

Thesis Title	Development of a GIS-based Program for Water Pipeline Evaluation
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#### Abstract

This research aims at studying the possibility of extending the applications of a readily available Geographic Information System (GIS) of Metropolitan Waterworks Authority (MWA) to evaluate physical deterioration of its piping system.

The study was divided into two sections. The first section was devoted to the identification of factors that cause such deterioration. An interview with an MWA expert was conducted to identify the main factors and their associated significance. The widely used Analytical Hierarchy Process was then used to determine the relative weights of these factors. The result of this first section was used in the development of a GIS-based program for pipeline evaluation.

The result of the study shows significant improvements of the pipeline evaluation task which was originally performed manually using the paper-based approach. The program can be used to pinpoint the pipeline sections that need maintenance or replacement. The program is user-friendly and can be interfaced with the existing MWA's Graphical Information System.