

Wondering about wastewater?

Each time you flush the toilet, pull the plug from a sink or have a shower, the water drains into a wastewater pipe on your property. These connect to the public wastewater network, which carries your household wastewater to be treated at a wastewater treatment plant.

Wastewater can include household and business chemicals, paint and medicines. These can be harmful to our health, our harbours and waterways, so effective treatment is very important.

How do we treat your wastewater?

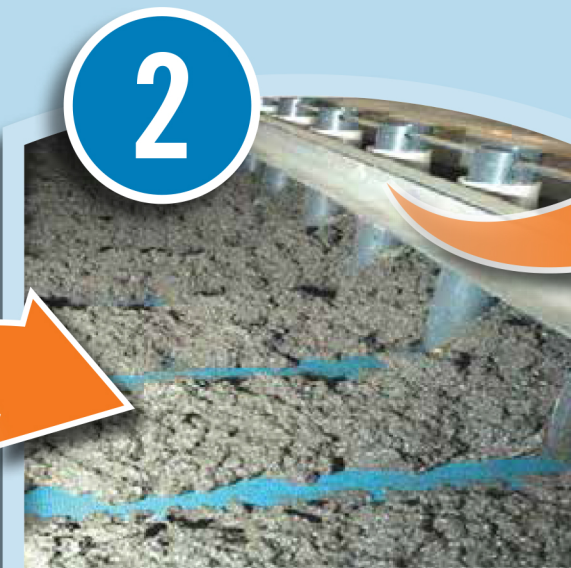
Each day, we collect about 400 million litres of wastewater. Over 90 per cent of it goes to our wastewater treatment plants at Māngere and Rosedale. You can see how we treat wastewater at these plants below.

The rest is treated at smaller treatment plants.



Screening

Before treatment, raw wastewater goes through screens to filter out any solids such as rags, debris and other objects. Rotating drum screens feed this material on to a conveyor and deposit it in a large bin. Trucks then take it out to landfill.



Separating solids from liquid

The wastewater goes into sedimentation tanks where sand and grit are removed, and any solids (sludge) sink to the bottom.

The sludge is then thickened and pumped to anaerobic digesters, where it is stabilised. We remove the remaining water to make biosolids – ready for disposal or reuse (see the sidebar to the right for more information about how we are reusing biosolids). The liquid then moves to the next treatment stage.



Removing nutrients

This natural, chemical-free process uses ‘activated sludge’, which contains an army of micro-organisms. They eat the carbon in the liquid wastewater, and reduce the amount of phosphorus and nitrogen. These nutrients can pollute waterways and be toxic to fish.



Settling, filtering and disinfecting

The micro-organisms are removed as the wastewater passes through clarifiers and filter blocks containing anthracite, a very hard form of coal.

The liquid is then disinfected under powerful ultraviolet lamps. This results in a 10,000-fold reduction of harmful pathogens, bacteria and viruses. There are no chemical by-products, and it is safe for the environment.

Finally, the treated wastewater is safely discharged into the Manukau Harbour and Hauraki Gulf.

Our plants are always operating, treating wastewater so that it is safe to release back into the environment, even during extreme weather and power outages.



Rehabilitating Puketutu Island with biosolids

Biosolids are a product of the nutrient-rich, organic sludge produced when we treat wastewater. At our Māngere Wastewater Treatment Plant, we produce about 330 tonnes of treated biosolids a day. Instead of sending this to landfill, we truck it to neighbouring Puketutu Island.

Known as Te Motu a Hiaroa to Mana Whenua, the island is sacred to the people of Te Kawerau ā Maki, Te Waiohū and Waikato-Tainui. It was the first permanent home of the crew of the Tainui waka in Aotearoa.

In the 1950s, the island was quarried for projects including the expansion of the nearby Auckland Airport. Thousands of tonnes of scoria and basalt rock were removed and the island’s volcanic cones disappeared.

Many years ago we bought a long-term lease on the island and then transferred its ownership to a trust with 12 iwi trustees. We are now rehabilitating the island by filling the former quarry with biosolids from the Māngere Wastewater Treatment Plant.

At the end of the project – not until 2049 – four small hills will be created to replicate the scoria cones that were quarried in the 1950s. The long-term goal is to create a recreational reserve on the island for everyone in the Auckland region to enjoy.

DID YOU KNOW?

Our wastewater network includes:

18 wastewater treatment plants

518 wastewater pump stations

7,999km of wastewater pipes

167,264 wastewater manholes