



Sejong

Why can~~not~~ Sejong City be ~~Smart~~ City ~~YET~~?

USP 313U Urban Environmental Issues
May 23, 2019 Kyuri Kim

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Basic Statistics

Sejong Metropolitan City

- Population: 327, 976 (2019)
- Land Area: 179.5 (mi²)
- PPL Density: 1827.2 (ppl/mi²)

Multifunctional Administrative City

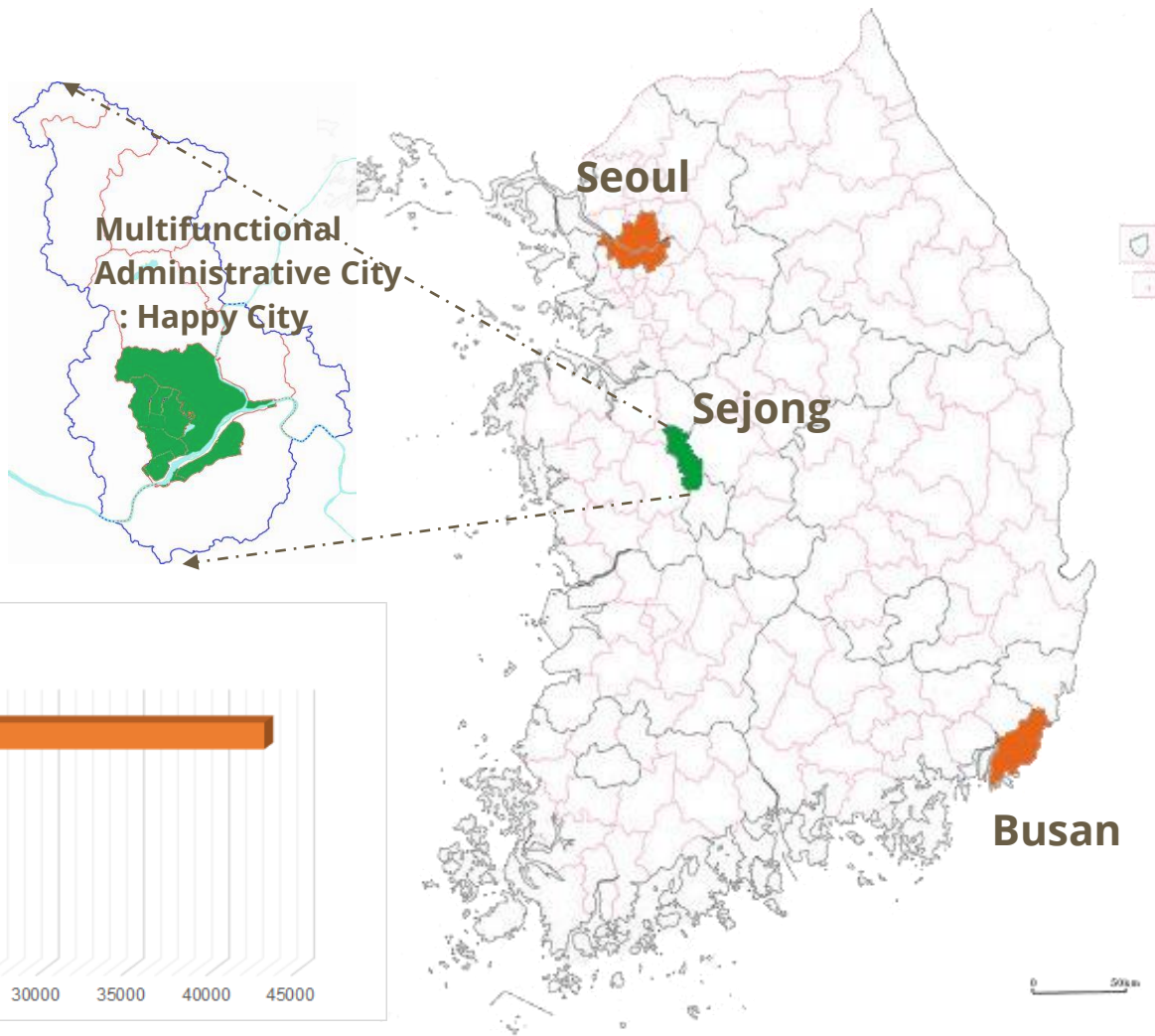
- Population: 245,872 (2019)
- Land Area: 28 (mi²)
- PPL Density: 8781.1(ppl/mi²)



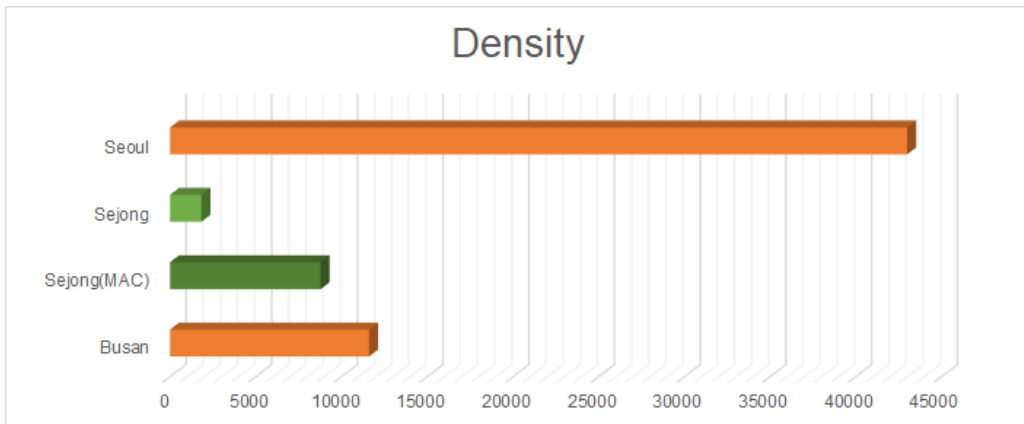
Basic Statistics

National project

Multifunctional Administrative City (Happy City): Build a city of **500,000 people by 2030** to promote balanced development of the country and enhance national competitiveness



Density



Basic Statistics

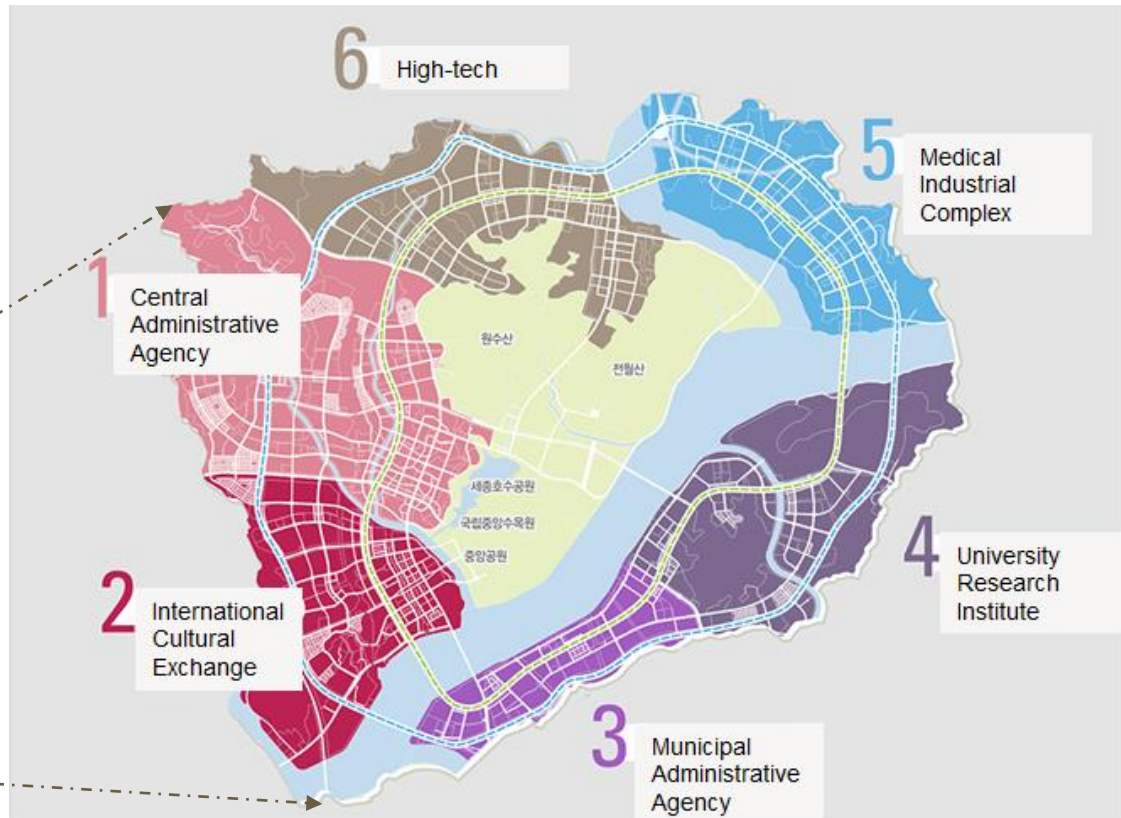
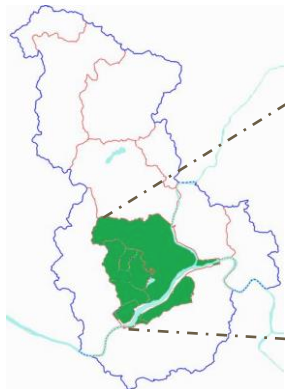
Narrow Road Width: 3m (9.8ft)

For limiting auto speed & encouraging to use public transit

cf) Road width in Seoul 3.5m (11.5ft)

Vehicle speed & reliable arrival time is more important than LOS

Due to shared work schedules and land use



Basic Statistics



Traffic BigData Analysis System

대시보드

버스통행속도

버스승하차인원

승용차통행속도

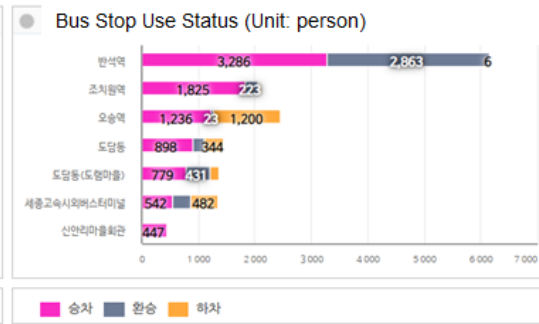
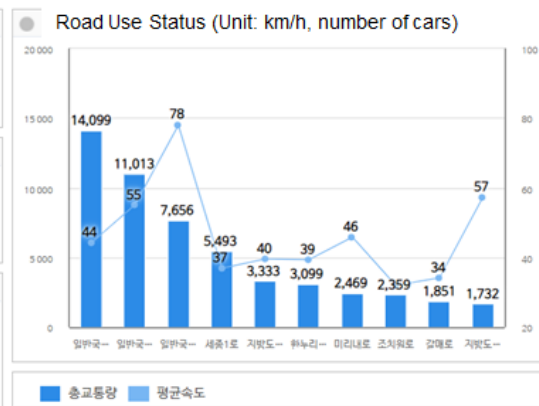
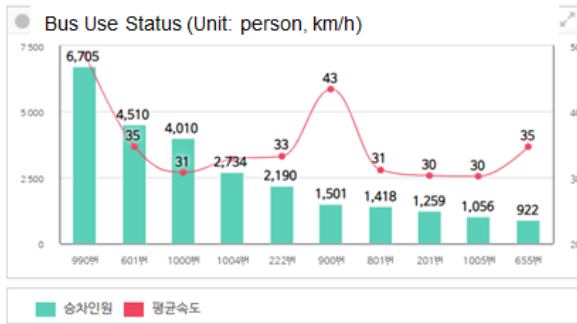
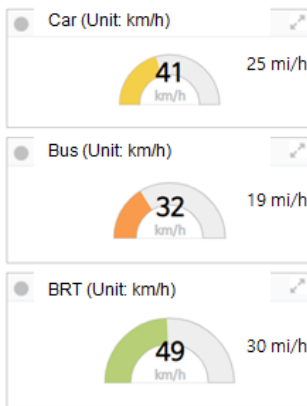
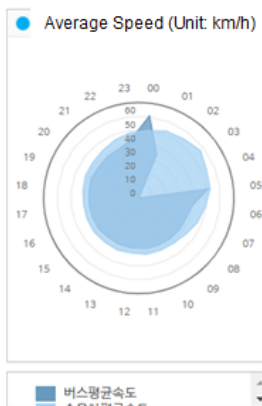
VDS교통량

도로소통 정보

월별통계정보

도움말

Daily Transportation Status



What is the Smart
City?

What is the Smart City?



Image: François Artusse(2018)

Graham, Stephen, 1998; Batty, Michael, et al, 2012; Tranos, E., and Nijkamp, P., 2013; Vanolo, Alberto, 2013; Kitchin, R., 2014; Neirotti, Paolo, et al., 2014; Shelton, T., Zook, M., & Wiig, A., 2015; Nikitas, A., Kougias, I., Alyavina, E., & Njoya Tchouamou, E., 2017; Martin, C., Evans, J., Karvonen, A., Paskaleva, K., Yang, D., & Linjordet, T., 2019

Smart Cities Definition

The **British Standards Institute (BSI)** defines the term as

“the **effective** integration of physical, digital and human **systems in the built environment** to deliver **sustainable, prosperous and inclusive future** for its citizens.”

BSI (2014), Smart cities framework – Guide to establishing strategies for smart cities and communities, PAS 181:2014

Sejong City: World's First Smart City Certification

“British Standard Institute (BSI) measured Sejong in 22 categories*, including **vision management, road-mapping, citizen-centricity, urban resource management, open platform efficiency, benefits realised**, and more.”

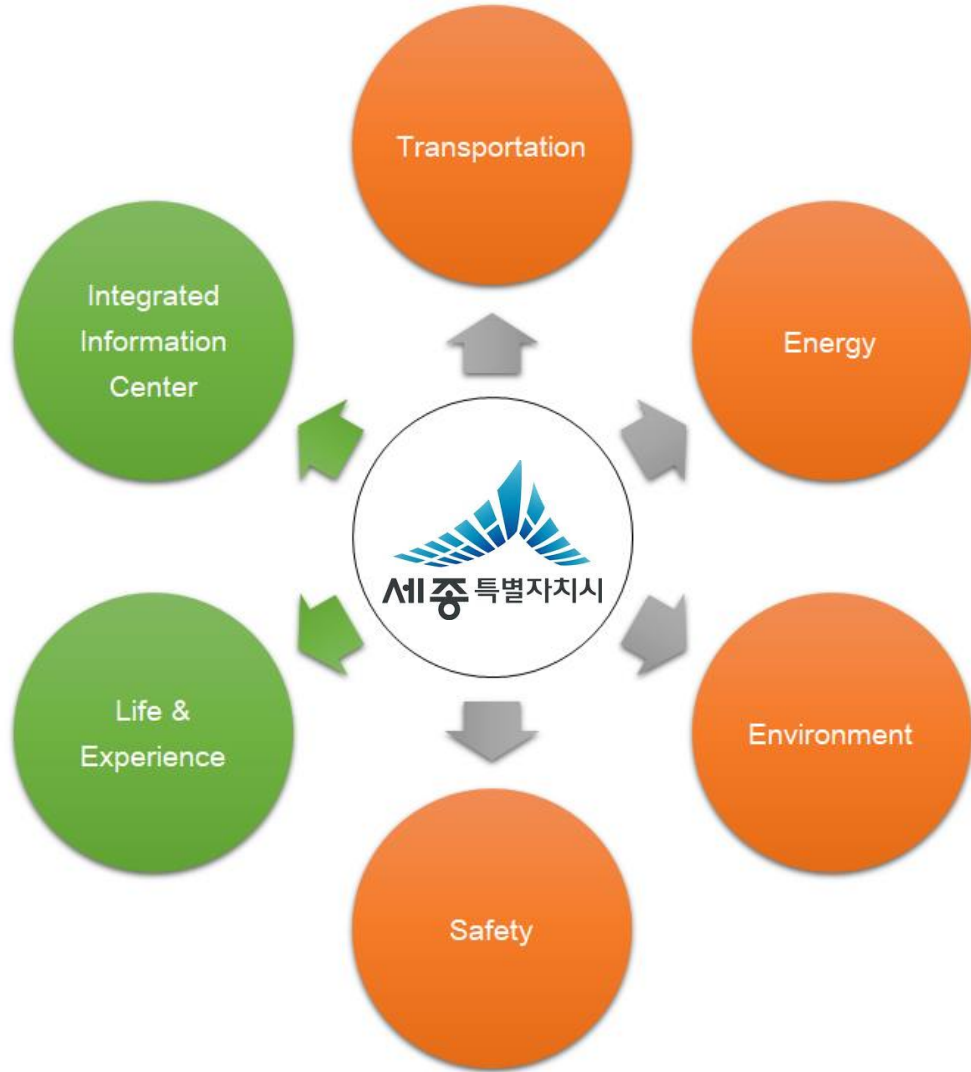
* The standard focuses on developing an **open, collaborative, citizen-centric and digitally enabled operating model** for a smart city.



Source: [SmartCitiesWorld news team \(2018\)](#)

What makes Sejong
to be a Smart City?

Sure!



Well...

Transportation: What the government says

Traffic Information

BRT Over-Ride Signal

Unexpected Situation
Management



Source: Korea Land & Housing Corporation Smart City Development Office (2018)

Energy: What the government says

Solar Energy Generation

Generation wattage : 1,269MW
(enough for 350 households), carbon
dioxide reduction of 560 ton

Zero Energy-Eco Community Village

Korean-style passive house and new
energy source such as solar panel in
an area of 1,800 m² with 60
households

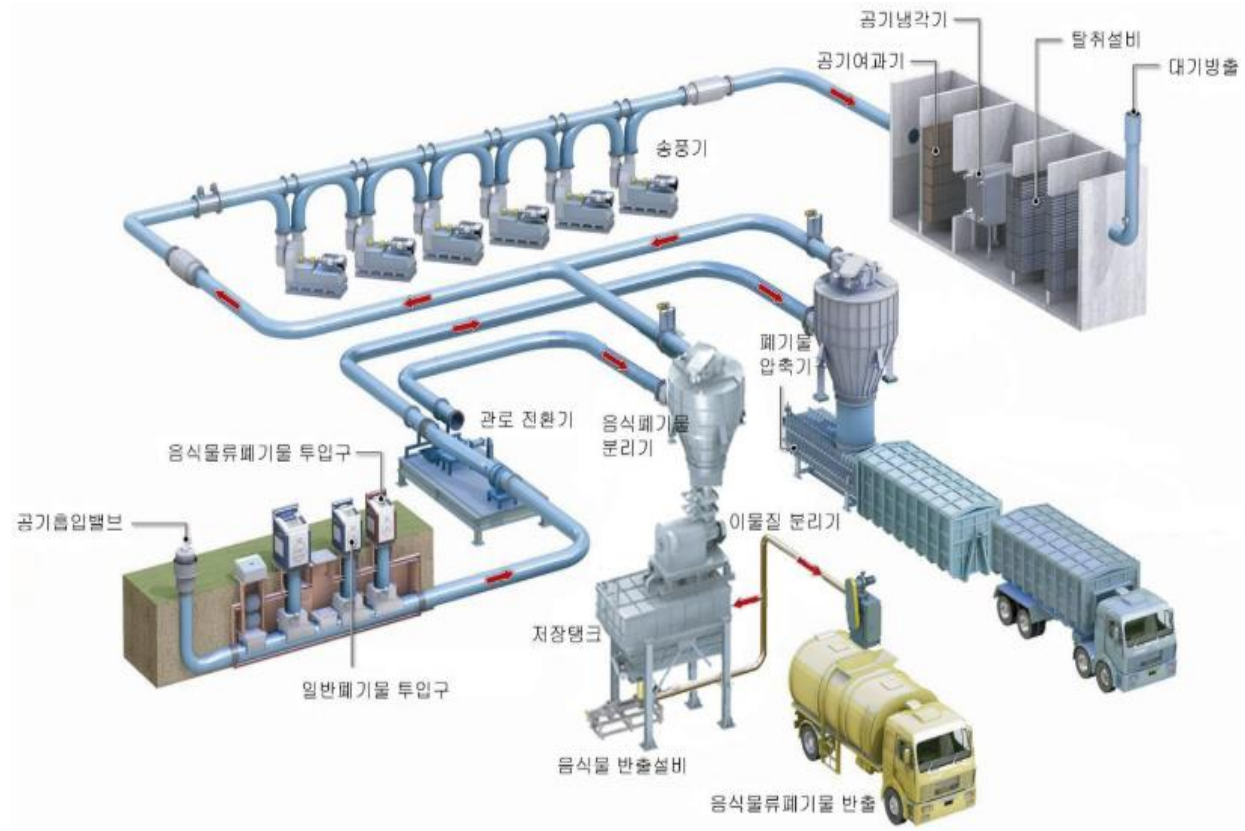


Source: Korea Land & Housing Corporation Smart City Development Office (2018)

Environment: What the government says

Automated Waste Collection System

Sewage Treatment Plant



Source: Korea Land & Housing Corporation Smart City Development Office (2018)

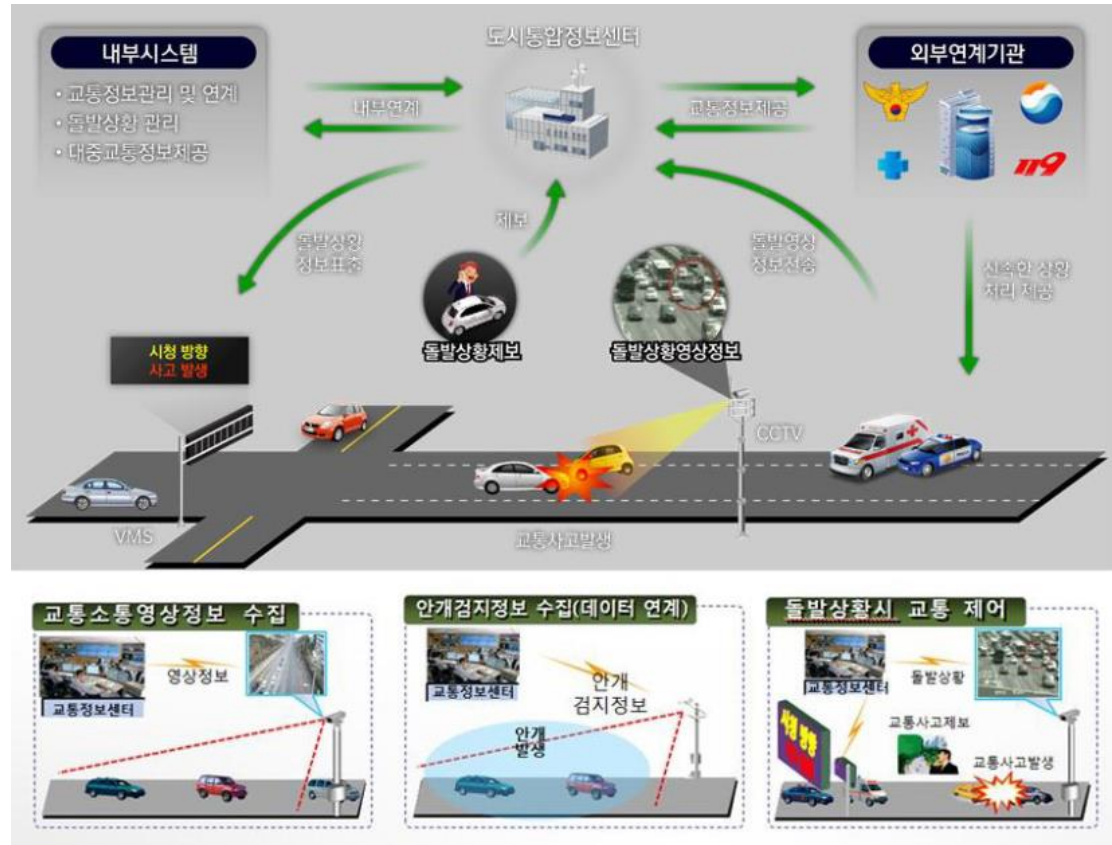
Safety: What the government says

Security CCTV Control

119 Emergency Dispatch (911)

112 Center Emergency Video Support (Police)

Support for Disadvantaged Citizens



Source: Korea Land & Housing Corporation Smart City Development Office (2018)

Without the
consideration of
environment...

Challenge & Issue

Environmental Problems create Traffic Safety Problems

Basin & Mouth of the River

→ Huge Temperature Difference → Wet fog

→ **Invisible!!!**

→ **Unsafe!!!**



Without the
consideration of social
context...

Challenge & Issue

KTX Straw Effect: **Sejong** never becomes **Seoul**

Crowded **Monday** vs. Competitive **KTX** ticket booking on **Friday**

→ The Blue House & National Assembly are located in Seoul, but All Ministries are located in Sejong (for business trips to Seoul \$ 20 million annually) with a very rigid hierarchy

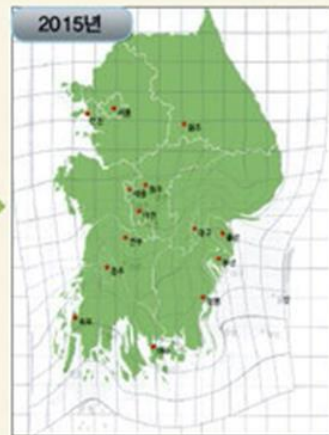
Compressive effect of territorial space due to the KTX



(100%)
Before KTX



(83.7%)
Gyeongbu[Seoul-Busan] (Railroad) Line



(77.6%)
Honam[Seoul-Mokpo] (Railroad) Line