

# Understanding water leaks

Every day the team at Watercare treats and distributes about 400 million litres of top-quality drinking water to the people of Auckland.

We have more than 9000 kilometres of water pipes delivering water to homes and businesses. If they were placed end-to-end, they would reach as far as Hong Kong.

There are more than 440,000 connections to our water network, and millions of separate joints too. With a network of this size and complexity, leaks are inevitable.

## What causes leaks?

There are many different causes of leaks, but the main ones include:

- Ground movement, especially in extreme weather conditions. When the ground dries out, it retracts from pipes and causes breakages. The summer of 2019/2020 was very dry and therefore there were more pipe breakages in Auckland than normal.
- Wear and tear causing cracks, particularly in older pipes.
- Vibration damage from heavy traffic.
- Damage caused by a third party, for example, during construction. In the past year, there were more than 1000 incidents of third-party damage to Auckland's water network.
- Seepage from very small leaks, which are often undetectable.



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## What are we doing about it?

We know there is room for improvement in our leakage levels, and we are committed to bringing our leakage rates down.

**Proactive leak detection:** As part of our network improvement programme, we use acoustic leak detection technology to find unreported leaks, and then repair them. An acoustic leak detection device locates leaks by characterising and differentiating leak sounds from those of normal water flow in our pipes.

**Pipe renewals:** We spend about \$22 million a year replacing water pipes and supporting infrastructure. Between 25 and 30 kilometres of Auckland's water pipes are replaced each year.

**Responding to leak reports:** When leaks are reported to us, they are given a priority level based on a number of factors including the volume of water being lost, health and safety risks and the potential for property damage.

When customers are without water, the leak is large, or there is a risk to people or property, the leak is treated as a priority one and we aim to have a crew investigating on site within an hour.

Our target for smaller leaks is to have them fixed within five days. Sometimes, due to the nature and location of the leak, repairs may take longer. With our dam levels still depleted because of the drought, we have put more staff and contractors in the field to enable us to repair leaks as quickly as possible.

There are also instances when leaks are reported, but upon investigation it is found to be stormwater or groundwater.

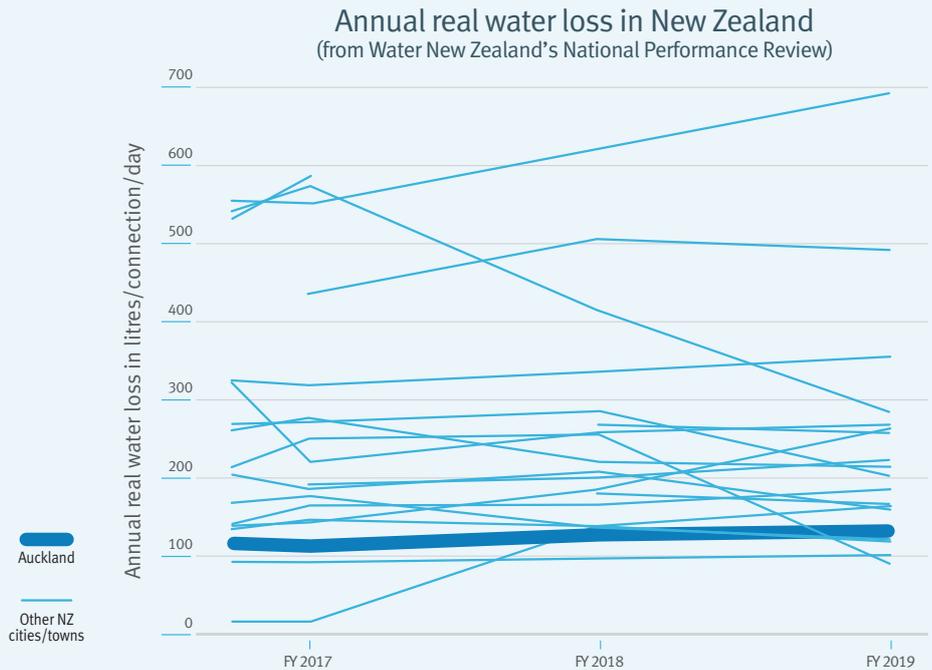


# Auckland's leakage levels

At Watercare, our real water loss is about 13.4 per cent of the water we supply. This might seem like an awful lot of water wasted, but water loss is a reality of all water networks around the world.

Water New Zealand's National Performance Review shows Auckland has one of the lowest levels of water loss. This graph shows our performance in terms of real water loss in litres per connection per day, compared to other New Zealand towns and cities.

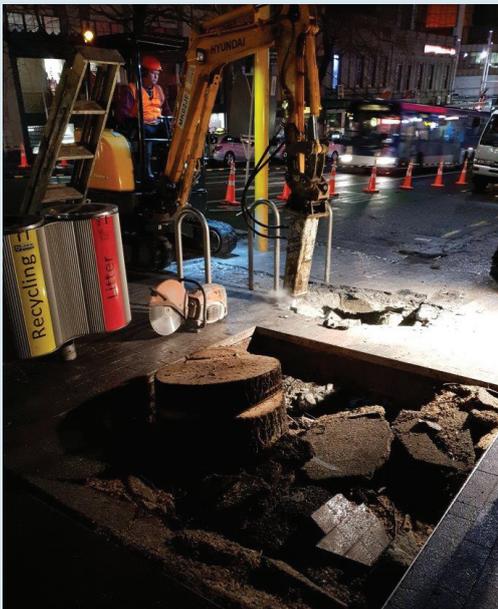
For the full graph, please visit [waternz.org.nz](http://waternz.org.nz).



## Case study:

# Queen St leak puts tree on a lean

In August 2018, we were alerted to a medium-size leak flowing near a traffic-light on the corner of Queen St and Wellesley St West. Investigation revealed the leaking water was creating a tomo (sinkhole) underground and causing a nearby tree to lean, putting pedestrians at risk.



Our crew had to quickly shut down the main to prevent the tomo expanding and the tree falling. The road was closed to pedestrians and motorists and 15 properties were without water. This included the Civic Theatre, which had planned to host 3000 people for a show that evening. We organised a supply for the theatre from a temporary overland pipe from a non-effected fire hydrant, but the theatre instead chose to cancel the show.

Auckland Council's arborist organised the immediate removal of the tree before work could begin on excavation at the site of the leak. A nearby traffic light base had also been compromised, and needed attention before the damaged pipe could be repaired.

When the water was turned back on again the next day, a further hairline crack emerged. However, given the leak was minor, our crew opted to monitor the leak without shutting off the water, to allow the Civic Theatre's scheduled shows to go ahead. When the final curtains were pulled, our crew returned to site to continue with repairs.

## Why does it take a long time to repair leaks?

Repairing leaks is often not as easy as you may think. Finding the location of a leak is often a challenge in itself, as water does not always come out of the ground at the exact spot where the pipe has cracked.

The repair can also be hindered by factors including the need for traffic management and other health and safety measures. If work needs to be carried out near a tree, we need to engage a tree specialist from Auckland Council.

[Watch this video to learn about how we respond to leaks.](#)

## What to do if you see a leak

Before we can fix a leak, we need to know about it. If you see water leaking from the public water network, please report it by:

- Reporting it online [here](#).
- Emailing [faults@water.co.nz](mailto:faults@water.co.nz)
- Calling 09 442 2222 and press 1.
- Free text 3130.