Survey Study on Conservation Plan of Water Environment of Ebi River and Mama River Watershed

Whole term	1999.12 - 2000.3	

(Purpose)

The water pollution in the Ebi River and the Mama River watershed in Chiba prefecture has been increased because of the delay of the sewerage improvement compared to progress of urbanization, and the water quality has not attained standard value (E type: BOD 10 mg/L).

It is predicted that the inflow of pollution sources will be decreased by sewerage development in the future, but however that the river water quality will be not improved sufficiently because of reduction of the river flow rate accompanying with the bypass of domestic wastewater. Therefore, the improvement and conservation of the water environment in the Ebi and Chiba rivers should be considered in both view points of water quantity and quality.

In Chiba prefecture, the project that is to connect Inbanuma River-basin sewerage and Edogawa left-bank River-basin sewerage has been started by the connection for the purpose of functional maintenance at the time of disasters and facilities improvement, and improvement and promotion of sewerage.

Improvement of water quality in the current status and reservation of amount of water in the future are expectable by placing water pipes in the connection trunk and returning the advanced treated water into the main and tributary stream in Ebi River and the Mama River watershed.

In this research, sewer advanced treated water is considered as the future water source in the watershed, and the "plan for water basin environment preservation" centering on the advanced-treated-water reduction to Ebi River and Mama River watershed.

(Results)

l. planned-target

① Planned-target water quality was defined as follows.

Level	Target year	Planned expected water quality	
		Target image	BOD mg/L
Medium-term objective	2007	Achievement of environmental standards	8-10
Long-term objective	2017	River where fishes can live in	5

② Target water quantity was taken as the river normal flux (interim value) presented by the River Department.

2. Calculation of amount of required reduction

① The amount of reduction was considered as the one required to maintain the expected water quality of ordinary water flow.

② The amount of reduction was considered as the one required to maintain target water quantity of the drought water flow.

③ The amount of required reduction was considered as greater than the others among (1) and (2).
In addition, the advanced treated water was calculated as BOD 3 mg/L by taking technical development in the future into consideration.

3. Treated water reduction plan

① In consideration of the main-line building plan, return flow in the project plan was temporarily distributed only to Ebi River by the ratio of required return flow.

② In the middle period plan, the amount of required reduction was distributed to Ebi River, and the remaining was distributed to the tributary stream of Mama river.

③ In the long period plan, in order to secure the amount of required return flow, the amount of advanced-treated-water water supplied from other treatment plants was planned.

4. Conclusion and Further tasks:

By returning the advanced treated water, the present quality of river water showed the improvement tendency. However, in medium-term-objective, the amount of return flow project plan was proved to be not enough in order to attain environmental standards in all rivers.

In the long term, although achievement of environmental standards is possible, return water from other treatment plants is also needed in order to maintain the normal flux of the river. Moreover, the advancement in water quality of the advanced treated water is also one of further issues.

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