

Disaster Prevention Measures

by the Tokyo Metropolitan Government

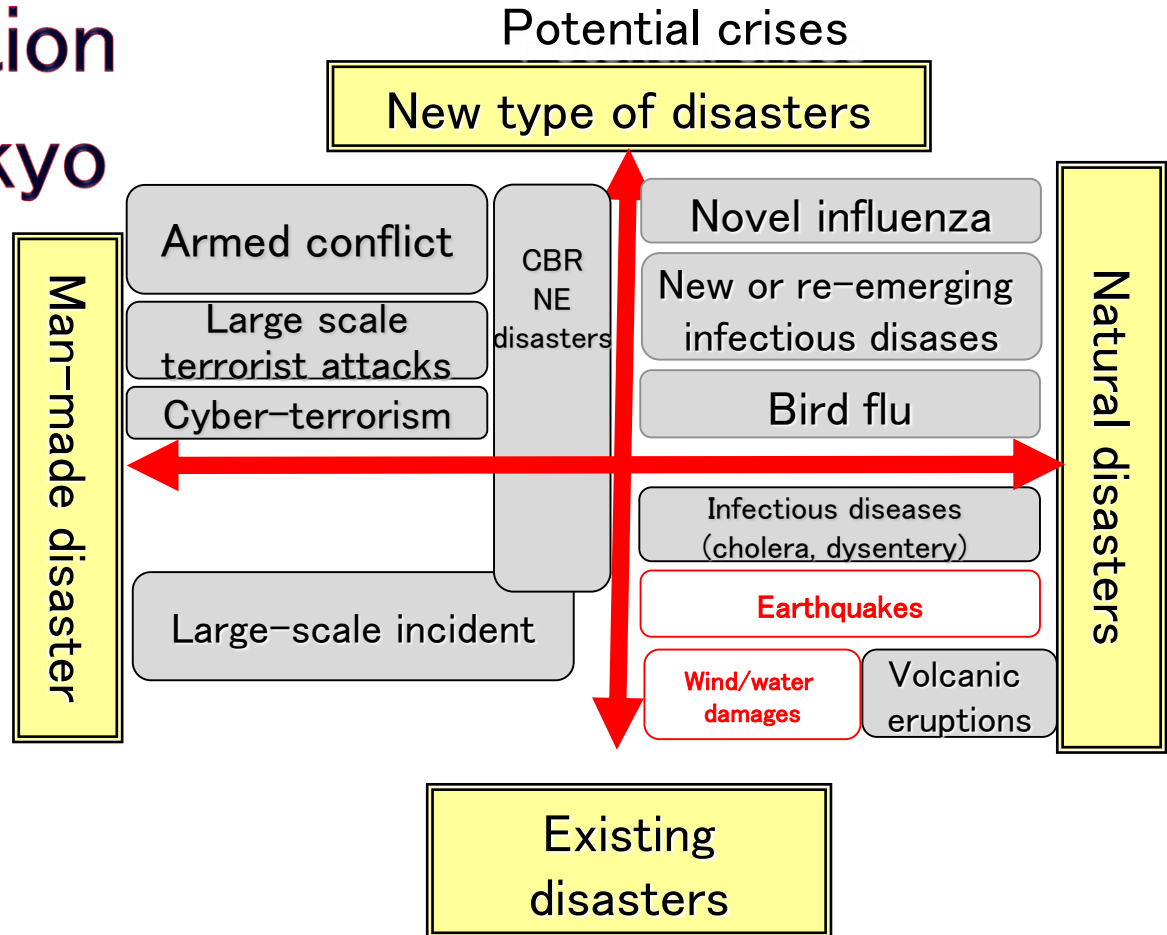


2023/1/31

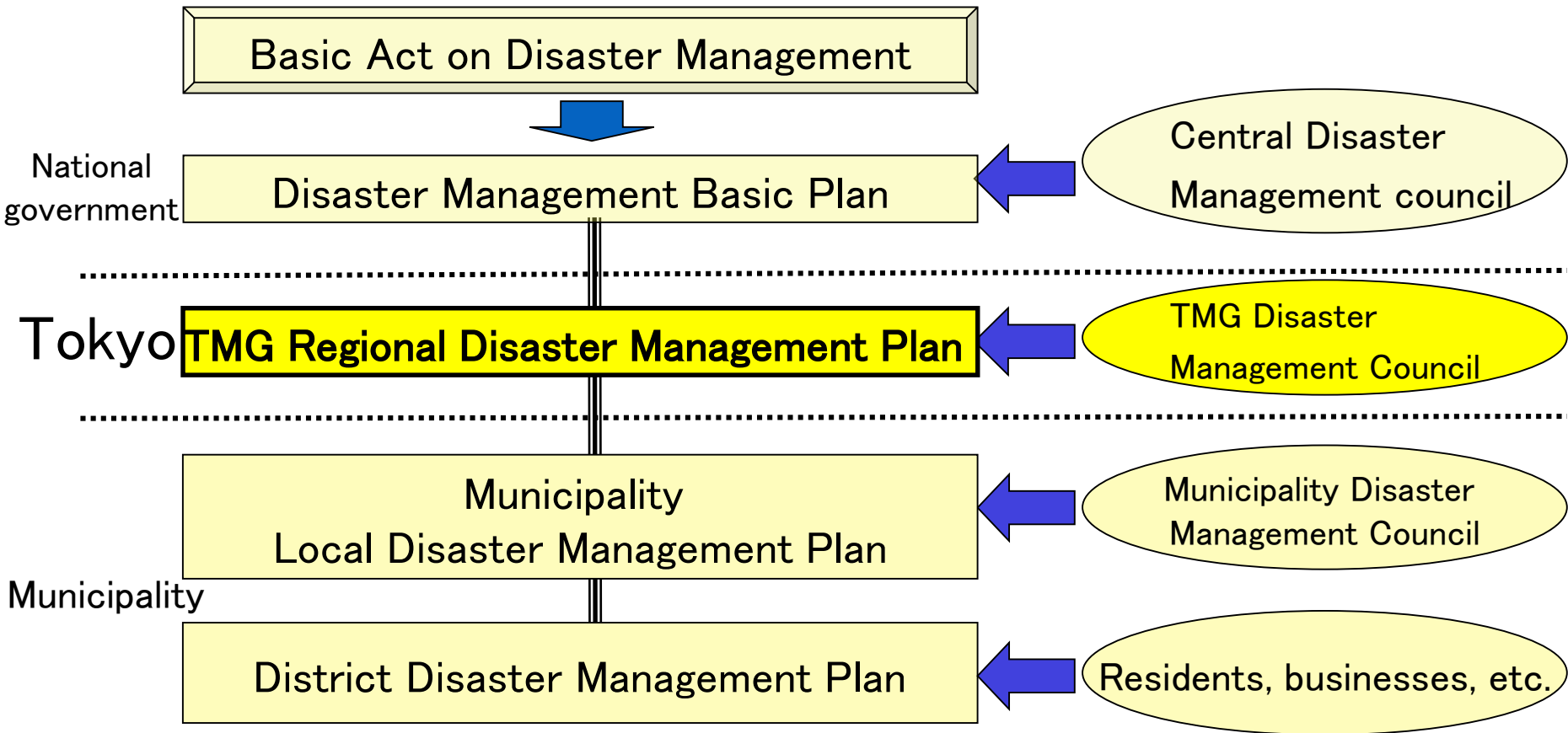
Bureau of General Affairs Tokyo Metropolitan
Government

Disaster prevention measures of Tokyo

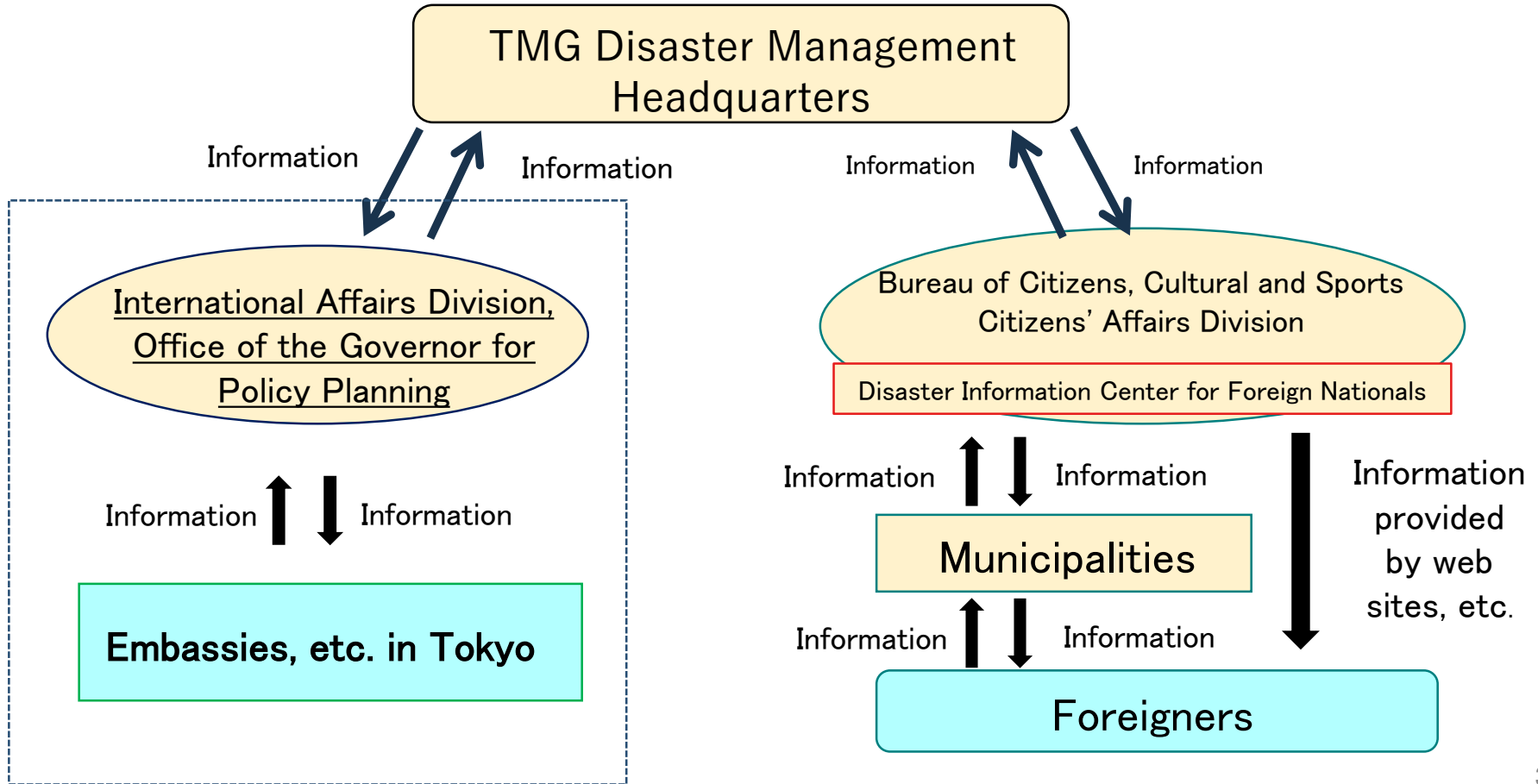
Measures against earthquake



Framework of Tokyo's disaster prevention measures



Tokyo Metropolitan Government operational framework during disasters



Providing information to foreigners

① TMG Disaster Prevention Information website (available in multiple languages)



To the Tokyo Residents

Thank you very much for your cooperation in saving electricity at home and workplaces. We would like to ask for your continued cooperation in energy conservation activities at home and at workplaces by turning off lights in unused rooms, turning off unused equipment, etc.

> [TEPCO website](#)

> [Joint message from Tokyo metropolitan and 8 prefectural governments regarding energy conservation, etc. \(PDF 1.0MB\)](#)

Evacuation Information



Currently, no evacuation information has been issued.

To search for evacuation centers, temporary shelters, etc., please check the [Tokyo Metropolitan Disaster Prevention Map](#).

② Digital signage (examples)

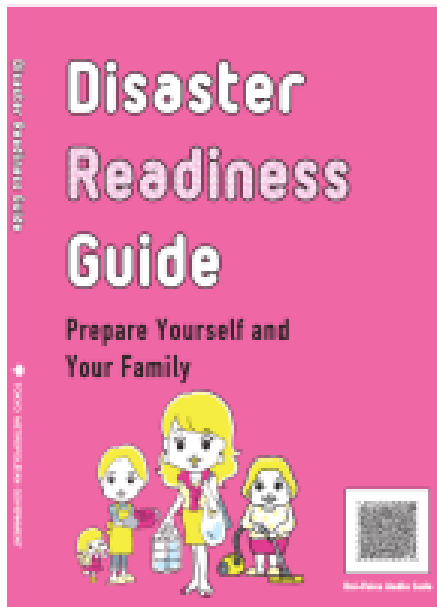


③ Tokyo Metropolitan Government Disaster Prevention Guide Book

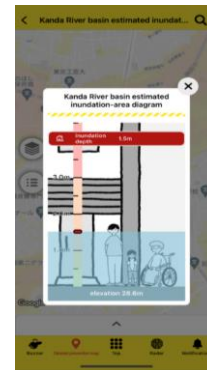


Information provision to foreigners

④ Disaster Readiness Guide (Chinese, English, Korean)



⑤ Disaster Readiness App (Chinese, English, Korean)



Android



iOS



Help Card
(Issued by Bureau of Citizens, Cultural and Sports)
Showing useful Japanese phrases to ask for a help for foreign residents.
(Chinese, English, Korean)

Background to revisions to damage estimates

March 2011: Great East Japan Earthquake

Estimates for damage in Tokyo following earthquake centered on Tokyo, published (2012)

- Maximum intensity: Magnitude 7
 - Buildings destroyed: About 300,000
 - Deaths: About 9,700 ■ Evacuees: About 3.39 million
 - People unable to return home: About 5.17 million
- *North Tokyo Bay earthquake

Estimates for damage in Tokyo following or Nankai Trough earthquake on Tokyo, published (2013)

- Maximum tsunami height: 30.16m (tsunami will arrive about 15 minutes after the earthquake)
- Buildings destroyed: About 1,300 (of which about 1,200 are destroyed by the tsunami) ■ Deaths: About 1,800

※ Carried out based on findings from the **1995 Hyogo-ken Nanbu (Kobe) earthquake** and the **2011 Great East Japan earthquake**

Developments in the decade since

New insights and knowhow about damage due to major earthquakes etc.

Massive earthquake presumably imminent

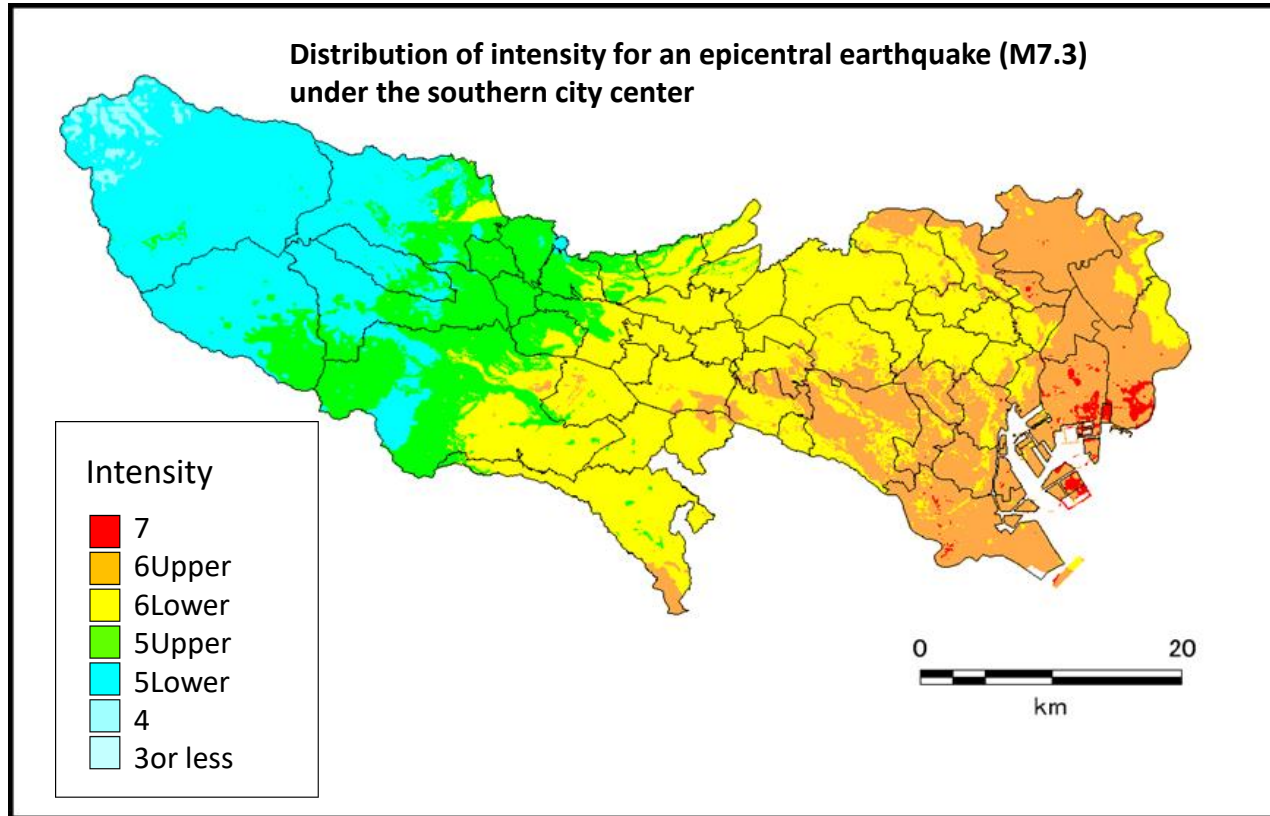
Probability of a Nankai Trough earthquake:
70% → 70%-80%

Steady progress with earthquake-resistant **urban development**
Major changes in social environment

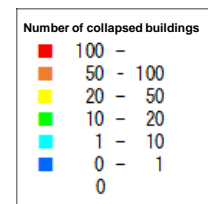
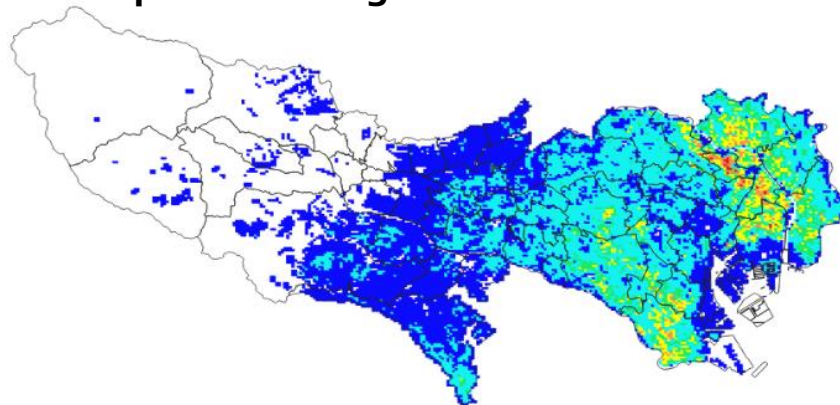
Preparation of new estimates on which to base disaster preparedness measures

Damage Estimates in Tokyo (Epicentral earthquake under southern city center)

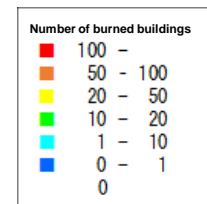
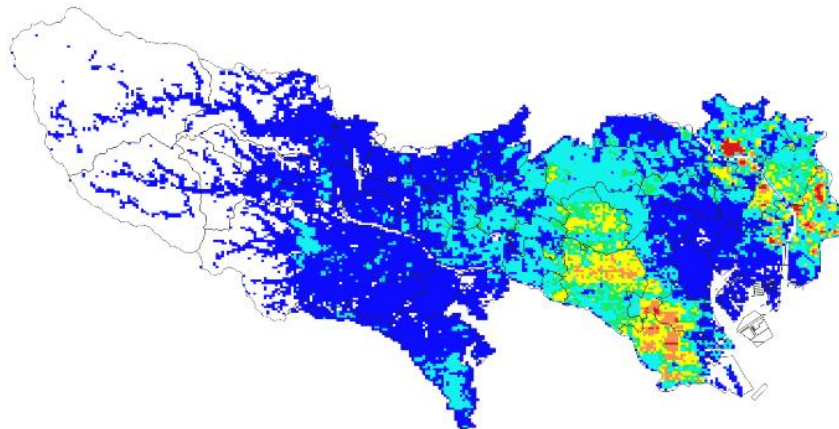
- This is an earthquake **with the maximum predicted damages within the city, with an intensity of 6 upper or greater effecting approximately 60% of city wards.**
- **194,431 buildings** will be damaged, and **6,148 deaths** are predicted.



Distribution of collapsed buildings



Distribution of burned buildings



Comparison with earthquake in northern Tokyo Bay, which in the previous estimate was expected to cause the most damage

		Winter, evening (wind speed 8 m/s)		
Material damage	Building damage		194,431 (304,300)	Building Approx. 110,000 less
	By factor	Shaking, etc.	82,199 (116,224)	Building Approx. 34,000 less
		Fire	112,232 (188,076)	Building Approx. 76,000 less
Casualties	Deaths		6,148 (9,641)	People Approx. 3,500 less
	By factor	Shaking, etc.	3,666 (5,561)	People Approx. 1,900 less
		Fire	2,482 (4,081)	People Approx. 1,600 less
	Injuries		93,435 (147,611)	People Approx. 54,000 less
	By factor	Shaking, etc.	83,489 (129,902)	People Approx. 46,000 less
		Fire	9,947 (17,709)	People Approx. 8,000 less
Evacuees		@ 2.99 million (@ 3.39 million)	People Approx. 400,000 less	
Stranded		@ 4.53 million (@ 5.17 million)	People Approx. 640,000 less	

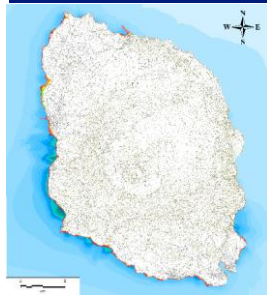
※ () denotes the previously predicted damages for an earthquake effecting the north of Tokyo Bay.

※ The seismic activity for an epicentral earthquake under the southern city center and an earthquake in northern Tokyo Bay will be different, and could be hard to compare.

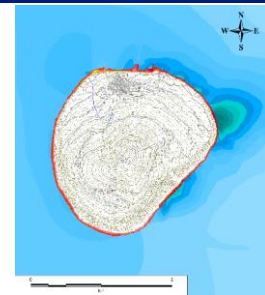
※ Totals may not add up due to rounding to the nearest whole number.

※ Shaking, etc. includes damage from liquefaction and landslides.

Damage prediction for Tokyo (Subduction-zone earthquake: islands)



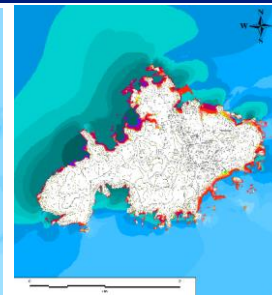
Oshima



Toshima



Niijima



Shikinejima



Kozushima



Miyakejima



Mikurajima



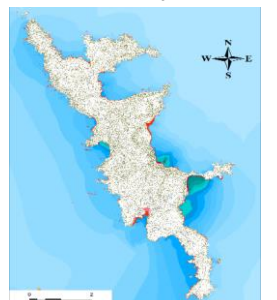
Hachiojima



Aogashima

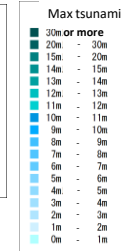
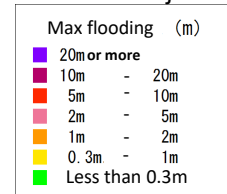


Chichijima



Hahajima

	Max Tsunami height	Arrival time
Oshima	@ 16 m	@ 23 min.
Toshima	@ 17 m	@ 19 min.
Niijima	@ 27 m	@ 17 min.
Shikinejima	@ 28 m	@ 14 min.
Kozushima	@ 27 m	@ 17 min.
Miyakejima	@ 16 m	@ 25 min.
Mikurajima	@ 6 m	@ 30 min.
Hachiojima	@ 17 m	@ 32 min.
Aogashima	@ 14 m	@ 36 min.
Chichijima	@ 15 m	@ 126 min.
Hahajima	@ 16 m	@ 108 min.



Building damage
1,258
(1,282)

Deaths
952
(1,774)

* Flooding on each island is maximum prediction

() Previous prediction

1 Making buildings earthquake-resistant, other renovations

◆ Major Specific Efforts

Self-help / mutual-help

- ✓ Using seismic diagnosis to confirm earthquake resistance, and having work done on the building to make it earthquake-resistant if necessary.
- ✓ Thoroughly considering where to place and how to secure furniture, home appliances, etc.
- ✓ Ensuring the safety of living spaces by fitting windows with shatterproof film, etc.

Public assistance

- ✓ Promoting earthquake-resistant schools, hospitals, and other key public buildings for disaster prevention.
- ✓ Measures to keep non-structural elements like suspended ceilings and light fixtures from falling in school facilities, kindergartens, nursery schools, etc.
- ✓ Promoting earthquake-resistant condominiums through financial support to encourage earthquake-resistant retrofitting and reconstruction.

Example of damage caused by the Great East Japan earthquake ▶



- Make key public buildings for disaster prevention earthquake-resistant ⇒ to 100% as soon as possible
- Prevent suspended ceilings, etc. in Tokyo Metropolitan High Schools from falling ⇒ complete by fiscal 2022

2 Curbing the outbreak and spread of fires

◆ Major Specific Efforts

Self-help / mutual-help

- ✓ Fireproofing and other fire prevention measures in homes, etc.
- ✓ Confirming how to use a fire extinguisher.
- ✓ Participating in and interacting with fire brigades, voluntary fire prevention organizations, etc.

Public assistance

- ✓ Promoting the development of earthquake-resistant fire cisterns and deep wells.
- ✓ Promoting the development of designated maintenance routes to serve as firebreak belts in the event of an earthquake disaster as well as for evacuation routes, emergency vehicle access, etc.
- ✓ Encouraging fireproofing through subsidies for rebuilding or demolishing aging wooden buildings under the Fire Resistance Regulation Zone system.

- Secure firefighters (23 central wards) ⇒ 90% or more of the numbers needed by fiscal 2030
- Designated maintenance routes ⇒ Spanning 28 wards/total of approx. 25 km by fiscal 2025

3 Preventing disorder due to people being unable to return home

◆ Major Specific Efforts

Self-help / mutual-help

- ✓ Understanding and putting into practice the idea of preventing everyone from returning home at once and of helping each other in the event of a disaster.
- ✓ Confirming stockpiles and ways to get home if a disaster strikes when you are not at home.
- ✓ Developing a safe environment where employees or customers can wait without worrying.

Public assistance

- ✓ Conducting training drills in cooperation with business associations, local communities etc. for measures to take for people unable to return home.
- ✓ Improving operational effectiveness in the event of a disaster by establishing a new system to improve the efficiency of temporary accommodation facilities, etc.



Training drill for measures for people unable to return home▲

4 Smooth establishment and running of evacuation centers

◆ Major Specific Efforts

Self-help / mutual-help

- ✓ Cooperation by evacuees in the running of evacuation centers.
- ✓ Evacuation center management with consideration for various people, where common courtesy and rules are upheld.
- ✓ Utilization of liquid infant formula that can be stored at room temperature.

Public assistance

- ✓ Promoting earthquake-resistant school facilities, social welfare facilities, etc.
- ✓ Promoting the installation of air conditioning in indoor sports facilities at public schools, etc.
- ✓ Support for municipalities that install toilet facilities for use during disasters such as manhole toilets.
- ✓ Cultivating disaster volunteer coordinators.



Manhole toilets in a school yard▲

(From “Guidelines for the Installation and Operation of Manhole Toilets,” Ministry of Land, Infrastructure, Transport and Tourism (March 2016))

· Create manuals for municipality evacuation center management and operations ⇒ For all municipalities by fiscal 2023

5 Securing drinking water and stockpiling

◆ Major Specific Efforts

Self-help / mutual-help

- ✓ Preparing gloves, etc. for cleaning up your room.
- ✓ Practicing “daily stockpiling” by purchasing a little extra of food and other supplies you use on a day-to-day basis.
- ✓ Paying attention to the expiration dates for batteries and medicine and stockpiling non-food items as well.

Public assistance

- ✓ Promoting earthquake-resistant water treatment plants and water pipes with earthquake-resistant joints.
- ✓ Promoting stockpiling, taking into consideration the perspectives of persons with special needs and women.
- ✓ Encouraging daily stockpiling of fuel for private vehicles through the “full-tank” campaign.
- ✓ Facilitating the introduction of solar power generation equipment, etc. which is also effective as an emergency power source.

Reference URLs

- Disaster Prevention web page (multilingual support)

<https://www.bousai.metro.tokyo.lg.jp/index.html>



- Tokyo Disaster Readiness Guide (Chinese (simplified characters), English, Korean)Chinese

<https://www.bousai.metro.tokyo.lg.jp/bousai/1000031/1003770.html>



- Disaster Preparedness Tokyo (Chinese, English, Korean)

<https://www.bousai.metro.tokyo.lg.jp/1002147/1008042/index.html>



- Disaster Readiness Guide (Chinese, English, Korean)

<https://www.bousai.metro.tokyo.lg.jp/1005427/1005746.html>

