

## Improvement of Districts With Close-Set Wooden Houses

In the event of earthquakes, districts with close-set wooden houses are expected to suffer major damage such as the outbreak of fires, due to inadequate roads, parks, and other urban infrastructure and the large number of old wooden structures.

In light of the impending threat of an earthquake directly striking the capital and the 2011 Great East Japan Earthquake, the TMG launched the Ten-Year Project to Advance Fire Resistance in Close-Set Wooden Housing Areas in January 2012 to protect the lives of residents and the urban functions of Tokyo. In collaboration with municipalities, the TMG has been implementing measures for accelerating improvements in such areas.

In March 2020, the Basic Policy for the Urban Development Plan for Disaster Resistance was revised, followed by development programs covered by the basic policy in March 2021. The revised basic policy extends use of the Fireproof Zone system and initiatives for the development of Designated Routes for Improvement for five years, intensive measures taken over a ten-year period in development districts where damage is expected to be particularly severe when an earthquake strikes. Through this extension, the TMG will strongly promote the enhancement of fire resistance.

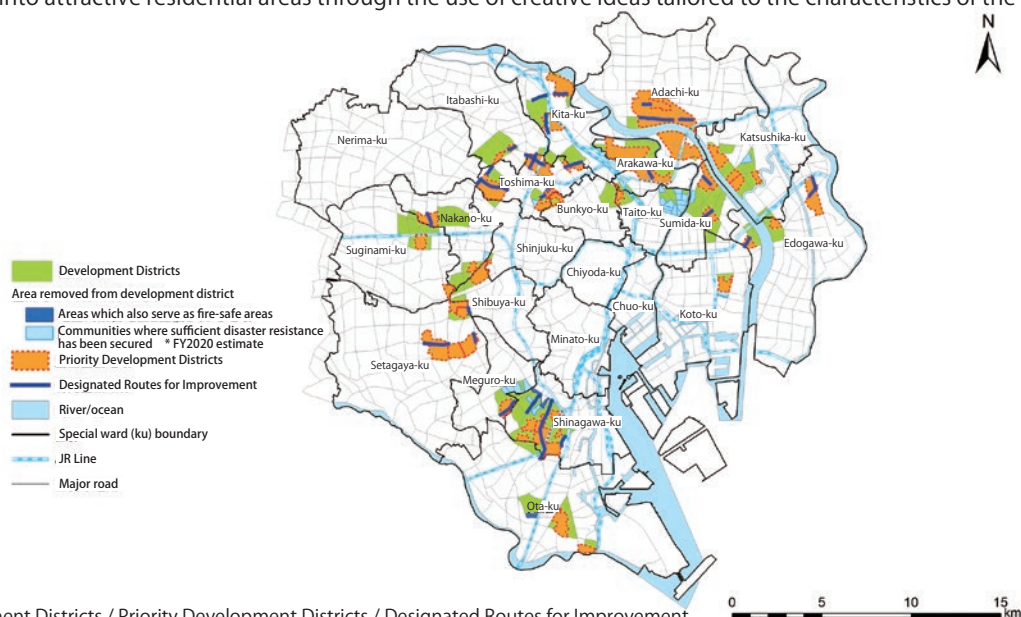
### Urban Development Plan for Disaster Resistance

Drawing on lessons learned from the Great Hanshin-Awaji Earthquake, the TMG formulated the Urban Development Plan for Disaster Resistance in 1996 (revised in 2004, 2010, and 2016). Revisions were made to the basic policy for the plan in March 2020, as well as to development programs covered by the basic policy in March 2021. Through these efforts, the TMG is working to improve the level of disaster resistance in built-up areas. In accordance with the Tokyo Metropolitan Earthquake Preparedness Ordinance, the plan establishes policies for creating firebreak belts, raising the level of fire resistance in districts with closely-packed wooden houses, and other initiatives.

The plan designates areas that are likely to suffer particularly severe damage in the event of an earthquake as “Development Districts” (28 districts covering approx. 6,500 hectares). This includes areas with a high community risk level and an especially high concentration of old wooden structures. The TMG is working to implement an effective combination of projects, regulations, and guidance based on the characteristics of each area. It also designates “Priority Development Districts” (52 districts covering approx. 3,350 hectares) in which various projects contributing to the creation of a disaster-resistant city are intensively carried out. Through the use of the Fireproof Zone system, the TMG will continue providing special support, including subsidies for the rebuilding and removal of older buildings and tax reductions or exemptions (fixed asset tax, etc.), and strongly promote the advancement of fire resistance.

Also in these districts, development of roads, parks, and other basic infrastructure, as well as reconstruction of old wooden houses into fire/quake-resistant homes or shared residences are underway based on policies to regulate and encourage plans such as the project to develop areas with close-set wooden houses and program to develop disaster-resistant blocks.

In addition, when making improvements to areas with close-set wooden houses, the Bureau will also promote their rebirth into attractive residential areas through the use of creative ideas tailored to the characteristics of the community.



Development Districts / Priority Development Districts / Designated Routes for Improvement (as of March 2020 revision to the Urban Development Plan for Disaster Resistance) (Additional revisions made in March 2021)

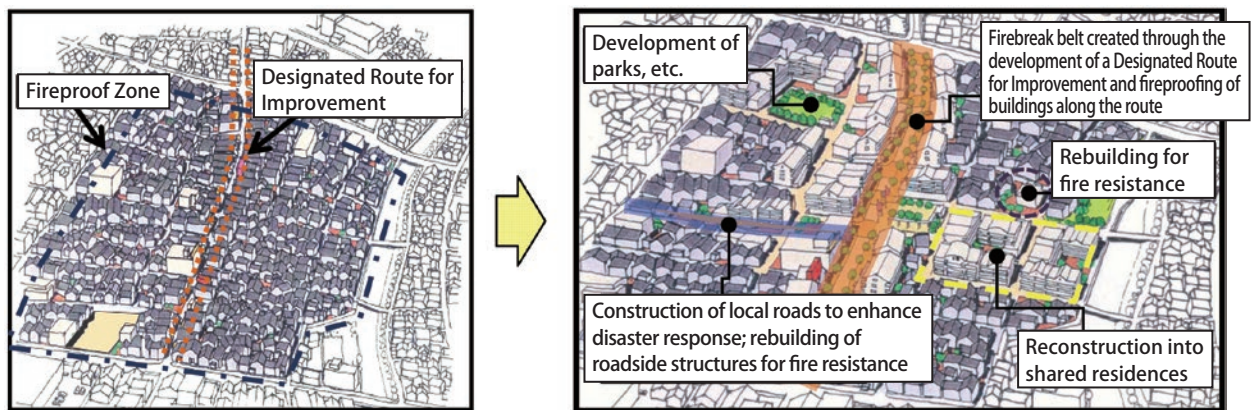


Image of Project to Improve Close-Set Wooden Housing Areas

## ■ Fireproof Zones and Designated Routes for Improvement

To further accelerate improvements in areas with close-set wooden houses, the Bureau is advancing intensive and focused fireproof zone initiatives and the development of designated routes for improvement to act as firebreaks, evacuation routes, and roads to facilitate the passage of emergency vehicles in an integrated manner.

### (1) Acceleration of Efforts to Make Built-Up Areas Fire Resistant in Cooperation With the Special Wards

In March 2013, the TMG launched the program for Special Development Zones to Advance Fire Resistance (Fireproof Zones), in which it extends special support upon requests from special wards in areas that are particularly in need of improvement, and has promoted fire resistance. In April 2021, the fireproof zone initiatives were extended for the next five years, and areas where the program is to be implemented through FY2025 were designated. (52 districts covering approx. 3,350 hectares in 19 cities)

In the fireproof zones, the TMG is promoting reconstruction and removal of old buildings through subsidies and tax reductions or exemptions (fixed asset tax, etc.). In addition, it is also supporting initiatives implemented by special wards by dispatching experts, sharing expertise, and other efforts to promote the fireproofing of districts.

### (2) Construction of Major City-Planned Roads to Stop the Spread of Fire

The Bureau has selected and is advancing the development of Designated Routes for Improvement, roads constructed by the TMG based on city planning (28 sections of road totaling approx. 25 kilometers in length) which will be highly effective in enhancing disaster resistance by blocking the spread of fire and serving as space for evacuation and rescue operations. The TMG will continue to proceed with development of Designated Routes for Improvement while extending special support measures to property rights holders to assist them in rebuilding their lives.

## ■ Improvement of Development Districts Through Construction of Local Roads to Enhance Disaster Response

To improve development districts and accelerate efforts to make them fire resistant, the TMG designates streets that facilitate the passage of emergency vehicles, smooth firefighting and rescue activities, and evacuation as local roads to enhance disaster response in the Urban Development Plan for Disaster Resistance, implements projects to widen the roads, and promotes reconstruction of roadside buildings.

Also, the TMG supports initiatives by special wards (ku) to remove utility poles to prevent them from falling down and blocking such roads following an earthquake.

## ■ Initiatives Taken in Areas Other Than Development Districts

In addition to advancing initiatives to contribute to the improvement of districts with close-set wooden houses, the TMG will also work to maintain and improve disaster resistance as needed in areas with agricultural land where housing is expected to be built in the future, mainly in the Tama area and western special ward area, to create safe and good housing environments.



Image of a local road to enhance disaster response

Example of a project to replace old wooden houses with shared residential buildings in close-set wooden housing districts



## Designation of New Fire Resistance Regulation Zones

To step up the fireproofing of buildings in areas such as districts with close-set wooden houses that pose a high risk when a disaster occurs, zones in which the fire resistance performance of buildings must be enhanced are designated according to regulations stipulated in the Tokyo Metropolitan Building Safety Ordinance.

The regulations state that, as a rule, all buildings must meet or exceed the quasi-fireproof standard, and, of these buildings, those with a total floor space exceeding 500 sq. meters must meet the fireproof building standard.

As of the end of December 2022, a total of 7,100 hectares of land in nineteen special wards and one city (Shinjuku, Bunkyo, Taito, Sumida, Koto, Shinagawa, Meguro, Ota, Setagaya, Shibuya, Nakano, Suginami, Toshima, Kita, Arakawa, Itabashi, Nerima, Adachi, Edogawa wards, and Mitaka City) have been designated to fall under the program. Expansion of designated areas is underway to further enhance safety in built-up areas.

## Integrated Development of City-Planned Roads and Roadside Communities

City-planned roads can block the spread of fire and serve as space for evacuation and rescue operations. As part of projects to construct such roads in areas designated as priority development districts under the Urban Development Plan for Disaster Resistance and other areas, the TMG also promotes the development of roadside communities through the redevelopment of existing buildings into shared complexes and effective land use, to further enhance the level of disaster resistance in those areas.

The Bureau is currently advancing city planning projects in the Higashi Ikebukuro district of Toshima-ku and Auxiliary Route 81 and Kanegafuchi district of Sumida-ku and Auxiliary Route 120 (Phase I) (approved as city planning projects in FY2005); the Jujo district of Kita-ku and Auxiliary Route 83 (Kyu-iwaki-kaido Avenue) and the Meguro Hon-cho district of Meguro-ku and Auxiliary Route 46 (approved in FY2009); the Kanegafuchi district of Sumida-ku and Auxiliary Route 120 (Phase II) (approved in FY2013); the Oyama Central district of Itabashi-ku and Auxiliary Route 26, the Haramachi-Senzoku district of Meguro-ku and Auxiliary Route 46, the Togoshi-koen Station district of Shinagawa-ku and Auxiliary Route 29, and the Shimo district of Kita-ku and Auxiliary Route 86 (approved in FY2014). Of these routes, auxiliary routes 120 (Phase II), 46, 26, 29, and 86 are Designated Routes for Improvement.

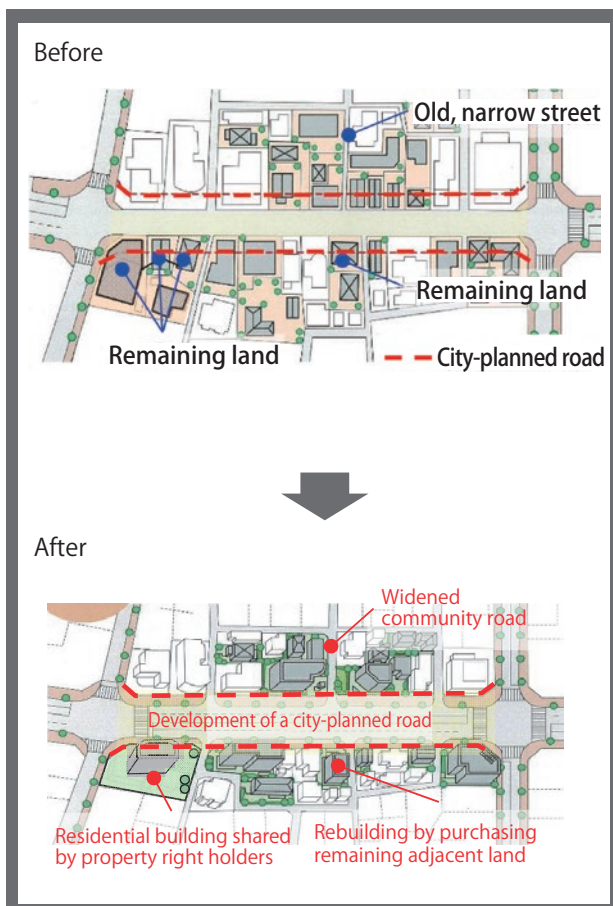


Image of Integrated Development



Community development association



Example of a shared residential building

## Community Earthquake Risk Assessment Study

In accordance with the provisions of 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 deepen the understanding of Tokyo residents with respect to earthquakes and heighten awareness of disaster preparedness.
- (2) To help select districts where measures aimed at reducing the impact of earthquakes will be implemented.

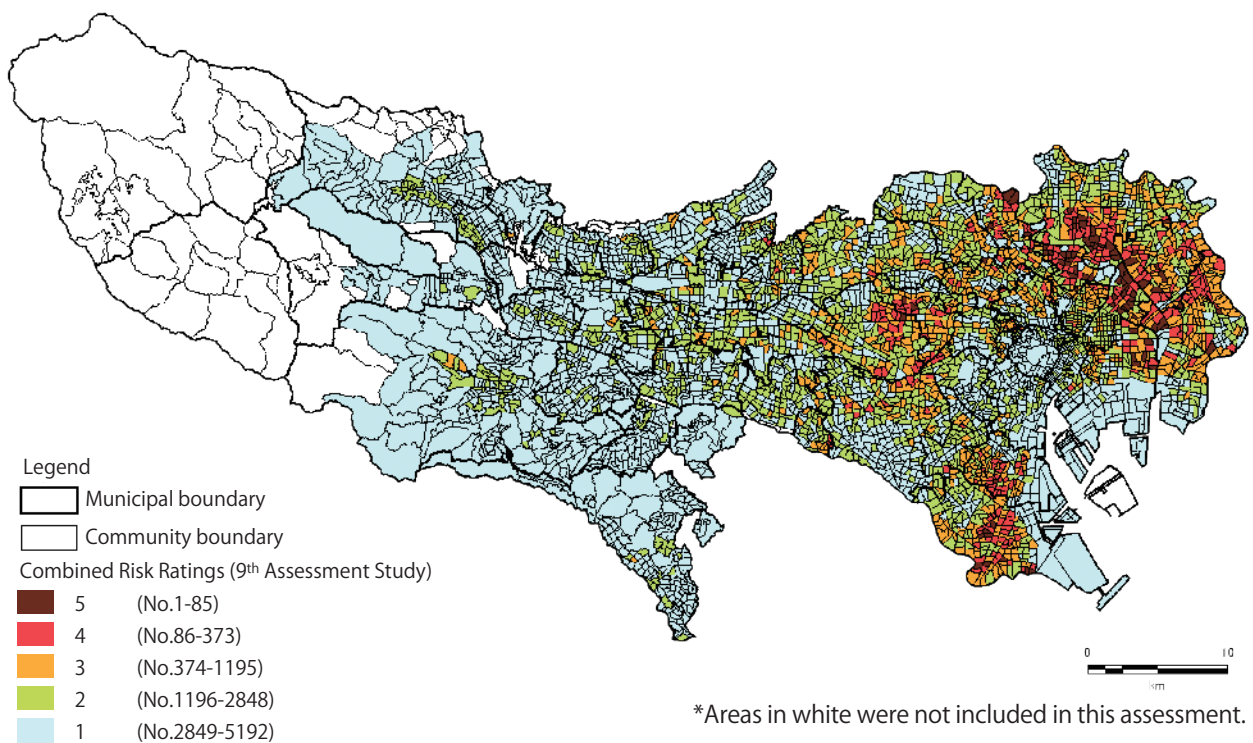
In the ninth survey, for which the results were announced by the TMG in 2022, 5,192 communities in urbanized districts were examined. Each community's risk of building collapse, risk of fire outbreak and spread, and combined risk (a combination of building collapse risk and fire risk multiplied by the emergency response difficulty coefficient) were, rating communities on a scale of five (high risk) to one (low risk) in each category, according to each community's vulnerability to hazards.

## Designation of Evacuation Areas, Fire-safe Areas, and Evacuation Routes

In order to protect the lives of residents from major urban fires caused by earthquakes, in the special-ward area of Tokyo, the TMG has designated locations to be used as temporary evacuation areas until a large-scale fire that is spreading can be extinguished based on the Tokyo Metropolitan Earthquake Preparedness Ordinance, and strives to familiarize residents with these locations. The TMG also designates areas where there is no danger of large-scale fire spread and no need to evacuate as fire-safe areas.

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 high, the TMG has designated roadways for safe evacuation as evacuation routes, based on the ordinance.

In order to reflect changes in the city and fluctuations in the population, the designation of evacuation areas, fire-safe areas, and evacuation routes are reviewed about once every five years. In the ninth revision (July 2022), 221 locations were designated as evacuation areas, 40 locations designated as fire-safe areas, and approximately 49 kilometers of roadways designated as evacuation routes.



**9th Community Earthquake Risk Assessment (Combined Risk Ratings)**

## Promoting the Seismic Resistance of Buildings

Amid the pressing urgency to prepare for a major earthquake directly hitting the capital, in March 2007 the TMG formulated the TMG Plan to Promote Seismic Retrofitting (latest revision: March 2023) 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 the direction for policy implementation. With the cooperation of the municipalities and others, the TMG is working to promote seismic resistance.

Specifically, the TMG educates and provides technical assistance. This includes the establishment of a consultation system; assistance with selection of seismic retrofitting methods; provision of information via pamphlets and a portal site for information on earthquake resistance; and registration and introduction of firms that conduct seismic evaluations on wooden framed houses. Due to their highly public nature, the TMG is also intensively working to advance, particularly of seismic resistance of wooden framed houses in closely-packed housing districts, condominiums, and buildings along disaster response routes by generously subsidizing seismic inspection and retrofitting costs.

Specifically with respect to Disaster Response Routes, which will serve as lifelines for evacuation, emergency services, and rescue operations, the Ordinance to Advance the Earthquake Resistance of Buildings Along Disaster Response Routes which took effect in April 2011, made it mandatory for owners of buildings located alongside specified routes\* to carry out seismic inspections. In line with this, the TMG is expanding subsidy systems and supporting efforts to retrofit properties by responding to technical inquiries and providing assistance with creating plans by dispatching seismic retrofit specialists. Results of seismic inspections are also made public to instill awareness among building owners and serve as information to Tokyo residents. The ordinance was revised in March 2019 to stipulate matters such as the responsibilities of occupants (tenants, etc.) of buildings along disaster response routes, preparing an environment to make it easier for building owners to obtain the cooperation of occupants when carrying out seismic reinforcement work.

In March 2020, portions of the TMG Plan to Promote Seismic Retrofitting were revised, establishing targets for buildings along specified routes from the standpoint of ensuring that roads will be passable following an earthquake through the use of two new indicators: segment completion rate and overall completion rate.

In addition to the launch of support for enhancing the seismic resistance of wooden framed houses built in compliance with the New Seismic Code (introduced June 1, 1981), revisions to the plan made in March 2023 seek to upgrade various measures, including the promotion of seismic inspections for buildings located along general roads, to further advance seismic resistance and achieve the targets set forth in the plan.

\*Buildings meeting certain conditions located along Designated Disaster Response Routes (Disaster Response Routes where seismic retrofitting of buildings along the road is particularly needed)



Disaster Response Route to be utilized for the transport of relief, etc., when a disaster strikes

## Using Urban Development as an Opportunity to Promote the Creation of a Disaster Resilient City

Large-scale urban development projects that apply various urban development schemes must play a leading role in making Tokyo a more disaster resilient city. In addition to ensuring that buildings can function independently following a disaster, such as a major earthquake, including one that directly strikes the capital, or flood, projects must also make efforts to improve the safety of the city.

To achieve this, the TMG encourages the creation of warehouses to store emergency supplies and temporary shelters for people stranded when a disaster occurs, the removal of utility poles along roads within and outside development districts, as well as initiatives that contribute to the elimination of close-set wooden house districts and urban development on elevated land as a flood control measure, and is promoting the use of urban development as an opportunity to create a disaster-resilient city.

## Using City Planning as an Opportunity to Promote the Removal of Utility Poles

In recent years, utility poles toppled by natural disasters such as typhoons have resulted in blocked roads and major long-term power outages, making the removal of utility poles even more important with respect to disaster resistance.

To that end, the TMG is strengthening measures in accordance with the Plan to Promote Removal of Utility Poles revised in June 2021 and the TOKYO Resilience Project formulated in December 2022. Along with actively advancing support for projects in close-set wooden housing districts, including projects for private roads in such districts, land readjustment projects, private residential land development, and other projects, efforts to make removal of utility poles mandatory for urban development projects subsidized by the TMG and other types of development projects will also be promoted, and the TMG will use all sorts of opportunities from large-scale development to housing land development to promote the removal of utility poles.



## Promoting Measures for Urban Restoration and Recovery

### ■ Rollout of a Movement to Mark the Centennial of the Great Kanto Earthquake

This year (2023) marks the centennial of the Great Kanto Earthquake. As part of the TOKYO Resilience Project formulated in December 2022, the TMG is taking the opportunity presented by this milestone to roll out a movement to raise public awareness in cooperation with the national government, municipalities, and others, in order to actively encourage the people and businesses of Tokyo to prepare for a disaster, including implementing measures for “self-support.”

As part of efforts to promote understanding related to urban development and urban development for disaster resistance, the TMG will undertake various efforts, namely, the creation of a reconstruction archive and PR videos, preparation of hands-on exercises for children that simulate reconstruction, and the promotion of enhanced awareness regarding the removal of utility poles through urban development. Furthermore, as part of efforts related to promoting collaboration with municipalities and others to raise disaster preparedness, the TMG is providing support to relevant wards that work to revitalize small reconstruction parks that were created next to elementary schools rebuilt following the Great Kanto Earthquake, utilizing them for purposes such as to enhance disaster preparedness functions or as places for community interaction and recreation, based on the concept for the parks at the time.



幾多の災害を乗り越えてきた東京  
備えよう、明日の防災



Promotion of enhanced awareness regarding removal of utility poles through urban development

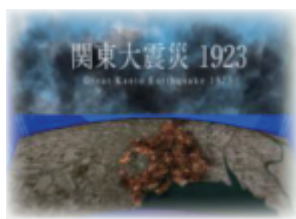


Image of reconstruction archive and PR videos



Revitalization of small reconstruction parks

### ■ Initiatives Taken Before a Disaster to Guide Urban Recovery Effort

To facilitate the realization of prompt and systematic urban recovery when a major earthquake that directly strikes the capital or other such disaster strikes, prior to a disaster occurring, it is necessary to take initiatives, including studying what urban recovery should entail, the steps to be taken, and systems for implementing actions, and sharing this information with the citizens of Tokyo, government employees, and others. As its vision for urban recovery following a disaster, the Tokyo Metropolitan Government formulated Principles for Urban Recovery, Targets and Basic Policy in June 2019. The TMG has also formulated and continues to use the TMG Earthquake Recovery Manual (March 2003), which outlines the recovery process and systems for implementing the plan.

Furthermore, by holding events such as urban recovery symposiums for residents and exhibitions based on resources such as the basic policy and earthquake recovery manual, the Bureau is working to raise awareness among the people of Tokyo. For employees of the TMG, municipalities, and others, it is also actively introducing online training methods to conduct tabletop drills for formulating community disaster recovery plans and other types of training, as well as drills that simulate surveying damage to dwellings through the use aerial photos and other data to grasp the post-disaster situation.

### ■ 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 conducting 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.

## TOKYO Resilience Project

Natural disasters can occur at any time. Storms and floods are becoming more frequent and intense due to the effects of global climate change. And a major earthquake that directly strikes the capital is an imminent possibility. There is also the risk of events overlapping to create a compound disaster. Faced with these risks, it is necessary to upgrade measures in order to protect the lives and livelihoods of Tokyo's residents and maintain the functions and economic activities of the capital. In addition, these efforts must be carried out in a stable and continuous manner over the medium to long term.

In light of these factors, the TMG announced the TOKYO Resilience Project, which clarifies the vision for Tokyo in the 2040s and the path to realizing this vision, in December 2022. With projects organized under five risks (floods and storms, earthquakes, volcanic eruptions, disruption of power, communications, etc., and infectious diseases), with the addition of compound disasters, the basic policy for project formulation includes the use of a backcasting approach, development of measures that center on hard infrastructure and its combination with soft infrastructure, and promotion of measures based on the standpoint of collaboration with diverse entities. The project is made up of 22 projects that combine hard and soft infrastructure measures for each of the risks and approximately 190 related projects. Of these projects, 33 pioneering and distinctive projects centered on new efforts are positioned as leading projects.

Tokyo will take the lead, partnering with various entities, including Tokyo residents, communities, and businesses, to steadily advance the project.

## Studying Measures for the Creation of a Highly Disaster-Resistant Capital (Tokyo)

To efficiently and effectively advance measures for flood control, earthquakes, and other disasters, a liaison council for the creation of a highly disaster resistant capital (Tokyo) was launched on January 15, 2020, by the government of Japan and the TMG to study measures for building a disaster-resistant city. Following broad discussions, the council compiled a vision for making Tokyo highly disaster resistant in December 2020. Among the measures set forth, the vision contains policies promoting the creation of high ground that can also serve as evacuation space when flooding occurs. This includes the creation of higher ground through land readjustment and the construction of high-spec levees, as well as the creation of evacuation space through redevelopment projects, among others. To firm up measures, a working group, which includes the relevant cities, was established under the liaison council on March 29, 2021. While also coordinating evacuation plans, the group is advancing studies related to applying measures based on the characteristics of model districts and other locations.

In line with the "TOKYO Resilience Project: Aiming for safety for the next 100 years" (December 2022), the TMG is promoting urban development that creates higher ground. Specifically, the TMG will provide support to local municipalities in the low-lying areas of eastern Tokyo that utilize public facilities to secure vertical evacuation space for use in times of emergency, as well as those municipalities that work to promote the establishment of evacuation routes. The TMG will also advance studies with a view to introducing a new framework to promote the creation of high-spec levees to secure high ground along rivers that can serve as bases for rescue and other purposes in times of flooding in areas along the Arakawa, Edogawa, and Tamagawa rivers where preparations for increasingly severe flooding are needed.

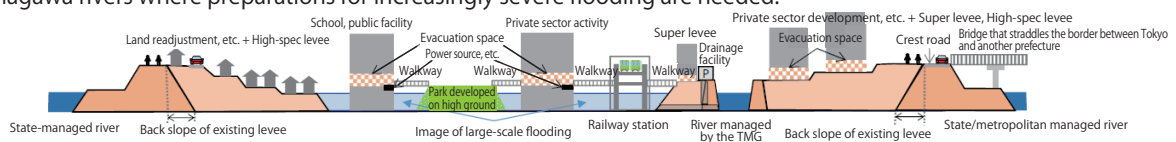


Image of large-scale flooding

Source: "Vision for a Highly Disaster-Resistant Capital: Tokyo," Summary version (Released: December 2020)

## Promotion of Comprehensive Flood Control Measures

The TMG formulated its Basic Policy for Measures Against Heavy Rainfall in August 2007, and has been promoting comprehensive flood control measures by setting forth measures for river basins, including river and sewer system improvements and installation of rainwater retention and infiltration facilities.

However, as torrential downpours surpassing the established rainfall level for flood protection of 50 millimeters per hour have continued to cause flooding, the TMG revised the Basic Policy for Measures Against Heavy Rainfall in June 2014 based on factors such as the characteristics of rainfall in recent years and the occurrence of flooding.

The revised plan strengthened 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.

Meanwhile, amid concerns that heavy rain will become even more frequent and intense due to the effects of climate change in recent years, leading to greater damage, it is necessary to further strengthen measures to protect the lives and assets of the people of Tokyo. To achieve this, the TMG established a committee in August 2022 for the purpose of studying future measures for heavy rainfall in Tokyo, taking into account future climate change impacts. In fiscal 2023, as part of the TOKYO Resilience Project, the TMG will revise its Basic Policy for Measures Against Heavy Rainfall, promote comprehensive flood control measures, and continue working to become a resilient city.

In addition, to prepare for an increased risk of flood damage due to climate change, the TMG is participating in meetings on flood control for Class A river systems, as part of the river basin flood control project launched in 2020. In August 2021, together with relevant municipalities, the TMG also established a flood control project for rivers in the Jonan district and three other rivers, and is advancing initiatives related to Class B river systems.