

Study on Systematization of Sewer Pipe Renewal and Repair Project

Whole term

2004.9 ~ 2006.3

(Purpose)

As a renewal and repair project, (hereinafter: RC & RH) this work consisted of a series of technological processes, including an investigation of the inside of the pipes, diagnoses, an RC & RH program, and design and construction. Each process cut across several work classifications, and in some cases with lack of needed information made for difficult going. Unsuitable situations included (a) information exchanges between processes were not smooth when requested; (b) difficulties in utilization of each output at the next process due to existing process being undertaken independently. In addition, there was a condition in which each output format and content was not made available as information for the next process.

In view of these situations, this study represents an attempt to systematize the information format output from each process, to convert collected data into digital data with information technologies, to make more effective utilization not only at the next process but also in the maintenance scheme. These efforts established measures to solve the above problems, and a technical manual is being prepared.

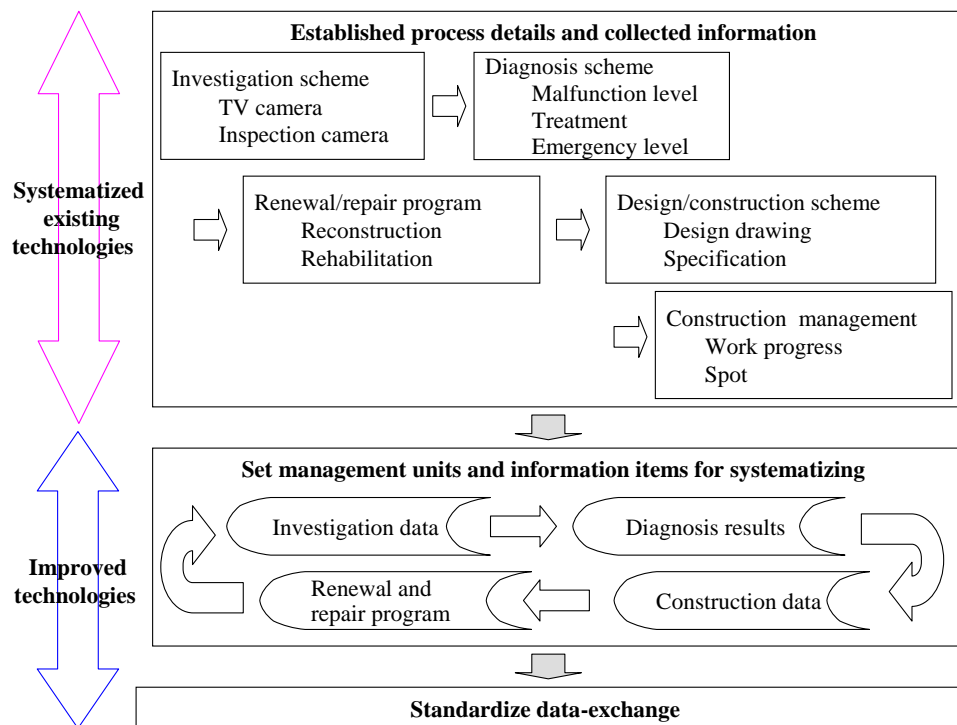


Fig.1 Object of the study

(Results)

1) Flow and findings:

Study items and findings are shown in Fig.2.

2) Systematization process for planned and effective renewal/repair projects

Based on various existing manuals and guidelines for operation and maintenance, the processes created for the RC & RH project implementation were systematized as a series of projects, from investigation to construction, for planned and effective implementation of the overall project studied.

Specifically, standardized details on identifying abnormalities, essential points for diagnosis, planning and review items according to the design procedure, and control items during construction management were indicated.

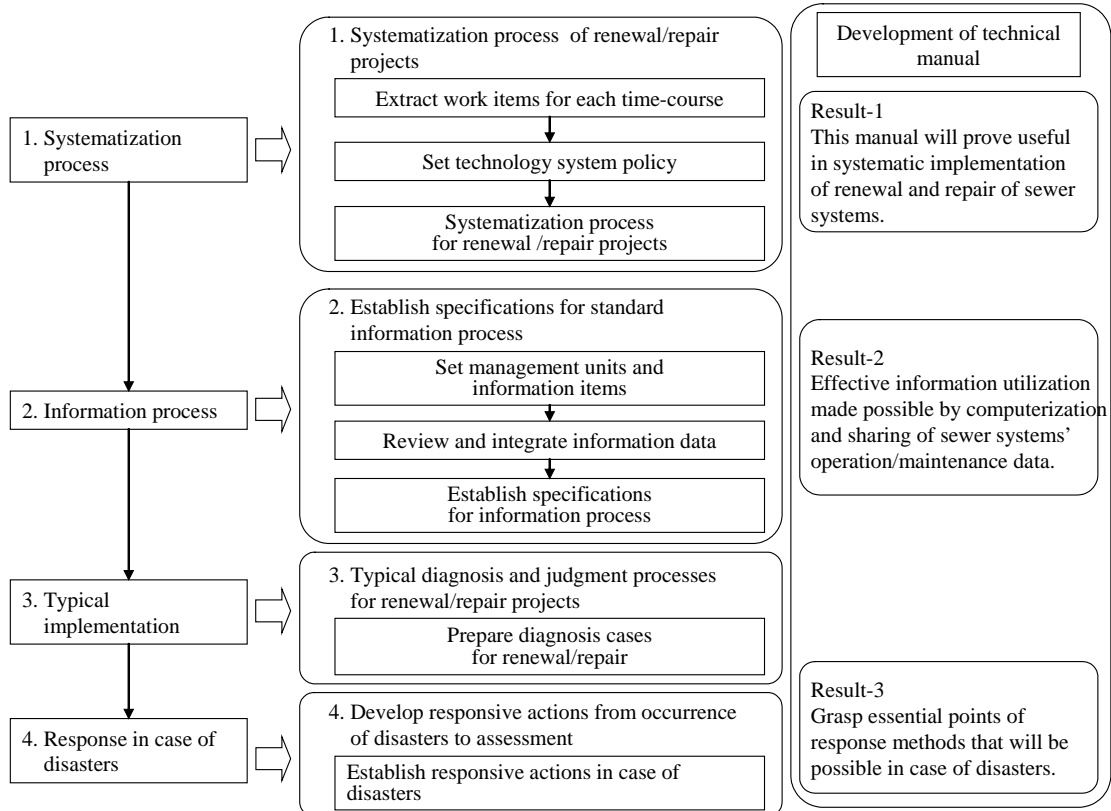


Fig.2. Study flow chart

3) Establishment of specifications for information processes and data-exchange standards

Information items generated in each process and the data needed for management were compiled, and the information specifications and data exchange standards were established to ensure proper utilization by any users other than the party who prepared the data.

4) Response activities in case of disasters

Response activities and their flow in case of earthquakes have been compiled along with typical evaluations during investigation and considerations for disaster assessment. The effectiveness of using accumulated information during response activities in case of disasters is demonstrated.

For reference, typical judgments by industry for selection of the renewal and repair project using data standardized for utilization in the field, and typical diagnoses for renewal and repair are presented. Finally, the actual states of renewal and repair projects of sewer systems are summarized on the basis of questionnaires given to local authorities.

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key words

Diagnosis process, Standard for diagnosis and judgment, Data-exchange, Informative process