

Basic study on sewerage management technology for an advanced information system

Whole term

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(Purpose)

In some cities, sewage system management is being improved through remote control of pumping stations, automatic monitoring of industrial effluent, and rapid transmission of rainfall radar information. These improvements are brought by setting high-speed network communication cable such as fiber-optic cable in sewage pipes with sewerage facilities which is accompanied by renovation and up-grade of sewerage facilities.

For sewerage system facing maintenance era, advanced sewerage system management is one of the future tasks to be selectively conducted at large cities and regional core cities.

In this study, the actual states of advanced information system sewage system management in developed cities are investigated. Basic concept, appropriate technology, standard component and property of advanced information system at sewerage maintenance are examined. Based on the results, an "Introductory guideline" and "Guideline for establishment plan" are proposed. It also aims to confirm validity of testing items after operating along the proposed "Guideline for establishment plan" in a local city [case study].

(Results)

"Introduction of the advanced information system for sewage system management" was published as a reference for local governments which are considering the introduction of the advanced information network system in future. Information on fourteen basic items in the Q&A format is summarized as a guideline for the advanced information system with fiber-optic cable.

"Guideline to formulation of the advanced information network plan in sewerage management" was published as a manual to make a master plan for local governments which consider installing the advanced information network in sewage system management.

[Grand Design]

The contents of grand design are as follows.

Selection of the utilization way and judgment in introducing advanced information system for sewerage management

Setting the general outline of utilization

Setting the general outline of communication network system (conceptual picture)

Decision on the suitable advanced information system (project cost and benefit)

Target year and development schedule (approximately after 20 years)

[Plan]

Feasible master plan is to be finalized after its details are made clarified within the next 5 years. Its contents are shown below.

- Plans

(Contents and period of the plan, outline of the utilization, outline of the communication network system, management system of the advanced information system for sewerage management, installation schedule and approximate project cost)

- Planned fiber-optic cable line

(Conceptual picture of advanced information system for sewerage management, Conceptual picture of fiber-optic cable network, Map of fiber-optic cable line, Block diagram of advanced information system for sewerage management)

[Case study]

The applicability of the planning procedure in the guideline was tested through simulation in the study area and found to be acceptable.

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Keywords

Advanced information sewage system management, Fiber-Optic