

# Factsheet – Leaks & Breaks

## Your questions answered

November 2015

### How can people report leaks or breaks?

Our customers are our eyes and ears. If you see a leak or break, please call **13 20 90** to report it.

This line is staffed 24 /7 which ensures a much faster response than reporting via social media.

We will then prioritise our response based the below factors:

- potential safety impacts on customers, their properties and the environment,
- number of properties without water,
- volume of water that could be lost,
- information provided when the report is first made.

### What happens if your property is damaged by a leak or break?

Sydney Water will work with property owners to ensure they are not left out of pocket as a result of water damage from a leak or break in our network.

### Why do water mains leak & break?

Leaks and breaks are an unavoidable issue for water utilities around the world. They are generally found in water main connections and fittings such as hydrants and valves. Age is usually not the determining factor for leaks and breaks – they occur for number of reasons, including:

- ground movement
- deteriorating joints and fittings
- pipe material
- changes in water pressure
- adjacent features such as trees and poles
- impacts or hits by third parties
- changes in rainfall and temperature
- traffic impacts over the location of the pipe

## What does Sydney Water do to reduce leaks & breaks?

Sydney Water does a lot to reduce the frequency of leaks and breaks. This includes several innovative programs such as:

### Active Leak Detection & Repair program

- involves acoustically scanning for concealed leaks and breaks in buried pipes. Without this program in place, leaks and breaks would increase every year
- since the program began over 190,000 kilometres of pipes have been inspected and more than 44,000 leaks have been proactively identified and repaired.

### Bulk Water Flow Meters

- monitors the water flowing through different parts of our pipe network
- improved flow metering enables Sydney Water to better monitor the effectiveness of its Active Leak Detection & Repair Program.
- to date, Sydney Water has installed over 500 bulk water flow meters.

### Pressure Management program

- involves the installation of pressure reducing valves in high pressure areas. Reduced water pressure in our system minimises the frequency of leaks and breaks.

### Water Main Renewal program

- proactive approach to repairing and replacing pipes and mains
- aims to minimise leaks and breaks by replacing pipes that are at the end of their life.
- we monitor leaks on a quarterly basis and adjust our programs in response to these results.

## Have these programs actually reduced leaks & breaks?

Yes – over the past decade, Sydney Water has reduced the number of leaks and breaks by about 50 per cent. This reduction has saved, on average, over 30 billion litres of wasted water per year.

This places us among the best water providers in the world with a top rating under international guidelines.

Over 2012-2016, Sydney Water will spend more than \$350 million on renewing water mains.

We're also leading the way in a \$16 million international research project into predicting leaks and breaks.

We always aim to balance the effort of reducing leaks further with the impacts this cost would have on our customers' bills.

## Will El Niño increase the frequency of leaks & breaks?

Sydney Water advises that the current El Niño weather event – and its associated reductions in rainfall – will cause an increase in leaks & breaks and sewer chokes across its area of operations over the 2015/6 summer season.

The El Niño was declared by the Bureau of Meteorology in May 2015 with climate modelling indicating it will peak at the end of 2015 and weaken in early 2016.

While the exact customer impact of El Niño is impossible to predict, we know it will cause an increase in leaks & breaks if it is accompanied by drier than normal conditions.

However, these increases are unlikely to exceed our Operating Licence performance targets.

Sydney Water will closely monitor its network and customer satisfaction during El Niño. We will also undertake a number of measures to mitigate its impact, including:

- a number innovative preventative programs
  - see Active Leak Detection and Pressure Management programs (page 2)
- ongoing network performance monitoring and analysis
  - to better predict future failures based on advanced tools and data analytics
- employment of additional operational staff
  - to ensure we have the capacity to manage leaks and breaks during peak periods

## How much does Sydney Water invest in the maintenance of its network?

Over the past decade, Sydney Water has invested \$1 billion – and will invest a further \$350 million over 2012-2016 – to manage leaks and breaks across its network.

Sydney Water's leakage rate is within the target range set by IPART in the Operating Licence. We balance the effort of reducing leaks further, with the impact this cost would have on our customers' bills.

## Why can't water be turned off immediately to a broken pipe?

Sydney's water network is pressurised so it's sensitive to any sudden changes in pressure. As such, a slow and controlled shut down is required to avoid placing undue pressure on other areas of the network and create another break elsewhere.

Sydney Water's crews do their best to maintain restore water supply to customers when leaks and breaks occur.

## Is Sydney Water developing new technology to prevent leaks & breaks?

Sydney Water is leading an international research project in conjunction with Water Research Foundation (USA) and United Kingdom Water Industry Research.

We also partner with several local universities on this project, including Monash University, University of Technology Sydney and University of Newcastle.

The five-year project, which started in August 2011, is the largest international research collaboration led by Australia on buried water pipes.

Sydney Water also provided the world's first research pipe Testbed for conducting the research.

The research is focused on real industry needs and active industry participation. This direct engagement to improve the available technology is considered to be the world's first in a large project of this nature.

The project is researching the following three activities:

- pipe failure prediction (how, when and where will the pipes fail);
- interpretation of advanced condition assessment using machine learning;
- corrosion modelling;
- 'Along the pipe' failure prediction;
- trials to investigate/evaluate emerging new technologies and
- knowledge consolidation and improved decision support to manage critical water pipes.

In addition to this research project, Sydney Water is also involved in trialling new technologies for monitoring the leaks in larger mains.

## How does Sydney Water compare to other countries?

Since 2005, Sydney Water has achieved the top rating for water utilities in developed countries under the World Bank Institute guidelines for leak reduction.

This places Sydney Water in the top band (band A) of the Infrastructure Leakage Index (ILI) which sees us rated in the top 10% of the world for minimising leaks and breaks.

The ILI measures how effectively infrastructure management can reduce leaks. According to experts, it is the best indicator for network performance.

The ILI bands range from A (reflecting best practice) to D, with recommendations for both developed and developing countries.

## What is the lifespan of Sydney Water's pipes?

There are a number of different types of pipes across our network and each has a different lifespan.

Regardless of type, our pipes are all designed to have an average lifespan of 100 years.

Each pipe's lifespan, however, is influenced by its environment and other factors including:

- ground movement and soil conditions,
- pipe material,
- changes in water pressure,
- changes in rainfall and temperature,
- traffic impacts over the site and
- adjacent features, such as trees and poles.