

Survey study on reciprocal use of rainfall information system

Whole term

2000.12 - 2001.3

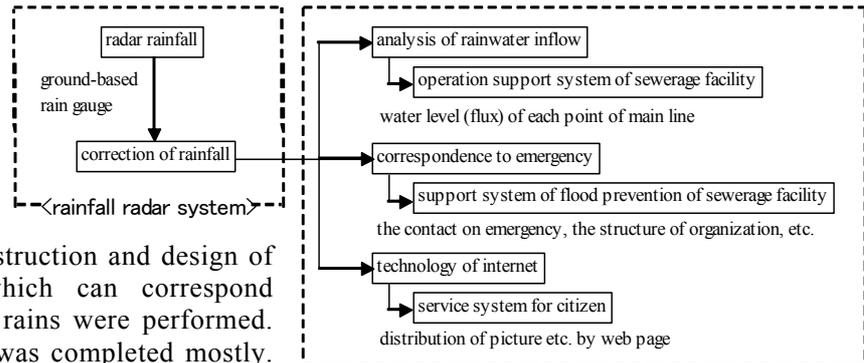
(Purpose)

The expansion of the urbanization in a city has changed the mechanism of rainwater outflow in recent years. Consequently, the rising of the rainwater outflow rate and the declining of the rainwater retaining function, etc. have occurred by increasing of impervious area. Furthermore, in terms of rainfall, the concentrated heavy rains in local area has occurred frequently and caused the urban flood damage.

In order to deal with environmental changes by facilities operation, rainfall information systems become more important, which can handle the analysis of the detailed intensity of rainfall for every rainwater drainage area, the analysis of velocity of rainy areas, and the immediate correspondence. In order to perform the efficient operation management of sewerage facilities including a storm sewage pump, Tokyo, Osaka, Yokohama, Kawasaki, and Sapporo have already introduced the rainfall radar information system.

The Saitama prefecture consists of four river basins. The sewerages are mainly the separate sewer system. In the Saitama prefecture, flood damage has occurred because of the interruption of the rainwater

maintenance. After that, the construction and design of rainfall information system which can correspond promptly to concentrated heavy rains were performed. The basic design of the system was completed mostly. Therefore, the project considered the reciprocal use of information of the rainfall information system by citizens or other cities.



(Result)

1. Consideration on Data Distribution to Community or Service for Citizen

The methods and contents for assisting citizens and communities effectively in disaster prevention activities were examined by providing the data analyzed from the rainfall information system. Since the rainfall radar system is a system which corrects the radar rainfall by a ground-based rain gauge, it is necessary to deliberate with the fire-fighting facilities which have ground-based rain gauges. The present information such as AMEDAS, weather radars, typhoon information, and the forecast information such as ground prediction weather charts, short-time prediction mesh pictures, warnings, typhoon predictions, weekly forecasts, tsunami information, will be shown as items of weather information. For citizen services, internet distribution by a telephone line was considered as a basic measure, and the distribution methods of the service for river basin community and people and the cost were summarized.

2. Examination about Reciprocal Use with Systems of Other City

The coordination with Tokyo, Yokohama, and Kawasaki which are applying now is effective in terms of an extensive prediction, the backup at the time of trouble, etc. However, the author understood that the range of coordination effect was limited actually and that the online connection of central computers was technically difficult. It seems that a host system like the Kanto area integrated system is required in the future.

3. Consideration on extension to Other River Basins or Other Projects

The data of the sewerage of other river basins within the prefecture will be taken as the form of processing and taking in the raw data of the rainfall information from a central processing unit. The author summarized the equipment and function needed at another river basin, the data exchange method, the cost of communication lines, etc. Moreover, the deployment to the rivers other than the sewerage and other project such as the comprehensive disaster prevention were also arranged.

Collaborators: Saitama Prefecture ,

Japan Institute of Wastewater Engineering Technology

Person in charge of study: Takuji Nakazato, Satoshi Noji, Masaharu Kato

Seii Soga

Key words

Rainfall information, Rainfall radar, Regional sewerage system, Immediate correspondence, Weather information