

# Guidance for Response to Earthquakes and other Emergencies

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Japan Water Works Association  
(JWWA)

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## **General Matters of the Mutual Relief Aid**

### **1. Request for help**

In an event of an extensive water cut-off triggered by a natural disaster such as an earthquake or an accident, a request for help from a public organization in the area hit by a disaster constitutes an integral part based on which relief operation would be initiated. Although such a request is normally made from a head of a local public organization to the heads of other organizations, it is considered that a system of making requests for help and engaging in a relief operation based on the voluntary collaboration centered on the Japan Water Works Association would be effective, especially for the waterworks, as agility in responding to requests is of the essence at the initial stage of an emergency.

However, as the requests for help shall be in principle made within the framework of a prefectural chapter and district conferences (hereinafter referred to as “the prefectural chapters, etc.”) in addition to the regional chapters, the key roles are to be played by the heads of regional chapters and the heads of prefectural chapters and district conferences (hereinafter referred to as “the heads of prefectural chapters, etc.”).

Meanwhile, a mechanism of communicating information on the extent of a disaster at emergency, including an earthquake, should have been well prepared with the regional chapters and prefectural chapters as the center. Immediately after the disaster occurrence, a waterworks entity in charge of coordinating information transmission (hereinafter referred to as “the water business entity in charge”) shall be formed in order to collect disaster information and centralize communication channels, in an effort to convey information promptly and smoothly.

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- 1) Rules on Making Requests for Help
- 2) Setup of Information Communication System and Requests for Help

#### **1) Rules on Making Requests for Help**

A request for help from a public organization in an area hit by a disaster is the essential move upon which relief operation from the dispatch of personnel from the local public organizations received such requests, procurement of machinery and materials to the operational cost to be shouldered is to be determined. However, Japan’s Disaster Countermeasures Basic Act and Local Autonomy Law specify that, as a basic rule, requests for help shall be made from “the head” to “the head”, and the administrator of

waterworks shall take an action under the direction of “the heads”.

However, because the business of waterworks is in reality dealt by public enterprises for many local public organizations, the business management is largely handled by the administrator of waterworks only. Moreover, many neighboring water business entities have established a mechanism of collaboration of their own accord in doing their day-to-day business in a communicative and collaborative manner with the local and prefectural chapters, etc. of Japan Water Works Association as the core.

Therefore, a water business entity hit by a disaster making a request for help directly to other water business entities based on this existing collaborative mechanism is considered to be a highly realistic measures and effective move.

In addition, the lessons from the Great Hanshin-Awaji Earthquake (the southern Hyogo prefecture earthquake) that occurred in January 1995 pinpoint that strict rules and the strait-jacket compliance to those rules pose a high risk of hampering initial measures from being taken promptly amid the chaos ensuing the disaster.

Note that although requests for help are in principle to be made by regional chapters or prefectural chapters, etc., there are times when making requests by disregarding the framework would be effective in view of the geography of the disaster areas.

This Guideline is written in our attempt to make sure that the water business entities make proper responses at the time of emergency by strengthening “mutual relief aid”, and therefore, it is not our intention to interfere with the relationships within the local public organizations, for instance, the relationships between “the heads” and the administrators in an event of making a request for help.

Having said that, the fundamental purpose of this Guideline is to “formulate rules of practical mutual relief aid based on the matters water business entities, etc. are expected to perform on a daily basis as the practical enterprise”.

## 2) Setup of Information Communication System and Requests for Help

It is required that the heads of regional chapters and the heads of prefectural chapters, etc. sign an emergency agreement in order to be well prepared for an earthquake, etc., and establish an information communication system amongst the members of chapters in advance. (See Reference-1.)

Information communication and requests for help are to be conducted by the heads of regional chapters and the heads of prefectural chapters, etc., according to such system in an event of the following emergency occurrences;

- An earthquake with a seismic intensity of an upper 5 or greater

- A massive water cut-off due to other natural disaster or accident

In addition, it is recommended to conclude an agreement by which the heads of adjoining chapters or the heads of neighboring prefectural chapters, etc. be requested to act for the heads of regional chapters or prefectural chapters, etc., should they themselves have been hit by a disaster and de-capacitated to report to work.

(1) Response immediately after disaster occurrence

i. Flow of information communication

At the time of emergency, it is essential that the water business entities report the extent of damage and the dire need for relief aid promptly according to the information communication system with the regional chapter of Japan Water Works Association as the hub.

Figure 1-1 shows the flow of information communication.

Under the information communication system, water business entities hit by the disaster, the heads of the prefectural chapters, etc. to which the stricken water business entities belong (hereinafter referred to as “the head of stricken prefectural chapter, etc.”), the head of the regional chapter to which the stricken water business entities belong (hereinafter referred to as “the head of the stricken regional chapter”), and the Japan Water Works Association water business relief aid task force (hereinafter referred to as “the JWWA relief headquarters”) are to play the roles outlined in below in order to conduct information communication and other tasks.

Stricken water business entities

- Report the extent of damage done to the water facilities and convey the requests made for help to the head of the stricken prefectural chapter, etc.

Heads of the stricken prefectural chapters, etc.

- Report the extent of damage reported from the stricken water business entities and convey the requests made for help to the head of the stricken regional chapter and the water business entities in the prefectural chapters and districts. Moreover, the heads of the stricken prefectural chapter, etc. also play the role of the water business in charge depending on the extent of damage, etc. Particularly, they must make an effort to grasp the extent of damage of small-scale water business entities and confirm if they have filed requests for help.

#### Head of the stricken regional chapter

- Reports the extent of damage and whether a request for help has been filed or not from the head of a stricken prefectural chapter, etc. to the JWWA relief headquarters and to the heads of other prefectural chapters in the regional chapter. Furthermore, if a request for help stretches over two or more prefectural chapters, the head of stricken regional chapter is supposed to take the role of water business entity in charge.

#### The JWWA relief headquarters

- The JWWA relief headquarters shall engage in close contact with the Ministry of Health, Labour and Welfare in its effort to share information regarding the extent of damage done to the small water-supply system businesses as well as the water business entities that are not the members of the JWWA, and work on the Ministry in order to ensure smooth communication among the heads of stricken regional chapters, the heads of stricken prefectural chapters, etc. and the Bureaus of Hygiene Control.

- Reports the disaster information obtained from the head of a stricken regional chapter to the heads of other regional chapters and concerned ministries (the Ministry of Public Management, Home Affairs, Posts and Telecommunications, etc.) and concerned organizations such as the Federation of Japan Water Industries, Inc. (hereinafter referred to as “the FJWII”) and the Japan Plumbing Heating and Air-conditioning Constructor’s Association (*hereinafter referred to as the “JPHACA”*).

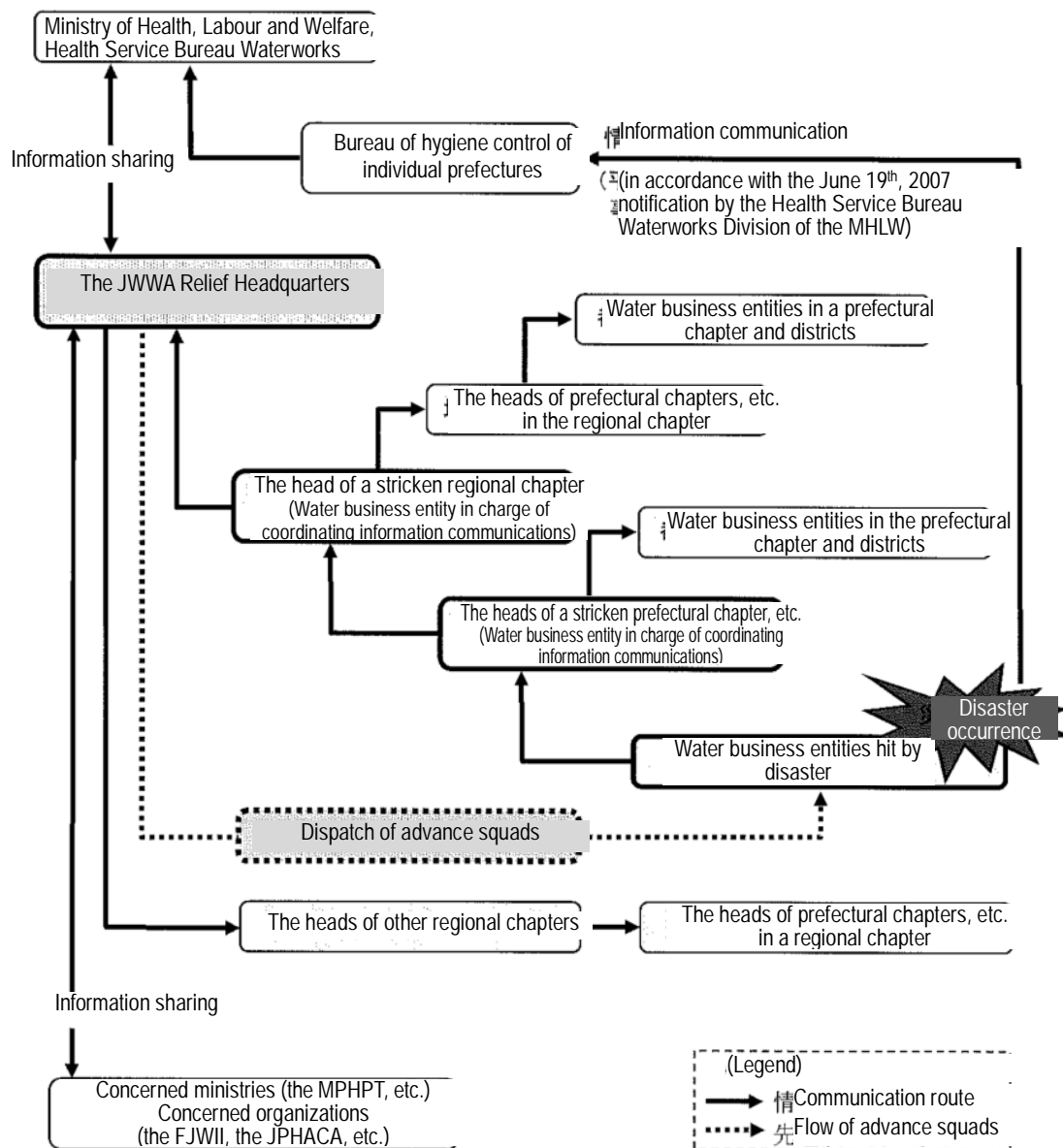


Figure 1-1 Emergency information flow at the time of an earthquake, etc.

ii. Selection of water business entity in charge

When a disaster occurs, water business entities hit by the disaster sometimes find themselves de-capacitated to *report the disaster information directly*, make a request for help or respond to inquiries from other cities. Hence, the water business entity in charge is entitled to dispatch staff members to the water business entities stricken by the disaster as required to take on the necessary tasks (to be engaged in the tasks identical to those of an advance squad dispatched by the JWWA, which is explained later.)



Therefore, it is necessary to select a water business entity in charge in the prefectural chapters and regional chapters in advance so as that prompt responses be facilitated immediately after the disaster.

When a request for help can be handled by water business entities in the prefectural chapter and the district conferences to which the water business entity made the request for help belongs (hereinafter referred to as “the stricken prefectural chapter, etc.), the heads of the said prefectural chapter, etc. are to be selected as the water business entity in charge, whereas the request for help is extended to other prefectural chapters in the regional chapter or farther to other regional chapters, the head of the stricken regional chapter will assume as the water business entity in charge.

When a water service task force is started up in the field, the functions of water business entity in charge will be absorbed by the water service task force.

### iii. Roles of water business entity in charge

- Immediately make contacts with stricken water business entities and dispatch personnel (staff members of the water business entity in charge or neighboring water business entities) to the disaster area as required.

- Determine the scale, content, etc., of relief operation in consultation with the stricken water business entities.

- In deliberation with the stricken water business entities, the JWWA (the headquarters, regional chapters), etc., determine which water business entities are to receive emergency relief aid.

- Establishes a chain of command for the relief operation.

- Grasp the on-going development of the relief operation.

### iv. Setup of the JWWA relief headquarters

When a massive scale of relief operation is deemed as necessary in the wake of a disaster such as an earthquake with a seismic intensity of an upper 5 or greater, the JWWA shall listen to the opinions of the heads of the stricken regional chapter, etc., and set up the JWWA relief headquarters no later than 24 hours after the disaster occurrence.

It is also desirable that the heads of the stricken regional chapters and prefectural chapters, etc. should have also established a mechanism of setting up a similar task force.

v. Roles of JWVA relief headquarters

a) Major tasks of JWVA relief headquarters

- Collecting disaster information
- Collecting information regarding on-going relief operation and confirming whether a relief aid is necessary or not
- Coordinating communications with the water business entities in conjunction with the relief operation
- Coordinating the relief operation with concerned ministries, including the MHLW and the MPHPT
- Offering cooperation and support to the government's investigation groups.
- Providing information to and asking cooperation from organizations related to the FJWII, the JPHACA, etc.

b) Once the JWVA relief headquarters has been set up, the JWVA shall notify the heads of all regional chapters of the setup immediately and make requests for help as required.

In making requests, the JWVA should confirm the meeting location in the disaster area and gather road information by closely communicating with the stricken water business entities and concerned organizations, and report to the water business entities awaiting help.

c) The relief operation conducted by the JWVA relief headquarters shall be coordinated by the heads of regional and prefectural chapters in close consultation, and how to share their roles should be determined in accordance with the magnitude of disaster.

d) The JWVA relief headquarters shall ask the heads of individual regional chapters to submit a list of available types of help (personnel, machinery and materials, duration) from the water business entities in their chapters. The heads of regional chapters shall then send the list to the JWVA relief headquarters while the heads of prefectural chapter, etc., are required to send the list to the division in charge of water works of the prefectural government and the heads of the regional chapters.

e) The JWVA relief headquarters shall assign the regional chapters to the districts in which the relief operation is to be deployed according to the requests from the stricken water business entities and reports from the water business entity in charge, etc., and request the heads of regional chapters to dispatch the rescue squads.

f) The JWVA shall allot the water business entities to be dispatched for relief operation weighing the extent of damage, the distance to the disaster area and the requests from the stricken water business entities.

vi. Dispatch of advance squad

When an earthquake with a seismic intensity of an upper 6 or greater hits or when the head of the JWVA relief headquarters decides it to be necessary, the JWVA relief headquarters shall promptly dispatch an advance squad to the disaster area. The advance squad shall grasp the extent of damage in the disaster area, gather information outlined as in below and report to the regional chapter and the prefectural chapters at an early stage in collaboration with the stricken water business entities and the water business entity in charge so as to contribute to the smooth coordination of requests for help and relief operation.

Once a water service task force has been established in the disaster area, the advance squad is expected to join the task force after having played certain roles. If a water service task force is not to be set up, the role of an advance squad is to be terminated based on the decision by the head of the JWVA relief headquarters.

<Examples of information to be gathered by an advance squad> (References 15, 16)

Information for emergency water supply

- Water supply cut-off areas, Areas where water supply is in service
- The number of households with no water service, The number of people with no water supply

Information for temporal water service restoration

- The extent of damage done to the key facilities (water source, water intake, raw water conveyance, water purification, water supply, water distribution installations)
- On-going development of restoration measures
- Prospect on restoration

vii. Preparation of water business entities for dispatching relief aid

In order to gather information and get the relief operation started promptly after a disaster occurrence, the neighboring water business entities and the heads of regional chapters and the heads of prefectural chapters, etc. must prepare a mechanism of relief operation suited to the magnitude of an earthquake (See Table 1-1.).

Further, it is important to have rules arranged in advance, for instance, on how to summon staff members or how to share roles, etc. and make sure that all staff members are in the know about such arrangement so that the dispatch of rescue teams would be readily prepared not only during regular business hours but also at off-duty hours such as at night or holidays.

Table 1-1 Classification of relief aid preparations

Level	Time of issuance	Structure
Warning	When an earthquake with a seismic intensity of a lower 5 has occurred	Mainly engaged in information gathering and communication. However, depending on a circumstance, must be prepared to swiftly move on to the higher level of deployment.
High alert	When an earthquake with a seismic intensity of an upper 5 has occurred	In addition to information gathering and communication, must be prepared for dispatch upon requests from stricken water business entities.
Emergency	When an earthquake with a seismic intensity of a lower 6 or greater has occurred	In addition to information gathering and close communication, must be well prepared and readily mobilized upon requests from stricken water business entities.

(The seismic level is based on the “Instrumental seismic intensity” by the Meteorological Agency.)

## (2) Requests for help

Similarly to the system of information communication, requests for help are basically made by way of regional chapters and prefectural chapters, etc.

However, because emergency water supply must be quickly conducted immediately after the disaster, getting into action beyond the framework of regional chapters, for instance, providing mutual help by the neighboring prefectural chapters is also effective. Therefore, it is desirable that prefectural chapters, etc., that are geographically closer to other regional chapter than to their administrative regional chapter study where to make requests in order to get the faster and smoother relief operation, and make an arrangement of mutual help with the head of the prefectural chapters, etc., belonging to the said regional chapter in consulting with the head of the said regional chapter.

In addition, upon receiving requests from water business entities hit by a disaster, a consultation body shall be set up if necessary by convening the concerned parties (stricken water business entities, the JWVA, the head of the stricken regional chapter, the heads of prefectural chapters, etc.) in order to determine how to meet the requests.

Note that the said consultation body shall join the water service task force later on.

Furthermore, when a request is made from an administrative body of a prefecture, etc., relief operation shall be implemented to the water business entities and small water-supply system businesses that are not the JWVA members as well, equally to the JWVA members.

The flow of requests for help is outlined in Figure 1-2.

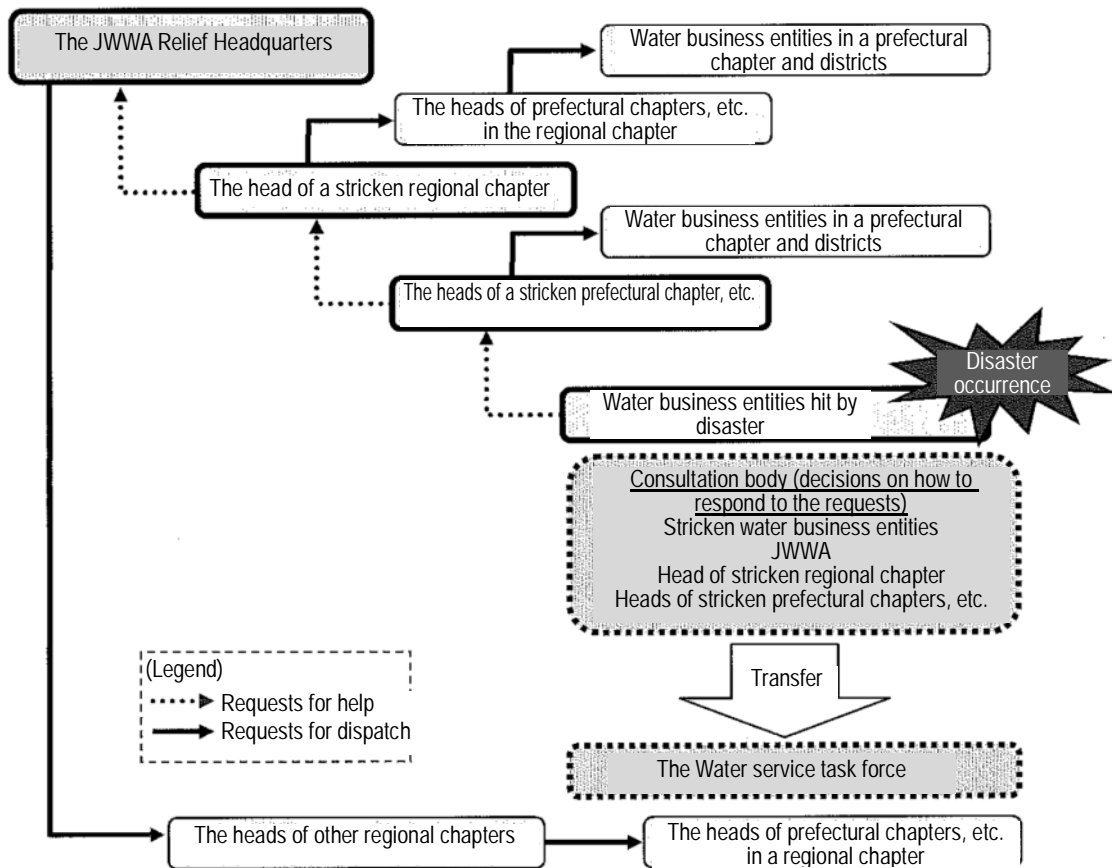


Figure 1-2 Flow of emergency relief request at the time of an earthquake, etc.

\*1 Requests for help are transmitted in the order from “stricken water business entities the heads of the stricken prefectural chapters, etc. the head of the stricken regional chapter the JWVA relief headquarters”.

\*2 When a request can be handled by water business entities in the stricken prefectural chapter, a water business entity afflicted by a disaster shall make such a request for help to the heads of the prefectural chapter, etc., upon which the heads of the prefectural chapter, etc. shall request the water business entities in the prefectural chapter and districts to send out rescue squads.

If the scope of a request spans across other prefectural chapters, etc., the heads of the prefectural chapter, etc. shall send the request for help to the head of the regional chapter, upon which the head of the regional chapter shall transmit the requests to the heads of prefectural chapters, etc. in the regional chapter. The heads of prefectural chapters, etc., upon receiving the request, shall further transmit the request to the water business entities in the prefectural chapter and districts to dispatch rescue squads.

If the scope of a request spans across other regional chapters, the head of a regional chapter shall make the request to the JWVA relief headquarters, upon which the JWVA relief headquarters shall send the request to other regional chapters. The head of the regional chapters, upon receiving the request, shall request the heads of the prefectural chapters, etc., in the regional chapter to send out rescue squads, and the heads of the said prefectural chapters, etc. shall further convey the request to the water business entities in the prefectural chapter and the districts.

### (3) Dispatch of rescue water business entities

#### i. Mobilization of relief operation

Rescue water business entities shall be dispatched, in principle, at the request from the JWVA relief headquarters and the heads of the prefectural chapters, etc.

#### ii. Information gathering, etc., regarding the disaster area

In dispatching, the rescue water business entities shall make the best effort to gather information concerning the disaster area through the water business entity in charge or the JWVA relief headquarters.

## 2. Setting Up of the Water Service Task Force

The water service task force is indispensable in executing relief operation accurately as it is regarded as the field control unit for coordinating information channels with the departments for coping with a disaster of the general administrative bureaus, and as a chain of command for implementing the relief operation by the rescue water business entities and facilitating personnel dispatch to the backup teams of the rescue water business entities and procurement of machinery and materials.

The emergency water supply and temporal water service restoration in the field shall be undertaken by the emergency water supply team and temporal water service restoration team organized by the rescue water business entities, etc. Moreover, a managing rescue water business entity shall be formed in individual teams by taking

the scale of stricken water business entities into consideration so that they could keep close contact with the water service task force in order to stay up-to-the-minute in conjunction with the on-going emergency activities.

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- 1) Water service task force
- 2) Emergency water supply team and temporal water service restoration team by the rescue water business entities

- 1) Water service task force

- (1) Structure of the water service task force

The water service task force shall be set up for the water business entities at the earliest possible stage in the wake of a disaster for the purpose of restoring water service quickly. However, the extent of damage being so colossal that a massive scale of relief operation is imperative, the water service task force may be created by the JWVA, the head of the stricken regional chapter, the heads of the stricken prefectural chapters, etc., based on the decisions of, and led by the water business entities hit by the disaster. Under such circumstance, the Ministry of Health, Labour and Welfare, the Bureaus of hygiene control of prefectures or the heads of other regional chapters who have received the requests for help could take part in the task force as required.

The aforementioned consulting body organized by the parties concerned (stricken water business entities, the JWVA, the head of the stricken regional chapter, the heads of the stricken prefectural chapters, etc.) upon requests from the water business entities in the disaster area shall be taken over by the water service task force after having played certain roles.

Note that the director of the water service task force shall be the administrator of the waterworks of the water business entities hit by the disaster.

An example of structural layout is given in Figure 1-3.

- (2) Roles of the water service task force

The water service task force shall play the roles as outlined in below.

The role sharing shall be determined through consultation among those that make up the water service task force, i.g., the stricken water business entities, the JWVA, the head of the stricken regional chapter and the heads of the stricken prefectural chapters, etc.

- i. Director of the water service task force (the administrator of waterworks of the

stricken water business entities)

- Makes decisions on the activities of the water service task force

ii. Commander in chief

- Facilitates communication with the JWWA relief headquarters
- Facilitates as a front with the departments for coping with a disaster in the

general administrative bureaus

- Grasps the extent of damage and checks for the requests for help
- Facilitates communication with the parties concerned (the FJWII, the JPHACA,

etc.)

iii. Personnel in charge of emergency water supply

• Gathers information concerning whether water has been in or out of service, on-going activities for supplying emergency water and confirms if a relief aid is required or not

- Draws up an emergency water supply plan
- Organizes emergency water supply teams
- Controls the chain of command of the emergency water supply teams
- Gathers and disseminates information necessary for the emergency water

supply activities

- Facilitates communication with the Self-Defense Forces of Japan, etc.

iv. Personnel in charge of temporal restoration of water service

• Gathers information concerning how badly the key facilities have been damaged, the on-going activities for restoring water service temporarily, etc., and confirms whether relief aid is necessary or not

- Draws up a plan for the temporal restoration of water service
- Organizes a temporal water service restoration team
- Controls the chain of command for the temporal water service restoration team
- Gathers and disseminates information necessary for the temporal water

service restoration

- Procures machinery and materials necessary for the temporal water service

restoration

v. Personnel in charge of backup support

- Assists public relations to the local people, etc.
- Assists arrangement for the dormitories, etc., for the rescue water business

entities

- Assists securing parking spaces for the vehicles of rescue squads and other

procedures required for it



- Assists coordination with the volunteers, etc.

2) Emergency water supply team and temporal water service restoration team by the rescue water business entities

(1) Structure of emergency water supply team and temporal water service restoration team

The director of the water service task force shall organize an emergency water supply team and a temporal water service restoration teams out of the rescue water business entities, considering the extent of damage and the location of offices of the stricken water business entities. The rescue water business entities shall dispatch communication personnel and a squadron of workers to the specified offices, etc.

It is desirable that some seasoned staff members or workers with experience be dispatched as the rescue water business entities.

(2) Roles of emergency water supply team and temporal water service restoration team

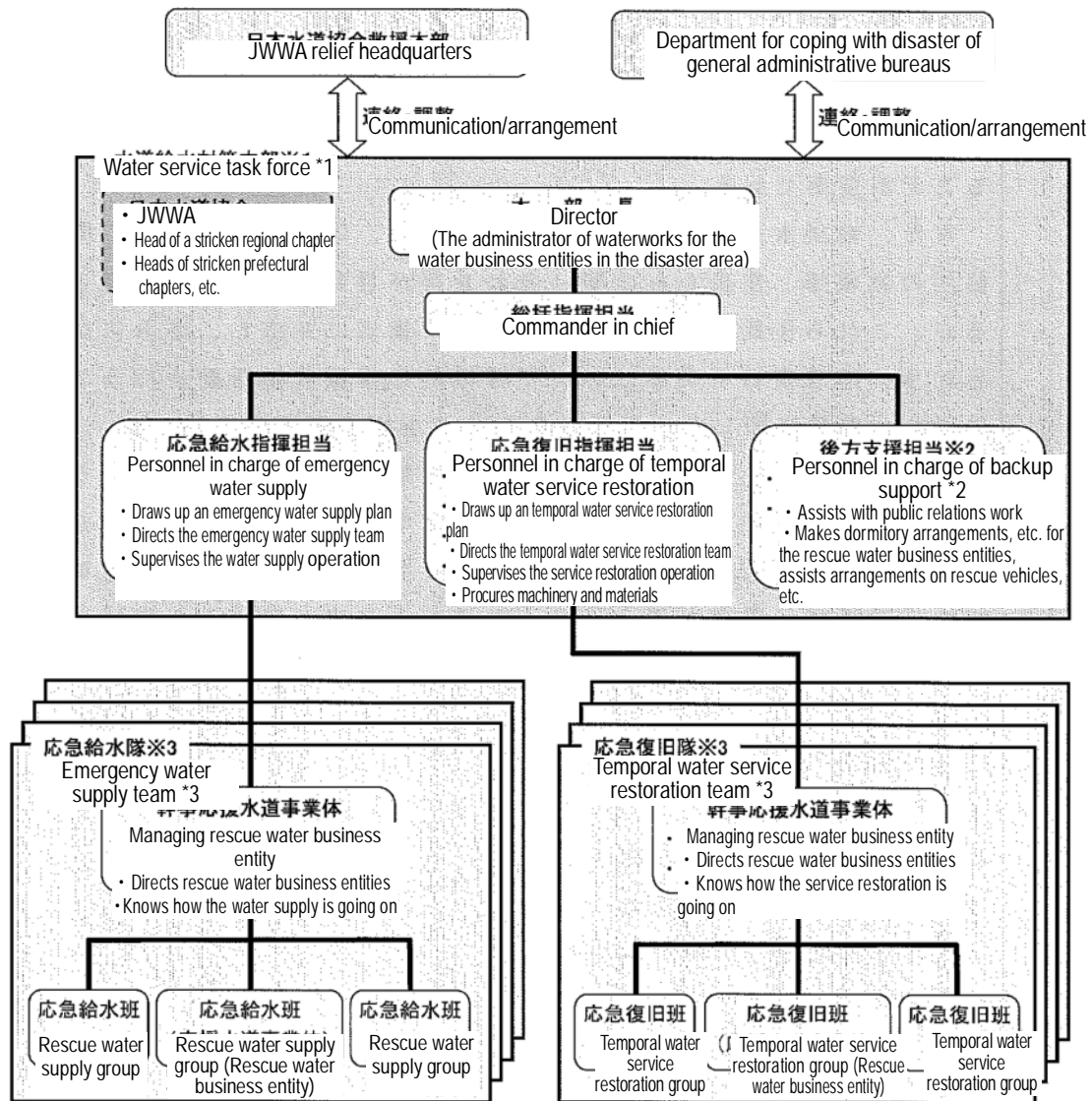
- Grasp the extent of damage
- Get clear understanding of the on-going emergency water supply and temporal water service restoration activities and coordinate requests for help
- Facilitate communication with the water service task force
- Engaged in emergency water supply and temporal water service restoration works
- Formulate a work implementation policy
- Coordinate how to conduct relief operation with the offices of the stricken water business entities
- Build a collaborative mechanism with the local autonomous bodies, etc.

(3) Setup of a managing rescue water business entity

For facilitating communication with the water service task force and the rescue water business entities efficiently, the emergency water supply team and the temporal water service restoration team shall set up a managing rescue water business entity for the respective teams. It is desirable that a managing rescue water business entity be selected in accordance with the scale of stricken water business entities, for instance, by giving preference to the larger cities if the magnitude of the disaster is enormous.

When the damage is stretching across the vast area of land or is dispersed, requiring the emergency water supply and temporal water service restoration works be implemented in separate districts, the emergency water supply team and temporal

water service restoration team must be divided into several teams. In such case, a managing rescue water business entity must be set up for individual teams, respectively.



- \*1 It would be possible to set up the water service task force with the JWWA, the head of the stricken regional chapter and the heads of stricken prefectural chapters, etc., led by the stricken water business entities.
- \*2 Personnel in charge of backup support shall assist in delivering emergency measures such as supplying water to the disaster victims or restoring waterworks conducted by the personnel from the water service task force.
- \*3 The emergency water supply team and temporal water service restoration team shall be stationed in view of the extent of damage and locations of offices of the stricken water business entities. This figure shows an example where the rescue water business entities are to implement the emergency operations.

Figure 1-3 Organizational chart of a water service task force (example)

### 3. Public Relations

At an occurrence of a disaster, it is crucial to minimize the damage afflicted upon locals by providing information people are anxious to know, such as the extent of damage done to the waterworks facilities, where to go to get water, and the prospect on restoration, etc., so that the fear, anxiety amongst the people could be minimized and a chaos be averted.

Meanwhile, it is expected that the stricken water business entities would be flooded with demands for water supply, information concerning water leakage or other inquiries from the local residents in the wake of the disaster. Responding to those inquiries properly and getting actively involved in gathering information at the sites of emergency water supply and temporal water service restoration are imperative for conducting public relations reflecting on the reality at the site.

Public relations here encompass from the public relations that water business entities are supposed to make in doing their daily business to those that must be made at the time of emergency, such as at the occurrence of an earthquake. However, if water business entities find themselves incapable of conducting public relations by themselves due to manpower shortage immediately after a disaster, they shall ask for support from the water service task force so that the public relations be continued uninterruptedly.

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- 1) Daily public relations
- 2) Public relations at disaster occurrence
- 3) On-site interviews in a disaster area
- 4) Response to the press interviews, and
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#### 1) Daily public relations

In order to avert chaos at the time of emergency, public relations play an important role in enlightening people to secure tap water, making aware of the waterworks which is the basics of our life and getting prepared for an emergency. Public relations immediately after a disaster would prove especially effective with regard to the emergency water service if people had been notified in advance where to go to get emergency water, how to retain the quality of supplied water, and how public relations is undertaken during the time of disaster through public papers, various brochures, etc. on a daily basis. Moreover, public relations at the time of emergency would function effectively if words have been spread regarding the measures people can take by

themselves to cope with a disaster, for instance, preparing containers or having stockpiles of water.

(1) Public relations

i. Activities

Public relations to be conducted on a regular basis may cover the following:

- Storage of drinking water by individual households on a regular basis (3ℓ of water per head per day)

- Locations of emergency water supply bases
- Methods of supplying emergency water and implementing method
- Preparation of containers necessary for getting emergency water
- Points to note at the emergency water supply bases
- Confirmation of opening/shutting of the water caps or faucets before evacuation
- Measures the water business entities take against earthquake

ii. Public relations media

With regard to the medium by which to undertake publicity activities, a medium which is deemed to be more effective than other media should be employed by considering the characteristics of available media.

a) Public papers

Public papers can be surely delivered to the residents. Because paper can be preserved for long, people can check the information whenever necessary.

- Use of public papers original of the autonomous body and water business entities

- Creation and distribution of printed matters (example: booklets, posters, fliers, etc.)

- Use of the information notice space and the back of a meter reader

b) Homepage (the Internet)

The homepage on the internet can be brought up-to-date easily.

- Opening of a homepage (the Internet) and posting of the disaster related information

c) Use of mass media

(Sponsor TV or radio programs, make appearances on those programs, make contributions to or post PRs on the newspapers, etc.)

Because the interests of the people in these forms of mass media are high, the publicity activities can be reached to the wider range of audience.

- Making of PR on TV or radio, making requests of PR to be aired
- Contribution of articles to local papers or magazines

- Providing information to the press club
- d) Public relations at local events, etc.

Events are the occasions at which PR personnel can make a pitch directly to the people about the preparations against a disaster and also listen to their questions or concerns.

- Public events such as “The waterworks week”, “Water day”, etc.
- Taking part in disaster prevention drills
- Compilation of videos on measures against disaster, presentation and lending of those videos
- Making the most of autonomous bodies

## 2) Public relations at the time of disaster

The damage to waterworks would give the devastating impact on the life of the people. Therefore, it is important that information would be disseminated in a proper manner at the right time concerning the water cut-off, how the emergency water would be supplied and the prospects of restoring water service so as to prevent people from getting trapped in chaos out of fear or anxiety and also to enable them to smoothly carry out the emergency measures.

Hence, it is necessary that the PR section provides information through press release (PR on the wider range) by way of the department for coping with a disaster of the general administrative bureaus whereas staff workers of the water business entities can carry out publicity in order to directly give information people are anxious to know by going on the beat around the afflicted area by cars or by using electric bulletin boards, emergency helicopters, emergency radio, a community broadcasting system, and so forth (PR on the local level). (See Figure 1-4.)

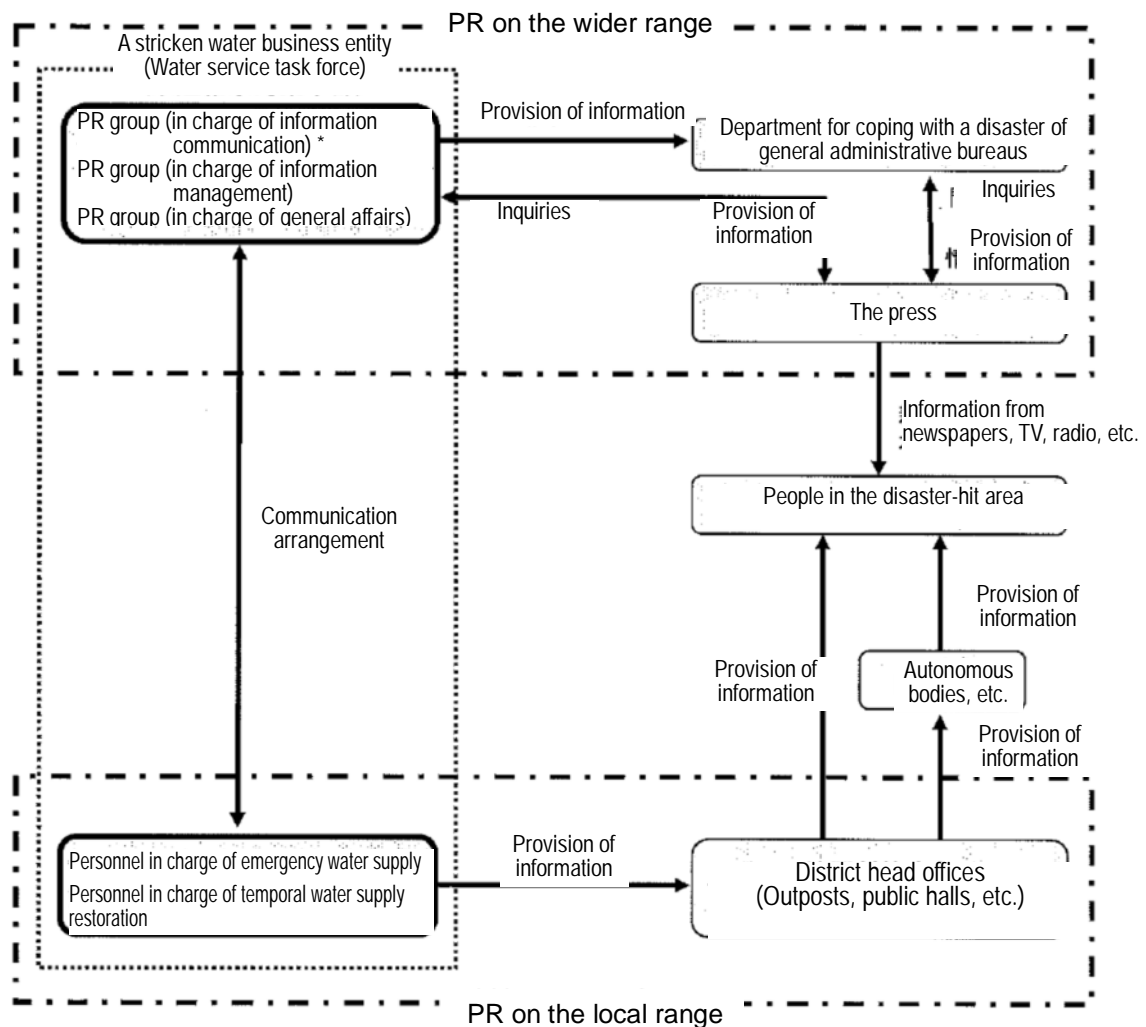


Figure 1-4 Example of an emergency PR

\*Structure of PR groups

- Personnel in charge of information communication: Collects the disaster information and then releases the important information as a person in charge of the press
- Personnel in charge of information management: Handles the information from residents via a telephone, etc., and then conveys the important information to the relevant working groups.
- Personnel in charge of general affairs: Reports the disaster information to higher-ups so that the information can be shared in the organization.

## II Preparation of Mutual Relief Aid on the Daily Basis

### 1. Preparations by the water business entities

Water business entities are required to study an emergency system or a manual of emergency operation, etc. on a regular basis on the assumption that they extend or

receive relief aid in an event of a disaster and be well prepared for an emergency so that they can undertake a swift and smooth emergency relief operation. Furthermore, the emergency system and the manuals must be reviewed at least once a year so that the actual conditions be reflected in the studies based on the regular exercises or drills.

It is also important that they make reservoirs to be earthquake-proof and systematically work on the emergency shut-down valves in order to secure the amount of water necessary for supplying emergency water and providing people with temporal water service while keeping the water level of the reservoirs as high as possible.

In addition, it is also desirable that an arrangement has been made concerning how to secure drinking water other than the tap water, such as water from the wells, underground water or spring water in collaboration with the bureaus in charge of disaster.

#### [Contents of This Section]

- 1) Preparation of machinery and materials
- 2) Compilation and storage of documents of plumbing drawings, etc.
- 3) Operation manuals on communications
- 4) Communication arrangement with organs concerned with roads, traffic and controllers
- 5) Reference manuals for disaster assessment
- 6) Preparation of a manual of emergency operation
- 7) A mechanism of accepting the rescue water business entities

#### 1) Preparation of machinery and materials

- (1) Machines, materials and tools to be prepared by the water business entities

It is desirable for the water business entities to have the following machines and materials prepared in their day-to-day work so that they can engage in supplying emergency water and restoring temporal water service promptly and smoothly. Note that machines or materials that are used only at emergency must be periodically inspected or replaced lest relief workers should have no other ways but to work with deteriorated or useless machines and materials at the time of emergency.

#### 2. Preparation to be made by the rescue water business entities

Water business entities must respond to a request for help they receive from a water business entity, the head of regional chapter or the heads of prefectural chapters, etc., hit by a disaster. Therefore they should investigate how better they can send relief aid

and arrange a mechanism of dispatching relief aid so that they can immediately respond to a request whenever it may come.

The head of regional chapter and the heads of prefectural chapters, etc., on the other hand, should be well versed in such mechanism arranged by the water business entities as it is essential for them to know the mechanism in launching the emergency operation.

[The Contents of This Section]

- 1) General notes on undertaking relief operation
- 2) Formulation of rescue squads
- 3) Preparation of machinery and materials
- 4) Securing of personnel dormitories, meals, parking lots, etc., at the start of relief operation
- 5) Application for passes for the emergency vehicles headed for the relief operation

1) General notes on undertaking relief operation

(1) Points of note on relief operation

i. Dispatching personnel

- Checkups must be performed before dispatching personnel. The personnel must take ample caution against accidents on the job or car accidents while being dispatched to the disaster area, and take good care of their health.

- The time of dispatched period should be basically about one week. The replacement of the personnel must be made in a seamless manner lest it should cause any inconvenience for the relief operation.

- The person in charge of personnel being dispatched shall report the on-going development to the water business entities to which the dispatched personnel belong.

3. Implementation of Education and Exercise

Water business entities shall hold seminars in their day-to-day work in an effort to give disaster prevention education to the staff workers and carry out periodical education and exercises pertinent to the worker duties under the pre-determined dispositions so that they can properly deliver relief operation at the time of emergency.

Furthermore, exercises of communicating information should be also periodically conducted because if a department for coping with a disaster were created in the general administrative bureaus, it becomes necessary to make contacts with the department in undertaking emergency measures.



In addition, the emergency operation manual must be reviewed after trainings to see whether its updating is necessary to improve emergency operation.

[Contents of This Section]

- 1) Education and exercises by the water business entities
- 2) Exercises with the general administrative bureaus
- 3) Extensive field drills with other cities

- 1) Education and exercises by the water business entities

- (1) Education for the staff workers

- The basics of disasters, including earthquakes
  - The basics of a disaster mechanism
  - The significance and content of the manual of emergency operation
  - The significance and content of the agreement on the mutual relief aid at the time of disaster signed by the water business entities
- Preparation and storage of documents of machinery and materials, plumbing drawings, etc.
  - Actions to be taken for combating against a disaster or when the likelihood of a disaster occurrence is projected to be high
  - The roles that staff workers should play (their operational arrangement and division of work)
  - Participation in disaster prevention communication meetings, etc.
  - Agenda on the disaster guideline and other points to note

### **III Implementation of Disaster Relief Emergency Operation**

1. Policy on the Relief Operation

The water service task force, with the Director at its helm, shall strive to grasp unfolding information concerning the extent of damage and emergency operation correctly, and declare the goals of restoring water facilities by taking the operation undertaken by the rescue water business entities into account. In addition, the goals of water service restoration shall be reviewed as required in accordance with the restoration efforts under way.

[Content in This Section]

- 1) Understanding the extent of damage correctly
- 2) Goal of facility restoration

### 3) Setting a time schedule for achieving goals

#### 1) Understanding the extent of damage correctly

• The water service task force shall attempt to grasp the extent of damage correctly by making close contacts with the emergency water supply team and temporal water service restoration team. If it were difficult for the two teams to correctly understand the scope of damage by themselves, a conference shall be held to determine whether or not to request for help.

##### i. Information necessary for emergency water supply

Disaster information including the water cut-off area and the scale, evacuation of residents (shelter locations, the number of evacuees), medical institutions and welfare facilities

##### ii. Information necessary for temporal water service restoration

Water purification and water supply facilities, the scope of damage to the key facilities such as plumbing, etc. (investigates the water system and water distribution blocks, separately)

• The rescue water business entity shall grasp the extent of damage in collaboration with the managing rescue water business entity based on the “Waterworks facility damage investigation sheet” and send reports from time to time.

(See Reference-15.)

#### 2) Goal of facility restoration

The water service task force shall draw up a restoration plan together with the personnel in charge of temporal water service restoration based on the information on the extent of damage obtained from the temporal water service restoration teams, etc., and the restoration efforts being made by the teams, etc. For making the plan, the goal of facility restoration shall be made clear in order to alleviate the anxiety of the people.

Moreover, the managing rescue water business entity shall make an arrangement with the offices of the stricken water business entities in order to clarify how the area or tasks are divided amongst the emergency water supply teams and temporal water service restoration teams.

#### 3) Setting a time schedule for achieving goals

Setting a time schedule for achieving goals not only serves as the yardstick of a dispatch plan for the rescue water business entities but it is also expected to help alleviate the uncertainty or anxiety of the residents and lessen grievances.

It is desirable that the schedule be set for 24 hours, 72 hours and one week after the disaster occurrence, deciding the key issue to be achieved during these time periods.

The schedules shall be reviewed as necessary in accordance with the restoration efforts getting under way.

(Example) The time period for achieving goals and relief aid operation

- For 24 hours after the disaster occurrence  
Make an utmost effort to supply water to the shelters and medical institutions
- For 72 hours after the disaster occurrence  
Embark on the restoration of waterworks facilities
- For one week after the disaster occurrence  
Start water service for life one after another with the waterworks facilities restored temporarily

## 2. Emergency Water Supply Operation

The amount of emergency water supplied by the stricken water business entities and the rescue water business entities must be gradually increased so that the people can keep their life and their living until the water service will have been fully restored.

Therefore, the emergency water supply operation shall be conducted efficiently following the manual on the emergency water supply in linkage with the temporal water service restoration effort.

[Content in This Section]

- 1) Operation by the water service task force
- 2) Operation by the emergency water supply groups

### 1) Operation by the water service task force

#### (1) Setup of a water supplying approach suited to the scope of damage

In accordance with the manual on the emergency water supply and the local disaster prevention plan, the water service task force shall specify the waterworks facility through which supply water is to be transported and the bases for supplying emergency water based on the information on the extent of damage and water supplying conditions before starting to supply emergency water.

The approach for supplying water must be modified according to the circumstance

and the on-going restoration efforts by referencing Table III-1.

Table III-1 Example of a water supplying approach according to the restoration efforts getting under way

The stage of damage	Restoration development	Goal and approach of water supply
Stage 1 Initial move (the day hit by a disaster)	All-out shut down	Water must first and foremost be supplied to those whose life is being threatened. Then, minimum water for maintaining life shall be supplied equally to everyone.
Stage 1 Initial period	All-out shut down	Emergency water supply at the initial phase of rescue operation. Establish a system of supplying emergency water
Stage 2	Main waterline restored Parts of branch pipes restored	Establish a system of rescue operation Increase the number of the bases for supplying water/amount of supply water Increase the number of make-shift faucets, etc. (unmanned)
Stage 3	Branch pipes restored in some areas	Increase the number of bases for supplying water Cut down the emergency water supply operation
Stage 4	Branch pipes restored	Cut down/terminate the emergency water supply operation as water service is restored through make-shift piping, etc

### 3. Temporal Water Service Restoration Operation

The temporal water service restoration operation by the stricken water business entities and the rescue water business entities shall be conducted efficiently in accordance with the manual on the temporal water service restoration, by taking the extent of damage and the pressing need for water distribution, etc., into consideration and by appropriately choosing the priority waterlines or districts to be restored, and make-shift piping or the thoroughly restored piping, and so on.

[Content in This Section]

- 1) Operation by the water service task force
- 2) Operation by the emergency water service restoration team

#### 1) Operation by the water service task force

(1) Specification of areas for which temporal water service is to be restored balancing with the supply capacity

The water service task force shall investigate to grasp the extent of a damage done to the waterworks facility for individual distribution systems, proceed with repair work by specifying the areas for which restoration work will be started by balancing with the amount of supply capacity, and compile a temporal water service restoration plan so that the secured water shall be used effectively.

Especially, the extent of damage must be investigated by taking notes of the following matters:

- Investigation must be started from the facility closest to the water filtering plant.
- Determine the check points in advance on the assumption that a disaster might hit so that a disaster investigation, when needed, could be made efficiently.
- Survey the flow rate and the dropping water level of the reservoir, the flow rate and the dropping water pressure of the main supply pipeline, and also check for the leakage visually.

#### (2) Division of restoration work

The division of work between the stricken water business entities and the rescue water business entities shall be clarified.

(Example) Division of work

From water intake to distribution pool · · · Stricken water business entities

From piping and afterwards · · · · Both the stricken water business entities and the

rescue water business entities

(Divide areas in which to take charge)