

United States of America & Canada

AwwaRF Research Project #2928 “Leakage Management Technologies”

Client: **American Water Works Association Research Foundation (AwwaRF)**

In North America, leakage management programs are not pervasive, even though leakage can be reduced with some simple starting points, which result in multiple benefits to the drinking water utility. Hence, North American governments are increasingly expressing interest in this area, by mandating water audits and other initiatives to improve water supply efficiency. North American utilities can benefit from international experience in leakage management helping to reduce water losses, defer capital expenditure on new water resources, improve the service level and public health protection and improve the efficiency of distribution system operation. This project was designed to provide hands on guidance on how to implement leakage management tools to cost effectively reduce water losses in North American water utilities.

The research team under the guidance of WSO worked with one Canadian and nine U.S. utilities, representing large and small, public and private utilities from a variety of geographic regions. During the first phase of this project leak management technologies used internationally and in North America were assessed. In the next phase the most promising leakage management technologies were implemented and tested at seven pilot sites (or utilities). The most significant conclusions of this project were:

- A water audit provides the utility with the necessary information about their level of losses and how far they can economically be reduced.
- It is paramount that a utility first understands the nature and extent of its water losses in order to select the best water loss reduction strategy.

The leakage management technologies of District Metered Area (DMA) and pressure management can be successfully applied by most North American utilities by following the guidance provided by this project report.

The following key components were identified for a successful leakage management policy:

- Periodic assessment of leakage levels through water audits.
- Improved data quality.
- Establishment of DMA.
- Pressure Management
- Reduced response and repair times to leaks that have been reported or actively detected
- Reduction in the average response time to repair of customer leakage
- Apply leakage management as an effective part of asset management

Benefits of leakage management are:

- Most economic way o reduce real losses.
- Leakage recovery often stands as the best source for new water resources for systems facing water supply shortage.
- Improving public health protection.

Reducing pressure on water resources and therefore providing environmental improvement.