Dannevirke water

Introduction

It is all too easy to take water for granted. After all, getting clean, reliable drinking water is as easy as turning on a tap, that is, until things go wrong. It is often only when failures occur that we are reminded of how much we take for granted our access to safe drinking water. The water challenges in Tararua's towns have been a catalyst to review and discuss our urban water supply networks as a whole. The information on this page focusses on the Dannevirke water supply system. Overviews of our other towns will be presented later.

Over recent years there has been significant investment to parts of the water supply network, this includes the recently completed water treatment plant upgrade. However, other parts of our water infrastructure are aging and underperforming. A lot of our aging infrastructure is literally buried underground, out of sight and, as was often the case previously, out of mind

Replacement is on the horizon. As we are experiencing now, the costs of doing nothing will likely end up being higher in the long run.

With this article Council would like to give an overview of where we stand at the moment, what we have been doing and what we intend to do to enable current and future people of Dannevirke to enjoy improved quality and reliability of water.

What is changing ?

What can we do to anticipate the changes to our water future and be ready to adapt?

Many of the changes – like droughts, floods and other climate events – can be rapid and disruptive. As our population grows, the demand for tap water is rising and Central Government is increasing water policies and regulations that Councils must follow. This includes the obvious 3-Waters Reform programme, which presents many unknowns in terms of how water supplies will be managed from July 2024. Regulatory changes that Council needs to adapt to include the new New Zealand Drinking Water Standards, and implementation of Taumata Arowai as the country's water regulator. This is predicted to increase the amount of monitoring and reporting needed to meet increased public health expectations.

And what happens when the system becomes so patched and aged that you can no longer stay ahead of the failures?

To prevent this, our water infrastructure will require substantial improvements in the years ahead. This is not unique to the Tararua District. Many Councils across the country have spent the last four decades under-investing in infrastructure, especially water, wastewater and stormwater. This has contributed to Central Government's review of the entire sector

Then there's the changes within Council. A fundamental understanding of the key infrastructure assets is required, including what we have, and it's condition, capacity, performance and expected life.

We also need to better understand where the water is being used, with more than 50% of the district's treated water currently unaccounted for. Unfortunately, the information we've gathered over the last year indicates that our assets are in a poorer condition and/or are performing worse than previously assumed. Answering these questions will help to better understand what, how, when and where to maintain, repair, replace and improve the components of our water infrastructure. This increased understanding will support improvements in long term investment planning, whether the plans are implemented by the Tararua District Council or by a different entity.

What is Council doing?

Various water projects and initiatives are underway and recently completed, specifically for Dannevirke and at district level:

- The water treatment plants have recently been upgraded. Improvements will enhance drinking water quality required to meet the New Zealand Drinking Water Standards.
- Bulk flow meters are being installed on the main line into the treated water reservoir and the key line coming out of it. This will provide a greater understanding of where water is being used, and where there may be unmetered extraordinary connections. Further investigation of unaccounted water is also being completed.

(Continued)

- Field testing of potential underground water sources has recently been completed and we are currently awaiting the reports. This will support decisions to be made around potential alternative and/or supplementary water sources.
- Condition assessments have been completed on water pipes across the district and we are currently awaiting the results. This will provide a better understanding of our vast water pipe networks, and an estimation of when replacement is needed.
- Models are being developed for water, wastewater and stormwater networks across Tararua's four towns. These hydraulic models are needed to understand the capacity and performance of our networks, and the improvements required to enable the growth of our towns.
- Investigation into the impounded supply leakage continues. Initial investigations and repairs were completed which reduced the amount of water loss. We believe a leak still remains (or leaks). The majority of this water loss is being recaptured and pumped back into the reservoir as a temporary measure.
- Council is reviewing the Water Supply Bylaw. The Bylaw sets out where water can be supplied from and who may use the water (and for what purpose). It also outlines how to connect to the water supply system and the consequences if people break the rules.
- Fees & Charges for water have been reviewed as part of the 2022-23 Annual Plan process. Charges for the extraordinary supply of water will increase as the costs to provide water do, and Council moves towards a 'user pays' model.
- We are working with the Department of Internal Affairs National Transition Unit for 3-Waters Reform, seeking the funding required to further develop the understanding of our water systems, and develop robust long term investment plans to sufficiently operate, maintain, repair, renew, improve, and decommission the key infrastructure assets in a way that meets long term community expectations and stakeholder requirements.



Water is sourced from the Tamaki River Resource consent runs until 2026 Under the consent. Council can take more than Dannevirke uses in high river flows. In low flows, Council can't take what Dannevirke uses and stored water in the resevoir is used to supplement the town. reated water reservoir A 4,550,000 litre concrete tank recorded as being installed in 1970. Holds about 18 hours of water during normal consumption. Estimated replacement cost is approx. \$5M.



Primary Treated Water Main 1.6 km long pipe, recorded as being installed in 1970. Replacement is likely needed before 2025, at an estimated cost of approx. \$5M. One of two key mains supplying town. Also supplies 12 recorded extraordinary users.



Kia ora koutou

How do we make sure we can supply enough water now and in the future? This is an mportant question that has no easy answer.

We are facing challenges around the age and condition of our infrastructure and some legacy issues around under-resourcing and under investment. This has become particularly evident in our town's water infrastructure, where ongoing disruptions have caused increasing frustration, and rightfully so.

Even without the pressure of increasing population growth and weather events, parts of our current water infrastructure assets will need maintenance, renewal and replacement. We also need to make sure that we meet the reforms which Central Government is adding to our plate when it is already full.

There is no quick and easy fix to this. Repairs and replacements will require a careful balance between affordability, community expectations, health and safety and technical feasibility, .

It's about taking one step at a time and finding the most efficient path forward to improve. We will need to make some tough decisions together and always remember that we stay strong if we are united - he waka eke noa!

Ngā mihi nui, Mayor - Tracey Collis



Aerodrome mair

4.5 km long pipe recorded as being installed in 1973. Replacement is likely needed before 2030, estimated cost approx. \$3M. Currently supplies 26 recorded extraordinary users.

Dannevirke's water supply system

Treated water trunk main

2.4 kilometer steel pipe recorded as being

installed in 1970.

Mostly underground, and more than 15

meters deep in some places.

Replacement is likely needed before 2030,

at estimated cost

of approx. \$15M

The infiltration gallery

A series of pipes under the riverbed which captures water. Riverbed gravels filter the water, but cannot sufficiently reduce turbidity levels during high flows.

Limited recorded information available about the infiltration gallery, but we know it is aging and doesn't perform

Tamaki River

Processes 50-80 litres of treated water per second, over 1 billion litres per year. Currently no fluoride added to the water, this might have to change under new regulations Recently upgraded with funding from the Department of Internal Affairs 3-Waters Stimulus Fund.

Water Treatment Plant

Recent upgrade has increased drinking

water quality.

The impounded supply

Constructed in 2013. About 14.6 metres deep when full and holds about 160,000,000 litres of raw (untreated) water (the equivalent of approx. 30 days of storage)

Developed to increase the water supply's resilience to natural disasters and water take limits under the resource consent.

Staff have been managing leaks in the npounded supply, & continue to do so.

> Cover which protects the impounded

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Secondary Treated Water Main 2.4 km long pipe, with an unknown installation date and age. Replacement is likely needed before 2025. at an estimated cost of

approx. \$12M. Supplies 7 recorded extraordinary users

Raw Water Trunk Main

<mark>4km long p</mark>ipe made up of asbestos cement, PVC, concrete & steel, ranging from 28 to 84 years old. Replacement is estimated at approx. \$20M, with much of this needed before 2030. Several connections on this line supply adjacent properties, using around 6-10 ltrs per second

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Riverdale main

2.5 km long pipe recorded as being installed in 1988. Replacement is likely needed before 2040, at a rough estimated cost of \$5M. Currently supplies 31 recorded extraordinary users.

Miller Street main

4.8 kilometre long pipe recorded as being installed in 1975. Replacement is likely needed before 2035, at a rough estimated cost of \$8M. Currently supplies 70 recorded extraordinary users.

Urban reticulation network This pipe network supplies drinking water

to homes and businesses The network is made up with pipes of various age, diameter and material

Much of the network is approaching the end of its useful life. Significant investment is required in the near future to replace it

> Extraordinary users: properties connected to the water supply network that are outside the urban supply boundaries

Turbidity: a measure of the cloudiness or clarity of water generally due to silt and other fine material in the water

Impounded water supply: the water reservoir or stored water supply