Rosario Metropolis for Tomorrow: 1980s' TOD Plan for Seoul

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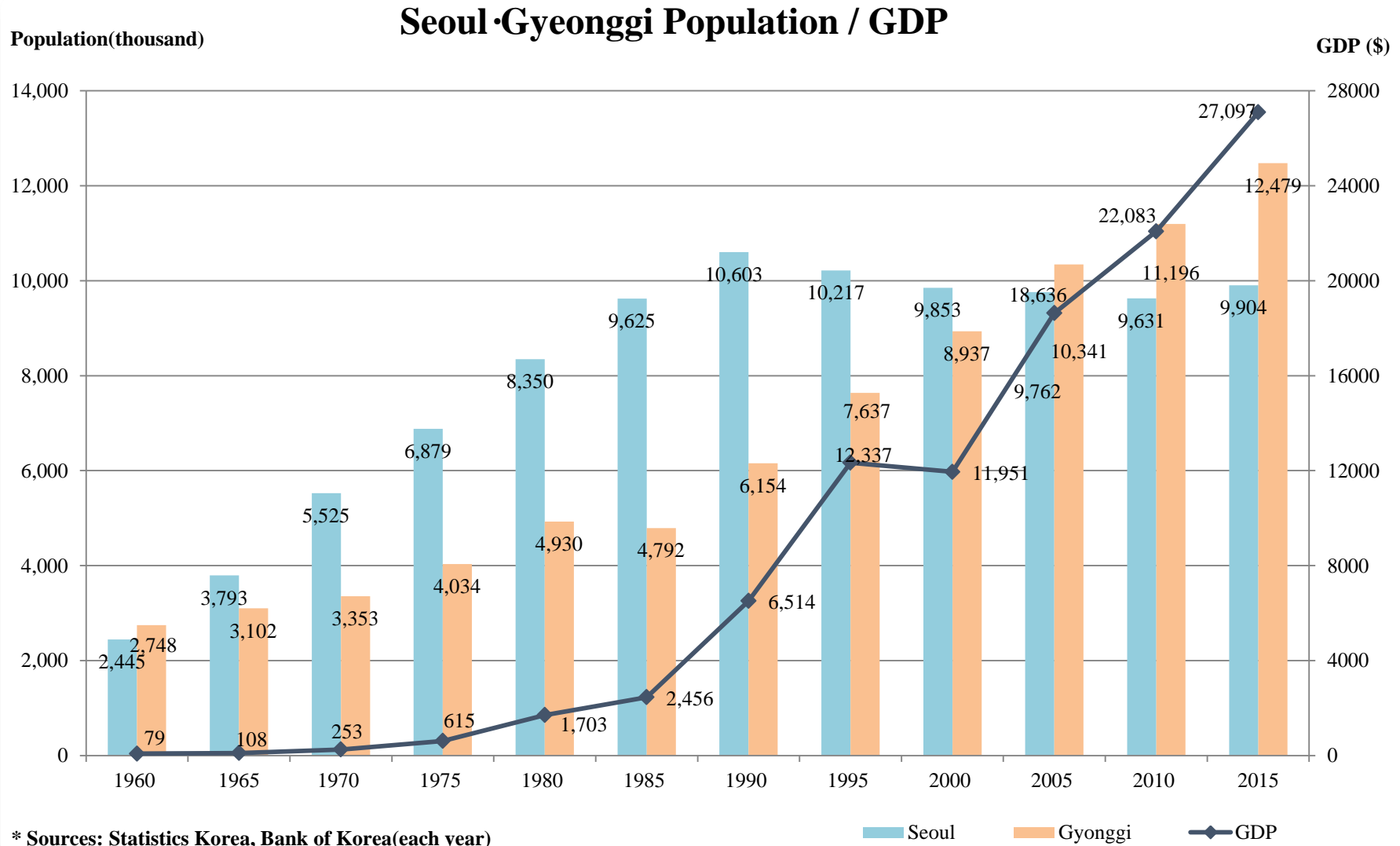Graduate School of Urban Studies, Hanyang Univ.
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"the construction of a subway makes our nation bankrupt"

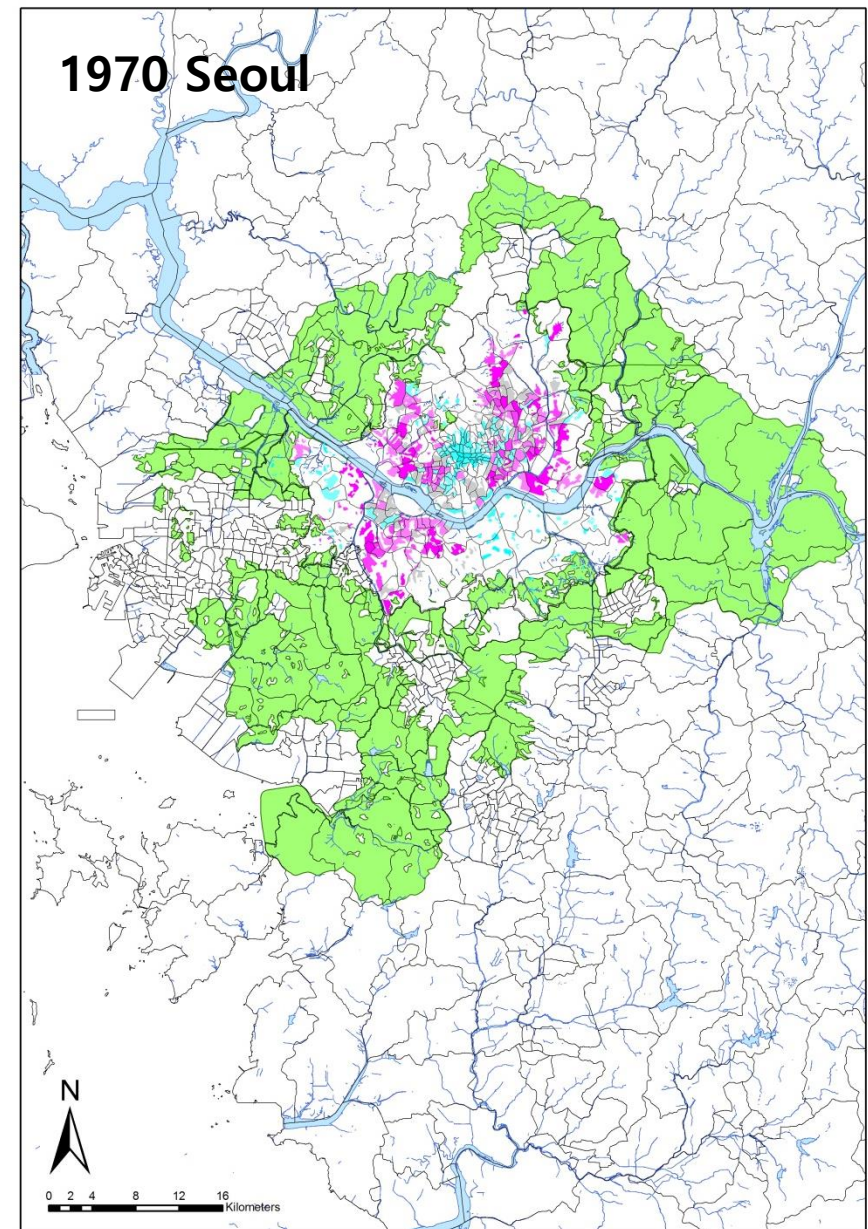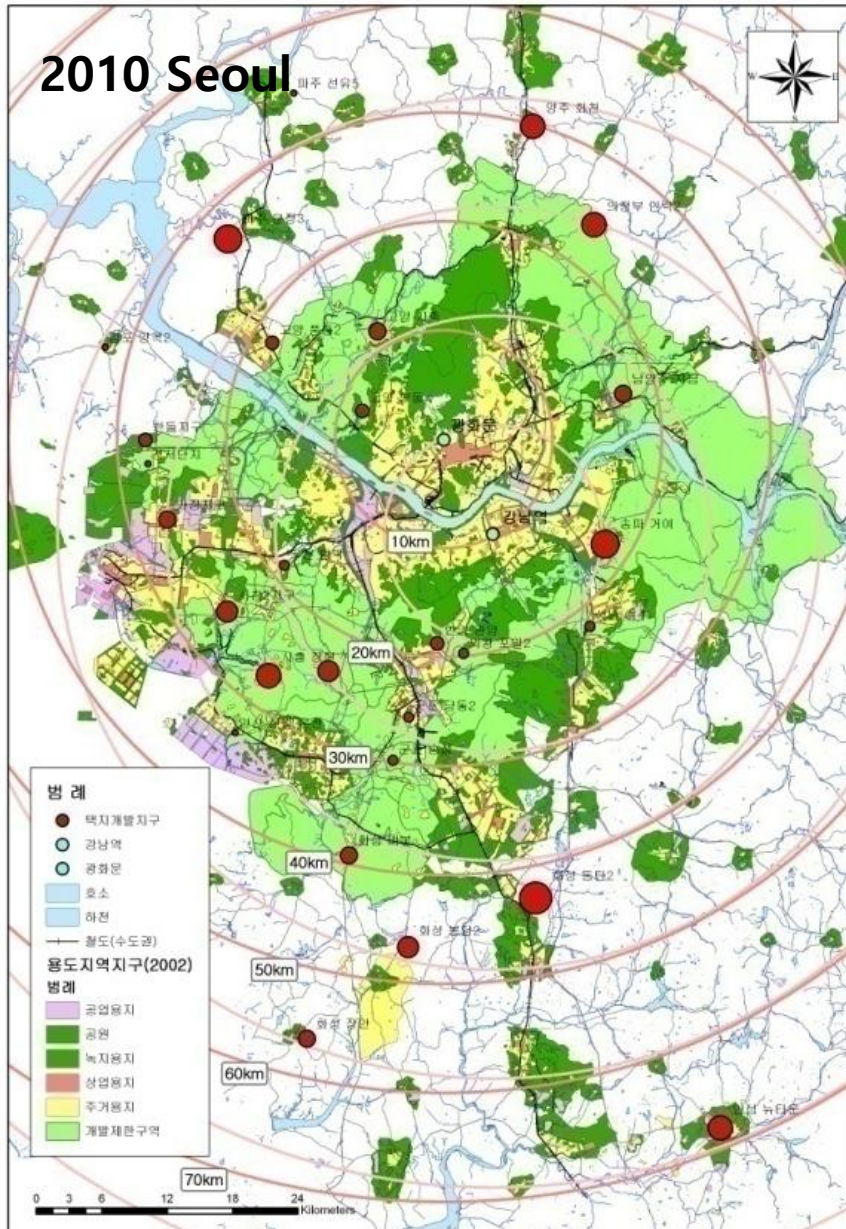# "the construction of a subway makes our nation bankrupt"

The deputy prime minister for economic affairs said to **the president of Korea** in the early 1970s, after examined the subway plan of Seoul (Son, 2005: 13-24).

The first subway plan is **less than 10 km**, but GNP was only $255 USD per capita in 1970.

Economic Development of Korea

Seoul·Gyeonggi Population / GDP

Population(thousand)

GDP ($)

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015
Seoul	2,445	3,793	5,525	6,879	8,350	9,625	10,603	10,217	9,853	9,762	9,631	9,904
Gyonggi	2,748	3,102	3,353	4,034	4,930	4,792	6,154	7,637	8,937	10,341	11,196	12,479
GDP	79	108	253	615	1,703	2,456	6,514	12,337	11,951	18,636	22,083	27,097

* Sources: Statistics Korea, Bank of Korea(each year)

■ Seoul   ■ Gyonggi   ◆ GDP

Seoul Metropolitan Area expansion

Subway Construction of Seoul

- 1965. 10. First Subway Construction Plan
- 1971. 4. Start the Construction of Subway
- Lines and Year of Subway Operation

- Subway Line 1: 1974. (10km only)
- Subway Line 2: 1984. Started of operation
- Subway Line 3: 1985. Started of operation
- Subway Line 4: 1985. Started of operation

  *. 1988 Seoul Olympic and 1986 Asian Game

- Subway Line 5 : 30. 12. 1996. Started of operation
- Subway Line 6 : 09. 03. 2001. Started of operation
- Subway Line 7 : 01. 08. 2000. Started of operation
- Subway Line 8 : 02. 07. 1999. Started of operation

- Subway Line 9 : 24. 07. 2009. Started of operation

* Seoul Metro

Subway Lines in the SMA

Subway Lines in Seoul

* Seoul Metro

Seoul as Transit Oriented Metropolis (TOM)

High-density and mixed land-use pattern based on the public transportation system
is expected to continue in the future.

Density

Seoul has one of **the highest population densities** in its administration area (16,364 persons/km2): Hong Kong SAR has 6,505 persons/km2, Singapore 7,422 persons/km2, and Tokyo 14,550 persons/km2)(Pan, 2013),. Compared to these big cities,

Private Car

Seoul has **22.2 (private cars per 100 persons):**Hong Kong has 6.3, Singapore has 10.1, and Tokyo 18.1 (Pan, 2013).

Rail length

Seoul has **31.3 (km rail length per million persons),** Hong Kong has 30.4, Singapore has 33.5, and Tokyo has 33.6, respectively (Pan, 2013).

Transit share

Transit share is 65.9% in 2013 (Seoul Statistics Service, 2015).
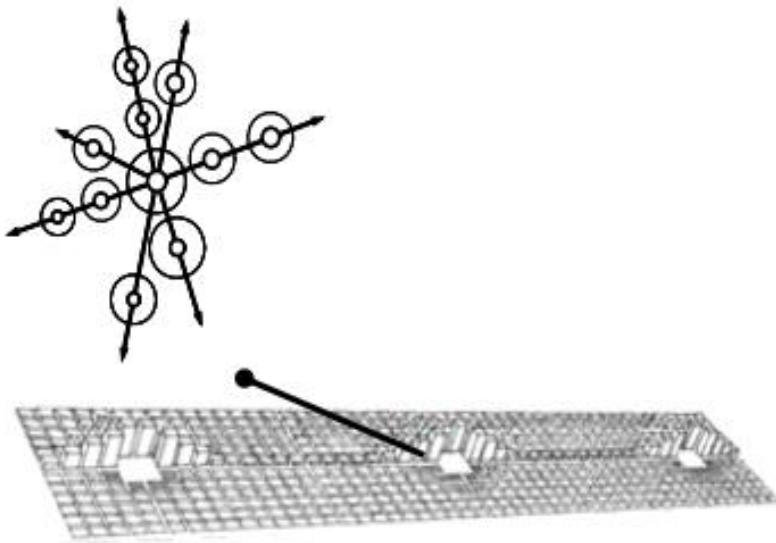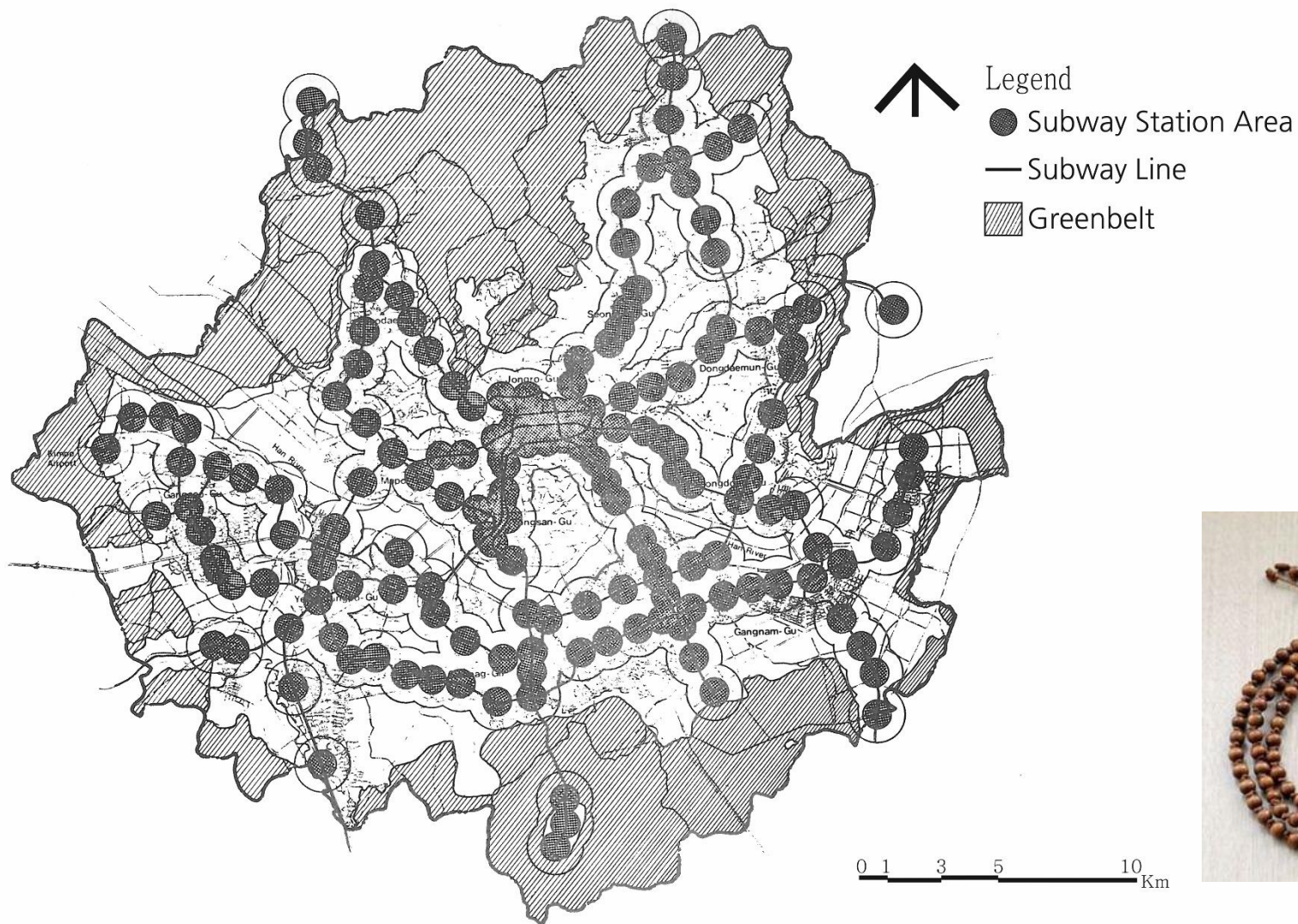
Robert Cervero & Jin Murakami (2008)

Necklaces of Pearls

Figure 2.1. TODs as "Necklaces of Pearls"

*Robert Cervero&Jin Murakami(2008: 23)

Rosario Metropolis for Seoul (1980) By Kahng, BK.

Schematic image of the Rosario Metropolis of Tomorrow for Seoul
(Kahng, 1980: 502; legend and scale bar by authors)

Rosario Metropolis for Seoul (Density Redistribution)

a) As of 1978

b) Rosario plan for 2000

Population density redistribution on subway station areas in Rosario plan
(Seoul City Government, 1980: 490)

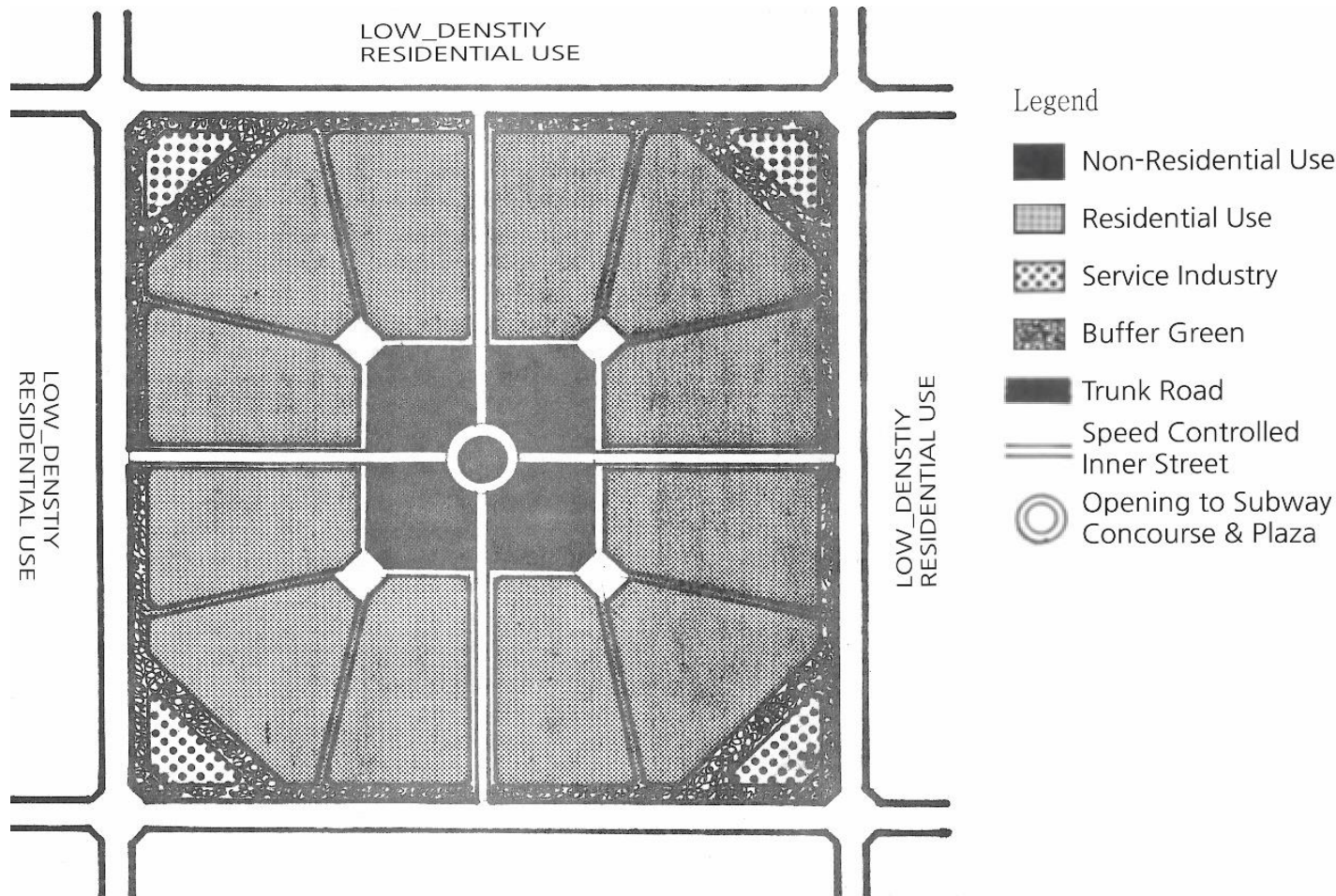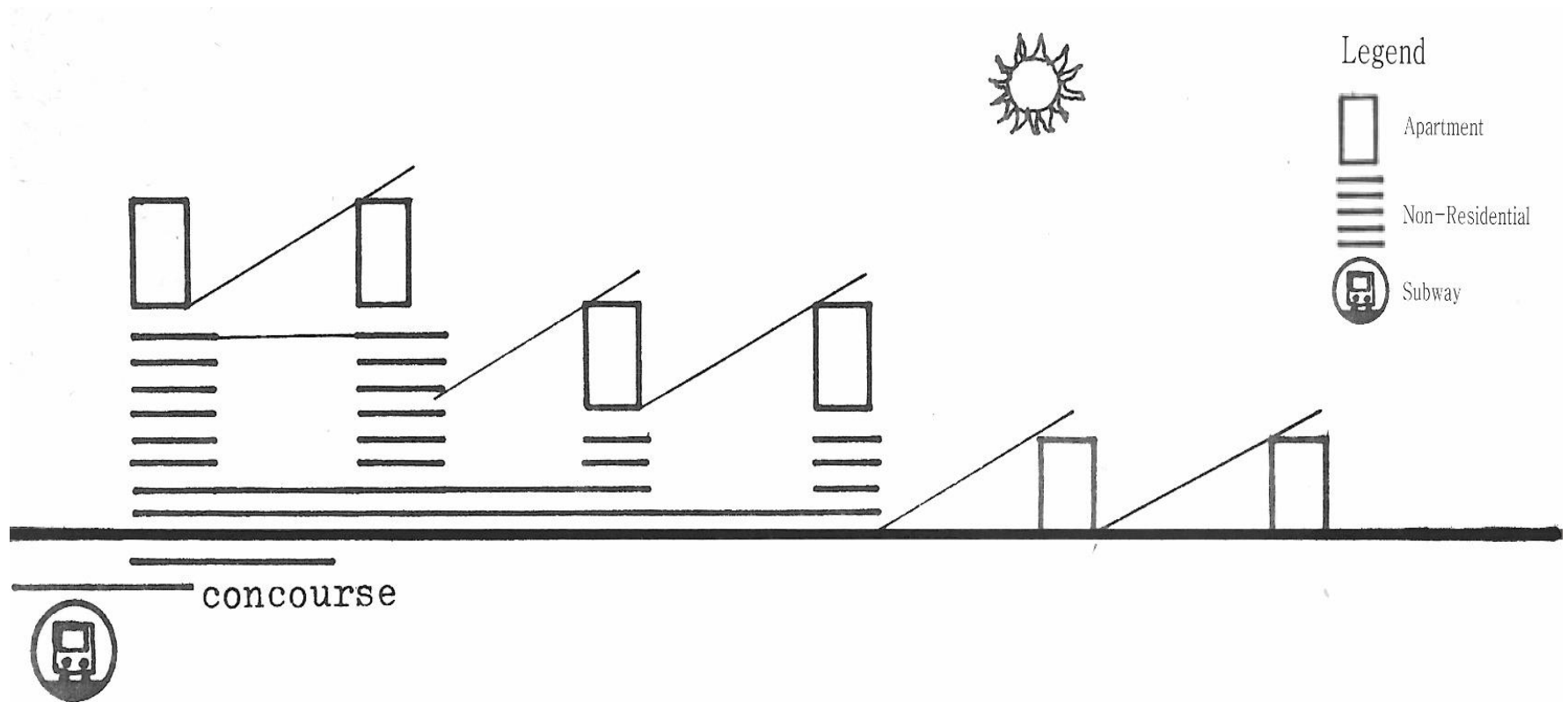# Rosario Metropolis for Seoul (1980): Station Area Plan

Figure 3. Schematic plan of a station vicinity cluster
(Kahng, 1980: 509)

Rosario Metropolis for Seoul (1980): Section Plan

Section diagram of mixed land uses building near station
(Kahng, 1980: 504)

Three Critical Concepts of 1980's Rosario Plan

From mono- to multi-centric city with Transit Oriented Metropolis (TOM) concept

The Rosario spatial concept is characterized by **a decentralized urban spatial structure** that uses the subway to achieve TOM.

- The ancestors of TODs, from the Linea City to Paris' 1965 Plan, had already conceived a of decentralized metropolitan structure, or concentrated deconcentration region.
- In 1980, Seoul had a population of 8.3 million with a unipolar spatial structure with one subway line. The Rosario plan proposed that the city's spatial structure be multi-centralized, with housing and workplaces located around planned subway stations.

Three Critical Concepts of 1980's Rosario Plan

Transit and housing to solve housing shortage

Building high-density apartment complexes near subway stations, an alternative scheme it referred to as "housing sponges" (Kahng, 1980: 503).

- Since the 1960s Korea has had a severe shortage of housing and faced skyrocketing housing prices in Seoul. Increase the effectiveness of public investments in transit and housing. Traditional "transit and housing" schemes from cases in Stockholm, Copenhagen, Paris, and Toronto would be found in the Rosario plan.

Three Critical Concepts of 1980's Rosario Plan

❚Value-capture and self-sufficient public transit for the developing country

The Rosario plan placed **high-density housing around subway stations** to support **mass transit management** and supply **housing supply**.

- Land value will be increased by the construction of subway stations. Rosario plan suggested that a government-funded public company should carry out eminent domain proceedings on the land surrounding subway stations. The strategies were very similar to those in Hong Kong's Rail and Property model, as housing development initiatives and value capture schemes.

Recent TOD concepts in the Rosario plan: the 6Ds

Density

- The plan was aimed at high-density development in subway station areas.
- The net population density of Seoul was estimated to be approximately 22,700 people/ km2 in 1978.
- According to the Rosario plan, subway station areas within a 500-meter radius were planned to be high-density zones, with 50,000 people/ km2, and other areas 500 meters distant from the stations to be intermediate-density zones, with 30,000 people/ km2 (Seoul City Government, 1980: 489).

Diversity

- The Rosario plan intended to locate commercial facilities, such as malls, on the first and underground floors near subway stations, and it suggested the development of office facilities on the lower and middle floors.

Design

- Necessary to make a more detailed and "urban" scale design, increase residential density, develop new residences, and facilitate mixed land use development.
- Kahng (1980: 508-511) argued that it was important to take a district-level approach to the Rosario proposal and to make a comprehensive plan and consistent design to combine the primary subway station areas.

TOD's connection to the Rosario plan: the 6Ds

Distance to transit

- The plan was designed to enable around 90% of Seoul's population to live in or near subway station areas. Kahng (1980) found that if areas available for development in Seoul were briefly calculated, the target population density would be achieved, allowing approximately 8.6 million people to reside in subway station areas.

Destination accessibility

- Commercial and service land use were placed in subway station areas. The plan tried to allocate commercial facilities on railway concourses and place offices and light-industrial-use facilities on their upper sections.

Demand management

- The Rosario plan enhanced the pedestrian environment in subway station areas and limited vehicle traffic. The roads within subway station areas are expressed as speed-controlled inner streets surrounded by trunk roads.

First official plan of Seoul with TOD, or TOM, concept (1990)

2000年代를 향한
서울市 都市基本計劃
1980

서울特別市

驛勢圈開發基本槪念
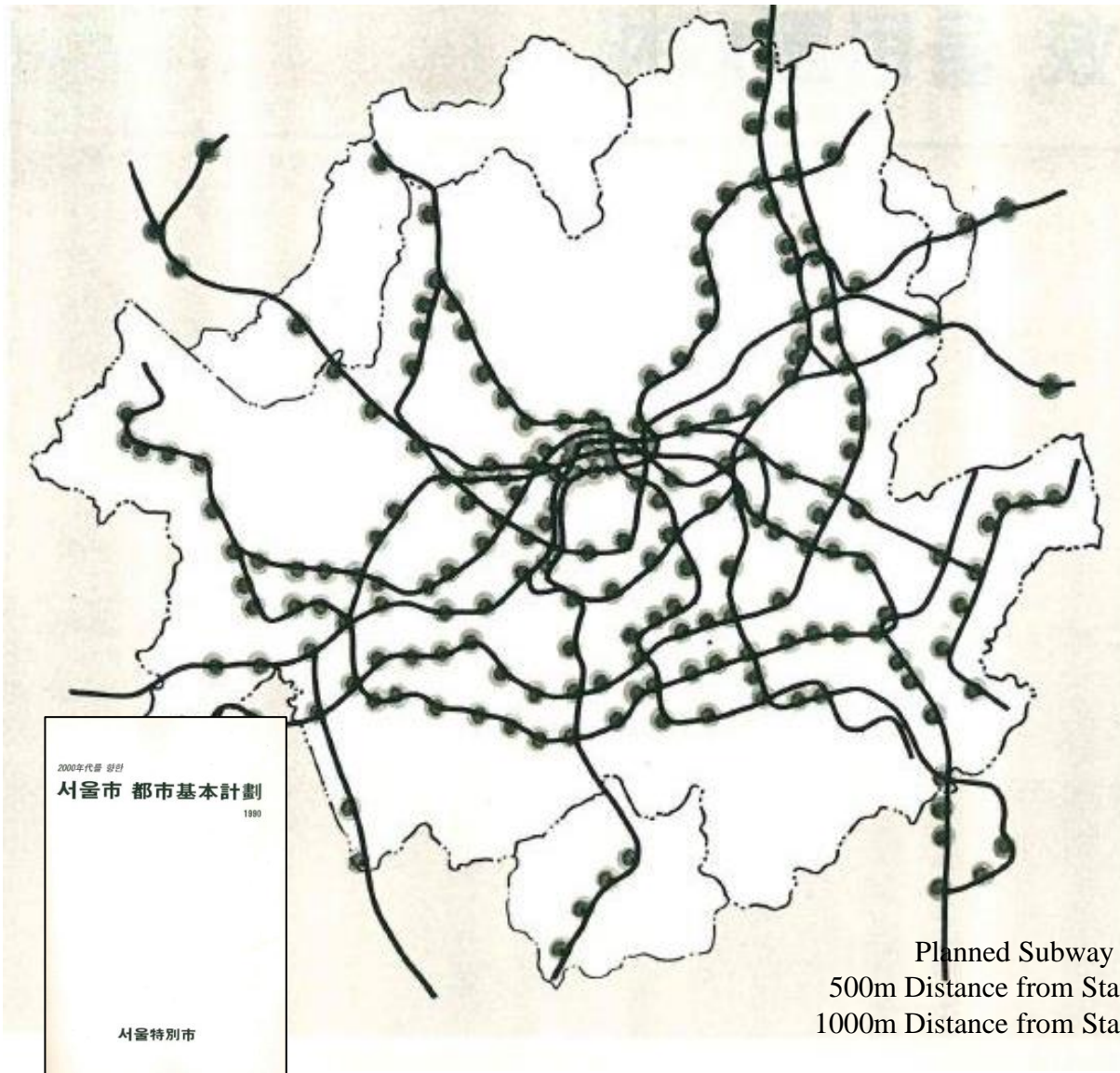
Planned Subway line
500m Distance from Station
1000m Distance from Station
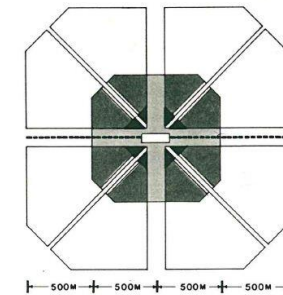
고밀도
중밀도
지하물쇼핑
역전쇼핑
지하콘코스
(Concourse)쇼핑

| 500м | 500м | 500м | 500м |

기존・계획전철
1차역세권 : 반경 500 m
2차역세권 : 반경 1000 m

* Seoul Metropolitan Government (1990: 233)
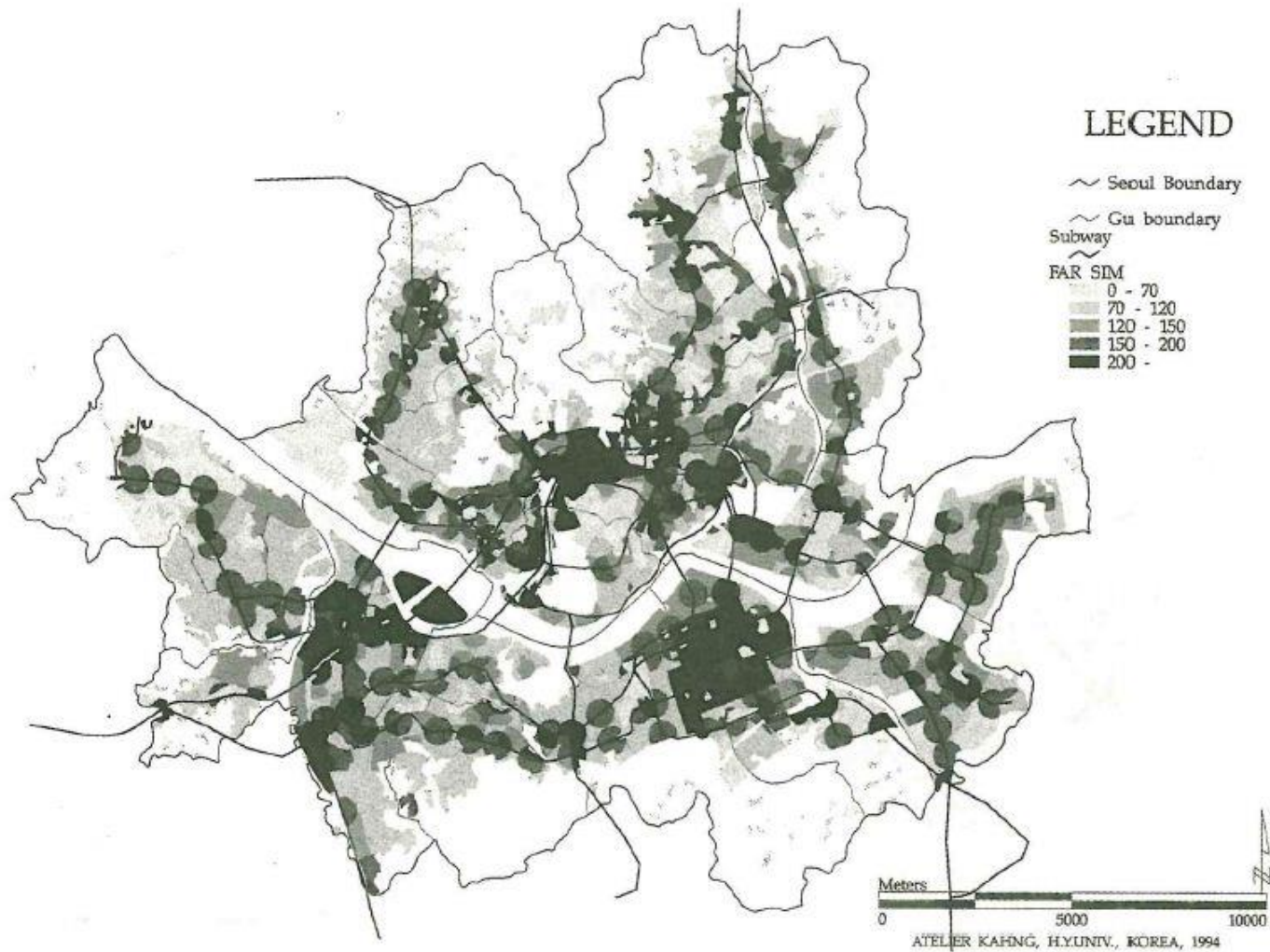
Proposal for Seoul by Kahng (1990)

Strategic Station Area with over 3 subway lines

驛勢圏 開發計劃
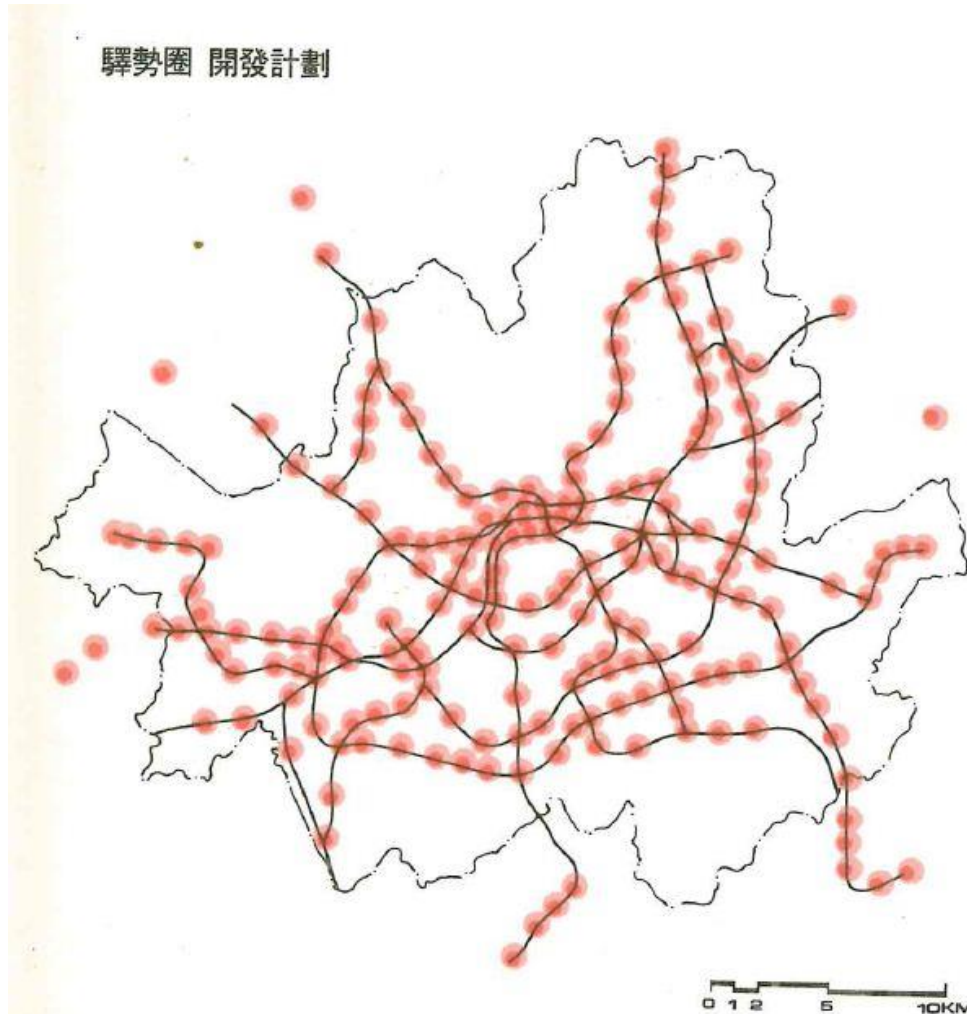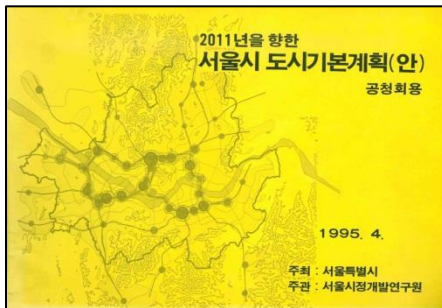
- Stations having low density developed area or large developable sites.
- Station and artery road accessibility

* Seoul Metropolitan Government (1990: 229), Choi and Kahng (1990: 27)

Density distribution simulation by GIS (Lee, 1994)

FAR, Population, and its Density

*Lee (1994: 157)

Seoul 2011 Comprehensive Plan (1995)

* Seoul Metropolitan Government (1995: 20)

* Seoul Metropolitan Government (1995: 21)

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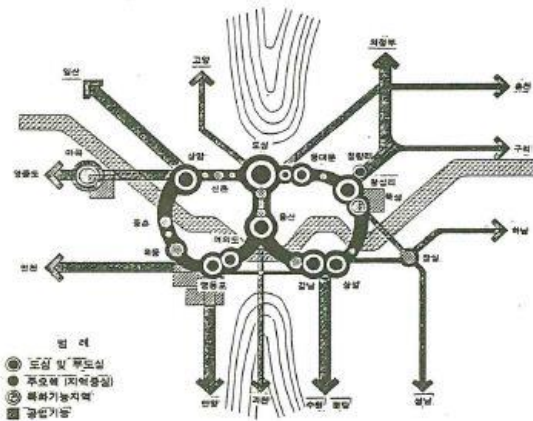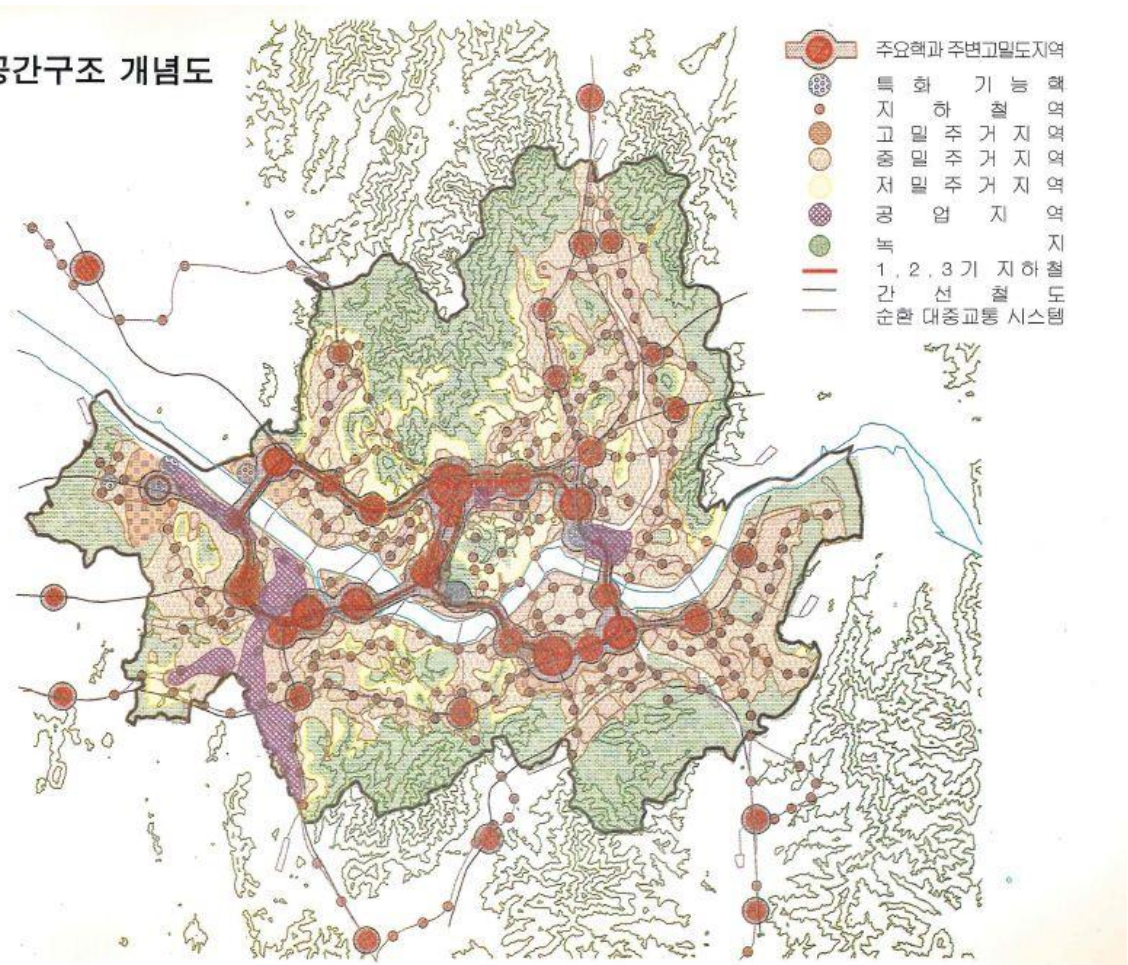
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Thanks