Section 5  Urban Disaster Prevention

1 Basic Concepts of Disaster-Resistant Urban Development

The Tokyo Metropolitan Government instituted “the Tokyo Metropolitan Regional Disaster Prevention Plan” based on the Basic Act on Disaster Control Measures which shows the basic measures for the Urban Disaster Prevention and “the Tokyo Metropolitan Earthquake Disaster Measure Project Plan” based on the Tokyo Metropolitan Ordinance for Earthquake Disaster Measures which comprehensively compiled the measures related to the Earthquake Prevention. In these plans, “Urban Development Plan for Disaster-resistance” has been positioned as one of the specific promotion plans for the earthquake damage prevention and the prevention of the damage expansion.

Because the high risk areas against disasters were spreading to the uptown areas, “the Urban Disaster Prevention Facility Basic Plan” which was the predecessor of “Urban Development Plan for Disaster-resistance” was instituted as the long Term Basic Plan for the Disaster-Resistant Urban Development intended for the entire ward areas in 1981.

“The Urban Disaster Prevention Facility Basic Plan” was aiming at the creation of the disaster-resistant living sphere (the city where people can stay even in a time of disaster) from a viewpoint of “No fire occurrence and No fire spreading” and the Disaster-Resistant Urban Development by developing the urban facilities. And it pursues the disaster prevention from the aspects of hardware and software, such as the improvement of the living environment and fostering of the civic disaster prevention organizations in the disaster-resistant living sphere, which is to be set up almost as large as the elementary school district, with the firebreak belt development plan at the core. As the specific measures based on this plan, the Tokyo Metropolitan Government started to promote the Disaster-Resistant Urban Development”, by utilizing the Disaster-Resistant Living Sphere Promotion Project and the Urban Disaster Prevention Fire-resistance Promotion Project.

In light of a good lesson from the Great Hanshin Earthquake occurred on Jan. 1st, 1995, we reviewed “The Urban Disaster Prevention Facility Basic Plan”, and instituted the Disaster-Resistant Urban Development Promotion Plan (Basic Plan) in fiscal year 1995 and the same plan (Development Plan) in fiscal year 1996, for the purpose of indicating the policy for the more effective and intensive Disaster-Resistant Urban Development Promotion in order to protect the livelihood of the citizen of Tokyo against the massive urban fire and the collapse of buildings at the time of earthquake.

The Tokyo Metropolitan Ordinance for Earthquake Disaster Measures was enacted in December 2000, and in the Article 13, it was obliged to institute the plan for the Disaster-Resistant Urban Development. And in the plan, ① The Guideline for the measures on the Disaster-Resistant Urban Development, ② The development policy and the designation of the development areas in accordance with the local characteristics, ③ The designation of the priority development areas etc. was stipulated.

In September 2003, this plan was amended to the Urban Development Plan for Disaster-resistance which was comprised of “the Basic Plan” and “the Development Program”, and in January 2010, in light of the suggestion for the imminent threat of the earthquake that directly hits Tokyo area and the publication of the current research results of the Community Earthquake Risk Assessment Study, the plan was amended in aiming for early realization of the disaster-resistant Tokyo.
(1) Community Earthquake Risk Assessment Study

The Community Earthquake Risk Assessment Study is based on the Article 12-1 of the Tokyo Metropolitan Ordinance for Earthquake Disaster Measures and the Article 5 of the Ordinance for Enforcement of the same Ordinance, and its purpose is to increase the awareness of the citizen of Tokyo against an earthquake disaster and to promote the elevation of the disaster prevention consciousness, as well as to be referred in time of the selection for the priority implementation areas of the Disaster Prevention as an indicator of the Disaster-Resistant Urban Development. And scientifically measuring and studying the degree of risk in the area with respect to an earthquake every five years, we publicize the results to the citizen of Tokyo under the Article 12-3 of the same Ordinance.

The research contents are, intended for the urban areas, to measure the degree of earthquake risk in each area from the aspect of ground, buildings and fire etc., and to rank them from one (low) to five (high) according to the degree of risk (the degree of vulnerability), compared with other areas.

The first research result for the ward areas in 1975, the first for Tama region in 1980, the second for the ward areas in 1984, the second for Tama region in 1987, the third for the ward areas and Tama region at once (unified hereafter) in 1993, the fourth in 1998, the fifth in 2002, the sixth in 2008, and the seventh in 2013 were publicized respectively.

In the seventh research, for 5,133 districts in towns, we measured the degree of risk from the aspect of building collapse and fire against earthquake in each district and relatively evaluated the risk of degree in each district by ranking from one to five, even as we synthesized two degrees of risk and publicized the comprehensive degree of risk as an easy-to-understand index. Also, we newly measured the degree of difficulty on activities based on the status of development on the road infrastructure as the index showing ease of activity in time of disasters, and publicized the degree of building collapsing risk and fire risk, and the comprehensive degree of risk in consideration of the degree of difficulty on activities in time of disasters.
Chart 3-14 Flow of the Seventh Community Earthquake Risk Assessment Study

Classification and Counting of Buildings
- Number of Buildings for Each Classification
  (Structure, Construction year, Number of Stories etc.)

Classification of Ground
- Classification and Evaluation of Ground
- Evaluation of Liquefaction Risk
- Evaluation of Large-Scale Reclaimed Land

Measurement of Collapse of Building
- Number of Buildings for Each Classification
  (Structure, Construction year, Number of Stories etc.)
- Ground Characteristics

Measurement of Fire Disaster Damage
- Risk of Fire
- Risk of Fire Spread

Degree of Building Collapsing Risk

Degree of Fire Risk

Comprehensive Degree of Risk

Degree of Difficulty on Activities in time of Disaster

Degree of Building Collapsing Risk in consideration of Degree of Difficulty on Activities in time of Disaster

Degree of Fire Risk in consideration of Degree of Difficulty on Activities in time of Disaster

Comprehensive Degree of Risk in consideration of Degree of Difficulty on Activities in time of Disaster
Chart of the Seventh Degree of Building Collapsing Risk Ranking in consideration of Degree of Difficulty on Activities in time of Disaster

Legend
- Municipality Boundary Line
- Town and District Boundary Line

The Seventh Degree of Building Collapsing Risk Ranking
5/1-84
4/85-368
3/369-1181
2/1182-2815
1/2816-5133

Chart of the Seventh Degree of Building

Chart of the Seventh Degree of Building Collapsing Risk Ranking in consideration of Degree of Difficulty on Activities in time of Disaster
Chart of the Seventh Degree of Fire Risk Ranking in consideration of Degree of Difficulty on Activities in time of Disaster.
Chart of the Seventh Comprehensive Degree of Risk Ranking in consideration of Degree of Difficulty on Activities in time of Disaster

Legend
- Municipality Boundary Line
- Town and District Boundary Line

The Seventh Comprehensive Degree of Risk Ranking

5/1-84
4/85-368
3/369-1181
2/1182-2815
1/2816-5133

Chart of the Seventh Comprehensive Degree of Risk Ranking in consideration of Degree of Difficulty on Activities in time of Disaster

Legend
- Municipality Boundary Line
- Town and District Boundary Line

The Seventh Comprehensive Degree of Risk Ranking in consideration of Degree of Difficulty on Activities in time of Disaster

5/1-84
4/85-368
3/369-1181
2/1182-2815
1/2816-5133
(2) Urban Development Plan for Disaster-resistance

Urban Development Plan for Disaster-resistance is the plan for the purpose of promoting various measures with respect to the urban structure improvement, as well as securing the quake and fire resistance on buildings and urban facilities, to prevent the earthquake disaster and the damage expansion, pursuant to the Article 13 of the Tokyo Metropolitan Ordinance for Earthquake Disaster Measures.

The term of the Basic Plan is for 17 years from fiscal year 2009 to fiscal year 2025 and the term of the Development Program is for seven years until fiscal year 2015.

As the basic concept of the Disaster-Resistant Urban Development, we promote ① The creation of the firebreak belts and the securement of the emergency transport roads, ② The securement of the safe urban areas, ③ The securement of the evacuation sites.

(Basic Policy for the development of the firebreak belts)

The firebreak belts are designated intended for the 23 ward areas where the Densely-Built Wooden Residential Areas continuously lie and for seven cities of Tama region.

We promote the creation of the firebreak belts by implementing various multi-level measures. In consideration of the priority of the disaster prevention, we classify them into three categories of the Disaster Prevention Central Framework, the principle firebreak belts and the general firebreak belts, and give priority to the development of the firebreak belts related to the Disaster Prevention Central Framework and the principle firebreak belts.

(Basic Policy for Urban Development)

We give priority to the development of the urban areas according to the degree of earthquake disaster risk. And as we select 28 areas approx. 7,000ha of the development districts and 11 areas approx. 2,400ha of the priority development districts where heavy damage of the earthquake disaster is anticipated, we aim at the ratio of fire-resistant areas 70% which is the level where almost no buildings in the urban areas are burned down.

We regulate and guide to rebuild high disaster-preventive buildings, as well as work on the rehabilitation type of project in the development areas. And in the priority development areas, we promote the swift improvement of the disaster prevention by combining the infrastructure development with the rehabilitation type of project and the measures by the regulations and the guidance and with a particular emphasis on it.

(Basic Policy for the Evacuation Site Development)

We promote the evacuation site development by the expansion and improvement of large-scale parks and fireproofing of buildings in the surrounding areas of the evacuation sites.

(Development Program)

We institute the development measures for the priority development areas, the development plans for each priority development area, the promotion of the projects for the priority development districts and the development measures for the development areas, as well as institute the development measures with respect to the firebreak belts and the evacuation sites.
Chart 3-15 Chart of Zoning in the Urban Areas

Legend
- Disaster Prevention Central Framework (chart of urban planning roads)
- Principal Firebreak belts
- General Firebreak belts
- Disaster Prevention Central Framework (rivers)
- Priority Development Areas
- Development Areas
- Rivers and seas
- Administrative Boundary Line
- JR Line

【Development Area / Priority Development Area / Firebreak Belt】
a. Basic Concept

In order that the Tokyo Metropolitan Government and the municipal governments prepare the Earthquake Disaster Recovery measures, we instituted “the Urban Recovery Manual” in 1997 and “the Livelihood Recovery Manual” in 1998. Subsequently, we completely amended and integrated these two manuals, and instituted “the Tokyo Metropolitan Government Earthquake Disaster Recovery Manual” in March 2003.

The Basic Concept is to show “the Overall Picture and Process of the Recovery” and “the Options and Judgment Criteria in time of the Actions by the Citizen of Tokyo toward the Recovery” and to promote “the Association and Consistency among sectorial measures”, furthermore to study and show “the Measures that go beyond the Current Systems”. And it comprises two portions which are “the Recovery Measures” for the administrative officers and “the Recovery Processes” for the citizen of Tokyo.

b. The Outlines of “the Recovery Measures”

It is the action guidelines for the administration and specifically describing the administrative actions by category as follows.

- Chapter 1   The Establishment of the Recovery Systems
- Chapter 2   The Urban Recovery
- Chapter 3   The Housing Recovery
- Chapter 4   The Livelihood Recovery
- Chapter 5   The Industrial Recovery

(a) The Outline of the Urban Recovery

It is to show the guidelines for the contents of actions, the procedures and the planning to swiftly and smoothly promote the urban recovery, so that the Tokyo Metropolitan Government and the municipal governments clearly understand their roles and mutually work in collaboration with respect to the summary and assessment of the house damages, the formulation of the basic policy and plan for the urban recovery, the enforcement of the building restrictions, the temporary urban area development, the designation of the target areas, the promotion of the recovery projects and so on.

(b) The Urban Recovery Process

We categorize the Urban Recovery Processes into five stages, which are ① the Establishment of the Recovery Initial Response System, ② the Formulation of the Urban Recovery Basic Policy, ③ the Formulation of the Urban Recovery Basic Plan, ④ the Approval of the Urban Recovery Basic Plan and ⑤ the Promotion of the Recovery Projects, and further categorize the recovery procedures into eleven items in accordance with the time schedule.

Also, the flow charts and the roles of the Tokyo Metropolitan Government and the municipal governments are shown in each stage.

(Chart 3-16)

(c) The Action Programs

The Action Programs, which show the procedures in chronological order, consist of (1) the Actions of the Tokyo Metropolitan Government and (2) the Actions of the municipal governments, and become a practical guide for the persons in charge of the recovery.

c. The Grand Design for the Earthquake Recovery

It is to share the direction of the Urban Recovery and Development in the Tokyo Metropolitan area with the citizen of Tokyo in advance to promote the swift and systematic recovery.

(a) Disaster Scenarios

The Earthquake directly hits Tokyo in the ward areas with a magnitude of 7.2.
(b) Goal
“Not to repeat suffering earthquake disaster. The creation of the International City, Tokyo which co-exists in harmony with the environment”

(c) Extensive Recovery Plan
We instituted it as the model plan of the Extensive Recovery Plan which the Tokyo Metropolitan Government is supposed to institute in time of the earthquake disaster. We develop the Earthquake Disaster Recovery Strategic Plan to promote the recovery associated with the drastic urban redevelopment. For example, in the Densely-Built Wooden Residential Area of the surrounding ward areas where serious damages are anticipated, we develop “the Green Corridor” as the network consisting of roads, parks and rivers, and regenerate Tokyo as “the Green Circular Urban Areas”.

d. Future Actions
We will provide advices on the enactment of the ordinance on the Urban Recovery and Development and the formulation of the Recovery Manuals for the municipal governments. Also as continuing to conduct the Urban Recovery simulation trainings intended for the municipal government officials, we promote the examination and the proficiency of the manuals so that it can work in practice smoothly.

Furthermore, we will study the matters to work on in advance, such as the development of the data and systems, and the building of the Recovery Systems.

**Chart 3-16 Urban Reconstruction Process**

<table>
<thead>
<tr>
<th>(Stage)</th>
<th>(Procedures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Establishment of the Recovery Initial Response System [within one week after Disaster Occurrence]</td>
<td>1 House Damage Outline Study</td>
</tr>
<tr>
<td>II Formulation of the Urban Recovery Basic Policy</td>
<td>2 House Damage Assessment 3 Urban Recovery Basic Policy 4 First Building Restriction 5 Temporary Urban Area Development</td>
</tr>
<tr>
<td>III Formulation of the Urban Recovery Basic Plan [from one month to six months after Disaster Occurrence]</td>
<td>7 Urban Recovery Basic Plan (Framework Draft) 8 Second Building Restriction 9 Urban Recovery and Development Plan etc. 10 Urban Recovery Basic Plan</td>
</tr>
<tr>
<td>IV Approval of a plan for Recovery Project etc. [from six months to one year after Disaster Occurrence]</td>
<td>11 Recovery Project</td>
</tr>
<tr>
<td>V Promotion for Recovery Projects [from one year after the Disaster Occurrence]</td>
<td></td>
</tr>
</tbody>
</table>
**Reference** Building Restriction

The Building Restriction areas are designated in case it's necessary for the Land Readjustment Project under the City Planning or the Land Readjustment Act.

**Procedures 4** First Building Restriction

Based on the Article 84 of the Building Standards Act, we may restrict or prohibit to construct the buildings within the area only within one month after the disaster occurrence.

**Procedures 8** Second Building Restriction

In the areas where the Urban Recovery Plan was not approved within the First Building Restriction period and further studies were necessary, the restriction of the buildings is enforced.

Based on Article 5 of the Act on Special Measures Concerning Disaster-Stricken Urban District, the Urban Disaster Recovery Promotion Areas and the building restriction period are designated in the City Planning. (The building restriction period is for maximum two years from the disaster occurrence.)

Based on Article 7 of the Act on Special Measures Concerning Disaster-Stricken Urban District, the person who is planning to change the character of land, or newly construct, rebuild, renovate or expand buildings, shall obtain the permission of the prefectural governor (In case it's within the city area, the permission of the mayor) pursuant to the Ordinances of the Ministry of Land, Infrastructure, Transport and Tourism.
2 Measures for Building Disaster-Resistant Cities

(1) Policy for the Development of Disaster Resistant Blocks

Policy for the Development of Disaster Resistant Blocks Improvement is the master plan to promote securing the disaster prevention functions, and rational and sound use of the land in the Densely-Built Wooden Residential Area where the risk is considered very high from the viewpoint of the disaster prevention, by utilizing various projects and the City Planning, under the law concerning the promotion of the Disaster Resistant Block Improvement in the Densely-Built Urban Areas (in 1997) and the regulations of the City Planning Act.

This policy shows the outlines of the development plan, by designating notable scale of areas where the integral and comprehensive urban area redevelopment is required as "the Disaster Prevention Redevelopment Promotion Area", and roads and parks etc. to be developed to secure the functions of the Fire Spread Prevention and Evacuation as "the Disaster Prevention Public Facility".

In the Disaster Prevention Redevelopment Promotion Area, the subsidized projects such as the joint reconstruction subsidy by the approval of the reconstruction plan are expanded, as well as the recommendation for the elimination of the fire spread hazardous buildings and the utilization of Urban Renaissance Agency becomes available.

Also swift development becomes possible by designating the scheduled project executors and the scheduled date of the business commencement in the City Planning in regard to the disaster prevention public facilities to be developed as the urban facility.

64 areas, 3,770ha of the Disaster Prevention Redevelopment Promotion Area and 145 Disaster Prevention Public Facilities have been designated as of April 1st, 2013.

(2) Projects in close-set wooden housing districts

In order to improve the disaster prevention of the urban city and to protect lives and property of the citizen of Tokyo, the improvement in close-set wooden housing districts where there are disaster risks and the problems on the living environment is important.

Therefore, the Tokyo Metropolitan Government, in cooperation with the municipalities, is conducting the project to redevelop and improve areas with close-set wooden houses in the development areas designated in the Urban Development Plan for Disaster-resistance.

This project is to promote comprehensively the development of public facilities such as the community roads and the disaster prevention parks, and the improvement of the disaster prevention and the living environment, as well as to promote the elimination and rebuilding of the aging buildings.

* Refer to Table 3-30 “the List of Project Implementation Area for the project to redevelop and improve areas with close-set wooden houses” (page 160)
(3) Fire-resistance Promotion Project

It is important to protect lives and properties of residents from fire due to a great earthquake. To do so, we need to work on the prevention of the massive urban fire and securing the safety of the evacuation in time of disasters by making cities fire-resistant. Therefore, the Tokyo Metropolitan Government and the Special Wards have been implementing the Fire-resistance Promotion Project since 1980.

This project is to protect the evacuees from the radiant heat of fire, as well as to designate the firebreak belts and the evacuation sites which are the Disaster Prevention Central Framework necessary for the disaster prevention, and the evacuation roads as "the Fire-resistance Promotion Areas", and to promote fire-resistance by partially subsidizing the construction cost to the persons who construct fire-resistant buildings in the areas, to protect the evacuees from the radiation heat from fire and to prevent the urban fire spread. We work on this project aiming approx. 70% of the ratio of fire-resistant areas in the Fire-resistance Promotion Areas in approx. 10 years.

Please note that the project completed areas are 69 areas, 1,335ha in the project areas of 92 areas, 1,531.49ha as a project result as of April 2013.

* Refer to Table 3-31 "the List of Project Implementation Area for Fire-resistance Promotion Project" (page 161)

○ Eligible person for Subsidy: Persons who construct a fire-resistant building with two floors or more and 7m or more height in the Fire-resistance Promotion Area (except the buildings owned by a big company and a housing land and building dealer to sell)

○ The amount of subsidy: the Special Ward subsidizes a part of the construction cost in proportion as the total floor area of up to third floor of the building. And for a four-storied building or more with 4 units or more, it will be subsidized in proportion as the total floor area of fourth floor or more. (The Subsidy for Fire-resistant Building for Residence)

<table>
<thead>
<tr>
<th>Subsidy Item</th>
<th>Central Government</th>
<th>Tokyo Metropolitan Government</th>
<th>Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection Cost</td>
<td>1／3</td>
<td>1／3</td>
<td>1／3</td>
</tr>
<tr>
<td>Housing Subsidy</td>
<td>1／2</td>
<td>1／4</td>
<td>1／4</td>
</tr>
<tr>
<td>Temporary Housing Cost</td>
<td>–</td>
<td>1／2</td>
<td>1／2</td>
</tr>
<tr>
<td>Subsidy for Fire-resistant Building for Residence</td>
<td>(*1／2)</td>
<td>(*1／4)</td>
<td>(*1／4)</td>
</tr>
</tbody>
</table>

* In case it is subject to the Effectiveness Promotion Project of the Subsidy (national expenditure)

< Project Image >

○ To protect the evacuees from the radiant heat of neighboring massive fire by making the area fire-resistant within approx. 30m from the evacuation roads designated in the Community Disaster Prevention Plan.
○ To protect the evacuees staying in the Refuge Site from the radiant heat of neighboring massive fire by making the area fire-resistant within approx. 120m from the Refuge Sites designated in the Community Disaster Prevention Plan.

○ To prevent the fire spread to the adjacent blocks and secure the safety against urban area massive fire by making the area fire-resistant within approx. 45m combined with the width of the principle roads which are the framework of the Firebreak Belts designated in the Regional Disaster Prevention Plan.

○ To prevent fire spread in a few hours against initial fire and secure the evacuation time, by making the area fire-resistant within approx. 12m (a space of one unit) surrounding the Specified Area Disaster Prevention Facility under the Act on Promotion of Improvement of Disaster Control Districts in Populated Urban Districts.
(4) Designation of Evacuation Sites and Roads

It is important to do our best together with citizen of Tokyo for the prevention of fire outbreak and for the initial firefighting activities. But it is also necessary to evacuate in case there is a risk of lives due to the earthquake fire spread.

The Tokyo Metropolitan Government has designated the Evacuation Sites and Roads in the ward area in advance under Article 47-1 and Article 48 of the Ordinance on the Earthquake Disaster Countermeasures. (Refer to Table 3-17 “Evacuation Sites and Roads” (amended in the fiscal year 2013), and Table 3-32 “the List of Evacuation Sites and Designated Remaining Area within the District”)

Also as for Tama region, each municipality has designated them in light of each local situation.

(Evacuation Sites)
The sites meeting the following two conditions are designated.

● To have area large enough against radiant heat in time of the major earthquake in consideration of the situation of surrounding urban areas

● Not to have facilities which impair the safety of evacuees in time of the earthquake

For the capacity of the evacuation site, we secure 1 ㎡ per person against the effective evacuation area in principle, and allocate it to each area. The allocation to each area is conducted with consideration of each urban area, the neighborhood association and the residents’ association.

The Ordinance was amended in May 2013, and 197 sites have been designated as the Evacuation Sites.

(Designated Remaining Area within the District)

We are designating the area where there is no threat of fire spread in time of the major earthquake and the wide-area evacuation is not necessary as the Designated Remaining Area within the District.

The ordinance was amended in May 2013, and 34 areas have been designated as the Designated Remaining Areas within the District.

(Evacuation Roads)

In principle, you can choose the way to evacuate to the Evacuation Site. However, we designate the Evacuation Roads for the areas where the distance to the Evacuation Site is approx. 3km or more, or, there is significant risk of fire spread. This is to guide the safe and smooth evacuation by clarifying the principle Evacuation Roads in advance.

With the amendment to the Ordinance in May 2013, 14 systems, 58 roads, total length approx. 54km have been designated for 12 Evacuation Sites.

Also we are designating the Evacuation Roads with the width of 15m or more in principle. (Provided, however, that if there is no such road, the width shall be 7.5m or more)
## Table 3-32 the List of Evacuation Sites and Designated Remaining Area within the District

<table>
<thead>
<tr>
<th>No.</th>
<th>District</th>
<th>Site Name</th>
<th>Site Address</th>
<th>Designated Remaining Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chuo-ku</td>
<td>Toshima 5-chome Dan-cho (Housing Complex)</td>
<td>Toshima 5-chome, Shinjuku-ku, Tokyo</td>
<td>Toshima 5-chome (River Bed)</td>
</tr>
<tr>
<td>2</td>
<td>Bunkyo-ku</td>
<td>Yoyogi Park</td>
<td>2-6-17, Shibuya-ku, Tokyo</td>
<td>Yoyogi (Sports Facility)</td>
</tr>
<tr>
<td>3</td>
<td>Setagaya-ku</td>
<td>Meiji Jingu Gaien</td>
<td>1-1-1, Shibuya-ku, Tokyo</td>
<td>Meiji Jingu Gaien (Sports Facility)</td>
</tr>
<tr>
<td>4</td>
<td>Kita-ku</td>
<td>Meiji Jingu Gaien</td>
<td>1-1-1, Shibuya-ku, Tokyo</td>
<td>Meiji Jingu Gaien (Sports Facility)</td>
</tr>
<tr>
<td>5</td>
<td>Edogawa-ku</td>
<td>Toshima 5-chome Dan-cho (Housing Complex)</td>
<td>Toshima 5-chome, Shinjuku-ku, Tokyo</td>
<td>Toshima 5-chome (River Bed)</td>
</tr>
</tbody>
</table>

### Notes
- The list includes various evacuation sites and designated remaining areas within different districts across Tokyo. The sites range from parks to educational institutions and residential areas.
- Each entry includes the site name, address, and a brief mention of the designated remaining area.
(5) Tokyo Metropolitan Ordinance on Safety Construction (New Regulation for Fire Prevention)

Because wooden buildings with fire protection structure can be built with the condition of total area 500 m$^2$ or less under the current Fire Prevention Regulation in the Quasi-Fire Prevention Areas, we cannot prevent rebuilding of wooden buildings in the Densely-Built Wooden Residential Area.

Therefore, in order to improve safety in the urban area in time of the disaster, we enacted the new regulation for fire prevention in the Tokyo Metropolitan Ordinance on Safety Construction in March 2003 to guide to the quasi-fireproof buildings which have high fire-resistant capability. (Article 7-3)

a. Regulated Areas
They are the areas which the Tokyo Metropolitan Ordinance on the Earthquake Disaster Prevention designates as the Development Areas and other areas where there is a high risk in time of disaster, and are designated by the governor.
A part of each area, approx. 3,314ha, of Sumida Ward, Shinagawa Ward, Nakano Ward, Suginami Ward, Arakawa Ward, Kita Ward, Itabashi Ward, Adachi Ward, Meguro Ward, Setagaya Ward, Toshima Ward and Mitaka City (eleven wards and a city) are designated as the Regulated Areas.

b. Contents of the Regulation
(a) In principle, all buildings have to be the quasi-fireproof buildings or more. (Except the buildings which comply with a certain level of technical standards)
(b) Among them, the buildings with the total area 500 m$^2$ or more have to be the fireproof buildings.

※ There are exemption provisions for the small –size annex buildings

c. Expansion of Regulated Areas
We adequately listen to the opinions from the local municipal governments and are planning to expand the Regulated Areas. we sometimes ease the building -to- land ratio of the buildings in light of local situations to promote the rebuilding.
(6) Seismic Retrofitting of Buildings and Disaster Prevention Volunteers

a. Tokyo Metropolitan Seismic Retrofitting Promotion Plan

In case the earthquake directly hits the Tokyo metropolitan area occurs, the immense damages due to collapse of buildings are anticipated. Therefore, the Tokyo Metropolitan Government instituted “the Tokyo Metropolitan Seismic Retrofitting Promotion Plan” in March 2007 and amended in March 2012.

In these plans, we focus on implementing following measures as well as setting up the target ratio of the seismic retrofitting of houses and buildings

(a) Seismic Retrofitting of Buildings alongside Emergency Transport Roads

In case buildings alongside important roads from the viewpoint of disaster prevention collapse and block the roads, there is a risk to interfere with the emergency, disaster-relief and recovery activities. Therefore, we designated whole length of the Emergency Transport Roads specified in the Tokyo Metropolitan Regional Disaster Prevention Plan as a road to prevent from blocking in time of the earthquake occurrence, and have been conducting the projects toward the seismic retrofitting of buildings alongside those roads since fiscal year 2008.

In April 2011, we enforced “the Ordinance on Promotion for Seismic Retrofitting of Buildings alongside Emergency Transport Roads in Tokyo”. And we designated the roads specially needed to promote the seismic retrofitting of the roadside buildings out of the Emergency Transport Roads as the Specific Emergency Transport Roads, and obliged the roadside building owners to receive a seismic diagnosis service. We are also improving the support programs including the expansion of the subsidy programs and working on the seismic retrofitting.

① Outline of Ordinance

○ Designation of Specific Emergency Transport Roads (on June 28th, 2011)

To designate the roads specially needed to promote the seismic retrofitting of the roadside buildings out of the Emergency Transport Roads as the Specific Emergency Transport Roads

○ Duty to Report of Seismic Retrofitting Status

To impose a duty to report of the implementation status for the seismic diagnosis and the seismic retrofitting on the owners of the buildings that satisfies all of the followings (Specific Roadside Buildings)

- The building of which the premises about the Specific Emergency Transport Roads
- The building newly built before May 1981 (Old Quake-Resistance Standards)
- The building which has approx. more than one half height of the width of the road (Chart on the right)

○ Duty to receive the seismic diagnosis service

- To impose the duty to receive the seismic diagnosis service on the owners of the roadside buildings
- To secure the performance of obligations by the administrative guidance or the order for implementation
- To be able to publish the buildings for which the seismic diagnosis have not been conducted.
Duty to make efforts to implement the seismic retrofitting
- To impose the duty to make effort to implement the seismic retrofitting on the owners of the roadside buildings which don’t have enough seismic performance
- To promote the implementation of the seismic retrofitting by the administrative guidance or the recommendation for implementation

2) Subsidy Program for Seismic Retrofitting of Buildings alongside Emergency Transport Roads

Subsidies to the municipal governments who plan to implement the subsidized projects on the expenses for the seismic diagnosis and the seismic retrofitting

(b) Seismic Retrofitting of Wooden House

In the Densely-Built Wooden Residential Area, in case houses collapse due to the earthquake, there is a risk that roads are blocked, the evacuation, the emergency and the firefighting activities are interfered, and major damages occur. Therefore we are providing intensive support to enhance seismic retrofitting of houses located in an area of public importance to disaster counter measure, utilizing subsidy program since 2006.

Also we are improving the environment where the owners of the buildings can take the initiative in the seismic retrofitting such as the introduction of the seismic retrofit scheme and devices, and the reliable seismic diagnosis offices.

(c) Seismic Retrofitting of Important Buildings from the viewpoint of Disaster Prevention

The important public buildings, large-scale department stores, hotels and theaters etc. from the viewpoint of disaster prevention are planned to implement 100% seismic retrofitting by the fiscal year 2015.

b. Training of Disaster Prevention Volunteers

In case the major earthquake occurs, the security of the citizen of Tokyo and the swift urban restoration become imperative. Especially for the damages of buildings, it is required to study the situation of damages, to assess the degree of risk on the damaged buildings against an aftershock (Post-Earthquake Quick Inspection of Damaged Buildings), and to take the appropriate measures to prevent the secondary disaster.

The cooperation of the private architectural engineers as well as the public institutes and the concerned bodies is indispensable to swiftly conduct the post-earthquake quick inspection on the huge quantities of damaged buildings. Therefore, Tokyo Metropolitan Government institutes the outline with respect to the Tokyo Metropolitan Disaster Prevention Volunteers, positions the assessor of the Post-Earthquake Quick Inspection of Damaged Buildings as the disaster prevention volunteers, holds the training sessions, and secures approx. 11,000 of the disaster prevention volunteers as of the end of March 2013. And we will continue to work on the training of the assessors in the future.

In addition, in recent years, 65 officials of the Tokyo Metropolitan Government and the municipal governments who are the assessor of the Post-Earthquake Quick Inspection of Damaged Buildings were dispatched at the Mid Niigata Prefecture Earthquake occurred on October 23rd, 2004 and assessed total 1,069 of buildings, and 62 officials were dispatched at the Niigata Chuetsu-oki Earthquake occurred on July 16th, 2007 and total 1,320 of buildings were assessed. And at the Great East Japan Earthquake occurred on March 11th, 2011, 13 officials were dispatched from 22nd to 24th in April and total 193 buildings were assessed.
To Prepare for Building Damages due to Liquefaction

At the Great East Japan Earthquake occurred on March 11th, 2011, the liquefaction damages occurred over a wide range centered on the Pacific coast from Tohoku region to Kanto region. Even in the Tokyo metropolitan area far from the seismic center, the liquefaction occurred not only in a waterfront area, but also in inland areas, and the damages such as slant of wooden houses occurred in five wards located in the eastern part of the ward areas.

Therefore, in July 2011, we set up “the Tokyo Metropolitan Building Liquefaction Countermeasure Examination Committee” (hereinafter referred to as “Examination Committee”) which is comprised of the specialists of the geotechnology and have been studying the possible administrative efforts for the buildings such as wooden houses through the implementation of the ground survey intended for the areas where the liquefaction damages occurred.

The Examination Committee proposed ① Preparation of the guidance for the citizen of Tokyo to prepare for the building damages due to the liquefaction, ② Provision of the information on the ground data, ③ Improvement of the system for providing consultation to the citizen of Tokyo, as the items the Tokyo Metropolitan Government should pursue.

Based on the above, we are working on the improvement for the environment where the builders and the owners of the buildings can investigate the possibility of the liquefaction in their premises, and study about how to prepare for the ground liquefaction in consultation with the specialists such as architects.

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<th>Item</th>
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<tr>
<td>1. Preparation and Publication of Guidance to prepare for Building Damages due to the Liquefaction</td>
<td>The purpose is to deepen knowledge of the liquefaction and to clearly explain the mechanism of the liquefaction occurrence, the method of the ground survey and the countermeasure technical method, intended for the buildings such as wooden houses.</td>
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<tr>
<td>2. Provision of information on the ground data</td>
<td>The hazard map of liquefaction, the past topographic map, the ground data etc. are useful reference. Therefore, we have improved the system where you can access the materials, as well as explaining the outlines of the materials.</td>
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<tr>
<td>3. Improvement of the System for Providing Consultation to Citizen of Tokyo</td>
<td>To provide necessary information and advices for the builders and the owners of the buildings to study in preparing for the building damages due to the liquefaction, such as understanding of the possibility of the liquefaction and the ground conditions of the premises, and the selection of the countermeasure technical method according to the characteristics of the ground.</td>
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Item Contents
Publication in the website in March 2013 To become accessible at each administrative agency in April 2013
To sequentially become accessible at each administrative agency and the municipal governments in May 2013
To sequentially start consultation at each administrative agency in April 2013. Introduction of the specialists accordingly.
To start consultation in June 2013. Introduction of the specialists accordingly.
10 year Project to Advance Fire Resistance in Close-set Wooden Housing Areas

The Close-set Wooden Housing Areas are distributed widely in Tokyo. Therefore, the Tokyo Metropolitan Government has been promoting the development of the roads to be the firebreak belts, and the fire-resistant and quake-resistant buildings, by instituting “Urban Development Plan for Disaster-resistance”, and designating its development districts. However, the ratio of fire-resistant area in the development area (approx. 7,000ha) is 56% in fiscal year 2006 and the development ratio of the Urban Planning Road is approx. 50% in fiscal year 2010. In addition, the improvement of the Densely-Built Wooden Residential Area is in a difficult situation due to aging residents and complicated relationship of rights. Under such circumstances, the Tokyo Metropolitan Government has decided to promote the 10 year Project to Advance Fire Resistance in Close-set Wooden Housing Areas, as a result of the fact that the improvement of the Close-set Wooden Housing Areas needs to be further accelerated, taking note of the imminent threat of the earthquake predicted to directly hit Tokyo area and the Great East Japan Earthquake.

In order to make the Close-set Wooden Housing Districts fire-resistant and without fire spread, we are setting the followings as goals for the development areas of 10 years later, by focused and intensive efforts for 10 years until the fiscal year 2020.

1. To realize no house burned down by fire spread (the ratio of fire-resistant areas 70%) by making the urban areas fire-resistant.

2. Development of the principle Urban Planning Roads to be the firebreak belts, achieving 100%

In order to realize these targets, we will promote fire-resistance of the urban areas in cooperation with the Wards, by substantially expanding the new fire prevention regulations under the Tokyo Metropolitan Ordinance on the Safety Construction, and instituting and promoting the special support systems (Fireproof Zones), such as expanding the subsidy for the reconstruction and elimination of buildings, the dispatch of experts and the metropolitan tax exemption, to the Wards who do further efforts than ever before.

Also, we will promote the acceleration of the Urban Planning Road developments which the Tokyo Metropolitan Government enforces, and the development of the principle Urban Planning Roads to be converted to the firebreak belts, by designating roads and instituting a new system (Designated routes for improvement) to specially subsidize for the livelihood reconstruction of the related right holders.

Image of the 10 Year Project to Advance Fire Resistance in Close-set Wooden Housing Area

Before Development

After Development

Creation of firebreak belt by the Designated routes for improvement

Promoting Fire-resistance of Urban Area by the Fireproof Zones

Merits of the Special Zone for Fire-resistance System (In case of Rebuilding)

Aging Buildings

In case of Building Removal

- Removal cost is subsidized
- You can consult the specialist such as the lawyer on the problems in regard to the inheritances and the relationship of rights

In case of Rebuilding

- Design cost is partially subsidized
- Property Tax is exempted

- The amount of subsidy is subject to the program of each Wards
3 Comprehensive Flood Control Measures

(1) Tokyo Metropolitan Torrential Rain Measures Basic Policy

Recently, local torrential rains occur frequently in part of the Tokyo metropolitan area. The extensive flood damage of approx. 6,000 houses occurred due to the torrential rain exceeding 100mm per hour centered on Suginami Ward and Nakano Ward on September 4th, 2005.

Responding to these, we established the Tokyo Metropolitan Torrential Rain Measures Examination Committee comprised of the academic experts in May 2006, and consulted with respect to the measures for torrential rains in Tokyo in the future.

As a result, we received the recommendation of the following two items as a framework from the committee.

a. To further promote the disaster mitigation countermeasures such as “River Basin Measures” not to directly run rain water into a river which is used as a sewer and “Housing and Urban Development Measures” to mitigate the flood damages, from a viewpoint of the promotion for self-help and mutual-help, as well as “River Improvement” and “Sewage Improvement” as public-help.

b. Designation of “Countermeasure Promotion Areas” based on the frequency of the torrential rains and flood damage occurrence

Based on the recommendation from the committee, we compiled its directions focusing on the countermeasures for the torrential rain which has been increasing recently, out of the whole flood control measures the Tokyo Metropolitan Government conducts, and instituted “the Tokyo Metropolitan Torrential Rain Measures Basic Policy” in August 2007.

Specifically, it was to show the directions of the objectives and efforts the Tokyo Metropolitan Government should realize in ten years in “the Countermeasure Promotion Areas” (please refer to Chart 3-18 Countermeasure Promotion Areas) where torrential rains and following flood damages occur frequently.

【Objectives to Realize in Ten Years】
① To prevent the damages of the inundation above the floor level against rainfall up to approx. 55mm per hour and of the basement flooding
② To secure the safety of human lives even in case of the record high rainfall

【Directions of Efforts】
● River Improvement
  ・ To address rainfall exceeding 50mm per hour using the whole river facilities by the improvement of the river channel and the regulating reservoir for the time being.
  ・ To address rainfall exceeding 50mm per hour combined with the river channel by the improvement of the regulating reservoirs based on the basin and the characteristics of the area.
● Sewage Improvement
  ・ To address rainfall of corresponding to 50mm per hour using the whole sewerage facilities by introducing the new design method which can take into account the characteristics of the area and improving the river channels (culvers) and retention facilities (regulating reservoirs).
  ・ The partial improvement of the facility in advance which can address rainfall of 75mm per hour in the high risk areas of flood damages such as underground shopping complexes.
● River Basin Measures
  ・ The promotion of the infiltration by the public rainwater infiltration inlet and the delivery of subsidies for the rainwater infiltration inlet installation to private houses.
  ・ To incorporate the water-holding capability of green land into the River Basin Measures
● Housing and Urban Development Measures
- The creation of the mechanisms so that the flood records can be explained at the real estate transactions
- The expansion of the subsidy programs to the construction of the raised floor structure and the installation of a water stop, and the promotion of the countermeasure implementation by the guidelines and the ordinances
- The formulation of the Tokyo Metropolitan version of the underground space flood countermeasure guidelines which shows the areas that need the countermeasures and the examples including the simple flood fighting methods by water bags, and the formulation of the underground flood countermeasure plans by facility (underground shopping mall, subway)
- Implementation method for Evacuation
  - The study of the implementation method for the evacuation to the upper floor
  - The preparation of the chart for the flood hazardous area and the hazard map, and the provision of the information for the highly accurate local heavy rain occurrence

Chart 3-18 Countermeasure Promotion
(2) Torrential Rain Countermeasure Plan by Basin
In the countermeasure promotion basin, principally the Council for Comprehensive Flood Control Measures instituted the Torrential Rain Countermeasure Plan by Basin which shows the torrential rain measures to be implemented by the fiscal year 2017, for “the Kanda-River, Shibuya-River, Furukawa-River basin” in March 2009 and for “the Shakujii-River, Meguro-River, Nomi-River, Nogawa-River, Shirako-River basin” in November 2009.

(3) Emergency Torrential Rain Measures
Furthermore, triggered by the flood damage due to the torrential rain exceeding 100mm per hour occurred in the Shakujii-River basin in July 2010, the Tokyo Metropolitan Government newly instituted the Emergency Torrential Rain Measures to pursue the swift damage mitigation by the intensive emergency improvement for the flood damage high risk area in cooperation with the related municipal governments and the citizen of Tokyo in November 2010.

① To promote the establishment of the retention facilities utilizing public facilities
- Projects in fiscal year 2013: to schedule junior high schools in Musashino City and three housing complexes owned by the Tokyo Metropolitan Government.
- To approach the 28 municipal governments especially related to seven basins to promote the flood damage measures such as Shakujii-River and each Bureau of the Tokyo Metropolitan Government to promote the establishment of the facilities.

② To take water into the underground regulating reservoir from other basin
- To study to take water into the Shirako-River Underground Regulating Reservoir from Shakujii-River
- To shorten the construction period of the Shirako-River Underground Regulating Reservoir now under construction by approx. one year

③ To expand the measures for large-scale underground shipping complexes
- To promote the formulation of the evacuation plan (to schedule Tokyo Station Yaesu Entrance in fiscal year 2010, Shinjuku Station West Entrance, Ikebukuro Station West Entrance, Kabuki-cho and Shibuya in fiscal year 2012, Keio Line Shinjuku Station, Shinjuku Station East Entrance, Ikebukuro Station East Entrance and Shimbashi Station East Entrance in fiscal year 2013)
- To move up the schedule of the improvement of the sewerage facilities (rainwater storage pipe) as the underground shopping complex measures.
  (Moving up the schedule of the improvement of the sewerage facilities (rainwater storage pipe) in the three basins of Kanda-River, Shakujii-River and Shirako-River)

④ To provide the information to protect human lives and livelihood
- In case there is a threat of the overflow stream, we newly implemented the provision of the flood prevention information which can be immediately reached to the citizen of Tokyo at Shakujii-River in cooperation with the Ward in the basin
- To promote the efforts to raise the public awareness among the citizen of Tokyo in cooperation with the Tokyo Fire Department