Development of New Towns and Regional Transportation in Seoul Metropolitan Region

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1.1 The Birth of Seoul in 1394

- New Dynasty (Chosun, established 1392) chose “Hanyang” as the new capital.

- The capital was established 45 km south from Gaesung (Koryo Dynasty).

- Hanyang Fortress Wall (around 18 km)

- Han River

- Main Avenue

- Sungryemun Gate
1.2 Under the Japanese Ruling (1910~1945)

- Seoul became “Geongsung” and grew drastically after the 1920s
  - Industrialization since the 1920s
  - 250,000 in the 1910s
  - 350,000 in 1930
  - 400,000 in 1935
  - Japanese immigrants and urban settlers from rural areas
1.4 The Korean War and Bad Urbanization in the 1950s

I. Historical Context

- **Vicious circle of poverty and “bad” urbanization**
  - Refugees from North during the War
  - Barely survived with US aid (food)
  - Extreme poverty in rural areas and blind coming up to Seoul
  - Urbanization without industrialization
II. Compressed Growth 60s~80s

2.1 Economic Growth since the 1960s

Growth Rate (1954~2016)

Source: KDI 2005 Updated

Liberation from Japanese Colonial Rule and Korean War

67

100 (1964)

87

1,000 (1977)

Oil Crisis

4 Ten-Year-Comprehensive National Territorial Plans

6 Five-Year-Economic-Development Plans

G20 Member

Joined OECD (1996)

Financial Crisis (1997)

11,432

16,291

20,759

27,561

Source: KDI 2005 Updated
2.2 Urban Growth of Seoul Metropolitan Region

II. Compressed Growth 60s~80s

National Urbanization Ratio

- 1960: 39.1%
- 1970: 50.1%
- 1980: 68.7%
- 1990: 79.6%
- 2000: 88.4%
- 2010: 90.9%
2.3 Growth Control of Seoul in the 1980s

- Special policies for reduction of over-concentration in the Capital region
  - The Capital Region Readjustment Planning Act (1982) were implemented to lessen the concentration of population and industry into the capital region
  - The First Capital Region Readjustment Plan (1982-1996) was implemented
  - Classified the capital region into relocation promotion zone, limited readjustment zone, development inducing zone, national environment conservation zone, and development reserve zone

- The administrative entities include Seoul, Incheon and Gyeonggi

- Became “Double Edged Sword”
  - Over-growth should be controlled
  - Over-control might be dangerous
※ Green Belt

- Development restriction area (greenbelt) was set in 1971 around the major cities Including Seoul
  - Very strong regulation to prevent unplanned expansion of metropolitan area
  - Weakened since 1999 to a degree, yet still effective
  - The location of new towns rarely overlapped with GB
2.4 Issues of Continued Expansion of SMR

- Population Concentration in SMR
- Rising Land Price in Seoul
- Limitations in Housing Provision

- Spillover to Suburbs for Better Housing Options
- Extrusion of Middle and Low-income Class
- Exacerbated Job-Housing Mismatch
3.1 The First Phase of New Town (1)

- In spite of the growth control of Seoul, drastic increase of housing price resulted in a massive housing supply in the Capital Region.

- “Contradictory” Newtown Development
  - To meet housing shortages in Seoul Metropolitan Area, "2 million housing construction project" was proceeded ('89-'93)

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III. New Towns in SMR

- <Ilsan New Town>
- <Bundang New Town>
- <Sanbon New Town>
- <Jungdong New Town>
- <Pyungchon New Town>
3.2 The 5 New Towns in the First Phase (2)

- Housing Provision for 1.17 million population in SMR
- Supplied 2.14 million housing units nation-wide (’89-’95)

- Go-yang city
  - Area: 1,574ha
  - Population: 270,000

- Bu-cheon city
  - Area: 545ha
  - Population: 170,000

- Gun-po city
  - Area: 420ha
  - Population: 170,000

- An-yang city
  - Area: 511ha
  - Population: 168,000

- Sung-nam city
  - Area: 1,964ha
  - Population: 390,000
3.3 Bun-dang New Town: The First Phase

Bun-dang New Town

- **Purpose and characteristics**
  - self-reliant new town functioning as central business and commercial district in the Seoul Metropolitan Area along with Seoul’s Gangnam area
  - Pleasant suburban residential area for the middle class

- **Location**
  - Located 25km southeast of the Gangnam area in Seoul, Seognam City, Gyeonggi-do

- **Area**
  - 1,894 ha

- **Population**
  - 390,000 people (reduced from 420,000 people)

- **No. of households**
  - 97,500 households

- **Project implementer**
  - Korea Land Corporation

- **Transfer period to local government**
  - 1993
3.4 Implementation Organization of Bun-dang New Town

III. New Towns in SMR

Senior Secretary to the President for Economic Affairs

Board of Ministries for Housing Policies

Low-income Housing Bureau

Related Ministries (Environment, Education)

Public Agencies (Water, Gas, Electricity etc.)

New Town Construction Bureau in MOC

Developers (KLC)

Committees for Housing, Capital Policy, Planning etc.

Public Institutes (KRIHS)

Local Governments (Seongnam, Gyunggi)

Engineering Firms

Housing Companies

Consumer
3.5 Provision of Arterial Infrastructure for Bundang

- The arterial infrastructures provision plan was based on the Regional Transportation Plan and Traffic Impact Assessment proposed by KRIHS
  - It was realized through several negotiation process between central and local governments, developer (KLC)
  - In the southeastern area of Seoul, 1 subway line to Gangnam area, Seoul and 11 roads connecting surrounding areas were provided by Bundang project

- The provision cost of regional infrastructure was $1.58 bil., 37.9% of total project cost
3.6 The Second Phase (2001~Present)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Period</td>
<td>1989~1995</td>
<td>2001~present</td>
</tr>
<tr>
<td>New Towns</td>
<td>Bun-dang / Il-san / Pyong-chon/San-bon / Jung-dong</td>
<td>Pan-gyo / Dong-tan / Pa-ju / Gim-po</td>
</tr>
<tr>
<td>Area</td>
<td>4,925ha</td>
<td>12,593ha</td>
</tr>
<tr>
<td>Pop.</td>
<td>1.17M (293,000 HH)</td>
<td>1.53M (578,000 HH)</td>
</tr>
<tr>
<td>Average density</td>
<td>240 persons/ha</td>
<td>121 persons/ha</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Housing supply, Stabilizing housing price</td>
<td>Various theme for each new town: venture / ecological / mass-transit oriented / environmentally friend</td>
</tr>
<tr>
<td>Transportation</td>
<td>Vehicle oriented, Roads, Railways Connection to Seoul</td>
<td>Mass-transit oriented New system connected with vicinity area</td>
</tr>
<tr>
<td>Open space ratio</td>
<td>12.5~25%</td>
<td>25~35% Green networks</td>
</tr>
<tr>
<td>Self-sustainability</td>
<td>Bed-town</td>
<td>Self-sufficiency</td>
</tr>
</tbody>
</table>
3.7 Pan-gyo New Town: The Second Phase

- Good accessibility to Seoul Gangnam area within 20km
  - Adjacent to Bun-dang and Seoul-Busan Highway
  - Adopt the green and smart city concept
  - Population of 87,800 and houses of 29,300 units
※ Conception of Pan-gyo (1): Self-sufficient Techno Valley

- Designated R&D specialized area of 660,000㎡ to be a core of IT industry
※ Conception of Pan-gyo (2): Ecological Green City

III. New Towns in SMR

*Bicycle and pedestrian friendly design>*

*Wind ways>*

*Natural and eco design for outside spaces>*

*Ecological green and water recycling system>*
4.1 Spatial Expansion of Trips in SMR

- Expansion of Commuting Space to Metropolitan Scale
- Road Congestion Cost: $17.44 billion in Seoul and Incheon (2012)
4.2 Metropolitan Transport Network Development (1)

- Transport Mater Plan by Central Government based on 「Special Act on Metropolitan Transportation Management」 (1997)

12 Corridors, 379km

28 Corridors, 951km

SMR Metro Development

SMR Road Network Development
4.3 Metropolitan Transport Network Development (2)

- Systematic Development of Arterial Road Network (2001) (Construction of Expressway Network)

  - (7×4+3 Ring) Network Plan:
    - 7 South-North Lines
    - 4 East-West Lines
    - 3 Ring expressways
  - 2020: 1,436km
  - Present: 749km
  - Future: 687km
    - Const. cost: 30 billion USD
    - Private: 69%
    - KEC: 18%
    - MOLIT: 13%
4.4 Public Transport-oriented Initiatives (1)

- The Expansion of Urban Railway Network: Current Subway Network: 9 lines extending 327.1 km, 7.2 M passengers per day (2.8 B per year)
4.5 Public Transport-oriented Initiatives (2)

- Transit-oriented measures:
  - Redesigning bus routes (hub-spoke bus network),
  - Integrated fare system through smart card,
  - Semi-public operation system,
  - Median bus lane system and public transfer center
4.6 Impacts of Transit-oriented Initiatives

Change of Ridership (Million person)

Results of the bus route reform

<table>
<thead>
<tr>
<th>Goal</th>
<th>Evaluation Index</th>
<th>Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Bus operation speed (km/h)</td>
<td>17.2(2003.11) → 18.1(2004.11)</td>
</tr>
<tr>
<td>Accessibility</td>
<td>No. of subway stations connected per route</td>
<td>9.66(2002.10) → 10.3(2005.6)</td>
</tr>
</tbody>
</table>
4.7 Inter-local (Regional) Collaboration in SMR

- Capital Region Development Committee (2009~2013)
  - A government agency established in Oct. 2009 under the Special Act on Balanced National Development
  - Aiming at promoting collaboration btw Seoul, Incheon, and Gyeounggi and effectively advancing with regional economic development projects
  - Joint Chairmen: Seoul, Incheon mayors, governor of Gyeounggi province

- Metropolitan Transportation Authority (2005~present)
  - Functions include:
    - Establish metropolitan public transportation comprehensive plans
    - Build metropolitan Bus Rapid Transit (BRT)
    - Consultation-adjustment of metropolitan transportation policy
    - Consultation-adjustment of road-rail plan connecting more than 2 cities-provinces
    - Transfer facility system construction of metropolitan intraregional transportation & public transportation
5.1 Successful Aspects

- Initiatives by the Central Government

  Newtown Development for Housing Supply → Spatial expansion of travel time and distance ⇒ Require Mitigation of Social Diseconomy (congestion, air pollution)

  Regulations and Plans:
  - SMR Maintenance Plan
  - Metropolitan Plan
  - Metropolitan Transportation Improvement Measures by Special Act

- Timely Provision of Mass Transit System and Regional Coordination

  Limitation of Transportation Facilities due to High Land Price → Mass Transit System through large-scale public transportation to reduce auto travel

  • Metro Construction & Operation
  • Bus Reform in Seoul & SMR
  • Transfer Fare Discount
  • Enhance the use of Public Transportation (BMS/BIS/Central Bus Lane)
V. Retrospect & Further Challenges

5.2 Limitations

■ Top-down Planning Approach led by Central Government
  • Land use and transportation plans established without sufficient coordination
  • Inconsistency with upper plans (SMR Maintenance Plan and Metropolitan Plan) in the process of preparing Basic Urban Plans by the local government

■ Ineffective Governance
  • Governance framework does not work well
  • Limited roles and functions of Metropolitan Transportation Authority (MTA)
  • Lack of investments for Transportation Improvement Project in Municipal level

■ Week linking between Metropolitan Plans and Budgets
  • Strict fund matching requirement to local government
  • Cost Share by Locals: Metro (25%), Metropolitan Roads (50%)
  → Delay in project implementation
5.3 Current Status of Seoul Metropolitan Region

**SMR**
- Area: 11,747 km²
- Population: 25.66 million
- Vehicle: 9.48 million

(As of 2016)
- 11.8% of Area
- 49.3% of population
- 44.36% of vehicles
- 49.4% of GRDP (2015)

**Seoul City**
- Area: 605 km²
- Pop.: 9.9 million
- Vehicle: 3.07 million
- 24 districts

**Gyeonggi Province**
- Area: 10,184 km²
- Pop.: 12.76 million
- Vehicle: 5.02 million
- 31 cities & counties

**Incheon City**
- Area: 1,010 km²
- Pop.: 2.94 million
- Vehicle: 1.39 million
- 10 districts & counties
5.4 Further Questions

- **SMR is still over-concentrated!**
  - In spite of the robust growth control and decentralization policy

- **Vicious circle of SMR new town and more transportation investment**
  - Mismatch of housing demand and supply in SMR →
  - Need to construct more new town →
  - Have to increase investment in transportation infrastructure →
  - Bigger demand in SMR and more (or never less) concentration in SMR → → →

- **Does SMR need more new towns?**

- **What do we do about SMR for “Balanced National Development”?**
  - SMR as the primary growth engine of Korea
  - SMR vs. the rest of the country: antagonistic disparity?