



Understanding the True Costs of Water Main Breaks

By David Lewis

Main breaks have long been accepted as a natural byproduct of operations, resulting from pipe age, residual pressure and raw water temperatures. Under ideal circumstances, main breaks would occur in a predictable fashion over a predictable period in a predictable geographical area. Unfortunately, prediction is not possible.

But some utilities have made concerted efforts to understand their water main breaks better, and institute a management program to reduce breaks and repair costs. The Knoxville Utilities Board (KUB) undertook a study of their fiscal years 2004 and 2008, where they discovered a 62% increase in water main breaks and reported leaks. That increase was accompanied by rising repair costs.

As the utility detailed in their presentation at the 2008 Kentucky/Tennessee American Water Works Association (AWWA) summer conference, in fiscal year 2007 their average water main break or leak repair cost was \$2,900. Just three years prior, that cost was \$2,212, a 23% increase. The rising repair cost coupled with the increase in the number of repairs was cause for concern for the utility.

In 2007, KUB undertook a widespread asset management program with three main goals: (1) address aging infrastructure, (2) update asset records and (3) improve accessibility to information. As a first step, KUB deployed field

crews to conduct an inventory of assets. This inventory process included recording and improving operability characteristics through a systematic and targeted approach. KUB focused on areas where the network of piping was old and consisted of vulnerable pipe such as cast iron and galvanized metal.

Immediately KUB saw results. While water main breaks between 2007 and 2008 continued to rise, the average cost to repair declined by 19% or \$551. As part of the asset management program KUB not only inventoried their assets but operated and rehabilitated them. This effort resulted in lower operating costs overall. These decreased costs were a direct result of shorter response times due to accurate location data, fewer crews since operability was known, and less damage to the system and surrounding infrastructures as breaks and leaks were repaired faster.

While water main breaks are expected with older water distribution systems, the number, severity and associated costs can be managed and controlled. Contact Wachs Water Services to discuss your distribution systems, and potential solutions for your water main break management.