Toward the higher quality water

~From Tokyo Waterworks Experience~

Bureau of Waterworks
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History of Tokyo Waterworks Development

Change in facility capacity, water resource volume and Maximum daily water distribution volume

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The Present

- Stable water supply and high quality tap water
- Rapid economic growth

Facility Capacity, Water resource volume, Maximum daily water distribution volume

- World War I (1914)
- Great Kanto Earthquake (1923)
- World War II (1939)
- The end of the war (1945)
- Rapid economic growth

Timeline:
- 1899
- 1913
- 1927
- 1988
- 2007

Yodobashi purification plant
History of Expansion

Establishment and completion of modern waterworks

Contamination of channels and the rotting of wooden conduits

Water supply by gravity

Implementation of water treatment

Water supply by pumping system

Wooden conduits

Construction of Yodobashi purification plant
History of Expansion

Waterworks expansion and post-war restoration
From the rapid economy growth to the present

Tokyo metropolis area rapidly developed and the water supply and demand for water became greater

Post-war restoration
A measure for water shortage

Waterworks expansion
Repair work for water leakage
Secure water resource

Completion of Higashimurayama purification plant
Post-war restoration
Ogouchi dam
Change in water service coverage rate and number of related water infectious disease patients

※Number of related water infectious disease patients
- Total of Cholera, Typhoid, Dysentery, Paratyphoid

※Water service coverage rate (%)
Requirement of waterworks development

Preparation of rules and regulations

- Establishment of water facility construction technical standard ⇒ Concrete indicator of facility construction
- Establishment of water quality criteria ⇒ Establishment and strengthening of water quality management structure

Adoption of appropriate water technique

- Epidemic measure ⇒ Water treatment (slow sand filter, rapid sand filter), Obligation of chlorine disinfection
- Complication and diversification of water quality problem ⇒ Installment of advanced water treatment and membrane treatment
- Improvement of water pipe material (earthquake-resistant, declination of water leakage rate)

Premeditative facility construction and expansion

- Forecast and planning in the future

Realization of advanced water facility

Sakai Purification plant (Slow sand filter)

Advanced water treatment facility (Ozone injection)
Requirement of waterworks development  Finance

Institutionalization of cost recovery by charge collection

● Establishment of self-supporting system as municipal utility
● Full-cost pricing

Institutionalization of financing method for facilities construction

● State subsidy system
● Public bond system

Water Tariff
Collection  Investment

Water supply
(Construction and maintenance of water facilities)

Service

Water users

Securing of the water facility construction finance
Tokyo Waterworks now

The largest scale water utility in the world

- Population served: 12 million people
- Service coverage rate: 100%
- Length of water pipe: 26,000 km
- Daily average water supply volume: 4.4 million m³/day

The highest level water service in the world

- The highest quality water in the world
- Low water leakage rate
- A firm financial capacity

Asaka purification plant (1.7 million m³/day)
Ozone injection
C40 Tokyo Conference on Climate Change  ‘Joint Action’
Promotion of water leakage prevention and provision of technical information
-Save the water, save the earth-

Percentage of stainless steel pipe

Water leakage rate

100%

3.3%
Tokyo waterworks in the future

**Problem**
- Environmental problem (Climate Change)
- Renewal of facility

**Solution measure**
- Promotion of environmental measures
- Finance securing for facility renewal

- Solar generation system (Asaka purification plant)
- Training and development center (Training field)