



Drinking Water Capacity Development Program

Asset Management Factsheet Series

Leak Detection Surveys

Water leaks often don't surface and go undetected until they cause significant pressure loss, pipe burst, outages, and/or property damage. According to the American Water Works Association, it's typically two years from the time a leak starts until it ruptures the pipe¹. And the amount of water lost per minute during this time increases exponentially (Figure 1). Conducting a proactive leak detection survey using modern digital equipment and methods allows you to find and repair leaks early on in their life-cycle. You'll save the water and its production costs (e.g., energy and chemical costs) that would have been lost if the leaks continued undetected. And you'll also benefit in ways that aren't always accounted for, including:



- Extending the life of assets (e.g., pumps and filters);
- Reducing the risks of contamination, pipe bursts, water outages, property damage, system liability, and legal fees;
- Avoiding costly emergency repairs and crisis management;
- Delaying or eliminating the need to develop new sources;
- Improving public relations;
- Eliminating excess load on the sewer system;
- Reducing impacts on the environment; and
- Learning more about your distribution system so you can respond faster to emergencies and set priorities for maintaining, repairing, rehabilitating, and replacing assets.

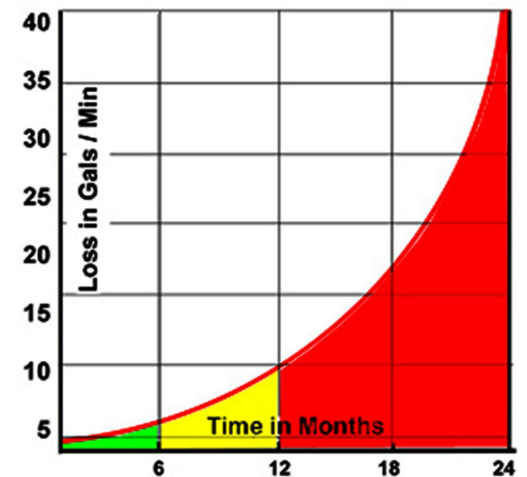


Figure 1. A typical leak's water loss over time



1 - AWWA's "Water Audits and Loss Control Programs Manual" M36

For many utilities, conducting proactive leak detection surveys every one to three years is a cost-effective way to reduce water losses.

Control Water Losses

1. Set level of service goals

Examples: Reduce real water losses to less than 20%; Maintain water pressures between 40 and 80 pounds per square inch at least 95% of the time.

2. Conduct an annual water audit

Water audits will help determine how much water is being lost, where the losses might be occurring, and how to reduce them in a cost-effective manner.

3. Implement measures to reduce losses

Examples: adopt design and construction standards; conduct proactive leak detection surveys; update operations and maintenance activities; install, calibrate, or replace meters; develop a hydraulic model; reduce excessive pressures; repair, rehabilitate, or replace pipes; develop outreach/education program.

4. Measure the effectiveness of efforts to reduce water losses and compare to goals.



Water main break in Montpelier, VT (August 2011)

Check out the Asset Management Guidance and Grant opportunity on our website. The guidance includes information on:

- ◆ *Setting level of service goals;*
- ◆ *Creating an asset inventory;*
- ◆ *Assessing the condition of assets and their probability and consequences of failure;*
- ◆ *Using life cycle and cost/benefit analyses to make asset maintenance, repair, rehabilitation, and replacement decisions;*
- ◆ *Developing funding strategies; and*
- ◆ *Using other asset management tools.*

Questions? Contact Joshua Lochhead of the Drinking Water Capacity Development Program



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