

# Overview of the 2018 White Paper on Fire Service

Materials created by the Fire and Disaster Management Agency were translated by the International Fire Service Information Center

**Fire and Disaster Management Agency (FDMA)**

**[Extent of the Damage]**

- During the "Heavy Rain in July 2018," **floods and landslides occurred due to prolonged record-breaking heavy rain and the flooding of rivers in various places.**
- Widespread damage occurred, including 224 deaths, 8 missing people (as of November 6, 2018) and more than 50,000 building damages, and **the number of fatalities reached a record high for storm and flood damage in the Heisei era.**



Mabi-cho, Kurashiki City, Okayama  
(Courtesy by the Tokyo Fire Department)

**[Activities of Firefighting Agencies]**

- **The local fire departments, volunteer fire corps, prefectural firefighting support teams and National Fire Service Team (dispatched to Okayama Prefecture, Hiroshima Prefecture, Ehime Prefecture, and Kochi Prefecture) cooperated with the Self-Defense Force (SDF), the police etc. to provide evacuation measure for the victims, and conduct search and rescue for missing people.**
- **A total of 3,713 units of National Fire Service Team containing 15,287 members were dispatched to the four prefectures and rescued 397 people over the 26 days from July 6 to 31 (the scale of the operation was ranked after the Great East Japan Earthquake and the 2016 Kumamoto earthquakes).**
- In light of the fact that widespread damage and a great number of casualties were anticipated and that the government had established an emergency center, **it was decided to dispatch a series of National Fire Service Team in accordance with the instructions of the FDMA Commissioner (for the second time since the Great East Japan Earthquake).**
- In the affected areas, **volunteer fire corps removed earth and sand, conducted local patrols and acted as lookouts in dangerous places at risk of landslide over an extended period.**
- In Kure City, Hiroshima, **one volunteer fire corps member was killed on duty due to being caught in a debris flow.**



Search activity utilizing amphibious buggies  
(Courtesy by Osaka Municipal Fire Department)



Rescue operation using lifeboats in Mabi-cho,  
Kurashiki City  
(Courtesy by Kurashiki Fire Bureau)



Safety confirmation and search  
activities by the volunteer fire corps  
(Courtesy by Kurashiki Fire Bureau)

**[Lessons from Torrential Rain Damage]**

- In light of the lessons learned from this disaster, **the best ways for regional public organizations to transmit information to warn the residents to evacuate, the preparation of a means of communication such as home receivers for the disaster information wireless broadcast system, the enhancement of emergency drills by local governments, and the development and strengthening of voluntary disaster prevention groups** were all considered in cooperation with the ministries and agencies concerned, including the Cabinet Office.

### Earthquake Centered in Northern Osaka

Time and date of occurrence: 07:58  
on June 18, 2018  
Maximum seismic intensity:  
6 lower (Magnitude: 6.1)



Status of railway stoppages in Osaka City  
(Courtesy by the Osaka prefectural government)

#### [Extent of the Damage]

- **Casualties including 6 deaths and more than 50,000 building damages (as of November 6, 2018) occurred** around the area struck by the violent shocks including Takatsuki City, where an elementary school pupil going to school was caught in the collapse of a concrete-block wall.
- A lot of damage occurred to lifeline utilities such as electricity, gas and water supply, with transportation including railways also being affected **stranding many commuters.**
- The level crossings were blocked for a prolonged period and hindered emergency vehicle traffic.

#### [Activities of Firefighting Agencies]

- Many emergency calls to 119 or local fire departments started to be made right after the earthquake and **each fire department immediately conducted firefighting, rescue operations and ambulance services.**
- **Volunteer fire corps conducted firefighting and patrols, removing concrete-block walls collapsed by the earthquake and eliminating road obstacles, which started just after the earthquake.**

### 2018 Hokkaido Eastern Iburu Earthquake

Time and date of occurrence: 03:07 on September 6, 2018  
Maximum seismic intensity: 7 (Magnitude: 6.7)



Damage due to the landslides in Atsuma-cho  
(Courtesy by Kawasaki City Fire Department)

#### [Extent of the Damage]

- Large-scale landslides occurred in Atsuma-cho, where a seismic intensity of 7 was observed.
- In Kiyota-ku, in the City of Sapporo, **liquefaction caused great damage to houses and roads.**
- **Casualties including 41 deaths and more than 10,000 building damages occurred (as of November 6, 2018).**
- Power plants in all areas of Hokkaido Prefecture stopped its operation, and prolonged outages occurred all over the prefecture.

#### [Activities of Firefighting Agencies]

- **The local fire departments, volunteer fire corps, prefectural firefighting support teams and National Fire Service Team cooperated with the SDF, the police etc. to provide evacuation measure for the victims, and conduct search and rescue for missing people.**
- The National Fire Service Team, made up of **a total of 642 units containing 2,632 members, rescued 24 people** over the 5 days from September 6 to 10. Since it was impossible for the Teams from Honshu to be dispatched overland, **they were dispatched to the affected areas using private ferries and the Air SDF's transport aircraft.**
- **The volunteer fire corps started conducting patrols and acting as lookouts in dangerous places at risk of landslide, and supporting the running of the evacuation centers soon after the earthquake.**

### Lessons from the Disaster Damage

- **Emergency inspections will be conducted** to regional public organizations' emergency means of communication such as a regional public organization's satellite communication channel **and the step-up measures will be implemented based on the results.**
- For measures taken by regional public organizations, **Special Financial Measures towards Local Governments will be used to promote the improvement of emergency power sources and the earthquake-proofing of public facilities.**

### (Special Feature 3) Strengthening the Safe Operation System of Fire and Disaster Prevention Helicopters

#### [Overview of Fire and Disaster Prevention Helicopter Crashes]

- On August 10, 2018, the Gunma prefectural disaster prevention helicopter "Haruna" crashed during terrain skills training, **killing all nine rescue members on board.**
- In addition, three fire and disaster prevention helicopters have crashed since 2009 killing 17 firefighting personnel on duty. (March 2017: Nagano Prefecture; July 2010: Saitama Prefecture; and September 2009: Gifu Prefecture)



A meeting of the investigative commission in FY2017

#### [Avoidance Measure to Helicopter Crash]

- In light of the crash in Nagano Prefecture, the investigative commission compiled a report in 2018, which recommended **constant utilization of the helicopter movement management system, safety improvement measures including the introduction of a two-pilot system, enhancing and strengthening aerial fire and disaster prevention systems including strengthening the mutual support system, and financial support to train and secure helicopter pilots,** with urgent implementation being advised.
- In light of the crash in Gunma Prefecture (the cause of which is under investigation by the Japan Transport Safety Board, the Ministry of Land, Infrastructure, Transport and Tourism), **a review of the safety management systems and early implementation of the recommendations above** were required while **FDMA interviewed with Gunma Prefectural Government on the implementation status of the recommendations.**
- Further measures for the operating organizations to put into practice, strengthening the cooperation with other ministries and agencies, necessary financial measures, etc. will all be considered.

### (Special Feature 4) Promotion of Integration of Fire Department

#### [Revision to the Basic Guidelines for Integration of Fire Department etc.]

- Integration of fire department is an **extremely effective measure to secure and enhance firefighting capacity.**
- Since the amendment to the Fire and Disaster Management Organization Act in 2006, efforts have been made over 10 years to **achieve certain results such as the realization of integration of fire department in 52 areas, so that the number of fire departments is 728 as of April 1, 2018.**
- However, small fire departments with jurisdiction over fewer than 100,000 people still account for about 60%, and so **it is important to promote integration of fire department to maintain and strengthen the firefighting capacity and to strengthen the systems of small fire departments in view of the future full-scale depopulating society as aging progresses.**
- **The basic guidelines for integration of fire department were revised to extend the time limit for promoting integration of fire department for 6 years to April 1, 2024.**
- In the first fiscal year, FY2018, **municipal fire departments are to analyze their own firefighting capacity and the need for integration of fire department in order to prepare the "firefighting capacity card" while prefectural governments are to remake their plans for the promotion of integration of fire department.**
- In areas where it's difficult to immediately promote integration of fire department, it has been decided to **promote coordination and cooperation for some parts of firefighting activities including joint operation of commands, and position this in the promotion plan.**

## (Special Feature 5) Enhancing and Strengthening Regional Disaster Prevention Capabilities with Volunteer Fire Corps Playing the Center Role

- As the center of fire and disaster prevention systems in local areas, the volunteer fire corps play a major role in ensuring the safety and security of local residents, but the number of volunteer fire corps members has been decreasing year after year to 843,667 (a decrease of 6,664 from last year) as of April 1, 2018.

### [Policies to Enhance and Strengthen Volunteer Fire Corps]

(Promoting Enrollment in Volunteer Fire Corps)

- To promote the enrollment of students, women, employees and public officials to join in the volunteer fire corps, efforts are being made such as the "Volunteer Fire Corps Office Symbol System" and the "Certification System for Students' Volunteer Fire Corps Activities."

(Improving Treatment of Volunteer Fire Corps Members)

- The FDMA requests that annual compensation and dispatch allowances be raised, particularly by municipalities with low allowances.

(Enhancing and Strengthening Equipment)

- With the aim of enhancing safety equipment like life jackets and rescue equipment, financial measures for local governments are implemented.
- Fire academies are being provided with equipment for information-gathering activities (off-road motorcycles, drones) and small-capacity pumps which can be easily used by women or students.

### [Measures to Secure Volunteer Fire Corps Members]

- To secure and enhance volunteer fire corps members, other efforts are being promoted including the further expansion of systems for "members in large-scale disasters".

## (Special Feature 6) Promotion of the Active Involvement of Female Firefighting Officials in Firefighting

### [Current Status regarding Female Firefighting Officials]

- The percentage of women among the total number of firefighting officials throughout Japan remains low, 2.7% as of April 1, 2018.
- Therefore the target is to raise the nationwide ratio of female firefighting officials to all firefighting officials to 5% by the beginning of FY2026.
- Each fire department is to set a numerical target and try to increase personnel systematically.

### [Initiatives for Promoting the Active Involvement of Female Firefighting Officials]

- While occupational briefing sessions aimed at female students, etc., are held, support for a workplace experience for female students given by the local fire departments is continuously provided.
- In order to systematically promote the development of facilities for women such as bathrooms and nap rooms, the financial measure for development of these facilities started in FY2016.
- The "System of Advisers for Promoting the Active Involvement of Female Firefighting Officials," was newly established in December 2017, in which human resources staff from fire departments which employ more female firefighting officials are dispatched as advisers to advise on specific efforts to promote recruitment.
- In March 2018, the "FDMA Guide to Women's Active Involvement," which compiles case examples of fire departments making best efforts, was prepared and provided to fire departments throughout the country.
- The "Fire Department Search" website was updated in FY2018 so that each fire department's recruitment exam information can be easily searched for.
- The Facebook page "FDMA -Women's Active Involvement" was created to share information through social media.



Female firefighting officials PR poster

## (Special Feature 7) Fire Protection and Safety Measures in Residential Accommodation Businesses (Vacation Rentals)

### [Trend of Vacation Rentals]

- The Residential Accommodation Business Act was enforced on June 15, 2018, aimed at the proper utilization of vacation rentals, to meet the demands of sharply increasing foreign tourists visiting Japan for accommodation and requests for regional revitalization etc.
- The FDMA **promotes the positive popularization of vacation rentals by making the regulations on fire defense equipment more suitable for the actual situation while taking the fire protection and safety measures necessary** to ensure safety in vacation rentals.

### [Promotion of Fire Protection and Safety Measures for Vacation Rentals]

- Users of vacation rentals **are unfamiliar with evacuation routes in buildings and are inexperienced in handling fire equipment**, which makes fire risk further concern.
- It was decided to **take measures for fire protection and safety including the installation of automatic fire alarm systems etc. excluding those cases where it would be possible for the owner of the house to make an emergency response.**

### [Amendment of Regulations on Fire Defense Equipment etc.]

- The fire safety regulation was amended to **exempt the vacation rental owners from installing the required fire safety equipment such as sprinkler and evacuation guide light** if the vacation rental meets certain predetermined conditions including having a safety space in.



Leaflet to make more people aware of the fire protection and safety measures in vacation rentals

## (Special Feature 8) Enhancement of Fire and Disaster Prevention Systems by Utilizing AI and Robots

### [Direction of Research and Development]

- The role of science and technology in fire and disaster prevention is becoming increasingly important in responding to the increasing risk of natural disaster and changing social structure such as the depopulating society.
- The "Strategy Plan for Advancement of Fire and Disaster Prevention Science and Technology" (revised in March 2018) focuses on AI and robots as well as promoting social implementation of research tasks.

### [Status of Research and Development (National Research Institute of Fire and Disaster)]

(Research and Development of a Firefighting Robot System by Utilizing AI Technology)

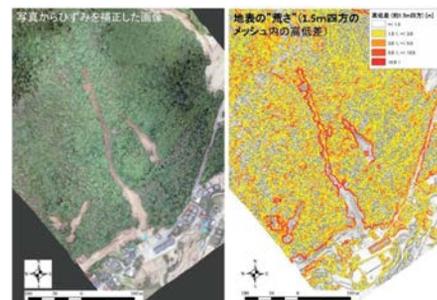
- When a large-scale disaster occurs at a petrochemical complex etc., it's likely that the firefighters will be unable to approach the site.
- **Robots that have high heat resistance and can transmit video of the disaster situation and perform firefighting work by spraying water and using other methods have been developed by utilizing AI technology.** (Since FY2014)
- **An actual deployable system will be completed in FY2018.**



Prototypes of individual robots

(Utilization of Drones in Fire and Disaster Prevention Activities)

- **Technology has been developed to assess the direction of a sediment flow or the height of the earth surface after a disaster, based on image information from a bird's-eye view.** These measurements are expected to help ensure safety in rescue operations..
- Research into further improvements in analysis precision will be promoted through cooperation with firefighting agencies.



Roughness of the earth's surface analyzed from aerial images taken by a drone

## (Special Feature 9) Overseas Promotion of Firefighting Equipment Conforming to Japanese Standards

### [Government's Efforts for Overseas Promotion of Japanese Firefighting Equipment]

- Japanese firefighting equipment **conforms to standards and criteria formulated by the FDMA, and is certified through strict inspection by third-party organizations to ensure high quality.**
- **Overseas promotion of Japanese fire prevention equipment has been carried out especially in South East Asian countries, where the equipment standard is undeveloped, to enhance Japanese industry's competitiveness in the region.**

### [Efforts for Overseas Promotion]

- To support the in-country cooperation system as well as the Japanese companies, **a seminar was held in cooperation between FDMA and the Japan External Trade Organization (JETRO)** on March 20, 2018.
- **An introduction leaflet advertising the superiority of Japanese firefighting equipment was prepared** and distributed at the "Tokyo Conference of the International Fire Chiefs' Association of Asia (IFCAA)" in May 2018.
- As a way of familiarizing the quality, standards and certification of Japanese firefighting equipment, the **"Memorandum of Cooperation in Firefighting Between the Ministry of Internal Affairs and Communications of Japan and the Ministry of Public Security of Vietnam" was signed on October 8, 2018.**
- **Overseas promotion of firefighting equipment conforming to Japanese standards will be carried out continuously focusing on Southeast Asian countries.**



The overseas promotion seminar

## (Special Feature 10) Response to Heatstroke

### [Survey on People Taken to a Hospital for Heatstroke]

- There were **95,137 people taken to hospital** for heatstroke in the country between May and September 2018 **(of which 48.1% were elderly people aged 65 or older), and there were 160 deaths** (the number of people taken to hospital **greatly increased by 79.6% from the previous year**).
- In July, **the average monthly temperatures were the highest in eastern Japan and the second highest in western Japan since statistic records started in 1946, and the number of people taken to hospital for heatstroke (54,220) and the number of deaths (133) were the largest since 2008 when the survey was first taken.**

### [Efforts for Heatstroke Prevention]

- On the FDMA website and on Twitter, **public awareness of heatstroke prevention is being raised and the number of people taken to hospital is being made public.**
- In FY2018, in light of the long spell of extremely hot days in various parts of Japan, at the liaison conference of heatstroke-related ministries and agencies, **Heatstroke Prevention Month was decided to be extended to August 31.**
- Through cooperation with the Ministry of the Environment and the Ministry of Health, Labor and Welfare, **a "leaflet for the non-Japanese to raise the public awareness of heatstroke prevention" was prepared** which describes how to prevent heatstroke and the necessary items when going see a doctor.



Leaflet on Heatstroke Countermeasures



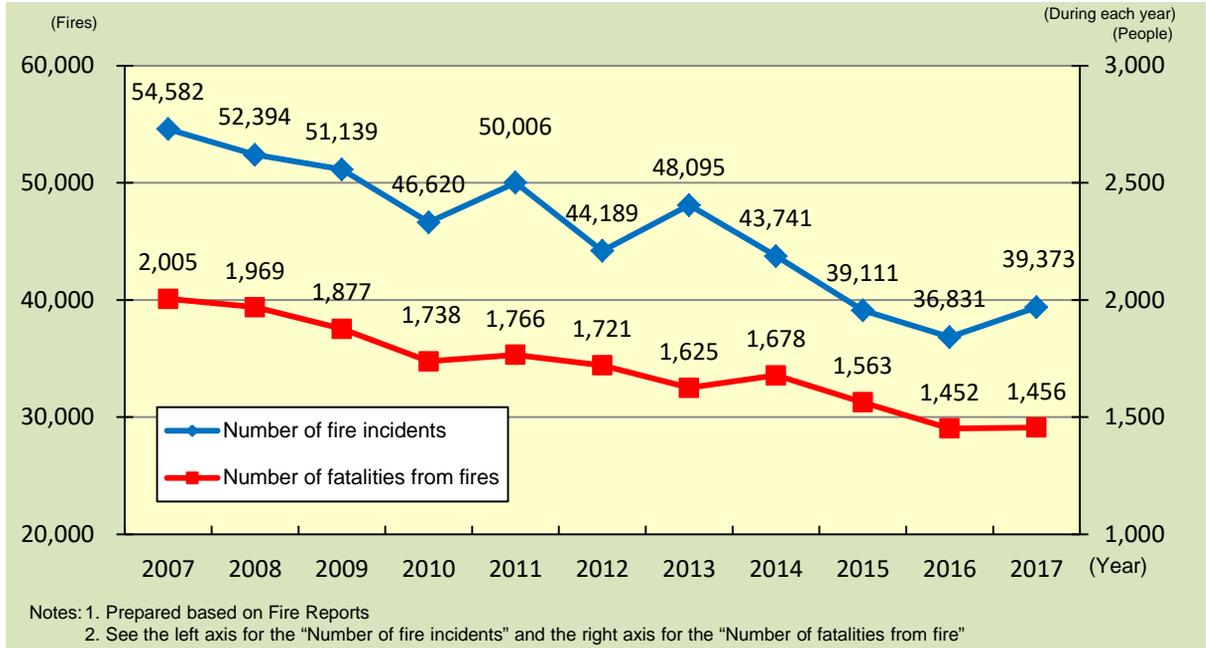
Sticker for vehicles

# Current Status and Activities concerning Fire and Disaster Prevention

## Current Status of Fires and Recent Trends (Chapter 1, Section 1)

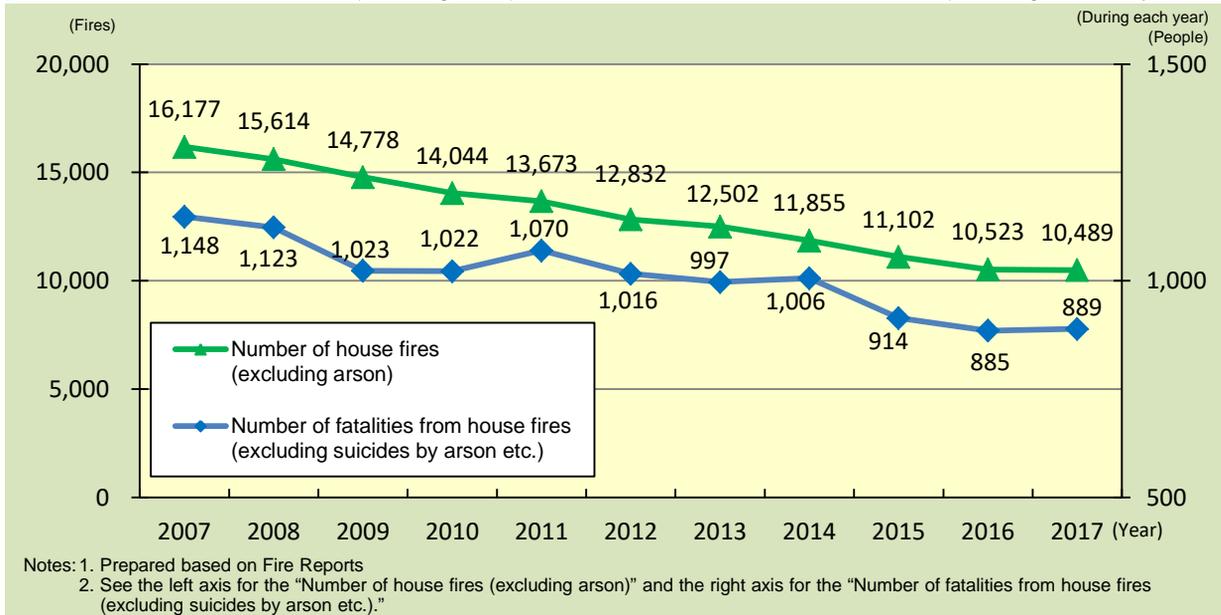
- The number of fire incidents and number of fatalities from fires have been gradually trending downward over the past ten years.
  - The number of fire incidents in 2017 came to 39,373, with the number of fatalities from these fires coming to 1,456 people.
  - The number of fire incidents increased compared to the previous year (an increase of 2,542 fires), while coming to **72.1% versus ten years ago**.
  - The number of fatalities from fires increased compared to the previous year (an increase of 4 people), while coming to **72.6% versus ten years ago**.
  - There were 3,712 fires caused by cigarettes, which were the primary cause of fires (arson was second and stoves were third).

[Trends in the number of fire incidents and the number of fatalities from fires]



- The number of house fires (excluding arson) in 2017 came to 10,489 fires, and the number of fatalities from house fires (excluding suicides by arson, etc.) came to 889 people.
- The number of house fires decreased from the previous year (a decrease of 34 fires), while coming to **64.8% versus ten years ago**.
- The number of fatalities from house fires increased from the previous year (an increase of 4 people), while coming to **77.4% versus ten years ago**.
- The installation rate for residential fire alarms is 81.6% (as of June 1, 2018).

[Trends in the number of house fires (excluding arson) and the number of fatalities from house fires (excluding suicides by arson etc.)]



## Status for Firefighting Organizations (As of April 1, 2018) (Chapter 2, Section 1)

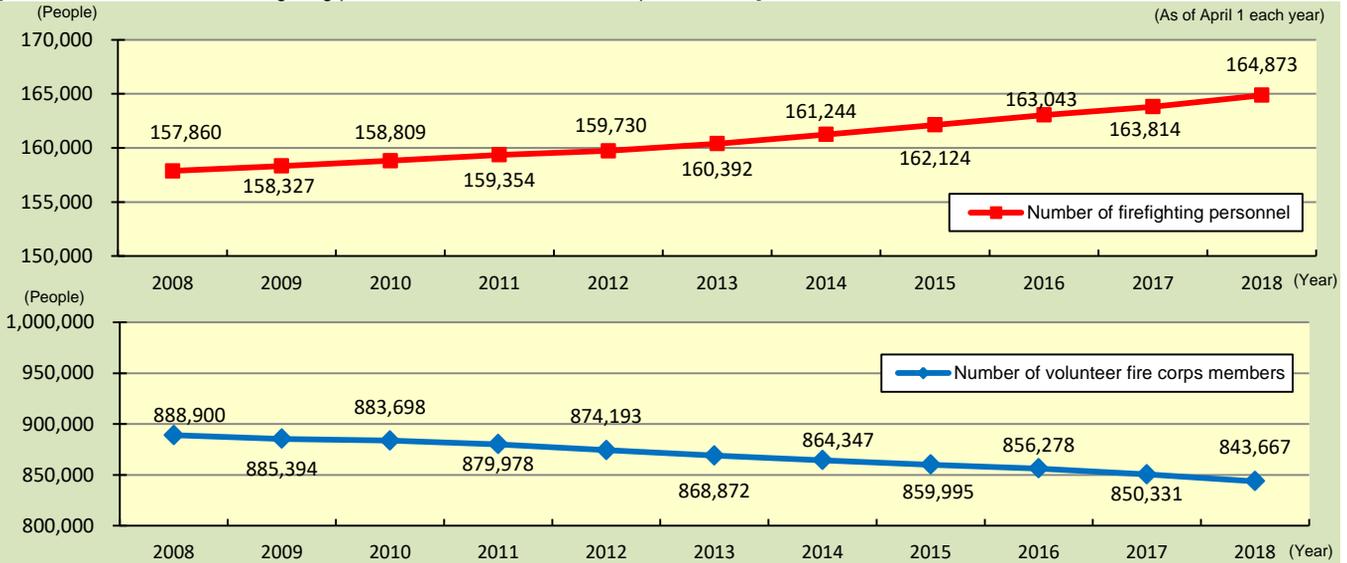
### ○ Fire departments

- 728 fire departments and 1,719 fire stations have been established, with the number of firefighting personnel coming to 164,873 people.
- The number of firefighting personnel increased compared to the previous year (an increase of 1,059 people), while coming to 104.4% versus ten years ago.

### ○ Volunteer fire corps

- The number of volunteer fire corps is 2,209 and the number of members is 843,667 people. Volunteer fire corps have been established in every municipality.
- The number of volunteer fire corps members decreased compared to the previous year (a decrease of 6,664 people), while coming to 94.9% versus ten years ago.

[Trends in the number of firefighting personnel and volunteer fire corps members]



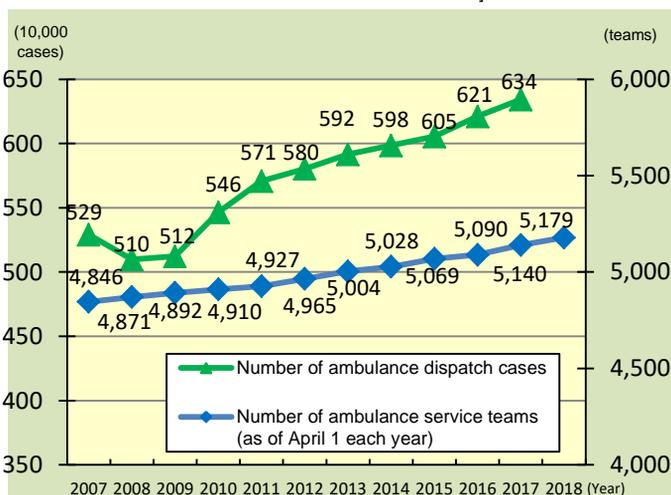
- Notes: 1. Prepared based on the Survey on the Current Status of Fire and Disaster Prevention and Earthquake Countermeasures  
 2. Due to the effects of the Great East Japan Earthquake, the number of firefighting personnel and volunteer fire corps members in Iwate Prefecture, Miyagi Prefecture, and Fukushima Prefecture for 2011 were totaled using the figures from the previous year (as of April 1, 2010).  
 3. Due to the effects of the Great East Japan Earthquake, the figures for Onagawa Town, Oshika-Gun, Miyagi Prefecture for 2012 were totaled via the figures from two years ago (as of April 1, 2010).

## Implementation Status of Ambulance Services (Chapter 2, Section 4)

- The number of times ambulances have been dispatched for emergencies has kept on upward trend. In 2017 they were dispatched at a record high of around 6.34 million times, which is roughly a 20% increase compared to ten years ago.
- The number of ambulance service teams as of April 1, 2018 is 5,179 teams (an increase of 39 teams compared with the previous year), which is roughly 6% increase compared with ten years ago.
- The average time required to reach the scene was 8.6 minutes in 2017 (this is 1.6 minutes longer than ten years ago).
- The average time required to take the sick and wounded to hospital was 39.3 minutes in 2017 (this is 5.9 minutes longer than ten years ago).

[Trends in the number of ambulance dispatch cases and the number of ambulance service teams]

[Trends in the time required to reach the scene and the time required to take the sick and wounded to hospital by ambulance]



- Notes: 1. Prepared based on Ambulance Service Annual Reports  
 2. Due to the effects of the Great East Japan Earthquake, the figures for the right-hand graph were totaled by excluding the data for the fire department at the Otsuchi District Administrative Affairs Association in Kamaishi and the fire department in Rikuzentakata City from 2010 and 2011.

## National Fire Service Team (Chapter 2, Section 7)

- The number of National Fire Service Team registered as of April 1, 2018 was **5,978 units (an increase of 320 units compared with a year earlier)**.
- They have been dispatched **38 times** since inauguration in 1995 (as of the end of November 2018).
- National Fire Service Team is **made up of Command Support Battalions, Prefectural Battalions, Comprehensive Mobile Units, and Emergency Response Units for Energy/Industrial Disaster (“Dragon Hyper Command Unit”)**.
- **An action plan on the operating policy etc. for National Fire Service Team in the case of the Nankai Trough Earthquake or the Tokyo Inland Earthquake was drawn up**, taking into account the response measures and damage envisaged by the Central Disaster Management Council.

### Emergency Response Unit for Energy/Industrial Disaster (“Dragon Hyper Command Unit”)

- The mission of Emergency Response Unit for Energy/Industrial Disaster is to carry out specialist firefighting activities rapidly and appropriately in the particular disasters occurring in areas in which energy/industrial infrastructure such as petrochemical complexes or chemical plants are located.
- They are made up of special vehicles able to send and discharge large volumes of water long distances.
- They will be deployed at 12 fire departments by FY2018.



Symbol used nationwide



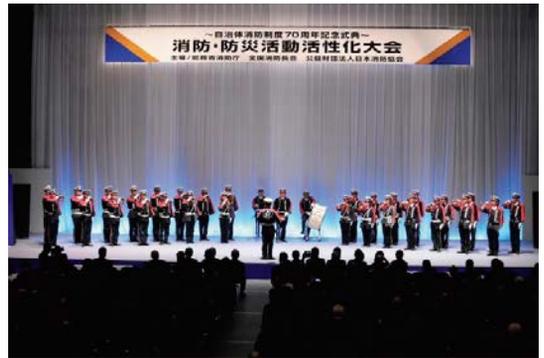
Core vehicles of the Dragon Hyper Command Units  
Hose extension vehicle equipped with large water cannon (left)  
Large-capacity water pump vehicle (right)

## Commemorative Project for the 70th Anniversary of the Local Government Centered Fire and Disaster Management System (Chapter 4)

- On March 7, 1948, the Fire and Disaster Management Organization Act came into effect, and today's system for “Local Government Centered Fire and Disaster Management,” based on the principle of fire and disaster management by municipalities, was established, .
- On March 7, 2018, in order to reaffirm the importance of the mission of fire and disaster management, which is to ensure the safe and secure lives of the people, and with the aim of further enhancing and strengthening fire and disaster prevention systems, **the “Ceremony to Commemorate the 70th Anniversary of the Local Government Centered Fire and Disaster Management System” was held** at Ryogoku Kokugikan.
- Following the commemoration ceremony, **the “Fire and Disaster Prevention Activities Promotion Convention” was held** aiming to further energize fire and disaster prevention activities nationwide, by honoring those business establishments cooperating with volunteer fire corps activities.



Prime Minister's commendation



Performance by a trumpet band of volunteer fire corps from Nagano Prefecture

## Activities after the Earthquake Disaster in Eastern Taiwan in February 2018 (Chapter 5)

- The International Rescue Team of Japan Fire-Service (IRT-JF) was inaugurated in 1986 and has been dispatched 21 times since their inauguration.
- In February 2018, eight experts (including two IRT-JF members) from the Japan Disaster Relief Team (JDR) were dispatched to support the search and rescue operations of the Taiwanese authorities.
- The experts **advised local rescue teams on the handling of search equipment and the search operations.**
- This was accepted as repayment by Japan for the support provided by Taiwan after the Great East Japan Earthquake and was **highly appreciated in Taiwan.**



Support for operations in Hualien County (dispatched in February 2018)  
(Courtesy by JICA)

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[Earthquake Centered in Northern Osaka]

1. Overview of the Damage
2. Government's Major Actions and the Operations of Firefighting Agencies

[2018 Hokkaido Eastern Iburu Earthquake]

1. Overview of the Damage
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## Attached Materials