

Community Earthquake Risk Assessment Study

In accordance with Article 12 of the Tokyo Metropolitan Earthquake Preparedness Ordinance, community risk levels are scientifically assessed and made public about once every five years with the following objectives:

- (1) To be used as an indicator for city planning with an eye to earthquake resistance
- (2) To help select districts to implement measures aimed at reducing the impact of earthquakes
- (3) To deepen the understanding of Tokyo residents with respect to earthquakes and heighten awareness of disaster prevention

In the seventh survey, for which the results were announced by the TMG in 2013, 5,133 communities in urbanized districts were examined. Each community's risk of building collapse and risk of fire resulting from earthquakes were assessed. Using the "combined risk," which combines the two risk assessments, the survey rates communities on a scale of five (high risk) to one (low risk), according to the each community's vulnerability to hazards.

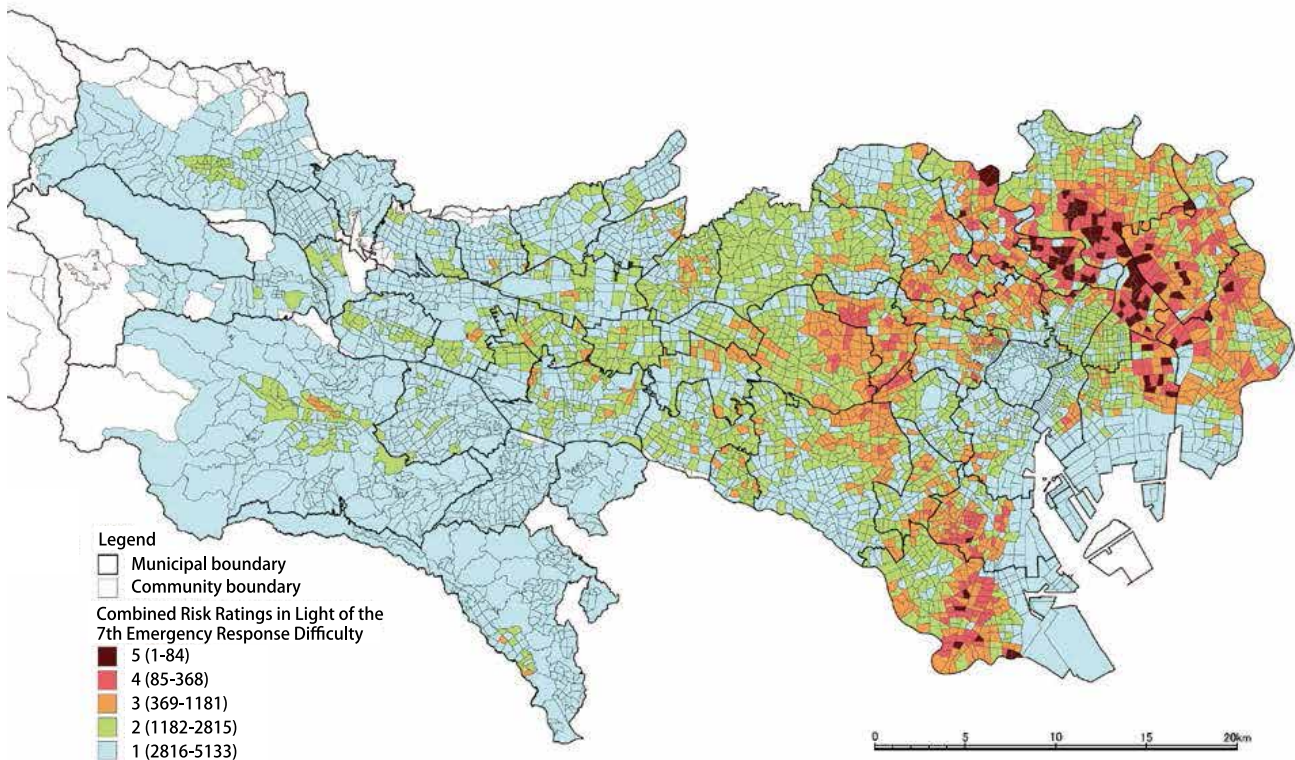
In addition, the TMG also assesses each community's degree of "emergency response difficulty," or how easy (or difficult) it is to conduct rescue activities in stricken areas and evacuate from them, and releases a risk rating that takes this index into account.

Designation of Evacuation Areas and Evacuation Routes

In order to protect the lives of residents from major urban fires caused by earthquakes, in the Tokyo ward area, the TMG has pre-designated safe locations to be used as evacuation areas based on the Tokyo Metropolitan Earthquake Preparedness Ordinance, and strives to familiarize residents with these locations.

In evacuating to a designated evacuation area, the route a resident uses is, in principle, up to the individual. However, in areas where residents must travel long distances to reach the evacuation area, or those in which the risk of the spread of fire is particularly high, the TMG has designated evacuation routes to guide evacuees safely and smoothly, based on the ordinance.

In order to reflect changes in the city and fluctuations in the population, the designation of evacuation areas and routes are reviewed about once every five years. In the May 2013 revision, 197 locations were designated as evacuation areas and approximately 54 km of roadways designated as evacuation routes.



Community Earthquake Risk Assessment(Combined Risk Ratings in Light of Emergency Response Difficulty)

Promoting the Seismic Resistance of Buildings

Amid the pressing urgency to prepare for an earthquake directly hitting the capital, in March 2007 the TMG formulated the TMG Plan to Promote Seismic Retrofitting (latest revision: April 2014) with the aim of making Tokyo a disaster-resistant city and protecting the lives and property of its residents. In addition to outlining the current state with respect to seismic retrofitting of buildings and goals to be achieved, the plan sets forth a basic policy on seismic retrofitting and a specific direction for policy implementation. With the cooperation of the municipalities, the TMG is working to advance the seismic evaluation and seismic retrofitting of buildings in Tokyo.

Specifically, based on this plan, along with working to inform building owners about the necessity of seismic resistance, the TMG provides technical assistance to owners so that they will take the initiative in enhancing their building's resistance to earthquakes. This includes the establishment of a consultation system; provision of information on seismic retrofitting methods and selection; registration and introduction of offices fulfilling conditions necessary to conduct seismic evaluations; and opening a portal site for central provision of information on earthquake resistance. Due to their highly public nature, the TMG is also working to advance seismic resistance of wooden framed houses in closely-packed housing districts, condominiums, and buildings along emergency transportation roads by subsidizing seismic inspection and retrofitting costs.

Furthermore, with respect to emergency transportation routes, which are the lifelines that enable evacuation, relief and rescue efforts, and the transport of emergency supplies in the event of a disaster, it is essential to prevent the blocking of roads due to the collapse of roadside buildings.

To this end, the Ordinance to Advance the Earthquake Resistance of Buildings along Emergency Transportation Roads was enacted in April 2011 to make it mandatory for owners of buildings located alongside specified routes (*) to carry out seismic inspections and submit a report on the seismic resistance of their building. In line with this, the TMG is also expanding the subsidy system for seismic inspections and the seismic retrofitting of buildings, and is advancing seismic resistance in cooperation with the municipalities. In addition, the TMG supports efforts of building owners along specific routes to retrofit their properties by responding to various types of inquiries through the establishment of a dedicated consultation desk, as well as the dispatch of specialists such as architects, lawyers, and accountants through the seismic resistance advisor system.

Furthermore, the TMG's own Seismic Certification System has been established so that the public can be reassured about the safety of buildings through the wide availability of information on the seismic resistance of buildings. Through this system, the TMG will heighten the awareness and sentiment of residents with respect to seismic retrofitting in order to promote efforts to make the city more resistant to earthquakes.

(*) Buildings fulfilling certain conditions that are located along designated emergency transportation roads (emergency transportation roads that particularly require seismic retrofitting of buildings along the road)



Tokyo Metropolitan
Seismic Certification Mark



Emergency transportation roads to be utilized in the event of a disaster for the transport of relief, etc.

Anti-liquefaction Measures for Buildings

Following the Great East Japan Earthquake, liquefaction occurred not only in waterfront areas, but also in inland areas of Tokyo, causing damage to buildings such as making some wooden structures tilt.

In order to prepare for liquefaction, it is essential to provide information so that building owners and builders can ensure the safety of their buildings. Based on the February 2013 report compiled by a TMG committee made up of geotechnical engineers and other experts, the Guide to Preparing for Liquefaction Induced Damage to Buildings for Tokyo residents was created in cooperation with municipalities to raise awareness among residents. Starting in May 2013, the guide was made available for viewing online and related pamphlets were distributed. Other materials helpful in determining whether the potential for liquefaction exists in a certain area, including past topographic maps and columnar sections showing layers of rock and soil below ground, were also made available. Furthermore, a liquefaction advisor system was established to respond to inquiries from residents.

The TMG also established a portal site that introduces anti-liquefaction measures for buildings, enabling residents to access materials such as a guide and topographical maps from the site.

Promoting Measures for Restoration and Recovery

■ Initiatives Taken Before a Disaster to Guide Recovery Efforts

With respect to post-disaster recovery, initiatives taken before a disaster occurs, including having the government and residents share a common understanding of the guidelines for action and of how the community should be rebuilt after a disaster are of great importance. The Tokyo Metropolitan Government has compiled the TMG Earthquake Recovery Manual (March 2003), which outlines actions to be taken from the outset of the disaster through to recovery.

Every year, in collaboration with the municipalities, the TMG holds urban recovery drills with the aim of fully mastering the steps outlined in the manual, and also holds earthquake recovery symposiums for residents to raise awareness of post-disaster recovery.

■ Post-disaster Risk Assessment in Residential Areas

Post-disaster Risk Assessment in Residential Areas is a system designed to reduce and prevent secondary disasters in the event residential areas are struck by disasters such as an earthquake or torrential rains that have caused major, widespread damage, by enabling the prompt and accurate assessment of the damage and the distribution of information to residents. Based on objective nationwide standards, visible damage is given a numerical score. The results of the assessment are then indicated through three different color-coded stickers, which also list information such as points of caution and where to contact for more information.

Working with the municipalities, the TMG trains risk assessors, and is also developing a system to cooperate with other prefectures.

■ Post-disaster Emergency Building Risk Assessment

Post-disaster emergency building risk assessment is a system in which buildings that have sustained damage in a major earthquake are inspected by an assessor and classified into three ranks: “Dangerous,” “Use Caution,” and “Inspection Completed,” with the aim to prevent the occurrence of secondary disasters from building collapse and falling debris due to large aftershocks and other causes. Color-coded stickers corresponding to each of the three categories are affixed to buildings to alert residents and passersby of the inspection results.

In preparation for large-scale assessment activities, the TMG is registering architects from the private sector as volunteer assessors. Along with creating a system for conduction of assessments in cooperation with the municipalities of Tokyo, a system making it possible for Tokyo and other prefectures to support each other in such activities is also being established.

Promotion of Comprehensive Flood Control Measures

Following a 2005 torrential downpour which fell at a rate exceeding 100 mm per hour, affecting mainly Suginami and Nakano wards, the TMG formulated its Basic Policy for Measures Against Heavy Rainfall in August 2007, and has been working to improve flood control measures.

However, as torrential downpours that surpassed the established maximum expected rate of rainfall at the time (55 mm per hour) continued to result in flooding, the TMG established a committee to study measures against heavy rainfall. Based on factors such as rainfall characteristics in recent years and the occurrence of floods, the Basic Policy for Measures Against Heavy Rainfall was revised in June 2014.

The revised plan strengthens disaster mitigation measures, including setting rainfall levels for flood protection in light of rainfall characteristics, designating river basins and districts requiring intensified measures for the development of rivers and sewerage systems, and enhancing flood control measures for large-scale underground shopping areas. In addition, the TMG is working to further strengthen measures against torrential rain by setting initiatives through the year 2025 that also cover the Tokyo 2020 Games.

Using urban development as an opportunity to promote the creation of a disaster resilient city

In preparing for a major disaster such as an earthquake that directly strikes the capital, measures such as enhancing the capacity of buildings so that they can function more independently following a disaster, making it possible for employees and others to take refuge inside the building, and securing facilities that will take in stranded commuters for a time until it is possible for them to return home (temporary accommodation facilities) are crucial to strengthening urban disaster response capabilities. To this end, the Bureau is using urban development as an opportunity to create a disaster resilient city, including providing guidance on the creation of warehouses to store emergency supplies and temporary accommodation facilities to large-scale projects that apply various urban development schemes.



Development of Core Areas through Private Sector Collaboration and Support

In the heart of the city, the Tokyo Metropolitan Government is leveraging the dynamism of the private sector to promote urban development through public-private collaboration in order to advance the formation of an international financial center and other urban spaces that have the elegance and multi-functionality befitting an international business center.

Additionally, in the Priority Development Areas for Urban Renaissance designated according to the Act on Special Measures Concerning Urban Renaissance, Tokyo is also striving to boost international competitiveness and the appeal of the city by, among others, attracting outstanding projects by private developers.

■ Otemachi/Marunouchi/Yurakucho District

In 1996, the TMG, together with Chiyoda Ward, the East Japan Railway Company, and local landowners and leasehold owners, established the Panel for Otemachi/Marunouchi/Yurakucho District Community Development. In this way, the public and private sectors are cooperating to advance the creation of an attractive area, bustling with activity, which has an elegance and charm befitting the “face of Tokyo, Japan’s capital.”

In this district, about 26 buildings have been reconstructed up to now, creating an area that is versatile in function with high quality business, cultural, and commercial facilities. Notably, in the Otemachi district a serial redevelopment project utilizing land where joint offices of the central government once stood is being advanced with the aim to renew the district’s functions as a business nerve center and strengthening business support functions. The first and second phases of development have been completed. The third phase of development is currently underway, and a review of the implementation of the fourth phase is set to begin.

Furthermore, along with preserving historic sites such as the Meiji Seimei Building, the creation of landscapes by taking an all-encompassing design approach was advanced for the Tokyo Station Marunouchi Side area, with a portion of the Gyoko Dori Avenue project completed in 2010, followed by the restoration of Tokyo Station’s red-brick station building in 2012.

In order to renew international business centers within the city, the TMG will continue to promote urban development through public-private collaboration.

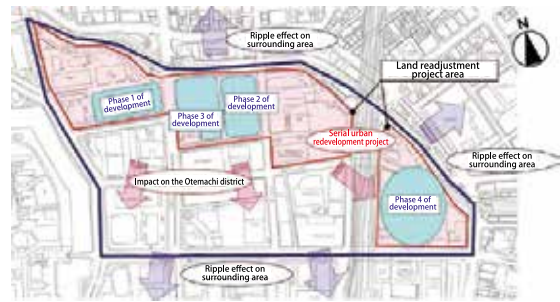


Image of the Otemachi serial redevelopment project

■ Development of Shinagawa/Tamachi Station District

The overall potential of the Shinagawa/Tamachi Station district is growing due to developments such as further increase of regular international flights to and from Haneda Airport and the decision to launch services of the Linear Chuo Shinkansen high-speed maglev train line in 2027. With this area home to large parcels of vacant or underutilized land, and its designation as a Special Priority Area for Urban Renaissance in January 2012 and a National Strategic Special Zone in May 2014, development that utilizes the dynamism of the private sector is expected to further advance.

Based on these developments, the TMG announced a revised version of the existing Urban Development Guidelines for the Shinagawa/Tamachi Station District in September 2014, making “Shinagawa—an international hub to drive Japan’s future growth” the vision for the area. To realize this vision, the TMG will advance the realignment and improvement of Shinagawa Station, as well as the development of priority development areas which serve as the core of area development, while fully leveraging the strengths of the private sector.



Shinagawa/Tamachi Station District

■ Promotion of Land Use Change for Large Vacated Sites

With regard to the development of large vacant parcels of land, including the former sites of the Japan Defense Agency's Hinokicho office building in Akasaka 9-chome, Minato Ward, and the Ishikawajima-Harima Heavy Industries factory in Toyosu 2-chome/3-chome, Koto Ward, the TMG is working with the local wards to encourage and support high quality development projects, such as determining the District Plans for Areas Designated for Redevelopment Promotion, which set out new land use plans.



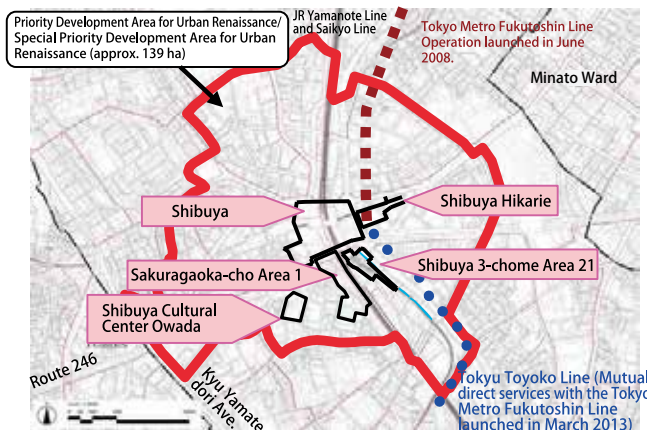
Toyosu 2-Chome/3-Chome

■ Development of the Area around Shibuya Station

In the Shibuya Station area, developments such as the relocation of the Tokyu Toyoko Line underground and commencement of mutual direct services with the Tokyo Metro Fukutoshin Line in March 2013 have provided the opportunity to begin integrated redevelopment of the surrounding area that combines upgrading the functionality of station facilities and realigning urban infrastructure.

TMG will continue to work in cooperation with the central government, Shibuya Ward, railway companies, and private developers, offering appropriate guidance to private-sector development projects in the area around Shibuya Station. By integrating reorganization and development of urban facilities with that of the surrounding area, including improvements to railways alongside the redevelopment of station plazas and the creation or reorganization of pedestrian walkways, the TMG will greatly improve the safety and convenience of Shibuya Station and the surrounding area.

In addition, the TMG will promote urban planning aimed at strengthening international competitiveness by adopting projects that enhance Shibuya's functionality as a center to promote culture and exchange, as well as supporting the advanced business functions and growth of industries such as the creative contents business.



Shibuya Station Area Special Priority Development Area for Urban Renaissance/Priority Development Area for Urban Renaissance



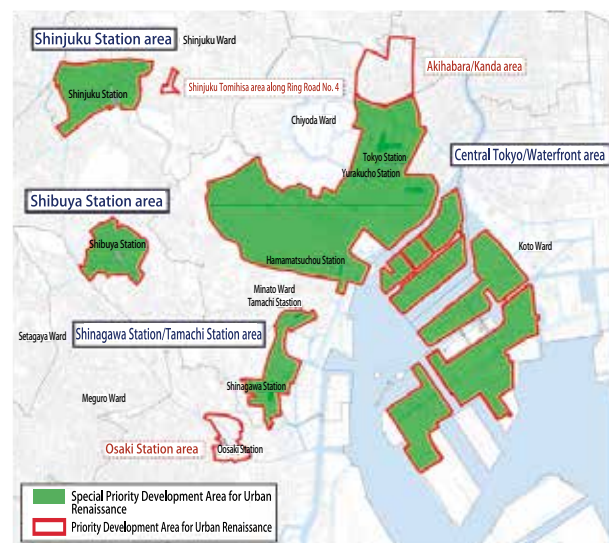
Image of the Shibuya Station Area

■ Urban Renaissance Projects

The TMG is implementing urban development to establish charm and vitality befitting an international city.

Through high-quality private sector development projects carried out in Priority Development Areas for Urban Renaissance based on the Act on Special Measures Concerning Urban Renaissance, urban development, including initiatives to boost international business functions, reduce environmental impact, create urban greenery, and form an elegant cityscape, is promoted to strengthen international competitiveness.

Also utilizing the Special Priority Development Area for Urban Renaissance system established under the revised 2011 Act on Special Measures Concerning Urban Renaissance, the TMG will continue to advance urban renewal with the aim to build up international competitiveness through quality private-sector projects.



Special Priority Development Areas for Urban Renaissance/
Priority Development Areas for Urban Renaissance

Use of Metropolitan and Central Government-Owned Land

To promote the urban renewal of Tokyo, the Bureau is undertaking projects that use metropolitan government-owned land and effectively utilize the vitality and resources of private firms. For example, land created through the rebuilding of metropolitan housing developments can be utilized to encourage people to live in central Tokyo, improve districts with close-set wooden houses, and deal with the graying of society with the support of the private sector.

The Bureau is also advancing “urban renewal upgrade projects” that effectively utilize several plots of metropolitan government-owned land.

Furthermore, regarding land owned by the central government as well, the Bureau will work with the central government and local municipalities to establish high-quality urban spaces.

Urban Renewal Upgrade Projects

Urban Renewal Upgrade Projects aim to create a Tokyo that is vibrant and attractive. Under the TMG-wide initiative, the program first establishes a concept tailored to the characteristics of an area and brings in investment and expertise from the private sector to utilize several pieces of metropolitan government-owned land in an integrated manner, while also bringing about development of the surrounding area.

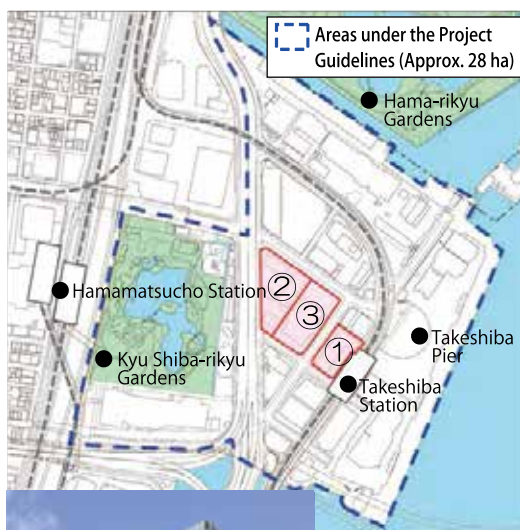
In March 2010, the Takeshiba district was announced as an area for implementation of the project, and the Shibuya district was announced in February 2011. Developers selected through public invitations for proposals for the Shibuya district (Miyashita-cho apartment complex) in March 2012, and the Takeshiba district in May 2013, have entered into a basic agreement with the TMG, and are now working on projects based on the proposals submitted.

• Takeshiba District

Metropolitan government owned-land slated for use: Approx. 1.5 ha

Former sites of ① the Tokyo Metropolitan Archives, ② the Tokyo Metropolitan Inspection Institute of Weights and Measures, and ③ the Tokyo Metropolitan Industrial Trade Center
<Concept>

To establish a dynamic center for business and commerce that provides an environment rich in greenery, the ocean, and culture



Conceptual drawing of the Takeshiba District project
(Final plans subject to change dependent upon future negotiations.)

• Shibuya District

Metropolitan government-owned land slated for use: Approx. 2.6 h

Former sites of ① the Tokyo Metropolitan Miyashita-cho apartment complex, ② the Tokyo Metropolitan Children’s Hall, and ③ the Tokyo Metropolitan Aoyama Hospital
<Concept>

To create a flow of people linking the Shibuya, Aoyama, and Harajuku areas, and form bases setting trends for lifestyle and culture, the fashion industry and other fields



(1) Conceptual drawing of the project at the former site of the Tokyo Metropolitan Miyashita-cho apartment complex
(Final plans subject to change dependent upon future negotiations.)



Urban Development Utilizing Metropolitan Land

The TMG is implementing projects in the following four areas using the fixed-term land leasehold system to provide land created through the rebuilding of metropolitan housing to private developers selected by public tender.

Minami-Aoyama 1-Chome Apartment Complex Reconstruction Project



In addition to metropolitan housing facilities, construction was completed in March 2007 for private housing for rent, ward facilities, a group home, and commercial and business facilities.

Konan 4-Chome Third Apartment Complex Reconstruction Project



This project, completed in October 2008, provides affordable condominium-style housing aimed at middle-income level families, as well as daycare and commercial facilities.

Kachidoki 1-Chome District Project



Completed in January 2011, this project includes private sector rental housing, including units for families with children, as well as facilities offering child-rearing support and commercial facilities.

Higashimurayama City Honcho District Project



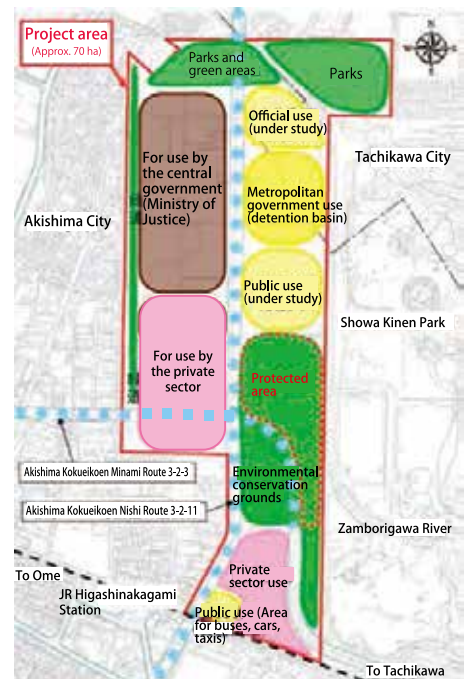
This project, completed in March 2011, included the construction of detached housing, a childcare center, social welfare facilities for the elderly, and commercial facilities, as well as roads and parks.

Akishima District (Former site of the Tachikawa Air Base)

This district is approximately 70 ha of central government-owned land spanning the west side of Showa Kinen Park and includes a portion of land reverted to Japan by the United States in 1977 (the former site of Tachikawa Air Base). This parcel of precious, unused land is included in the development area for the “regional core city” of Tachikawa. As such, while promoting the introduction of business and commercial functions, as well as facilities befitting a “regional core city” such as the International Justice General Center (tentative name) the greenery of the Showa Kinen Park will be used to create high-quality urban spaces that are environmentally friendly.

The city plans, including land readjustment projects, were decided in March 2012. Land readjustment projects are being carried out by the Urban Renaissance Agency (UR), an independent administration corporation. In order to ensure the smooth progress of the projects, the TMG will work with the central government, city, and others to provide financial and technical support.

Akishima District Land Utilization Plan for the Former Site of Tachikawa Air Base (October 2014).



Urban development undertaken by the Tokyo Metropolitan Government

Land readjustment and urban redevelopment projects implement comprehensive urban development in an integrated manner such as building roads, parks, and plazas, as well as developing residential land and supplying quality urban housing.

The TMG takes the initiative in implementing projects that are highly public in nature or those that are difficult for the private sector to execute, such as the creation of a new transportation network.

Land readjustment and urban redevelopment projects are also carried out by other entities, including municipalities, individuals, associations, organizations, and public corporations.

Land Readjustment Projects

Land readjustment projects by the metropolitan government are currently underway in nine districts of central Tokyo, the surrounding ward area, and waterfront area, in order to enhance the urban functions of built-up areas and create a highly-convenient city.

Land Readjustment Projects to Develop Large Vacated Sites

Integrated development of the urban infrastructure is underway in the Shiodome district and the surrounding areas, centering around the former site of a Japan National Railways freight terminal, to advance mixed-use development with business, commercial, cultural, and residential facilities (project period: FY1994 through FY2015).



Shiodome area (before project)



Shiodome area (project underway)

Land Readjustment Projects in Redevelopment of Built-up Area

In the Mizue Station West, Shinozaki Station East, Rokucho, Hanahata North, and Tabata districts, the TMG will work to develop a quality living environment in the areas along the Toei Shinjuku Line and the Tsukuba Express Line.



Rokucho district

Land Readjustment Projects in Tokyo's Waterfront Area

In the Harumi 4-chome and 5-chome districts, as well as the Toyosu district and the Ariake-kita district, regional arterial roads linking central Tokyo to the waterfront sub-center area are being constructed and mixed-use development combining business, commercial, cultural, and residential facilities is underway.



Waterfront area

■ Urban redevelopment projects undertaken by the metropolitan government

Two urban redevelopment projects of the metropolitan government are currently underway: the Urban Facilities Redevelopment Project, which develops essential urban facilities such as city-planned roads and promotes intensive use of the land in surrounding areas, is being implemented in one district, and the Urban Redevelopment Project Related to Disaster Reduction, currently implemented in one district, aims to create disaster-resistant communities by developing evacuation areas and routes, and also improving the living environment.

While promoting the steady progress of these projects, the vitality of the private sector is employed through such programs as the designated builder system.

• Urban Facilities Redevelopment Project <Ring Road No. 2 and the Shimbashi/Toranomon District>

In order to respond to the requests of rights holders, who wished to continue to reside at the same location, the system for integrated development of roads and buildings has been employed in the development of Ring Road No. 2 in the Shimbashi and Toranomon districts. By placing the main line of Ring Road No. 2 underground, allowing the space above and below the road to be used for building construction, a building has been completed in Block III.

Construction of the underground portion of Ring Road 2 (the main line) is advancing as a Tokyo Metropolitan Bureau of Construction road project, with the above-ground portion of the project advancing as part of the redevelopment project (project period: FY2002 through FY2019).



Image of the completed Shimbashi/
Toranomon Ring Road No. 2 area

• Urban Redevelopment Projects Related to Disaster Reduction <Kameido, Ojima, and Komatsugawa District>

One of the largest redevelopment projects in Japan is underway in the vast area (approx. 98.6 ha.) of the Kameido/Ojima/Komatsugawa district, which straddles Koto and Edogawa wards. The district is situated on relatively soft soil, has a high population concentration, and has been vulnerable to disaster. Therefore, with the aim to build a disaster-resistant community, the development of a disaster-reduction base has been promoted under the Basic Plan for Redevelopment of the Koto District established in 1969, in order to develop evacuation areas and evacuation routes, as well as to improve the living environment and provide a stable supply of housing (project period: FY1979 through FY2017).



Kameido/Ojima/Komatsugawa Development Area