

Tokyo Disaster Prevention Plan

—Becoming the World's Safest, Most Secure City—

December, 2014



TOKYO METROPOLITAN GOVERNMENT

Toward Becoming the World's Safest, most Secure City



As head of the Metropolitan Government, my goal is to make Tokyo the greatest city in the world, and safety and security are at the foundation of that effort. Tokyo faces many threats in the form of natural disasters, from the potential for an earthquake striking directly below the metropolis, to an increase in typhoons in recent years, as well as torrential rains and disastrous landslides. While no one can prevent these natural disasters from occurring, it is possible to be prepared for them.

The Tokyo Metropolitan Government is fully committed to disaster preparedness. But to create a structure for complete preparedness, it is important that people protect their own lives and that neighbors help one another; self-help and mutual assistance efforts are essential. In the aftermath of the Great Hanshin-Awaji Earthquake, approximately 98% of those who were rescued after being buried alive or trapped saw their lives saved through the cooperation of family and neighbors. Tokyo, too, is pushing ahead with a variety of initiatives to improve such self-help and mutual assistance capabilities among its individual and corporate citizens.

This Tokyo Disaster Prevention Plan provides an overview of the initiatives we will be working on together. It sets forth a schedule for measures in response to natural disasters such as earthquakes, wind and flood damage to be implemented by the year 2020, when Tokyo will host the Olympic and Paralympic Games. The plan lays out easy-to-follow, chronological simulations of situations that might arise in the event of a natural disaster. We encourage you to first look at the section titled “Possible Scenario in the Event of a Disaster,” and try to imagine yourself in those situations. Furniture may fall over and fires break out, mobile phones won’t work, and food and water will run out. You’re likely to find yourself wishing you had prepared in advance.

Risk management is the practice of envisioning the worst case scenario, then ensuring everything possible is done to prepare. Taking the year 2020 as one end point, this plan works backwards from there to lay out a clear road map for what needs to be done. I hope the citizens of Tokyo, and the companies that do business here, will work with us to manage the risks that Tokyo faces, and help us turn Tokyo into the safest, most secure city in the world, prepared to respond to any disaster.

December, 2014
Yoichi Masuzoe,
Governor of Tokyo

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I. About the Tokyo Disaster Prevention Plan

About the Tokyo Disaster Prevention Plan

■ Background of the Plan's Development

- ◆ Following the Great East Japan Earthquake, the Tokyo Metropolitan Government (TMG) undertook a fundamental review of its disaster prevention measures, the results of which were then reflected in revisions to the Tokyo Metropolitan Area Disaster Prevention Plan. Based on the roles defined in that plan, TMG then collaborated with national and municipal governments, disaster prevention-related organizations and others to make solid advances in measures to improve Tokyo's disaster prevention capabilities.
- ◆ In the midst of these efforts, Tokyo was selected to host the 2020 Olympic and Paralympic Games. While the success of the games is of course important, it is also important that Tokyo take advantage of this opportunity to achieve its goal of becoming the greatest city in the world. Disaster preparedness measures are one of the foundations on which a city's safety and security are built, and TMG will be expected to work even harder to promote such measures heading into the year 2020.

■ Significance of the Plan

- ◆ [Based on the following two basic concepts, the Tokyo Disaster Prevention Plan summarizes the disaster prevention initiatives that should be put in place by Tokyo's citizens, communities, companies and government in response to the potential for earthquakes, wind and flood damage and other natural disasters.

The two basic concepts

- (1) In advance of the Tokyo Olympic/ Paralympic Games, a sense of urgency should be brought to promoting efforts to ensure the viability of preparedness operations set forth in the Tokyo Metropolitan Area Disaster Prevention Plan, and to ensuring smoother emergency response and recovery efforts in the event of a disaster.
- (2) TMG should work to further the understanding and cooperation of Tokyo's citizens, communities and companies, who are largely responsible for the self-help and mutual assistance efforts so important to advancing disaster prevention methods, and to link that understanding and cooperation to specific prevention-related action.

- ◆ This plan indicates the key disaster prevention initiatives that should be put in place in the approximately six-year period between FY 2015 and FY 2020.
- ◆ In that sense, the plan is both an action strategy for government through the year 2020, and at the same time, a guideline to disaster preparedness efforts for Tokyo's citizens and companies.
- ◆ TMG will work even harder to gain the understanding and cooperation of national and regional governments, neighboring municipalities, and the citizens and companies of Tokyo, to unite self-help, mutual assistance and public assistance efforts to promote the disaster preparedness initiatives laid out in this plan, and to work toward making Tokyo the world's safest, most secure city.

■ TMG's Vision for Tokyo

- ◆ The plan offers a vision, and three specific perspectives, for making Tokyo the world's safest, most secure city, even as the metropolis constantly faces the risk of earthquakes, wind and flood damage and other natural disasters.

The Vision for Tokyo, and Three Perspectives

A city where, through the efforts of its citizens, communities, companies and government, disaster response capabilities are in place appropriate to the world's safest, most secure city.

- The city's citizens, communities and companies are highly aware of and prepared for disasters, forming a society in which, even in the event of a large-scale natural disaster, each citizen is ready and able to assist others and take appropriate action.
- In the event of a natural disaster, a disaster response system is in place to protect lives, enabling Tokyo and its municipalities, along with the Self-Defense Forces, the police, the fire department and others to work together to provide swift rescue operations and ensure evacuation centers operate smoothly.
- Solid progress is being made with efforts to build a strong, disaster-resistant city in the event of a major disaster such as an earthquake striking directly below the metropolis, including improvements to areas with a high density of wooden housing, earthquake-proofing of buildings, lifelines and other infrastructure, securing a network of roads and addressing issues such as torrential rains and tsunami.

■ Structure of the Plan

- ◆ The plan is structured around four key points for each type of disaster and each region covered, and lists measures for each.

Disaster	Earthquake	Wind and flood damage
Region	Wards, Tama Area, Island areas	Across Tokyo

Four Points	Description of Points
(1) Describe in chronological order possible scenarios that could arise in the event of a disaster.	Documents the series of events that could arise in the event of damage to homes or business and entertainment districts after the disaster.
(2) Note the situations deriving from the scenarios offered, along with the currently envisioned end point.	Lists the status of efforts to date in response to situations that might arise under typical circumstances.
(3) Offer a vision for future outcomes, and a direction for those initiatives that should be given greatest emphasis.	For each situation, this documents a vision for the year 2020, and a direction for the key initiatives that should be put in place by citizens, communities, companies and the government to achieve that vision.
(4) Formulate the specific initiatives that should be put in place for self-help, mutual assistance and public assistance.	<u>This documents and provides a schedule for 14 ideal future outcomes, along with 54 initiatives for achieving them</u> (13 self-help and mutual assistance efforts, 41 public assistance initiatives*). *Public assistance initiatives include the primary efforts over the years through FY 2017.

How to Read the Tokyo Disaster Prevention Plan

(1) Different aspects of potential damage



1 Possible scenarios in the event of a disaster

Provides a chronological picture (going from top to bottom) of the circumstances that could arise in the event of a natural disaster occurring at home or in a business or entertainment district.

2 Situations deriving from this scenario

Lists the situations that might typically arise from **1 Possible Scenario in the event of a disaster**.

3 Initiatives that should be put in place

For each of the possible situations, offers an overview of the various types of initiatives that should be in place by the year 2020.

4 Cases

Lists the location affected by the natural disaster, and the expected conditions.

Note 1: These possible scenarios are intended to provide a picture of what kinds of situations might be expected to occur in the event of a natural disaster; events will not necessarily occur in this order in the event of an actual disaster.

Note 2: Self-help, mutual assistance and public assistance initiatives are listed along with the possible scenarios, but each of these initiatives is intended to be undertaken with respect to the potential circumstances; the list does not indicate the order in which they are to be put in place. These initiatives are not intended to be limited to the time or possible scenario with which they are listed.

Note 3: Initiatives labeled as "by 2020" include initiatives to be implemented by the end of FY 2020.

Note 4: An explanation is provided for the terms marked with an * on the last page of the respective chapter.

(2) Initiatives that should be put in place for the year 2020



5 In the year 2020...

Documents a vision for the future to be achieved through the efforts of citizens, communities, companies and government.

6 Self-help and mutual assistance initiatives

Lists the key initiatives that should be put in place by citizens, communities and companies in response to each situation.

7 Public assistance initiatives

Lists the direction of key initiatives to be put in place by government, including those intended to encourage initiatives by citizens, communities and companies.

8 Key specific self-help and mutual assistance initiatives

Lists key procedures for advancing initiatives targeting the year 2020 from among those noted in 6 Self-help and mutual assistance initiatives.

9 Key specific public assistance initiatives in the three years between FY 2015-FY 2017

A schedule for key public assistance initiatives to be implemented in the three-year period between FY 2015 and FY 2017, with the goal of achieving the future vision listed in 5 In the year 2020, and based on the direction indicated in 7 Public assistance initiatives.

- ① Lists each item in the initiative, and the end point of initiatives to date.
- ② Lists initiatives through FY 2014, along with key initiatives for the three-year period between FY 2015 and FY 2017.
- ③ Lists the final ultimate status of the various initiatives and goals as of the FY 2020.

II. Earthquake in the Wards and Tama Area

Different aspects of potential damage

Disaster occurs

Hours from occurrence

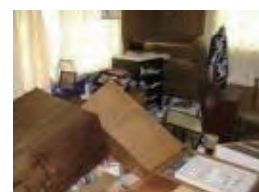
Possible scenario in the event of a disaster

- ▼ A sudden strong tremor hits, and your house, which hasn't been quake-proofed, begins creaking. It's impossible to stay standing.



Source: Institute for Fire Safety and Disaster Preparedness

- ▼ A sudden loud sound follows the tremor, furniture overturns and windows break.
- ▼ Your child can be heard crying from under a fallen bookcase.
- ▼ Your child can't escape on his own, but you manage to reach into the small space and pull him to safety.



- ▼ You leave the house to find that many of the older houses in the area have collapsed. You hear voices calling for help from among the collapsed homes, but alone you feel hopeless to rescue them.



Source: Institute for Fire Safety and Disaster Preparedness

- ▼ Flames burst out from part of a collapsed home.
- ▼ A neighbor is fighting desperately to put out the fire, but you don't know what to do, and can only stand there watching in a daze.



- ▼ The earlier blaze seems to have been extinguished, but flames can be seen spreading from another spot, so you decide to protect yourself and move to a safe place.



- ▼ Notice that emergency shelters have opened is later broadcast over the public emergency radio system, etc.

- ▼ Concerned about your house, you return home to check and to secure food and other supplies, but find the house completely demolished. You decide to seek safety in an emergency shelter.



Source: Institute for Fire Safety and Disaster Preparedness

Situations deriving from this scenario

Collapse of buildings, etc.

- ◇ Poorly quake-proofed homes and apartment buildings, etc. may collapse, leaving casualties and people trapped and unable to escape on their own.

Furniture, etc. overturns, falls or shifts

- ◇ Furniture that has not been secured may overturn, fall or shift, trapping people underneath and making it difficult to escape on one's own
- ◇ The shock of the quake can cause window glass, etc. to shatter, possibly resulting in death or injury.

Difficulties with citizen rescue efforts

- ◇ Lack of disaster expertise may result in lives lost that might otherwise have been saved.
- ◇ If ties between neighbors are weak, it may be more difficult to quickly attempt a rescue of the injured.

Outbreak and spread of fire

- ◇ Fire may spread if appropriate steps are not taken to extinguish the initial outbreak.
- ◇ If personnel and equipment to fight the fire is lacking, it may become more difficult to extinguish, and the fire may spread.
- ◇ In areas with a high density of non-fireproof construction buildings, buildings may be destroyed as the fire spreads.
- ◇ Spread of fire may result in a high number of casualties and severely injured.

Chaotic evacuation

- ◇ Failure to prepare items to take from the home in advance of evacuation could result in delays, causing evacuees to get caught in fires, etc.
- ◇ Unfamiliarity with evacuation areas and escape routes can mean considerable time will be needed to move to shelter.
- ◇ It may be difficult to quickly and smoothly evacuate the elderly, etc.
- ◇ Damage to roads, etc. resulting from quake activity may create obstacles to evacuation.

Initiatives that should be put in place

1.
Quake-proofing
and upgrading, etc.
of buildings
(see p.14)

2. Implementation of
rescue activities by
residents
(see p.16)

3.
Control of
outbreak and
spread of fire
(see p.18)

4.
Achieving safe,
prompt evacuation
(see p.20)

Possible scenario in the event of a disaster

- ▼ You arrive at the emergency shelter and are relieved to find the school serving as a shelter hasn't been destroyed.
- ▼ The emergency shelter is overflowing with citizens who have lost their homes to the quake or the spread of fire.
- ▼ You finally manage to confirm the safety of other family members via email.
- ▼ You're thirsty and go to find a water fountain, but no water comes out.
- ▼ You go to use the toilet, but there are long lines of people waiting.
- ▼ Space in the emergency shelter is tight, the floors are cold, and you're too cold to sleep.



Source: Institute for Fire Safety and Disaster Preparedness

- ▼ All three meals at the emergency shelter consist of instant rice or hard biscuits and water. With so many evacuees, even those items are running out, and you're told that given the chaos resulting from the disaster, it's unclear when relief supplies will arrive.



- ▼ As day breaks, you go to a nearby hospital to check on a family member who was transported there.
- ▼ The injured continue to arrive at the hospital non-stop, and mass confusion reigns.
- ▼ On the way back to the emergency shelter, fire continues to spread in places as far as you can see, and Self-Defense Force, police and fire personnel are working to rescue the injured from collapsed buildings, but it's clear there isn't enough manpower.



Source: Institute for Fire Safety and Disaster Preparedness

- ▼ During food distribution, many who are not evacuees have begun showing up looking for food.
- ▼ Shelter stockpiles are running low, but new supplies have yet to arrive, and trouble has started to arise between shelter personnel and evacuees.



- ▼ Several days later, water, sewer and other lifelines are gradually being restored, and electricity is finally being supplied to the emergency shelter.
- ▼ A Victim's Certificate is required to receive government aid, but you're discouraged when you're told it will take a considerable amount of time to issue one.
- ▼ Tired of life as an evacuee, you're now staying with relatives near Tokyo, but you'd like to quickly get back to living independently.



Source: Institute for Fire Safety and Disaster Preparedness

Situations deriving from this scenario

Obstacles to opening and operating emergency shelters

- ◇ Non-quake-proofed buildings may collapse, ceilings may fall in, and the buildings may not be usable as emergency shelters.
- ◇ Disruption of water and sewer lines immediately following the disaster may leave some toilets and other facilities unusable.
- ◇ Significant chaos can be expected if emergency shelter operating structures are inadequate.
- ◇ Heat, cold, and cramped spaces may result in an increase in evacuees with health damage.

Stockpile shortages

- ◇ In the few days immediately following a disaster, information and supplies in particular tend to be disrupted, making it difficult to respond to shortages.
- ◇ Shortages of or lopsided food supplies may cause an increase in evacuees with health problems.

Difficulties with rescue and relief operations

- ◇ In the event medical facilities are damaged in a tremor, etc., medical services may be impaired.
- ◇ Damage to roads, bridges, etc. resulting from earthquake tremors may leave emergency vehicles stuck, making it impossible to conduct smooth rescue and relief operations.
- ◇ It may be extremely difficult to conduct rescue and relief operations in the face of a vast number of injured and missing.

Shortages of daily commodities, etc.

- ◇ If roads are blocked by rubble, it may affect the transport of stockpiles and other supplies.
- ◇ It may be difficult to provide food, basic essentials, and other items that meet the varying needs of individual evacuees.
- ◇ As time passes, citizens whose houses escaped destruction and who are living at home may experience stockpile shortages.

Prolonging of efforts to rebuild lives

- ◇ A considerable amount of time may be required to investigate and process the vast amount of damage caused by collapsed buildings, losses to fire, etc.
- ◇ Extended interruption of lifelines, transportation and other facilities may have an impact on economic activity.

Initiatives that should be put in place

7.
Smooth opening
and operation of
emergency shelters
(see p.26).

8.
Securing of sufficient drinking
water and other stockpiles to
supply daily needs for three
days following a disaster
(see p.28).

9.
Rescue and relief
operations through
public assistance
(see p.30).

10.
Early rebuilding of
lives through
prompt recovery
efforts
(see p.34).

Different aspects of potential damage

Disaster occurs

Hours from occurrence

Three days later

Possible scenario in the event of a disaster

- ▼ Shopping in the city, you're on the upper floor of a department store when suddenly a major tremor hits.
- ▼ The building is quite old, and you're engulfed in the fear that it might collapse.
- ▼ The shaking subsides, but the elevators have stopped, and it seems some people have been trapped in them.
- ▼ Ignoring store personnel attempts to stop them, confused shoppers think only of their own safety as they run down the stairs.



Source: Institute for Fire Safety and Disaster Preparedness

- ▼ You make it as far as the train station, but train services have been suspended, and the station is overflowing with people.
- ▼ You try to find out about the damage using your mobile device, but data communications are at a crawl and you can't confirm anything.
- ▼ You stay near a station stairway overflowing with people and wait for train services to resume.
- ▼ Some foreign tourists who don't know what's happened approach you with worried faces, and you do your best to explain the situation to them in broken English.



- ▼ Concerned about your family and your house, you decide to make your way home.
- ▼ You aim for the highway and start walking, but waves of people block your progress and overflow into the roadway.
- ▼ You try many times to contact your family using your mobile device, but can't get a connection.
- ▼ Just as you're feeling overwhelmed, you hear that a recently re-developed building is offering space to those unable to make it home, and begin heading that way.
- ▼ Arriving at the building, you're provided with food, water and blankets, and are even able to charge your mobile device.
- ▼ You're finally able to confirm by email that your family is standing by at your home, which escaped destruction.
- ▼ Conditions are cramped, but once you eat the food that was provided, you fall asleep exhausted.



- ▼ Three days after the disaster, partial train services have resumed.
- ▼ Even though the train can take you only part of the way, you miss your family and decide to head for home.
- ▼ You've been walking for three hours since you got off at the last station. You're thirsty, and stop at a convenience store to get something to drink, but they are all out of everything.
- ▼ Not sure where you are, you get lost on the unfamiliar streets, but after several more hours of walking, you finally reach home.



Situations deriving from this scenario

Collapse of buildings, etc. (reused)

- ◇ Poorly quake-proofed buildings may collapse, and falling walls and glass may result in multiple deaths and injuries, including among passers-by.

Shortage of information

- ◇ With mobile phone and other communications disrupted, it may be difficult to determine whether trains are running or to gather other kinds of information.
- ◇ Tourists, including foreigners, and others unfamiliar with a place have access to even less information, which may increase their fear and spur further confusion.

Mass departures for home

- ◇ Some facilities may begin shutting out new arrivals, increasing the number of those with nowhere to go.
- ◇ Roads and stations may become overrun by people wishing to go home, concerned by their inability to confirm the safety of family members. The resulting traffic jams and chaos could give rise to mass collapses and other injuries.
- ◇ Traffic jams could create significant obstacles to rescue and relief efforts.

Confusion arising while walking home

- ◇ Lack of geographic familiarity means many may not know the road home, and may take considerable time to get there.
- ◇ For those walking significant distances to get home, finding toilets and securing water, etc. on the way may not be easy.

Initiatives that should be put in place

1. Quake-proofing and upgrading, etc. of buildings (see p.14).

5. Accurate transmission of information (see p.22).

6. Preventing confusion due to stranded people (see p.24).

Initiatives that should be put in place for the year 2020

1. Quake-proofing and upgrading, etc. of buildings

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

Many communities have been formed which have significantly reduced the number of buildings collapsed due to tremors, and resultant deaths and injuries.

Self-help and mutual assistance initiatives

■ Move ahead with safety measures people can implement themselves at home or in the workplace.

- Undergoing a seismic evaluation is important to understanding the quake resistance of one's home. Homes that are judged to have poor quake resistance should undergo seismic retrofitting.
- For apartment buildings and other multiunit dwellings, earthquake preparations should be made through the owners' association, including appropriate management (seismic evaluations, earthquake-proofing), repairs, and functional upgrades through rebuilding.
- Potentially dangerous furniture and appliances should always be firmly secured.
- Take steps to create an injury-free environment, including the use of shatterproof film on windows.
- Ensure the safety of one's living spaces by leaving as few items as possible in bedrooms and entrances.



Residential seismic evaluations



Securing safe space in the home

Public assistance initiatives

■ Prevent the collapse of buildings essential to disaster prevention

- Important buildings such as schools and hospitals which are needed to secure emergency shelter and medical functions will receive financial and technical support to advance earthquake proofing efforts.
- Measures will be advanced to prevent the fall of non-structural elements such as ceiling materials and lighting fixtures in school facilities, etc.

By the year 2020...

Earthquake proofing of public buildings*1 essential to disaster prevention is completed.



Examples of seismic retrofitting of multiunit dwellings



Renovations to metal substrate ceilings



Examples of quake-proofing of non-structural components

■ Promote efforts to prevent the collapse and improve the disaster resistance of homes and apartment buildings, etc.

- Implement the financial and technical support needed for earthquake proofing and rebuilding of apartment buildings.
- Promote public awareness of regional risk levels, information on potential damage and examples of earthquake proofing initiatives.
- Work to encourage the spread of multiunit housing (Tokyo LCP Housing) equipped to enable continued living even in the event of a disaster.
- By systematically conducting seismic retrofitting and rebuilding, advance the earthquake proofing of TMG and other publicly-owned housing.
- Encourage the rebuilding and upgrade of aging buildings, etc. through urban re-development.

By the year 2020...

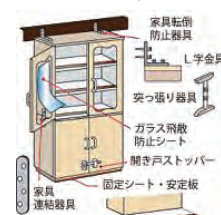
- Residential quake-proofing 95%
- TMG public housing quake-proofing 100%

■ Encourage measures to prevent furniture, etc. from overturning, falling or shifting

- Work to encourage dissemination of measures to prevent furniture, etc. from overturning, falling or shifting, particularly among the younger generation, where implementation rates are low.

By the year 2020...

Implementation rate of measures to prevent furniture, etc. from overturning: 60% (FY 2015)



Measures to prevent furniture, etc. from overturning

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Move ahead with safety measures people can implement themselves at home or in the workplace The year 2020

Initiatives at home	Confirm what year the house was built Meet with those involved (multiunit dwellings).	Undergo a seismic evaluation.	Undergo quake-proofing as needed.
	Confirm where items are kept.	Keep hallways and entrances tidy, apply shatterproof film to windows.	Reconfirm a room's safety whenever cleaning.
	Confirm the condition of furniture in each room.	Install fixtures to prevent furniture from overturning.	Check for loose fixtures and securing.
Initiatives in the workplace	Confirm where items are kept.	Tidy up any boxes, etc. that are stacked in hallways.	Check the safety of the office space during regular cleaning, etc.
	Check the condition of office equipment and furniture.	Take steps to prevent equipment, etc. from overturning.	Check for loose fixtures and securing.

Key specific public assistance initiatives in the three-years between FY 2015–FY 2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
■ Prevent the collapse of buildings essential to disaster prevention.						
Complete earthquake-proofing of public buildings, etc. essential to disaster prevention Earthquake-proofing of public buildings essential to disaster prevention 90.3% (end of FY 2010)	Earthquake-proofing of fire stations, police departments, public schools etc.	Continue to promote earthquake-proofing of public welfare facilities*, private schools, etc.				Complete earthquake-proofing of public buildings, etc. essential to disaster prevention.
	Implement subsidies for seismic evaluations, seismic retrofitting, etc.					
	Promote earthquake-proofing of non-structural components in public school facilities, etc.					
	Encourage steps to prevent the fall of items installed at height in indoor play areas, etc. of municipal public schools.					Improve quake resistance of public school facilities, etc.
	Implement steps to prevent the fall of items installed at height in TMG-run public schools.					

■ Promote measures to prevent the collapse of and improve the disaster resistance of homes and apartment buildings, etc.

Residential earthquake-proofing	Review and implementation of measures to encourage earthquake-proofing and rebuilding of apartment buildings.				Residential earthquake-proofing 95%
	Review through the Tokyo Housing Policy Committee.		Implement necessary support, etc.		
	Implement joint rebuilding model project in three sectors.				
Residential earthquake-proofing 81.2% (end of FY 2010)	Implement aid for seismic evaluation and renovation of wooden housing in designated upgrade zones.*3				Improve disaster resistance of apartments through rebuilding.
	Implement support through the taxation system.		Review based on trends in tax reform, etc.		
	Residential earthquake-proofing above 90%				
Earthquake-proofing of TMG-owned housing 77% (end of FY 2013)	Implement earthquake-proofing of TMG-owned housing through seismic retrofitting and rebuilding.				Earthquake-proofing of TMG-owned housing 100%
	Earthquake-proofing above 90%.		Further promotion of earthquake-proofing.		
	Create new sites through rebuilding (utilize for TMG measures including promotion of road and park development).				
	Promote installation of automatic landing devices in elevators to prevent confinement during power outages.				

■ Encouraging measures to prevent overturning, falling and shifting of furniture, etc.

Encourage measures to prevent overturning of furniture, etc.	Implement public awareness and guidance targeting specific types of households, focusing on those with a low rate of implementation.					Further increase implementation rates through the spread of indoor safety measures.
	Implementation rate 60%					
	Improve public awareness among residents and in offices of the dangers of long-period ground motion*, etc.					
	Prepare miniature shake table and vibrating device for testing		Public awareness activities utilizing shake table compatible with long-period ground motion.			
Implementation rate 58% (December, 2013)						

2. Implementation of rescue activities by residents

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

With a widespread sense that people are responsible for protecting their own lives and communities, disaster preparedness capabilities at the community level have improved.

Self-help and mutual assistance initiatives

■ Learn to protect one's own family and community.

- It is important in a disaster to first protect one's own life. Start by learning to take action to ensure your own safety when you receive an emergency earthquake notification or feel a tremor.
- Advance preparations are important in reducing damage from an earthquake. Families should treat disaster preparedness as a normal topic of conversation, confirming how to verify one another's safety and designated evacuation areas to gather in the event of an emergency.
- During an emergency, more lives can be saved when neighbors work together in rescue efforts. Maintain relationships with your neighbors on a routine basis, and participate in community disaster preparedness drills. It is also important to participate in community volunteer fire companies and disaster preparedness organizations.



Rescue and relief training through mutual assistance

Public assistance initiatives

■ The citizens of Tokyo and communities will be encouraged to develop a self-help, mutual assistance mindset.

- A disaster preparedness booklet will be created and distributed so that each household has one to serve as a disaster preparedness guide. The booklet will be used in the classroom, and other opportunities will be found to increase disaster awareness in the home and ensure preparations are complete.
- Public schools will conduct overnight disaster preparedness training and other kinds of hands-on, practical drills.
- Opportunities will be provided to learn about disaster preparedness through various facilities and through mobile devices, etc.
- To enhance community-level disaster preparedness capabilities and strengthen community ties, opportunities will be provided for training community disaster preparedness leaders and educational exchange.
- College students, including foreign students fluent in Japanese, will be recruited as disaster preparedness volunteers and trained to ensure availability of youthful mutual assistance resources.



Use in the classroom



Disaster preparedness training for students

By the year 2020...

- Overnight disaster preparedness drills at Tokyo metropolitan high schools and specialized schools Approx. 260,000 people (total for the period between FY 2015 and FY 2020)
- Implementation rate of comprehensive disaster preparedness education*5 in public schools 100%

■ The citizens of Tokyo and communities will be encouraged to improve their disaster response capabilities.

- To enhance the function of volunteer fire companies, which are models of community-based disaster preparedness, efforts will be made to ensure sufficient personnel and equipment are in place.
- A wide range of small- and large-scale public participation drills will be conducted to ensure a smooth response in the event of a disaster.
- Workplaces and communities will work together to train leaders in emergency relief and first aid, ensuring communities can conduct their own emergency relief activities.
- Organizations highly motivated to conduct disaster preparedness activities in the community will be certified as "TMG Disaster Preparedness Neighborhood Organizations," and information about their efforts will be widely disseminated.

By the year 2020...

- Recipients of lifesaving training 2.24 million (20% of daytime population) (FY 2016)
- First aid implementation rate*6 50% (FY 2016)



Emergency relief training



Community disaster preparedness study exchanges

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ People should learn to protect their own homes and communities

The year 2020

Initiatives at home	Family members discuss what to do during a disaster.	Prepare an emergency survival kit.	Check the contents of the emergency survival kit annually.
		Confirm evacuation areas and routes.	Walk evacuation routes during drills, etc.
		Confirm ways to stay in contact.	Take advantage of practice days to try out the emergency message dial system.
Community initiatives	Discuss roles during a disaster and other issues.	Participate in community volunteer firefighting and disaster preparedness organization activities.	Implement and participate in regular drills, etc.
		Confirm those in the community requiring special consideration.	Build visible relationships in the community.

Key specific public assistance initiatives in the three years between FY 2015-2017

	~FY 2014	FY 2015	FY 2016	FY 2017	... FY 2020
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■ The citizens of Tokyo and communities will be encouraged to develop a self-help, mutual assistance mindset.

Strengthen the disaster preparedness capabilities of each and every citizen	Prepare a trial version disaster preparedness booklet.	Distribute disaster preparedness booklet to households and validate contents.	Consider producing multiple language versions, etc.	Raise self-help, mutual-assistance awareness.		
		Create and distribute a disaster preparedness notebook*7 for study at home (target all public school students).	Implement initiatives utilizing the disaster preparedness booklet and notebook.			
Enhance disaster preparedness education	Extend overnight disaster preparedness drills to specialized schools	2 schools (trial run)	20 schools	40 schools	Extend to all schools (FY 2017-)	Overnight disaster preparedness drill participants Approx. 260,000 (FY 2015--2020)
Implement overnight disaster preparedness drills at all Tokyo metropolitan high schools. (end of FY 2013)					Conduct checks of faculty crisis management systems and improve disaster preparedness awareness among students.	
	Roll out Disaster Preparedness Activity Support Teams to encourage volunteer student participation in community disaster preparedness activities(FY 2014-).				Conduct initial response skill training to enable students to develop skills needed during a disaster(to be conducted at about 25 schools annually).	Organize across all schools
Public school comprehensive disaster preparedness education Implementation rate 92.4% (end of FY 2013)	Encourage schools that have not yet done so to introduce comprehensive disaster preparedness education.	Promote additional instruction utilizing volunteer fire companies, which are models of community-based disaster preparedness, and Tokyo Fire Department Disaster Support volunteers.	Consider creating a training instruction manual to improve disaster preparedness instruction capabilities.	Expand comprehensive disaster preparedness educational materials and equipment, including disaster preparedness training simulations and facilities for hands-on practice in firefighting and rescue.		100% implementation of comprehensive disaster preparedness education at public schools
Improve community disaster preparedness capabilities	Conduct community disaster preparedness study exchanges.	200 sessions (FY 2014)	250 sessions (weekend/night classes, etc.)	Diverse methods for developing community disaster preparedness personnel	Support development of municipal volunteer disaster preparedness organizations.	Mutual assistance capabilities rebuilt/elevated.
	Leader training for civic disaster preparedness organizations (quarterly).				Stimulate community disaster preparedness activities.	
					Support improvements in the leadership capabilities of civic disaster preparedness organizations.	

■ The citizens of Tokyo and communities will be encouraged to elevate their disaster response capabilities.

Conduct public participation drills	Conduct seasonal public participation drills quarterly.					
	Conduct cooperative community-based fire and disaster prevention drills (expand to 2 million participants annually). Conduct "machikado" disaster preparedness drills** tailored to each community.					
Strengthen emergency relief systems	Encourage municipally-led drills by school district, emergency shelter, etc.					Disaster response capabilities strengthened.
Number of people taking lifesaving classes 1.8 million (end of FY 2013)	Promote first aid incentive programs, disseminate through comprehensive disaster preparedness education.					
	Encourage participation in grade-appropriate lifesaving classes, faculty development, dissemination of incentive programs, etc.					
First aid implementation rate 39.5% (2012)	Establish "Bystander Insurance***" to reduce risks associated with applying first aid.					
	Number attending lifesaving class 2.24 million					
	First aid implementation rate reaches 50%					Further increase dissemination

3. Control of outbreak and spread of fire

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

Many fire-proof communities have been formed where, in the event a fire breaks out during a disaster, it doesn't spread.

Self-help and mutual assistance initiatives

■ Building communities resistant to the outbreak and spread of fire

- To keep homes safe from fire, homeowners should be encouraged to rebuild using fire-resistant construction. Homeowners should install ground fault circuit interrupters*¹⁰, seismic sensor-equipped distribution panels*¹¹ and other safety equipment, and implement fire prevention measures such as shutting of gas and electrical mains when evacuating.
- Residents should work with their communities to regularly participate in drills and learn initial firefighting techniques such as how to use a fire extinguisher.
- Residents should use drills and other activities as opportunities to get to know the local volunteer fire companies which protect their communities.
- Residents should be proactive in participating in volunteer adult and youth fire companies and other volunteer disaster preparedness organizations.



Street corner practical drills



Prepare fire prevention equipment

Public assistance initiatives

■ Support will be given to protecting communities from fire by strengthening community initial firefighting capabilities.

- Community fire prevention capabilities will be strengthened by spotlighting the activities of TMG Disaster Preparedness Neighborhood Organizations, which are highly motivated community based disaster preparedness groups.
- Securing of personnel and equipment will be promoted to strengthen the function of volunteer fire companies, which are models of community disaster preparedness capabilities.
- Efforts will be made to ensure the availability of water for firefighting, including installation of fire cisterns and deep wells and the use of water from rivers, etc., and to promote the installation of fire cisterns with dual-opening covers*¹², which are easier for residents to use in initial firefighting.
- A wide variety of both small- and large-scale resident participatory drills will be implemented to ensure a smooth response in the event of a disaster.



Install a fire cistern



Dual-opening cover

By the year 2020...

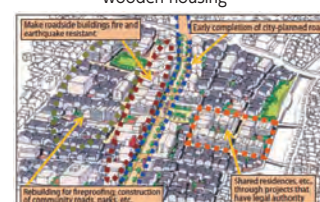
- Deep well installation 11 wells in special zones
- Installation of fire cisterns with dual-opening covers 757 installed in special zones (FY 2018)

■ Spread of fire between buildings, etc. will be prevented.

- Fireproofing zones*¹³, which make urban areas less prone to fire, will be steadily implemented, while improvements are made to system operations, and fireproofing of buildings and securing of vacant land in these zones are encouraged.
- Efforts will be advanced to prepare major urban roads (designated upgrade roads), which act to block the spread of fire and serve as evacuation and rescue routes. Until they are in place, other measures will be promoted, including establishment of temporary firefighting roads utilizing land designated for businesses.
- Parks and green districts will be put in place to secure open space where fire will not spread.



Area with a high density of wooden housing



Improvements to an area with a high density of wooden housing (illustration)

By the year 2020...

- Fireproofing in upgrade zones, zero losses due to spreading fire.
- Preparation of designated upgrade roads 100%
- Newly opened Tokyo metropolitan park space 100ha

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Building communities where fires do not burn or spread

The year 2020

Initiatives at home	Confirm the location of gas main and distribution panels, etc.	Install ground fault circuit interrupters and seismic sensor-equipped distribution panels, etc.	Check home fire prevention measures annually.
	Conduct inspections of smoke alarms and fire extinguishers.	Check how to use the fire extinguisher.	Regularly participate in firefighting drills, etc.
Community initiatives	Plan firefighting drills, inform community of volunteer fire company activities.	Work with fire department to conduct firefighting drills.	Acquire further firefighting skills
		Participate in community volunteer fire companies and disaster preparedness organizations.	Regularly conduct and participate in drills, etc.

Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
Strengthen initial firefighting capabilities Volunteer fire company personnel Special zones 14,190 people Municipal 9,315 people (April 1, 2014) Deep well installation Special zones 5 wells (end of FY 2013) Installation of dual-opening covers Special zones 422 covers (end of FY 2013)		Encourage support for volunteer fire company activities • Implement measures to encourage participation in volunteer fire companies through public messages on trains, etc. • Strengthen ties with community residents through fire and disaster preparedness instruction, etc. • Conduct drills, etc. through cooperation with relevant agencies.				Enhancing community initial firefighting capabilities
		Secure and promote use of water for firefighting.				Deep wells Special zones 11 wells
		Installation of deep wells (multi-function deep layer infinite water supply for disaster use ^{*14}) (1 per year)				
		Ongoing installation of fire cisterns with dual-opening covers (about 70 per year).				Dual-opening covers Special zones 757 covers (FY 2018)
		Consideration of new methods for installing fire cisterns and securing water supplies.		Consider implementation in light of commercial potential.		
	Consider use of river water.	Design (field test)	Field test	Implement upon consideration of field test results, etc.		Water supplies secured and put in place.

■ The spread of fire from buildings, etc. will be prevented.

Promote fireproofing in wooden housing areas Ratio of fireproofed areas in upgrade zones 56% (2006) Work begun on designated upgrade roads 12 of 28 sections (end of FY 2013)	Promote 10-year project to fireproof wooden housing areas ^{*15} Implement fireproofing zone system. Fireproofing zones 38 zones designated (October 2014) Additional designations (initial in FY 2015) [Key support measures] • Dispatch of experts, tax system support, and aid for removal/rebuilding of aging structures. • Strengthen system for execution by wards (dispatch experts in land use negotiation). Consider reevaluation of support measures. Roll out support measures in light of actual conditions in each community, local ward opinion, etc.					Fireproofing in upgrade zones (Zero losses due to spread of fire)
	Promote establishment of designated upgrade roads. Begin work on all roads (28 sections, approximately 26 km). Land acquisition and urban road construction.					Preparation of designated upgrade roads 100% (28 sections, approximately 26 km)
	Systematic promotion of metropolitan Tokyo park space. Obtain business permits. Begin land acquisition. Begin construction in sequence as land is acquired. Johoku-Chuo Park, Shinnozaki Park, Koganei Park, Higashi-Fushimi Park, etc. Revise policies for preparing urban planning parks and green spaces.					Newly opened metropolitan Tokyo park space 100 ha

4. Achieving safe, prompt evacuation

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

A system is in place to enable safe, prompt evacuation in the event of a disaster.

Self-help and mutual assistance initiatives

■ Conditions should be in place at home and the community to enable evacuation at any time.

- Have an emergency survival kit ready and keep it where it is immediately accessible in the event of a disaster. Decide on an annual date for checking the contents of the survival kit.
- Families should regularly discuss locations for seeking safe shelter in the event of a disaster, and confirm routes for getting there. Talk with your community members to create disaster prevention maps.
- Cooperate with neighbors to ensure those requiring special consideration^{*17} (those requiring evacuation assistance^{*18}) are guided to safe shelter or otherwise assisted.



Public assistance initiatives

■ Conditions will be put in place to ensure evacuees, including the elderly, foreign residents and others requiring special consideration, are able to evacuate safely.

- Support will be provided to municipalities that put in place a system for evacuation support utilizing lists of those requiring evacuation assistance.
- Efforts will be made to support the use of "Help Cards"^{*19} and promote the use of the "Help Mark"^{*20}, making it easier for those requiring special consideration to get assistance.
- Through enhanced disaster preparedness education, efforts will be made to cultivate personnel who can assist those around them and also contribute to their communities, while also strengthening local evacuation support structures.
- Structures for ensuring those requiring special consideration can evacuate safely and smoothly will be strengthened through the use of college students and other volunteers.
- Efforts will be made to put in place English and other bilingual versions of informational signage, etc. to make them more accessible to foreigners.
- Functional upgrade of parks and other evacuation areas will be advanced to ensure evacuees feel comfortable evacuating even during a power outage.
- Support will be provided to maintain urban farmlands^{*21} that can be utilized as evacuation areas during disasters.



Training regarding those requiring special consideration

By the year 2020...

- All municipalities will have formulated evacuation assistance plans (Overall Plans)^{*22} for those requiring special consideration.
- Overnight disaster preparedness drills at Tokyo metropolitan high schools and specialized schools Approx. 260,000 people (total for the period between FY 2015 and FY 2020).
- Implementation rate of comprehensive disaster preparedness education^{*5} in public schools 100%



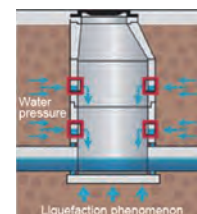
Overnight disaster preparedness drill (drill in methods to stanch bleeding)



Evacuation of those requiring special consideration

■ Efforts will be made to enhance the disaster prevention functionality of roads, etc. to enable prompt evacuation.

- In mountainous areas, retaining walls, rock fall prevention fences and other measures will be implemented to address issues with roadside slopes.
- While promoting burial of electric lines to do away with utility poles, efforts will be made to ensure roadside trees are properly maintained to prevent fallen trees.
- To ensure safe movement to evacuation areas, proactive efforts will be made to remove barriers to accessibility on evacuation routes and other Tokyo metropolitan roads. At the same time, steps will be considered to provide some level of lighting over roadways even during power outages.
- Efforts will be made to put in place roads to block the spread of fire and service as evacuation and rescue routes (designated upgrade roads).
- Use of grade-separated crossings between roads and railroad tracks will be promoted to improve access to evacuation areas.
- Measures will be promoted to prevent manhole covers from rising due to liquefaction.^{*23}



Measures to prevent manhole covers from rising

By the year 2020...

- Elimination of utility poles on roads completed to planned width within the Center Core Area ^{*24} 100%
- Preparation of designated upgrade roads 100%
- Total length of roads for which measures to prevent manhole covers from rising have been implemented Approx. 1,200 km



Accessible sidewalk

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Conditions should be in place at home and the community to enable evacuation at any time

The year 2020

Initiatives at home	Discuss when to evacuate and where to go	Prepare an emergency survival kit	Check the contents of the emergency survival kit annually.
		Confirm evacuation area and establish an escape route.	Walk evacuation routes during drills, etc.
		Confirm ways to stay in contact.	Take advantage of practice days to try out the emergency message dial system.
Community initiatives	Discuss who requires assistance.	Confirm those in the community requiring special consideration.	Build visible relationships in the community.
		Create a community disaster preparedness map.	Review the disaster preparedness map regularly.

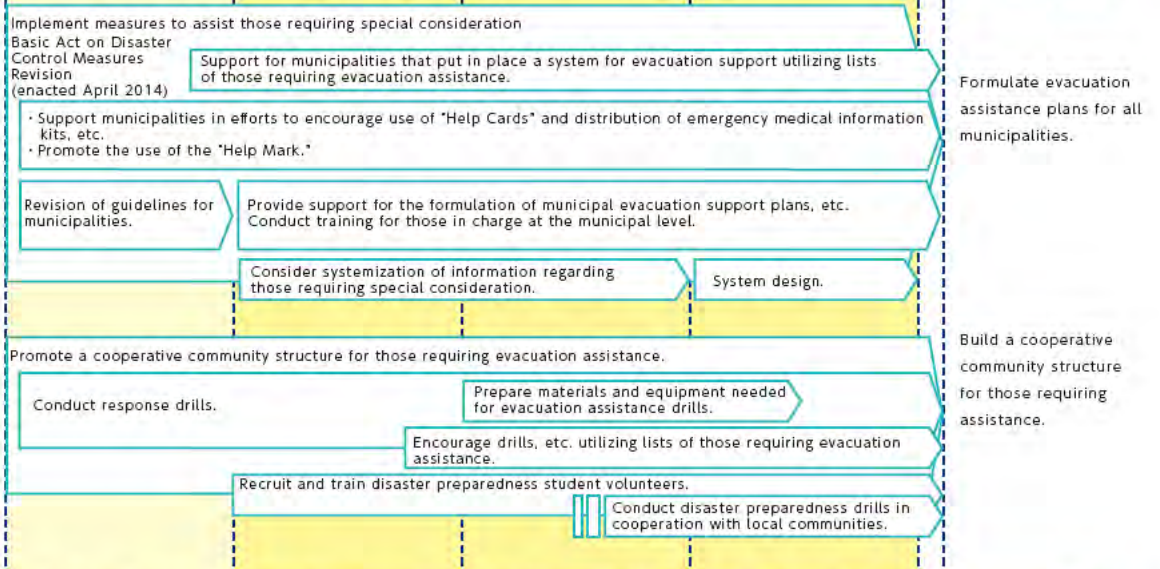
Key specific public assistance initiatives in the three years between FY 2015–FY 2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
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■ Conditions will be put in place to ensure evacuees, including the elderly, foreign residents and others requiring special consideration, are able to evacuate safely.

Put in place a support system for those requiring special consideration

Evacuation assistance plans formulated 73% (April 1, 2013)
45 of 62 municipalities have created plans

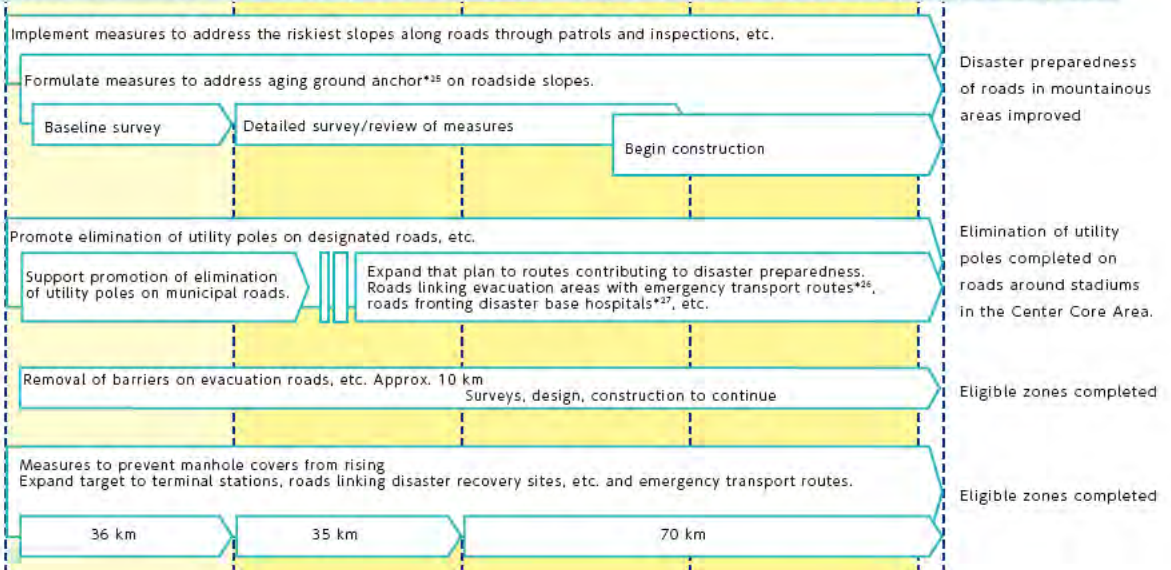


■ Efforts will be made to enhance the disaster prevention functionality of roads, etc. to enable prompt evacuation.

Enhancing the disaster preparedness of roads, etc. contributing to evacuation

Elimination of utility poles on roads completed to planned width within the Center Core Area 85% (end of FY 2013)

Total length of roads for which measures to prevent manhole covers from rising have been implemented 899 km (end of FY 2013)



5. Accurate Transmission of Information

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

A system is in place to quickly and accurately transmit necessary information

Self-help and mutual assistance initiatives

■ Citizens should work to diversify their means of gathering information.

- During a disaster, there is a risk of confusion arising from false rumors, etc. Citizens should utilize and act on information from government agencies and other reliable sources.
- Citizens should work to diversify their sources of information by utilizing emergency radios^{*28}, mobile phones, etc.
A stock of emergency batteries should also be kept on hand to power these devices.
- Families should discuss ways to ensure multiple means of confirming one another's safety, including emergency message boards and SNS.

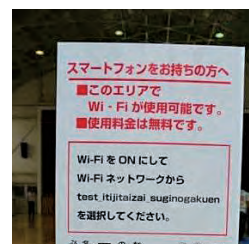


People checking their mobile phones, etc. for information as they evacuate

Public assistance initiatives

■ The ability to gather accurate information on disaster conditions, etc. will be strengthened.

- A system will be secured for ensuring close contact and sharing of information between government, local and Tokyo metropolitan disaster response offices.
- The Tokyo Metropolitan Government (TMG) will work to share video, information on the extent of damages and other disaster information in the hands of municipal governments and related agencies.
- Use of geographical information systems (GIS)^{*29}, big data^{*30}, etc. will be considered, while work advances on putting in place infrastructure for a disaster information system.^{*31}
- In order to quickly track information on damage, efforts will be made to utilize information communications technology (ICT), including a rescue navigation system that shares photos of damages taken with mobile phone cameras.



Wi-Fi hotspot notification

■ Confusion arising from a lack of information during disasters will be prevented.

- TMG will work to increase diversity in the transmission of information and provide a richer range of the information needed by its citizens, utilizing websites, Twitter, the L-Alert^{*32} system for sharing disaster information, digital signage^{*33}, etc.
- Intelligent transport systems (ITS)^{*34} will be utilized to efficiently provide drivers with traffic and other information.
- A PR team will be formed to go out to disaster-stricken sites and provide more effective handling of the media with regards to damages, the activities of various teams, etc., as part of an effort to strengthen public information structures in the event of a disaster.



Information provided through digital signage

■ Methods for providing information to foreigners, etc. will be strengthened.

- A system will be put in place for quickly providing multilingual versions of disaster information on the TMG's disaster preparedness website, etc.
- TMG will work to put in place English and other bilingual versions of informational signage, making them more accessible to foreigners, etc.
- Wi-Fi^{*35} antennas and digital signage will be put in place in public spaces and TMG facilities, etc. to strengthen transmission of information to foreign tourists, etc.



Multilingual information provided in emergency shelters, etc.

Specific initiatives for achieving the envisioned future

Specific key self-help and mutual assistance initiatives

■ Citizens should work to diversify their means of gathering information

The year 2020

Initiatives at home	Confirm a means of obtaining accurate disaster information.	Secure multiple devices, including radios, needed to collect information, as well as extra batteries for those devices.	Use drills, etc. as an opportunity to actually try collecting information.
	Discuss and decide on multiple means of contacting one another.	Take advantage of practice days to confirm the procedure for using the emergency message dial system.	Hold regular family discussions about means of contacting one another, etc.
Initiatives in the workplace	Confirm a means of obtaining accurate disaster information.	Secure multiple devices, including radios, needed to collect information, as well as extra batteries for those devices.	Use drills and other opportunities to actually collect information, regularly confirm how devices are to be used.
	Secure multiple means of contacting employees.	Create and distribute to employees a list of methods for collecting disaster information, and of providers of services for checking the safety of others.	Reconfirm contact methods regularly through drills, etc.

Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
■ The ability to gather accurate information on disaster conditions, etc. will be strengthened.						
Build a tight collaboration between the disaster response offices, etc. of the national government and TMG	Review information via the joint review team established by the national government and TMG to consider an earthquake strike directly below the metropolis.	Joint review by the national government and TMG Establish team and conduct reviews	Decide on cooperative tactics, conduct drills, and verify	As appropriate, consider further cooperative tactics, and repeat drills and verification to ensure effectiveness.		Build smooth cooperation between national government and TMG in the event of a disaster
Put in place and/or upgrade disaster preparedness facilities	Strengthen disaster response infrastructure by putting in place and/or upgrading disaster information systems, disaster preparedness centers, and emergency radio systems.	Upgrade disaster information system equipment	Infrastructure strengthening reviews	Upgrade AV equipment		Strengthen system for collecting and transmitting information.
Promptly track information on damages, etc.	Deploy (on 62 roadways) and expand (to rivers, etc.) rescue navigation system.	Trial deployment and field testing (at three river posts).	Expand and operate (12 river posts, 4 branches)			Ensure prompt restoration efforts through centralized management of information on damages.
	Enhance functionality of earthquake disaster and fire preparedness measures and improve and strengthen information collection systems.	Decipher earthquake damage Early damage information System review	Earthquake damage deciphering system Early damage information system Design and development	Begin operation		
		Review of earthquake damage prediction system		Basic concept for an earthquake damage prediction system		
■ Confusion arising from a lack of information during disasters will be prevented.						
Strengthen information transmission capabilities	Promote diversification of information transmission.	Transmit information via L-Alert system.	Enhance and strengthen use of disaster preparedness websites, SNS, etc. Utilize digital signage to transmit information.			Confusion resulting from a lack of information during disasters is reduced.
■ Methods for providing information to foreigners, etc. will be strengthened.						
Provide multilingual disaster information	Enhance and strengthen provision of multilingual disaster information.	Release Chinese and Korean language versions of the disaster preparedness website.	Further promote development of multilingual disaster preparedness website. Provision of disaster information utilizing simultaneous translation.			
Multilingual versions of informational signage	Consider utilization of digital signage and Wi-Fi.	Put digital signage in place (in areas with many foreign tourists, etc.).	Put in place infrastructure for using Wi-Fi (in areas with many foreign tourists, etc.)			A system has been built for ensuring the safety of foreigners.
	Based on cross-administrative policies, etc., implement multilingual versions of informational signage, etc. in a wide range of public facilities.					

6. Preventing confusion due to stranded people

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

Even in the event of a disaster, conditions are in place in which people can remain where they are, ensure the safety of those with nowhere to go, and enable people to smoothly return to their homes.

Self-help and mutual assistance initiatives

■ Preparations should be made on the assumption that you may not be able to return home in the event of a disaster.

- Store extra supplies of anything you might need in your desk drawer or locker.
- Confirm the route you would use to return home.
- In addition to stockpiling three days' worth of supplies for employees, businesses should stockpile an additional 10% for visitors.
- Businesses should also create an environment in which employees will feel safe standing by, including familiarizing them with methods for checking the safety of family members, and stockpiling sanitary supplies and other items based on their needs.
- Enhance disaster response capabilities by participating in drills of measures to address stranded people to be able to accept stranded people, etc.
- Establish a plan in office disaster preparedness plans, etc. allowing for employees, etc. to standby in the office or other facility.



The area around Shinagawa Station on March 11, 2011



Sample stockpiles

Public assistance initiatives

■ TMG will work to gain public understanding of the need to control attempts to return home en masse.

- Utilize every opportunity, including distribution of handbooks and PR at various events, to conduct public awareness campaigns.

■ Securing of temporary stay facilities will be promoted.

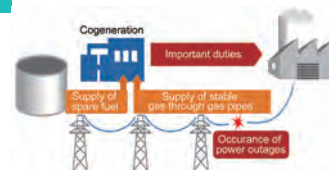
- Support will be provided for businesses that wish to have a system in place for accepting stranded people.
- Taking advantage of new urban development, TMG will encourage securing of additional temporary stay facilities^{*36} and stockpile storage.
- TMG will provide support for deployment of stand-alone distributed power sources^{*37} that can also be used in the event of a disaster.
- Olympic/Paralympic games-related facilities such as major sports facilities put in place by TMG will be utilized as temporary stay facilities.
- TMG will proceed with discussions with the national government to enable the creation of a system for reducing the burden on businesses that promote mutual assistance.

■ Efforts will be made to ensure the safety of those stranded.

- Through drills of measures to address the stranded, etc., efforts will be made to ensure the safety of and guide the stranded, establish temporary stay facilities, and ensure a system is in place to implement and run them smoothly.
- TMG will proceed with measures to collect and provide information and ensure safety, enabling the stranded to stand by in a safe place until temporary stay facilities can open.
- Work will continue to quake-proof sewer pipes in order to secure functioning toilets at terminal stations and elsewhere.

■ TMG will support a smooth return home.

- In cooperation with nine metropolitan authorities, TMG will work with companies to enhance the availability of support stations^{*38} for those attempting to return home during a disaster, and will publicize their availability.
- Working together, the national government, municipalities in the Tokyo metropolitan area, and transportation businesses will create and test the content of a manual regarding special transportation for those requiring special consideration^{*17}.
- Efforts will be made to enhance language support systems, enabling foreign residents to return safely home.



Source: Advanced Cogeneration and Energy Utilization Center JAPAN
Cogeneration illustration (stand-alone distributed power source)



Public awareness campaign via digital signage



Drill for guiding stranded people, utilizing digital signage



Drill for opening and operating temporary stay facilities

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Preparations should be made on the assumption that one may be unable to return home in the event of a disaster The year 2020

Initiatives by individuals	Store supplies in a desk drawer or locker	Supplement supplies with seasonal items as needed.	Regularly use and renew stockpiled items.
	Confirm the route home	Confirm the location of support facilities on the route home.	Verify the route home by actually walking it.
Company initiatives	Familiarize employees with policies regarding control of attempts to return home en masse.	Prepare three days' worth of stockpiles, plus an extra 10%	Conduct drills of measures to handle the stranded.
	Familiarize employees with methods for confirming the safety of family members.	Familiarize employees with operating procedures.	Reconfirm operating procedures regularly through drills, etc.
	Cooperate with private-sector temporary stay facilities.	Stockpile supplies for stranded people.	Drill employees on intake methods, etc.

Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
■ Deepen the public's understanding of controls over returning home en masse.						
Spread public awareness of controls over returning home en masse	Use every opportunity to roll out informational campaigns.					Awareness cultivated of the need for controls over returning home en masse.
	Gain an understanding of the issues through fact finding surveys	Taking into account the opinion of businesses, use TMG disaster preparedness Twitter accounts, maps, and other diverse means to provide information and ensure it is widely disseminated.				
■ Work to secure temporary stay facilities.						
Secure temporary stay facilities	Encourage deployment of stand-alone distributed power sources.					Progress made in securing temporary stay facilities.
	200 TMG facilities designated (April 1, 2013)	Expand designation of TMG facilities. To ensure smooth opening and operation of facilities in the event of a disaster, put in place the necessary stockpiles, commercial MCA radios, etc. and conduct drills.				
Encourage deployment of stand-alone distributed power sources	Implement initiatives to secure private sector temporary stay facilities.					Community disaster preparedness capabilities enhanced through diversification of power sources.
	Provide support and dispatch advisors for putting an intake system in place (stockpiles, equipment, etc.).					
	Increase available floor space by establishing private sector temporary stay facilities**40 and providing tax system support for stockpile warehouses.					
	Conduct discussions with the national government, etc. to create a system for reducing the burden on businesses.					
	Encourage deployment of cogeneration**41 and other stand-alone distributed power sources.					
	Provide support cogeneration and other regional-level energy use.					
■ Work to ensure the safety of stranded people.						
Promote steps to secure the safety of stranded people	Cooperate with industry groups, municipalities, businesses and others to conduct drills and verify measures for handling stranded people.					Safety of stranded people is secured
Secure functioning toilet facilities at terminal stations, etc.	Promote quake-proofing of sewer pipes that handle waste water from terminal stations, disaster recovery sites, etc.					Quake-proofing of approximately 1,000 eligible sites is completed (end of FY 2019)
	182 sites	215 sites	320 sites			
■ Support a smooth return home.						
Promote support for ensuring a smooth return home	Enhance and publicize the availability of support stations for those attempting to return home during a disaster.					Support for those walking home is enhanced. Support for the return home of those requiring special consideration is enhanced.
	Work with national and municipal governments, related groups and others to create a manual regarding transport of those requiring special consideration.			Review the manual regularly through drills.		

7. Smooth opening and operation of emergency shelters

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020 ...

An environment has been created that enables evacuees to enjoy security and peace of mind in the event of a disaster.

Self-help and mutual assistance initiatives

■ Use community-level cooperation to ensure that people can enjoy peace of mind while living in emergency shelters

- We need to undertake drills, as part of our daily lives, to ensure that emergency shelters can operate smoothly
- When staying in an emergency shelter, everyone needs to make a proactive effort to help out with cooking, cleaning, etc.
- Many different types of people will be staying in emergency shelters, including the elderly, disabled people, and pregnant women. We need to implement community-level measures to build emergency shelter operation systems that take into account the differing needs of different groups of people, for example through the establishment of breast-feeding areas.
- As part of their everyday lives, people should be making sure that their emergency survival kits contain all the items that they will need while living in an emergency shelter.



Source: Institute for Fire Safety and Disaster Preparedness (ISAD)
Training in the distribution of supplies at emergency shelters

Public assistance initiatives

■ Ensuring the safety of facilities that will be used as emergency shelters

- TMG will be working to strengthen the earthquake-proofing of school facilities, social welfare facilities etc.*2 that will be used as emergency shelters.
- Measures will be taken to prevent non-structural components of school facilities etc. (such as ceiling materials, lighting fixtures, etc.) from falling.
- Steps will be taken to secure the water supply, by improving the earthquake-proofing of water supply pipes in emergency shelters, and of the water distribution mains that serve as the distribution route for these pipes.

By the year 2020 ...

- Measures to improve the earthquake-proofing of public buildings, etc. essential to disaster prevention will be completed.
- The implementation of measures to prevent ceiling materials, lighting fixtures etc. in gymnasiums belonging to TMG-run public schools from falling will be completed (FY 2015).
- Enhancement of the earthquake-proofing of water supply pipes in emergency shelters etc. will be 100% completed (FY 2019).



Building renovation using metal-reinforced ceilings



Example of measures to improve the earthquake-proofing of non-structural materials

■ Securing the security and peace of mind of evacuees

- Support will be provided to help municipal governments formulate emergency shelter operation standards and emergency shelter management and operation manuals that take into account the needs of the elderly, women, and those requiring special consideration.*17
- Through the revision of the TMG guidelines relating to those requiring special consideration, support will be provided to help municipal governments put in place emergency shelter operational systems that take into account the needs of those requiring special consideration.
- Support will be provided to help ensure the availability of secondary emergency shelters*42 that can accept those requiring special consideration who experience difficulty living at home or in an emergency shelter in the aftermath of a disaster.
- Support will be provided to secure satisfactory environmental sanitation in emergency shelters, for example by ensuring the safety of drinking water.
- Support will be provided for healthcare activities aimed at securing the health of evacuees staying in emergency shelters.
- Steps will be taken to cultivate disaster preparedness volunteer coordinators*43 to ensure the smooth implementation of volunteer activities.



Ensuring a satisfactory living environment in emergency shelters

By the year 2020 ... Emergency shelter management and operation manuals will have been formulated by all municipal governments in Tokyo (FY 2017).

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Using community-level cooperation to ensure that people can enjoy peace of mind while living in emergency shelters The year 2020

Initiatives at home	Confirm which emergency shelter your family should take refuge in	Prepare an emergency survival kit	Check stockpile regularly, replace as needed
		Prepare items that the family thinks will be necessary for a long stay in an emergency shelter, such as diapers, prescription medicines, etc.	Take part in emergency shelter training programs, etc.
		Visualize living in an emergency shelter, discuss it with other family members	
Community initiatives	Confirm the location of local emergency shelters	Engage in community-level discussion of issues relating to emergency shelter operation	Use disaster preparedness drills as a means of realizing effective emergency shelter operation
		Cultivate human talent who can serve as community leaders in the event of a disaster	

Key specific public assistance initiatives in the three years between FY 2015–2017

	~ -FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
■ Ensuring the safety of facilities that will be used as emergency shelters						
Promote earthquake-proofing of public buildings, etc. essential to disaster prevention	Implement earthquake-proofing of public schools, etc.		Follow up with measures to improve the earthquake-proofing of social welfare facilities, private schools, etc.		Complete earthquake-proofing of public buildings, etc. essential to disaster prevention	
	Provide support for seismic evaluation, earthquake-proofing improvement work, etc.					
Strengthen the earthquake-proofing of the water supply pipes etc. of emergency shelters etc.	Implement measures to strengthen the earthquake-proofing of non-structural components in public school facilities, etc.				Improve quake resistance of public school facilities, etc.	
	Encourage steps to prevent the fall of items installed at height in indoor play areas, etc. of municipal public schools					
Percentage of emergency shelters etc. that have had the earthquake-proofing of their water supply pipes etc. strengthened 31% (end of FY 2013)	Implement steps to prevent the fall of items installed at height in TMG-run public schools.				Percentage of emergency shelters etc. that have had the earthquake-proofing of their water supply pipes etc. strengthened 100% (FY 2019)	
	Strengthen the earthquake-proofing of the water supply pipes etc. of emergency shelters etc.					
	Strengthen the earthquake-proofing of sewage pipes that receive sewage from emergency shelters etc. (to be completed by FY 2013)					

■ Securing the security and peace of mind of evacuees

Put in place proper operational management systems for emergency shelters.	Provide support to help municipalities formulate emergency shelter management and operation manuals that take into account the needs of those requiring special consideration		Arrange for the formulation of emergency shelter management and operation manuals by all municipalities (FY 2017)	
	Formulate guidelines relating to those requiring special consideration			
Number of local government authorities within Tokyo that have formulated emergency shelter management and operation manuals 38 municipalities (April 1, 2013)	Provide support for municipality-designated secondary emergency shelters (for those requiring special consideration)			
	Promote municipality initiatives aimed at ensuring that gender equality considerations are reflected in emergency shelter operations		Strengthen collaboration with individual municipalities' GenderEqualityCenters, etc. Require that gender equality considerations be taken into account when formulating emergency shelter management and operation manuals	
Ensure good sanitation etc. in emergency shelters	Provide support for the securing of sanitation etc. for emergency shelter residents through collaboration with municipalities		Put in place mechanisms to ensure proper sanitation etc. in emergency shelters	
	Ensure the renewal of stockpiled medicines etc. to secure environmental hygiene			
Cultivate disaster preparedness volunteer coordinators	Promote public awareness of animal needs in relation to disaster preparedness, through collaboration with municipalities and disaster prevention related agencies			
	Cultivate disaster preparedness volunteer coordinators to ensure that disaster victims can benefit from effective rescue and relief operations		Cultivate 1,140 volunteer coordinators	
	Implement volunteer coordinator training seminars in collaboration with the Tokyo Voluntary Action Center. (with an annual target of training 90 individuals to S Level and 100 to A Level)			
	Implement training in relation to the establishment and operation of the Tokyo Disaster Preparedness Volunteer Center			

8. Securing of sufficient drinking water and other stockpiles to supply daily needs for three days following a disaster

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020 ...

Sufficient drinking water, foodstuffs and other essential items required to keep people alive while living in an emergency shelter or at home are stockpiled, thereby helping to prevent chaos in the aftermath of a disaster

Self-help and mutual assistance initiatives

■ Maintaining stockpiles of essential items in case of a disaster

- Based on what the members of the household usually eat and use, everyone should have enough foodstuffs and other essential items stockpiled to meet their living needs during the first three days after a disaster.
- Preparing for a disaster can be done as part of our daily lives, for example by purchasing slightly more of the foodstuffs and other essential items that we normally buy on a day-to-day basis.
- Beverages and other essential items should be used up and replaced on a periodic basis, so that each household is thinking about its emergency supplies in an ongoing manner.
- In-car televisions and radios can be an important alternative source of information in the event of a disaster, so everyone should try to make sure that their car always has a reasonable amount of gas or diesel fuel in the tank.



A queue of vehicles waiting to fill up with fuel at a filling station

Public assistance initiatives

■ Ensuring availability of drinking water, which is vital for keeping people alive

- Besides working to strengthen the earthquake-proofing of water purification plants, pumping stations etc., TMG will also be prioritizing the earthquake-proofing of water mains that supply water to emergency shelters, and water mains in districts which it is anticipated may suffer particularly serious damage.
- In order to secure the water supply even in the event that individual facilities become inoperable, besides ensuring the raw water distribution facilities^{*44} and distribution mains and the creation of a mutually supporting network of water supply lines, in order to prevent the water supply from being affected by disruptions in the supply of electric power, water purification plants etc. will be equipped with their own independent power supply (and those facilities that already have their own power supply will have it improved), thereby enabling the water supply network to operate independently of the electric power network when necessary.
- In order to enable community residents to access emergency water supplies more easily, besides maintaining and improving water supply points^{*45}, TMG will also be working to ensure that the emergency water supply can make effective use of fire hydrants etc.



Before seismic reinforcement



After seismic reinforcement (water purification plant)



Strengthened earthquake-proofing of water supply routes serving important facilities

■ Stockpiling essential items for evacuees

- The stockpiling of foodstuffs and other essential items will be implemented in such a way as to take account of the special needs of women and of elderly people and those requiring special consideration.^{*17}
- TMG will be working to ensure that there is sufficient space available to permit effective stockpiling of essential items for the use of evacuees.

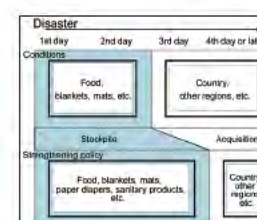
By the year 2020 ...

Effective collaboration between TMG and individual municipal governments will ensure that there are sufficient stockpiles of drinking water and other essential items to meet people's needs for the first three days after a disaster.

■ TMG will be encouraging households to ensure that they have sufficient emergency supplies and sources of electric power

- The disaster preparedness booklet will explain how families can stockpile emergency supplies at home, and will encourage them to implement effective stockpiling.
- To enable individual households to implement stockpiling of foodstuffs and other essential items on an ongoing basis while taking into account the needs of all family members, a "Stockpiling Consumption Model" (provisional title) will be established.
- Support will be provided to help households maintain emergency power supplies, in the form of storage batteries, or by installing solar power facilities, etc.

By the year 2020 ... Percentage of households and workplaces that have adequate stockpiles of emergency supplies 100%



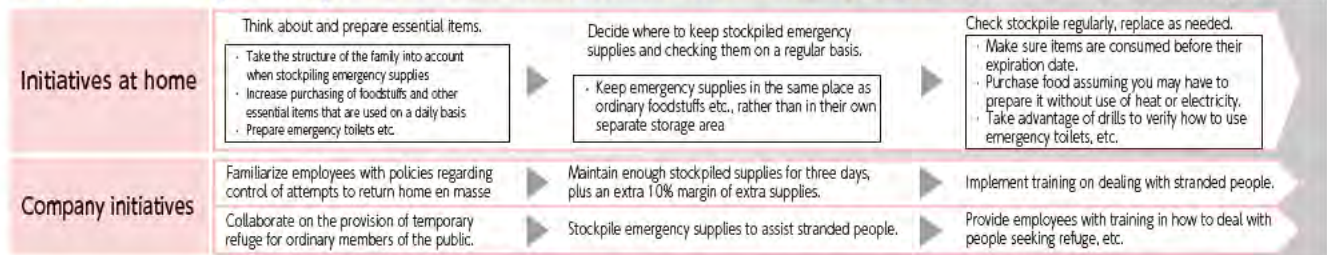
Schematic view of public assistance measures relating to enhancement of emergency supply stockpiling etc.

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Maintaining stockpiles of essential items in case of a disaster

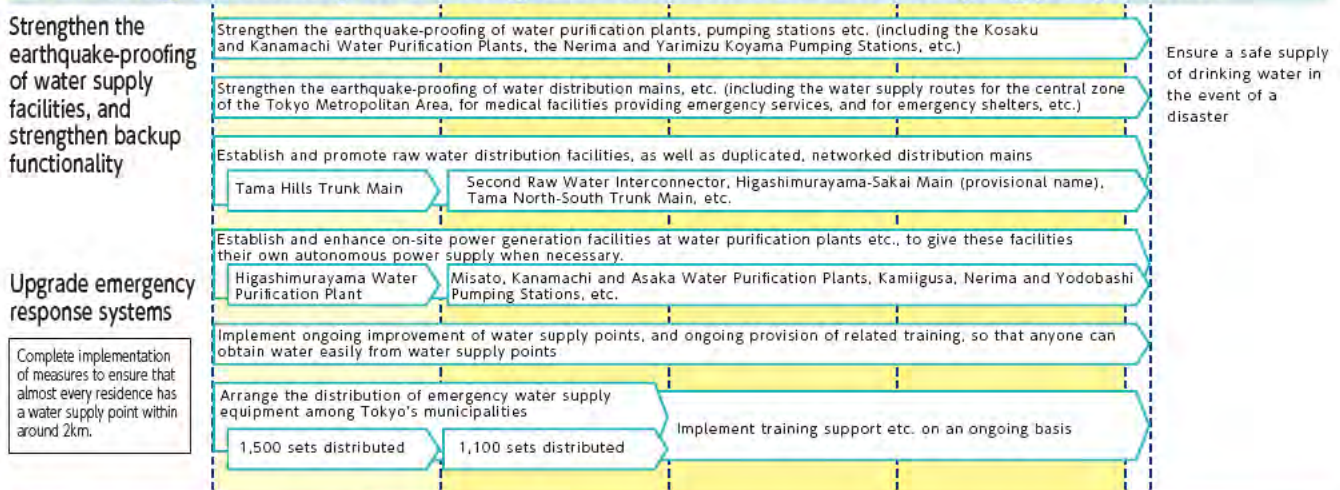
The year 2020



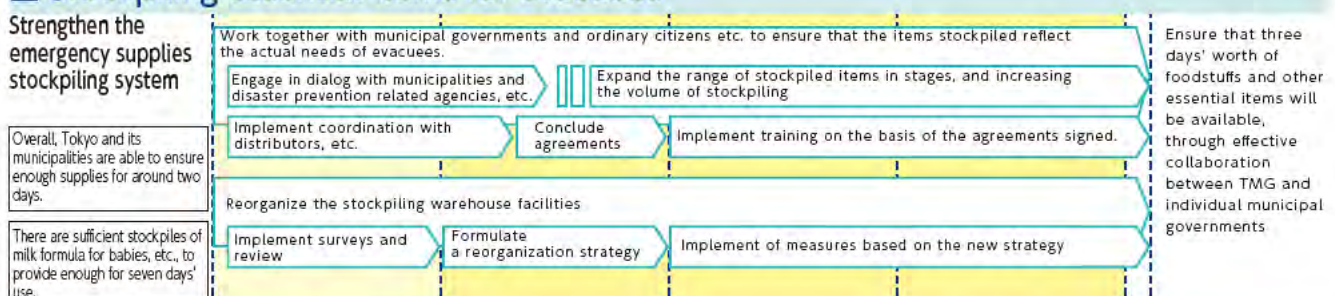
Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
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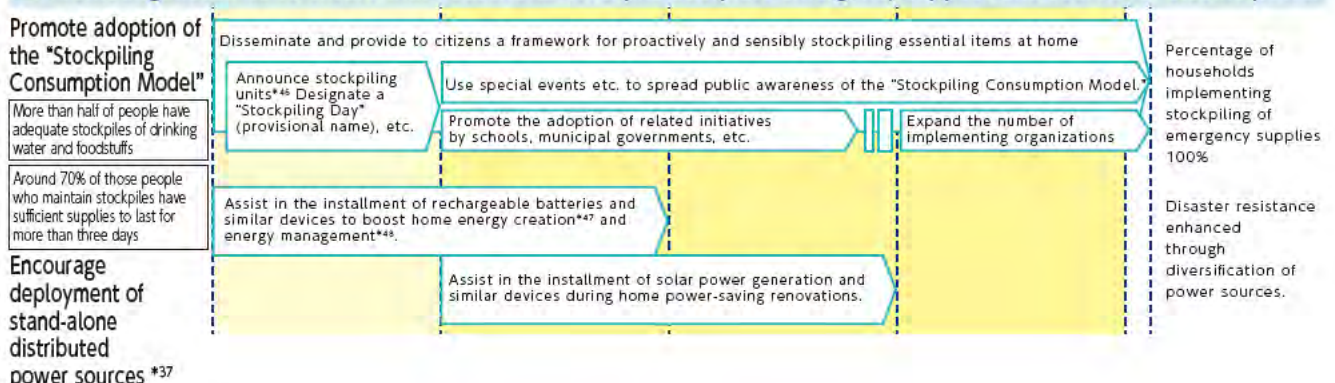
■ Ensuring availability of drinking water, which is vital for keeping people alive



■ Stockpiling essential items for evacuees



■ Promoting measures to ensure that households stockpile adequate emergency supplies and sources of electric power



9. Rescue and relief operations through public assistance

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020 ...

An environment has been put in place that permits the rapid, precise implementation of rescue and relief operations even in the event of a large-scale disaster.

Public assistance initiatives

■ Preventing the obstruction of roads needed for rescue and relief operations

- TMG will be working to strengthen the earthquake-proofing of buildings located adjacent to emergency transport roads.*26
- TMG will be implementing seismic reinforcement of bridges to ensure smooth emergency transportation in the case of an earthquake.
- With the aim of improving disaster response, TMG will be relocating electric power lines etc. that are located along emergency transport roads underground so as to eliminate utility poles.
- TMG will be implementing measures to prevent manhole covers from being forced upwards as a result of liquefaction.



Strengthen the earthquake-proofing of buildings

■ Ensuring that debris on roads is cleared away as rapidly as possible

- Besides working to ensure that the heavy machinery and equipment needed to remove debris are available when needed, TMG will also be collaborating with disaster prevention related agencies to put in place a system for ensuring rapid re-opening of roads.
- TMG will be working with disaster prevention related agencies to formulate a road re-opening plan.



Improve the earthquake-proofing of bridges

■ Securing other transport routes besides roads to the maximum extent possible

- TMG will be working to secure helicopter landing/take-off sites so as to facilitate rescue and relief operations in the event of an emergency.
- TMG will be working to ensure the operation of integrated land/water emergency rescue and relief transport routes by improving wharf facilities and neighboring facilities, and strengthening the interconnection of these facilities with their hinterlands.
- Besides improving the earthquake-proofing of the Port of Tokyo's quays, TMG will also be working together with neighboring Tokyo Bay related agencies etc. to put in place systems for channel opening and early restoration of operations, so as to ensure that the Port of Tokyo can continue to operate in the event of a disaster and to secure transport routes over a wide area.

■ Ensuring that bases are available from which disaster prevention related agencies can carry out rescue and relief operations

- TMG will be seeking to strengthen the disaster preparedness functions of Tokyo's Municipal Parks, which will serve as large-scale bases for rescue and relief operations, so as to ensure that rescue and relief operations can proceed rapidly and smoothly around the clock.
- TMG will be putting in place the systems needed to ensure a smooth, effective response to large-scale disasters, for example by readying bases from which emergency rescue teams, including emergency fire response teams*49 arriving in Tokyo from other parts of Japan can operate, and by making sure that Tokyo is ready to receive emergency rescue teams arriving from overseas, etc.



Move power lines etc. underground to eliminate utility poles from the roads

■ Strengthening Tokyo's disaster response capability so as to be able to respond effectively to a wide range of different situations

- TMG will be establishing an Airmobile Fire Rescue Task Force, heavy machinery disaster response teams and other specialized, highly-capable teams, as well as emergency response teams capable of assisting foreign nationals, etc.
- TMG will be seeking to put in place various different types of facilities and materials needed to facilitate disaster response in accordance with local conditions.



Provide bases for the operations of disaster prevention related agencies

■ Strengthening medical functions that are needed to save citizens' lives

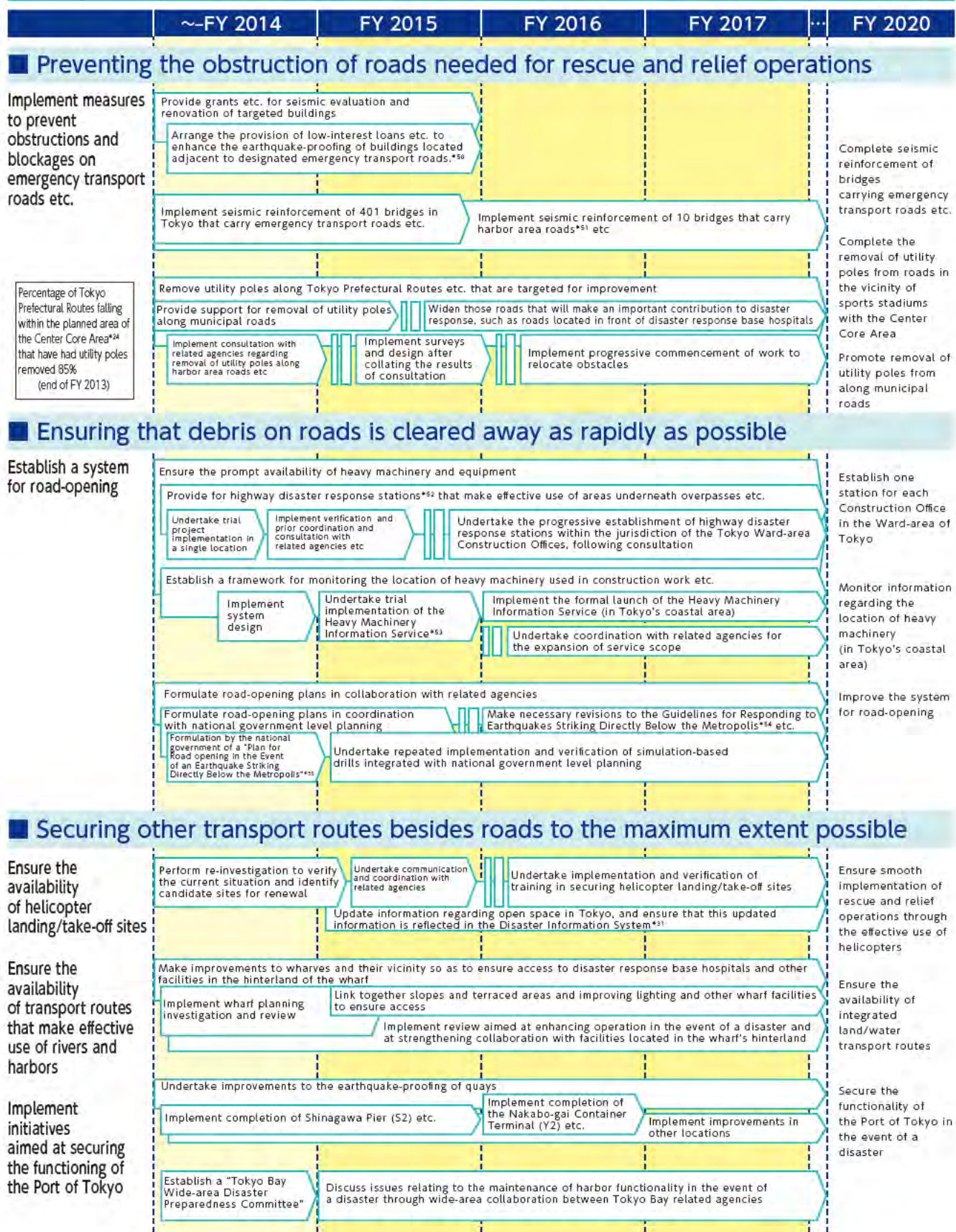
- Besides working to improve the earthquake-proofing of disaster response base hospitals*27 and other medical facilities, TMG will also be striving to secure other lifeline functions.
- TMG will be promoting the formulation of business continuity plans (BCPs) to permit continued provision of medical care.
- TMG will be working to strengthen collaboration between the Tokyo Disaster Medical Assistance Team (DMAT) and other disaster prevention related agencies, for example through the holding of training exercises.
- TMG will be seeking to expand the network of disaster response base hospitals that will accommodate and treat mainly serious cases.



Tokyo DMAT

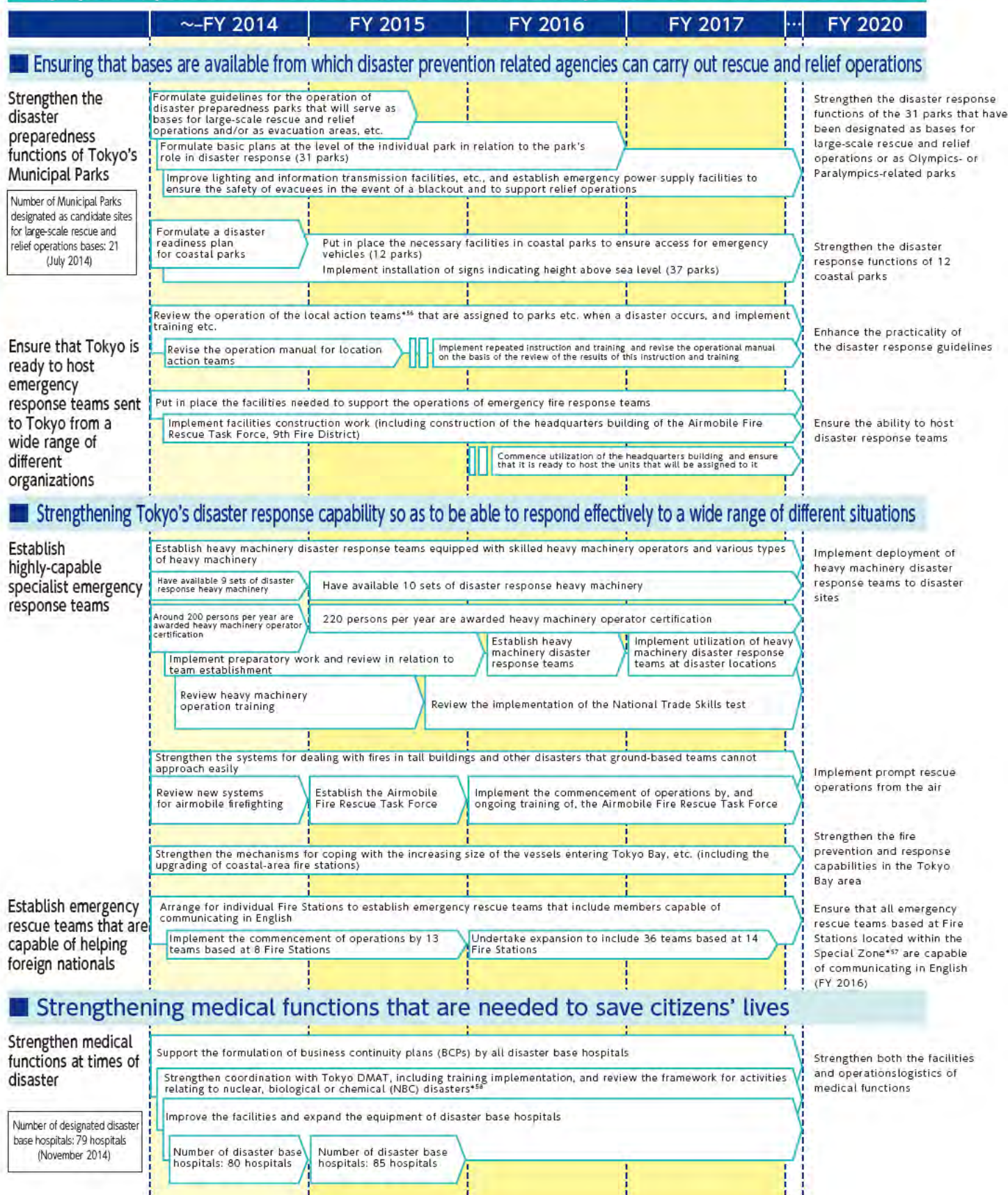
Specific initiatives for achieving the envisioned future

Key specific public assistance initiatives in the three years between FY 2015–2017

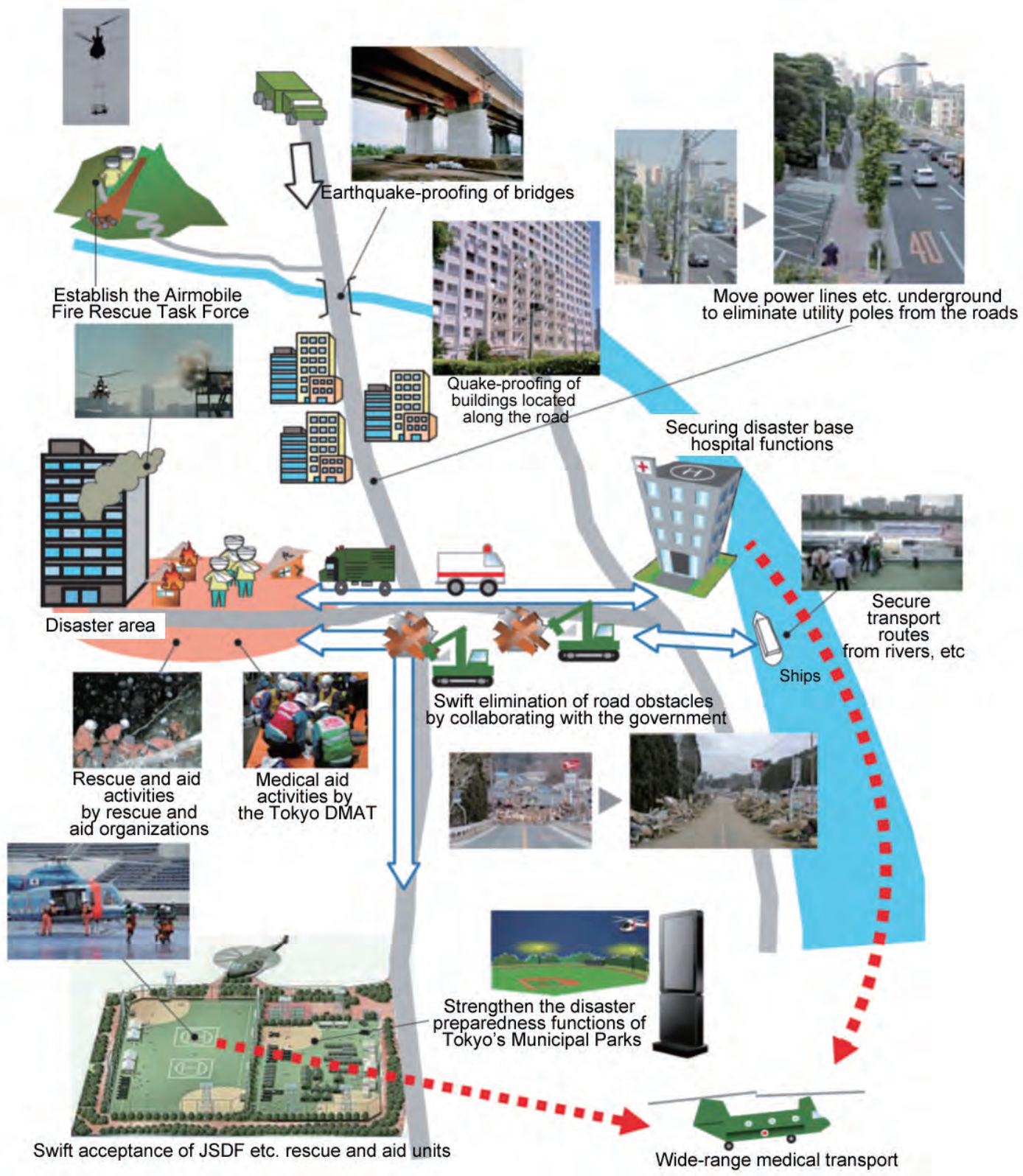


Specific initiatives for achieving the envisioned future

Key specific public assistance initiatives in the three years between FY 2015-2017



Schematic Diagram Showing rescue and relief operations through public assistance



10. Early rebuilding of lives through prompt recovery efforts

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020 ...

Putting in place the systems needed to help disaster victims rebuild their lives as quickly as possible, including measures to secure transport routes and delivery methods for supplies, etc.

Self-help and mutual assistance initiatives

■ Working together to make preparations in advance that can help people rebuild their lives after a disaster, and to ensure effective community collaboration in the event of a disaster

- Advance preparations that people can take to make it easier to get back on their feet after a disaster include taking out appropriate types of disaster insurance, and ensuring that they have the necessary documents and contact details ready so as to be able to complete insurance company and bank procedures after a disaster.
- To facilitate effective mutual aid at the time of a disaster, people are urged to participate actively in disaster-related volunteering activities (such as providing living support for persons living in emergency shelters, or assisting with debris-clearing in affected areas).
- Participation in urban restoration training with other people from the same community can help to ensure a smooth recovery after a disaster has taken place.

Public assistance initiatives

■ Strengthening and securing transport routes to ensure that they are of maximum use during emergencies

- In order to build up an effective wide-area road network for the Tokyo Metropolitan Area as a whole, besides the steady improvement of the Tokyo road network, for example through the creation of the Three Loop Roads^{*59}, measures will also be taken to improve the road network in the boundary areas between Tokyo and neighboring prefectures, through consultation with the prefectural governments of neighboring prefectures.
- Besides the road network, TMG will also be striving to ensure availability of transport routes that make effective use of rivers and harbors.



The Ward-area Loop Road Loop Road No. 2 (Shimbashi-Toranomon section)

■ Strengthening the system for procurement and delivery of supplies

- TMG will be working to strengthen the system for procurement of supplies from distributors.
- TMG will strive to ensure the smooth delivery of fresh foods, for example by arranging for the installation of emergency generators in wet markets.
- Besides putting in place mechanisms to ensure smooth delivery of supplies received from the national government etc., TMG will also be providing support for the establishment of supply point systems by municipal governments.
- Fuel will be stockpiled to ensure that sufficient fuel is available for the use of emergency vehicles etc.

■ Providing support for the early restoration of the living environment for disaster victims

- TMG will be working to train emergency risk assessment personnel^{*60} etc. who can evaluate the level of danger posed by buildings etc. that have been damaged in a disaster.
- Disaster volunteer coordinators^{*43} will be trained so as to ensure the smooth implementation of volunteer activities.
- Besides the putting in place of the Tokyo Disaster Victim Registration System^{*61}, municipal governments will be encouraged to adopt the Victim's Certificate issuing system.
- In addition to providing support for the compilation, by municipal governments, of earthquake debris disposal manuals that take local conditions into account, Tokyo will also be working with neighboring prefectures to put in place a wide-area debris removal system.
- To facilitate effective recovery from disaster, TMG will be revising the Tokyo Earthquake Recovery Manual, and will be formulating the "Guidelines for Earthquake Recovery in Urban Areas" (provisional title).



Disaster volunteer coordinators undergoing training



Victim's Certificate issuing system

By the year 2020 ...

A debris disposal manual will have been formulated by all municipal governments in Tokyo

■ Minimizing the damage to society as a whole, and facilitating early recovery

- TMG will be working to ensure that river, coastal protection, canal and sewer facilities are properly quake-proofed and flood-proofed, and are equipped with emergency power supplies
- TMG will be working to quake-proof the headquarters buildings of disaster prevention related agencies and other recovery bases, and to secure the functioning of the infrastructure in the vicinity of these facilities.
- Quake-proofing will be implemented on rail transport facilities, including stations, viaducts, tunnels, etc.
- Besides implementing measures to extend the lifespan of important bridges, preventive maintenance management^{*62} will be performed with respect to other Metropolitan infrastructure, including tunnels, wharves, and sewers.
- In addition to providing support for the formulation of business continuity plans (BCPs) to help business enterprises keep operating in the aftermath of a disaster, and working to secure the energy supply, a wide variety of other initiatives will also be launched, including the provision of support for the commercialization of technologies and products that can help to improve Tokyo's resistance to disaster.



Quake-proofing of coastal levees



Work being undertaken to extend the lifespan of a bridge

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

- Working together to make preparations in advance that can help people rebuild their lives after a disaster, and to ensure effective community collaboration in the event of a disaster

The year 2020

Initiatives at home	Discuss possible disaster scenarios with other family members	Verify what administrative services will be provided in the event of a disaster	Make a note of the application procedures etc., and check the details regularly
	Verify the procedures for dealing with insurance companies, banks etc. during a disaster	Prepare the necessary documentation and contact details	Check the content etc. on a regular basis
	Monitor the state of the affected area	Register as a disaster volunteer, and take part in disaster area support activities	Provide feedback for community rebuilding efforts based on one's experience in participating in support activities
Community initiatives	Visualize the type of damage that might occur in a disaster, while walking around the area	Create venues for discussing urban community recovery, with participation by experts, etc.	Hold regular discussions at community meetings as to how community recovery could be implemented

Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
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Strengthening and securing transport routes to ensure that they are of maximum use during emergencies

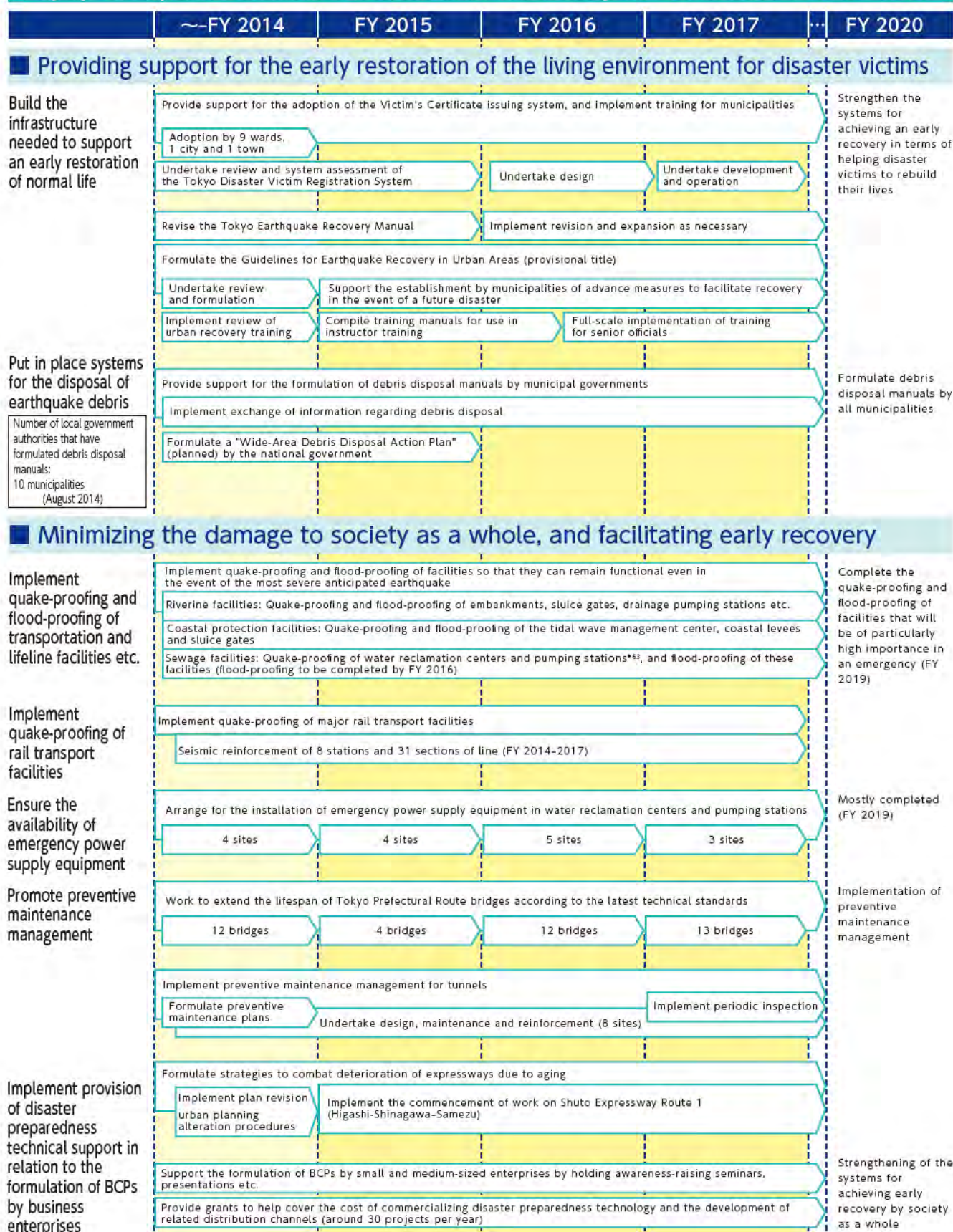
Road network construction	Promote the completion of the Three Loop Roads in the Tokyo Metropolitan Area				Completion rate: Around 90%
	<div>Implement opening of the Central Circular Route Shinagawa extension and of the entire portion of the Metropolitan Inter-City Expressway that is located within Tokyo</div>	Promote the completion of the Tokyo Outer Loop Road			
Three Loop Roads completion rate 64% (June 2014)	Build a disaster-resistant road network				Enhanced road network functionality
	Promote the completion of the Ward-area radial and loop highways, and of north-south and east-west routes in the Tama area, etc.				
	Promote the construction of disaster-resistant bridges (including the Wakashio Bridge)				
	Undertake widening of emergency transport routes (including roads in Kawasaki)				
	Promote improvement of the road network in the Tama Hills area (including the Tama River South Bank Highway, etc.)				
	Improve the road network in the areas on the boundary between Tokyo and other prefectures				
	Promote the review and improvement of roads that cross prefectural boundaries (such as Higashimurayama Route 3-3-8)				
	Implement review, surveys and improvement of the South Tama ridge route highway				

Strengthening the system for procurement and delivery of supplies

Strengthen the systems used for the procurement and delivery of supplies	Put in place the system for procurement of supplies from distributors				Strengthened system for procurement of supplies
	Sign further agreements with distributors		Implement and verify training		
	Collaborate with private-sector distributors on building a framework for the efficient delivery of supplies in the event of a disaster				
Ensure that wet markets are able to continue functioning	Compile operational and management handbooks		Implement verification and revision of the handbooks for loading/unloading operations and for public truck terminal operation, and implement related training		
	Undertake coordination aimed at the signing of further agreements with logistics service providers				
	Put in place systems to ensure the smooth distribution of fresh foods				
Ensure that an adequate supply of fuel is available	Install emergency power supply equipment (for example, in Ota Market)				
	Promote the formulation of BCPs by firms involved in market operation, and implement related training				
	Ensure an adequate supply of fuel for the use of emergency vehicles etc.				
	Allocate emergency generators to designated filling stations (2013)		Achieve an appropriate increase in the amount of fuel stockpiled for the use of vehicles etc. belonging to disaster base hospitals*27 and contracted organizations		
			Stockpile fuel for the use of vehicles belonging to emergency response teams from other prefectures		

Direction for initiatives that should be put in place for the year 2020

Key specific public assistance initiatives in the three years between FY 2015-2017



[Terminology Explanations]

1. Quake-proofing and upgrading, etc. of buildings

- *1 **Public buildings essential to disaster prevention:**Those Metropolitan and municipal buildings that fall under the category of “Public buildings that have a particularly important role to play in disaster preparedness,” such as facilities that will be used as disaster response operational centers for firefighting, evacuation guidance, transmission of information, etc., in the event of an earthquake, and facilities that will be used as emergency first-aid stations or temporary reception centers, as well as buildings that fall under the category of “Other public buildings essential to disaster prevention,” such as buildings that will play an important role in restoration or healthcare provision following an earthquake, and facilities used by a high percentage of the population.
- *2 **Social welfare facilities etc.:**Here, this refers to day-care centers and residential institutions used mainly by those requiring special consideration.
- *3 **Designated upgrade zones:**Districts where there is a particularly high level of risk, and in particular districts with a high concentration of older wooden structures where major damage could be expected to occur in the event of an earthquake. Districts of this type in Tokyo cover a total area of around 7,000 hectares.
- *4 **Long-period ground motion:**In earthquakes with long-period ground motion, the movement of the ground back and forth occurs relatively slowly; compared to short-period ground motion, the movement takes longer to die away, and the ground motion is more likely to spread to areas further away from the epicenter of the earthquake. As there is a greater likelihood of the subsurface structure being affected, areas where there is a pronounced depression in the subsurface structure (such as sedimentary basins) are likely to experience increased shaking due to the weakness of the accumulated subsoil, and the shaking will tend to continue for longer.

2. Implementation of rescue activities by residents

- *5 **Comprehensive disaster preparedness education:**The disaster preparedness education provided by Tokyo Fire Department, which teaches children to look after themselves in various different types of disasters and accidents using teaching methods appropriate to the children's age and level of development. Here, it refers specifically to disaster preparedness education provided in collaboration with public schools.
- *6 **First aid implementation rate:**The percentage of instances where, when someone is seen to be experiencing cardiac arrest, a bystander endeavors to administer first aid in the form of AED, heart massage, or artificial respiration.
- *7 **Disaster Preparedness Notebook:**Teaching materials that can be used by children, students and their family members to check their knowledge of disaster prevention preparations and emergency evacuation routes, with the aim of ensuring effective utilization of the booklet.
- *8 **Machikado Disaster Preparedness Drills:**Drills focused on early-stage fire prevention training, making effective use of equipment and materials available in the neighborhood, which is implemented for local residents in the neighborhood where they live, with the aim of strengthening the effectiveness of mutual assistance in the event of a real disaster and enhancing the ability to implement a comprehensive, integrated response.
- *9 **Bystander insurance:**Insurance for bystanders who happen to be on the scene when an emergency occurs, which covers part of the cost of medical treatment for injuries incurred or infection screening undergone following attempts by the bystander to provide emergency assistance, and also covers part of the consultation fees and other legal fees incurred if a claim is brought against the bystander.

3. Control of outbreak and spread of fire

- *10 **Ground fault circuit interrupter:**This is a device installed on a distribution board which performs constant monitoring to check for earth leakage and interrupts the circuit immediately if earth leakage is detected, in order to prevent death or injury from electrocution, damage to equipment, or the starting of a fire due to overheating.
- *11 **Seismic sensor-equipped distribution panel:**This is a distribution panel with a built-in seismic sensor that cuts off the supply of power when a specified level of vibration is detected.
- *12 **Dual-opening cover:**This is a metal cover used on fire hydrants that has an additional opening to facilitate the attachment of the types of hoses used with lightweight, portable firefighting pumps.
- *13 **Fireproofing Zones:**These are Designated Upgrade Zones where there is a particularly high level of risk and which are a priority target for focused improvement efforts; Fireproofing Zones are designated as such by TMG following the submission of an improvement proposal by the Ward in which they are located, and are the subject of major efforts to enhance resistance to fire.
- *14 **Multi-function deep layer unlimited water supply for disaster use:**This refers to deep wells, accessing underground water that is at least 200m below the surface, for use in firefighting operations etc.
- *15 **Ratio of fireproofed area:**This ratio is an indicator of the extent to which a given urban area is likely to be safe from the spread of fire; it is calculated based on the level of fireproofing of the buildings in the district, and the area of roads, parks and other open space. The risk of a fire spreading in an area with a ratio of fireproofed area of 70% or higher is more or less zero.
- *16 **10-year Project to Fireproof Wooden Housing Areas**This is a carefully-targeted, focused 10-year initiative by TMG to speed up improvements in areas with a high concentration of wooden buildings, so as to transform these into areas where fires are less likely to break out and less likely to spread.

[Terminology Explanations]

4. Achieve safe, prompt evacuation

- *17 **Those requiring special consideration:** Individuals requiring a particularly high level of consideration at every stage from pre-disaster preparation, through evacuation at the time of a disaster, to post-disaster living support. More specifically, this term refers to the elderly, the disabled, people suffering from serious illnesses, young children, pregnant women, foreign nationals, etc.
- *18 **Those requiring evacuation assistance:** Among those requiring special consideration who need special assistance in order to evacuate smoothly and rapidly. More specifically, this term refers to those persons eligible for registration on the "List of Those Requiring Assistance with Evacuation" drawn up in accordance with the criteria laid down by the individual municipal government.
- *19 **Help Card:** This is a card recording emergency contact details and the nature of the assistance required, which disabled persons can show to other people in the vicinity in the event of a disaster (or at other times) when they are unable to communicate clearly what they are experiencing difficulty with and require assistance so that other people can understand that they have a disability and the kind of help they need.
- *20 **Help Mark:** This is a special mark to support people who require special assistance or consideration but not easily recognized, such as people with artificial limbs or artificial joints, people with internal injuries or serious illnesses, women in the early stages of pregnancy. They can use a help card to let other people in the vicinity know that they require special consideration and to make it easier for them to obtain assistance.
- *21 **Urban farmland:** This is a farmland located within urban areas which, in addition to its usual function of providing urban residents with fresh, healthy and safe agricultural produce, also has the important function of being able to serve as a location for a temporary evacuation area/emergency shelter during a disaster, and of providing green space.
- *22 **Evacuation Assistance Plan (Overall Plan):** This Plan specifies the scope of "those requiring assistance with evacuation," the system for providing evacuation support, and the system for providing living support for persons requiring special consideration after evacuation, clarifying the respective roles of self-help, mutual assistance and public assistance, and outlining the overall approach to providing support for those requiring special consideration.
- *23 **Liquefaction:** This is a phenomenon whereby the vibration from an earthquake causes the soil in areas of sandy soil with a high water table to become liquefied. Liquefaction may cause larger buildings to subside or tilt over, and may cause lighter objects such as manhole covers to be pushed up.
- *24 **Center Core Area:** This refers mainly to the area located inside the Metropolitan Expressway Central Circular Route.
- *25 **Ground anchor:** Ground Anchors blocks are a system for stabilizing structures located above ground by attaching them to an underground anchorage zone using high-tension cables, utilizing tensile force to stabilize the structure.
- *26 **Emergency transport routes:** These are roads including National Expressways, National Highways and other main roads that link to these, as well as roads linking these roads to key locations specified by the Prefectural Governor, or linking such key locations together, which are needed to ensure smooth implementation of emergency transport following an earthquake (the importance of which was learned from Japan's experience with the Great Hanshin-Awaji Earthquake of 1995).
- *27 **Disaster base hospital:** This term is used mainly to refer to hospitals that receive and treat the seriously injured or seriously ill. Such hospitals may be designated as "backbone disaster base hospitals", "local core disaster base hospitals" or "local disaster base hospitals."

5. Accurate Transmission of Information

- *28 **Emergency Radio:** This is a radio system that uses pre-registered frequency allocated to community FM radio channels. Even when the radio set power is off, when a chime tone on the pre-registered frequency is automatically detected, the radio will switch on, and the user will automatically receive emergency broadcasts.
- *29 **GIS (Geographic Information System):** GIS technology involves the unified management, processing and visualization of data that includes positional information (i.e. spatial data), permitting high-level analysis and rapid decision-making.
- *30 **Big Data:** This refers to multi-faceted, large-volume, real-time data, the generation, collection and accumulation of which has been made easier by advances in information and communications technology (ICT).
- *31 **Disaster Information System:** When a disaster occurs, this system collects a wide variety of different types of data from municipal governments and from disaster prevention related agencies, and utilizes map data as a basis for unified management of damage report data and response measure implementation data by the Tokyo metropolitan disaster response offices, to support TMG's disaster response decision-making; in addition, individual agencies that are equipped with Disaster Information System terminals can make effective use of the disaster information provided by the System to support their disaster response activities.
- *32 **Disaster information-sharing system (L-alert):** A basic information-sharing system using ICT, the communication method prompted widely by the Ministry of Internal Affairs and Communications, for the simplified and mass delivery of detailed instructions concerning the local safety and security, including evacuation advisories and directives. The system enables messages to be delivered during a disaster to residents of local areas in the most prompt and efficient manner via radio, television, and other media.
- *33 **Digital signage:** Digital signage systems show video and other information on network-linked display screens located in commercial facilities, transportation facilities, shops and public spaces, etc.
- *34 **ITS (Intelligent Transport System):** ITS is a system that uses cutting-edge information and communications technology (ICT) to facilitate the exchange of information between people, transport routes and vehicles, with the aim of preventing accidents and easing congestion.
- *35 **Wi-Fi:** This refers to wireless Internet access technology that uses devices approved by the Wi-Fi Alliance (an industry organization with its headquarters in the U.S.) as conforming to international standards.

[Terminology Explanations]

6. Prevention of chaos among those unable to return home

- *36 **Temporary stay facilities:**These are facilities that can provide a temporary place to stay for stranded people who have nowhere else to shelter while they are waiting for the opportunity to return home.
- *37 **Stand-alone distributed power source:**Unlike grid power, which involves the transportation of electric power from large-scale generating facilities over long distances to the areas where the power is used, stand-alone distributed power sources comprise those power generation systems using smaller generating facilities to supply power to areas close at hand (distributed power sources) that are able to maintain a stable supply of electric power following a disaster, when grid power is unavailable.
- *38 **Support stations for those attempting to return home during a disaster**This system comprises measures for helping stranded people return home on foot once rescue and relief operations are already underway following a disaster, for example by making available drinking water and toilets, as well as route information based on maps etc. and information as to which routes are likely to be passable based on information obtained from the radio, etc.
- *39 **MCA radio communication:**This is a wireless communication system for business use that utilizes an MCA (Multi-Channel Access) approach whereby multiple users can share a given amount of frequency.
- *40 **Increase available floor space by establishing private sector temporary stay facilities:**This applies to buildings governed by Tokyo's Urban Development Systems (a collective term for four systems that permit an easing of floor area ratio restrictions in regard to urban development that makes a positive contribution towards the creation of a first-class urban environment: Integrated Design, Efficient Utilization Districts, District Planning that Stipulates Improvement Promotion Districts, and Special Zoning Area).
- *41 **Cogeneration:**This is a type of energy supply system aimed at enhancing overall thermal efficiency, by making use of the waste heat produced during electricity generation to provide heat for heating/air-conditioning systems and for hot water supply etc.

7. Smooth opening and operation of emergency shelters

- *42 **Secondary emergency shelters (for those requiring special consideration)Secondary Evacuation Centers (Welfare Emergency Shelters):**These are facilities designated as Social Welfare Facilities or Health and Welfare Centers that provide temporary accommodation and care for those elderly and disabled people who experience difficulty living at home or in an emergency shelter and who require support in terms of care and welfare services.
- *43 **Disaster volunteer coordinators:**These people play a key role in disaster volunteer activities by undertaking recruitment and coordination of volunteers, with the aim of ensuring that volunteer activities implemented at the time of a disaster proceed as smoothly as possible.

8. Securing of sufficient drinking water and other stockpiles to supply daily needs for three days following a disaster

- *44 **Raw water distribution facilities:**These are facilities that carry raw water from the extraction point to the water purification plant.
- *45 **Water supply points:**These include water purification plants, pumping stations and emergency water supply tanks that ensure the supply of drinking water in the event that the mains water supply is disrupted because of a disaster. Water supply points are equipped with emergency water supply equipment, and, by and large, there is a water supply point located with a radius of around 2km of every residential area.
- *46 **Stockpiling units:**Stockpiling content, tailored to the composition of the household such as with elderly people and children.
- *47 **Energy creation:**Actively producing energy on a household basis through the use of solar power generation systems or household fuel cells.
- *48 **Energy management:**Implementing the visualization of energy use and optimized control of power demand and supply

9. Rescue and relief operations through public assistance

- *49 **Emergency fire response teams:**This refers to the national emergency fire response system and the emergency fire response teams established under this system. The aim of the system is to put in place a framework for mutual support between fire departments throughout Japan, so as to undertake rescue activities rapidly and effectively in circumstances where the local fire department's resources are overstretched because of a large-scale disaster.
- *50 **Designated emergency transport routes:**These are emergency transport routes in Tokyo where there is a particularly strong need for quake-proofing of buildings located along the road, designated as such pursuant to Article 7 of the "Ordinance to Promote Renovation for Earthquake-Resistant Structure of the Buildings Along the Emergency Transportation Roads in Tokyo." These are roads that, viewed from the perspective of harbor managers, are extremely important for harbor management and need to be improved and managed as such, and which have a vital role to play in maintaining the harbor's logistical functions. It should be noted that harbor area roads are not classed as roads for the purposes of the Road Act.
- *51 **Harbor area roads:**This refers to those harbor facilities classed as harbor area transportation facilities in accordance with Item 4, Paragraph 5, Article 2 of the Port and Harbor Act, and designated as harbor area roads pursuant to the Tokyo Harbor Management Regulations. These are roads that, viewed from the perspective of harbor managers, are extremely important for harbor management and need to be improved and managed as such, and which have a vital role to play in maintaining the harbor's logistical functions. It should be noted that harbor area roads are not classed as roads for the purposes of the Road Act.
- *52 **Highway disaster response stations:**These are places for the storage of materials and equipment, located under overpasses or other elevated road sections, to facilitate the smooth implementation of road-opening operations following a disaster.
- *53 **Heavy Machinery Information Service:**This involves the recording in an information system of location data for heavy machinery used in public construction projects, so that the location of such machinery can be identified on a map, thereby facilitating ready determination of the location of heavy machinery (which tends to be moved around from day to day).

[Terminology Explanations]

- *54 **Guidelines for Responding to Earthquakes Striking Directly Below the Metropolis:**Besides clarifying, on the basis of the division of responsibility between TMG and other agencies as laid down in the Tokyo Metropolitan Area Disaster Prevention Plan, the basic coordination content and procedures needed to ensure the smooth implementation of emergency response operations with effective and efficient collaboration with Tokyo, the police, the fire department, the Japan Self-Defense Forces (JSDF), the Japan Coast Guard (JCG), municipal governments, the national government, other prefectural governments, lifeline service providers etc. in the event of an earthquake occurring directly below Tokyo, these Guidelines also aim to enhance mutual awareness between the different organizations referred to above.
- *55 **Plan for Road-opening in the Event of an Earthquake Striking Directly Below the Metropolis:**This Plan, prepared by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), details the approaches and methods for implementing road-opening of directly-administrated National Highways and other roads running from Tokyo's suburbs into the city center, as well as matters that need to be prepared in advance, and the division of responsibility between different organizations, etc.
- *56 **Local action teams:**These are teams of TMG personnel that mobilize at pre-designated TMG facilities etc. in particular municipalities to permit flexible implementation of emergency response activities in the disaster area.
- *57 **Special Zone:**Here, this refers to the "Special Zone for Asian Headquarters," a special zone established to encourage more foreign companies to locate their Asia regional headquarters and R&D facilities in Tokyo, thereby helping to boost Tokyo's international competitiveness and stimulate renewed growth. The Special Zone was formally designated by the national government in 2011 as including five districts: The area stretching between Tokyo city center and the Rinkai coastal district, the area around Shinjuku Station, the area around Shibuya Station, the area around Shinagawa Station and Tamachi Station, and the vicinity of Haneda Airport.
- *58 **NBC disasters:**NBC (Nuclear, Biological, Chemical) disasters are special types of nuclear, biological or chemical disaster.

10. Early rebuilding of lives through prompt recovery efforts

- *59 **The Three Loop Roads:**This is the collective term for the three major loop roads running round Tokyo: the Metropolitan Inter-City Expressway (Ken-Ō Expressway), the Tokyo Outer Ring Road, and the Metropolitan Expressway Central Circular Route.
- *60 **Emergency risk assessment personnel:**These are qualified architects serving as disaster response volunteers. In order to prevent the risk of secondary damage caused by buildings collapsing or objects falling or toppling over due to aftershocks following a major earthquake, the emergency risk assessment personnel perform prompt evaluation (emergency risk assessment) of building damage status to determine whether the building can be used in its current state.
- *61 **Tokyo Disaster Victim Registration System:**This is a system that collates the Disaster Victim Registers established by individual municipalities pursuant to the Basic Act on Disaster Control Measures on a citywide level, so that the information can be used effectively by TMG agencies when providing support for disaster victims.
- *62 **Preventive Maintenance Management:**The aim of preventive maintenance management is to monitor the status of facilities accurately through means such as periodic inspections, and to implement systematic maintenance and reinforcement, thereby extending the lifespan of facilities, reducing lifecycle costs, and spreading out the costs of renovation work.
- *63 **Quake-proofing of water reclamation centers and pumping stations:**Here, this refers to the "quake-proofing of facilities that implement functions such as pumping, basic water treatment and sterilization that are vital to ensuring the proper functioning of the sewage system following an earthquake."

III. Earthquakes in Island Areas

Different aspects of potential damage

Disaster occurs

Minutes from occurrence

Approximately one week

Possible scenario in the event of a disaster

- ▼ After waking up in the morning, you turn on the television to see an emergency earthquake notification warning viewers of strong tremors. Within just a few seconds you feel your home swaying horizontally.
- ▼ As the swaying finally subsides, you look at the television again to see that a major earthquake has occurred and a tsunami warning has been issued for the entire country.



- ▼ The emergency radio system seems to be announcing a tsunami warning as well as evacuation instructions for evacuating to safe areas/shelter at higher grounds, but it is difficult to hear the message from inside your home.



- ▼ You look outside and see neighbors carrying emergency survival kit, fleeing the area with whatever clothes they are wearing. You quickly call out for all family members and flee your home together.
- ▼ Volunteer fire company personnel have arrived to help your elderly next-door neighbor, who lives alone, evacuate.
- ▼ As you are evacuating, tourists who were out for a walk ask you where the evacuation area/location is. You explain how to get there and tell them to escape immediately.



- ▼ After you arrive at the evacuation facilities on higher ground, you decide to remain there until the earthquake and related conditions have calmed down.
- ▼ You try to contact relatives living in other prefectures but the communication lines are either down or overloaded and you cannot contact them.
- ▼ The evacuation facility only has limited food supplies. You make do by sharing the little water and emergency food you brought from home among your family members.

- ▼ Listening to earthquake-related announcements on a radio brought by other evacuees, you learn that the tsunami warning has been cleared. However, with catastrophic damage all over the country, you are worried that assistance for the island will be delayed.
- ▼ While returning to your home, you find the roads blocked with debris and your neighborhood has been completely demolished by the tsunami.
- ▼ People at the evacuation facility are now expressing anxieties as they worry about supplies. The piers and landing bridges at the port were destroyed by the tsunami and it looks impossible for boats to bring in supplies any time soon.
- ▼ Fear of aftershocks and lack of daily commodities creeps in and you begin to feel isolated and insecure. Your family discusses evacuating from the island itself, but you feel uneasy about life once you find a place to stay.



Source: Institute for Fire Safety and Disaster Preparedness

Situations deriving from this scenario

Damage due to tsunami

◇A huge tsunami may reach the coastline within just ten or so minutes.

Delay in evacuation

◇If information of the tsunami or evacuation does not reach residents immediately, the evacuation may be delayed, possibly resulting in vast damage.

Confusion during evacuation

- ◇Failure to prepare items to take from the home in advance of evacuation could result in delays, causing evacuees to get caught in a tsunami.
- ◇The elderly and physically disadvantaged face more difficulties in evacuating quickly and smoothly.
- ◇Lack of familiarity with the escape route will add substantial time to the evacuation.
- ◇Many people may be engulfed in the tsunami due to lack of proximity to higher grounds.

Prolonged isolation, lack of daily commodities and other supplies

- ◇Damage to roads and port facilities due to a tsunami may prevent personnel and supplies from reaching your area as a result of limited means of transport, and you may remain isolated for a few days or up to a week with no deliveries.
- ◇Such isolation will also affect emergency response and recovery efforts and return to regular lifestyles.
- ◇Life line damages due to a tsunami will cause a prolonged delay in recovery.

Initiatives that should be put in place

1.
Achieve prompt
evacuation for
island areas
(see p.44)

2.
Secure a stockpile
and transport
system for island
areas (see p.46)

Initiatives that should be put in place for the year 2020

1. Achieve prompt evacuation for island areas

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

A system is in place to greatly reduce the amount of human suffering, even in the event of an earthquake-triggered tsunami, through prompt evacuation.

Self-help and mutual assistance initiatives

■ Prepare for and fear tsunami appropriately

- When you receive an emergency earthquake notification or feel a strong tremor, immediately evacuate to a safe place and protect your own life.
- Cooperate with others in your community to build ties that will enable you to evacuate with those requiring special consideration*1.
- Participate in disaster preparedness drills to ensure the most appropriate actions during evacuation.
- In areas in which flooding is expected, make sure you develop tsunami evacuation and other disaster-related plans far in advance.



Evacuation drill

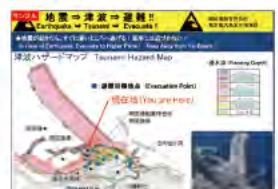
Public assistance initiatives

■ Evacuation measures covering both facilities and logistics will be implemented to protect lives from a major tsunami

- Towers and other evacuation structures will be installed in port areas where quick evacuation is the most difficult.
- Roads will continue to be improved as will measures for fortifying access areas susceptible to landslide disasters, securing safe roads for evacuation routes.
- Assistance for installing night lighting in evacuation route areas will be considered.
- A system for promptly and accurately collecting tsunami warnings and advisories and quickly transmitting such information to residents and others in the area will be established.
- Municipalities in island areas will be assisted in creating a tsunami and flooding hazard map as well as establishing measures for tsunami evacuation.
- Promote evacuation measures that include tourists and other visitors, through cooperation with municipalities in island areas, such as fortifying measures for tsunami evacuation plans regarding lodging and other accommodation issues.
- Measures will be advanced to quake-proof evacuation shelters and prevent the falling of non-structural elements.
- Assistance will be provided for municipalities in island areas that put in place a system for evacuation support utilizing lists of those requiring evacuation assistance*2.
- Public participation-based tsunami evacuation drills and review of evacuation plans will be conducted regularly.



Tsunami evacuation facility



Tsunami advisory sign



Basic hazard map

By the year 2020...

Island area municipalities will have formulated tsunami and flood hazard maps and tsunami evacuation plans based on basic hazard maps.

■ Protect lives and property from frequent occurrence of tsunami

- Leveling and other initiatives for sea embankments will be implemented to prevent flooding.
- Carry out facility improvements to sustain port and fishing harbor functions and ensure continuity of daily island lifestyles and economic activities.

By the year 2020...

Coastal embankments improvements securing the required height - 22 coastal areas



Raising coastal embankments

Earthquake in island areas occurs

~Minutes from occurrence

~Approximately one week

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Fear and prepare for a tsunami

The year 2020

Initiatives at home	Confirm the tsunami hazard map; discuss evacuation actions with family members.	<ul style="list-style-type: none"> Confirm evacuation area and establish multiple evacuation routes. Prepare an emergency survival kit and confirm where it is kept. 	<ul style="list-style-type: none"> Walk evacuation routes during drills and at other opportunities. Regularly confirm and replace contents as needed.
Community initiatives	Discuss who requires assistance.	<ul style="list-style-type: none"> Confirm those requiring special consideration. Create a community tsunami evacuation plan. 	<ul style="list-style-type: none"> Build visible relationships in the community. Regularly review and improve plans when carrying out drills.

Key specific public assistance initiatives in the three years between FY 2015-2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
■ Evacuation measures covering both facilities and logistics will be implemented to protect lives from a major tsunami						
<Facility-related Measures> Establish tsunami evacuation shelters and other facilities	Established tsunami evacuation facilities: 4 islands/9 ports					Enhance the disaster preparedness of ports.
	Port Okada: design	Construction				
	Other 8 ports: promote establishment of tsunami evacuation facilities based on basic survey and confirmation with municipal officials					Complete installment of guidance and other signs throughout island.
	Install tsunami advisory signs**3 in boat passenger waiting areas.	Install tsunami evacuation guidance signs**4				
Evacuation route measures such as road maintenance and safety precautions for hazardous areas	Road maintenance: current road broadening, curve improvements**5, alternative route creation (for Oshima loop and other roads)					Secure safe roads for evacuation routes.
	Implement measures on road slopes in priority of urgency based on the result of patrols and inspections.					
	Implement improvements in areas of evacuation routes known to be susceptible to landside disasters.					
<Logistics-related Measures> Assist in the creation of tsunami evacuation plans	Create a basic hazard map (FY 2013)	Create evacuation plan model	Encourage island municipalities to create hazard maps and evacuation plans, encourage businesses and organizations to create evacuation plans.			Formulate hazard maps and evacuation plans for all municipalities on island.
	Develop guidelines for municipalities to follow when creating evacuation plans.	Create evacuation plan. Dispatch advisors.				
	Implement measures to support those requiring special consideration	Support for municipalities that put in place a system for evacuation support utilizing lists of those requiring evacuation assistance.				
Revise guidelines for municipalities.		Provide support for the formulation of municipal evacuation support and emergency plans**6.				
Conduct drills	Conduct joint public participation drills with island municipalities and Tokyo metropolis (annual).					

■ Protect lives and property from frequent occurrence of tsunami

Establish coastal protection facilities	Set coastal embankments heights Discuss with municipal representatives	Basic/detailed designs	Start construction	Required height secured for 22 coastal embankments
	Facility improvements for sustaining port and fishing harbor areas (Futami fishing harbor, etc.)			
Reinforce fishing villages and areas against disasters	Assist in earthquake-proofing and strengthening shared facilities in cooperation with local fishery associations			Quake-proof 296 targeted facilities (planned)
	Implemented for 228 facilities (FY 2013)	Promote earthquake-proofing of the remaining target facilities.		

2. Secure a stockpile and transport system for island areas

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

Put in place environment that greatly reduces the effects of isolation in island areas due to an earthquake-triggered tsunami.

Self-help and mutual assistance initiatives

■ Stockpile one week's worth of supplies

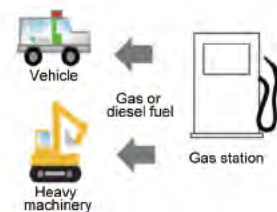
- Assuming the island will lack supplies in an emergency, stock one week's worth of supplies at home and workplaces.
- Stock enough supplies at workplaces and stores for area residents as well.



Public assistance initiatives

■ Encourage expanding stockpile system and securing power sources

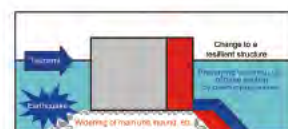
- Collaboration of self-help, mutual assistance, and public assistance will be promoted to stockpile one week's worth of stock based on a survey of required items and quantities.
- Assistance will be provided to ensure decentralizing stockpiles so that supplies can be distributed swiftly when needed.
- Stock areas will be established in higher grounds with low flooding risk.
- A stockpile system on each island will be considered to secure fuel for emergency vehicles required for initial response and emergency power generators for governmental facilities.
- Support will be provided for use of renewable energy^{*7} when deploying stand-alone distributed power sources^{*8} that can also be used in the event of a disaster.



Fuel stockpile in island areas



Quake-proof airport firefighting facilities



Establish wharf and other facilities for emergency transports

■ Strengthen the delivery system of relief supplies

- TMG will develop an enhanced transport system to fortify regular transport routes, by increasing the number of temporary shipments, chartering ships, and other methods.
- Measures for securing fuel for helicopters essential to the transport of supplies will also be considered.
- Ports, fishing harbors, and airports will be improved to help secure emergency transport functions during a disaster.
- TMG will secure transport bases on the main land and transport centers on islands.
- A one-stop transport system between supply centers and island areas will be established.



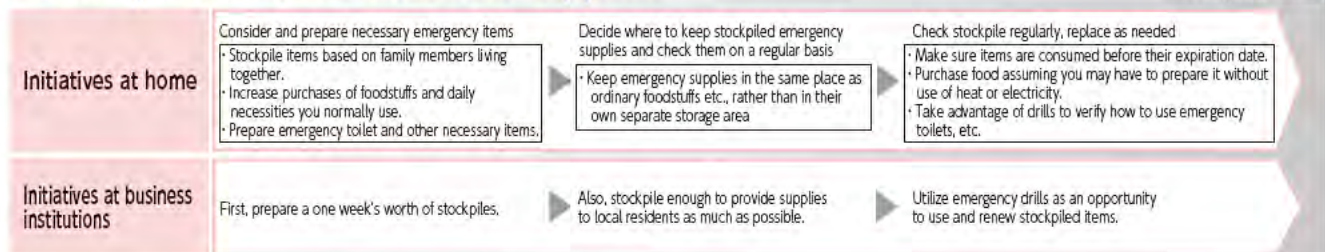
Image of securing a stockpile and transport system for island areas

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Stockpile one week's worth of supplies

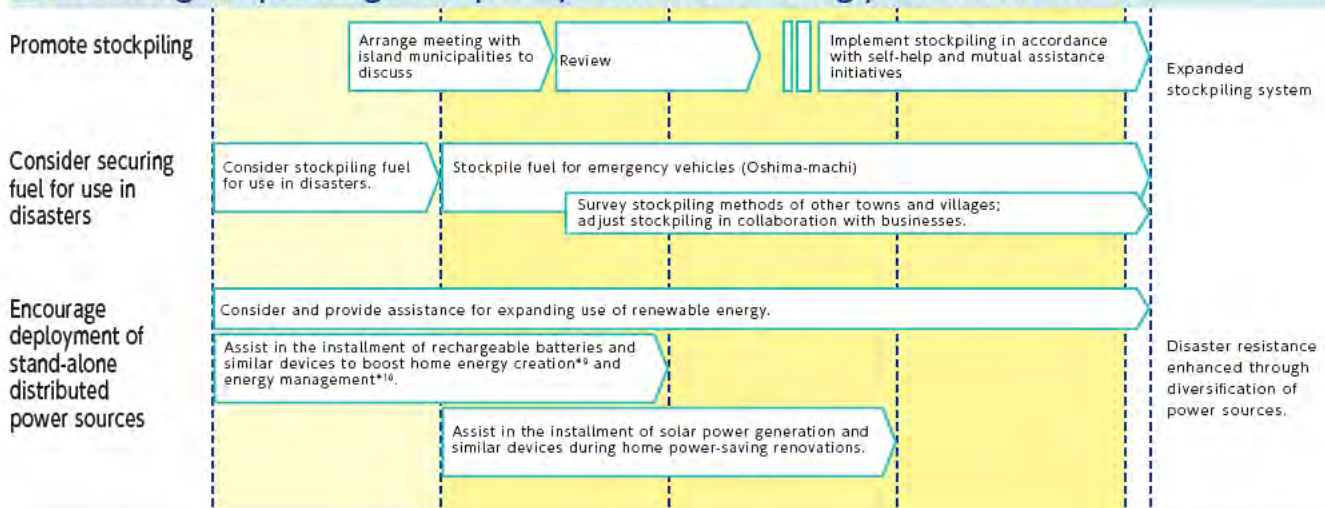
The year 2020



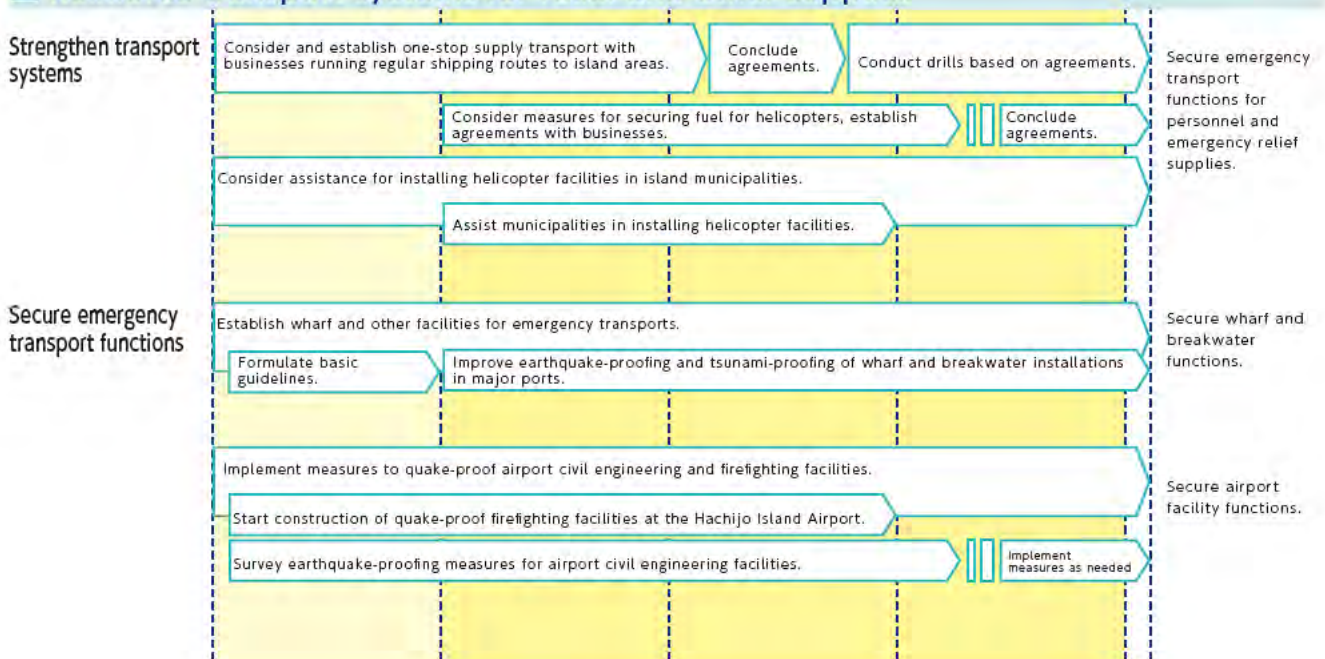
Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
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■ Encourage expanding stockpile system and securing power sources



■ Reinforce transport systems for relief and other supplies



[Terminology Explanations]

1. Achieve prompt evacuation for island areas

- *1 **Those requiring special consideration:** Individuals requiring a particularly high level of consideration at every stage from pre-disaster preparation, through evacuation at the time of a disaster, to post-disaster living support. More specifically, this term refers to the elderly, the disabled, people suffering from serious illnesses, young children, pregnant women, foreign nationals, etc.
- *2 **Those requiring evacuation assistance:** Among those requiring special consideration who need special assistance in order to evacuate smoothly and rapidly. More specifically, this term refers to those persons eligible for registration on the "List of Those Requiring Assistance with Evacuation" drawn up in accordance with the criteria laid down by the individual municipal government.
- *3 **Tsunami advisory signs:** Signs installed in boat passenger waiting areas indicating that the current location is susceptible to flooding due to tsunami, aiming to bring more attention to danger warnings.
- *4 **Tsunami evacuation guidance signs:** Signs providing tsunami advisories and evacuation instructions which are posted on piers, parking lot walls, and other public areas to enable quick evacuation in emergencies.
- *5 **Curve improvements:** Improvements to straighten roads with sharp curves.
- *6 **Evacuation assistance plan (overall plans):** This Plan specifies the scope of "those requiring assistance with evacuation," the system for providing evacuation support, and the system for providing living support for those requiring special consideration after evacuation, clarifying the respective roles of self-help, mutual assistance and public assistance, and outlining the overall approach to providing support for those requiring special consideration.

2. Secure a stockpile and transport system for island areas

- *7 **Renewable energy:** Energy that does not deplete natural resources and can be regenerated for reuse in a relatively short period, such as solar light and heat, hydraulic, wind, bio mass, and geothermal power.
- *8 **Stand-alone distributed power source:** A type of power generation system (distributed power source) that enables the installation of relatively small-scale electric power sources close to consumption areas, as compared to system power, which supplies power to consumption areas over a considerable distance from large-scale power plants via power transmission lines. This system can provide a stable supply of power during a disaster or other situations when system power cannot be used.
- *9 **Energy creation:** Actively producing energy on a household basis through the use of solar power generation systems or household fuel cells.
- *10 **Energy management:** Implementing the visualization of energy use and optimization of demand.

IV. Wind and Flood Damage

Different aspects of potential damage

Before the disaster occurs

Immediately before the disaster

Immediately following the disaster

Possible scenario in the event of a disaster

- ▼ You are playing with your children at a park located alongside a river. The clouds overhead suddenly darken and it starts to rain.
- ▼ The rain gets heavier and you all get soaked as you return home.
- ▼
- ▼ Turning on the television, you see a heavy rain warning, followed by warnings concerning accidents that can occur due to heavy rains.
- ▼ You can faintly hear announcements from the emergency radio speakers indicating that evacuation shelters have been opened and issuing evacuation preparation information.
- ▼ You notice that the rain has gained momentum even since you arrived home and the fierce flow of water in the river and drainage ditches you saw on the way home crosses your mind, but you refrain from evacuating in the heavy rain.



- ▼ Heavy rains are expected to continue and an evacuation advisory has been issued for your entire area.
- ▼ You call a friend who indicates no intention of evacuating, but you remember seeing the raging waters of a river on television and you begin to feel extremely uneasy.
- ▼ After the rain eases a bit, you decide to evacuate to the evacuation shelter.
- ▼ Although you have decided to evacuate, you don't know what to take with you and get confused. For now, you simply take your children and elderly mother, who lives with you, and head for the closest elementary school.
- ▼ Evacuating with your children and elderly mother takes much longer than expected but you are helped by other evacuees along the way and finally reach the shelter.



- ▼ You see television reports of local firefighters piling sandbags around homes.
- ▼ News shows reports on water overflowing from manholes and the river overflowing in some areas; an evacuation directive is issued.
- ▼ You see reports of a flooded house located in an area similar to yours and you become very concerned about your own home.



Situations deriving from this scenario

Insufficient grasp of weather information

- ◇ Failure to heed weather reports and other crucial information may cause evacuees to get caught in dangerous conditions or an accident.
- ◇ Making decisions and taking action without knowledge and understanding of weather reports and other crucial information can lead to life-threatening situations.

Chaotic evacuation

- ◇ Failure to prepare items to take from the home in advance of evacuation could result in delays, causing evacuees to get caught in dangerous conditions or an accident.
- ◇ Strong rain and wind can make evacuation difficult, possibly making moving to a shelter too dangerous.
- ◇ It may be difficult to quickly and smoothly evacuate the elderly and others who require assistance.

Flooding and landslide disasters

- ◇ Inundation above floor level may occur in buildings in areas with high risk of flooding.
- ◇ Heavy rains and other weather conditions may cause life-threatening disasters such as floods and landslides.

Initiatives that should be put in place

1. Achieve smooth evacuations (see p.52)

2. Enhance and strengthen flood and landslide disaster measures (see p.54)

Initiatives that should be put in place for the year 2020

1. Achieve smooth evacuations

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

A system for safe evacuation has been established, aided by the distribution of accurate information concerning wind and flood damage.

Self-help and mutual assistance initiatives

■ Stockpile and gather information regularly to enable appropriate evacuation decision-making.

- Confirm flood and landslide disaster hazard maps, become familiar with danger spots within your area.
- Conduct regular discussions with family members concerning timing and location of evacuation based on weather and other information provided by the government, media and various sources, to ensure a safe evacuation.
- While heeding government-issued evacuation directives, evacuation advisories, and other information, evacuate at the earliest possible time based on the actual conditions in your area.
- Cooperate with neighbors to ensure those requiring special consideration*¹ (those requiring evacuation assistance*²) are guided to safe shelter or otherwise assisted.
- Build stockpiles in your own home in anticipation of an indoor evacuation.



Public assistance initiatives

■ Enhance its ability to provide information to its citizens.

- The delivery of real-time information will be enhanced with initiatives such as expanding the range of rivers with flood warnings*³ and the availability of surveillance footage of such rivers.
- TMG will work to increase the speed and diversity in which information is provided by utilizing websites, Twitter, the L-Alert*⁴ system for sharing disaster information.
- Rainfall measurement accuracy for the Tokyo Amesh*⁵ will be enhanced with implementation of the most advanced radar system available.



Image of river surveillance footage

■ Establish prompt and accurate information exchange system between governmental agencies.

- A delivery system will be established to ensure information provided to TMG by Japan's Meteorological Agency, such as weather warning announcements, is also automatically issued to all municipalities and delivered by electronic mail to registered municipal disaster prevention personnel.



Tokyo Amesh

■ Put in place environment to ensure safe evacuation for those requiring special consideration.

- Support for municipalities that put in place a system for evacuation support utilizing lists of those requiring evacuation assistance.
- Enhance disaster prevention training to strengthen local evacuation assistance systems while fostering human resources that can help those close by as well as contribute to the community.
- Enhance large-scale underground mall flood prevention plans and develop multilingual evacuation guidance.

By the year 2020...

All municipalities will have formulated evacuation assistance plans (Overall Plans)*⁶ for those requiring special consideration.



Underground flooding countermeasure example using a water bar

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Stockpile and gather information regularly to enable appropriate evacuation decision-making

The year 2020

Initiatives at home	Discuss evacuation timing and locations with family members.	▶ Prepare an emergency survival kit.	▶ Check the contents of the emergency survival kit annually.
		▶ Confirm evacuation area/location and establish an evacuation route.	▶ Walk evacuation routes during drills and at other opportunities.
		▶ Confirm multiple methods of gathering evacuation information.	▶ Confirm how to use equipment and make sure you have extra batteries.
Community initiatives	Discuss who requires assistance.	▶ Confirm those requiring special consideration in the area.	▶ Build visible relationships in the community.
		▶ Create a community disaster preparedness map.	▶ Review the disaster preparedness map regularly.

Key specific public assistance initiatives in the three years between FY 2015-2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
■ Enhance its ability to share information with its citizens.						
Provide Information concerning rivers and heavy rains	Implement initiatives to enhance disaster information delivery.					Improve delivery of information to Tokyo citizens.
Specify rivers under flood advisory (4 basins) and rivers with water level warnings*7 (3 basins)	Provide surveillance camera footage.					
	Verify operations of water level forecast systems and improve systems using the latest technology.					
	Upgrade Tokyo Amesh with the most advanced radar system available.		Provide more accurate rainfall information.			
Strengthen Information transmission capabilities	Promote diversification of information transmission.					
	Transmit information via L-Alert system.	Expand and enhance disaster prevention homepages, SNS and other information media.				
■ Establish prompt and accurate information exchange system between governmental agencies.						
Establish an Information exchange system between governmental agencies	Strengthen disaster response infrastructure by putting in place and/or upgrading disaster information systems*, disaster preparedness centers, and emergency radio systems.					Strengthen system for collecting and transmitting information.
Establish a hotline between municipal mayors (FY 2013)	Establish automatic electronic mailing system for weather and other information.	Upgrade disaster information system equipment	Infrastructure strengthening reviews	Upgrade AV equipment		
		Strengthen cooperation with municipalities and relevant agencies in the event of a disaster.				
■ Put in place environment to ensure safe evacuation for those requiring special consideration.						
Put In place a support system for those requiring special consideration	Implement measures to assist those requiring special consideration.					All municipalities formulate evacuation assistance plans.
Evacuation assistance plans formulated 73% (April 1, 2013) 45 of 62 municipalities have created plans	Basic Act on Disaster Control Measures Revision (enacted April 2014)					
	Support for municipalities that put in place a system for evacuation support utilizing lists of those requiring evacuation assistance.					
	• Support municipalities in efforts to encourage use of "Help Cards"*9 and distribution of emergency medical information kits, etc. • Promote the use of the "Help Mark."**10					
Flood prevention measures for underground malls	Revision of guidelines for municipalities.	Provide support for the formulation of municipal evacuation support plans, etc. Conduct training for those in charge at the municipal level.				Enhance flood prevention measures for underground malls.
		Consider systemization of information regarding those requiring special consideration.		System design.		
	Hold a meeting with underground mall administrators.	Enhance underground mall flood prevention plans (9 underground malls)				
		Create multilingual versions of evacuation guides (9 underground malls)				
		Provide assistance for flood prevention measures, evacuation drills, and other initiatives.				

2. Enhance and strengthen flood and landslide disaster measures

Direction for initiatives that should be put in place for the year 2020

◆ In the year 2020...

Establish environments that minimize flooding and landslide disasters resulting from severe weather such as torrential rains and typhoons.

Self-help and mutual assistance initiatives

■ Confirm in advance any actions that should be taken when a disaster occurs to reduce damage.

- To prevent your home from flooding, take damage mitigation measures in advance to allow you to implement appropriate measures during a disaster, such as using water bars or simple home-made sandbags or water bags to prevent flooding and backflow from drainage ditches.
- The danger of an accident can often be seen before a landslide occurs. Learn how to correctly identify such signs to enable early evacuation at the first sign of an abnormal change.
- Remain aware of safety measures on a daily basis so that, even when evacuating at night is very dangerous, you know you have methods for protecting yourself, such as evacuating to an upper floor or to a room on the opposite side of the landslide.
- Litter and fallen leaves can easily clog street inlets and gutters, preventing rain water to properly flow into sewage pipes, thus increasing the risk of flooding. Do not throw litter or other items into such areas, and regularly cooperate to help clean up street inlets and gutters.



Simple flood prevention using water bags

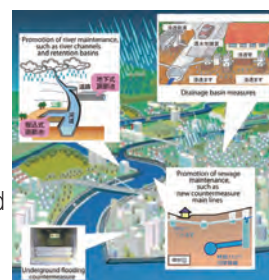


Flood disaster prevention drills

Public assistance initiatives

■ Flood damage due to torrential rains and tidal waves will be prevented or minimized.

- TMG will improve rainwater maintenance standards for sewage systems, such as implementing facility improvements in 75-mm countermeasure sector^{*11} and 50-mm expansion countermeasure sector^{*12}.
- In addition to the maintenance of seawalls, retention basins^{*13} and other facilities will be improved in high-priority areas to countermeasure rainfall, based on 75-mm per hour in each ward and 65-mm per hour in the Tama area.
- Promote coordinated measures for rivers and sewer pipes to reduce damage to inland waters.
- Enhance large-scale underground mall flood prevention plans and implement sewage improvements to support 75-mm per hour rainfall countermeasures.
- Strengthen flood measures for water purification plants.
- Improve river and coastal protection facilities such as by establishing two tidal wave prevention centers and implementing coastal levees as measures against tidal waves during typhoons.



Overall flood control measure image

By the year 2020...

- 82% flood control safety rate^{*14} for 50-mm per hour rainfall in river dikes.
- 50-mm per hour rainfall countermeasures for all special countermeasure areas^{*15}. Completed in all 20 areas.
- 75-mm per hour rainfall countermeasures for sewer pipes in large-scale underground malls. Implemented in all 9 areas.

■ Reduce damage in areas with high risk of disaster due to landslides.

- Implement physical measures such as sediment control in evacuation areas where safety is difficult to ensure or near facilities for those who require special consideration.
- Identify landslide disaster risk areas^{*16} and special landslide disaster risk areas^{*17}

By the year 2020... Identify approximately 15,000 landslide risk and other such areas.

■ Strengthen the system of disaster prevention agencies such as those performing rescue and relief operations.

- Conduct regular joint training sessions and lectures with heavy equipment operators to enhance skills and heighten cooperation.
- Collaborate with other disaster-related agencies to enhance and strengthen flood disaster prevention systems.
- Continue to maintain flood and landslide disaster protection materials and equipment.



Landslide disaster risk areas image



Operations using heavy equipment

Specific initiatives for achieving the envisioned future

Key specific self-help and mutual assistance initiatives

■ Confirm in advance any actions that should be taken when a disaster occurs to reduce damage The year 2020

Initiatives at home	Regularly discuss with family members.	Learn about reducing damage to your home using sandbags, water bars and other materials.	Participate in usage drills.
		Make sure street inlets and gutters are always clear of litter.	Implement regular cleaning activities.
		Confirm hazard maps and water damage records for your area.	Take walks regularly to check any changes.
		Confirm locations in your area that pose a danger during heavy rains.	Confirm contents of emergency supplies regularly.
	Gain accurate knowledge about wind and flood damage.	Prepare emergency supplies for use during a power outage.	Practice taking immediate action in case of emergency.
		Confirm the safest areas within your home in advance.	

Key specific public assistance initiatives in the three years between FY 2015–2017

	~FY 2014	FY 2015	FY 2016	FY 2017	...	FY 2020
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■ Flood damage due to torrential rains and tidal waves will be prevented or minimized.

Small, medium river measures	Retention basin and other implementations for 75-mm wards and 65-mm Tama area.	82% flood control safety rate
77% flood control safety rate for 50-mm per hour rainfall in river dikes. (end of FY 2013)	River improvement plan revisions, designs, and other measures.	
	Newly installed retention basins and other facilities (8 facilities)	
	Continued maintenance of seawalls and other facilities for 50-mm rainfall measures.	
Flood countermeasures for sewage pipes	Facility improvements in special countermeasure areas (2nd Tameike Trunk Main, 2nd Toyama Trunk Main)	Complete countermeasures for all 20 special countermeasure areas (FY 2019)
Complete sewer pipe countermeasures for 7 out of 20 special countermeasure areas (end of FY 2013)	Facility improvements in 75-mm countermeasure sector (Kami-Meguro, Meguro Ward; 4 areas in Setagaya Ward including Tsurumaki)	
	Facility improvements in 50-mm expansion countermeasure sector (6 areas in Shinagawa Ward including Togoshi and Nishi Shinagawa)	
	Facility improvements in small-scale emergency measures sector**18 (6 areas in Suginami Ward including Zenpukuji)	75-mm countermeasure sector 50-mm expansion countermeasure sectors highly successful (FY 2019)
Drainage basin measures	Promote establishment of rainwater runoff control facilities (retention facilities, street inlets and other measures for public and private facilities)	75-mm per hour rainfall countermeasures implemented in all 9 sectors.
	Support for establishing temporary retention facilities for public facilities.	
Measures for large-scale underground malls	Improvement measures for 75-mm rainfall (Tokyo Station Marunouchi and other areas)	
Earthquake, tsunami, tidal wave measures	Establish two tidal wave prevention centers.	Earthquake, tsunami, tidal wave measures for river and coastal protection facilities.

■ Reduce damage in areas with high risk of disaster due to landslides.

Identification of landslide disaster risk areas	Baseline survey: approx. 10,000 locations	Focused implementation of baseline survey (approx. 5,000 locations more to survey)	Baseline survey completion (FY 2017)
	Identification of landslide disaster risk areas		
Identification of 6,993 locations as landslide disaster risk areas (end of FY 2013)	Assist in creation of hazard maps for municipalities in the designated areas		High risk and other areas Approx. 15,000 locations (FY 2019)
	Landslide disaster measures implemented according to conditions of facilities, such as evacuation shelters and hospitals in landslide disaster risk areas.		
	Measures to fortify slopes taken in areas where evacuation locations are difficult to reach. (Nishi Tama area)		
Facility-related measures	Review measures for facilities for those who need special consideration.	Implement measures based on results of the review.	

■ Strengthen the system of disaster prevention agencies such as those performing rescue and relief operations.

Enhance measures for preventing flooding and other disasters	Conclude contracts heavy equipment businesses; conduct joint training and seminars with heavy equipment operators.					Strengthen disaster response system.
	Work with related agencies to review the introduction and improvement of materials and equipment most effective in disaster situations.					

[Terminology Explanations]

1. Achieve smooth evacuations

- *1 **Those requiring special consideration:** Individuals requiring a particularly high level of consideration at every stage from pre-disaster preparation, through evacuation at the time of a disaster, to post-disaster living support. More specifically, this term refers to the elderly, the disabled, people suffering from serious illnesses, young children, pregnant women, foreign nationals, etc.
- *2 **Those requiring evacuation assistance:** Among those requiring special consideration who need special assistance in order to evacuate smoothly and rapidly. More specifically, this term refers to those persons eligible for registration on the "List of Those Requiring Assistance with Evacuation" drawn up in accordance with the criteria laid down by the individual municipal government.
- *3 **Rivers with flood warnings:** Rivers with high water level or overflow warnings issued by Japan's Meteorological Agency with the Ministry of Land, Infrastructure, Transport and Tourism, or with individual prefectural agencies; warnings are issued to aid in the decision-making process about measures to prevent high water or overflow floods as well as the evacuation of residents.
- *4 **Disaster information-sharing system (L-alert):** A basic information-sharing system using ICT, the communication method prompted widely by the Ministry of Internal Affairs and Communications, for the simplified and mass delivery of detailed instructions concerning the local safety and security, including evacuation advisories and directives. The system enables messages to be delivered during a disaster to residents of local areas in the most prompt and efficient manner via radio, television, and other media.
- *5 **Tokyo Amesh:** Real-time rainfall information (via website and other venues) including rainfall intensity, impacted area, and rain cloud movement.
- *6 **Evacuation assistance plan (overall plans):** This Plan specifies the scope of "those requiring assistance with evacuation," the system for providing evacuation support, and the system for providing living support for those requiring special consideration after evacuation, clarifying the respective roles of self-help, mutual assistance and public assistance, and outlining the overall approach to providing support for those requiring special consideration.
- *7 **Rivers with water level warnings:** rivers not currently under flood advisory, but which are monitored for flooding potential, with water levels reported to the public. When urgency prevents issuance of flooding advisories, TMG will issue a flood alert for rivers reaching predetermined water levels.
- *8 **Disaster information system:** When a disaster occurs, this system collects a wide variety of different types of data from municipal governments and from disaster prevention related agencies, and utilizes map data as a basis for unified management of damage report data and response measure implementation data by the Tokyo Disaster Countermeasures Office, to support TMG's disaster response decision-making; in addition, individual agencies that are equipped with Disaster Information System terminals can make effective use of the disaster information provided by the system to support their disaster response activities.
- *9 **Help card:** A card bearing emergency contact information and special needs information facilitating outside help for disabled individuals who are unable to communicate their situation and needs during disasters or in times of trouble.
- *10 **Help mark:** A mark created to alert others of individuals requiring special consideration or assistance which may not be outwardly evident, such as those with prosthesis, an unseen disability, or a serious illness, or those in their first trimester of pregnancy.

2. Enhance and strengthen flood and landslide disaster measures

- *11 **75-mm countermeasure sector:** This Plan specifies the scope of "those requiring assistance with evacuation," the system for providing evacuation support, and the system for providing living support for those requiring special consideration after evacuation, clarifying the respective roles of self-help, mutual assistance and public assistance, and outlining the overall approach to providing support for those requiring special consideration.
- *12 **50-mm expansion countermeasure sector:** An area in which measures to minimize damage from rainfall exceeding 50-mm per hour are in place; specifically, areas where existing rainwater retention facilities can be used and plans for new facilities can be expedited.
- *13 **Retention basin:** A riverside storm water retention facility used as a temporary measure when rising water levels from torrential rainfall threaten flood damage.
- *14 **Flood control safety rate:** Rate of river dike installments for 50-mm per hour of rainfall plus effect of installment of retention basins.
- *15 **Special countermeasure area:** Twenty "special countermeasure areas" with depressions or slopes putting them at high flood risk have been identified for expanded measures including drainage systems, pump facilities, and outflow discharge methods.
- *16 **Landslide disaster risk area:** An area with an established warning and evacuation system in place for use when residents' lives and health are in imminent danger from cave-ins and other damages occurring in steep areas.
- *17 **Special landslide disaster risk area:** Highlighted landslide risk area. This includes steep areas in which buildings may be damaged when cave-ins and other damages occur, and residents' lives and health are in considerable imminent danger and specified licensing for development as well as building regulations are in place.
- *18 **Small-scale emergency measures sector:** An area of comparatively small-scale and scattered damage with relatively few flooded buildings, in which there is cooperation with local wards for early-stage expansion of facilities such as storm drain inlets and bypass pipes.

Tokyo Disaster Prevention Plan

—Becoming the World's Safest, Most Secure City—

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