

Probability model for risks of burst water pipes: a case study in Seoul

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ABSTRACT

Pipelines are a very important component of water supply systems. Specially, the pipe bursts and leaks are very useful indicators to show the condition of the network. To keep and improve the performance of the system, much accumulated know-how for inspections, operation, maintenance, and suitable rehabilitation to achieve the best performance is needed, as well as a logical method that can estimate the optimal time and range of replacement/rehabilitation work with an understanding of deterioration factors of pipe networks. Therefore, in this study, a statistical probability model for pipe burst risk was developed with various data from leak-repairing records and local characteristics of the circumstance on the real-scale distribution system in Seoul in order to utilize this method for management and operation of the water pipe network, including prioritization of pipe replacement/rehabilitation work.

Keywords: Pipe burst probability; Water distribution networks; Logistic regression

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