

# Chapter 4-8

## Water Supply

### Abstract

Stable quantity and good quality are essential for water resources used for tap water. Blessed with Lake Biwa with its abundant water resources, the water supply facilities of Shiga Prefecture have been properly maintained and water treatment facilities have been improved to cope with deterioration in the level of water quality.

**Keywords:** Water supply, Water resource, Musty odor

### 1. Outline of Water Supply Project

The present-day water supply system of Shiga Prefecture dates back to June 1930 with the purification and water supply of Lake Biwa off the shore of Yanagasaki in Otsu. After the establishment of the water supply project around 1955 and its subsequent proper maintenance, it spread rapidly, serving up to 99.4% of the prefectural area as of March 31<sup>st</sup>, 2012. (See Fig. 4-8-1)

There are 197 water purification plants

owned by entities such as water suppliers and the total water supply in 2011 was 190,130,000 m<sup>3</sup>. In the densely populated district around the lake, large-scale facilities have been developed to utilize the abundant waters of Lake Biwa. The 27 water purification plants that use Lake Biwa supply 128,480,000 m<sup>3</sup>, or 67.6% of the total water supply (See Fig. 4-8-2) and 996,356 people, or 70.6% of the total population to which water is supplied (See Fig. 4-8-3).

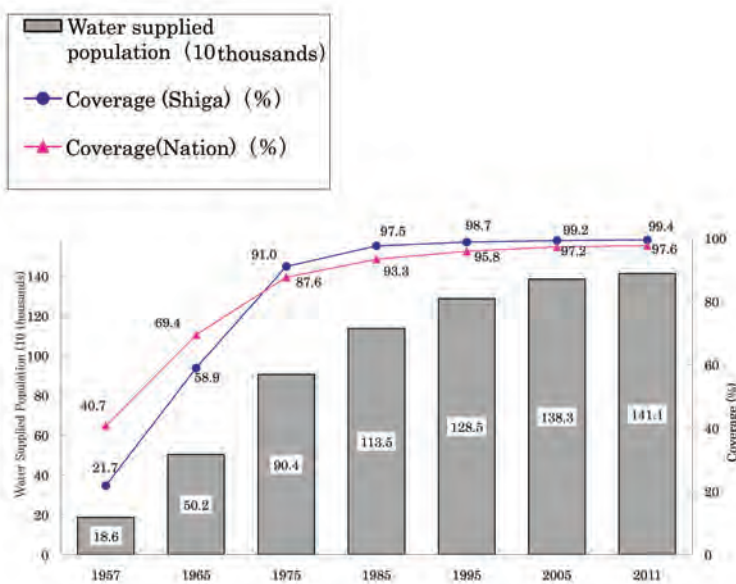
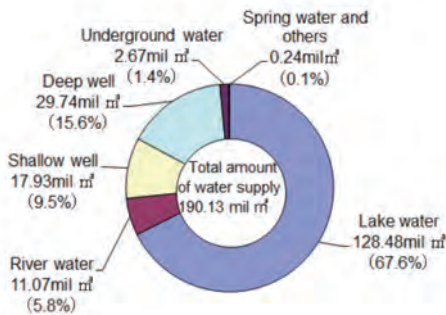
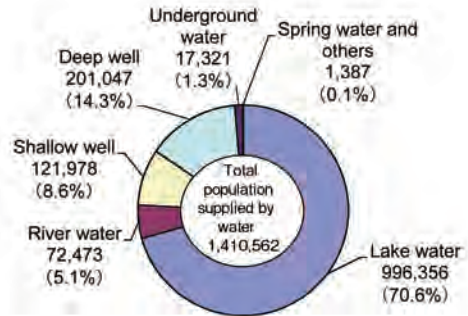


Fig. 4-8-1 Changes in the status of water supply coverage



**Fig. 4-8-2** Percentages of supplied water amount from various resources (FY2011)



**Fig. 4-8-3** Percentages of the population supplied by water from various resources (FY2011)

## 2. Introduction of Advanced Water Purification Treatment Facility

While Lake Biwa has served as a resource capable of supplying water of relatively stable quantity, phenomena such as rapid eutrophication have occurred in the past and problems such as freshwater red tides, blue-green algae and musty odors continue to this day. The offensive odor and problems with taste caused by these phenomena have a serious impact on the water supply. To address this problem, various measures have been introduced in the process of purification treatment. In 1969, a musty odor occurred for the first time in Lake Biwa and from the following year, powdered activated carbon treat-

ment was introduced as a deodorizing countermeasure. Subsequently, a granular activated carbon filtration pond was introduced and Japan's first biological contact filtration facility was established in Otsu City. These facilities are now utilized separately or in combination for advanced water purification treatment when needed.

Water suppliers have been making great efforts to maintain proper water quality management as well as operate and maintain water purification treatment facilities in order to ensure the stable supply of safe and delicious water.

(Environmental Health Division,  
Shiga Prefectural Government)

**Advanced water purification treatment:** This is a form of treatment to remove odor and chemical substances which cannot be dealt with by ordinary methods of treatment. Various methods are used including enhancement of absorption into activated carbon and decomposition by microscopic organisms and ozone.

**Biological contact filtration facility:** This is a facility that removes malodorous substances *etc.*, by using microscopic organisms that are widespread in the natural world. This method of purification is safe and effective and uses a filtering tank filled with porous filtering material that enables adherence of large amounts of microscopic organisms.