

A DEVELOPMENT OF DETERIORATION ESTIMATION AND MANAGEMENT SYSTEM ON WATER LINES USING GIS

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ABSTRACT

Due to the fast industrial growth and unplanned urban underground development in Korea systematic management for underground utilities could not have been accomplished. Unsystematic underground utilities management has resulted in difficulty of finding exact location and the age of it, which has potential of leading it to a disastrous situation.

Objective of this study is on the development of deterioration estimation and management system for water lines using GIS. This system is constructed to estimate easily water lines deterioration by the establishment of the geographic output system on it, search damaged objectives near surrounding area in a situation of destruction, and offer the information by which one can take quickly emergency. And also, it is constructed to prevent from accident occurring under work by presenting underground utilities and states of work.

This system has largely two parts, deterioration estimation and efficient management of water lines. Deterioration estimation system evaluates its safety according to water lines deterioration and management system offers general information required for water lines management. Deterioration estimation model selected in this study is Numerical Weighting System developed by KOWACO(Korean Water Resources Corporation), which estimates quantitatively pipeline deterioration using factors such as year laid, materials, diameter, etc. Deterioration index tables were generated for the effective estimation, and they were applied on each water lines. DB for system application was designed by analyzing the task of water supply control center and deterioration estimation. This system is developed by using ARC/INFO of ESRI Company.

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