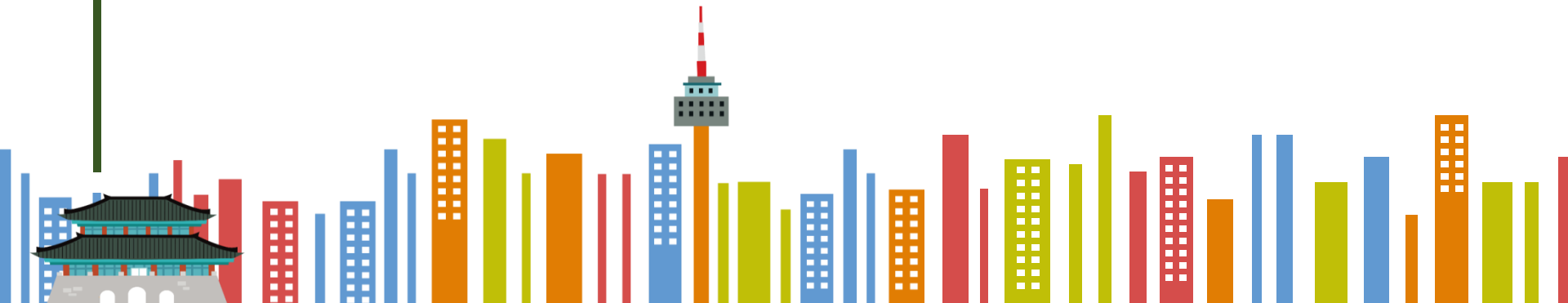


서울시립대학교  
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# Seoul's Experience in SDG Goal 11

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# Overview of the Presentation

- **Introduction of Seoul**
- **Housing (Target 11.1)**
  - Housing supply
  - Housing type
  - Public housing
- **Transport (Target 11.3)**
  - Use of public transport
  - Public transport infrastructure
  - Reform of public transport system
- **Environment (Target 11.7)**
  - Air quality
  - Waste Management
- **Lessons Learnt**

\*\* Graphs used in this presentation were taken from the Seoul Research Data Center (<http://data.si.re.kr/>) and Seoul Solution Archive(<https://www.seoulsolution.kr/en>).

# I . Introduction of Seoul

01

## Past and Present of Seoul



50  
years

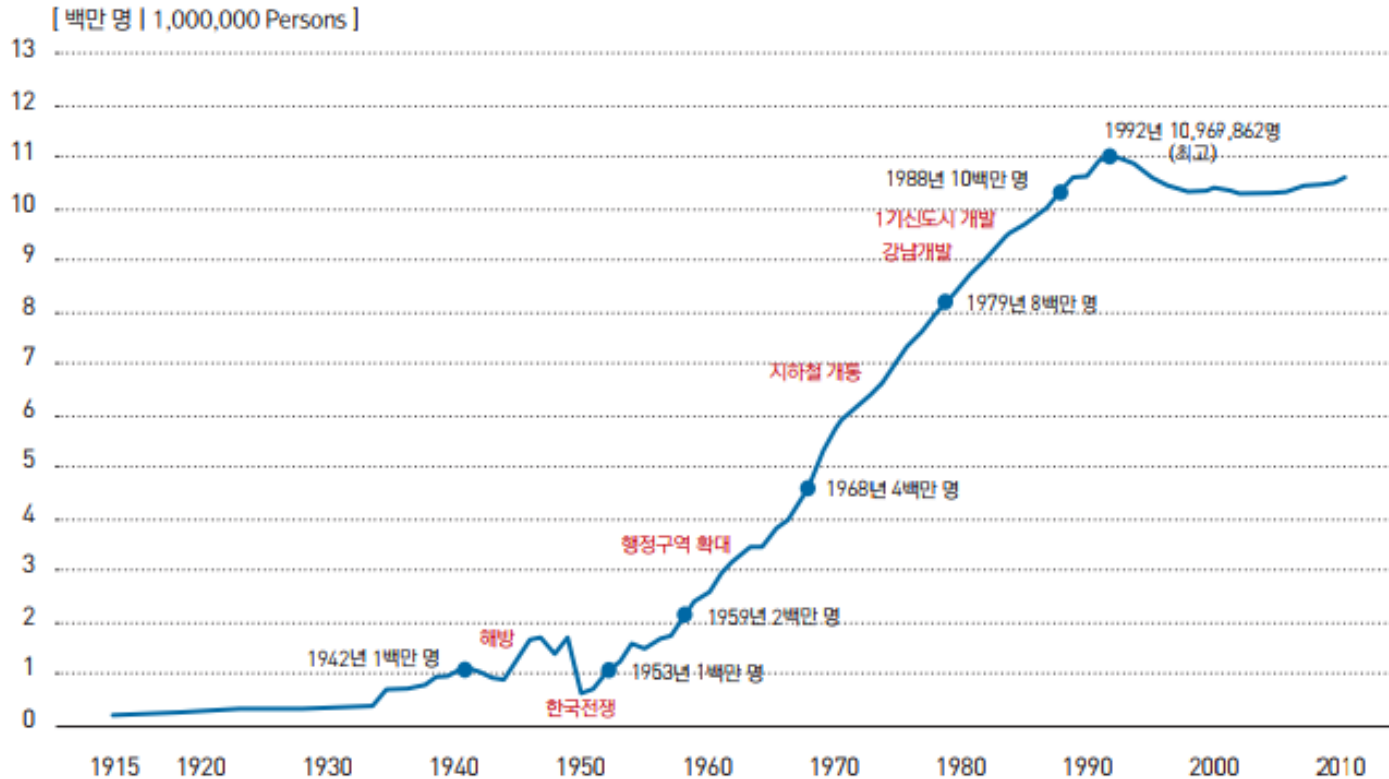


# I . Introduction of Seoul

02

## Explosive Population Growth

### Population Growth, 1915 ~ 2010



# I . Introduction of Seoul

## 03 Challenges due to the fast growth

**Fast urbanization causes various challenges:**

- Shortage of housing and infrastructure
- Inadequate urban basic services like water supply, sanitation and energy
- Prevalence of poverty
- Lack of financial capacity of local governments....

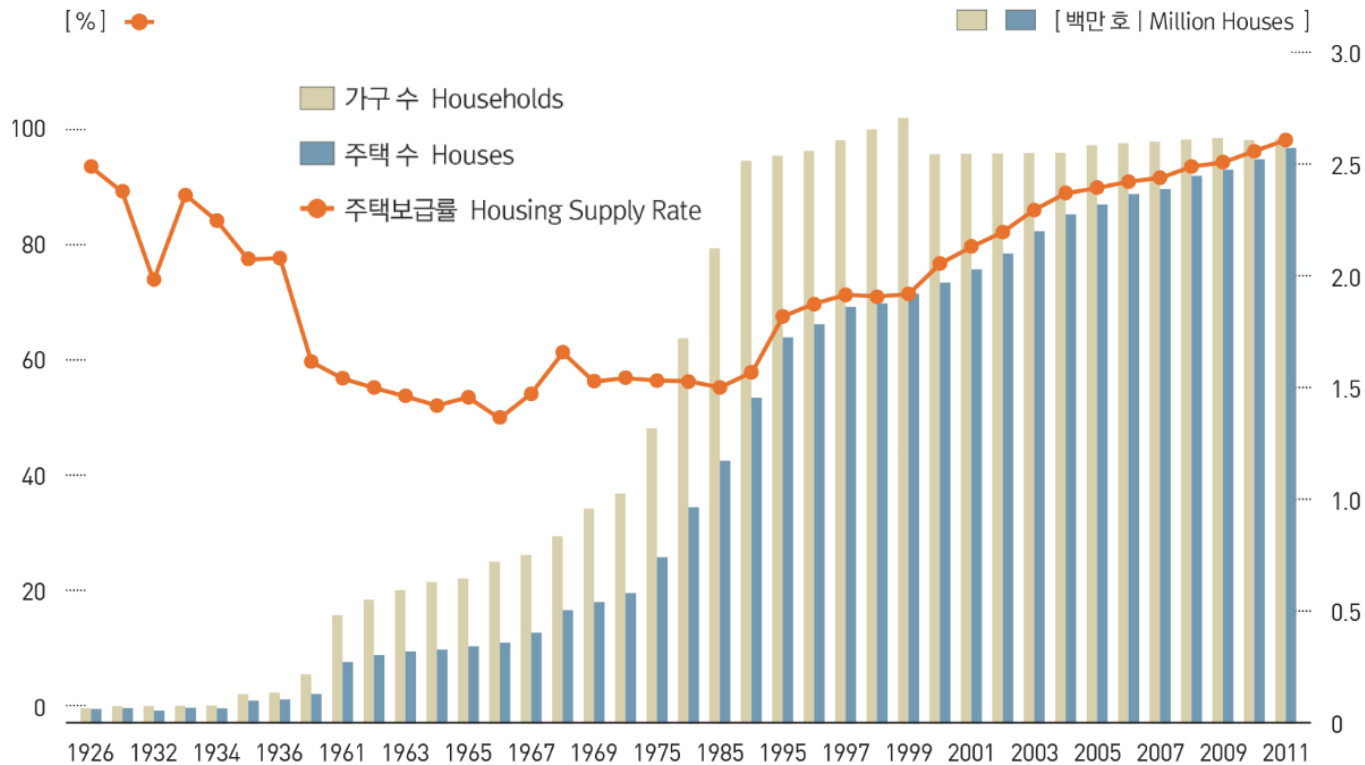
**Then, how has Seoul achieved the current urban development?**

# II. Housing (Target 11.1)2

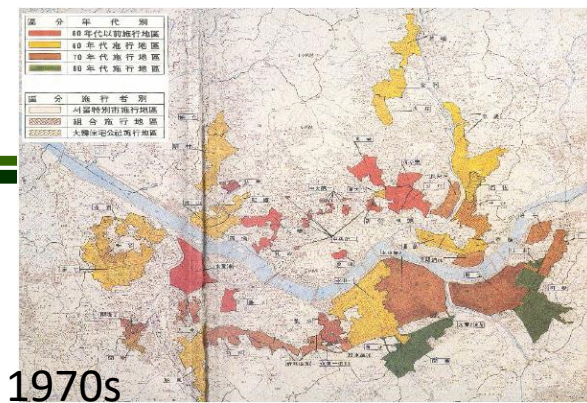
## 01 Housing Supply

- Mass supply of housing (via public development) to keep up with the population growth
- More than 100,000 housing units each year during the early 1990s

Trends in housing supply and the number of households



# II. Housing (Target 11.1)

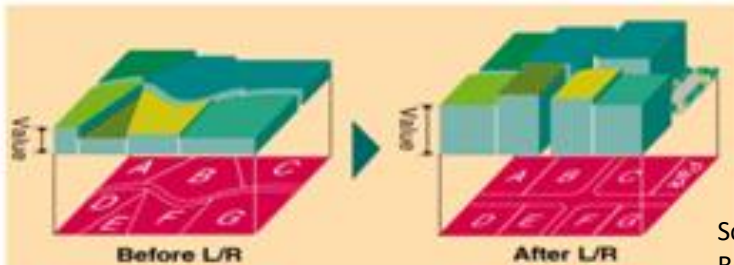


## 01 Housing Supply

- Explosive population growth vs. Housing shortage in Seoul in 1970s
  - During the 1970s, about 3 million people moved in Seoul, which is equivalent to 800 new residents everyday requiring around 200 houses a day in Seoul
  - ➔ Urgent need for LARGE scale development
  - ➔ Introduction of **Land Readjustment mechanism** to promote large scale development



- Owner have to provide **land contribution** for public facilities and project finance!
  - Size of land contribution: 30~70% of the area depending on estimated land value appreciation
- ➔ Secure land for public space and infrastructure
- ➔ 30% of built-up area in Seoul developed using this approach



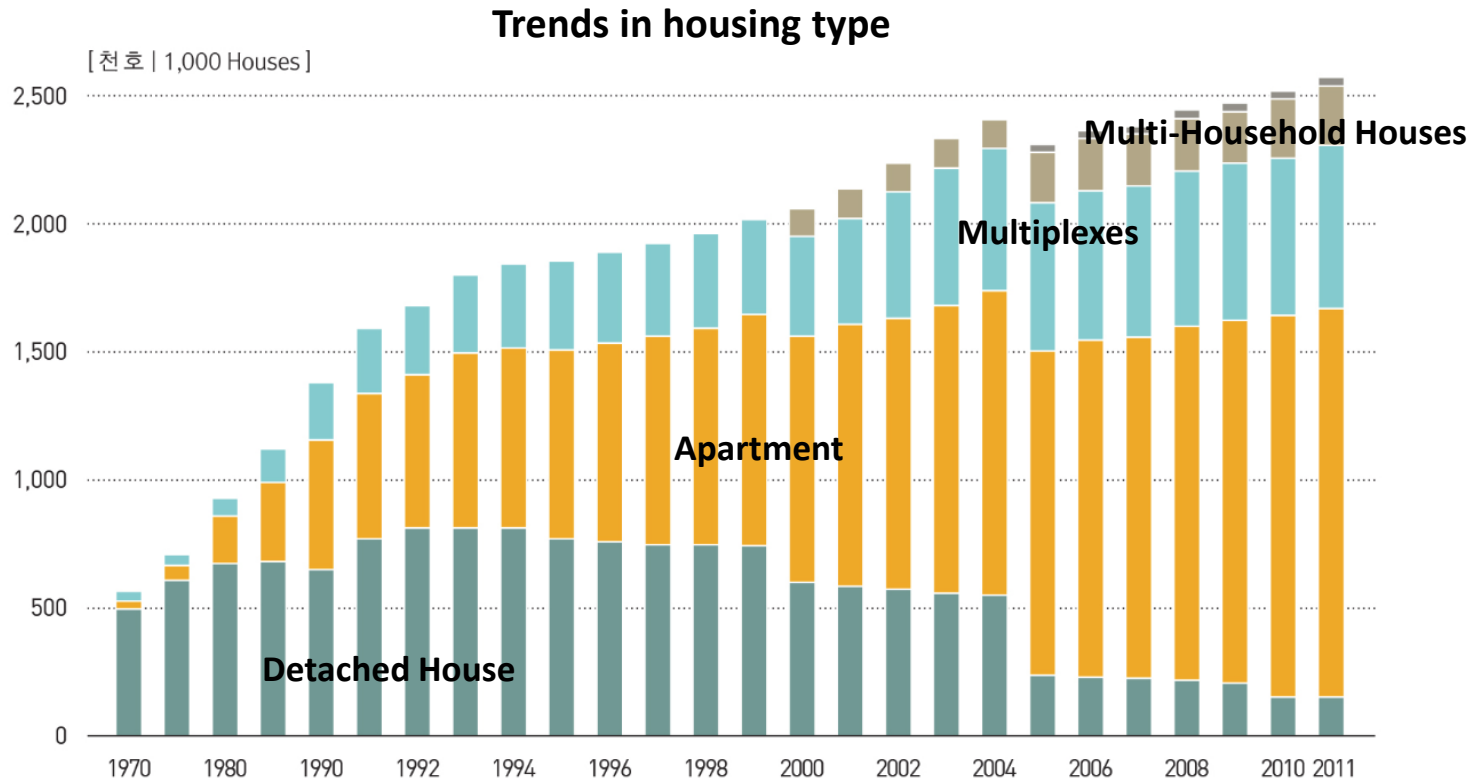
Source: Seele, W, "Land Readjustment In The Republic of Germany.", In Doebele, W.A., ed., Land Readjustment: A Different Approach To Financing Urbanization", Lexington Books, USA ,1982

# II. Housing (Target 11.1)

02

## Housing Types

- Decline in the number of detached houses replaced by row houses or multiplexes
- Currently, apartment as the most popular type of housing in Seoul, accounting for around 60% of all housing



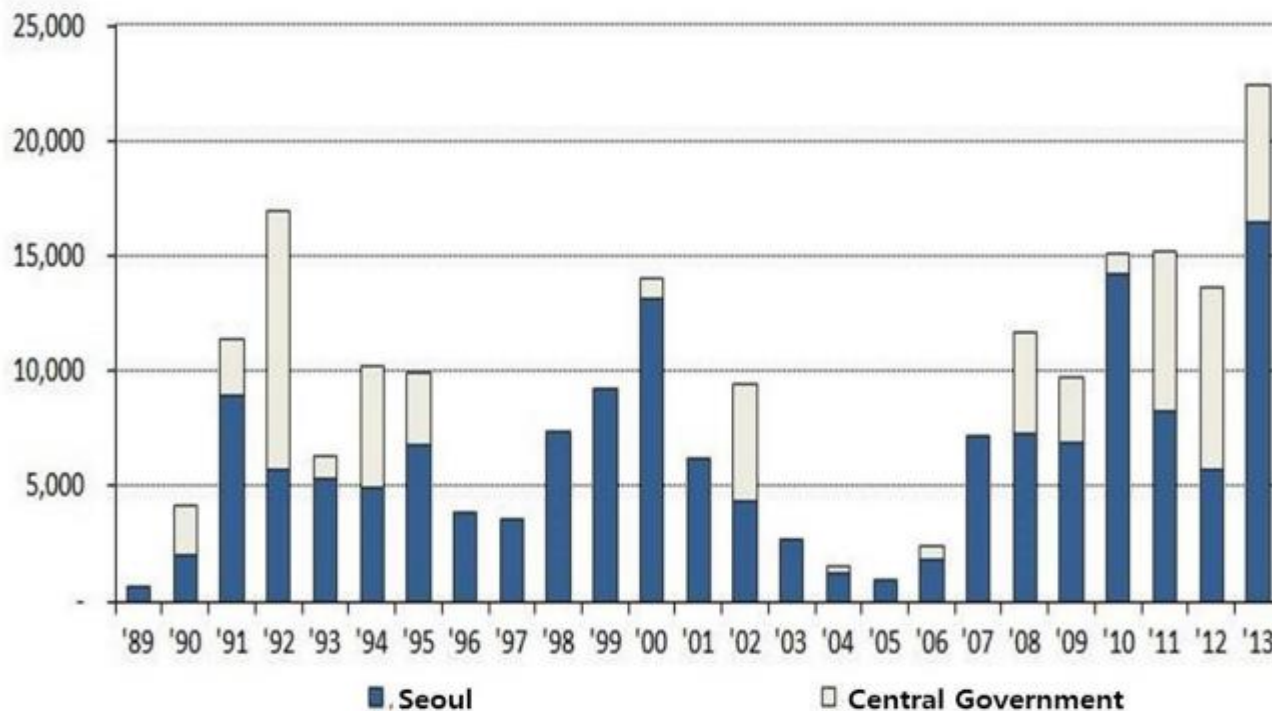


# III. Housing (Target 11.1)

## 03 Public Rental Housings

- Supply of public lease housing for lower incomes since 1988
- An annual average of 8,636 public housing units supplied in Seoul by both Seoul and Central Government
- Currently, 5% of the total housing units

Number of New Public Housing Units in Seoul



# III. Transport (Target 11.2)

## 01 Use of Public Transport

- Public transportation as a major mode of transport in Seoul with a share of **64.3 %** (buses 28.1% and subways 36.2%)
- Public transportation system reform in 2004

Shares of Usage by Mode of Transportation



# III. Transport (Target 11.2)

## 02 Public Transport Infrastructure

- Expansion of public transport infrastructure to facilitate the use of public transportation and improve the efficiency of public transport

### Public transportations and roads in Seoul



### Seamless Integration: Transfer Center connects various transportations in one place



### Subway Map (total 15 lines)



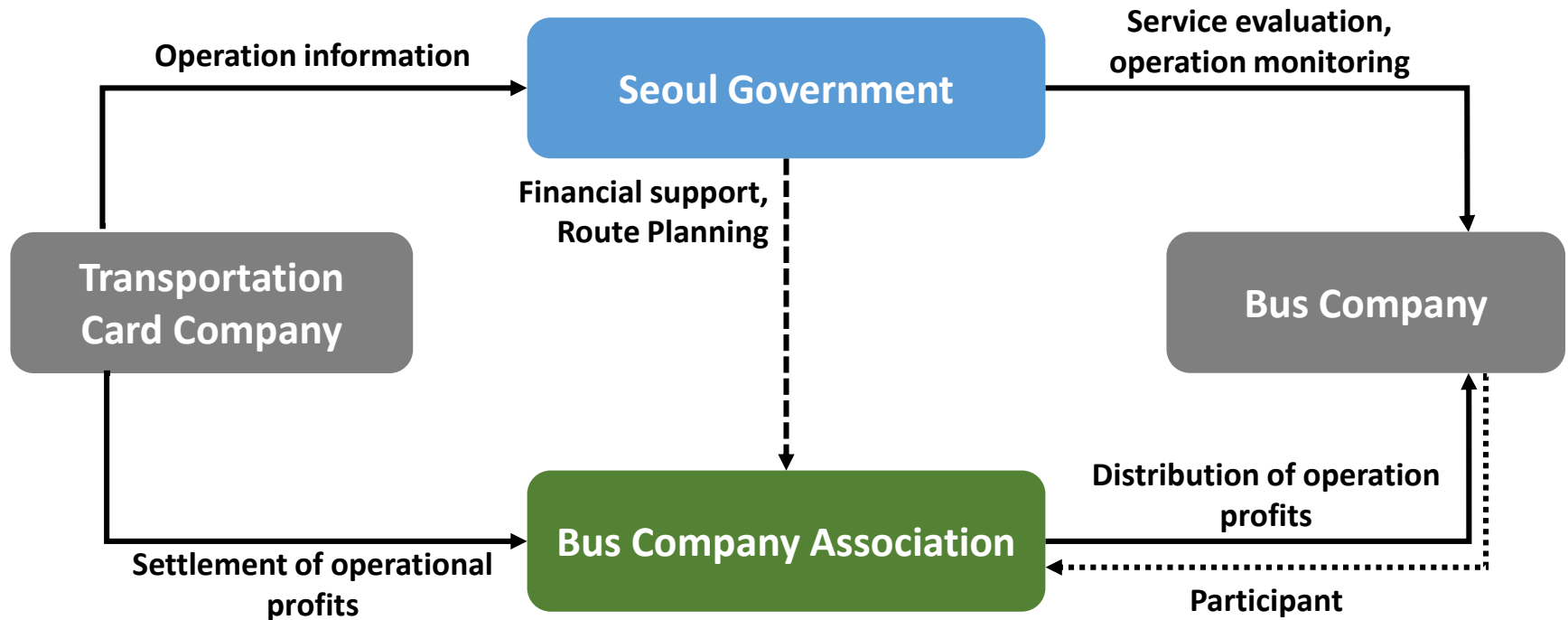
### Designated Bus Lanes (2013)



# III. Transport (Target 11.2)

## 03 Reform of Public Transport System (in 2004)

- Introduction of the semi-public bus operation system



# III. Transport (Target 11.2)

## 03 Reform of Public Transport System

### ➤ Bus Rapid Transit

- Median exclusive bus lane + different types of buses (trunk lines, feeder lines, circular lines and wide area lines)

### ➤ Integrated distance-based transit fare system

- Free transfer between bus-bus and bus-subway, within 30 min. (max 4 times)
- Introduction of “smart card”



Inter-regional Lines



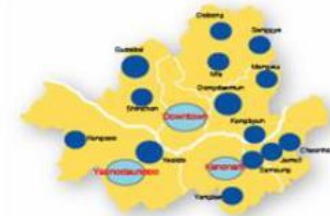
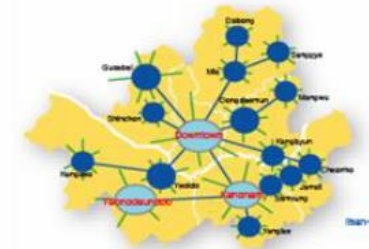
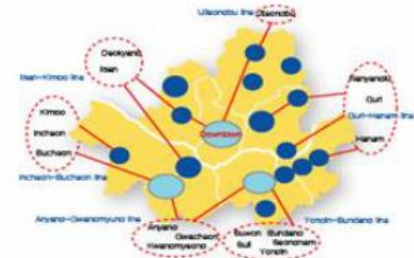
Trunk Lines



Feeder Lines



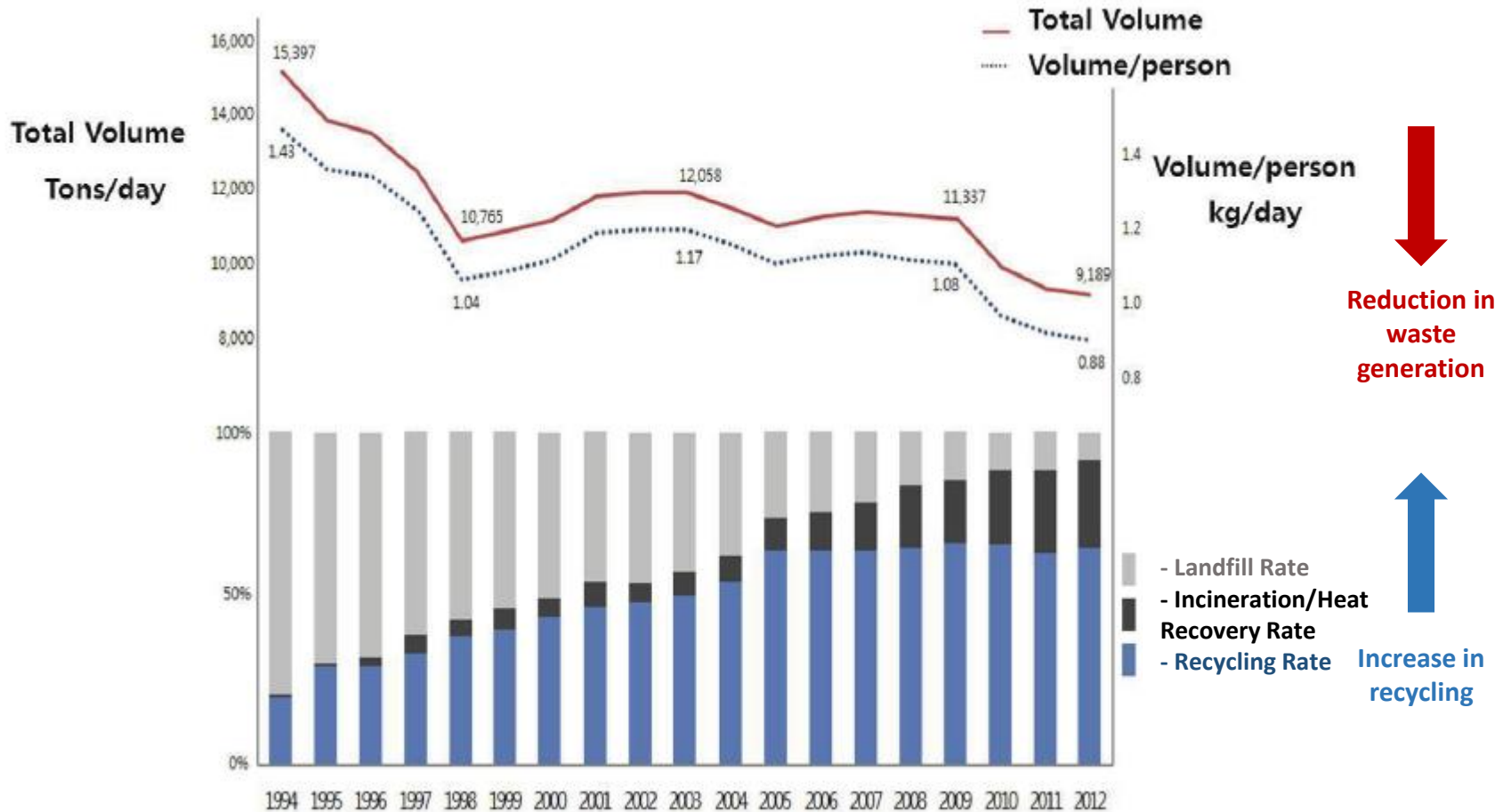
Circular Lines



# IV. Environment (Target 11.7)

## 01 Waste Management

Trends in Waste Generation and Treatment

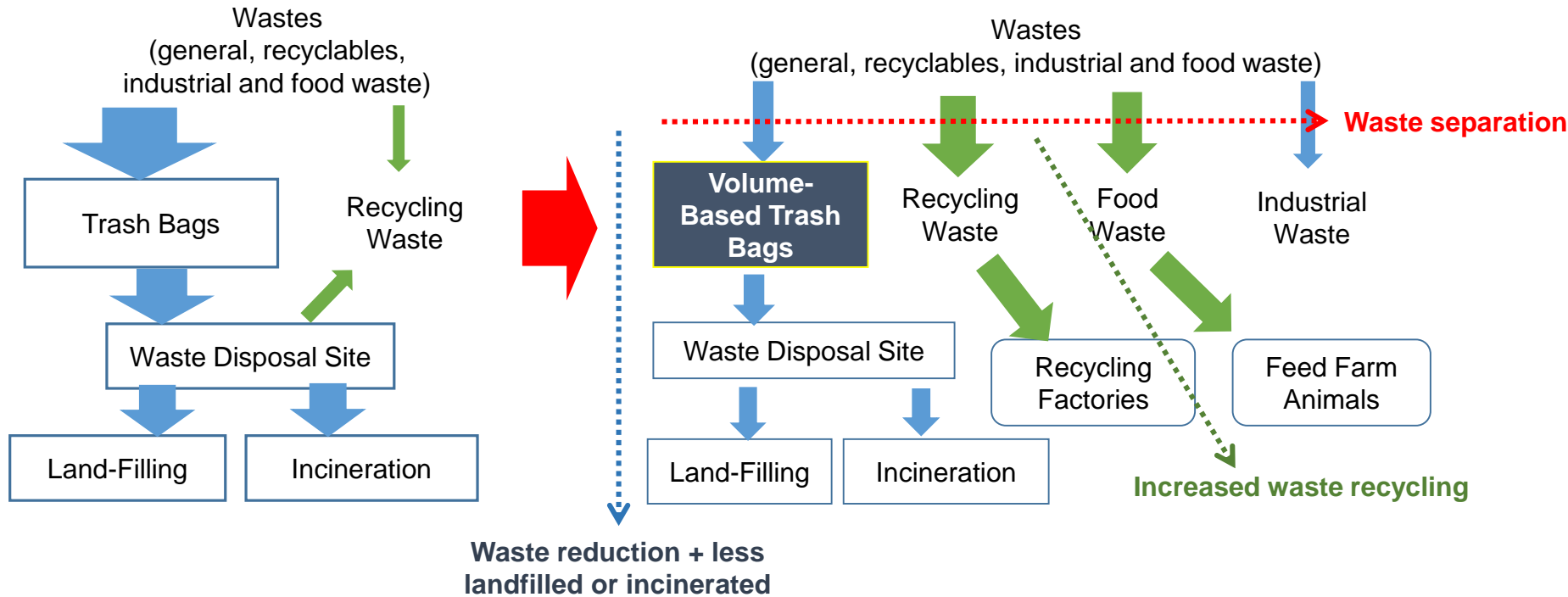


# IV. Environment (Target 11.7)



## 01 Waste management: Volume-based Waste Fee System

- ✓ To require users to purchase designated VBWF plastic bags to dispose their wastes
- ✓ Objectives:
  - 1) Induce reduction in generation of waste at source
  - 2) Encourage the collection of recyclable wastes by providing free collection service for recyclables wastes including food waste



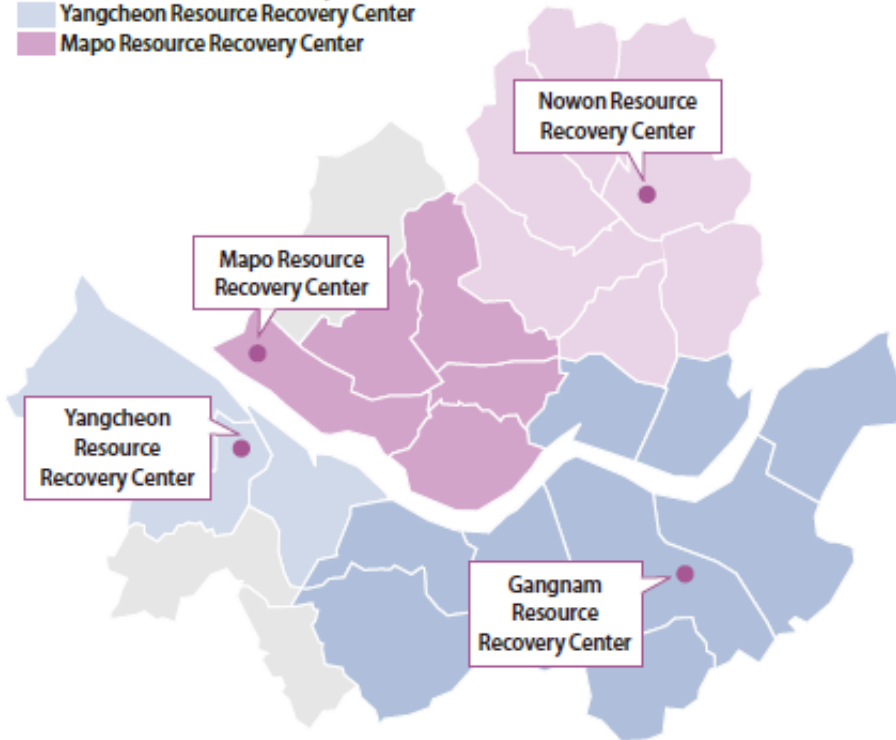
# IV. Environment (Target 11.7)

## 01 Waste Management: Waste as Resources

### Waste as Resources: Resource Recovery Facilities

- Incineration + Heat Recovery

- Nowon Resource Recovery Center
- Gangnam Resource Recovery Center
- Yangcheon Resource Recovery Center
- Mapo Resource Recovery Center



### Status of Resource Recovery Facilities

Category	Yangcheon	Mapo	Nowon	Gangnam
Capacity	400 t/day (200 t/day × 2 units)	750 t/day (250 t/day × 3 units)	800 t/day (400 t/day × 2 units)	900 t/day (300 t/day × 3 units)
Completion Date	February 1996	May 2005	January 1997	December 2001
Site Area	14,627m <sup>2</sup>	58,435m <sup>2</sup>	46,307m <sup>2</sup>	63,818m <sup>2</sup>
Construction Cost(KRW million)	31,815	166,547	74,279	101,080
Waste Disposed	108,206	203,925	195,000	266,712
Waste Incinerated	106,628	204,245	199,254	266,074
Electricity Generated	12,995,400kW	35,431,253kW	29,008kW	40,189kW
Electricity Sold	4,427,964kW	12,584,012kW	Used all electricity generated	Used all electricity generated

\*As of 2013, Yangcheon and Mapo are generating electricity by cogeneration, Nowon and Mapo by solar power

Source: Pleasant, Healthy and Sustainable City Seoul (Seoul Metropolitan Government, 2015)

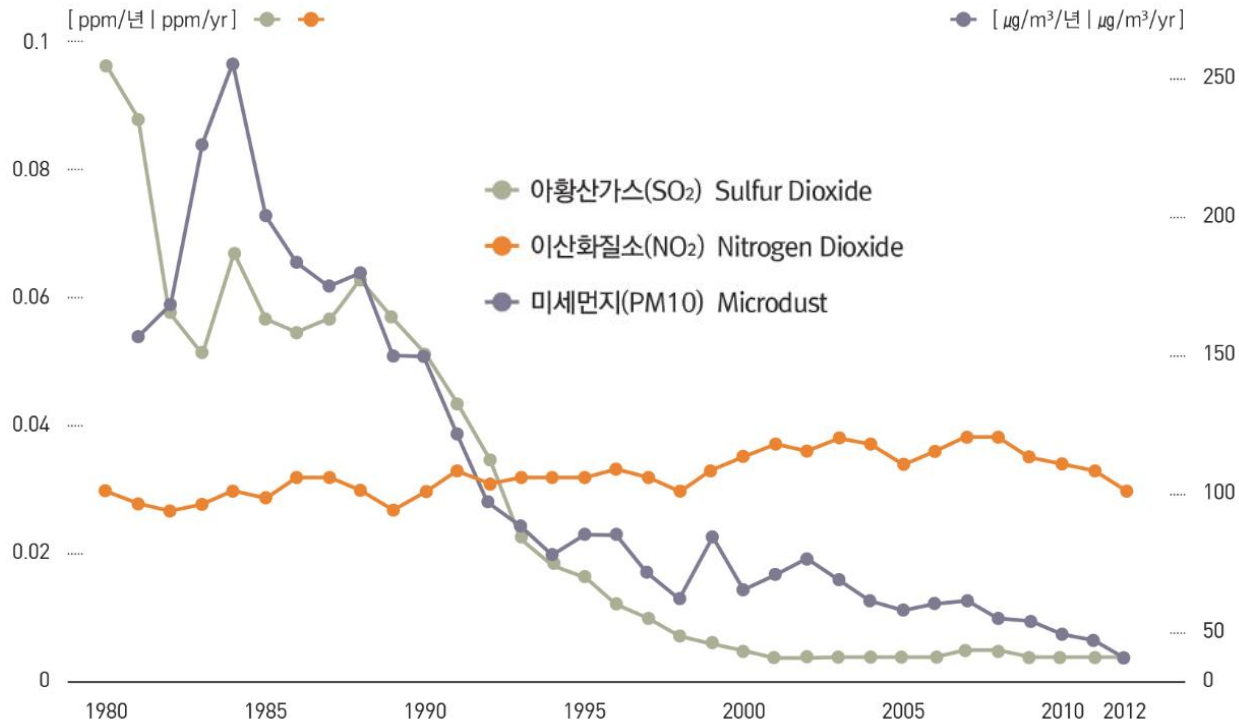


# IV. Environment (Target 11.7)

## 02 Air Quality

- Serious air pollution in the 1980s
- BUT significantly improved over time due to various measures taken including the replace of coal briquettes with cleaner fuel for heating and the mandatory use of LNG

Trends in Air Pollution



# IV. Environment (Target 11.7)

## 02 Air Quality

- However, still high level of PM10 compared with other cities in OECD countries

PM10 μg/m <sup>3</sup>	2009	2010	2011	2012	2013	2014
<b>Seoul</b>	<b>54</b>	<b>49</b>	<b>47</b>	<b>41</b>	<b>45</b>	<b>46</b>
<b>Los Angeles</b>	32	27	29	30	29	30
<b>Tokyo</b>	31	21	21	20	21	–
<b>Paris</b>	28	27	27	26	26	22
<b>London</b>	19	18	23	19	18	20

# V. Lessons Learnt

01

## Good urban/regional plan + its implementation

### Seoul's Approach

Continuous efforts to solve its problems

- Housing
- Basic service
- Environment ...

+ "α"



**"α " includes:**

**Vision for future, strong leadership and enforcement, creative envisioning..**

➔ *The development of Seoul has been achieved by the combination of continuous rigorous efforts to "keep up with demands of each time period" and "ambitious plan with a vision for future".*

# V. Lessons Learnt

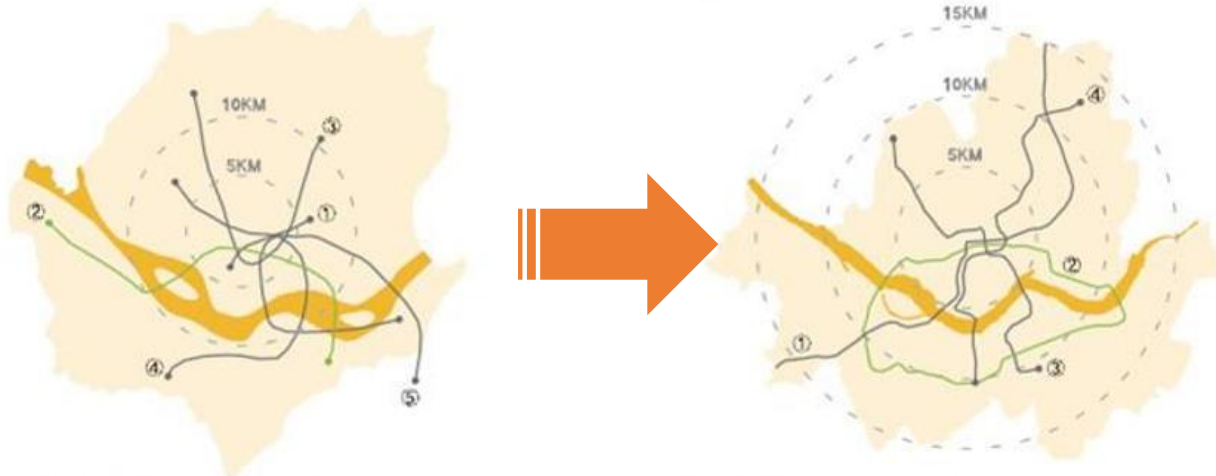
02

## Efficient urban form by integrating housing supply and infrastructure

### *Urban form matters!*

- Distribution of jobs and population is closely related to the efficient use of resources.

\* Modification of subway plan for Line 2 in 1975 (green line in the picture) to consider “future citizens in the Gangnam Area



Before the Metro Plan change

After the Metro Plan change

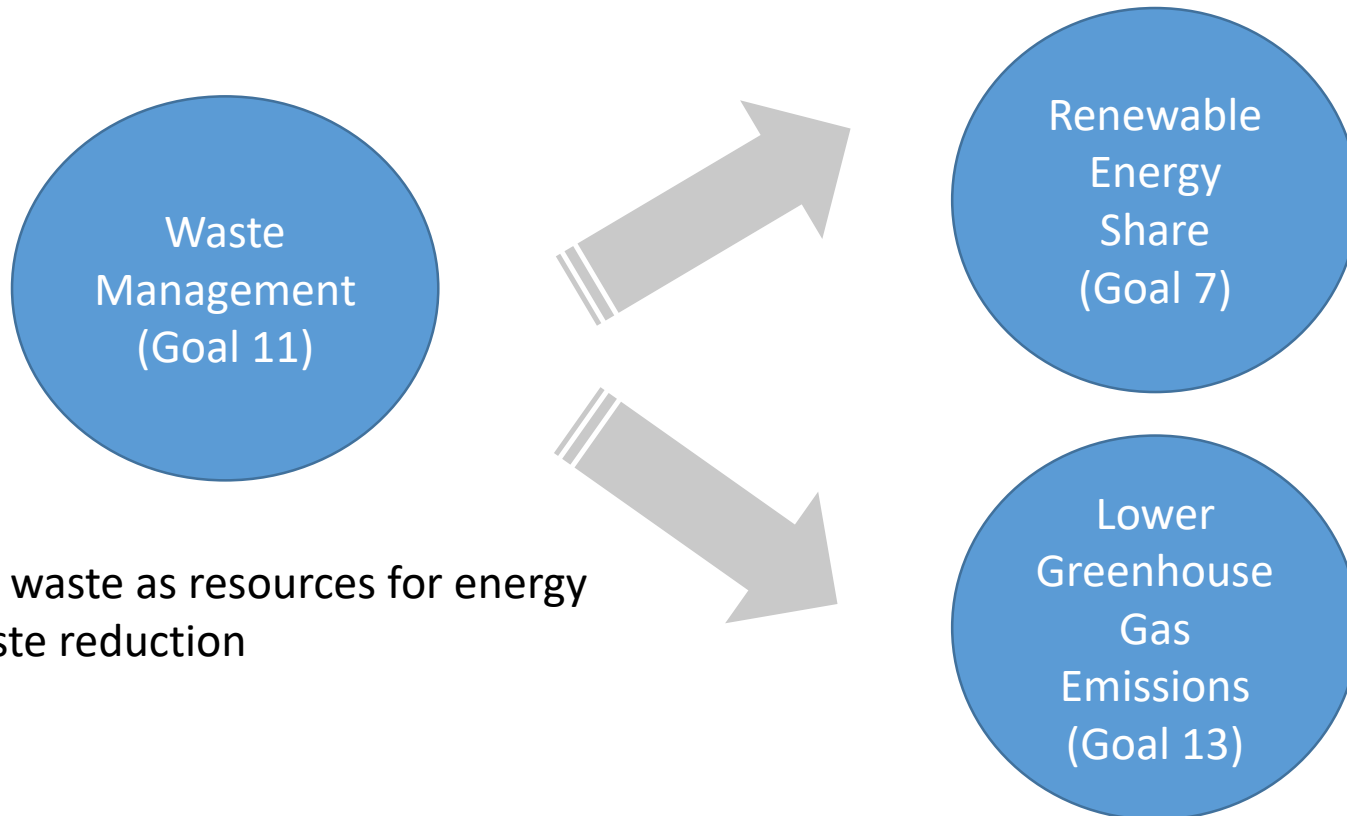


# V . Lessons Learnt

03

## Co-benefits and/or Conflicts between SDG Goals/targets

- Implementation of one policy can bring about co-benefits OR conflicts with other policies!



Thank You!

