REGION OF OTTAWA-CARLETON REPORT
RÉGION D'OTTAWA-CARLETON RAPPORT

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DATE 15 March 2000

TO/DEST. Co-ordinator, Planning and Environment Committee

FROM/EXP. Director Engineering Division
Environment and Transportation Department

SUBJECT/OBJET **PRESENTATION: INTERNATIONAL AWARD FOR ASSET MANAGEMENT**

DEPARTMENTAL RECOMMENDATION

That the Planning and Environment Committee receive this report for information.

BACKGROUND

Asset Management Quarterly International (AMQI), an international organization based in Australia, has awarded the *GHD Assets and Facilities Management Excellence Award* to the Region for its watermain asset management practices. AMQI promotes sound asset management through professional development, information sharing, and competition. GHD is an Australian based international engineering consulting firm.

The Region's winning submission, written by Dr. Fattah Hashem-Zadeh, P.Eng., Ph.D of the Environment and Transportation Department's Engineering Division, received a second place finish among the many entries submitted to AMQI by organizations and governments from around the globe.

An abstract of Dr. Hashem-Zadeh's award winning paper to AMQI is attached for information. We wish to congratulate him for his excellent effort and professional recognition.

Ottawa-Carleton's water distribution system has a replacement value of approximately $3 billion. This award winning paper describes the Region's decision-making tools for the allocation of funds for its watermain rehabilitation and replacement program. The application of such decision-making tools demonstrates how the Environment and Transportation Department implements "best practices" to protect taxpayers' investments in infrastructure.

This is one of a number of initiatives on Asset Management in development by the Department to ensure the effective use of financial resources in the Region and for the New City of Ottawa.

Dr. Peggy Burns, AMQI Editor and Convenor, will be travelling to Ottawa from Australia to formally present the Region with this prestigious award at Regional Council's meeting scheduled for 12 April 2000 at 13:30 p.m.

Approved by
Jim Miller, P.Eng.

Application of an Asset Management Inventory System to Develop Decision Making Tools for Watermain Rehabilitation & Renewal Programs

by

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Abstract

Application of an Asset Management Inventory System to Develop a Decision Making Tool for Watermain Rehabilitation & Renewal Programs

In this paper we will share with you our experience in developing a comprehensive asset management inventory system of the Region of Ottawa-Carleton water supply network, demonstrating our success on how we have used this tool to forecast our optimal watermain rehabilitation needs for the next 50 years. Additionally, this paper presents our systematic approach on how we created a priority list and ranked pipes for replacement or rehabilitation using our Watermain Asset Management Inventory System. The goal is to develop and implement a long term proactive and cost-effective watermain rehabilitation and renewal program by applying user-friendly computerized decision making models and tools.

The Central Water Supply System of the Region of Ottawa-Carleton serves 11 local municipalities with a serviced population of over 680,000 via a watermain network of over 2,400 kilometers of pipes of various materials, ranging in age from just installed to over 125 years.

For old and large cities like Ottawa, maintaining a reliable water service is an enormous and costly task. In order to keep costs under control a well-planned and cost effective watermain rehabilitation and replacement program is a must. To accomplish this objective, we have developed a comprehensive watermain asset management inventory system. From 1991 to 1996 a total of five major databases have been developed containing over 450,000 fields of data on pipe, node, pipe break, fire flow, and soil characteristics. These databases are integrated into a relational database management system.

Our experience indicates that the best approach to implement a proactive watermain rehabilitation program is to use a 2-step approach utilizing two distinct types of decision making tools. The first step is a macro level or budgetary approval phase, in which, the KANEW[1] model and our watermain asset management inventory databases are used to develop a 50-year capital budget needs forecast. This is an essential step to insure senior management support and subsequent Regional Council approval. The second step is to decide on how the approved annual budget for the rehabilitation program should best be spent, using alternatives such as, cathodic protection, pipe cleaning and relining, or replacement.

1. The KANEW model developed by Roy F. Weston Inc. (USA) and Dresden University of Technology (Germany) is a planning tool to assist water utility managers in developing watermain renewal programs.