

Loss Reduction in Potable Water Systems, 1997

Summary:

This study focused on the distribution and sale of potable water. The team designed methodologies for private economic assessment of loss reduction for the distribution network (usually called “leakage”) and the reduction of commercial losses as a result of underbilling. The methodologies were applied to the system that serves Greater Santiago and to that used in the city of Arica.

In the case of distribution network losses, the aspects examined included the number of leaks present in the network, the average flow rate lost per leak, the frequency of new leaks, and the duration of the leak until detection. Regarding direct actions that could be taken, the study examined systematic leak detection and district-specific flow rate measurements (volume balances in limited areas of the network), which are aimed at reducing the frequency of new leaks. Costs were determined on the basis of containment actions, while the benefits corresponded to increased short-term (with and without water shortages) and long-term (postponement of investments) water availability.

For commercial losses, micro measurement research has shown that household meters systematically undercount the cumulative usage or volume recorded. Based on this information, replacement projects were designed taking into account the costs of replacing water meters based on their age versus the benefits of replacing them and billing increasing volumes of water, compared to the losses that would be incurred by not replacing the meters.