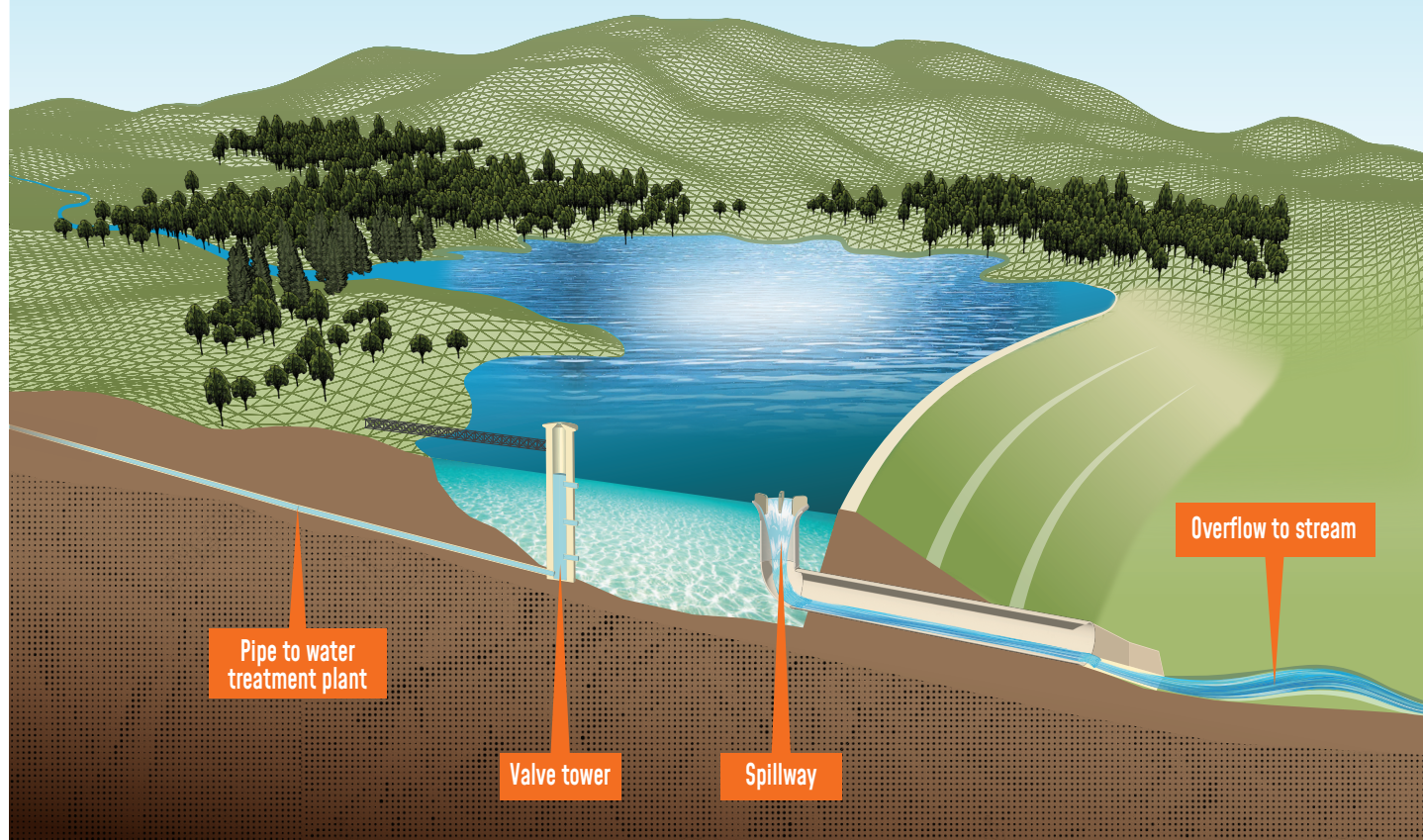


Watercare dams: what you need to know

Did you know that up to 80 per cent of Auckland's water supply can come from dams in the Hūnua and Waitākere ranges? To help protect the flora and fauna in and around the dams, Auckland Council and Waikato Regional Council require us to release small flows of water safely with a compensation flow, a periodic flush - or both.

At times, we release water from these dams for maintenance or operational safety purposes to allow our people to carry out critical works. Most planned releases are to ensure our critical infrastructure is functioning as it should be, in line with best practice guidelines for the safe operation and management of dams.



How do we safely release water from dams?

To safely release small volumes of water each dam is kitted out with a valve tower comprising of pipework and valves. We use this operational equipment to release small flows of water.

Whenever we plan to release water from a dam for maintenance or environmental compliance, we follow safety guidelines and conditions set out in the dam's resource consent. Among the various conditions are things like the maximum drawdown rate, and requirements for notifying the relevant council.

Why do we release water from our dams?

We are legally required to release a small flow of water from most of our dams to protect the downstream flora and fauna. This is called a 'compensation flow'. The volume of this flow is very low – designed to keep the stream habitat, by providing a base flow when dams are not spilling.

We are also required to carry out periodic flushing operations at most of our dams in summer using a 'free discharge' valve.

This again promotes the health of the downstream environment. Typically, we are required to run these flushing flows for about three hours, and the free discharge valve is only partially opened. The flow rate released during these operations is well below what would be considered a 'flood' flow.

We are authorised to release water from our dams for operational and maintenance purposes.

Why can't you strategically keep your dams low and prevent them spilling?

Auckland's water supply dams aren't designed for the rapid drawdown of their water levels and are not suitable for flood management purposes. If they did have the infrastructure to do this, we would lose a significant amount of the city's water storage capacity and reduce the water available during a drought, which would bring forward the need to invest in new water sources.

Do dams cause flooding?

There's a common misconception that Auckland's dams contribute to flooding – in fact, they do quite the opposite. When they do fill up and spill, the water flow rate over the spillway is slightly less than what would be flowing in the stream if the dam wasn't there. This is because the presence of the dam delays and suppresses peak flows in heavy rainfall.

We don't have any control over the rate at which water flows from our dams to the stream below when the dams are spilling, as this is driven by rainfall.

We do not have 'release gates' like hydro-electric dams.

When our dams fill up, any excess water flows into a fixed or passive spillway and into the downstream environment. Water can only enter through the bell mouth or spill over at certain points once a certain water level has reached.

Our dams are designed to do this to prevent structural and environmental damage.



Did you know?

The volume of water we release from the dams ranges from 5 to 280 litres a second for continuous environmental compensation flows. Flushing flows will be at a higher level for a shorter duration.

When we need to draw down lake levels for dam maintenance, we release water slowly over several weeks.

In line with dam safety guidelines, we test our free-discharge valves once a year by opening them fully for a short period.



Migrating fish and eels

We provide safe passage for juvenile eels and other young native fish who want to continue their journey upstream. We trap them in buckets downstream and release them into our dams.

NZ's native fish are in real need of protection as their numbers are dwindling. The transfer operation is very important and satisfying work at our dams.

Our on-site team visits the fish traps two to three times per week. Over a season, up to 10,000 fish can be transferred to the dams.

Each bucket-load of fish is photographed and the numbers are recorded and sent to the Ministry for Primary Industries and Auckland Council.

In autumn, our dam technicians focus on catching adult shortfin and longfin eels, using un-baited nets. They are released downstream, so they can find their way to the sea to breed.

Our people are also trained to identify physical changes in the eels that indicate they're ready to migrate.