Your water in Porirua

Across Porirua, there are three networks of pipes, pumps and valves transporting three waters:

Drinking water

The drinking water network stores and delivers safe drinking water to every household, business and facility in the community

Stormwater

The stormwater network carries rainwater from the roads, footpaths, roofs and gutters and diverts it into our streams, rivers and eventually out to sea

Wastewater

The wastewater network carries wastewater from the bathrooms, kitchens and laundries of every home, business, and public facility to a wastewater treatment plant where it is treated before being discharged to sea

These information panels focus on your wastewater system and what we are doing to upgrade and improve it.

For more information go to **wellingtonwater.co.nz/PWP**

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The wastewater network

MAJOR PUMPING STATIONS

There are 54 pumping stations helping transport wastewater through 573 km of pipes. The major pumping stations, shown on the map, are:

- 1 Duck Creek
- 6A Station Road
- 6B Paremata Cres
- 7 Bridge
- 20 City Centre
- 33 Takapuwāhia
- 34 Tangere Drive
- 35 Rukutane

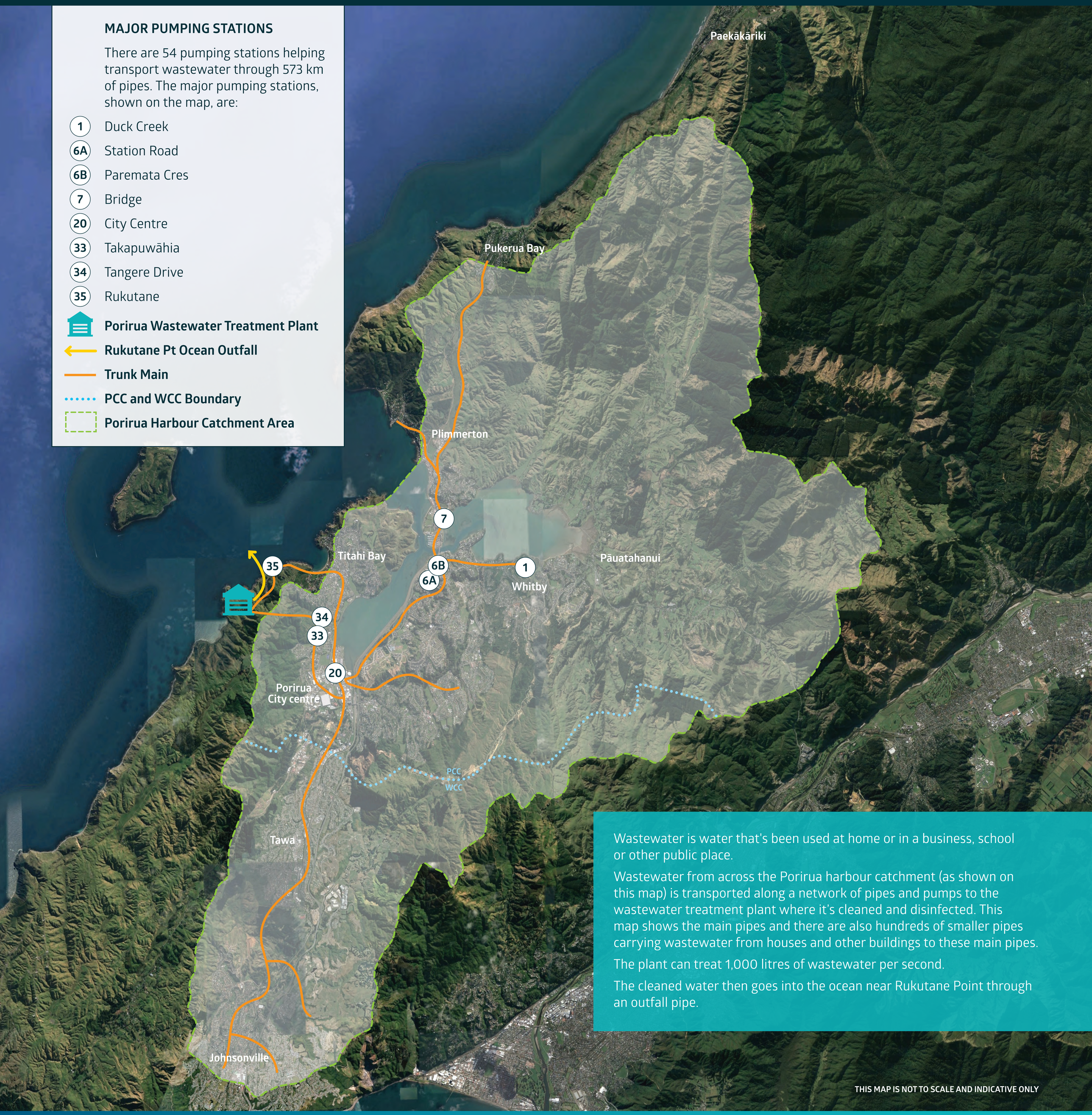
Porirua Wastewater Treatment Plant

Rukutane Pt Ocean Outfall

Trunk Main

PCC and WCC Boundary

Porirua Harbour Catchment Area



Wastewater is water that's been used at home or in a business, school or other public place.

Wastewater from across the Porirua harbour catchment (as shown on this map) is transported along a network of pipes and pumps to the wastewater treatment plant where it’s cleaned and disinfected. This map shows the main pipes and there are also hundreds of smaller pipes carrying wastewater from houses and other buildings to these main pipes.

The plant can treat 1,000 litres of wastewater per second.

The cleaned water then goes into the ocean near Rukutane Point through an outfall pipe.

THIS MAP IS NOT TO SCALE AND INDICATIVE ONLY

For more information go to **wellingtonwater.co.nz/PWP**

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Your wastewater's journey

Private network

The wastewater network starts on your property with your plumbing. The wastewater flows into a gully trap (a basin in the ground) and then into a lateral pipe from your place to the main council pipe. You are responsible for maintaining the gully trap and pipes on your property.

When it rains a lot

Rain can get into the wastewater network through faulty plumbing or gully traps or holes in manhole covers (known as inflow).

Groundwater can seep in through cracks or bad joints in pipes or manholes (known as infiltration).

When it rains heavily, there can be more water than the pipe network can carry and untreated wastewater will overflow into streams, the harbour or the sea. That's why you shouldn't swim after heavy rain.

When things go wrong

Overflows can happen in dry weather when there is a blockage in the network.

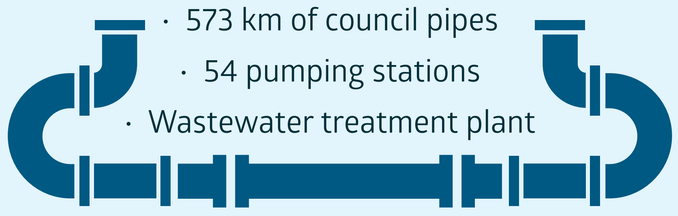
Leaks are from a hole or break in a pipe.

Wellington Water makes it a priority to fix these types of problems because of the health risk from untreated wastewater.

Public (council-owned) network

Starts outside your property and and is funded by ratepayers. The public network is maintained by Wellington Water.

- 573 km of council pipes
- 54 pumping stations
- Wastewater treatment plant



Porirua Wastewater Treatment Plant

- Near Rukutane Point
- Treats 1,000 litres of wastewater per second (about 1750 pints of beer!)
- 25 million litres per day (about 10 Olympic pools)

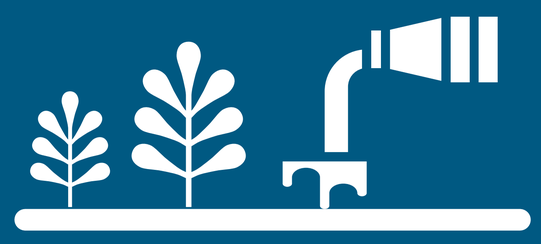
When the plant can't keep up

Sometimes when it rains heavily, more water is transported to the plant than it can handle (more than 1,000 litres a second). If this happens, some partially treated wastewater is discharged to sea at Rukutane Point. Plans to increase the capacity of the plant by 2023 will stop this happening.

Looking after your wastewater

Our wastewater system is only designed for poo, pee and toilet paper.

Don't flush wet wipes or menstrual products – put them in the rubbish bin or a sanitary bin.



Never pour cooking fats and oils down the kitchen sink – put them in your rubbish bin or garden.

Avoid using a food disposal unit – compost where you can.

Choose environmentally friendly washing machine detergents.

For more information go to **wellingtonwater.co.nz/PWP**

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About the treatment plant

The Porirua wastewater treatment plant treats wastewater from Porirua and northern Wellington. Here's how it works.

1. Wastewater enters via tunnel

2. Screening

As it enters the treatment plant, wastewater passes through millscreens that catch large solids like wet-wipes, menstrual products, plastic bags etc. Excess water is squeezed out of this material and it's taken to a landfill. Fluid that passes through the milliscreens flows into an aeration basin.

3. Aeration

Air is blown into the aeration basin to feed bacteria and keep everything mixed. This process allows environmentally friendly bacteria to feed on the nutrients in the wastewater, such as fats, sugar, and ammonia from body waste.

4. Clarifiers

In the clarifiers, clusters of bacteria fall to the bottom as 'sludge' and the liquid flows over the outside walls of the clarifier, separating it from the solids, so it can then be treated.

4A. Settled sludge

From the clarifier, most of the settled sludge is pumped back to the aeration basin. This is because the aeration basin needs a certain bacteria population to maintain the aeration process. The exact amount is calculated and adjusted every day.

4B. Waste sludge thickened

The sludge that does not go back to the aeration basin is pumped to a thickener.

4C. Waste sludge dewatered

The sludge slurry is then pumped to a centrifuge and 'spun' at a high speed removing most of the liquid, which is sent back to the aeration basin.The de-watered sludge drops into large containers.

Waste sludge taken to Spicer landfill for disposal

5. UV Disinfection

Ultraviolet (UV) light disinfects the liquid by destroying the remaining bacteria and viruses down to safe levels.

Treated wastewater discharged from coastal outfall at Rukutane Point

For more information go to **wellingtonwater.co.nz/PWP**

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Improving the treatment plant

What we've done so far

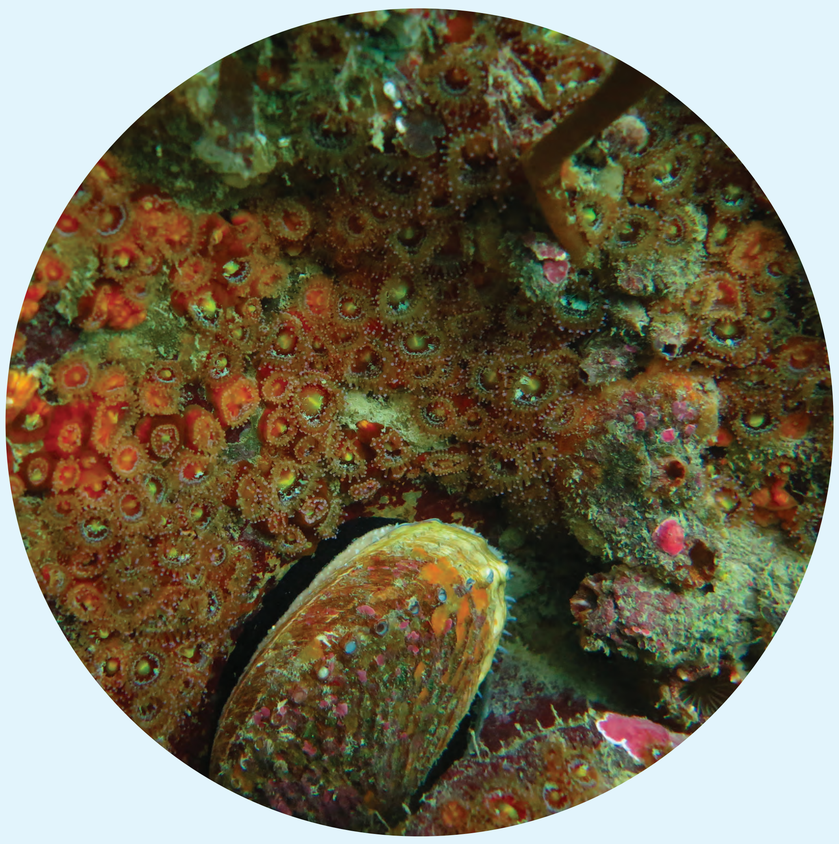
Cleaner discharge

Over the past seven years we have carried out ongoing upgrades that have improved the cleanliness of treated wastewater being discharged to sea. This has been good for our coastal ecology – algae, kelp beds, fish and invertebrates such as paua, kina and crayfish.

Surveys by the Cawthron Institute, New Zealand's largest science organisation, suggest that the current treatment plant operation is not having a marked effect on the local ecology. In fact, there are more pāua around the existing outfall as people don't harvest there.

More capacity

We've increased the capacity of the treatment plant, so it can handle peak flows of 1,000 litres per second. However, in heavy rain the amount of wastewater delivered by the network can reach up to 1,300 litres per second, and so some partially treated wastewater is discharged off Rukutane Point. This happened about 12 times last year. But on a yearly basis, 99.5 % of wastewater is fully treated.



Photos of marine life around 50m from the existing outfall at Rukutane Point. *Photo: Roberta D'Archino, NIWA.*

What's next

New disinfection equipment

Over this summer, we will install new ultra-violet (UV) disinfection equipment. UV disinfection is the final stage of wastewater treatment, to destroy bacteria and viruses. This will increase the volume of wastewater that can be disinfected.

Further increase capacity

By 2023 we will further increase the peak capacity of the plant to 1,500 litres per second. This will mean that the plant will be able to treat all the wastewater the network can deliver to it, even after heavy rain. It will also be able to handle a growing population.

Getting consent to operate

Under New Zealand law (the Resource Management Act), special permission is required to discharge treated wastewater. This permission takes the form of a resource consent, issued by a regional council.

The current consent for the Porirua wastewater treatment plant (WWTP) is expiring and needs to be replaced.

Porirua City Council (PCC) is applying to Greater Wellington Regional Council for a new consent (a coastal permit) for the next 20 years. The application proposes regular monitoring and measurement of the impact of the plant, including a new ecological survey and a full review of operations after 10 years.

For more information go to **wellingtonwater.co.nz/PWP**

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Improving the network

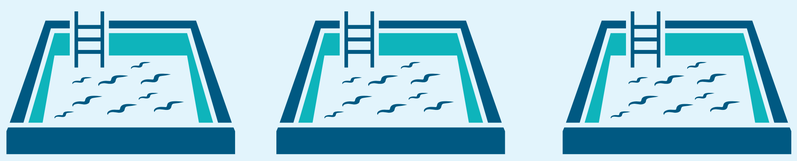
For a healthier harbour and coastal waters, we need to reduce the amount of untreated wastewater overflowing from the network.

Overflows happen when wet weather increases the amount of water flowing through the network beyond the amount the pipes can carry.

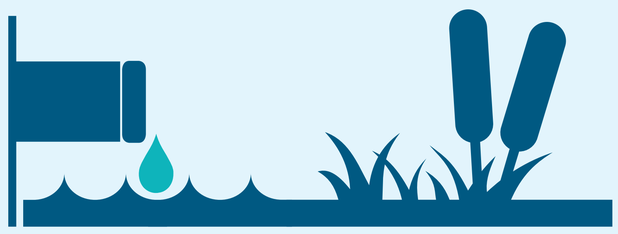
To reduce overflows, we're building a new storage tank so we can better manage peak flows in wet weather.

The proposed tank will:

Capture and hold wastewater at times of peak flow, then gradually release it at levels the network can carry to the treatment plant



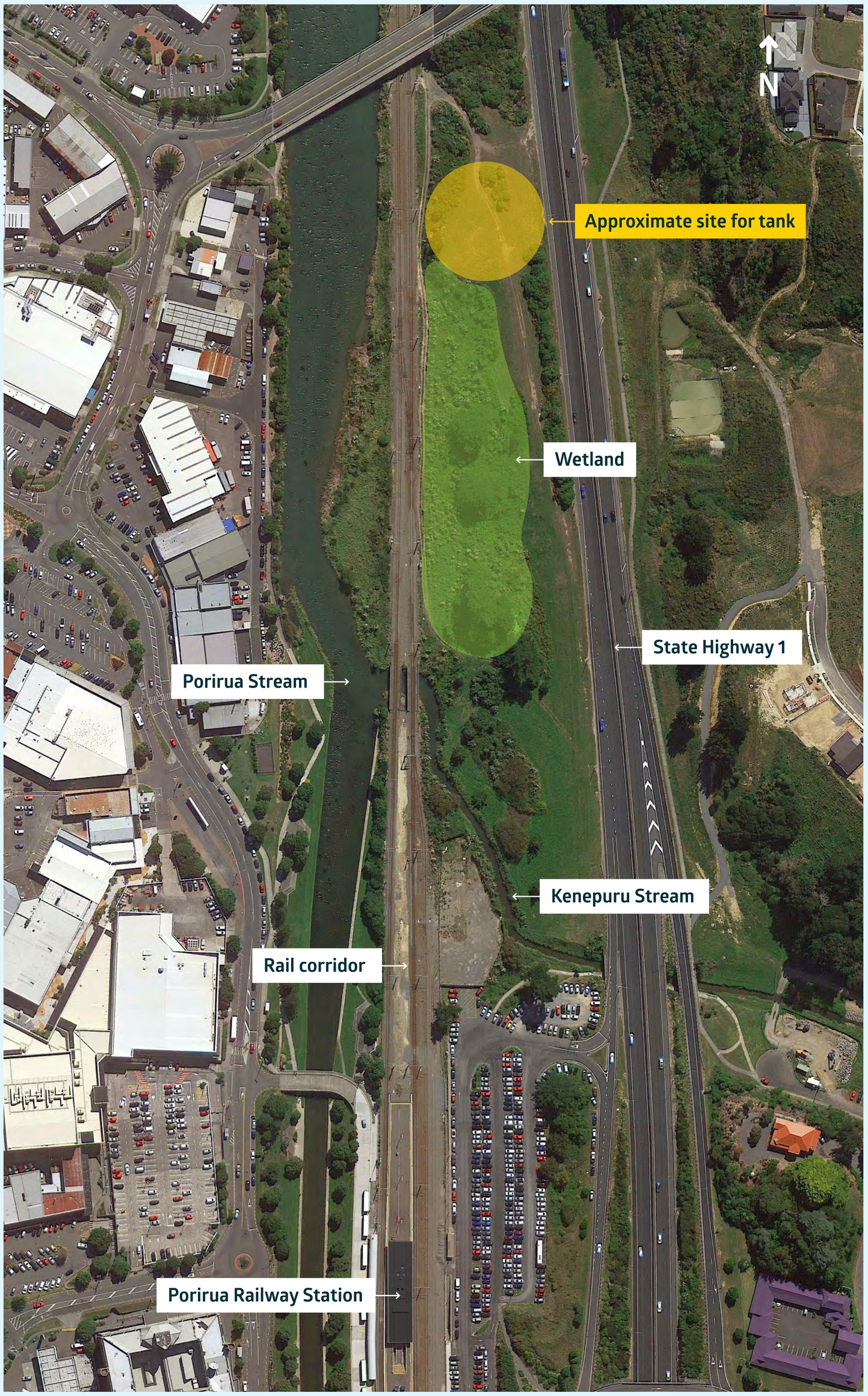
Store up to 7 million litres of wastewater, almost equivalent to three Olympic swimming pools



Reduce overflows into Porirua Stream from about 10 a year, to about two

While the Porirua Central storage tank will not stop all overflows from the wastewater network, it is an important part of the solution.

Wellington Water plans to apply for resource consents for the storage tank in 2021.



We have identified a preferred site for the storage tank to the north of the Porirua Railway Station carpark.

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