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Urban Planning as the Proactive Foundation of Compact Green City

2014. 12.

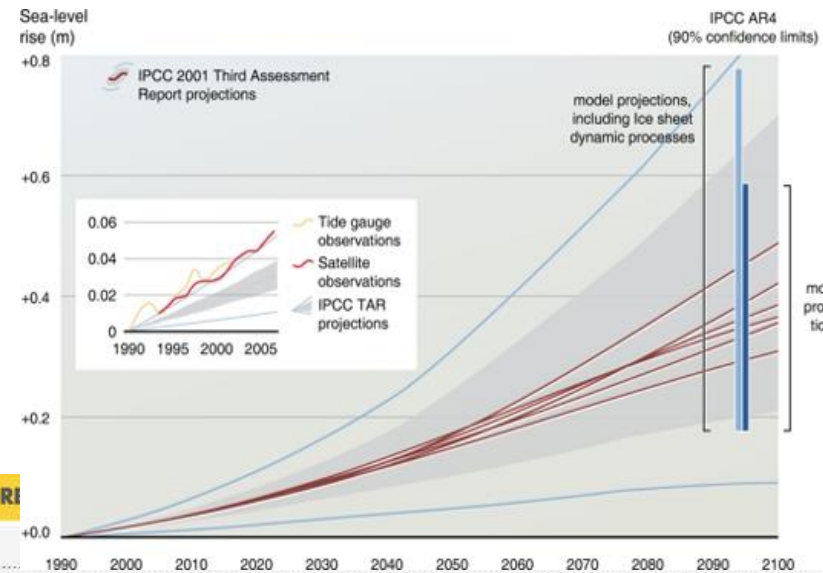
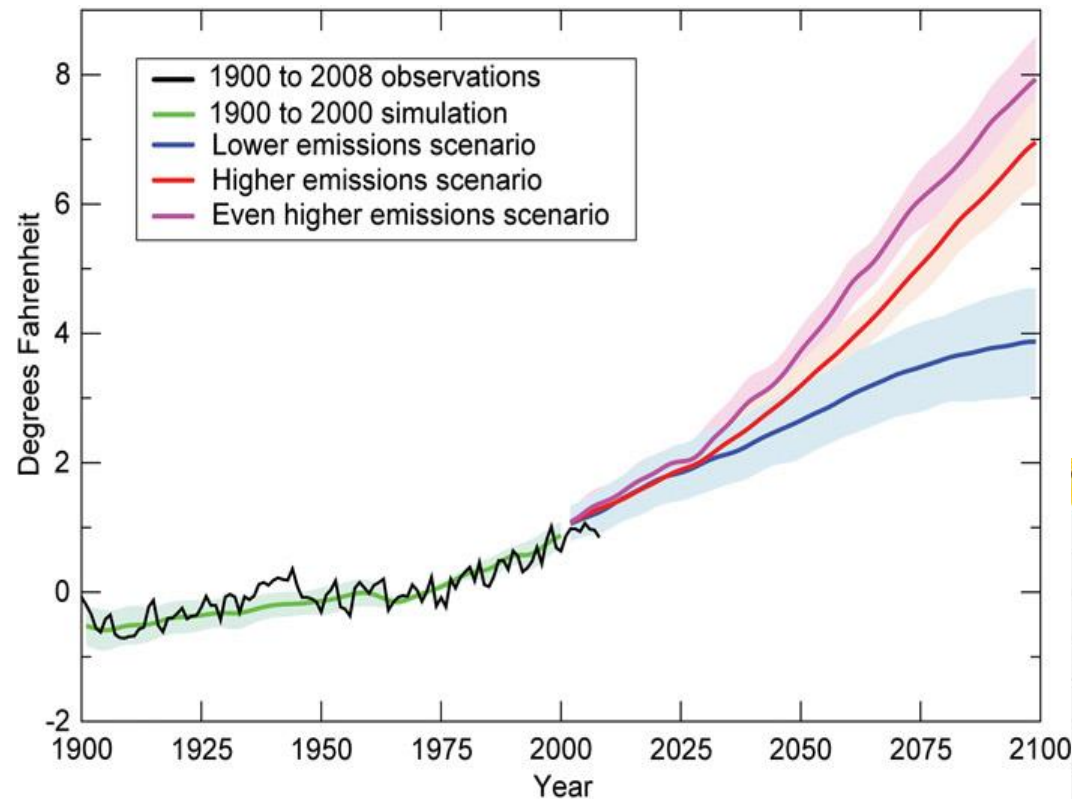
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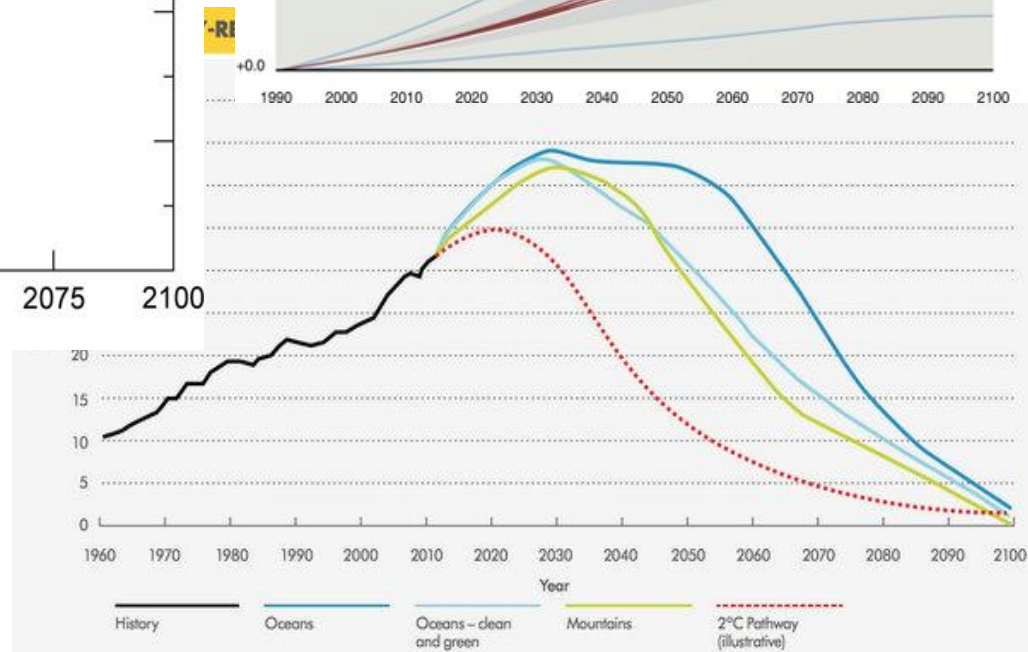
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(Former Director-General of Int'l Urban Development Collaboration
of Seoul)

Technology alone can't stop Global Warming

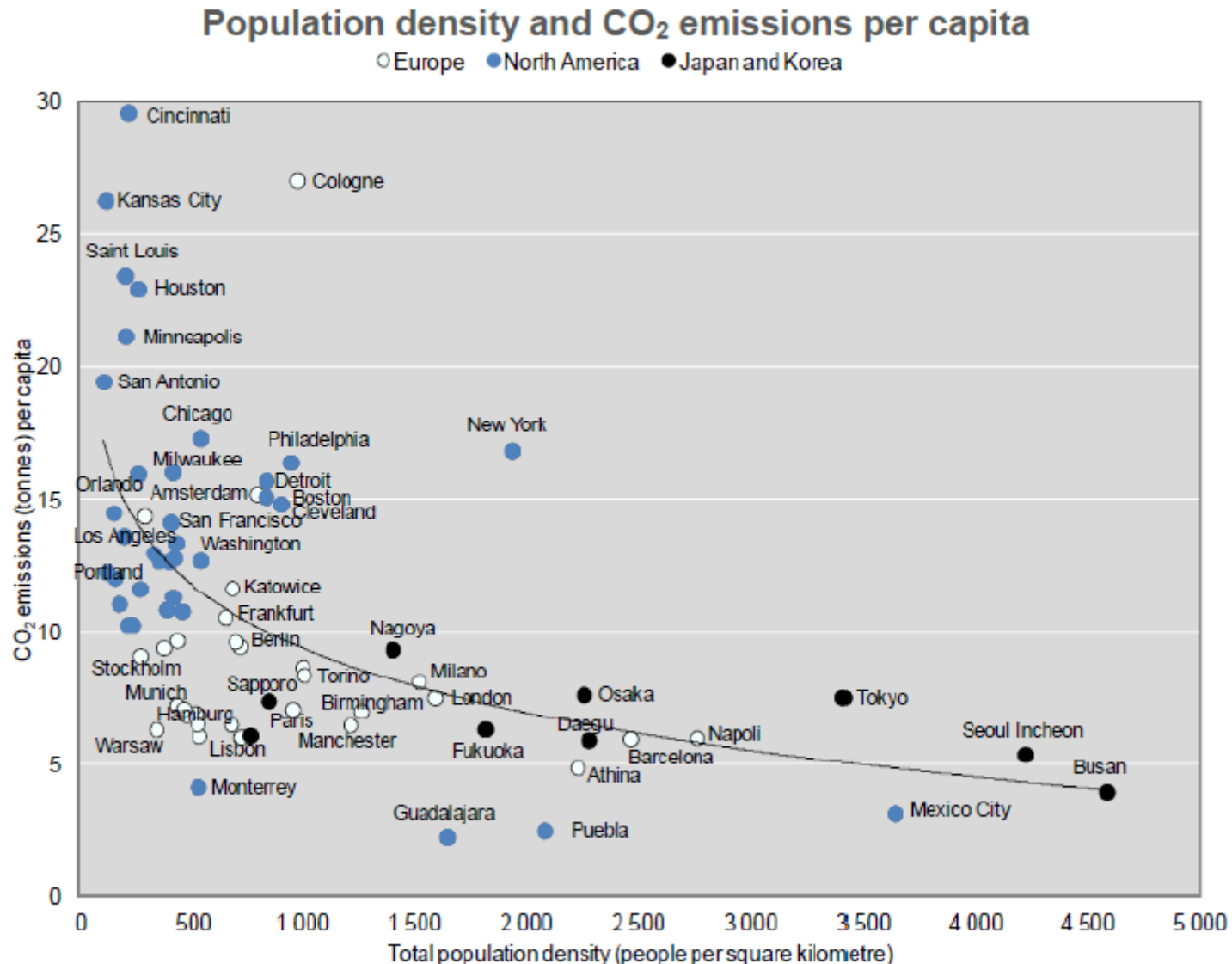


Impact = f(Pop, Prod, Tech, etc)



Need to change our cities and behavior

More than 75% of GHG emitted from Cities in 2008

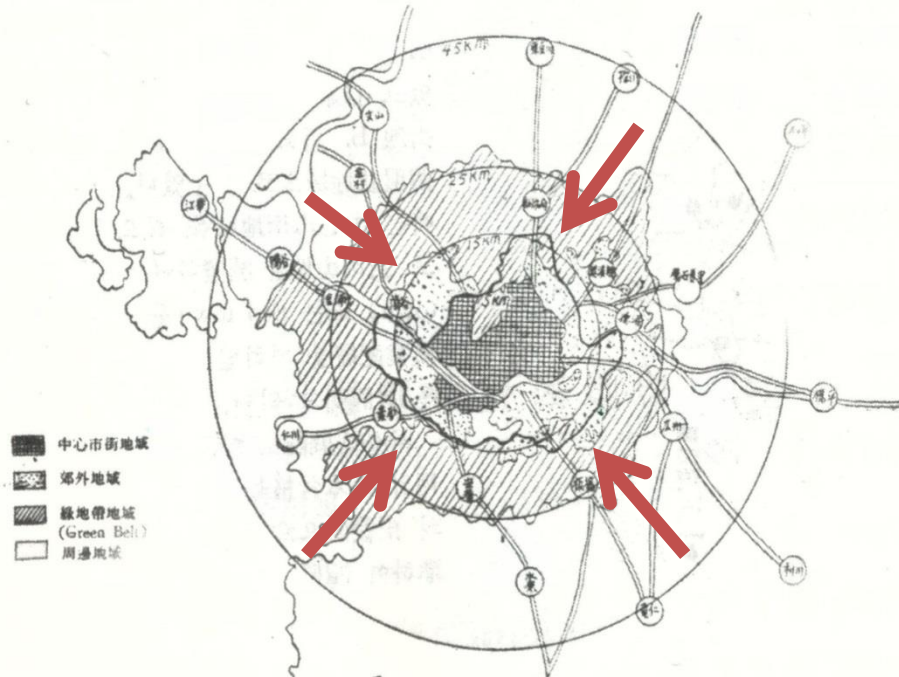


Source: OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, doi: 10.1787/9789264174108-en.

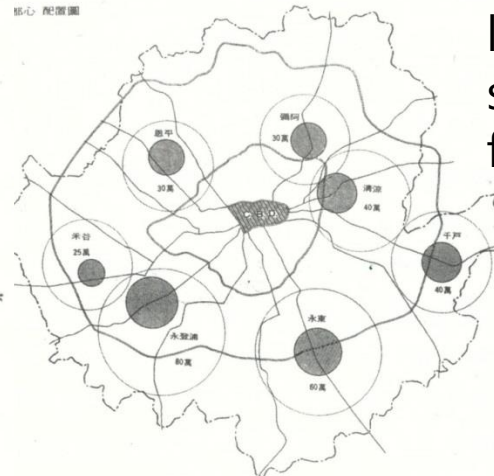
Urban Planning for Compact is the First Step

Seoul Metro Area Master Plan (1965)

大서울地域區分圖 (國土計劃學會案)



都市圈圖



-8 서울도시기본계획 조정 수립(1970), p159

Visioning the **future**.
Time, space, people,
scope were not
limited by then
situation as was the
future growth



1957



1972



1988



2005

Gangnam was a New Town outside Seoul

Expansion of Boundaries

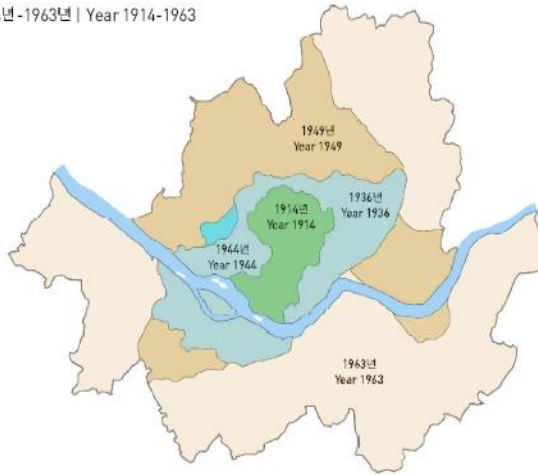
행정구역 변천 1394-1995

Change in Administrative District, 1394-1995

1394년 - 1913년 | Year 1394 - 1913



1914년 - 1963년 | Year 1914-1963



1973년 | Year 1973



1995년 | Year 1995



- Seoul doubled its administrative area in 1963 to resolve the urban problems, including southern area of Han river
(In Korean, Gang means river and Nam means south)

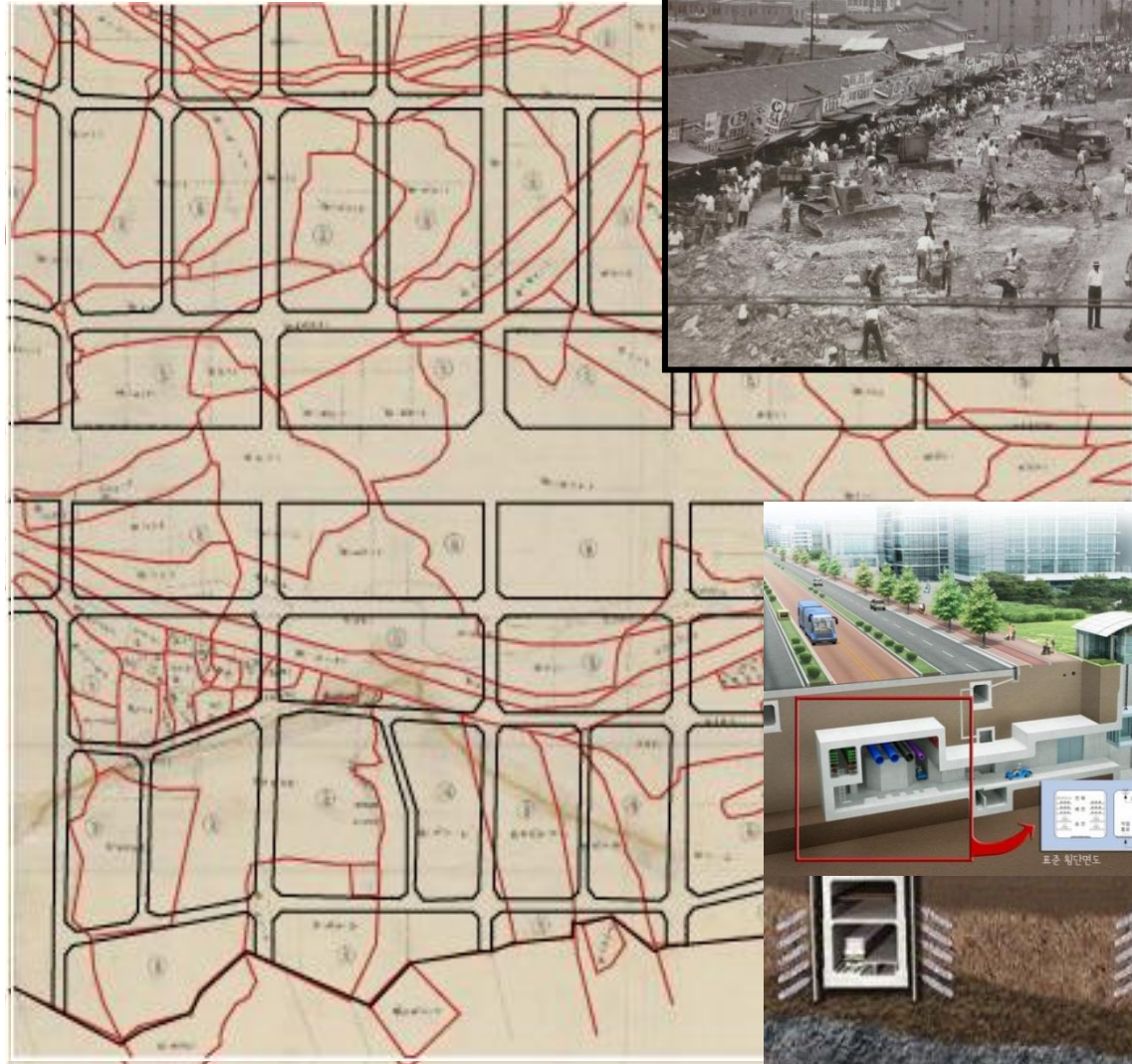
Date	Area(km ²)
1946. 10. 18	136.00
1949. 08. 13	288.35
1963. 01. 01	613.04
1973. 07. 01	627.06
1988. 01. 01	605.40*

*the area did not shrink, but was merely readjusted by survey

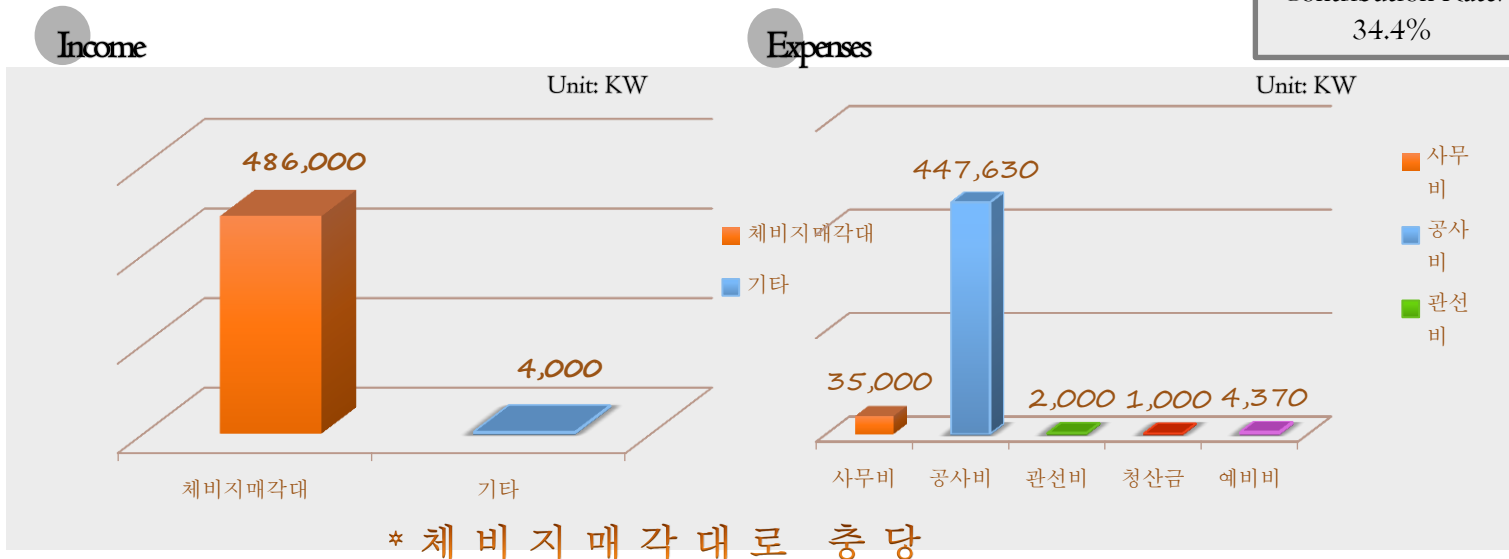
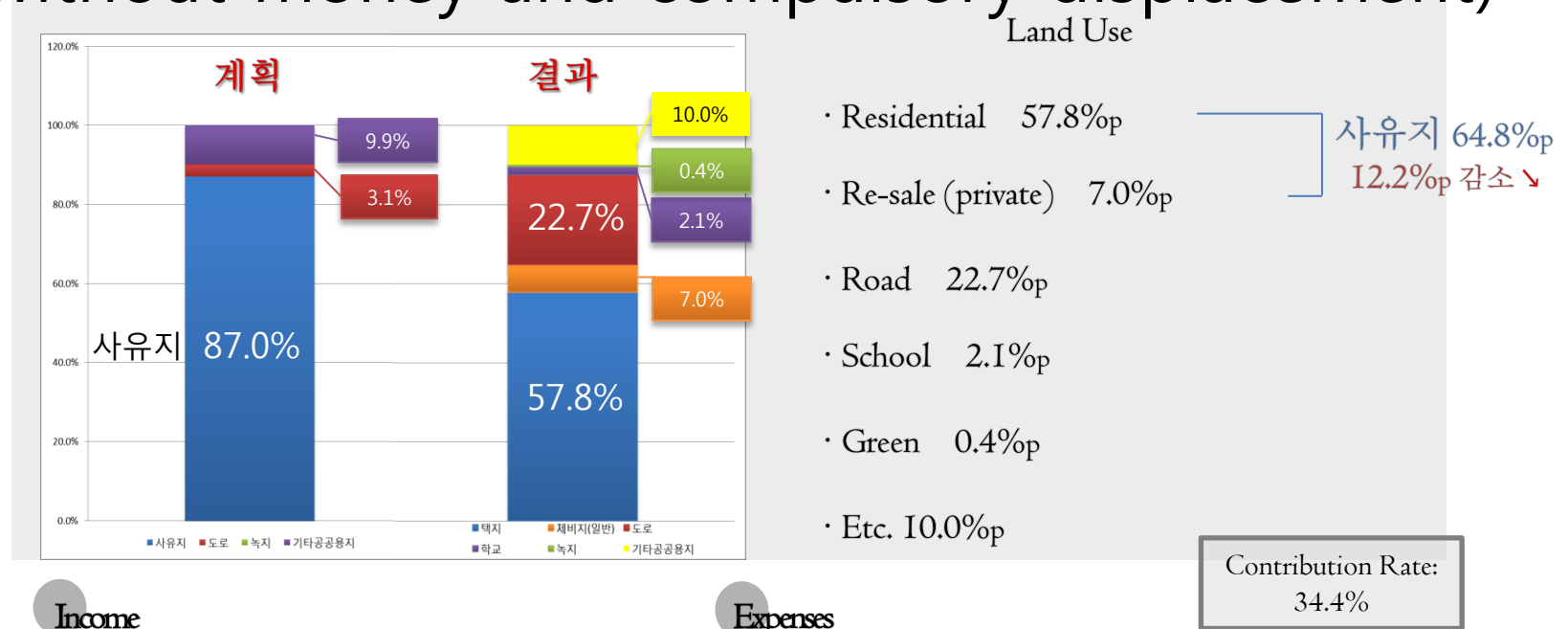
Transforming non-urban into Sustainable Urban Land

Road is not only surface for cars but also artery (public space for public services) for a city.

Water,
Sewage
Energy , Gas,
Electricity
Communication
Heat, Cooling,
Subway, etc.

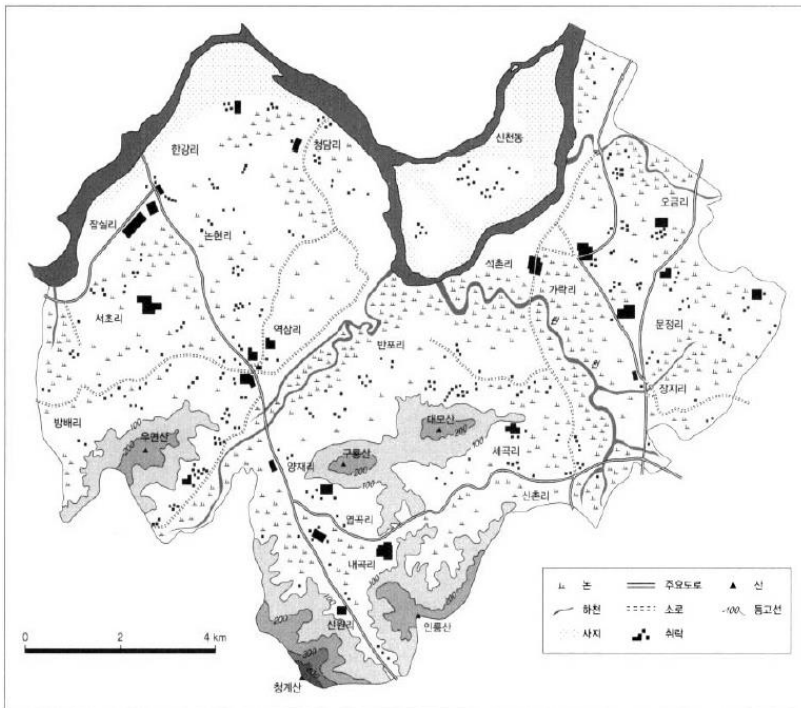


Securing Public Space and Change Spatial Structure (without money and compulsory displacement)



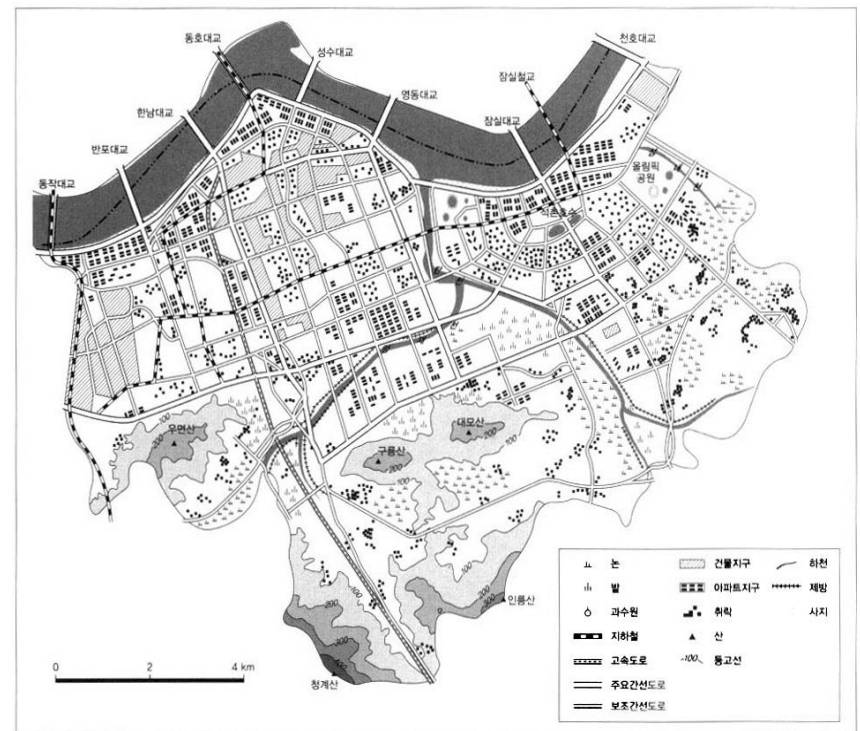
Gangnam Development

- **Envisioning (Futurecasting) vs. Prediction**
- 30 years of development from an idea to completion



출처 : 1957년 미육군국동지도국에서 작성한 「서울」, 「독도」 1:10만 도폭에서 재작성

▲ 강남 1957년

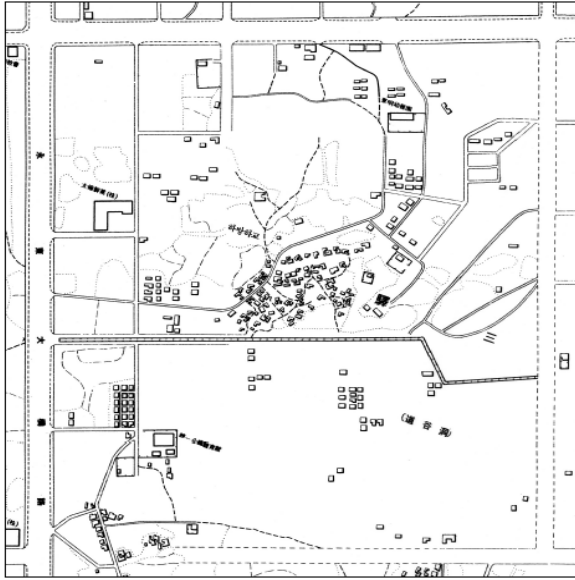


▲ 강남 1988년

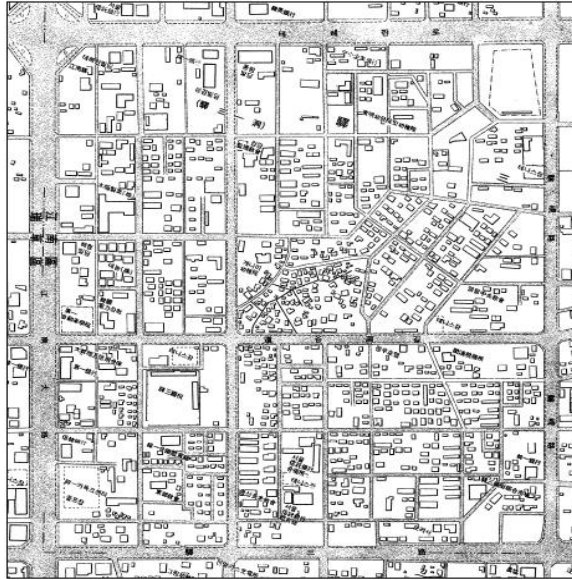
Government Planning and Private Development

Planning is not a blue print; rather Vision, Framework, & Scenario

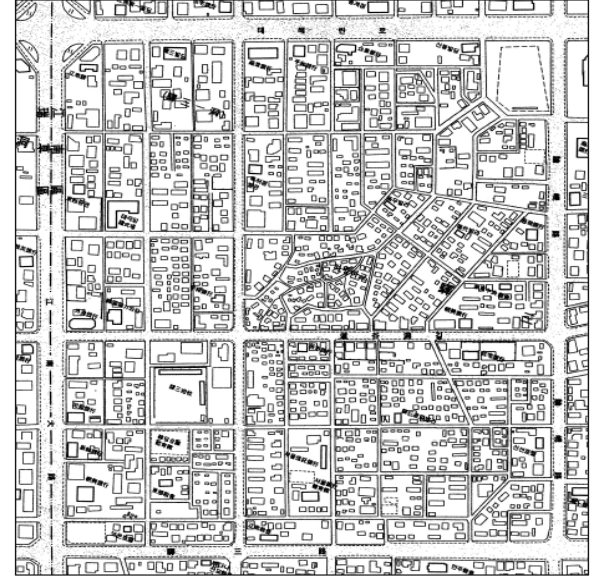
1976년



1987년



1995



1972년



1980년



1988



출처:서울연구원 (2009)

출처:서울시 (2013)

자료 | 서울시장개발연구원 내부자료
연대별 사업지역

- 60년대 이전 사업시행지구
- 60년대 사업시행지구
- 70년대 사업시행지구
- 80년대 사업시행지구



Achievements

- Set *Land Use Framework* as the Ground of Future Growth
- Secure *Public Space* for *Public Services* (e.g., Transit, Water)
- Set *Growth Limit* for Protecting Nature from Sprawl and Citizens from Disasters (e.g., Flood)
- Provide *Urban Land and Infrastructures* for the Life, Work, and Play of Citizens

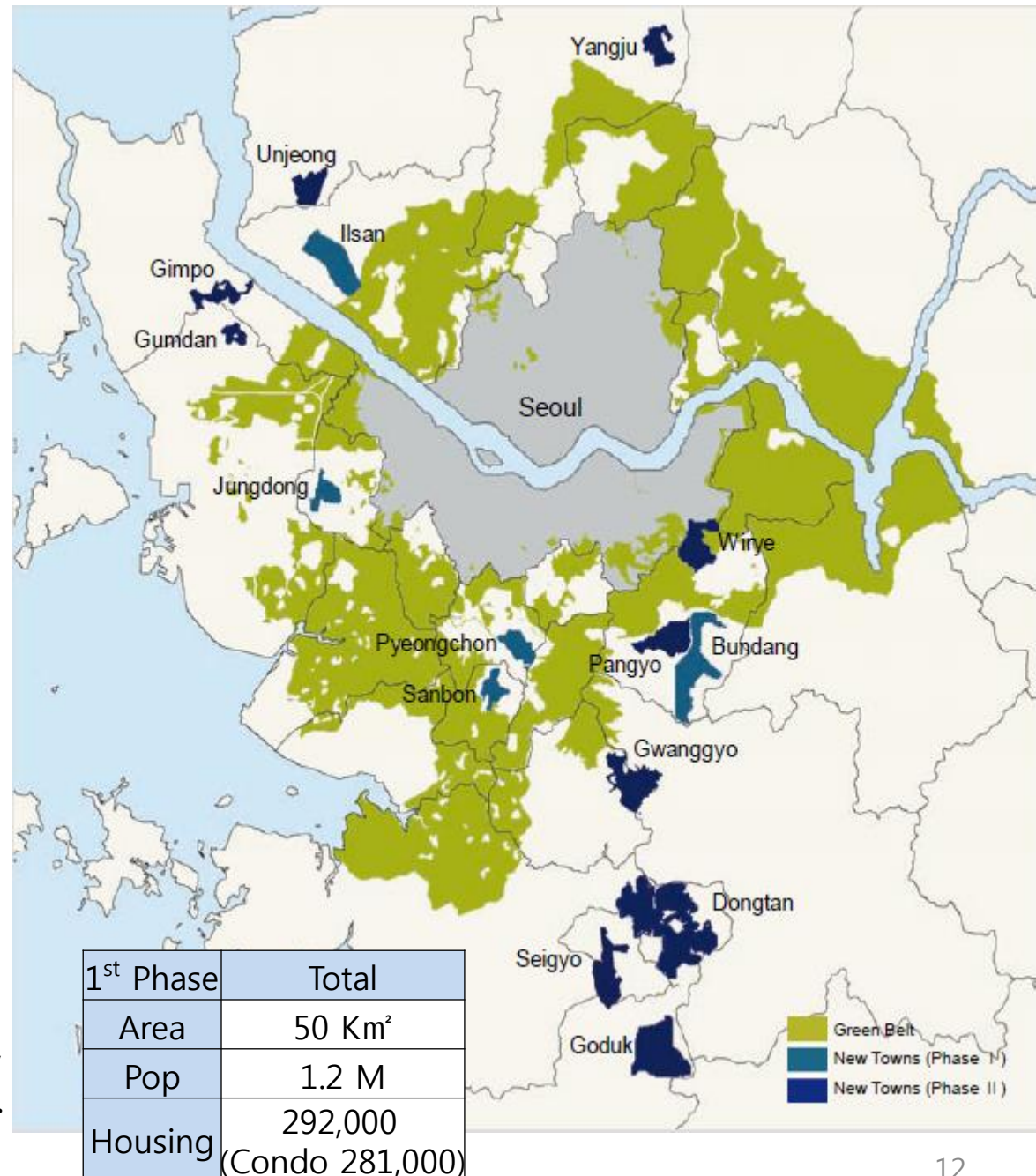
Pop in 1960: 2.45 M

	1970	1976	1981
Population (Thousand)	5,509	7,150	7,500
Income per cap (KRW)	138,810	189,580	268,240
Urban Land (km²)	130	201.7	261.7
Housing (Unit)	593,370	863,970	1,300,000
Hosing Supply Rate (%)	56.8	56.3	56.1
Housing Area per cap (m ²)	6.8	8.2	10.1
Water Prod (10T t/day)	111	210	302
Road Area (km²)	34.85	44.57	55.69
Road Rate (%)	9.5	12.0	15.0
No. of Cars	61,000	170,000	315,000
Subway (km)	-	26.5	64.0
Green/Park per cap (m²)	4.04	5.73	6.60

New Towns in 1990's

In the late 1980s, as the situation of housing shortages became worse and the existing available land for large-scale urban development was nearly exhausted, the population began to spillover beyond the green belt.

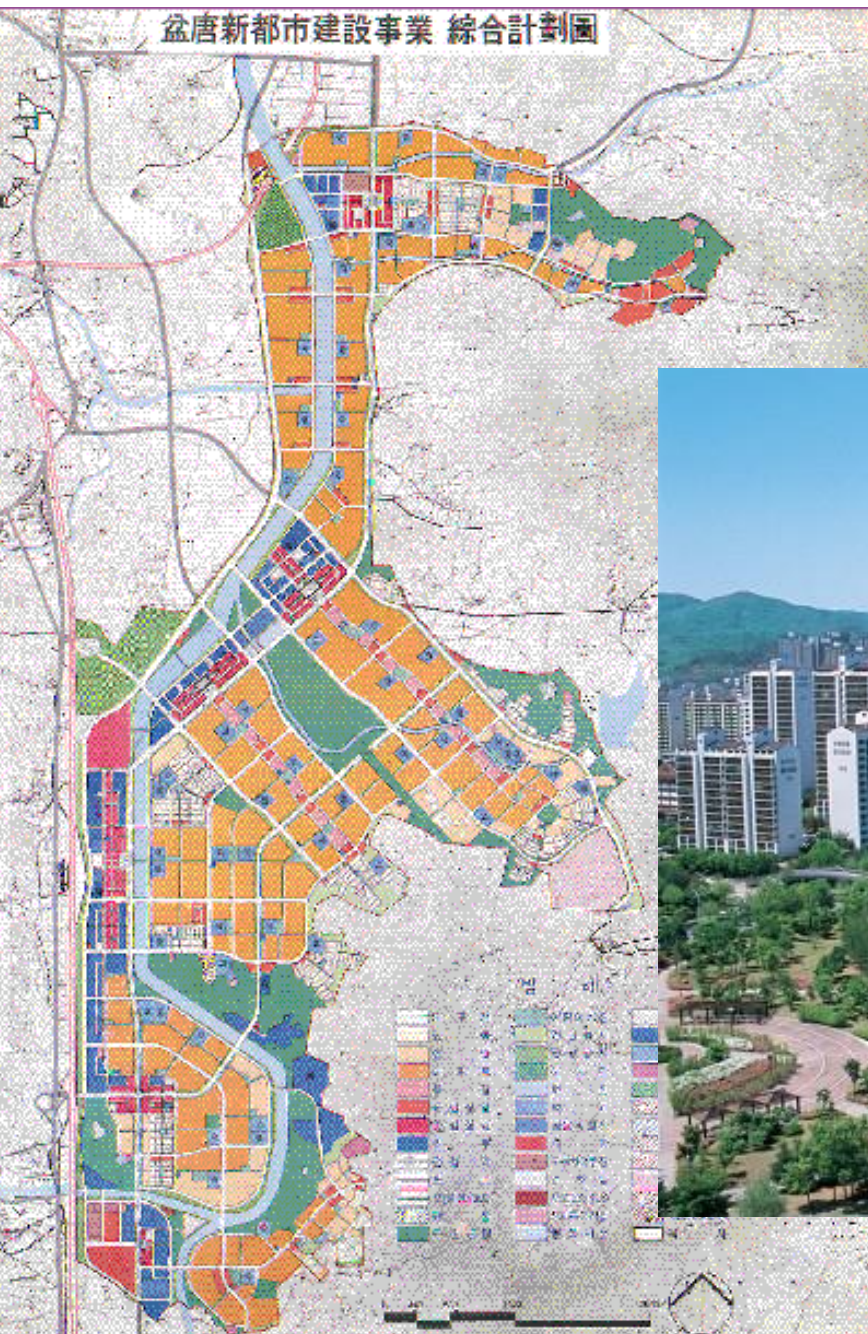
Faced with limitations in land supply for urban development, the central government began to build several new towns in the Seoul Metropolitan Region including Bundang in Sungnam, Ilsan in Goyang, Pyeongchon in Anyang, Sanbon in Gunpo, and Jungdong in Bucheon.



Land Use Plan

(unit: thousand m², %)

	Total	%	Bundang	Ilsan	Pyung- chon	Sanbon	Jung- dong
Total	50,140	100.0	19,639	15,736	5,106	4,203	5,456
Residential	17,230	34.4	6,350	5,261	1,931	1,811	1,877
Commercial	3,866	7.7	1,640	1,233	247	178	568
Public	29,044	57.9	11,649	9,242	2,928	2,214	3,011
Road	10,388	20.7	3,860	3,290	1,187	639	1,412
Green	9,548	19.0	3,810	3,705	801	649	583
Gov't	676	1.3	166	92	150	100	168
School	2,402	4.8	732	584	343	327	416
Etc.	6,030	12.0	3,081	1,571	447	499	432

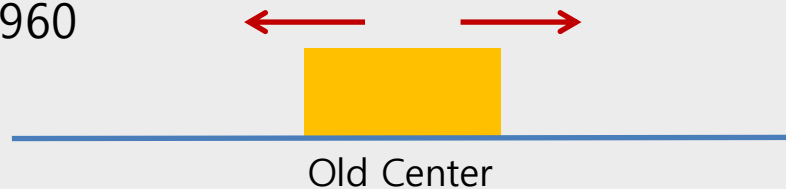


Urban Development Protects Environment Bundang



Urban Planning: Sustainable Development Guide to *Compact, Transit-oriented, Eco-Friendly City*

1960



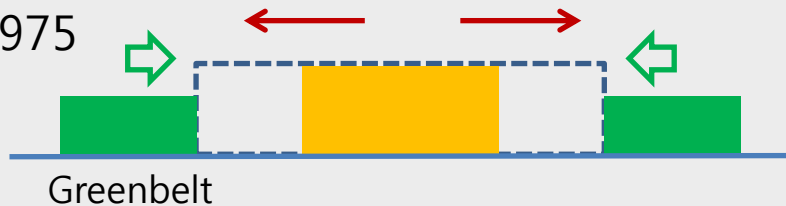
Pop: 2.4M

Density: 91 인/ha

Area: 268 km²

Priority: Spatial Framework, Public Space, Water
(Density, Location) (**Roads**, Schools, Parks, etc.)

1975



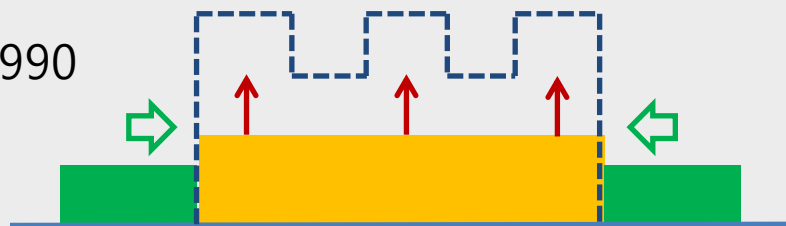
Pop: 6.9M

Density: 110 인/ha

Area: 600 km²

Priority: Urban Land, Urban Rail, Sewage

1990



Pop: 10.6M

Density: 175 인/ha (Net Density 265 인/ha)

Area: 600 km² (developed Land 400 km²)

Priority: Compact, Smart, Urban Transit, e-Gov

Which one is greener?

(a)

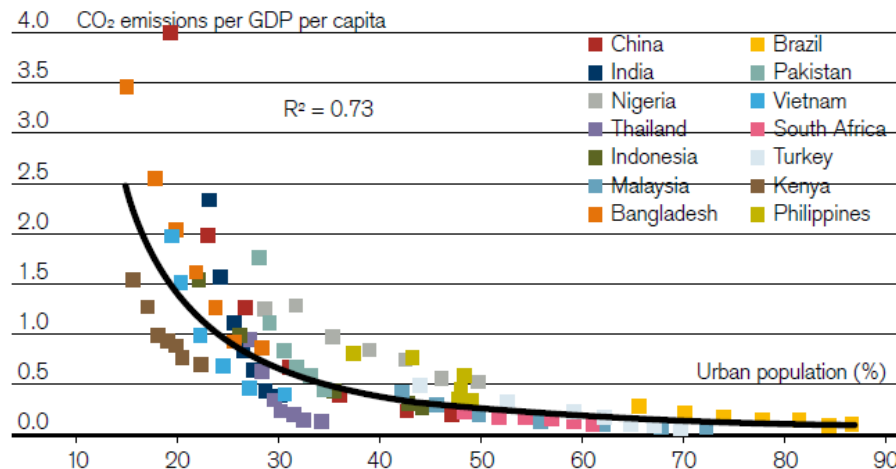


(b)



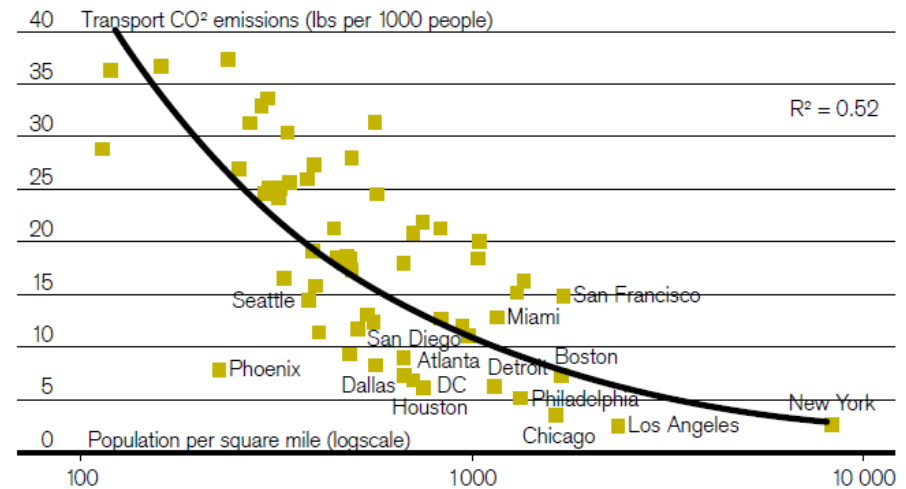
Total CO₂ emissions versus urban population rate in emerging markets (1980–2010, 5-year intervals)

Source: World Bank Development Indicators, Population Division of Department of the Economic and Social Affairs of the United Nations Secretariat, Credit Suisse



Emissions from transportation (public and private) versus population density for US metropolitan statistical areas

Source: US Census Bureau 2000 Census, Credit Suisse



Invisible Beauty of Seoul: Green by Compact Development



Concluding Remarks

- Plan ahead, especially for the (rapidly) growing/emerging cities
- Act Quickly: accelerate plan-making and implementation

“The enemy of a **good plan** is the dream of a **perfect plan**.”

“It is even better to **act quickly** and err than **hesitate** until the time of action past.”

- Carl von Clausewitz -
- Utilize the Experiences of Cities, like Seoul, as Human/Technical Resources (learning-by-doing)

Thank You!

2014. 12.

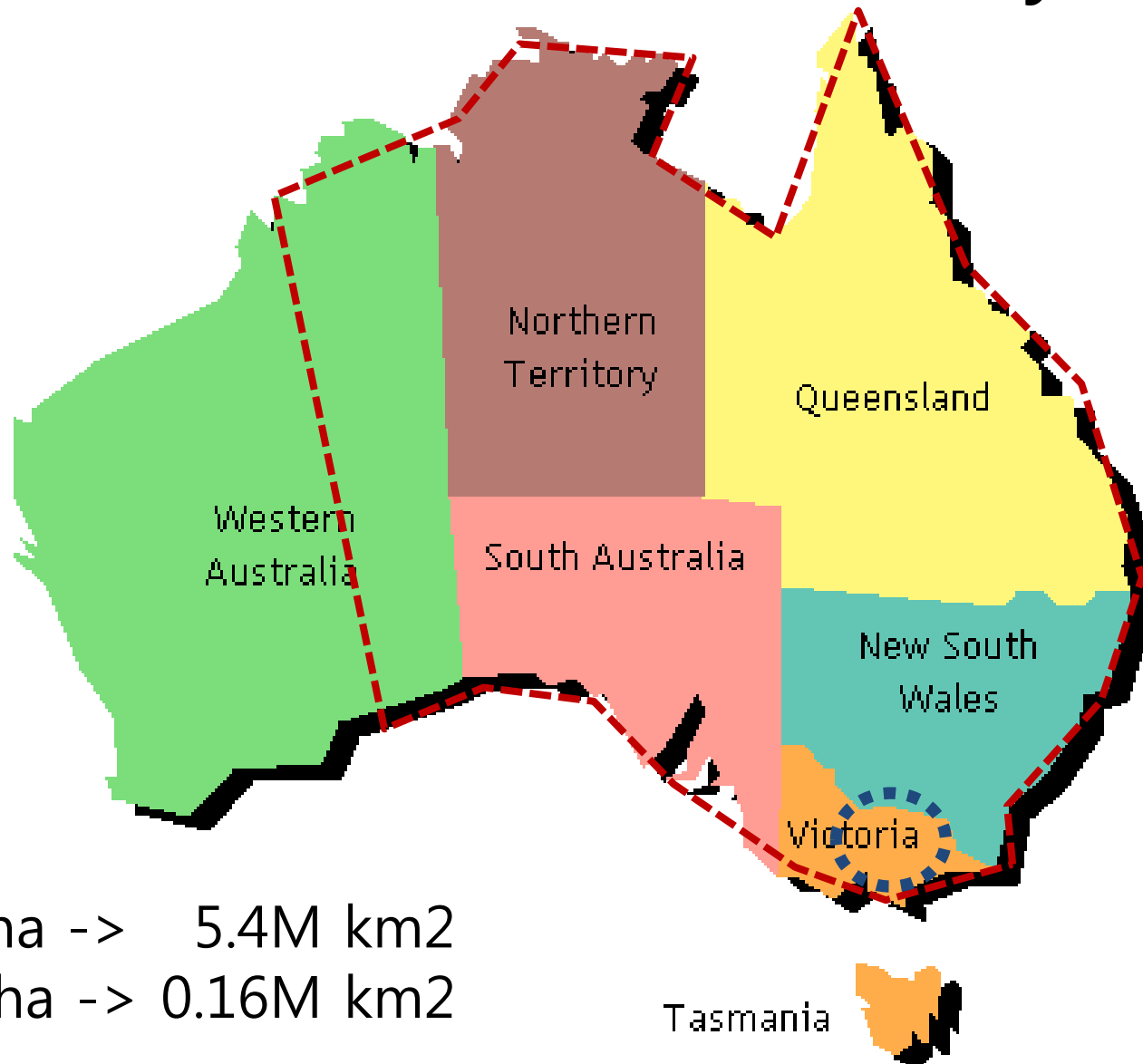
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2.7B more urban dwellers by 2050



Self-contradiction on Compact

- **Although many plans target “compact city,” why we see less compact cities?**
- What happened in Korea:
 - 1st generation New Towns (1980's) Pop Density: 281 persons/ha
 - 2nd generation New Towns (2000's) Pop Density: 112 persons/ha
 - Pop Density of Seoul: 175 인/ha (1990) 162 persons/ha (2010);
- Some planners and developers argue the need of lower density and more spatial distribution because;
 - Compared to world cities, Korean cities have much higher density. (for example, Seoul's pop density is 8 times of New York City and 3 times of Tokyo)
 - Compared to domestic cities, Seoul's pop density is 34 times of national average (Busan 45 persons/ha, Gyunggi 11 persons/ha, in 2010)
- *Lowering density of (crowded) city has been a big issue of modern urban planning (Neuman, 2005).*

Conflict with Personal Preference

- As income increases, an individual tends to prefer more space, higher privacy, and private transportation (Ellwood & Polinski, 1979; Crotte et al., 2009).

Personal Preference



Collective Outcome



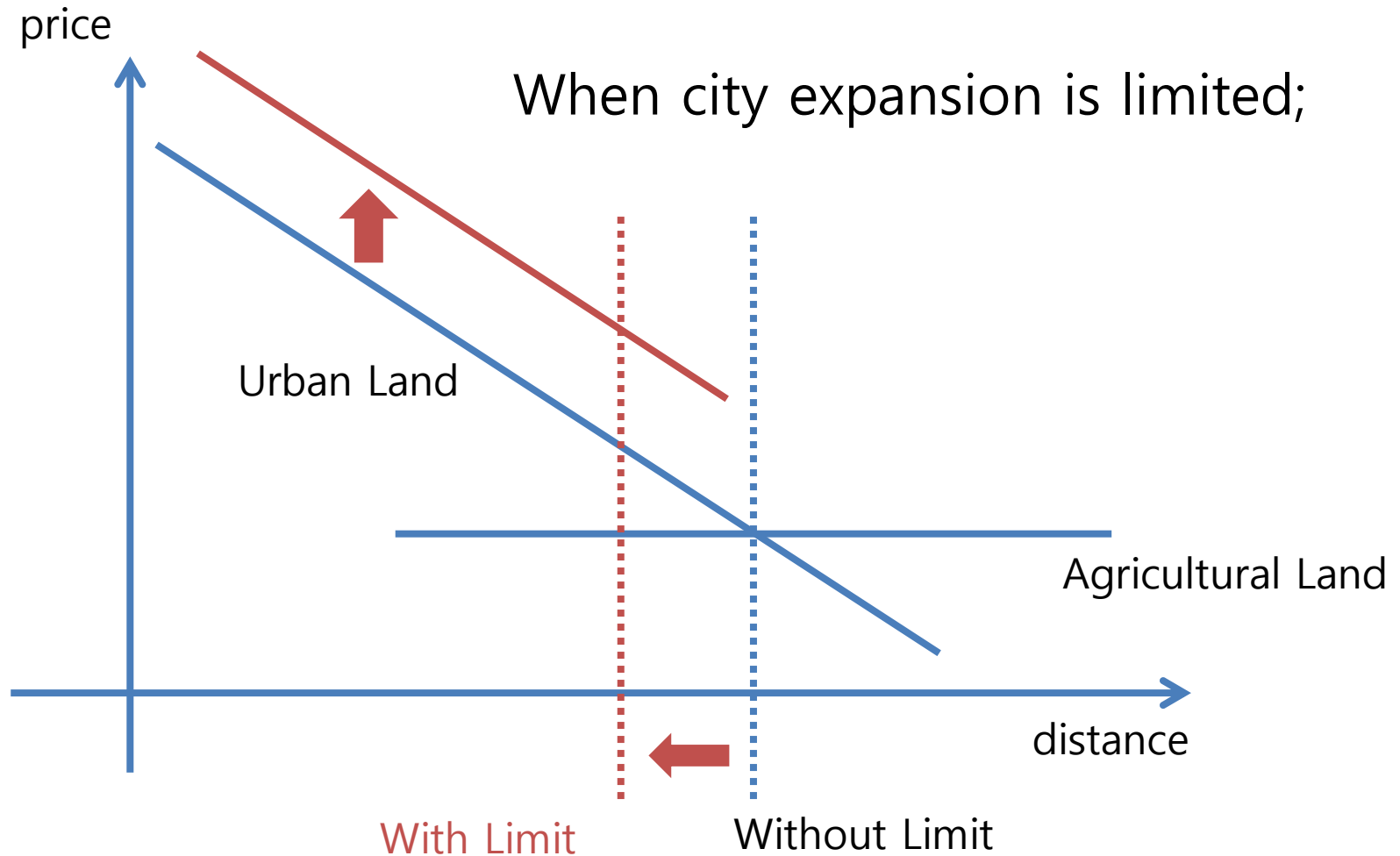
Personal Inclination vs. Social Necessity

- Transit is one of inferior goods
- In order to make transit attractive: (market solution)
 - Make transit relatively cheaper, more convenient, more accessible, etc.
 - Make car-transportation relatively more expensive, less convenient, less accessible, etc.



Compact City is not natural to people → Social commitment important.

Social Conflicts over Compact

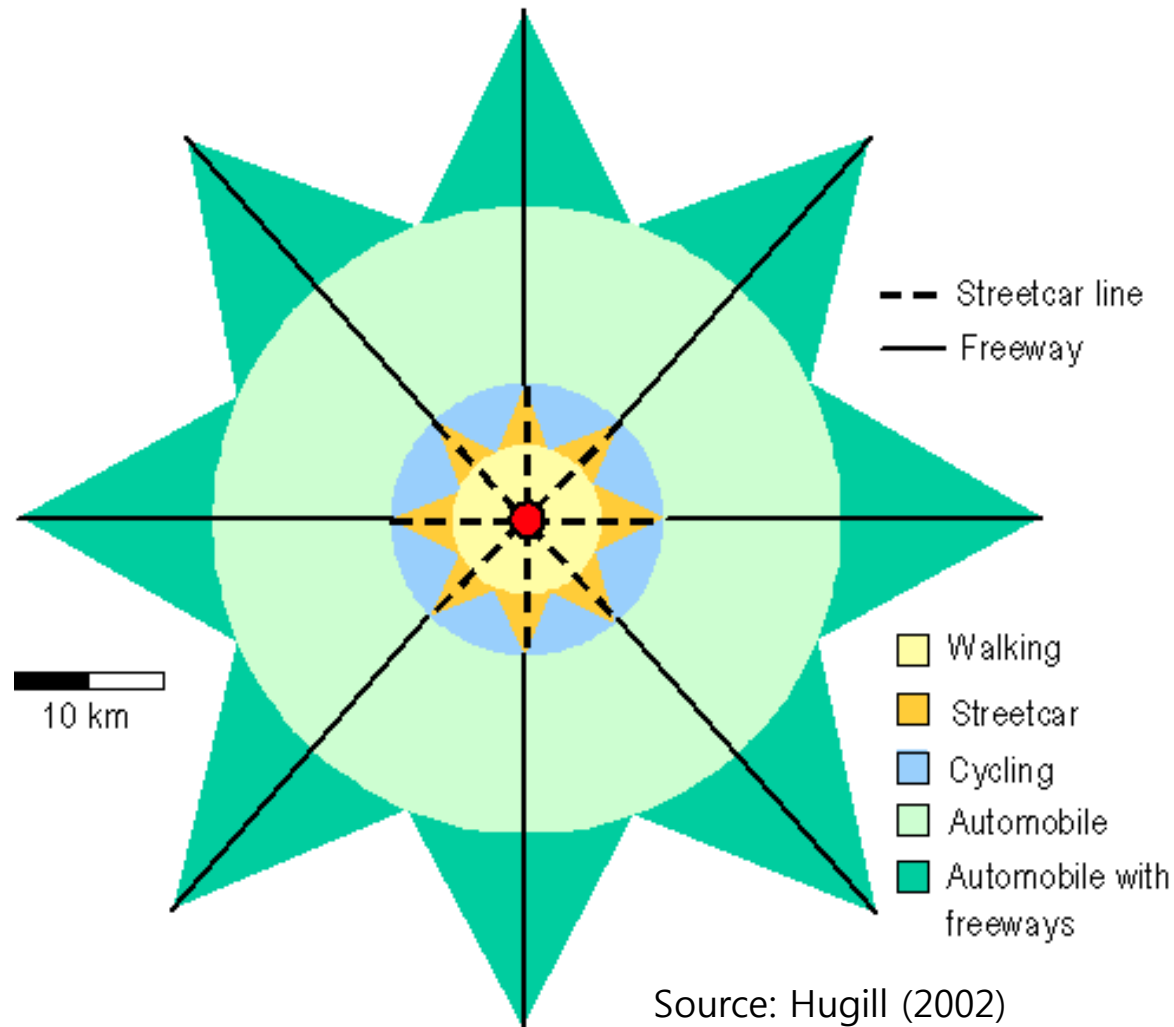


Cities have ever been expanding

How to Reverse or Cease the Expansion?

Expansion has the same way of individual preference - more space, privacy, freedom, etc.

There is rising interests of relationship, eco, urban, etc.



- Command and Control
- Incentives and Penalties
- Mental / Psychological
- Nudge?

Source: Hugill (2002)