

# Our Drinking Water Supply

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Rain falls in the Waitakere Ranges, the catchment area. It runs into streams and rivers which feed into the dams which collect it and store it for us.

Water is piped from Auckland's dams to the filter stations. The first stage of the treatment process is adding alum (aluminium sulphate) to the water. Any dirt in the water clings to the particles of alum.

The water is then piped to settling tanks. Here the alum and dirt form a layer called floc. The floc, also known as sludge, is drained off, thickened and squeezed through the filter press. It is then recycled as landfill.

The clean water is piped to the sand filters. The sand traps small bits of dirt as the water passes through it. When the sand gets too dirty, it is cleaned using air jets and clean water.

After the water has been filtered, it is treated with chlorine. This kills any of the remaining bacteria. Fluoride is added (except in Onehunga) to protect our teeth. Finally tiny amounts of lime are added. This helps prevent the water pipes from corroding.

Next the water is piped to the reservoirs (large holding tanks). Watercare has 51 reservoirs, including the holding reservoirs at the filter stations.

Watercare's large pipes transport the clean drinking water to EcoWater's smaller ones. We bring it to all the homes and businesses in Waitakere City.



## **Discussion:**

Rain falls in the ranges and the water on the ground runs into streams which feed the dams.

Climate change makes rainfall unpredictable – **why might this be a problem?**

Dams are very expensive to build and require part of our environment and habitats to be destroyed – **who pays for them?**

Water from dams is not safe to drink- it must be treated - **why might it not be safe?**

It takes a lot of energy to get the water to our homes - **what parts of the process would need energy to make them work and why?**

The whole system must be maintained at big expense

We can use water more wisely in our homes – **how?**

We can use water more wisely in our outdoor activities – **how?**

Water is a resource that must be shared with others – **in what ways do we share it?**

Water and energy are connected – water supply needs energy to make it work – **who pays for this?**

Water needs to be under pressure to come out of our pipes

Water needs to be under pressure for the Fire Service to fight fires

We can collect rainwater for FREE for non-drinking purposes

Once we have used the drinking water in our homes, it (wastewater) must be taken away and cleaned – **what would happen if we didn't clean it up?**

Our cleaned up wastewater is then released back into the environment.