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Investigation of Failure Mechanisms of Asbestos-Cement Pipes in Regina

Objective

To analyze the failure mechanisms of Asbestos-Cement (AC) water mains in Regina, Saskatchewan.

Background

AC pipes account for about 68 per cent of the pipes currently in use in the City of Regina's water main network. The majority of these pipes were laid in the 1950s and 1960s. After decades of service, the number of failures in AC pipes has increased greatly in recent years, resulting in high repair costs. To provide more information about why this increased breakage is occurring and to enhance the management of these assets, it is essential to understand the mechanisms behind their failure.

Statement of Work

The research will consist of the following tasks:

- Analyze historical failure data to determine the factors contributing to the failure of AC water mains
- Develop new models for exploring the physical mechanisms that cause pipe failure
- Instrument AC water main sections under an older street to examine pipe behaviour in expansive Regina clay
- Develop preliminary guidelines for the operation and maintenance of the City's AC pipes.

Expected Outcomes

The project will help the City of Regina and other municipalities to implement mitigation measures in a timely manner, to extend the useful service life of their AC water mains, and to minimize the economic, social and environmental costs of these systems.

Partner

City of Regina

Start/Expected Completion Dates

This project began in July 2004 and will be completed in December 2006.

Project Manager

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For more information, see http://irc.nrc-cnrc.gc.ca/csir/projects/asbestos_e.html

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