

Residential water tariffs in New Zealand

New Zealand has abundant freshwater by world standards thanks to plentiful rainfall and a low population density. Annual rain and snowfall produces approximately 500,000 million m³ of water. Just 2% of that is extracted, but managing water is an expensive process.



IN WATER NEW ZEALAND'S 2016/17 National Performance Review, participating local authorities reported spending NZ\$2 billion on drinking water, wastewater and stormwater disposal services.

For 87% of the New Zealand population, these three water services are provided by the local city or district council or unitary authority. Most councils provide services directly, except Auckland and Wellington where council-controlled organisations deliver water services – Watercare in Auckland and Wellington Water in the Wellington area. (Auckland Council has retained stormwater management responsibilities itself.)

Some rural consumers rely on roof-collected rainwater and on-site wastewater treatment systems.

Tariff structures

A large proportion of New Zealand residential properties do not have water meters (Figure 1), and the predominant form of charging is by a targeted fixed rate. For metered properties, a combination of fixed and volumetric charges is common.

Fixed charges

Fixed charges most commonly take the form of a uniform annual general charge (UAGC), which is applied to every rating unit. Some fixed charges are based on capital value or land value. Fixed charges are often incorporated into council rates. There is no incentive for water conservation with this type of charging.

Uniform volumetric charges

With a uniform volumetric charge, water usage is metered, with a set charge per volume of water (such as \$1.30 per m³/1,000 litres). Consumers can reduce bills by keeping consumption low. For water providers, it is simple to administer but has a high initial cost for meter installation.

Increasing block tariffs

With an increasing block tariff, cost is based on blocks of water use. As the volume of water consumed steps up above a particular threshold, so does the cost (Figure 2). This encourages water conservation. The first block threshold is set relatively low to make a basic volume of water affordable for low-income households. Research suggests that

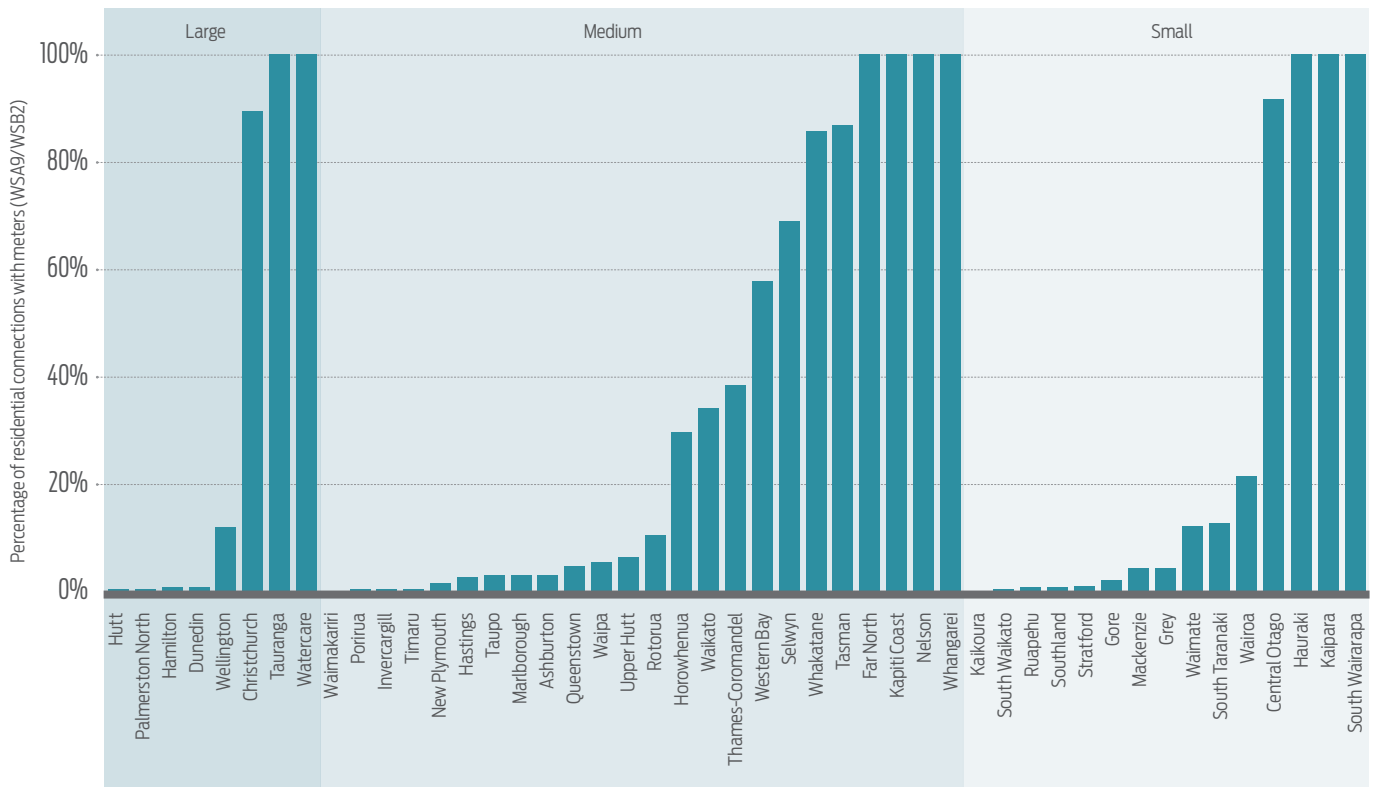


Figure 1. Residential water metering cover. © Water New Zealand.

an increasing block tariff structure typically produces the lowest bills for low and average water users. For water providers, the tariff design is more complex.

Decreasing block tariffs

Decreasing block tariffs work in the opposite way to increasing block tariffs – the cost of water starts high and goes down in steps with increasing consumption. This type of tariff structure promotes higher levels of water consumption. Research suggests that decreasing block tariffs is the tariff structure that typically produces the highest bills for low and average water users.

Residential water tariffs in 2017/18

All councils were asked to provide information on tariffs they currently use. Data was gathered on the tariffs charged by 67 providers in 2017/18.

For water supply to non-metered properties, 85% of providers used a single fixed targeted rate per separately used or inhabited part of a rating unit (SUIP).

Hamilton, Queenstown-Lakes and Wellington Councils implemented fixed rates plus variable charges. Hamilton's variable charge was based on land value, while Queenstown-Lakes' and Wellington's was based on capital value. Christchurch City

Council charged residential properties solely based on their capital value.

There are often two uniform charges for drinking water – one for rating units connected to the network, the other for units not connected but available for connection (serviceable units). The charge for serviceable units is often half the cost of the connected charge.

Metering

Of all water service providers, only nine (19%) report universal water metering of

residential connections (Figure 1). A further six (13%) have over 50% meter coverage and 32 (68%) less than 50% (or zero) coverage. Residential metering is slowly expanding – during 2016/17, 12,000 residential water meters were added.

For those with a meter installed, a combination of a fixed and volumetric charge was most common. Auckland's Watercare was one of just seven providers to use solely volumetric charging.

Other councils have some residential meters but do not always charge on a

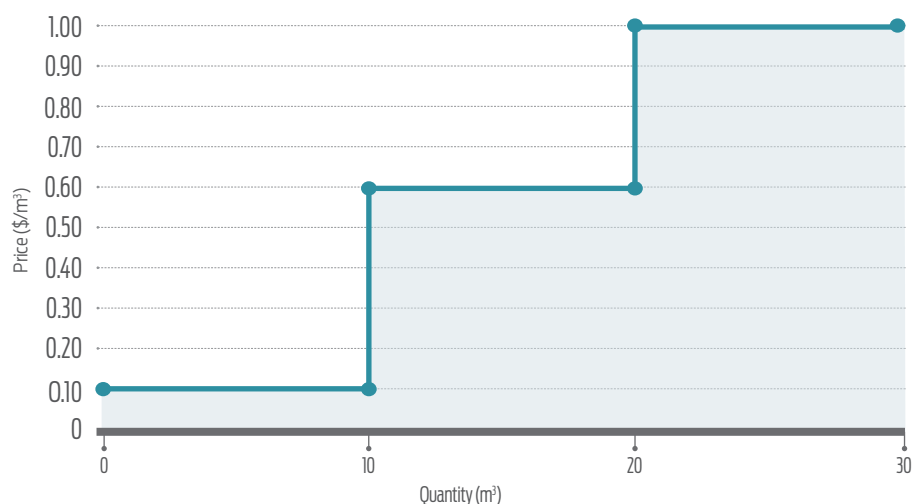


Figure 2. A simplified example of an increasing block tariff system.

volumetric basis. For example, Manawātū District Council only charges extraordinary users or those who have voluntarily opted in for this. Residential properties with a water meter in Christchurch pay for water use over their water allowance.

Horowhenua, New Plymouth, Ruapehu and Masterton Districts are among providers who apply an increasing block tariff for volumetric charges. Hauraki and Nelson used a decreasing block tariff structure in 2017/18.

Ōtorohanga District Council implements a higher peak season metered water charge for the Kāwhia community from 20 December to 20 February.

Extraordinary use charges

Commonly, water in metered properties is charged at a fixed rate up to a defined volume. Once exceeded, each subsequent unit of water may incur a volumetric charge, referred to as an extraordinary water use charge.

There is almost an even split of providers that do and do not apply an extraordinary water use charge to their metered residential customers. It is not always clear how extraordinary use in non-metered areas is determined.

Extraordinary water use charges varied from \$0.44/m³ for every cubic metre over 375 m³ (Selwyn) to \$2.66/m³ for urban users considered to be extra-high users (South Taranaki). The threshold where extraordinary water use charges apply varies from 75 m³ (where \$1.93/m³ was subsequently charged – Ruapehu) to 50,000 m³ (where a \$1.13/m³ charge applied – New Plymouth). The average annual threshold in which extraordinary use charges applied across the 34 councils that implemented this charging was 300 m³, and the average cost was \$1.44/m³.

Some councils only install water meters to those properties considered extraordinary users.

Residential wastewater tariffs

The vast majority of wastewater service providers (44) set a fixed charge for wastewater. The second most common charging method (15 providers) is technically based on the number of toilets in a building, but residential properties are commonly assessed on the basis of having a single toilet. Thus, in practice, residential properties generally only pay the base rate.

A few councils operate variable charges for wastewater:

- Christchurch charges a rate based on a property's capital value.
- Hamilton uses a combination of a fixed charge and a variable charge based on land value.
- Auckland applies a fixed charge and a volumetric charge based on 78.5% of the incoming water. (Auckland is unique in New Zealand in both universally metering water supply and charging residential properties volumetrically for wastewater.)
- Manawātū charges those considered extraordinary users or who have opted to be charged volumetrically an amount based on a meter reading of 80% of the water consumed. Should discharge exceed a threshold (304 m³ for 2017/18), an additional charge is applied.

Residential stormwater tariffs

Residential stormwater tariffs are highly variable. The most common charging mechanism is a fixed charge per separately used or inhabited part of a rating unit (16 providers) followed by incorporation in the general rate (15 providers) and a variable charge based on capital value (10 providers).

Some authorities such as Dunedin and Gore combine stormwater in their wastewater charge.

International comparisons

On a world scale, New Zealand has a lot of freshwater, ranking fourth among Organisation for Economic Co-operation and Development (OECD) members for freshwater availability per capita.

New Zealand's water service charging is very different to that in many OECD countries, partly because universal metering of residential properties is limited here. While the most common way of charging for water in New Zealand is through a targeted fixed rate, none of the 184 OECD utilities examined in one survey charged this way. (Some countries that did not appear in the survey do use a flat fee, however.) A uniform volumetric charge, often combined with a fixed charge, is the most common model in OECD countries.

International studies of average water and wastewater bills as a share of average net disposable income show New Zealand charges are comparatively high. An OECD assessment ranked New Zealand the sixth-highest of 27 countries and 50% higher than Australia.

The OECD also assessed the water costs as a share of income for households in the lowest deciles. New Zealand ranked 23rd of 29 countries, with 3.3% of income spent on water services. This was 1 percentage point higher than figures for Australia and the United Kingdom and 2 percentage points higher than Canada.

More information

Garnett, A. & Sirikhanchai, S. (2018). *Residential water tariffs in New Zealand*. BRANZ Study Report SR413. Judgeford, New Zealand: BRANZ Ltd.

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