

Survey study on the combined sewer system improvement program of Kitakyushu City

Whole term

2002.10-2004.3

(Purpose)

In Kitakyushu-city, sewer system area covers 15,394ha in 2002. The combined sewer was expanded by 3,422ha (about 22%), and untreated wastewater is discharged to the public water body from 140 storm outfalls, in case of rainfall more than a design rainfall.

For this reason, it has been a critical issue to reduce the contamination by untreated wastewater influence.

Therefore, it was decided upon the improvement program of the combined sewer in Kitakyushu-city which aiming at the improvement of the water environment of the water-amenity, river, and waterfront.

During 2 years survey period, the study was aimed at four treatment areas (Kougouzaki, Nichiaki, Shinmachi, and Kitaminato) currently improved in the combined sewer.

(Results)

(1) Planning of CSO control

A gradual improvement target was set up according to "the CSO control target- guideline and description-2002-", and the efficient implementation plan was decided upon. The following improvement targets were set up in this research.

- ① Reduce the present effluent load identical to separate sewer system for every treatment areas.
- ② Divide the times of overflows from storm outfall.

(2) Examination of measure

Initially, the times of overflows were calculated by using the present runoff analysis model to achieve the same pollution load of a separate sewer system, and the programs for achieving the goal were examined.

The measure in consideration of the present condition of each treatment area is shown below.

- ① The advancement in an intercepting rate
- ② Separating of a combined sewer system
- ③ Establishment of reservoirs and retarding basin

(3) Formulation of sewage improvement program

The cost effectiveness of the measures and the influence of the important basin was considered, and improvement programs are determine for urgent and gradual measure plans. Furthermore, goals, such as establishment of screens and drying pump stations, were decided by the current runoff analysis.

(Summary)

In this research, the effect of the combined sewer system improvement program which Kitakyushu-city decided previously was verified. And in four treatment areas, after calculating the program which is needed for achieving a goal, the synthetic measure was decided. Moreover, the gradual improvement program was proposed for more efficient project implementation.

This examination is positioned by revision of a sewage law enforcement ordinance, and it is considered to play an important role in the business strategy of Kitakyushu-city towards observance of the water quality standard of overflow water, or the standard of a storm outfall.

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Key words

Combined-sewer system improvement program