

# 05 Creating earthquake-resistant waterworks

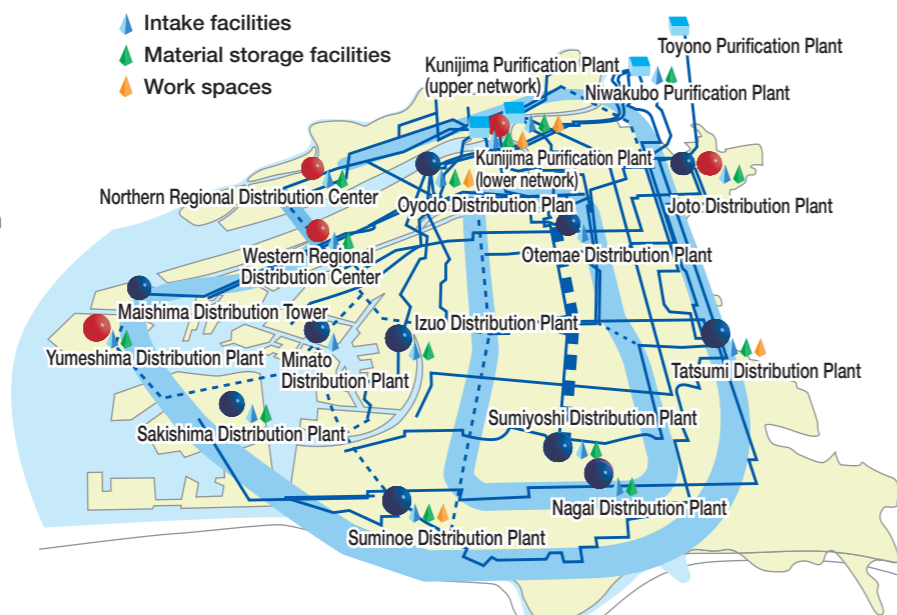
## Earthquake countermeasures

The Osaka Municipal Waterworks Bureau aims to maintain a stable supply of water as much as possible even in the confusion following an earthquake. To this end, the Bureau has been developing comprehensive earthquake countermeasures, such as improving networks of waterworks facilities and making such facilities earthquake-resistant, while being ready to promptly provide emergency water supply and recovery if an earthquake occurs.



### Establishing water supply and distribution centers

Large quantities of drinking water are stored in distribution reservoirs. In the event of a great earthquake, these reservoirs will serve as important centers to distribute water to the City or provide an emergency water supply. The Osaka Municipal Waterworks Bureau has strategically placed the reservoirs around the city, thereby establishing an efficient network of water supply and distribution centers.



- ▲ Intake facilities
  - ▲ Material storage facilities
  - ▲ Work spaces
- Water main network
  - ⋯ Planned water mains
  - Existing water mains
  - Water purification plants
  - Water distribution centers (existing)
  - Water distribution centers (planned)

### Forming reliable lifelines

A network of distribution pipes (approximately 5,200 km in total) spreads throughout Osaka City. Efforts are being made to build a more reliable water distribution system by closely connecting the main supply trunks and designing a block management system to minimize failures in water supply or drops in water pressure following an earthquake or disaster.

### Earthquake-proofing of waterworks facilities

—Purification plants, distribution pipes, and countermeasures against power failures—

To minimize damage to water facilities in the event of a great earthquake, it is necessary to increase the earthquake resistance of aging equipment by replacement or reinforcement. The Waterworks Bureau follows a comprehensive plan to improve the earthquake resistance of the purification plants, distribution plants, and distribution pipes. Furthermore, in order to ensure a stable supply of electricity to operate the necessary facilities, the Bureau takes countermeasures, including improvements in the earthquake resistance of electrical equipment as well as the multiplication of power receiving lines and the installation of in-house power generation systems in preparation for unexpected power supply failures.



Kunijima Purification Plant



Sumiyoshi Distribution Plant  
(Non-utility generator for facility operation)

## Emergency water supply and emergency restoration in an earthquake

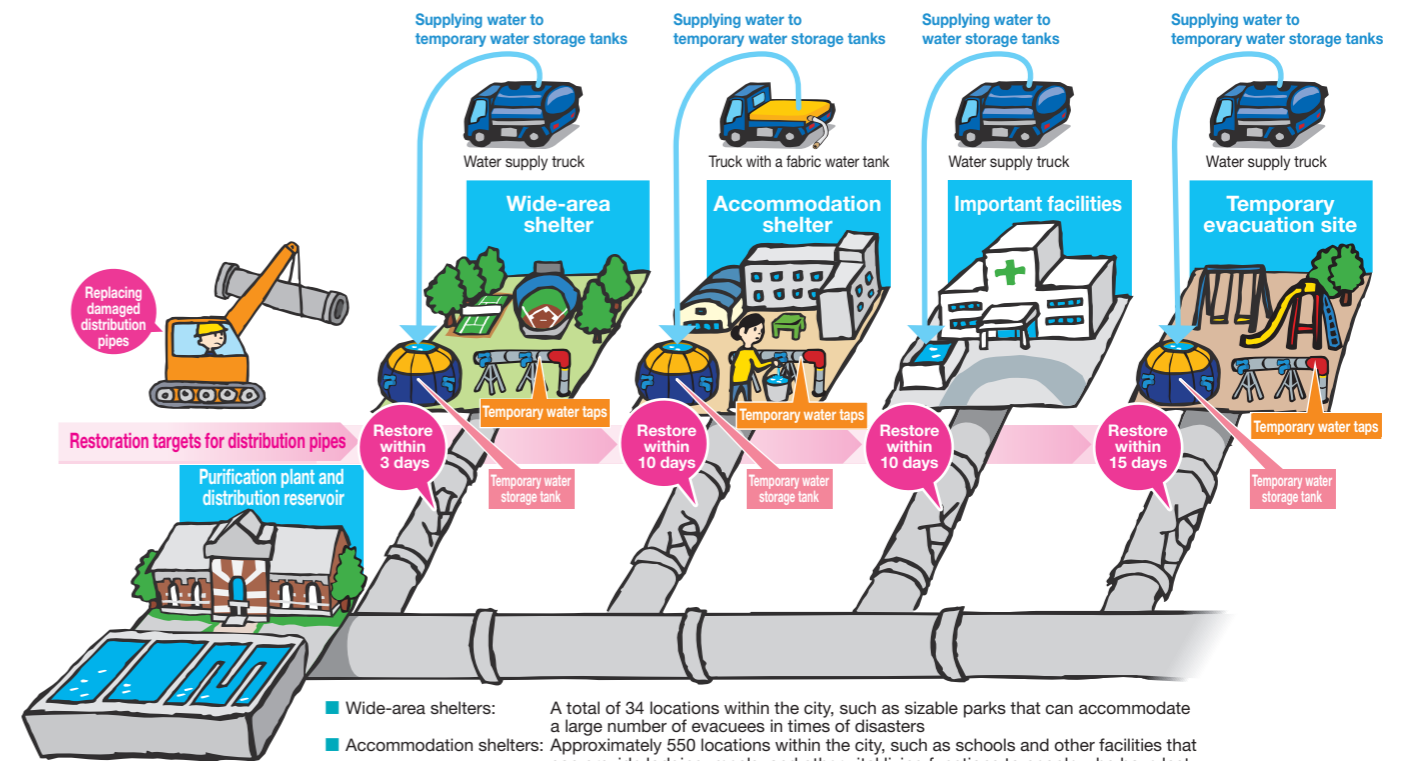
If a great earthquake occurs, it is necessary to promptly organize an emergency water supply (delivering water at evaluation sites) and emergency restoration (repairing ruptured distribution pipes). Temporary water tanks and temporary water taps are placed in designated refuge areas, such as wide-area shelters, accommodation shelters, and temporary evacuation sites, to distribute water to people affected by the earthquake. For important facilities, such as hospitals, social welfare facilities and other public institutions, water trucks will be dispatched to directly supply water to their receiving tanks.

Locations with no water service: Install temporary water tanks

Install temporary water tanks

Locations with no damage to water service or recovered locations: Install emergency faucets (temporary water taps)

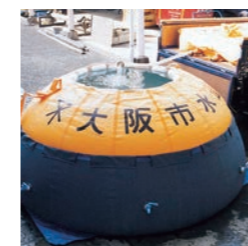
Install emergency faucets (temporary water taps)



- Wide-area shelters: A total of 34 locations within the city, such as sizable parks that can accommodate a large number of evacuees in times of disasters
- Accommodation shelters: Approximately 550 locations within the city, such as schools and other facilities that can provide lodging, meals, and other vital living functions to people who have lost their homes after disasters and need continuous support

### Planning and training for emergency measures

To ensure implementation of emergency measures in a disaster, the Bureau has formulated plans to stock materials for emergency water supply and restoration. The Bureau also holds emergency water supply and restoration training and simulation drills on a regular basis while maintaining a mutual support system with other municipalities.



Temporary water storage tank (4 t)



Temporary water storage tank (1 t)



Temporary water taps



Materials for restoration



Joint drill with other municipalities