



Tokyo Development
Learning Center
Policy Paper Series 3:

CASE STUDY ON TOKYO METROPOLITAN REGION, JAPAN



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EXECUTIVE SUMMARY

Japan entered its period of rapid economic growth in the late 1950s, and for half a century since then, the concentration of population, industries, and other functions in three major metropolitan areas, particularly in Tokyo, was remarkably intense.

For the well-balanced development of Greater Tokyo Metropolitan Area, comprising Tokyo and seven prefectures (Saitama, Chiba, Kanagawa, Ibaraki, Tochigi, Gunma and Yamanashi), the National Capital Region Development Plan (NCRDP) was formulated in 1958 (revised four times subsequently until 1999) under the National Capital Region Development Act (1956). The concept of the plan was to conserve green spaces that embraces the healthy natural environment as well as to carry out the comprehensive development of the Tokyo Metropolis and the surrounding regions as an integrated “capital region” in order to build a capital region that is suitable for the center of politics, economy and culture while alleviating the concentration of population and industries into Tokyo and the ensuing environmental degradation. The NCRDP consisted of three parts: basic (approximately 10 years), development (approximately 5 years), and annual (every fiscal year) plans. The *NCR Basic Plan* included the simple directions for development in the region with respect to population size and land usage while the *NCR Development Plan* set out the foundation concerning the development of facilities specified in the Act for roads, railways, etc.

Inspired by the *Greater London Plan* of 1944, the 1st NCR Basic Plan (1958) emphasized restriction of new construction; development of green belts; and establishment of industrial areas in the suburbs. The 2nd NCR Basic Plan, 1968, shifted the emphasis from physical restriction

of growth to that of promoting planned urban development. Further accent was provided for these strategies in the 3rd plan (1976) considering the increases in population. Safety and environmental capacity, expansion of urban areas, housing and industrial development received prominence in these plans. The 4th NCR Basic Plan, 1986, also the Capital Reform Plan, aimed to change the previous structure of overconcentration in the center of Tokyo, to form a regional structure with multipolar and zones, and to reform the Greater Tokyo Metropolitan Area as a combined urban area, through development of business core cities, as independent urban areas promoting location of workplaces near the workers’ dwelling and living services. The idea of correcting the overconcentration in the center of Tokyo was included in the 5th NCR Basic Plan (1999) also. However, a series of large-scale redevelopment projects was implemented in the center of Tokyo and in the waterfront areas along Tokyo Bay in the late 1990s to the early 2000s.

After the WWII, there was tremendous stress on *land and housing* in the Greater Tokyo Metropolitan Area, which occurred because of the substantial migration of population into the metropolitan regions, hence the rapid increase in the demand. This was accompanied later by problems like densely built-up commercial areas vulnerable to earthquake damage, low-density suburban residential areas extending far away from urban centers, and unfinished roads that were once planned to be constructed. This was addressed typically by developing residential areas and commercial districts in an intermingling way around the railway station, enabling people to live comfortably without owning motor vehicles. The Japan Housing Corporation initially constructed large-scale multi-family residences and new towns in

Tokyo and subsequently in suburbs in the 1960s through land readjustment projects or full land acquisition. The land and real-estate prices increased from time to time, which was managed through the NCR Basic Plans and Development Plans, national policies and acts for housing, land use, transport, and environment.

Residents in the Greater Tokyo Metropolitan Area use *public transportation services*, particularly railways, much more frequently than those in other major cities in the world. The number of rail passengers increased each year after the war until 1994 but has slowly declined since then. Many passengers using the metropolitan railway system endured crowded trains and a long commute. This prompted the NCR Basic Plans to focus on policies for railways, such as running longer trains at shorter headways, quadrupling tracks, and constructing overpasses. More subway lines were also built during and after the 1960s to carry the growing number of commuters disembarking from the suburban railway lines. These efforts gave the region its

interconnected transit system. Urban railways succeeded in building an advanced network, including mutual extension operations, by the governmental policies and in cooperation with many railway service providers (Annexure 1). However, a long period of time was required to relieve the congestion due to the growing demand.

At present, Japan is entering an era of substantial decline and aging of the population decline, which requires us to reexamine all plans and policies for reconstructing our society. In the Greater Tokyo Metropolitan area, a series of redevelopment projects have been implemented on a large scale in the center and bayside areas under the slogan of “urban regeneration,” while other areas on the outskirts have seen reduction in their populations. It is therefore of great importance to reorganize town areas in a compact form, to respond to the problems of uninhabited or abandoned land and dwellings, as well as to strategically manage and renew social capital.

1. SPATIAL DEVELOPMENT OF TOKYO METROPOLITAN AREA

Tokyo was developed with the aim of making a modern capital. From the late 19th century to the beginning of the 20th century, when Japan was being modernized and was experiencing significant development, both economically and militarily, Tokyo was growing in population, while urban areas were spreading into the surrounding farming areas.

GROWTH OF TOKYO

HISTORICAL DEVELOPMENT

At the beginning of the 17th century, Tokyo (formerly called Edo) was constructed by Shogun Ieyasu Tokugawa as the de facto seat of the government. During the 18th century, it became one of the world's largest cities with a population of 1 million people. After the Meiji Restoration (1868), the capital was moved from Kyoto to Tokyo, and feudal domains were abolished to establish prefectures for creating a centralized state.

SPATIAL DEVELOPMENT & PLANNING

Tokyo suffered major catastrophic damage twice during the first half of the 20th century. In September 1923, Tokyo lost 44% of the surface of its urban areas, including almost all the downtown areas, which were the commercial centers, because of the Great Kanto earthquake and the large fires resulting from it. After the earthquake, the imperial capital reconstruction project was initiated, and the built-up areas of Tokyo were reborn as a modern city by the construction of major streets and a 3,100-hectare land readjustment. As people looked for housing in the suburbs, the western areas of Tokyo where new railways were constructed were rapidly being urbanized in the areas.

The second catastrophe occurred during the Second World War. Tokyo suffered repeated air raids and 159 km² (28% of its ward area) were damaged with 710,000 houses destroyed at the end of the war (August 1945). In the aftermath, the land readjustment project for war-damage reconstruction was initiated, but only 1,274 hectares of land was redeveloped mainly in front of the railroad stations along the Yamanote Line. The reasons were delayed commencement of reconstruction compared to other major cities and downsizing of the project because of austerity measures against inflation.

Based on the Town Planning Ordinance (1888: the origin of the city planning legislation in Japan) and the construction project of a central government district, Tokyo was developed with the aim of making a modern capital. From the late 19th century to the beginning of the 20th century, when Japan was being modernized and was experiencing significant development, both economically and militarily, Tokyo was growing in population, while urban areas were spreading into the surrounding farming areas.

The typical suburban development in Tokyo until 1950s was low dense single-family housing for emerging middle-class citizens, those sub-urban development generally provided decent or minimal living environment even if it had only self-supplied well water and no flush toilet. So, as many sub-urban railways were developed in

the 1920s, rapid sub-urbanization started under very weak planning system introduced in 1919, and the big earthquake in 1923 accelerated the suburban development of Tokyo.

In May 1947 the new Constitution of Japan and the Local Autonomy Law took effect, and Seiichiro Yasui was elected the first Governor of Tokyo by popular vote under the new system. In August of that year, the present 23 special-ward system began in Tokyo Metropolis.

The 1950s were a time of gradual recovery for the nation. Television broadcasting began in 1953, and Japan joined the United Nations in 1956. Economic recovery was aided by the special procurement boom arising from the outbreak of the Korean War in 1950. This led to Japan's entry into a period of rapid economic growth in the 1960s. Due to technological innovations and the introduction of new industries and technologies, this period saw the beginning of mass production of synthetic fibers and household electric appliances such as televisions, refrigerators, and washing machines. As a result, the everyday lives of the residents of Tokyo underwent considerable transformation. In 1962 the population of Tokyo broke the 10 million-mark. In 1964 the Olympic Games were held in Tokyo, the Shinkansen ("Bullet Train") line began operations, and the Metropolitan Expressway was opened, forming the foundation for Tokyo's current prosperity.

Entering the 1970s, the strain of rapid economic growth became apparent as the country was beset by environmental issues such as pollution of the air and rivers, as well as high levels of noise. The Oil Crisis of 1973 brought the many years of rapid economic growth to a halt.

In the 1980s, Tokyo took large steps in economic growth because of its increasingly global economic activity and the emergence of the information society. Tokyo became one of the world's most active major cities, boasting attractions such as cutting-edge technology, information, culture, and fashion, as well as a high level of public safety. From 1986 onwards,

land and stock prices spiraled upwards, a phenomenon known as the "bubble economy."

POPULATION

After the World War II, by 1947, Tokyo regained its population and became centralized, with a population of 3.82 million people increasing to 5.38 million in 1950. As economic recovery set in, the population in Tokyo further increased to 6.97 million in 1955, surpassing the pre-war peak population. However, the population distribution was considerably differently after the war, with increased population settling in the surrounding wards spreading into the western suburbs.

In the 1970s, the flow of population into Tokyo and two other metropolitan areas decreased exponentially, owing to the decentralization policies implemented by the national government. In late 1980's, Japan enjoyed tremendous growth under the bubble economy, but with the burst of the bubble at the beginning of the 1990s, sinking tax revenues caused by the protracted economic slump led to a critical state in metropolitan finances. Tokyo was, however, able to overcome this financial crisis through two successive fiscal reconstruction programs. The population also started returning to Tokyo, and in 1997, in-migration exceeded out-migration for the first time in 12 years. In 2001, Tokyo's population reached 12 million, and surpassed 13 million in 2010.

NATIONAL CAPITAL REGION DEVELOPMENT ACT, 1950

For promoting post-war urban planning in Tokyo in consultation with and under the guidance of the national authorities, the Capital Construction Act was passed in 1950. The Plan based on this law was limited to the administrative district of Tokyo; therefore, Tokyo Metropolitan Government (TMG) had difficulty in dealing with the actual state of the conurbation of the Tokyo Metropolitan region that transcends the prefectural borders. Thus, based on the **Vision for the Capital Region** of 1956, the

National Capital Region Development Act was enacted in the same year to replace the Capital Construction Law.

The Vision for the Capital Region was a concept to develop a large regional complex, embracing one metropolis (Tokyo) and seven prefectures (Saitama, Chiba, Kanagawa, Ibaraki, Tochigi, Gunma and Yamanashi) that were to take on roles that best suit them in a mutually and efficiently complementary manner to alleviate adverse effects of overcrowding due to rapid concentration of population and industry into Tokyo and the surrounding areas. To promote this Vision, the National Capital Region Development Act formulated the National Capital Region Development Plan, which was revised several times since the first plan in 1958. The Act divided the Capital Region into policy areas including “built-up areas,” “suburban development zones” and “urban development areas” and mandated TMG to build a totally harmonious regional area through the

development and conservation that suit the characteristics of each policy area.

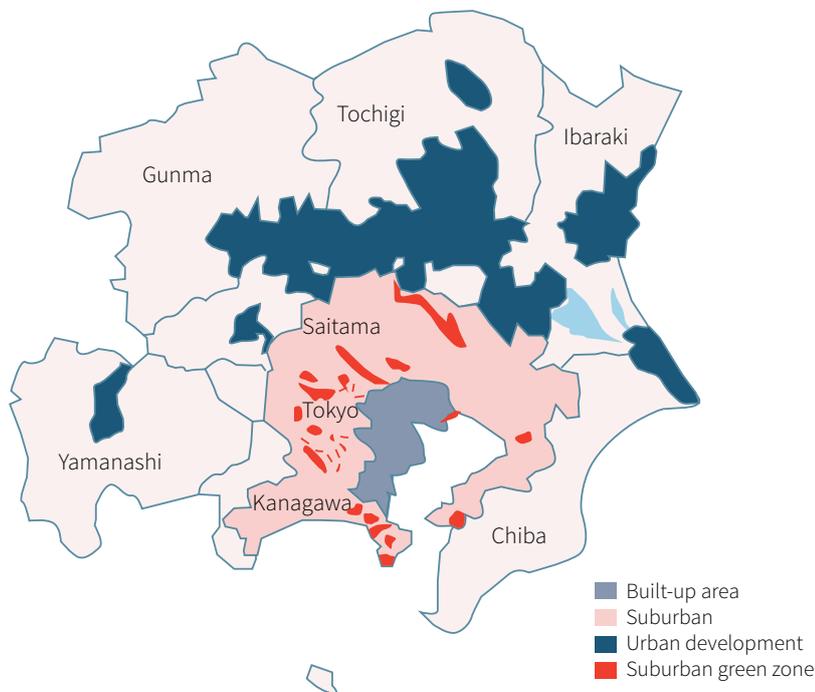
Built-up areas: Areas that prevent excessive concentration of industries and population and ensure maintenance and improvement of urban functions

Suburban development areas: Areas that require improvements as systematic urban areas and conservation of green spaces to prevent chaotic urbanization in the suburbs of the Built-up areas

Urban development areas: Areas that are to be developed as industrial or residential cities.

Suburban green conservation spaces: Areas in which maintenance and enhancement of mental and physical health of the Capital’s residents are promoted through the conservation of green spaces within urban development areas.

Figure 1 Policy affected areas in the National Capital Region



Source: MLIT

NATIONAL CAPITAL REGION DEVELOPMENT PLANS

CONCEPT

The underlying policy aim of the NCR Development Act was to conserve green spaces that embraces the healthy natural environment as well as to carry out the comprehensive development of the Tokyo Metropolis and the surrounding regions as an integrated “capital region” in order to build a capital region that is suitable for the center of politics, economy and culture while alleviating the concentration of population and industries into Tokyo and the ensuing environmental degradation.

The National Capital Region Development Plan in accordance with the National Capital Region Development Act consisted of three parts: basic (approximately 10 years), development (approximately 5 years), and annual (every fiscal year) plans.

Basic: Although this part was formulated as the framework of the NCR Development Plan before the revision of the Act, under the new Plan, it has become a guideline for plans concerning the capital regional development that clarifies the basic policy concerning future development of the Capital Region, the future vision for the Region to aim for and the direction of efforts towards the realization thereof.

The basic plan included the basic direction for development in the region with respect to population size and land usage (directions of regional development, arrangement of functions, etc.). The NCR Basic Plans promoted many projects including motor ways, rapid transits, new towns, and water resource development projects in the built-up areas, suburban development and redevelopment area, and urban development areas along with the fundamental transportation infrastructure between these areas.

Development: This part sets out what should be the foundation concerning the development

of facilities specified in the National Capital Region Development Act for roads, railways, etc. in built-up areas (23 Wards, Musashino City and part of Mitaka City in Tokyo), Suburban Development Zones (areas except built-up areas, Okutama Town, Hinohara Village and the Island Region in Tokyo) and urban development areas.

KEY CHALLENGES ADDRESSED

Land and Housing: Land is valued much greater in Japan given its limited availability for a large population. Most of the land in Japan, except sites for public facilities and forests in mountains areas, is privately owned by individuals or businesses. Both residential and agricultural lands are divided into small parcels, and this has been accelerated by agricultural land reform and the revision of the Civil Code (equal inheritance rights) after the war, subsequent urbanization, and aspirations for owning one’s own house. In Japan, the current number of landowners is almost the same as the number of households.

For approximately 15 years (from the mid-1950s to the early 1970s) after post-war economic recovery from the Second World War, Japan experienced rapid economic expansion with an annual economic growth rate of approximately 10%, called as “*the Japanese economic miracle*”. During and after the Japanese economic miracle, Japanese citizens, including those in metropolitan areas, strongly wished to own and live in a detached house even if the house was small and had a minimal garden. This trend was encouraged by the traditional Japanese lifestyle and the value of the land as an asset given the increasing land prices.

It is relatively recent that this preference weakened due to growing popularity of condominiums near the urban center and continuing decrease in land prices in the suburbs. Under such circumstances, many difficult problems relating to land and housing occurred because of the substantial migration of population into the metropolitan regions and

the rapid increase in the demand for housing and residential land during the period of the economic miracle.

Urban Railways:: The commuter system in the Tokyo area, except the subway system, was completed in a roughly similar form to that at present by the 1930s, and it served as a major means of transportation for the residents. The main routes of JNR between the capital city and major cities were completed during the late 19th and the early 20th centuries. The Yamanote loop line was completed and started its operation in 1925 as part of the imperial capital reconstruction project after the Great Kanto Earthquake. Several private railways were constructed to connect stations on the Yamanote Line to the suburbs from 1900 to the 1920s, along which residential development proceeded after the Earthquake. Tram lines ran within the Yamanote Line and in downtown areas on the east side and only one subway line was operating. These providers operated on a stand-alone basis without financial support from the government. In the process of carrying out the post-war urban reconstruction plan, the construction of the subway systems was determined.

From the post-war reconstruction period to the economic miracle, the demand for commuter transportation increased because of substantial migration from rural areas into the Tokyo area and suburbanization, which led to overcrowded trains. Moreover, increasing motorization of society was causing chronic urban traffic congestion impeding tram and bus operations. Following policies were suggested by the then MLIT to resolve the issues:

1. Switch from trams to subways in inner-city areas
2. Increase transport capacity of suburban railways
3. Run through services¹ connecting city center to outlying areas.

1ST NATIONAL CAPITAL REGION BASIC PLAN AND THE CONCEPT OF GREENBELT

The National Capital Region Development Committee was established as an affiliated agency of the Prime Minister's Office, based on the National Capital Region Development Act, which formulated 1st National Capital Region Basic Plan in 1958. The plan covered an area of 100 km radius, and was modeled after the Greater London Plan of 1944. It emphasized restriction of new construction that contributed to population concentration; development of green belts; and establishment of industrial areas in the suburbs. But many of these strategies could not stand the force of population increase and high economic growth. Basic principles of this plan were to – a) define certain urban areas including the wards of Tokyo as a “built-up area”, b) ease population congestion from the designated areas while improving them internally, c) designate a 10-kilometer area surrounding the built-up areas as a “greenbelt” to prevent expansion of these urban areas, and d) designate urban development areas in suburban areas to promote decentralization of the population and industry.

However, once the plan was announced, farmers, who were main landowners of the surrounding areas; agricultural organizations; and local assemblies launched an intense campaign against it. Given the large differences in valuation of urban land versus rural, landowners of fringe land preferred their land classified as urban. It was also opposed by some of the local governments too, as it will potentially lead to challenges in land acquisition to for future development and growth. For example, hinterlands of the Yokohama city's urbanized areas were planned as a greenbelt, which was strongly condemned as it was perceived to prevent effective implementation of their urban plans and diminish the possibility of future urban and industrial growth.

1 Through service means running the same train line between trunk and branch lines of one operator or between different railway operators.

In 1959, Tokyo was awarded the 1964 Summer Olympics. The Metropolitan Expressways and monorail connecting Haneda Airport to the center of Tokyo were rapidly constructed. Large parks for the Olympic venues were constructed and major streets were enhanced. To support the Olympics, infrastructure in Tokyo was substantially improved, accelerating its growth and evolution.

With increasing development, the planned greenbelts experienced an influx of population from the wards overflowing with people and factories, resulting in urban sprawl. This further led to higher land values and conversion of agricultural lands to other more profitable uses, such as residential. In addition to that, Japan Housing Corporation acquired land in the greenbelts for building large-scale apartment complexes to ease housing shortages. Consequently, the greenbelts lost their function and became part of the continuum connecting new sub-urban areas to the built-up areas.

Finally, the designation of greenbelts was abandoned. The concept of greenbelts was modeled after the Greater London Plan, 1944. In contrast to London, where the urban sprawl was already slow when the concept was introduced, it was perhaps unreasonable to contain the

expansion of Tokyo, which had a large potential for growth still.

Revision of the National Capital Region Development Act and a change in policy-affected areas

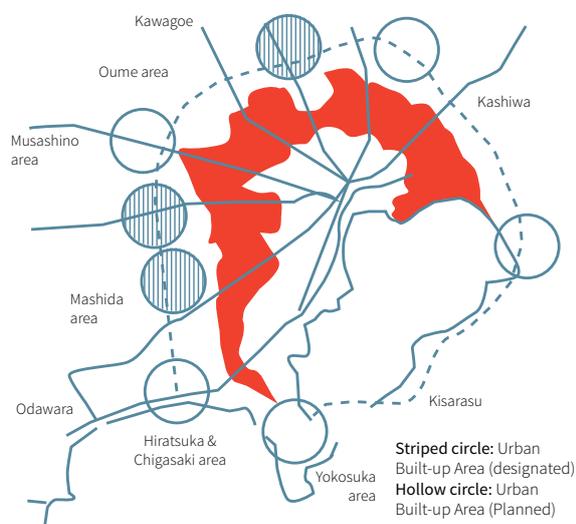
The National Capital Region Development Act was revised in 1965. The concept of greenbelts was eliminated, and a broad area surrounding built-up areas of Tokyo, within a 50-km radius was designated as a Suburban Development and Redevelopment Area. In this area, focus was not only on urban development but also on green conservation to be undertaken systematically preventing disorganized urbanization.

Concentrated urban development centers were planned outside the Suburban Development and Redevelopment Area to develop industry and residences, universities, and logistics hubs. The prefectural capitals in four prefectures around Tokyo (approximately 100 km from the center of Tokyo) were such urban development centers. For instance, the Tsukuba area was designated as a science city and the Kashima area as an industrial area.

Industrial parks were constructed to relocate factories from built-up areas in the Suburban Development and Redevelopment Area and urban development areas, and new financial special measures were implemented for development of communal facilities to decrease the fiscal burden on these local governments.

The Act on the Conservation of Suburban Green Zones in the National Capital Region was enacted in 1966 for active green conservation. However, the designated and conserved areas based on the Act were limited to hills, rivers, and lakes, which were small in area and sparsely spread across the suburban area.

Figure 2 Planned Greenbelt around Tokyo in 1956



Housing policies and development of residential land

Shortly after the end of the war, housing policies in Japan began to address the housing shortage of 4.2 million housing units. In 1950, the Government Housing Loan Corporation of Japan was established as a governmental financial institution to provide long-term and low-interest loans to the public for purchasing a home. In 1951, the Act on Public Housing was enacted. Based on this Act, local governments provided low-income individuals who needed housing with leased homes. In 1955, the Japan Housing Corporation was established to address the housing shortage in large cities caused by rapid concentration of population and to develop large-scale residential lands and collective housing for working people based on regional-scale plans. In this way, the three pillars of the post-war housing policy were established: public financial loans, public housing, and housing from the Japan Housing Corporation.

In the 1950s, room rentals and lodging solved the housing shortage caused by mass migration into Tokyo, and in the 1960s, this was accomplished through renting of wooden apartments built by small landowners. The development of residential land rapidly expanded into the suburbs where land prices were relatively low. This caused an urban sprawl and many negative effects, which included random distribution of urban areas after residential construction on farmlands and in forests and poor construction of residential lands without roads and sewerage.

The Japan Housing Corporation initially constructed large-scale multi-family residences and new towns in Tokyo and subsequently in suburbs in the 1960s through land readjustment projects or full land acquisition. In 1963, the New Housing and Urban Development Act was enacted, which enabled large-scale residential development businesses through the land expropriation right. Utilizing this Act and the land readjustment projects, the Japan Housing Corporation developed large-scale new towns in

the suburbs, such as the Tama New Town, Chiba New Town, and Kohoku New Town. As there were not sufficient employment opportunities in these new towns, many of the residents had to commute to wards of Tokyo by train. The only exception was the Tsukuba Science City, in which universities and national research institutions relocated from Tokyo.

In the suburbs, once public apartments were available, access roads were constructed and a bus system was established, the residential areas often expanded into the surrounding areas.

Following such construction, private railroad companies and other businesses started residential land development.

Urban Railways

Railways support large cities in Japan for passenger transportation. Residents in the Greater Tokyo Metropolitan Area use public transportation services, particularly railways, much more frequently than those in other major cities in the world, such as London and New York. Commuters in the Greater Tokyo Metropolitan Areas use trains more frequently than those in other cities. Over 3 million people



Tama New Town, Chiba



Source: japanpropertycentral.com

Source: ja.m.wikipedia.org

(nearly half of the commuters) who work or go to school in the wards of Tokyo live in the suburbs, and almost all of them must commute by train every day.

Council for Urban Transport (Council for Transport Policy) Report

The Council for Urban Transport (the current Council for Transport Policy) was established in 1955, which drew up a plan in 1956, concerned with passenger transportation in Greater Tokyo. In this plan, the Council proposed the expansion of the subway system, removal of the tram lines, and development of through services between the subway lines and suburban railways. The Council continued to prepare such reports that had substantial influence on the systematic and consistent development of railroad systems operated by many different railroad service providers in the Greater Tokyo Metropolitan Area.

At that time, there were two subway lines run by Teito Rapid Transit Authority (the current Tokyo Metro which is a company jointly owned by the national government and TMG), and the expansion of the subway lines and the participation of TMG as a business entity were included in the plan by the Council. Until then, the six railroad service providers, which ran private suburban railroad services, had indicated their intent of the expansion into inner Tokyo to the government. However, these providers eventually agreed on establishing through service with Teito Rapid Transit Authority or Toei Subway lines, which was constructed later.

At the end, the subway lines were assigned numbers from 1 to 13 along with suburban railway lines they support with through service. The tram lines, which caused traffic disturbances and had financial problems because of the opening of subway lines, were removed by 1972, except for one line which had an exclusive track.

Through services

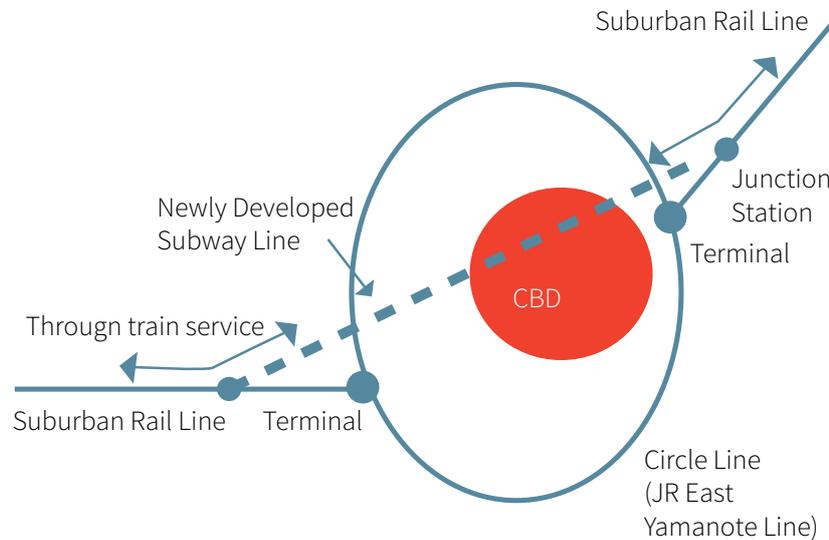
The first through service in 1960 was between

the Toei Asakusa subway running north-south in downtown Tokyo and the kensei main line running through eastern Chiba prefecture. The Asakusa Line was later extended to southern part of the central Tokyo, starting through service with the Keihin Kyuku main line in 1968. As a result, the outlying core urban areas of Yokohama and Kawasaki and the residential areas of eastern Kanagawa Prefecture and western Chiba Prefecture were connected directly to central Tokyo locations, such as Shimbashi, Nihonbashi, and Asakusa. Full length of the Tokyo Metro Hibiya Line with through service to Tokyo Tohoku Tobu Isesaki lines opened in 1964 (construction started in 1959), the same year as 1964 Olympics. The Tokyo Metro Tozai Line was opened in stages from 1966 to 1969 and provided through service to JNR's Chuo and Sobu lines.

While through service had many advantageous, there were certain issues associated too.

- The first problem was that the gauges and power collection systems needed to be standardized. For example, the Toei Asakusa Line planned to provide a through service at both terminal stations with two different private suburban railroad providers, but the gauges were different. The Keisei Electric Railway, one of the private suburban railroad providers, changed their gauges. Newly constructed subway lines adopted pantographs as a power collection system, which was different from the traditional third rail system, even though the pantographs increased the construction cost because of the larger sectional area of tunnels required. This adoption was needed for a through service with suburban railroad providers.
- The second problem was the need for new subway tracks to provide a through service with a suburban railroad provider which would use longer and larger train cars at the new subway stations. The minimum curve radius of the track increased and the station platforms had to be long enough for 10-car trains.
- The third problem was standardization of safety operation systems. A train runs on

Figure 3 General concept of Through services in Tokyo



both subway lines and suburban railroad lines; therefore, it needs to be equipped with both devices from each system for some in-car units.

- Besides the above-mentioned issues, others included operations by train crews and station staff, charges for the use of train cars and tracks, and policies for handling accidents and delays. These were discussed among the railroad service providers to establish rules.

Subsidies for private railroad service providers

The railroad service providers in Japan were required to conduct business on a stand-alone basis. However, for constructing new lines and quadrupling the existing lines in an urgent manner to meet the rapid increase in demand in the metropolitan areas, they needed enormous amounts of capital for land acquisitions and construction. This made it difficult for such providers to proceed with construction and expansion. To address this problem, various subsidy systems were established.

In 1962, a system which subsidized part of the interest on debt loans related to construction was established for Teito Rapid Transit Authority and the Local Public Enterprises which were the main subway constructors. In 1967, another

subsidy system for part of the construction costs was established. The subsidy systems were improved afterward, such that 35% of subway construction costs were borne by the national and local governments.

Urban development around stations

In the Tokyo area, urban areas spread radially outward into the suburbs along the railroad lines. Commercial facilities and offices are concentrated around the stations, which again increased the usage of railroad services. This is partly the natural consequence of market mechanisms and was also an intended consequence of urban planning and residential land development in association with the railroad development by public sector and railroad service providers.

Today, Shinjuku, Shibuya, and Ikebukuro are the main subcenters in Tokyo. However, from the late 19th century to the early 20th century, when small stations opened on the Yamanote Line, houses were sparsely distributed and just a few passengers used these stations. These areas became busy after several private suburban railways were constructed and new stations opened. In the 1930s, the Shinjuku station square was redeveloped as part of the urban planning project.

After the Second World War, the squares in front of these stations were redeveloped as part of the land readjustment project for war-damage reconstruction and an affiliate of the private railroad service provider opened department stores in the station buildings. Such subcenters rapidly grew with the increase in passengers due to suburbanization after the war, changing to busy downtown areas comparable to Ginza, with department stores, shopping streets, restaurants, theaters, and hotels.

Five-direction strategy by JNR

JNR recognized their responsibility to enhance transportation between cities and did not focus on the development of commuting lines for a while after the war. However, they started the “five-direction strategy” in 1965 because of intensifying train congestion, the so-called “commuting hell.” This strategy involved investing in huge expansion of the five major commuting lines radiating out from the center of Tokyo to quadruple them: Tokaido, Chuo, Tohoku, Joban, and Sobu Lines. This investment increased the transportation on these lines and had a huge impact on the formation of the Greater Tokyo area. JNR was privatized and divided in 1987. JR East serves the Tokyo area, attempting further enhancement of transportation by changing freight lines to passenger lines.

Regulation for the establishment of factories and universities

The Tokyo area was not only a political and an economic center but also had the nation’s leading industrial districts. The industries spread along the rivers and coast from downtown areas in Tokyo extending up to Kawasaki and Yokohama and further along to Osaka, Kobe, Nagoya, and its surrounding areas. In the late 1950s, the population upsurge in Tokyo spilled negative effects associated with an overcrowding, such as deterioration of the living environment and heavier traffic congestion. Therefore, the Factory Limitation Act was

enacted in 1959 to limit construction of new factories and universities, which was the main factor of population attraction, and to prevent their excess concentration in the center of the metropolis. In addition to the Act, the regulation on pumping-up of ground water for subsidence control, enhancement of environmental regulations, and higher land value forced many factories to relocate to the suburbs or other regions. As a result, the ratio of the number of employees in the manufacturing industry in the regulated areas as well as in Greater Tokyo Metropolitan Area decreased substantially.

The share of university students in the regulated areas also plummeted, while it increased in the surrounding areas. This was because universities in the wards of Tokyo relocated to the suburbs for obtaining larger campuses to accommodate the increased number of students. For example, in Hachioji, which is approximately 40 km to the west of the center of Tokyo, more than 20 universities and colleges were newly established or relocated from the wards of Tokyo. For attracting young students longing to study in Tokyo, there was an advantage in having a campus within Tokyo, even if that was located on a hill far away from the busy urban district.

Development Acts and plans for Kinki and Chubu Regions

Kinki region that includes Osaka, Kyoto, and Kobe is the second largest metropolitan area, the Kinki Region Development Act, which was on similar lines as the National Capital Region Development Act, was enacted in 1963. The Kinki Region, just like the NCR, was grouped into built-up areas, suburban development and redevelopment areas, and urban development areas for developing in accordance with the Kinki Region Development Act and was regulated for the construction of factories and universities in the built-up areas in accordance with the Factory Limitation Act.

The Chubu Region Development Act was enacted in 1966 for the Chubu Region that includes Nagoya. As this region did not have as

Figure 4 Kinki and Chubu regions



severe overconcentration problems as Tokyo and Osaka, built-up areas were not designated. Instead, Nagoya and the surrounding areas were designated as urban improvement areas and the major cities and their surrounding areas in other prefectures were designated as urban development areas. In this region, the development and improvement proceeded in accordance with the Chubu Region Development Act, but the Factory Limitation Act was not implemented. As a result, Aichi prefecture, which includes Nagoya and Toyota, successfully started shipping Japan's highest value of manufactured goods shipped.

THE 2ND AND 3RD NATIONAL CAPITAL REGION BASIC PLANS

In response to the revision of the National Capital Region Development Act, the 2nd National Capital Regional Basic Plan was prepared in 1968. This plan estimated a population of 33.1 million in the Capital Region (Tokyo and the 7 prefectures) for the target fiscal year of 1975 based on previous trends, including population of 1965 (approximately 27 million). However, the actual population was slightly higher than the plan estimates at 33.62 million. Subsequently the 3rd National Capital Regional Basic Plan was developed in 1976, with a target

year of 1985. The estimated population for this period was 37.62 million, which overshot by 400,000 in actual.

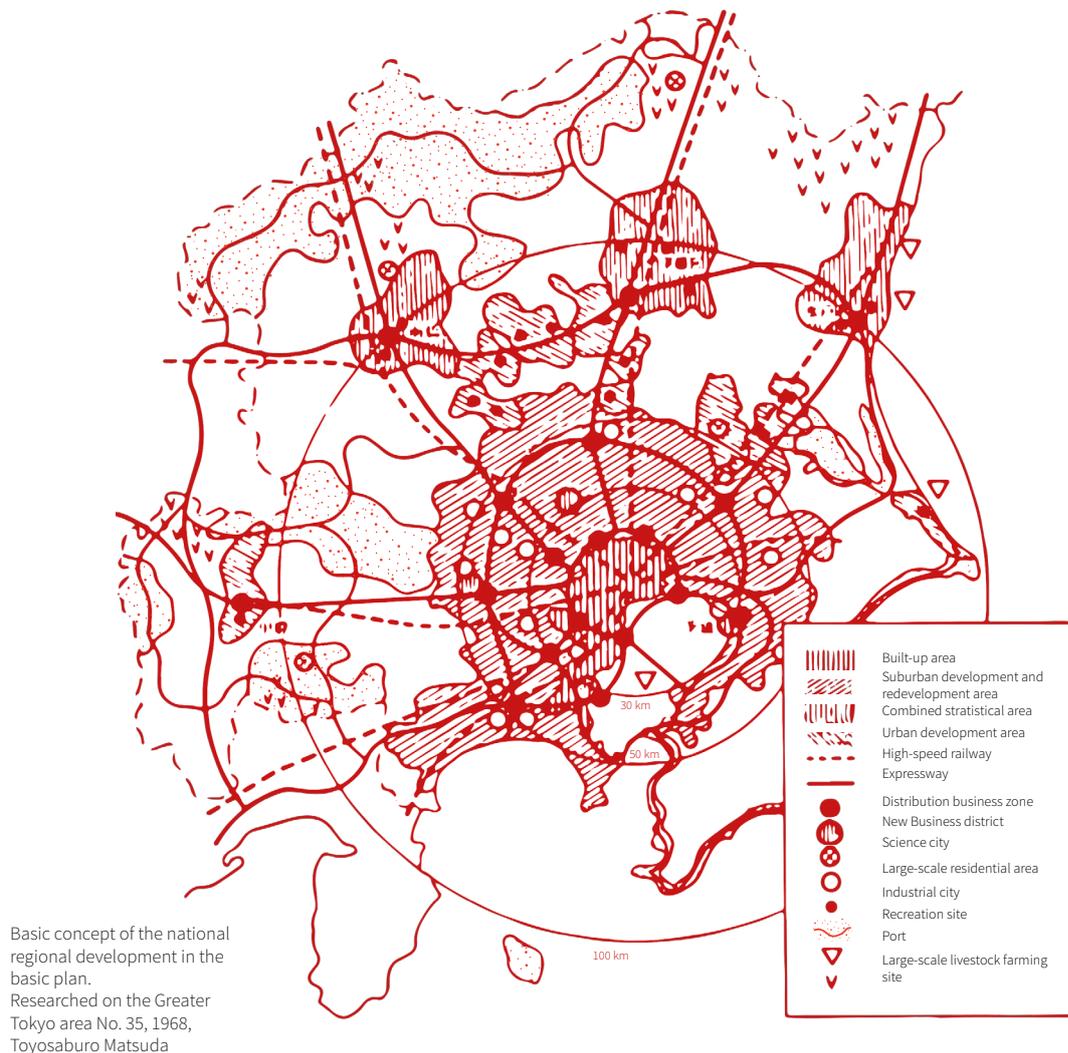
The 1968 Plan shifted the emphasis from physical restriction of growth to that of promoting planned urban development. Further accent was provided for these strategies in the 1976 Plan considering the increase in population. Safety and environmental capacity, expansion of urban areas, housing and industrial development received prominence in these plans. A concept map of the National Capital Region Basic Plan, associated with the 2nd Plan, was created and published, although it was not included in the finalized Plan. This map showed high-speed railways, expressways, distributed business zones, new business districts, science cities, large-scale residential areas, industrial cities, recreation sites, ports, and large-scale livestock farming sites in policy-affected areas, indicating a clear direction of the development in the region.

Further accent was provided for these strategies in the 3rd plan (1976) considering the increases in population. Safety and environmental capacity, expansion of urban areas, housing and industrial development received prominence in these plans.

The City Planning Act

For land use control, which was abandoned after the failure of the concept of greenbelts, the Suburban Development and Redevelopment Area was divided into urbanization promotion areas and urbanization control areas in accordance with the City Planning Act revised in 1968. This formed a framework for planned urbanization, and the division was completed by 1970. This Act designated city planning areas for urbanization resulting from the economic growth and for preventing nonsystematic expansion of urban areas. It also adopted an area division system, which the global equivalent would be growth boundaries, for dividing the city planning areas into urbanization

Figure 5 The concept map of the 2nd NCR Basic Plan



promotion areas and urbanization control areas. The policy-affected area in the Greater Tokyo area was included in the city planning areas. The urbanization promotion areas were already developed urban areas and were to be preferentially and systematically urbanized in approximately ten years. The urbanization control areas were those in which urbanization was planned to be prevented. Subsequently, the Suburban Development and Redevelopment Area accommodated majority of the increased population in Tokyo.

In this revision, the developmental permission system was implemented, requiring the construction of necessary roads, parks,

and public facilities for a certain scale of development in the urbanization promotion areas, while in principle, prohibiting the development in the urbanization control areas. This way, the system controlled urban sprawl and enabled efficient construction of utilities, such as roads and parks. In the urbanization control areas, this system prevented the abolition of agricultural lands and maintained agricultural management as well as contributed to the preservation of and harmony with natural surroundings.

This allowed larger urbanization promotion areas for flexible development of residential lands from agricultural lands. However, the

systematic supply of residential land was not achieved because the tax on agricultural land was much lower than that on residential land, which resulted in many small-scale residential land developments without infrastructure development. In the urbanization control areas, individual development was often approved under various reasons.

Housing policies and development of residential land

With the increase in the level of household income as an impact of growing economy and preferential policies, the total number of housing units exceeded the total number of households in all prefectures by 1973. The housing policies quantitatively overcame the housing shortages. On the other hand, the ratio of publicly leased houses never exceeded 10% even in the Greater Tokyo Metropolitan Area in statistical surveys. In addition, 70%–80% of the supply of residential land was provided by the private sector, whereas 20%–30% were provided by the public sector, including the Japan Housing Corporation and local governments.

Generally, in Japan, individuals purchase or build a house for themselves or landowners and private businesses provide homes for sale or lease. In addition, the public sector provides public housing for low-income individuals, rental housing for working people in metropolitan regions and financial supports for homebuyers.

The government housing policies did not explicitly promote the purchase of homes by citizens, but supported this through the tax reduction and public financing loans. Although the Act on Land Lease and the Act on House Lease protected the rights of lessees, it is said to have counteracted the supply of good-quality leasing houses. Majority of private leasing houses were for single households, and the number of leasing houses with ample space for families was limited.

Since 1967, many of the municipal governments in metropolitan regions created guidelines for

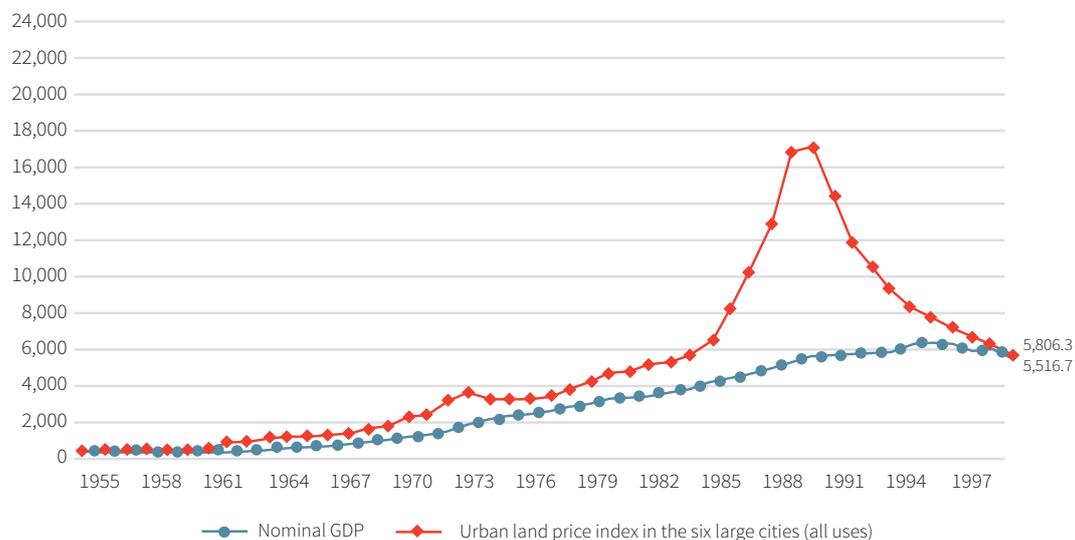
residential land development. These guidelines prescribed that developers, who operate a certain size of residential land development, should provide land for free for public use, develop public facilities (given to cities for free after the development), and create and manage good living environment (of a high standard). While such guidelines had a positive impact on developing a healthy urban environment; however, overdoing this could impose a greater burden on developers, disrupting the smooth supplies of good and inexpensive housing and residential lands. To avoid such situations, notifications were repeatedly issued by the Ministry of Construction and other central ministries instructing the municipal governments to relax the guidelines.

In 1966, the Housing Construction Planning Act was enacted to promote residential construction in cooperation with the central government, local governments, and citizens. This Act mandated the central government to prepare a five-year plan for residential construction, including private construction projects and the goals.

A rise in land prices and measures concerning land

With inauguration of Prime Minister Tanaka's new Cabinet in 1972, a bill was passed a year later for restructuring the administrative organizations and establishing the "Comprehensive National Land Development Agency" to promote various measures for the territorial development. This bill was submitted to the Diet along with an amendment to the Comprehensive National Land Development Act; which was strongly opposed by the opposition party because these bills were likely to increase the land speculation and impact the environment and nature that were already being social problems. Consequently, the National Land Use Planning Act was enacted in June 1974 to combine various projects for land administration rather than a general coordination of development administration, which helped in controlling the land prices.

Figure 6 Urban land prices in the six large cities and nominal GDP growth rate (based on an assumption of 100 in 1955)



Source: "Annual Report on National Accounts" from the Cabinet Office, "Urban Land Price Index" from Japan Real Estate Institute
 Note: The land price index is calculated for each year based on an assumption of 100 in 1955.

Municipal governments in the suburbs

On completion of a large-scale housing development, water supply and sewerage systems, an incineration plant, a sewerage treatment system, and elementary and junior-high schools were needed. However, these required the municipal governments to assume the burden of huge costs and enormously increased administrative requirements, which exceeded their abilities.

For this reason, the Japan Housing Corporation constructed elementary and junior-high schools for such residential land developments on behalf of the municipal governments based on the arrangements with relevant governmental ministries. However, the municipal governments had to pay for them in annual installments afterward so that the effect was limited. In fact, this worsened the financial situations of the municipal governments because many of the new residents were young, lower-income taxpayers with children.

Moreover, new urban development by the Japan Housing Corporation and larger-scale housing development led to private development in the surrounding areas. Further concentration of population and increased demand from residents placed a heavy burden on

infrastructure and its provision by the municipal governments.

Many of the suburban cities and towns with increasing population exclaimed "We do not want to be a bedroom town" or "No more housing development." The governors in the Greater Tokyo area held meetings with the Ministry of Construction and the Japan Housing Corporation requesting them to share the burden of municipal government. The Japan Housing Corporation, which demurred in the beginning, using rent increase as an excuse, ultimately accepted the claim of the local governments. The national subsidy system for the relevant development of public facilities was also improved.

Urban Railways

Through Service

- The Tokyo Metro Hanzomon Line was built between 1973 and 2003 to relieve congestion at the large Shibuya Station terminal and on the Tokyo Metro Ginza Line, Japan's first subway.
- The Tokyo Metro Chiyoda Line was opened in stages until it was fully opened

in 1978. This line was built with through service on JNR's Joban Line and Odaku Electric Railway's Odakyu Line to alleviate congestion, improve journey times into the city centre, and alleviate congestion on the Hibiya subway line.

- The Toei Shinjuku subway line was opened in stages running from Shinjuku west to east through the northern area inside the Yamanote Line to western Chiba Prefecture. Through service started with the Keio main line Keio Sagami Line from Shinjuku in 1980.

Suburban development accompanying construction of railways

Suburban development by railroad service providers first started in the Osaka area and then in the Tokyo area before and after the Great Kanto Earthquake (1923). Such development accelerated with the increased demand for residential lands after the war.

- A good example is the development of Denentoshi (garden city) by Tokyu Corporation, which is located in the southwest of Tokyo along the Tokyo Metro Hanzon Line through service. The Tokyu Corporation formed a land readjustment association with many of the landowners who owned land along the planned railroad line to systematically develop the entire area along the line. This greatly increased the development's appeal, promoting its transformation into one of Japan's largest housing developments.
- Following the Tokyu Denentoshi Line, public developers planned large-scale developments of the Tama New Town and Chiba New Town. The railroad lines of these New Towns were planned by the public developers, but private businesses operated the services. Tama New Town was linked to Greater Tokyo by Toei Shinjuku subway line's through service.

Private railroad service providers not only constructed department stores in terminal stations but also opened commercial facilities

in front of stations around the completed residential developments in the suburbs, which included amusement parks and leisure facilities. These efforts increased revenue for railroad business while adding value to areas along the railroad lines and building a business model of maximizing profitability from a group of businesses, including real-estate, commercial, and leisure companies.

Subsidies for private railroad service providers

In 1972, a new subsidy system was established. The Japan Railway Construction Public Corporation (which had only constructed the JNR's lines), with soft loan installments, became responsible for the large-scale construction of private suburban railroad lines on their behalf. The lines were sold and transferred to the private railroad service provider after its completion. There was also a subsidy system by the national and local governments for lines in new towns which were built by constructors other than the Japan Railway Construction Public Corporation.

Involvement of local governments

Railroad lines were initially constructed on the ground. However, traffic congestion and interruption of traffic flow because of railroad crossings became a serious problem once the urbanization around stations accelerated and motorization began in the 1960s.

In 1969, the Ministry of Construction and the Ministry of Transport of that time entered into an agreement on the burden of expenses for the continuous grade separation project in cities with urban (road) planning business operators and railroad service providers.

Based on the agreement, approximately 90% of the cost for railroad overpasses and subway construction was to be borne by the local governments, which were the urban planning (road) project operators, and half of it was to be subsidized by the central government. Railroad service providers would bear the remaining 10%, but could benefit from the utilization of spaces under overpasses. This system enabled

approximately 200 projects nationwide thus far. In most cases, the areas around stations, which grew rapidly lacked sufficient urban infrastructures such as roads and station squares. Railroad overpasses improved railways and their safety while providing a good opportunity to rebuild the urban infrastructure around the station.

Local or municipal governments, except TMG and Yokohama city, which also served as subway service providers, were not the main actors for railroad development. However, they helped in promoting urban development with construction of railways through the continuous grade separation project, zoning around railroad stations for urban planning, reconstruction of roads and execution of land readjustment, and investment in new companies for unprofitable construction and operation of suburban railways.

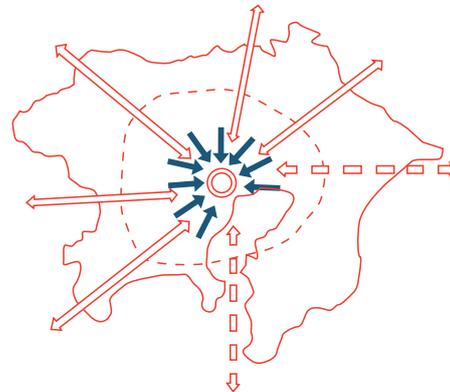
THE CAPITAL REFORM PLAN AND THE 4TH NATIONAL CAPITAL REGION BASIC PLAN

In the late 1970s, the flow of population into the Greater Tokyo Metropolitan Area started slowing down. The National Land Agency began to develop the Capital Reform Plan in 1979, an ultra-long-term outlook up to 2025 when this area was predicted to have a stable population. The Capital Reform Plan was finalized in 1985 following multiple publications of the proposals, opinion polls, and exchanges of opinions among relevant government ministries and local governments.

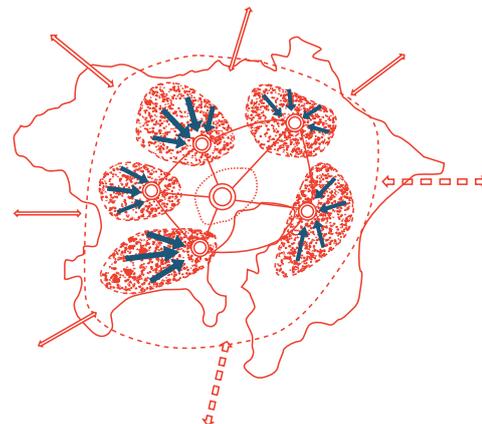
This plan aimed to change the previous structure of overconcentration in the center of Tokyo, to form a regional structure with multipolar and zones, and to reform the Greater Tokyo Metropolitan Area as a combined urban area. For these purposes, this plan attempted to strategically develop business core cities² in the areas surrounding the wards of Tokyo and to form independent urban areas for promoting

Figure 7 Status and future concept of the Greater Tokyo area (the Capital Reform Plan)

(a) Overconcentration into the center of Tokyo



(b) Concept of a combined urban area



Source: National Land Agency

location of workplaces near the workers' dwelling and living services.

These ideas were incorporated in the 4th National Capital Region Basic Plan, which was a statutory plan enacted in 1986. The 4th Plan designated Yokohama, Kawasaki, Urawa, Omiya, Chiba, Hachioji, Tachikawa, etc. as business core cities.

In addition, the procedures and support measures in relation to the basic concept of the business core cities were specified in the Multipolar Patterns National Land Formation Promotion Act (1988), which was enacted as an implementation law of the

² Business core cities: cities that perform various functions, including business functions, for their effective allocation as a regional core of an appreciable range of areas outside the wards of Tokyo, to resolve urban problems in the Greater Tokyo Area.

4th Comprehensive National Development Plan. After the basic policy concerning the relocation of governmental offices (1988) was created, business core cities were selected for the relocation of governmental offices (many of them were branch offices of government ministries which had jurisdiction over the Capital region) and special corporations located in the wards of Tokyo.

Development of business core cities

Yokohama, Chiba, Urawa, and Omiya (Urawa and Omiya were incorporated as Saitama City afterwards) outside of Tokyo were central cities with prefectural governments. In the 1960s and 1970s, the population rapidly increased and the urban areas in these cities expanded. However, the population during daytime was lower than that during the night because many of the new residents who moved into these cities commuted to Tokyo for work and studies. These cities mostly developed as bedroom towns so were less attractive and lively despite their population size.

In the meantime, it was found that these cities could have the potential of large-scale development areas by using the spacious reclaimed lands along the Tokyo Bay, restructuring industrial and seaport functions, and utilizing the Japanese National Railways' yards and sites of old U.S. military bases in the inland areas. Around 1980, with support from the relevant national ministries, each local government began to consider various new concepts for urban development and tried to embody them. The urban development projects were realized by interacting actions by the local governments with support from the central government, including the Capital Reform Plan, and by carving out the concept of business core cities.

In Minato Mirai 21 district in Yokohama, new business districts were developed around key facilities, including National Convention Hall of Yokohama and Yokohama Landmark Tower which was the tallest skyscraper at that time, by

redeveloping sites of old dockyards and train yards in the waterfront adjacent to the center of Yokohama.

The Makuhari New City (Makuhari Shintoshin) in Chiba city, which is in the broad reclaimed land on the east side of the Tokyo Bay, adopted the concept of a convention city. Centering around the Makuhari Messe (an international exhibition center), a lot of IT companies set up offices in the business and research district of this new city. The Saitama New Urban Center (Saitama Shintoshin) was redeveloped for enabling national government ministries to relocate branch offices by utilizing the former site of the Omiya train yard.

From the late 1980s to the beginning of the 1990s when the development of business core cities entered its full-scale phase, the construction of facilities and buildings for



Source: www.m-messe.co.jp

Makahari Messe and Makuhari New City



Source: Wikipedia

Saitama New Urban Center

companies was successfully conducted in the context of the economic bubble and shortage of office space in the central districts of Tokyo. However, the expansion of businesses slowed down after the economic bubble burst, and some of them again relocated to the center of Tokyo. In the meantime, each local government attempted to mature their business core cities by improving their transportation infrastructure and enhancing their support measures for incoming companies and new businesses while improving their land use plans to change the usage of remaining lands for business offices to residential or commercial facilities. However, the employed population in these business core cities was well below the initial target populations.

Housing: A rise in land prices and measures concerning land

The value of land in urban areas in Japan constantly increased from 1985 to the 1990s when the economic bubble burst. The percentage of rise was higher than the nominal GDP growth rate. During this period, there were three times when the value of land experienced a steep rise. The first time was the period of the economic miracle in the mid-1960s. This resulted from the rapid increase in demand for industrial lands and housing because of the concentration of population into urban areas.

Because of the oil crisis, the value of land declined for the first time in 1975. It remained stable afterward, but sharply increased in the late 1980s. This increase was triggered by increased demands for land for business offices in the center of Tokyo due to unipolar concentration. However, after this, the surrounding areas, suburbs, and other metropolitan regions and provincial cities also experienced an increase in land prices. This phenomenon generated the period called the “bubble economy” during which excess funds were invested in land and stock market based on excessive expectations, which resulted in a dramatic rise in stock prices; this was despite the relatively stable real economy and commodity

prices. At that time, the land transaction monitoring system was implemented for registration of land transaction prices in accordance with the revised National Land Use Planning Act. The Basic Act for Land was also enacted in 1989 to debunk the “land myth” and change the way of thinking about land by citizens.

The “land myth” states that “the value of land will never decrease, and land is the most advantageous asset.” Because of continuing increase in land prices during the period of economic miracle, Japanese citizens had come to believe this myth. This widely believed myth led to a vicious circle: landowners were reluctant to sell their lands because they expected an increase in its value, people who wanted to buy created a land rush, and the land prices further increased.

The higher land prices increased economic disparities between landowners and non-landowners, worsened the living environment for working people, and generated a feeling of inequality among citizens. This also made it difficult to acquire lands for public use and interrupted the development of a healthy urban environment. Holding-off selling and hasty purchase of lands caused inefficient use of land, such as an increase in underutilized lands.

Urban Railways

Through service

The full length of the Tokyo Metro Yarakucho Line was opened in 1988 with the line running from southern Saitama Prefecture, through the urban sub-centre of Ikebukuro through Hibiya and Yarakucho in the city centre, and on to the Tokyo waterfront. Some of Japan’s most important facilities, such as the Imperial Palace, National Diet Building and headquarters of major companies border the Yarakucho Line. Creating a through service with the Tobu Tojo and Seibu Ikebukuro lines linked central Saitama Prefecture and the Tokyo Tama area to the Tokyo waterfront via the city centre.

Subsidies for private railroad service providers

To promote large-scale construction of quadrupling lines to enhance transportation on private railroad lines, a new system was established based on the law enacted in 1986 that a railroad service provider could include part of the construction cost in the rail fare, accumulating the increased revenue in the tax-free and using it to pay for construction costs. This subsidy system along with others worked well for the construction of new subway lines, construction of new railroad lines for suburban new towns, and quadrupling of private railroad lines, increasing transportation volume and easing congestion.

Urban development around stations

In 1989, Act on Special Measures concerning Comprehensive Advancement of Housing Development and Railway Construction in

Metropolitan Areas was enacted. Based on this act, the railroad line between inner Tokyo and the Tsukuba Science City was constructed. Residential development of 3,000 hectares along the line is still ongoing under the land adjustment project. The railroad service was operated by a company which was financed by the local and municipal governments along the line. Majority of the railroad construction costs were covered with interest-free financing by the national and local governments.

THE 5TH NATIONAL CAPITAL REGION BASIC PLAN

The idea of correcting the overconcentration in the center of Tokyo was still included in the 5th National Capital Region Basic Plan (1999). However, a series of large-scale redevelopment projects was implemented in the center of Tokyo and in the waterfront areas along Tokyo Bay in the late 1990s to the early 2000s.

Figure 8 Tokyo Subway Map

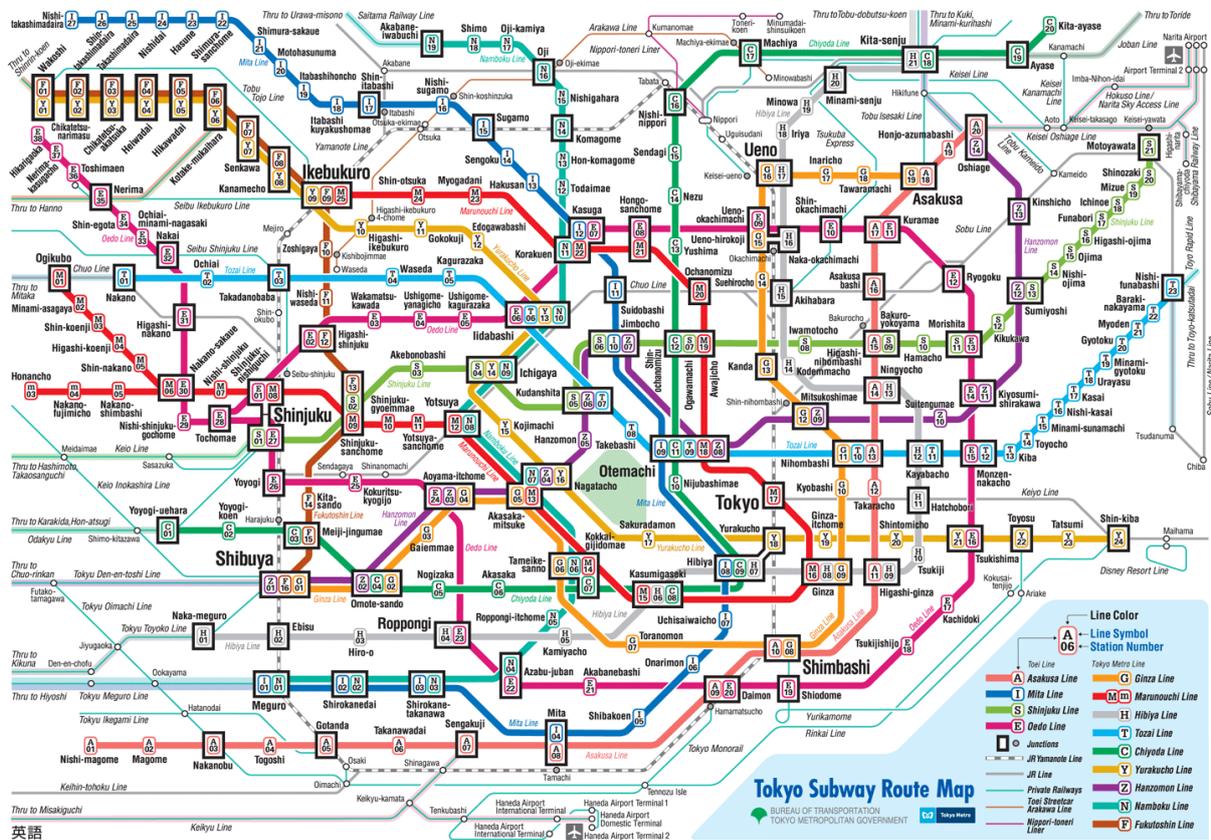
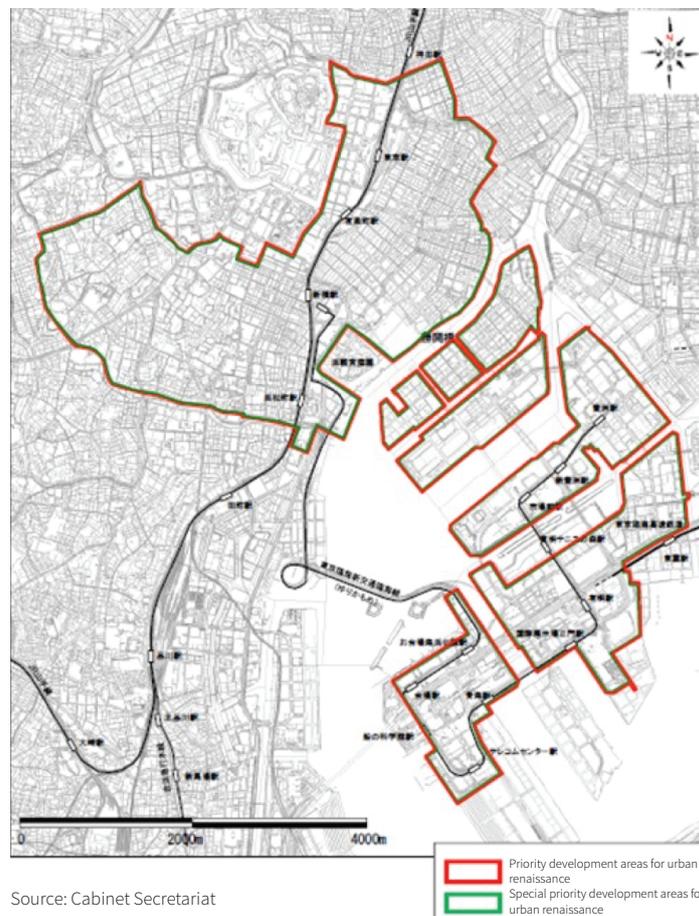


Figure 9 The Centre of Tokyo and the Tokyo Bay waterfront



In May 2001, the Urban Renaissance Headquarters was established under Prime Minister Koizumi (led by the prime minister) to seriously work on urban renaissance. According to the Basic Policies for Urban Renaissance (July 2002), urban renaissance has three meanings: 1) enhancement of the attractiveness and international competitiveness of Japanese cities, 2) promotion of the utilization of funds and know-how from the private sector for urban renaissance, and 3) elimination of bad loans through land liquidation. In June 2002, the Law on Special Measures for Urban Renaissance was enacted and a basic mechanism was developed to support urban renaissance in terms of urban planning and business systems, taxes, and financials. Among the broad range of policy measures, which the policies for urban renaissance covered, easing of the floor area ratio regulation had the greatest effect.

This stimulated private investment in large cities, such as the center of Tokyo, assisted redevelopment projects, and brought about condominium boom. The value of land in urban areas including Tokyo, increased enormously, aiding revitalization of the economy.

In 2011, the Law on Special Measures for Urban Renaissance was revised for improving international competitiveness, and the Special Priority Development Area for Urban Renaissance system was established.

In the wards of Tokyo, to date, eight priority development areas for urban renaissance (including six special priority development areas) have been designated in the center of Tokyo and along the Tokyo Bay waterfront. In these areas, urban renaissance has been conducted for increasing international

competitiveness of Tokyo through high-quality development plans using ideas taken from the private sector.

The Housing Construction Planning Act and housing policies

While the five-year plan for housing construction was prepared for eight times, the goals of housing policies changed from the elimination of living shortage to the improvement in the quality of housing in terms of size of rooms, safety and comfort, the use of market functions, and the effective use of the existing housing stock. In 2006, the Basic Act for Housing was enacted as an institutional framework instead of the Housing Construction Planning Act.

In the 1990s, Japan was one of the countries with the highest national income per capita in the world. However, the effects of this were not felt by the citizens that much, and in particular, the results of a survey suggested that the quality of life of the residents was lowest in the suburban prefectures in the Greater Tokyo Metropolitan Area. Some of the largest factors of this were higher land values, housing problems, and a long commute related to the land prices. Based on economic principles, the value of land will increase along with economic growth and population increase in urban cities. However, an excessive increase in the land prices could interfere with healthy economic growth and welfare of citizens. To avoid this, it is necessary to understand that the public use of land should be prioritized while developing a detailed land usage plan, evaluating the lands appropriately, and calling on landowners for a fair share through a land holding tax.

Regulation for the establishment of factories and universities

The regulations for factories and universities under the Factory Limitation Act were maintained for a long time, but they were drastically eased in 1999 and then repealed in 2002. This was because the concentration of the population and industries in the built-up areas

was diminishing, which called for modifications in the regulations to at least partially reverse the trend. This led to the plea from the local governments and the economic organizations for easing or abolition of the regulations. The new construction and relocation of the universities to the wards of Tokyo became marked after the repeal. In 2017, the central government issued a policy that prevented universities in the wards of Tokyo to increase the number of students. This policy was formulated out of concern of excess concentration of students in Tokyo causing difficulty in management of provincial universities and to prevent potential decay of the surrounding areas of Tokyo from which universities moved.

Population Dynamics of the NCR Basic Plans

The actual and estimated population for the National Capital Region Basic Plans have been slightly off mark during some of the plans, are shown in figure 11. The estimated population for the 3rd Basic Plan was 400,000 higher than the actual population, while the estimated population in the 4th Basic Plan was 400,000 lesser than the actual number. For both the plans, there have been obvious differences in the estimated and actual population, but small. However, the projected population for the 5th Plan was 1.6 million lesser than the actual figure. The reason for this under-estimation was the real-world population recovery, particularly in inner Tokyo, while the 5th Plan assumed that the temporarily slowed population inflow in the early 1990s would continue at that trend. This difference could perhaps be attributed to the desire to ease the population concentration in Tokyo through the plan, but no effective measures were taken in that direction.

Urban Railways

The development and usage of urban railroad system in Tokyo metropolitan area has been a direct function of population growth and concentration. Tokyo was the central hub of a trunk-line network radiating to every part of the country. These trunk lines naturally determined

COMPARATIVE FEATURES OF FIVE NCR BASIC PLANS

Capital Basic Plan (Year of Formulation)	First Plan July 1958	Second Plan October 1968	Third Plan November 1976	Fourth Plan June 1986	Fifth Plan ¹ March 1999
Period	Target Year: 1975	Target Year: 1975	FY: 1976-85	About 15 years from FY 1986	FY 1999- 2015
Background	Response to the concentration of population and industries into Tokyo. Necessity to build the capital region appropriate as a center of politics, economy and culture.	Change in social conditions along with high economic growth. Review of the Green Belt Vision and the ensuing designation of urban development areas.	Change in economic and social conditions due to the first oil crisis.	Formulated towards the twenty-first century in light of social changes such as a stable trend in modest population growth, internationalization, aging society, informatization, progress of technical innovation.	Correction of polarized dependence on central Tokyo. Promotion of the development of “core business cities” as the center for regional cooperation aiming to attain a “decentralized network structure.” Aimed for the safe capital region while coexisting with the environment.
Target Areas	Areas within a 100-km radius of central Tokyo	Tokyo, Saitama, Chiba, Kanagawa, Ibaraki, Tochigi, Gunma, Yamanashi	Same as on the left	Same as on the left	Same as on the left
Population	Trend population (26.6 million, 1975). Control in built-up areas, absorption in urban development areas	Trend type. Population forecast for the whole Capital Region in 1975: 33.1 million	Control type. Control in the whole Capital Region; 38 million in 1985. The social decrease in Tokyo metropolitan area is slightly. The increase in the surrounding area is moderate.	Considering the trend of (mainly natural) growth of population, reduce social increase in the whole capital region up to 40.9 million in 2000	Faced population decline. The population in the Capital Region was estimated to reach a peak of 41.9 million in 2011 and decline to 41.8 million in 2015

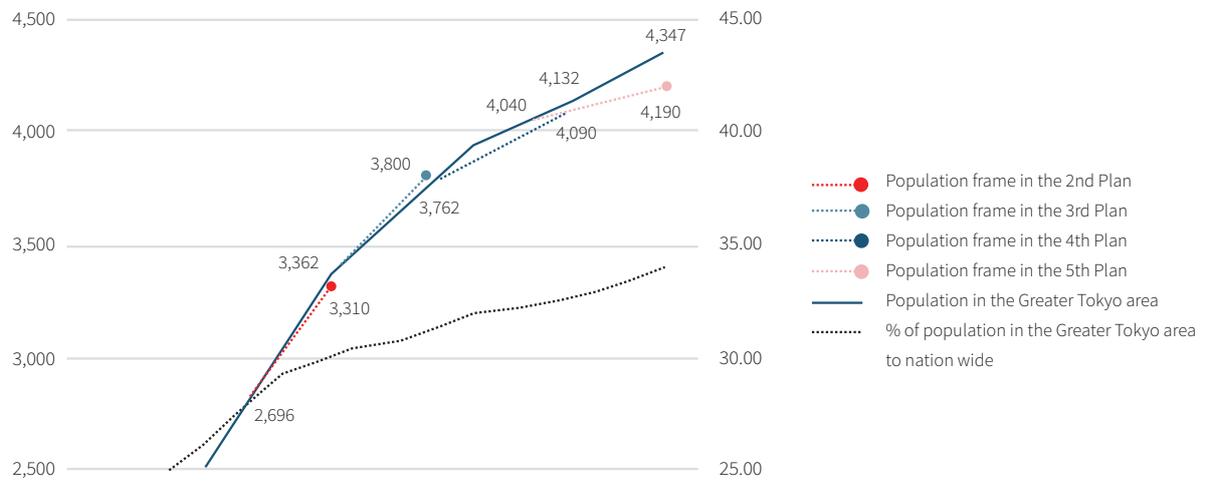
<p>Direction of local development</p>	<ul style="list-style-type: none"> □ Set up suburban areas (Green Belt) around built-up areas to control the expansion of the built-up areas □ Develop satellite cities in urban development areas. Ensure absorption and settlement of population and industries. 	<ul style="list-style-type: none"> □ Reorganize the urban space in built-up areas as areas that share the Capital functions □ Set up suburban development areas instead of suburban areas. Ensure systematic development of urban areas and their harmonious coexistence with green spaces □ Continue to promote the development of satellite cities in the surrounding urban development areas 	<ul style="list-style-type: none"> □ Correct the polarized dependence on central Tokyo and make efforts to develop nucleus cities, thereby developing a multipolar regional complex □ Enhance social and cultural functions of the surrounding areas, thereby developing them as outer metropolitan areas where people are free from commuting to metropolitan areas 	<ul style="list-style-type: none"> □ As for Tokyo metropolitan region, correct the structure of polarized dependence on the Wards area in Tokyo, especially, central Tokyo, develop independent urban regions with the focus on core business cities, and reconstruct them into a region of multi-core and multi-sphere structure □ As for the surrounding areas, promote the accumulation of urban functions mainly in major urban regions, aim to reinforce inter-regional mutual coordination and improve regional independence. 	<ul style="list-style-type: none"> □ Divide the National Capital Region into five regions including the Tokyo metropolitan area (i.e. central Tokyo and its suburban areas) and North Kanto area, thereby promoting development that suits to each area □ As for central Tokyo, promote reorganization and development of the urban spaces (e.g. urban residential areas) □ As for suburban areas, develop circular core urban cities (i.e. a band of core urban cities in a circular pattern), thereby ensuring proper sharing of roles with central Tokyo
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1 The revision of the Law in 2005 integrated the Basic Plan and the Development Plan into the “Development Plan”, the old Basic Plan was retained as the “Basic Part” of the ne “Development Plan” that was adopted in September 2006 and positioned as “guidelines for plans concerning the development of the National Capital Region”.

the directions in which commercial districts expanded within the city and out toward neighboring areas. In addition, the development of private railways gave impetus to the

expansion of Tokyo’s suburbs. As a result, Tokyo and its surrounding districts developed more rapidly than other parts of the country.

Figure 10 Demographic changes and estimated population of NCR



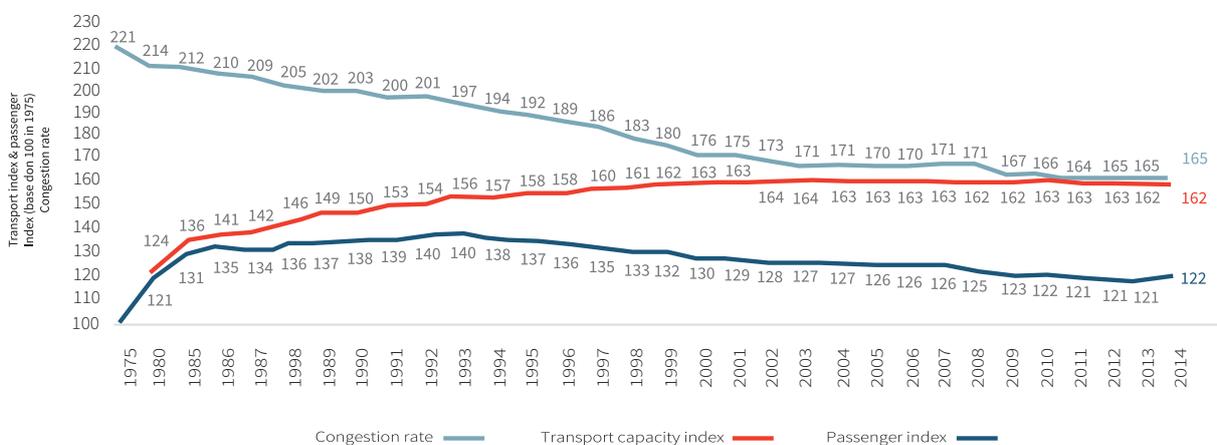
Source: MLIT

The postwar high-economic growth period and Tokyo's further expansion promoted even more development along the rail corridors. This population growth led to increased demand, which in turn prompted railways to run longer trains at shorter headways. When these measures proved unable to cope with increased ridership, other steps were taken, such as quadrupling tracks and constructing overpasses. More subway lines were also built during and after the 1960s to carry the growing number of commuters disembarking from the suburban railway lines. These efforts gave the

Tokyo metropolitan area its interconnected transit system.

The figure below shows trends in the train congestion rate. The number of passengers peaked in 1992 because of policies for enhancement of transportation and efforts by the railroad service providers. In addition, promotion of off-peak commuting has eased traffic congestion recently. However, some railroad lines still experience high congestion rates, and efforts to ease such congestion continue to be required.

Figure 11 Trends in average train congestion rate for major 31 track sections



Source: MLIT

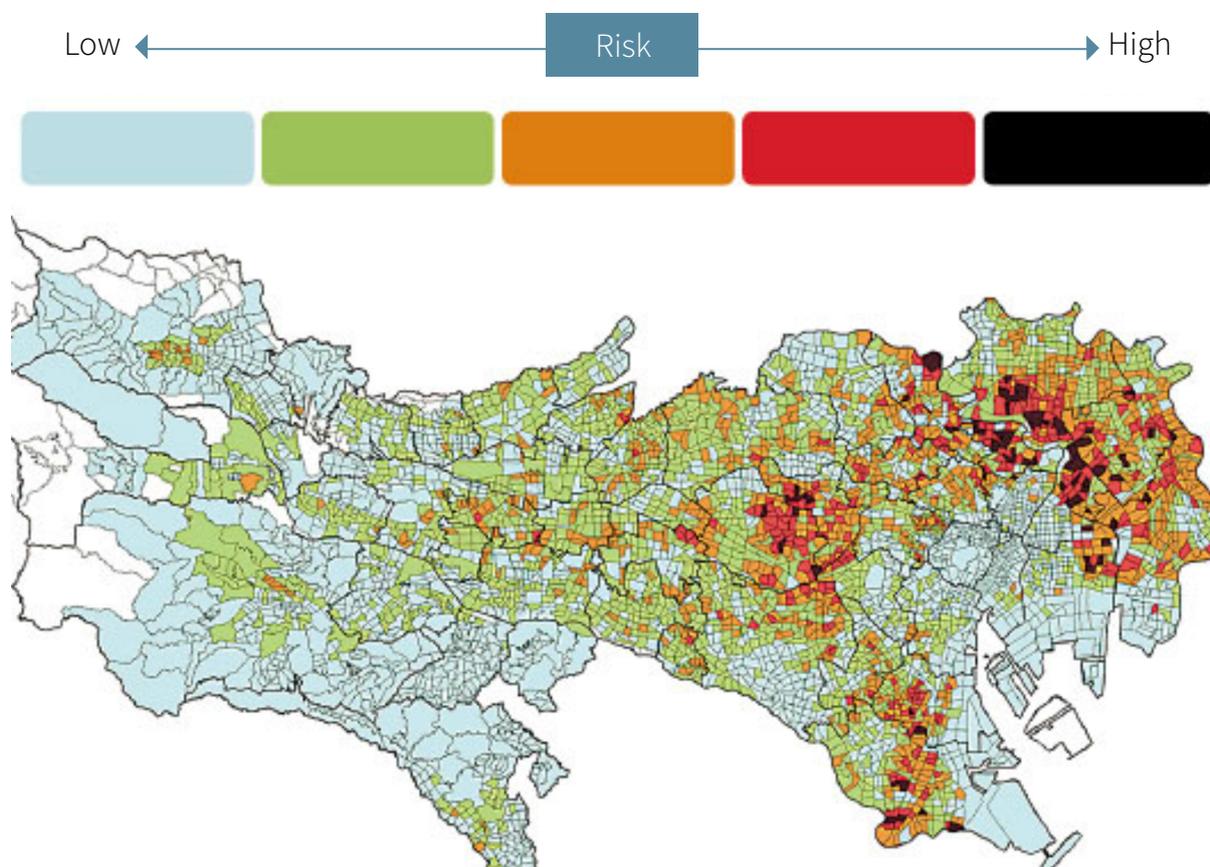
2. CURRENT CHALLENGES AND PLANNING CONCEPTS

The migration of population into Tokyo continues, increasing the population in this area. However, the population growth rate has considerably slowed, and the population in this area is expected to decrease soon.

Present status of housing and residential land issues in Greater Tokyo area
The migration of population into Tokyo continues, increasing the population in this area. However, the population growth rate has considerably slowed, and the population in this area is expected to decrease soon.
The number of housing units in Tokyo is

sufficient, and the quality has improved over the years. However, a higher percentage of households in this area live in smaller homes than the national average. It may become easier for people living in Tokyo to have an acceptable housing environment, including the size of rooms and traffic convenience, than before, but this involves large expenditures.

Figure 12 Hazard map of comprehensive risk of major earthquakes



The largest characteristics of Tokyo after the bubble burst were the decreased value of land and housing and increased population in the ward areas of Tokyo, which has the highest population growth rate in Japan. The underutilized lands and company houses owned by business entities were sold and reclaimed land along the waterfront of the Tokyo Bay and land for factories and commercial distribution were used for constructing and supplying many condominiums.

There are two regional issues for housing and residential land in Greater Tokyo Metropolitan Area. First, there are many urban districts in which old wooden houses are lined up close together along narrow roads with few open spaces, such as parks, approximately 10 km away from the center of Tokyo. These urban areas are the results of the urban sprawl before the war. They were included in the post-war reconstruction project, but this was not carried out in the end. Instead, many wooden apartment buildings were constructed in the 1960s for renting to young workers and single households. Such apartments have been torn down and new ones have been recently built from reinforced concrete, but these districts are still densely overcrowded areas with small houses.

If Tokyo suffers a large-scale earthquake, these areas will be at a high risk of building collapses, fires, and fire spread. In addition, evacuation, firefighting, and rescue operations will be difficult.

The second issue is about the surrounding areas, i.e., those located 40 km from the center of Tokyo. These areas were urbanized from the 1960s to the 1980s, and housing complexes, detached houses, agricultural land, and forests coexisted. However, in recent years, the first generation of residents is getting older and their children are living away. The population has decreased and land prices have declined because of re-concentration of the population

in inner Tokyo, and community activities, such as residents' associations, have also declined. Moreover, open spaces and vacant houses are more frequently seen, and daily living has become less convenient for those who do not drive because retailers, such as supermarkets, have withdrawn, and public transportation services have been reduced.

These two issues are caused by nonsystematic urbanization, wherein the infrastructure was not adequately developed through a land readjustment project as they were in the central urban areas of Tokyo during the expansion, and by development of low-density cities in the surrounding areas where green and agricultural lands should have been preserved.

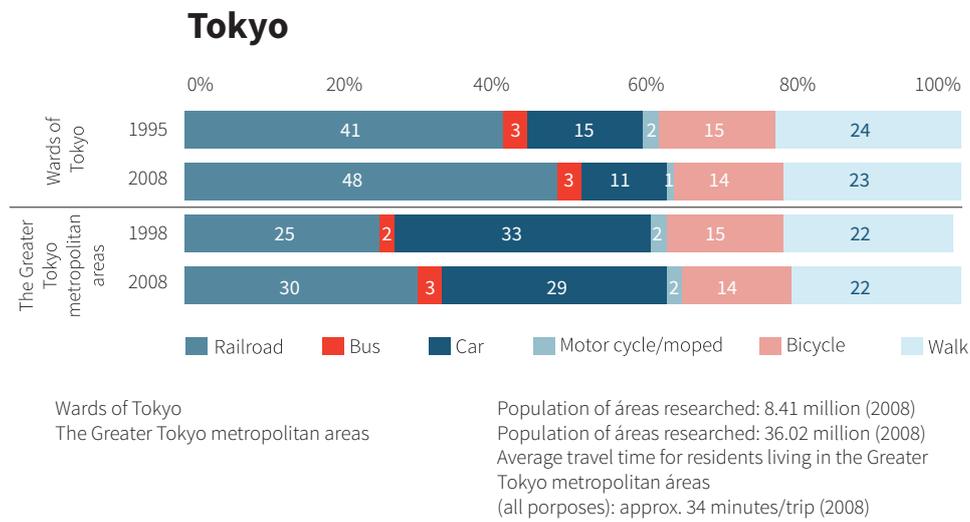
Urban railways

Railways support large cities in Japan for passenger transportation. Residents in the Greater Tokyo Metropolitan Area use public transportation services, particularly railways, much more frequently than those in other major cities in the world, such as London and New York. Commuters in the Greater Tokyo Metropolitan Areas use trains more frequently than those in other cities. Over 3 million people (nearly half of the commuters) who work or go to school in the wards of Tokyo live in the suburbs, and almost all of them must commute by train every day.

If there were no railroad, this huge metropolitan area would not function as efficiently as it does today. Tokyo fares out better than many cities worldwide in terms of the efficiency, dependency, and volume of the passenger traffic on railways.

In Greater Tokyo area, the development of a railroad network and the development of sub-centers and suburban cities have proceeded in concert with each other, improving the convenience of the railroad systems.

Figure 13 Transportation in Greater Tokyo Metropolitan Area



Source: Tokyo Metropolitan Region Person Trip Survey

3. ANNEXURES

ANNEXURE 1: MANAGEMENT OF URBAN RAILWAYS IN TOKYO

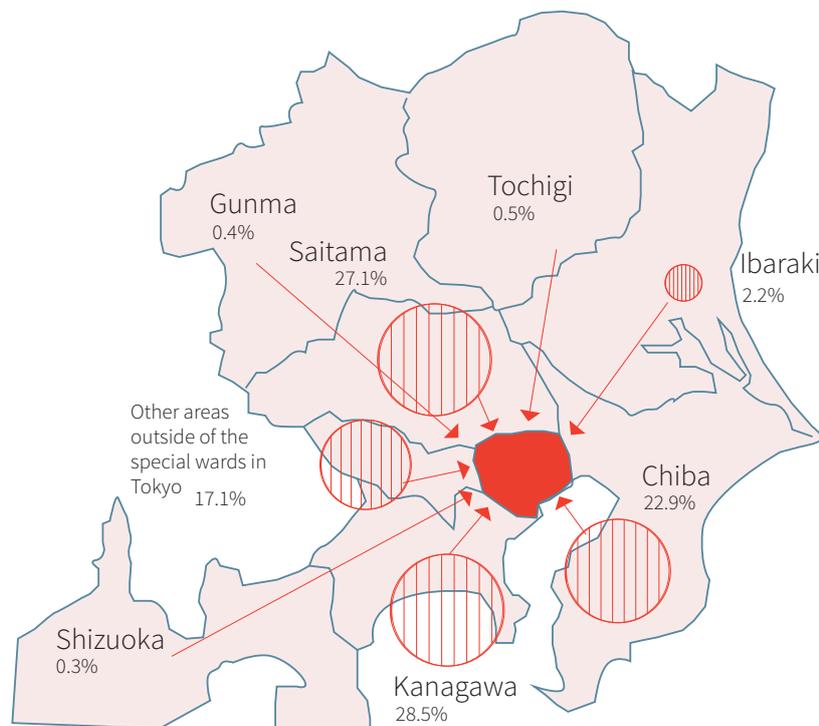
The rail transportation system in the Tokyo area is operated by many different railroad service providers, including private businesses, which are divided into three major groups and others. The first group is the East Japan Railway Company (JR East), which is one of the companies succeeding Japanese National Railways (JNR) which was divided and privatized in 1987. The second group is the subway system. Two subway service providers, the Tokyo Metro and the Toei Subway, operate in Tokyo, and the Yokohama Municipal Subway operates in Yokohama. The third group comprises private railways, which includes eight major providers

and several small- and mid-sized providers. Others are relatively new railways, new transportation systems and monorails financed mainly by local governments.

Between the subway systems and private and JR systems in the suburbs, they provide through services so that commuters do not have to change trains between inner Tokyo and their local stations in the suburb.

In the Greater Tokyo area, the development of a railroad network and the development of sub-centers and suburban cities have proceeded in concert with each other, improving the convenience of the railroad systems.

Figure 14 Inflow population by prefecture (over 14 years old) Special wards of Tokyo (2010)



Source: Tokyo Metropolitan Region Person Trip Survey

ANNEXURE 2: DEVELOPMENT OF NEW CITY CENTERS (SHINTOSHIN) AND DECENTRALIZATION OF BUSINESS OFFICES IN THE SUBURBS

Logic and reality of business core cities

The concept of developing core cities in the Greater Tokyo Metropolitan Area was proposed for the first time in the 3rd National Capital Region Basic Plan (1976). The concept of business core cities was finalized in the Capital Reform Plan and was positioned as a statutory plan in the 4th National Capital Region Basic Plan (1986).

The following reasons backed the development of business core cities.

The first reason was to supply affordable homes and establish workplaces near the workers' dwellings. The land prices were quite high and newly available land was also limited in the areas within a 1-hour distance from the center of Tokyo. However, there was a lot of inexpensive land left in the new city centers approximately 30 km from the center of Tokyo. The second reason was to offer spaces for offices to be relocated from the center of Tokyo, which was expected to soon reach the limit of available land. The third reason was, in addition to the promotion of the decentralization of business offices, to develop new city centers, with high levels of urban infrastructure and transportation networks, near an existing city center with a certain level of agglomeration in prefectural capitals. This was considered to have strong effects on not only the promotion of relocation but also the desirable formation of regional structures with multipolarity and zones.

However, the relocation of business offices from the center of Tokyo to business core cities was affected by economic boom and bust and did not easily move forward, in contrast to the advanced suburbanization of housing and decentralization of factories to the suburbs and provinces.

Many corporations are in the center of Tokyo, which enables them to easily exchange information face-to-face with suppliers, customers, industry groups, supervisory agencies, etc. This is called "economies of agglomeration," the essence of urbanization. For the corporations that frequently need to exchange information, relocation to a business core city in the suburbs would produce an increase in transaction costs, which would negate the saving from office rental fees. Having an office at the center of Tokyo is also convenient when going abroad or traveling to anywhere else in Japan. Also, employees are less willing to move in cases where the workplace or schools of their family members are in central Tokyo or in other locations.

To promote relocation, placing a heavier burden of taxes on corporations located in the center of Tokyo or giving preferential treatment to corporations relocating to a business core city was also considered. However, the former was met with strong resistance by the business community, and the latter was given up because there was no need to favor business core cities over provincial cities as a national policy. The policy actualized for the business core cities included the development of high-quality urban infrastructures, construction of symbolic facilities (such as international conference centers), and the improvement of the transportation network (such as the construction of new railroad stations and urban expressways), while the effect of the promotion of the relocation or establishment of company offices was limited.

Why do companies concentrate in the center of Tokyo?

Why, in Japan, do head offices of large companies concentrate in the center of Tokyo? Office areas are decentralized nationwide in the U.S. and Germany, while many companies are in the suburbs and not only in Inner London in the U.K. or in the City of Paris in France.

One of the reasons is that Tokyo is the center of Japan, having an extremely strong gravity politically, economically, and culturally. In addition to this, the following reasons can be pointed out: it is easier to construct a large-scale building in Tokyo than in Paris or London because of less strict regulations, such as for urban planning; Japanese workers are not so cost-conscious about a long commute to work; there is a

continuing business practice of placing importance on face-to-face contacts; negative factors of large cities, such as security concerns and air pollution are not so serious in Tokyo.

Relocation of governmental offices to the Saitama New Urban Center

In Japan, one of the examples of successful decentralization of offices to a new city center is the collective relocation of governmental offices to the Saitama New Urban Center (Saitama Shintoshin).

The relocation of branch offices of national government ministries and national research institutions was specified for the first time as a statutory plan in the 4th National Capital Region Basic Plan (1986). This was based on discussions with the respective ministries, but when and which institutions would relocate was not determined, and the National Land Agency that formulated this Plan could not give orders to the relevant ministries for such relocation.

When the Takeshita Cabinet was formed in 1988, the relocation of governmental offices, etc. became one of the primary subjects concerning the prevention of excess concentration in Tokyo. Based on the Multi-Polar Patterns National Land Formation Promotion Act, the government decided to work on the relocation of governmental offices and affiliated corporations, which did not need to be in the wards of Tokyo for their business practices, out of the wards of Tokyo.

The Saitama New Urban Center was selected for the relocation of branch offices of national government ministries, which govern the capital region, because it is in the north of Tokyo, is near a bullet train station, and had land available, which was previously the site of the Japan National Railways' train yard. The smooth promotion of the collective relocation was considered in a liaison conference in the presence of relevant ministries and agencies and a plan for the development of governmental facilities was determined in 1993. The infrastructure development as part of the land readjustment projects and the construction of the government office complex proceeded, and 17 governmental agencies with approximately 6,300 employees relocated by 2000. This is a good example of the realization of a policy based on a political decision, but also the result of the National Capital Region plan prior to this policy, and of the coordination during the liaison conference for the plan's realization.

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