

Fiscal Management by Tokyo Metropolitan Government Based on the Medium and Long-term Viewpoint

- Case Study and Financial Simulation toward Facilities' Renewal -

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INTRODUCTION

Waterworks business is based on huge and extensive facilities requiring constant maintenance. These activities need numerous fund, therefore fiscal management based on a long-term perspective is essential. Bureau of Waterworks, Tokyo Metropolitan Government (hereinafter referred to as "TMG") faced some rapid changes in the operational environment.

1 Previous

(1) Surging demand period (1950's - 70's)

Water supply population doubled and the amount of water distribution tripled. To deal with this rapid increase in demand, TMG expanded its facilities' capacity to the extent of 4 million cubic meters per day.

(2) Stable growth period (1980's - 2000's)

After 1970s of energy crisis, Japanese economy turned to stable economic growth period and mature society. Most customers started to put their preference on quality over quantity. TMG started to install an advanced water purification facilities using ozone and biological activated carbon.

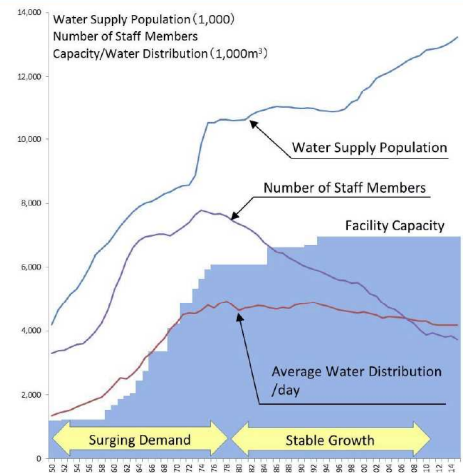
2 Now and future

(3) Facilities' renewal period (2010's -)

Now, facilities started to operate at surging demand period need do be renewal. Such renewal operation will be carried out in parallel with the maintenance of stable water supply and management.

At the time of initial investment, water supply revenue increases in accordance with supply amount increase, however this is not the case in the renewal stage. Besides, due to shrinking population and implementation of water saving technology, further demand increase is unlikely to happen.

This paper reviews how TMG has overcome financing issues based on illustrative cases including painful failures and discuss challenges toward upcoming stage. The author believes financing for the costly maintenance and renewal of facilities is an issue common to all major city utilities and the case of TMG will serve as a good reference. I provide financial results of TMG waterworks to study characteristics of previous fiscal management and to deliver a financial prediction to deal with challenges going forward.



Previous Efforts

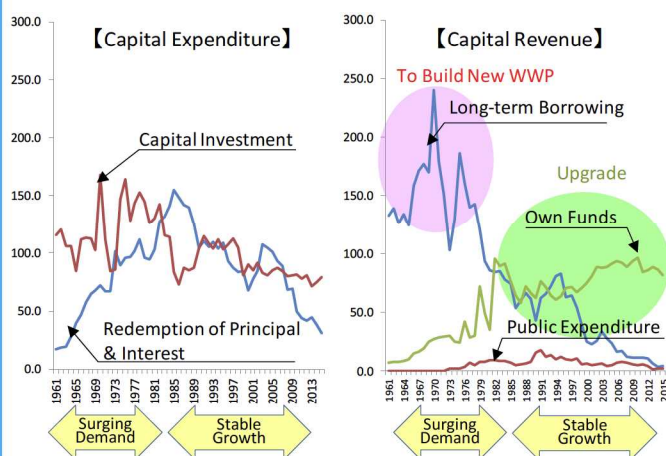
(1) Surging Demand Period

TMG rapidly built four water treatment plants (WTPs), including two million class plants. A capital investment for developing facility capacity leads to revenue after the operation, therefore we actively utilized a long-term borrowing scheme.

However, there was a downside. The revision of the rate was postponed due to a political consideration, and the TMG's financial situation worsened rapidly. Specifically, the accumulated loss was expected to exceed the annual revenue in 1975, and eventually we had to impose as much as 2.6 times higher rate to avoid a financial collapse.

(2) Stable Growth Period

TMG started to install advance water purification facilities and to take earthquake-resistance reinforcement, responding to the increasing demand for quality. The capital investment for upgraded service like these does not increase revenue. If we rely on borrowings to finance such investment, we could induce financial inflexibility, thus losing long-term financial health. Therefore, we took measures to hold down borrowing by securing own fund through reducing staff members by outsourcing, saving construction costs and other expenditures as well as taking advantage of public subsidies from national government and TMG.



Future

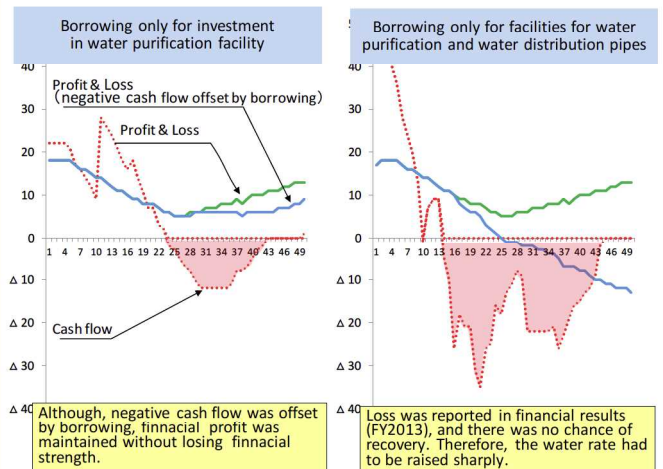
(3) Facilities' Renewal Period

In the 2010's and onwards, WTPs were built at surging demand period and those were needed to be renewed one after another. Just like the case of the upgrade investment, we cannot expect an increase of revenue through such investments, and overreliance on borrowing could lead to financial collapse.

Based on the preliminary calculation based on TMG's financial results in FY2015, in case of borrowing all capital investment fund, current account balance will turn deficit in 25 years. Moreover, once it happened, there would be no chance of recovery, therefore the rate would have to be raised considerably.

TMG leveraged asset management to extend the use life of facilities and standardize a renewal period. It also makes efforts to secure financing by reserve funds, but further initiatives for fiscal consolidation will be required to prepare for the upcoming series of renewals. For this end, we need to formulate a well-planned and appropriate borrowing scheme and make further management efforts to cost down, as well as the consideration of public grants.

Prediction of cash flow and profit & loss (50 years)



Conclusions

For waterworks in major cities, we need to maintain and manage massive amount of facilities for years, therefore appropriate fiscal management based on a long-term perspective is essential. For this end, we must prepare an appropriate financing portfolio based on facility's life cycle, customer needs and economic trend, besides water rate has to be revised appropriately in a timely manner. TMG's financial condition has been generally healthy, but it needs new fiscal management with a different viewpoint to handle series of facility renewals.