



# Managing Urban Expansion: Case of Tokyo

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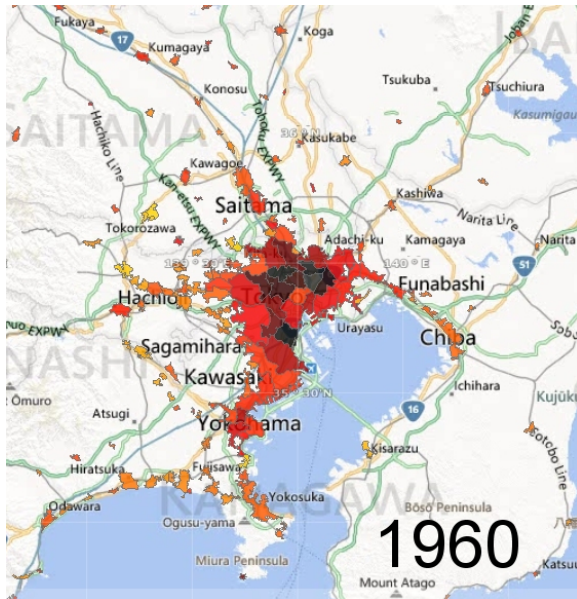
Government  
of Japan



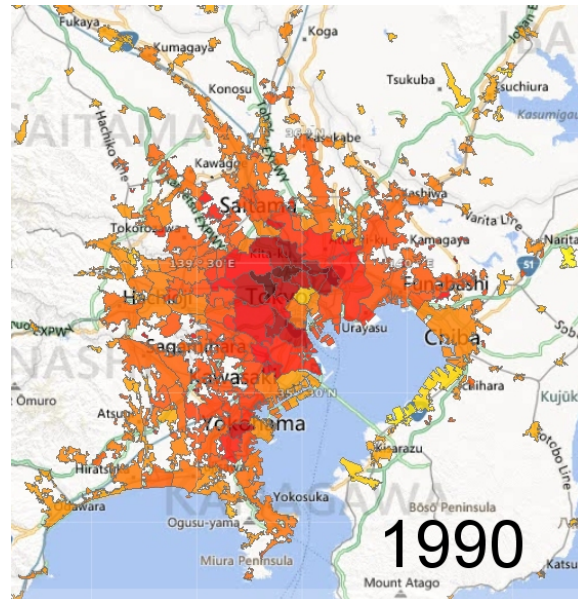
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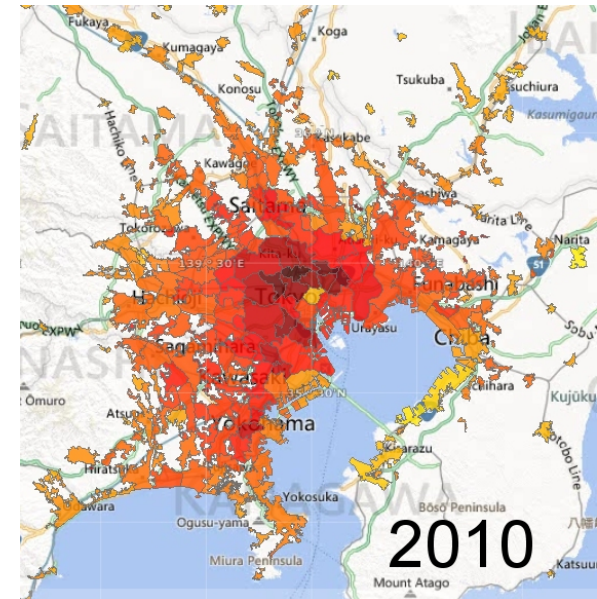
# Thriving Metropolis: Urban Expansion of Tokyo



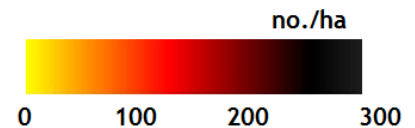
Highly concentrated  
Taito Ward exceeding 320/ha  
Rural areas at the periphery  
Less extensive Tokyo Harbor



Largest urban area by 1970  
"Fingers" of development along rail  
Tokyo proper losing population to suburbs



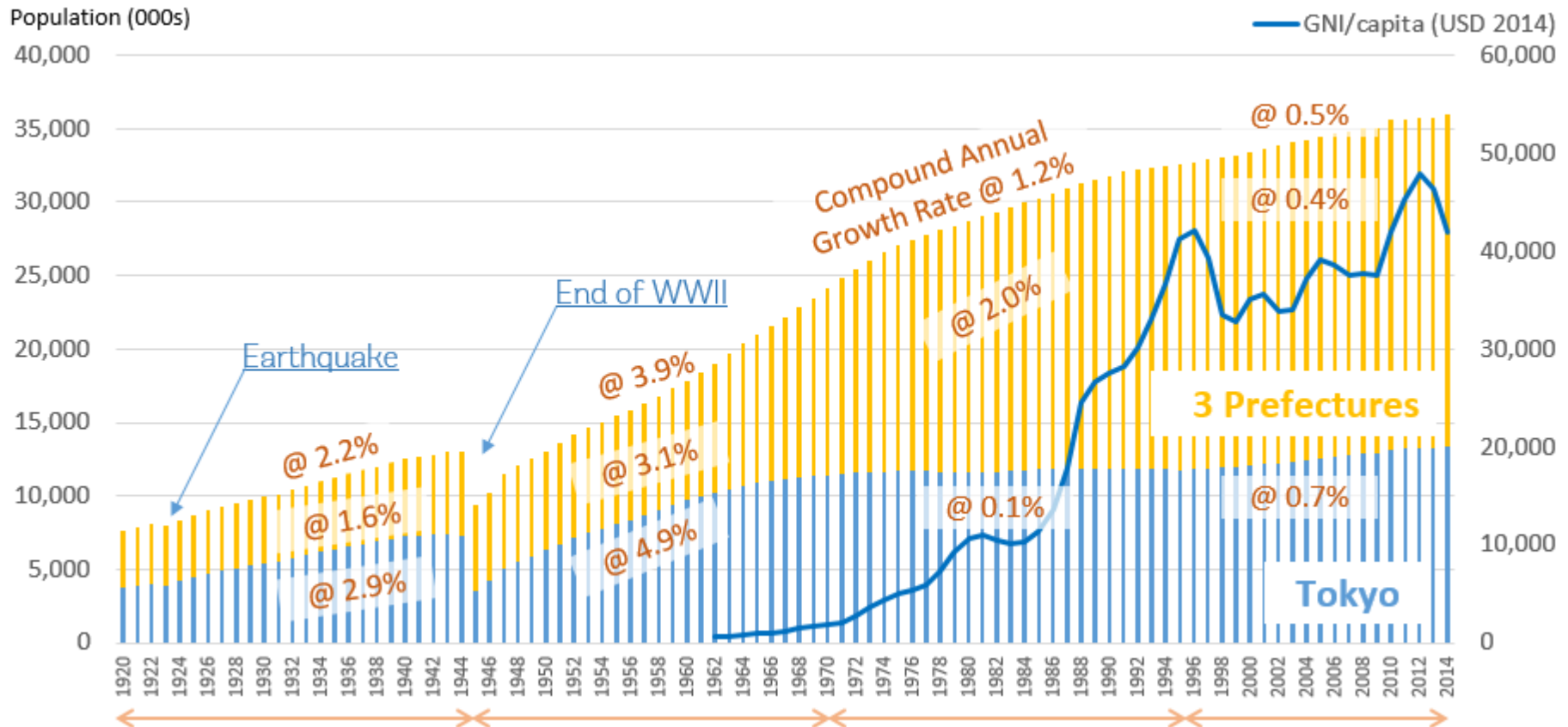
Redensification of the Tokyo proper  
Greater Tokyo population reaching 30 million excluding rural areas



Source: <https://perihelie.wordpress.com/2014/04/18/mapping-japanese-city-spaces-greater-tokyo/>

# Thriving Metropolis: Urban Expansion of Tokyo

Rapid expansion took place first before WWII, and then in 50s and 60s. Tokyo stabilized since, but the suburbs continued.





# Adverse Impacts due to Densification



**“Commuting Hell”**



**Traffic Congestion**



**Inadequate and Dense Housing**



**Air Pollution**



**Frequent Floods and  
Water Contamination**



**Waste Management Issues**

# Day-Night Dynamics of Population Density

person/ ha		Tokyo	London	Paris	New York
Daytime	Center	<b>596</b>	285	151	327
	Fringe	185	97		
	Suburban	54	29	45	17
Nighttime	Center	<b>89</b>	106	215	267
	Fringe	158	114		
	Suburban	146	64	67	85
Day/Night ratio, Center		6.7	2.7	0.7	1.2

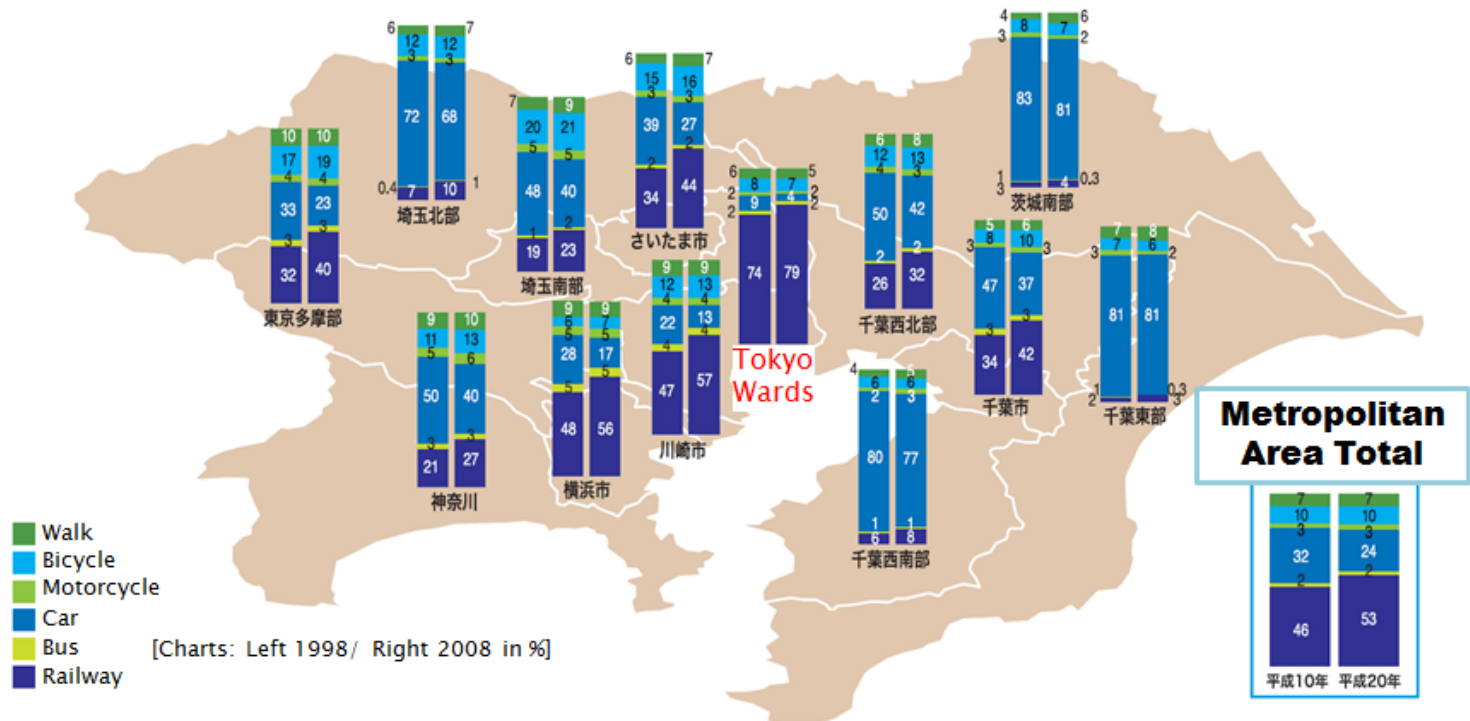
Source:  
 Tokyo National Statistics 2010 (Nighttime population), Tokyo Metropolitan Government Survey 2006 (Daytime population)  
 London 2010 Mid-Year Population Estimates (Nighttime population), NOMIS Official Labor market Statistics (Daytime population)  
 Paris Institut National de la Statistique et des Etudes Economiques, Chiffres clés sur un territoire (Nighttime and Daytime population)  
 New York US Census Bureau, State & County QuickFacts (Nighttime and Daytime population)



# High Public Transport Modal Share in Tokyo

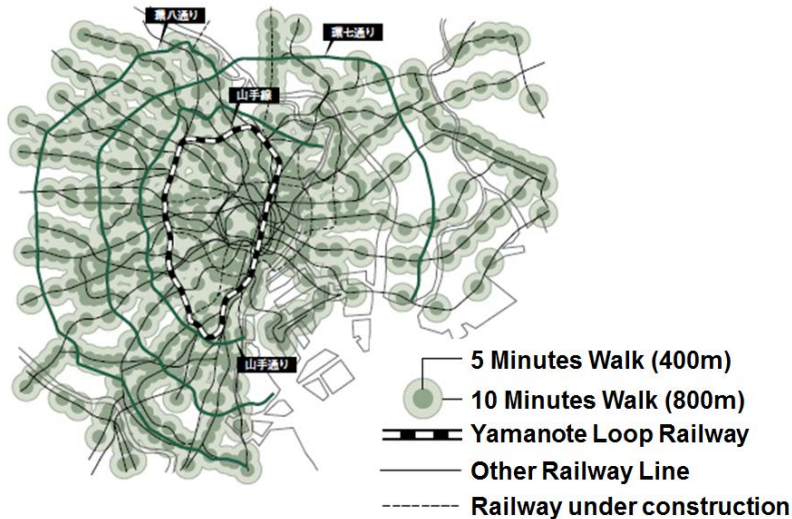
Tokyo and its surrounding areas are highly reliant on public transport. In the metropolitan area (34M population), more than **50%** of commuters use railway. The modal share of public transport is about **80%** within the wards of Tokyo (8M population).

Modes of Commute Travel in Tokyo Metropolitan Area (2008 and 1998)

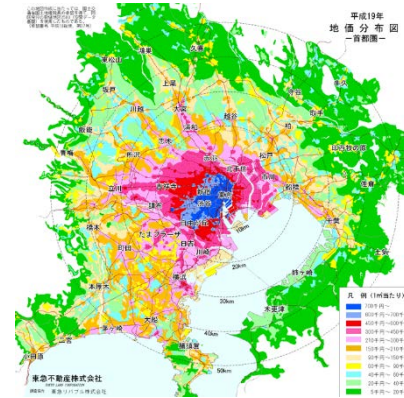


# Integration of Transit and Land Use in Tokyo

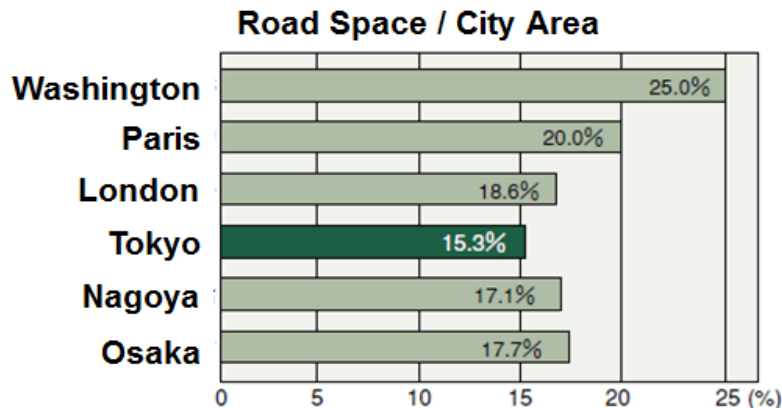
Most areas are walking distance from stations...



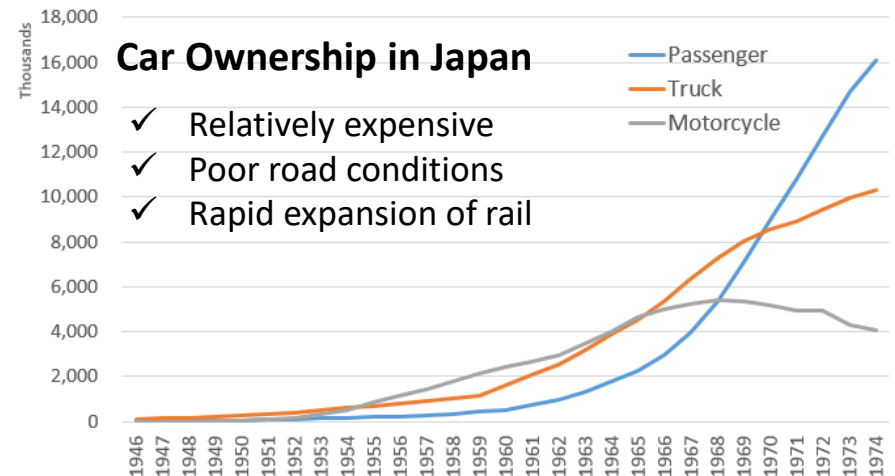
High modal share of public transport translates into high land value along lines...



Actually has poor road network...



Rapid expansion of rail network affected slow onset of motorization, and vice versa...





# Policy Alternatives explored by Tokyo for Managing Urban Expansion during high growth



Decentralize employment

Create new land

Mobilize untapped land supply

Increase housing supply

Subsidize housing demand

Reduce commuting time

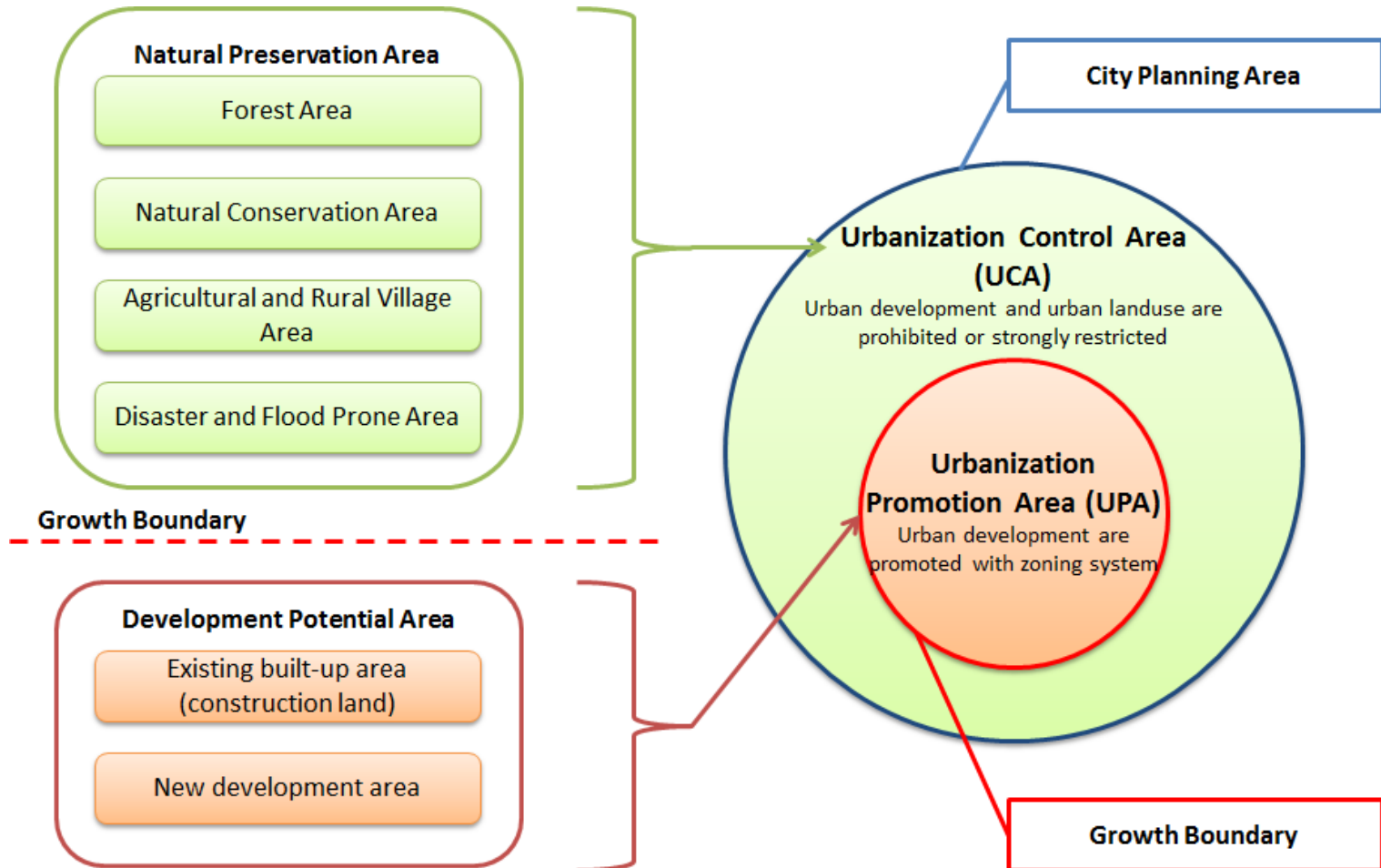
Subsidize commuting

Reclaim transport costs



# Key Spatial Policies/ Regulations Shaping Urban Form

*Foreseeing the next 10 years*



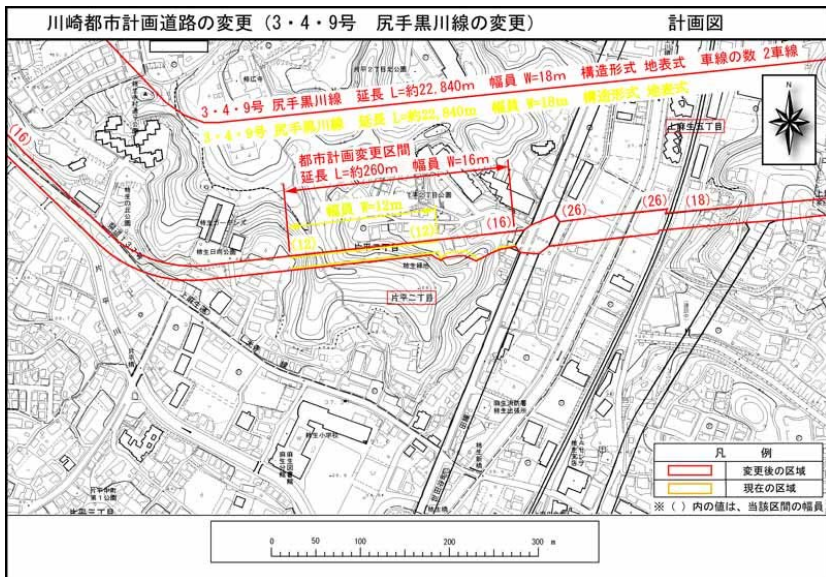
# Key Spatial Policies/ Regulations Shaping Urban Form

- **Land use zones:** Regulate structures according to agreed upon standards.
- **Secure land:** Regulate development on land which infrastructure is planned (not at construction stage) and reduce land acquisition costs downstream.
- **Special zones:** Establish special zones which development is encouraged.

Land use classifications

用途地域	用途制限	建築制限	その他
第一種住居地域	第一種住居用途	建築高さ制限	建築面積制限
第二種住居地域	第二種住居用途	建築高さ制限	建築面積制限
第三種住居地域	第三種住居用途	建築高さ制限	建築面積制限
第一種中高層住居地域	第一種中高層住居用途	建築高さ制限	建築面積制限
第二種中高層住居地域	第二種中高層住居用途	建築高さ制限	建築面積制限
第一種商業地域	第一種商業用途	建築高さ制限	建築面積制限
第二種商業地域	第二種商業用途	建築高さ制限	建築面積制限
第一種工業地域	第一種工業用途	建築高さ制限	建築面積制限
第二種工業地域	第二種工業用途	建築高さ制限	建築面積制限
第一種緑地	第一種緑地用途	建築高さ制限	建築面積制限
第二種緑地	第二種緑地用途	建築高さ制限	建築面積制限
第一種遊園	第一種遊園用途	建築高さ制限	建築面積制限
第二種遊園	第二種遊園用途	建築高さ制限	建築面積制限
第一種公園	第一種公園用途	建築高さ制限	建築面積制限
第二種公園	第二種公園用途	建築高さ制限	建築面積制限
第一種臨海地域	第一種臨海用途	建築高さ制限	建築面積制限
第二種臨海地域	第二種臨海用途	建築高さ制限	建築面積制限
第一種河川敷	第一種河川敷用途	建築高さ制限	建築面積制限
第二種河川敷	第二種河川敷用途	建築高さ制限	建築面積制限
第一種埋立	第一種埋立用途	建築高さ制限	建築面積制限
第二種埋立	第二種埋立用途	建築高さ制限	建築面積制限
第一種特別用途	第一種特別用途	建築高さ制限	建築面積制限
第二種特別用途	第二種特別用途	建築高さ制限	建築面積制限

Structures/ facilities seeking Development permission



# Was Tokyo able to contain urban sprawl?

1) Over-designation of Urbanization Promotion Areas (UPA)

2) Failure of proposed land tax reform

3) Loopholes that allowed sprawl development in UPA/ UCA

4) Very loose planning regulations in “white” areas





# Opportunities for private sector railway development and integrated urban development

## Land Market & Regulations

Freehold land tenure system

Weak regulations on land use and development

## Demographic & Social Backdrop

Strong housing demand due to mass urban in-migration around 1950s

Slow onset of motorization

Opportunities for  
Private-led railway and  
housing development

## Capabilities

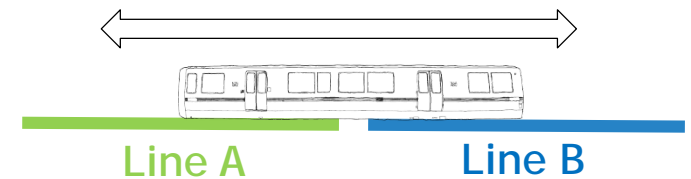
High ability of the private sector in railway and housing development

# Opportunities for private sector railway development and integrated urban development

## Key Policy Instruments for Private-led Development

### Railway

- Mutual extension operation
- Replacement of railroad crossing
- Public direct investment into railway facilities
- Development incentives (subsidies, tax exemption, low interest loans)



Continuous Grade Separation

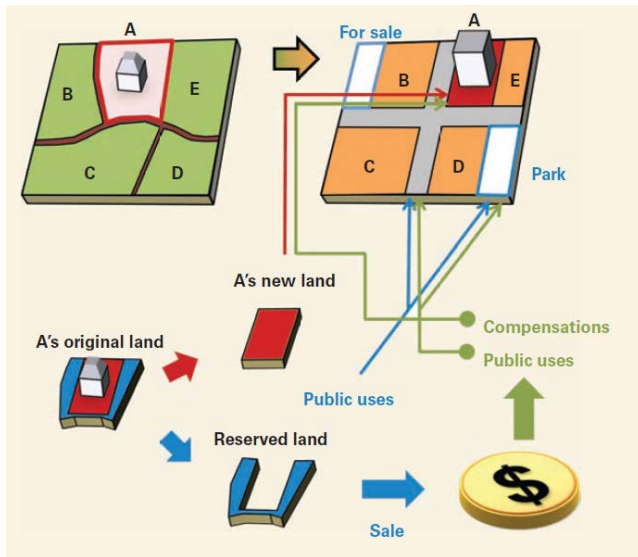
### Housing + Railway

- Matured Land Readjustment system and multiple special legal arrangements
- Application of various Land Value Capture schemes
- Public provision of housing complex for middle income urban workers

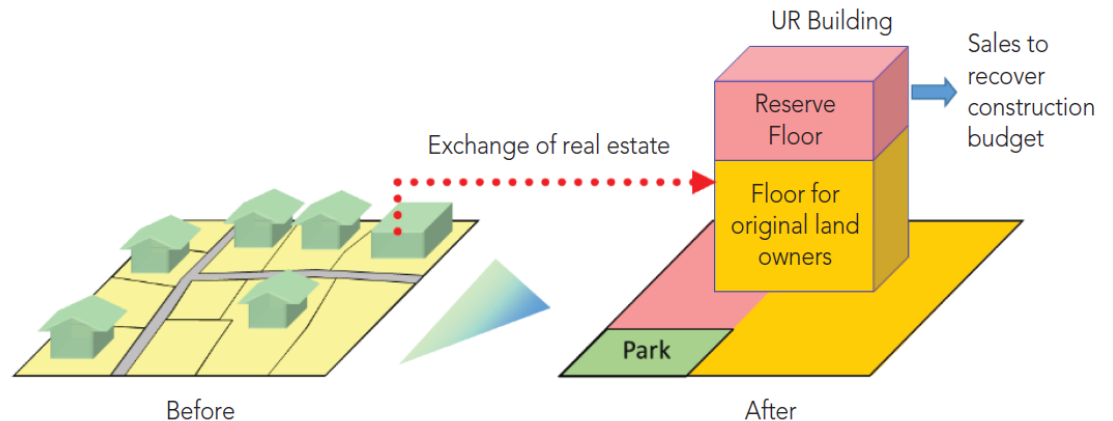
# What is Land Readjustment?

- Enables the **public and private sector to carry out necessary development projects to serve public interests** through provision of infrastructure and service delivery.
- Can be done through land use conversion schemes (below) or whole purchase schemes.

## Land Readjustment



## Urban Redevelopment Projects





## Land Readjustment developed...

**1/3 of all urban area in Japan**  
(1/4 of area in Tokyo's Wards developed through LR)

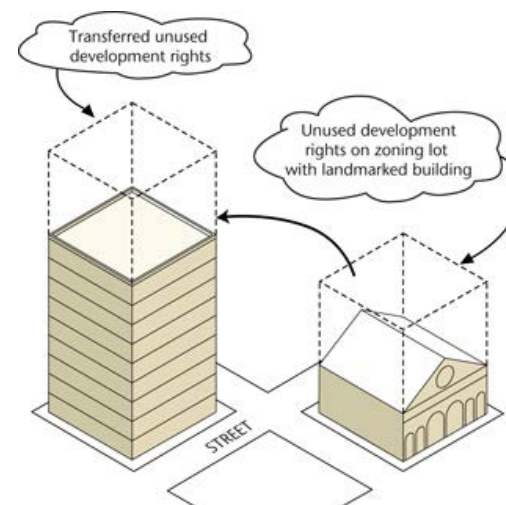
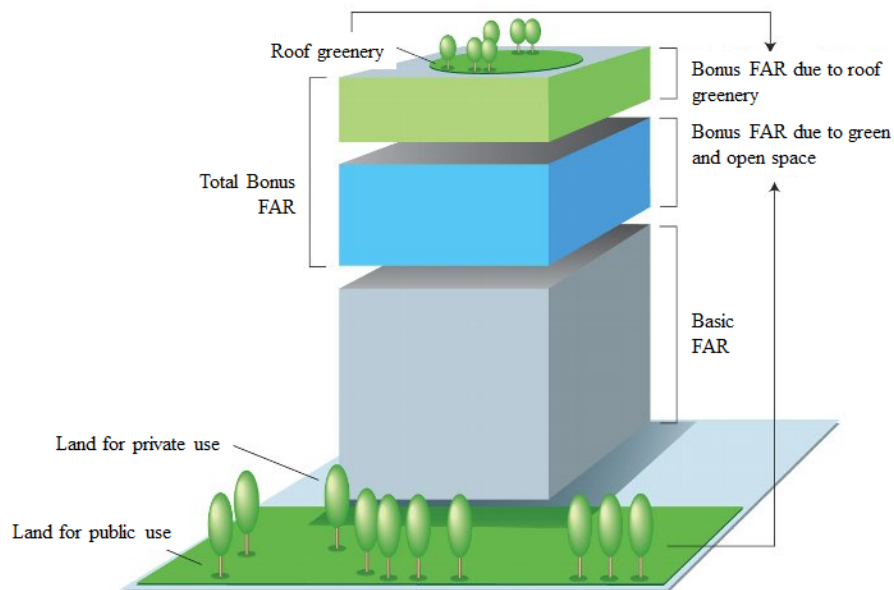
**1/2 of all principal residential parks in Japan**  
(parks amount to 14,000 ha)

**1/4 of roads designated in City Plans**  
(roads amount to 11,000 km)

**1/3 of station plazas at major train stations in Japan**  
(about 900 station plazas)

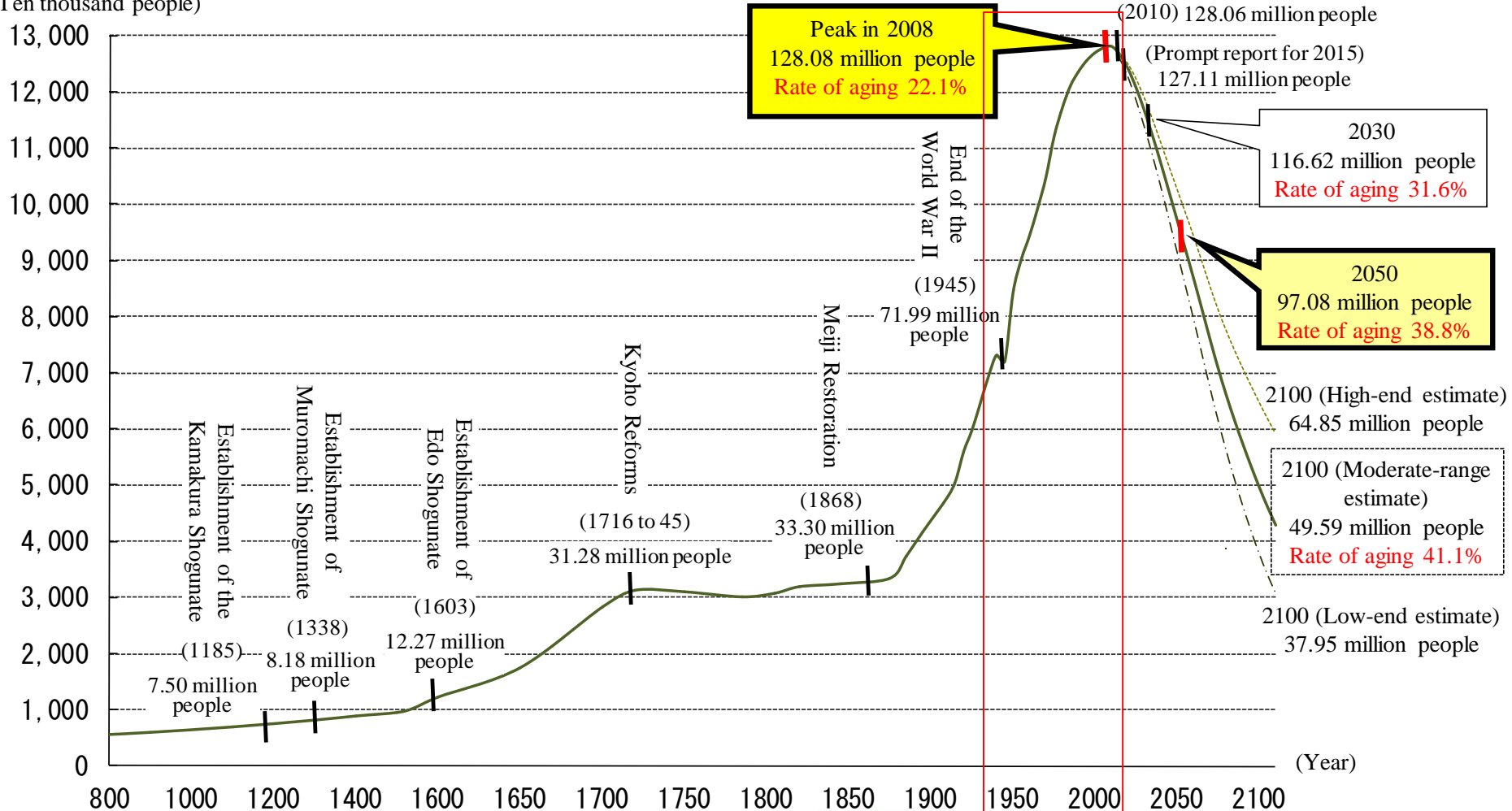
# Post “bubble” and In-migration to Central Tokyo

- Relatively affordable land prices (supply-demand plus economic downturn since 1990s) leading to abundant supply of housing and office space
- Deregulation of high-rise buildings (c.f. FAR)
- Increase of elderly population in suburbs lacking mobility/ accessibility



# Rapid Changes in Demographics

(Ten thousand people)



Source: Ministry of Land, Infrastructure, Transport and Tourism



Government of Japan



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# Implications of Urban Sprawl and Future Prospects

What does all of this mean for Tokyo today, situated in a country facing population decline and the significant need for infrastructure maintenance and renewal?

How will we manage these assets spread out to the suburbs which are facing major fiscal challenges due decreasing population leading to less defrayers/ payers of these services?

What will happen to the self-contained “bed towns” or “new townships” very far from central Tokyo which are now dominated by over 60s?

These are all important questions that must be answered today - the costs of urban sprawl need to be paid.

## Managing Urban Expansion: Tokyo Case Study

### 1. Overview on Tokyo's Urban Expansion

Tokyo, with a population of 38 million (2017) has been the world's largest mega city for the past sixty years in terms of economic scale and population agglomeration. Through Japan's drastic economic and social changes, this enormous city has been performing a difficult balancing act of managing urban growth at the national, prefectural and municipal levels.

Tokyo today consists of 23 special wards, 26 cities and multiple small towns and villages. It is the nation's political and economic core and boasts an abundant supply of Grade-A business office buildings. The metropolitan area furthermore includes the seven surrounding prefectures of Kanagawa, Saitama, and Chiba, with over a dozen large satellite cities, comprising the nation's Capital Region (*Syutoken*).

The city's overall growth has been guided by the National Capital Region Master Plan (NCRMP) of 1956, under which Tokyo obtained special status as a capital and a higher level of support from central government for planning and rebuilding. In Japan, the national government has a dominant power in planning and development to embody unitary management and coordination over the country. Holding inclusive visions in the national development plans (Comprehensive National Development Plans (CNDPs)), the national government draws master plans and enacts special laws, backing them with large financing for the Capital Region. Adapting the nation's umbrella plans to the local context, prefectural and municipal governments devise city plans including arrangement of land use, provision of infrastructure, and incentive systems for private sectors. The region is thereby guided by both top-down strategy of the central government and horizontal coordination among prefecture and municipal governments with the multilayered arrangement.

Under a free-hold land tenure system and relatively limited government intervention in the land market, the growing capital city succeeded in mobilizing private sector interest to invest in railways and housing, and the results can be witnessed in Tokyo's urban spatial structure today. Versatile privately owned and managed railway companies radially extended commuter lines outwards and built residential suburbs along them (e.g. Tokyu Corporation and the Garden City Project, Seibu Railway and Tokorozawa, Keio Corporation and Seiseki Sakuragaoka<sup>1</sup>), contributing to forming an urban shape of "fingers".

After WWII, Japan suffered the pressure of mass rural to urban migration. Tokyo regained its population during the immediate post-war period and reached 7 million by 1955, subsequently reaching 10 million only seven years later. It then started to expand especially westwards, inducing haphazard small-scale development and sprawl (Figure 1).

While the central business districts enjoyed economic benefit from urban agglomeration, the fast-growing mega region faced scarcity of affordable housing for middle-income workers and saw a significant increase of long journey commuters from the neighboring cities (Figure 2). To meet the surging demand, the Government supplied mass developable tracts of land (large areas vacated by older industrial units which were then developed for mass housing) to the market by relocating large factories to the new industrial areas in the fringe, mobilizing untapped land, and reclaiming the coastline of Tokyo Bay. This decentralization trend continued until the 1990s, until Japan was faced with a halt in its high economic

<sup>1</sup> Based on Iwamoto, T. et al. (2009). *Post Evaluation on a Collaborative Development in Urban Railway Station Areas and their Surroundings in Tokyo Metropolitan Area*. Journal of the City Planning Institute of Japan, 44-1, 3. [https://www.jstage.jst.go.jp/article/journalcpj/44.1/0/44.1\\_1/\\_pdf](https://www.jstage.jst.go.jp/article/journalcpj/44.1/0/44.1_1/_pdf)



# Overview and Planning Process of Shibuya Redevelopment Project

Tokyo  
Development  
Learning  
Center



May 2017



## CASE STUDY LAND READJUSTMENT IN JAPAN



Source: City of Yokohama.



Tokyo  
Development  
Learning  
Center

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Yuko Okazawa from the World Bank facilitated the overall production of this paper.

