



For a Sustainable Water Management



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Recognition of Current Situation

1. The Current Situation of Tokyo Waterworks

After World War II, Japan achieved a rapid economic growth. In Tokyo, the Bureau of Waterworks newly built and expanded the construction of waterworks facilities from 1950s to 1970s in order to support the labor population flowing in Tokyo from provincial areas.

In the near future, while those facilities become older, the rate receipts will decrease because of the population decline due to the declining birth rate. The population decline will also make bond flotation financing hard to reimburse, and it will be difficult to substantially expand the volume of issuance.

It is clear that, in the future, it will become difficult to secure financial resources needed to renew aged facilities only by the current level of water rate receipts.

I would like to examine a method for maintaining and stabilizing the Tokyo Waterworks Bureau's water management for the future.

Method

2. Securing Resources for Equipment Investment

In order to stably provide satisfactory customer service, i.e. supply high-quality tap water, a water supplier needs to always keep facilities in perfect condition by repairing and renewing aged facilities.

To secure resources for equipment investment in areas such as facility development, it is important to restrain expenditure as well as secure funds by steady income.

Restraint on expenditure

- Restrain labor costs as fixed costs (mechanization, outsourcing, etc.)
- Reduce costs by leveling and streamlining the business (scale optimization).

Securing income

Urge the national government to actively provide financial support for the aged infrastructures.

Make a structural shift to a payment system in which fixed costs including facility operation costs and labor costs can be recovered in a sustained way.

Issue enterprise loans in an appropriate level.

Challenges in the Method

3. The Level of Enterprise Loans

In the past facility development, we issued enterprise loans to secure investment resources from the standpoint of equitable burden-sharing among generations.

In order not to be over-dependent on enterprise loans, we restrained the issuance while continuing to reimburse them. As a result, the current balance of enterprise loans (interest-bearing liabilities) is decreasing (Figure 1).

We will continue the issuance of enterprise loans in a certain scale in the future, but we need to consider the issuance level in light of the equitable burden-sharing among generations in renewal projects in the phase of decreased income.

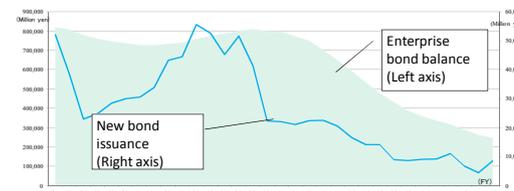


Figure 1: Balance of enterprise loans and new bond issuance

4. Equalization of Project Volume

Water treatment facilities owned by the Tokyo Metropolitan Government will all face the time of renewal in the near future. The renewal requires long-term efforts.

Therefore, we will prolong the facilities by utilizing asset management, reduce the failure risk and, by equalizing the project volume of facility renewal, come up with a long-term vision for fiscal revenue and expenditure to minimize the costs (Figure 2).

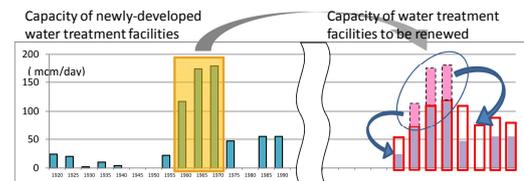


Figure 2: Equalization of project volume by asset management

Measures Taken and Results

5. Fund Resource

Water rates in Tokyo include an amount equivalent to depreciation expense to prepare for future investments.

In addition, Tokyo Waterworks maintains the rate level containing a certain level of profits for equity maintenance (Figure 3).

With this, we secure the fund resource needed to maintain and renew facilities in the level satisfactory to customers as well as stable management.

Tokyo Waterworks has accumulated about 450-million-dollar funds from retained earnings between 2007 and 2016. The Bureau will allocate them for equipment investment in the facility renewal.

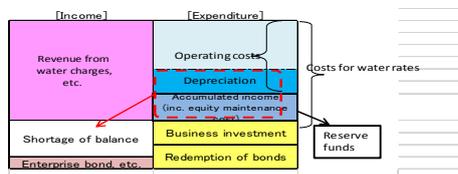


Figure 3: Structure of income and expenditure of Tokyo Waterworks [Single fiscal year]

6. Stable Management

In recent 10 years, the ratio of equity to total assets in Tokyo Waterworks (*) has been increasing (Figure 4), which will enable the Bureau to continue its stable fiscal management.

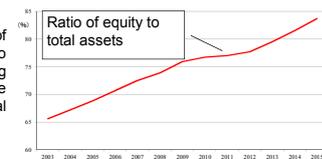


Figure 4: The ratio of equity to total assets in Tokyo Waterworks

(*) Ratio of equity to total assets =

$$\frac{\text{Capital} + \text{Surplus} + \text{Deferred revenue}}{\text{Liabilities} + \text{Equity}} \times 100$$

Conclusion

7. Conclusion

For sustainable water management, we need to seek for the best mix of the following:

- Setting a rate level to generate appropriate profits for equity maintenance
- Establishing a payment structure which is operationally stable
- Providing highly satisfying customer service
- Planned equalization of project volume to deal with the change in business environments due to social factors
- Appropriate bond flotation level with good balance between the likelihood of reimbursement and the equitable burden-sharing among generations
- Continued efforts for management rationalization, including labor cost reduction, effective use of assets and optimization of business scale