

## **Comprehensive Flood Control Measures**

### **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 Sugunami Ward and Nakano Ward on September 4th, 2005.

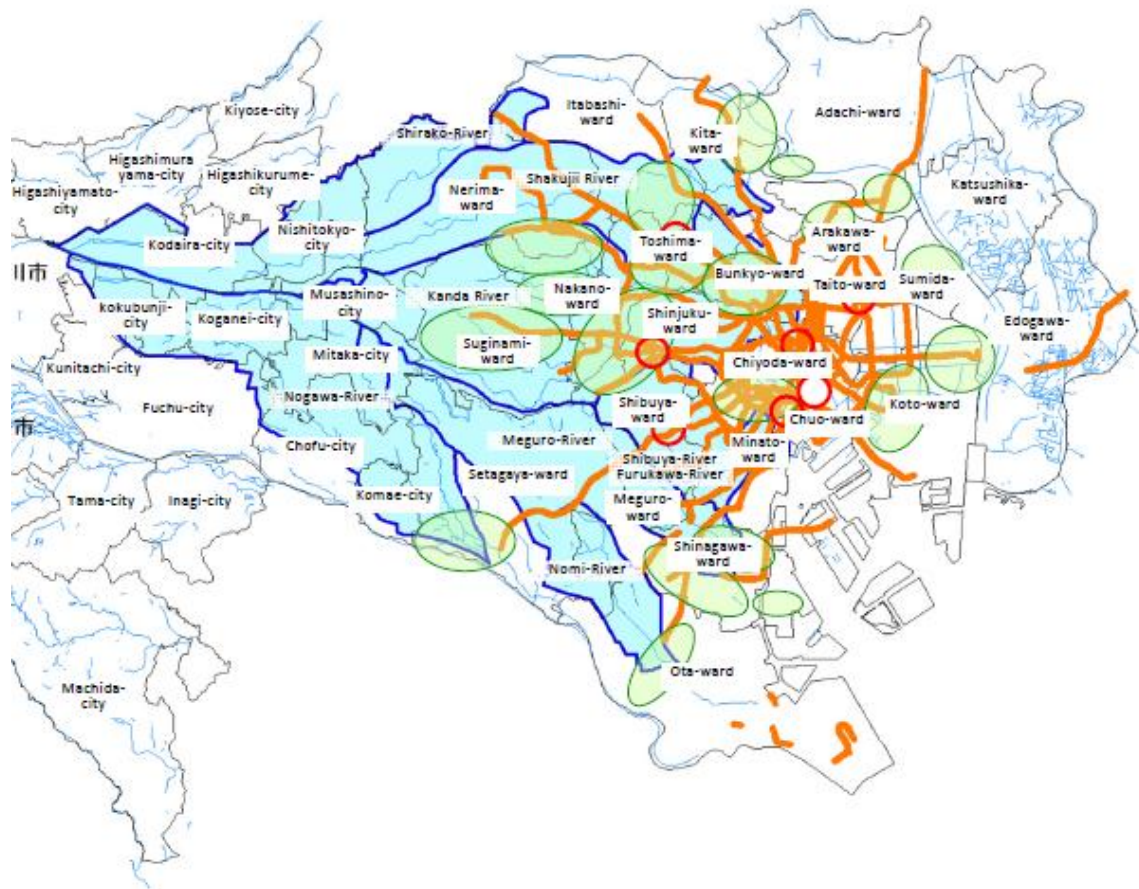
Responding to these, we established the Tokyo Metropolitan Torrential Rain Measures Examination Committee comprised of the academic experts in May 2006, and consulted with respect to the measures for torrential rains in Tokyo in the future.

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

- (1) 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.
- (2) 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” 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

### **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.

## 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 shopping 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 reac

hed to the citizen of Tokyo at Shakujii-River in cooperation with the Ward i  
n the basin

- To promote the efforts to raise the public awareness among the citizen of Tokyo in cooperation with the Tokyo Fire Department