

Study of the Use of the Common Platform for Rainfall Runoff and Pollution Load Simulation Models in Sewerage Systems

Year of Research

2009

Promoting Flood Protection Measures

(Purpose)

The purpose of this Study is to investigate methodologies for the use of various sewerage planning models on the CommonMP platform and data classification methods, with the intention of streamlining investigations, analyses, and planning and other tasks performed in the sewerage field.

(Result)

1) Fundamental information concerning CommonMP

Fundamental information concerning CommonMP, purposes, an operation system, system images, and system configuration has been collected and classified.

2) Understanding of existing rainfall runoff and pollution load simulation models

Situations in which general-purpose models are actually used by consultants were surveyed, and agents selling the models were interviewed regarding their cooperation with CommonMP. Based on the results of the above, a policy regarding cooperation with CommonMP was studied as follows:

- The possibility of cooperative use of CommonMP with the existing general-purpose models in current work must be investigated based on the fact that a tool called OpenMI has already been developed for this purpose.
- It is assumed that when it becomes necessary to develop software with more sophisticated functions in order to realize more advanced simulations in the future, it will be advisable to develop it with higher accountability following the basic idea of the CommonMP platform.

3) Study of development policy for simulation models using CommonMP for sewerage systems

Surveys of consultants concerning their development of non-general-purpose models and situations in which they are actually used were carried out. Then, their policies regarding cooperation with CommonMP were studied based on the results of above surveys.

- Efforts have already been made to bring models developed by the National Institute for Land and Infrastructure Management (NILIM) and Public Works Research Institute (PWRI) into conformity with the CommonMP platform. However, their usability be studied because they are not actually widely used.
- As for consultants, it is assumed that they can use the models they personally developed as element models in collaboration with CommonMP. However, the problem here is whether such an approach can repay the investments required to develop wrapping programs and/or modify their models.

4) Merits for government officials and other concerned people and future prospects

Surveys of governments etc. concerning problems with simulation work done using models were carried out accompanied by studies of policies regarding cooperation with CommonMP in terms of databases.

◆ Problems concerning simulation works using models (survey of governments)

- One problem is that for each project, data and simulation results are dependent upon simulation software and are difficult to use for studies in collaboration with other districts. Other problems are that the above-mentioned dependence makes it difficult to verify accuracy of results and there is a lack of transparency.
- Since a comprehensive sewerage master plan for a river deals with a lot of varying data in basins, work must be more efficient and duplicated investments prevented by efficiently accumulating work accomplishments and securing accountability.

◆ Policy regarding collaboration

- The level of data to be developed for the time being must be determined and a road map prepared. Another important problem is to decide how common formats are determined.
- As for model data, copyrights related problems are to be studied and clarified to construct their databases, because the copyrights of these model data are frequently not made clear.
- Data possessed by other ministries and agencies will be utilized in order to make projects more efficient. However, places database are installed and their management regarding data possessed by ministries and agencies other than river data for which the managing body is clearly specified.

