Te Kaitiaki Wai

Wellington Water's official magazine | Winter 2019

Keep the good things flowing

Meet Louie and Tapitha

Encouraging household resilience

Have you stepped up to be a water hero?

Ki uta ki tai – from mountains to the sea

How healthy are our waterways?

Wellington Water

Our water, our future.

Tuna (eel) swimming through the wai awa (river).

contents

your choices impact our waterways

We've had a pretty mild Autumn, but with Winter starting to set in we're expecting to see (and feel) lower temperatures and more rain.

He wai, he wai
He wai herenga tāngata
He wai herenga whenua
He waiora
He wairua
Tis water, tis water
Water that joins us
Water that necessitates the land
Soul of life
Life forever

Our stormwater network is designed to take the water that runs from our roofs, driveways, and roads and carry it into water ways. Most of the time our stormwater network does this without any problems, but when there's a lot of rain, or a large volume falls in a short amount of time, the network can get overwhelmed.

This is likely to happen more often, rather than less. Ministry for the Environment climate projections show that by the end of this century we are likely to experience: higher temperatures, rising sea levels, more frequent extreme weather events (droughts and floods), and more frequent intense winter rainfalls.

We're currently modelling our network to better understand this picture. This will help us provide advice to our client councils about key infrastructure renewals and improvements we can make that will have the most impact on risk to our homes and communities. You can read more about some of the big projects we are currently working on around the region on pages 19-21.

To help manage the risk to property in the short term, we're using predictive weather technology to monitor rainfall and help us deploy work crews (in advance of the rain) to go out into communities to check and clear known problem areas. You can read more about how we've been using NowCast on pages 15/16.

It's not just quantity that's a challenge when it comes to stormwater. It's quality too. Because stormwater that falls on hard surfaces takes contaminants with it as it makes its way to streams, rivers and the sea, it has a big impact on receiving environment. We do our best to raise awareness about this challenge, and our 'Where does it go?' campaign asks people to stop and think before they undertake an activity that connects them with the stormwater network. We want to help people to make the connection between their choices, our networks (infrastructure), and the impact they can have on the environment.

An additional problem for urban environments is that of illegal cross-connections, where some people's wastewater pipes have been connected to the stormwater network. This could've happened by accident, or simply because someone was being lazy. But when wastewater enters the stormwater network it can cause major water quality issues, as unlike wastewater, which is treated before it's discharged into the ocean, stormwater enters the environment untreated.

An example of this was in Plimmerton, when our water quality sampling showed high bacteria levels at a popular recreational area near the mouth of the Taupo stream. The dry weather at the time helped us pinpoint where wastewater was entering into the stream through the stormwater network, and we were able to carry out the necessary repairs and re-piping.

When we find elevated bacteria levels we work with Regional Public Health, Greater Wellington Regional Council, and the affected local council to agree on the next steps, including notifying the public.

And while it might seem like those days for beach swims are a long way away now, it's always worth remembering that contaminated stormwater can affect water quality for up to 48 hours after rainfall at any time of year - and that we can all do our bit to reduce that impact.

reducing the impact of flooding

Tawa School has a history of flooding within the school grounds.

Tawa School's field is flanked by the Redwood Stream to the west and the Porirua Stream to the east. The Redwood Stream flows into an existing stormwater culvert under the School's field. Major rainfall events in April 2015 and May 2016 overwhelmed the culvert and caused surface flooding.

The May 2016 event was so bad that students and staff had to be evacuated (by rubber dinghies!) and there was significant water damage to school buildings.

To reduce the impact of flooding on the school Wellington Water engaged Consultancy Panel member Connect Water to provide option development, design, procurement, and construction services.

A collaborative working approach was required between Wellington Water, Wellington City Council, Connect Water, the Ministry of Education, Tawa School, and local residents to manage the project risks.

Connect Water identified three options to improve stormwater conveyance and alleviate the flood risk. These were: a new stormwater pipe; a new open channel/swale; and a flood protection bund.

Following consultation with the school and local community, a combined swale and pipe option was developed. This option was preferred as it limited the land requirement and impact on the school and provided value for money.

A key part of the design was a stormwater flow control structure in the Redwood Stream to ensure high stormwater flows would be diverted into a new overflow pipe.

Three consents were obtained to cover the earthworks and in-stream work. This was no easy feat and involved lengthy negotiation with affected residents. We also negotiated with the school to leave a stockpile of excavated material on the school field for them to use to construct a new bike track.

As part of the consent requirements, the Redwood Stream was reinstated to a 'natural state' as it provided a spawning habitat to some species including eels.

To reduce the health and safety risk of working on school grounds, construction was timed to coincide with the school summer break. Construction Contracts Ltd began work in December 2018 and the main works were completed prior to the start of the school year, despite some lost time due to weather delays and high stream flows.

Construction activities included the installing an 80 metre length of 1050 millimetre diameter concrete pipe, up to four metres deep, precast flow control structures, a pipe outlet, a flood protection block wall, flood bund, and landscaping. Work was required within the two streams, which were temporarily diverted around the work areas using bypass pipes and sandbag barriers.

The works were successfully completed on time and under budget. The landscaping around the open channel looks great and the plants are establishing well. ■

A flooding event in May 2016, caused an evacuation (by rubber dinghies!) of the school and damage to school buildings.

2018-21

Statement of Intent measure **update**

Our customers' home and businesses will be protected from flooding because we will reduce the number of habitable floors impacted adversely by our stormwater service during a 1:100 year flood event (SOI measure 8).

UPDATE: We're progressing a number of projects throughout the region that will reduce the number of habitable floors adversely affected by our stormwater service during a 1:100 year flood event.

delivering value for money

Taking a regional approach to the management of wastewater treatment plants.

The way we organise how our work is done, through our consultants and our contractors, is a key factor in providing value for money for our client councils. Our service delivery strategy outlines the change in the way we will work to achieve this. At the heart of this strategy is the desire to take the same approach to common work across the region.

As part of our service delivery strategy we decided to seek a supplier to operate, maintain and manage our four wastewater treatment plants under a single regional contract. Since then, we've been undertaking quite an involved procurement process, which has included an extensive discovery phase and sharing lots of wastewater treatment plants data with the bidders.

We've completed the evaluation of the three Request for Proposal responses and our Tender Evaluation Team identified Veolia as the preferred bidder to take on this work.

In early March, we had a scene-setting workshop with Veolia's Country Manager, Alex Lagny, and three of their Senior Leadership Team members. At the workshop, we discussed how we want to work together, timelines, and actions, and the Veolia team took the staff at the Porirua Waste Water Treatment Plant through a presentation, before going on a tour of the site.

Our next steps are to continue with contract negotiations, with the hopes of a signed contract by the end of May. If all goes well, Veolia will be taking over management of all four of our wastewater treatment plants over the coming year (Porirua from 1 July 2019, Moa Point and Western from February 2020, and Seaview from June 2020).

It's great to get to this point, and we're looking forward to getting this across the line, as it will provide great benefits across the region. ■

2018-21

Statement of Intent measure **update**

We'll deliver our service delivery strategy by implementing the Alliance, implementing the Contractor Panel, and introducing a regional approach across all wastewater treatment plants (SOI measure 42).

UPDATE: Interim Alliance Agreement signed with Fulton Hogan in November 2017. Contractor Panel framework agreements with three contractor leads signed on 14 December 2018. Recommendation of preferred Wastewater Treatment Plant suppliers were presented to Senior Leadership Team and Board in March 2019. Veolia was announced as a preferred supplier.

Porirua Wastewater Treatment Plant.

Moa Point Wastewater Treatment Plant.

"Taking a regional approach gives us far more consistency across our client councils as we take into account what's best for the whole region. As well as a regional approach, we will have a much greater pool of resources to draw on. One of the problems with operating the plants independently is a lack of resilience, due to the much smaller silos of expertise and resources you get with operating one or two plants. We will have much greater depth grouping four plant operations together."

– Jeremy McKibbin, Manager Treatment Plants.

getting to the heart of the customer

Putting customers at the heart of everything we do is a big challenge for a council-owned utility management organisation. But it's vital if we're to deliver value for money.

As a council-owned organisation, we see our customers as the end-users of the services we look after. That's why our three highest-level service outcomes are customer-focused: safe and healthy water; respectful of the environment; and resilient networks that support the economy.

As a utility company, these outcomes drive everything we do – and because most things work most of the time, most end-users of these services don't think much about them.

In many cases, they might not even be aware how much they pay for them.

We don't have a direct relationship with residential customers – such as Auckland Council-owned Watercare does – through water billing. When we deal with customers it's usually after they've been referred to us by their council, or we've disrupted their lives in some way. So they're already likely to be a bit on the grumpy side.

Our challenge is to not only get past the lack of awareness our customers have about the water services they pay for, but also to provide a positive experience for those who do get in touch with us.

Research among water service companies supports the intuitive expectation that how much people pay is highly influenced by their attitudes toward their service provider. But it's not just about the money. Yarra Valley Water (Victoria, Australia) found that while the total bill and the way it was determined (including incentives and late fees) made up 47 per cent of customer's perceptions about the service they were getting, over half of the choice equation – what would make them choose one provider over another, if they could choose – was made up of non-financial factors. These included aspects such as a commitment to help those facing hardship; notification about planned work; sustainability commitments; and the impact of and response to service failures (Figure 1). ▶

ASPECTS MOST INFLUENTIAL OVER CHOICE BEHAVIOUR

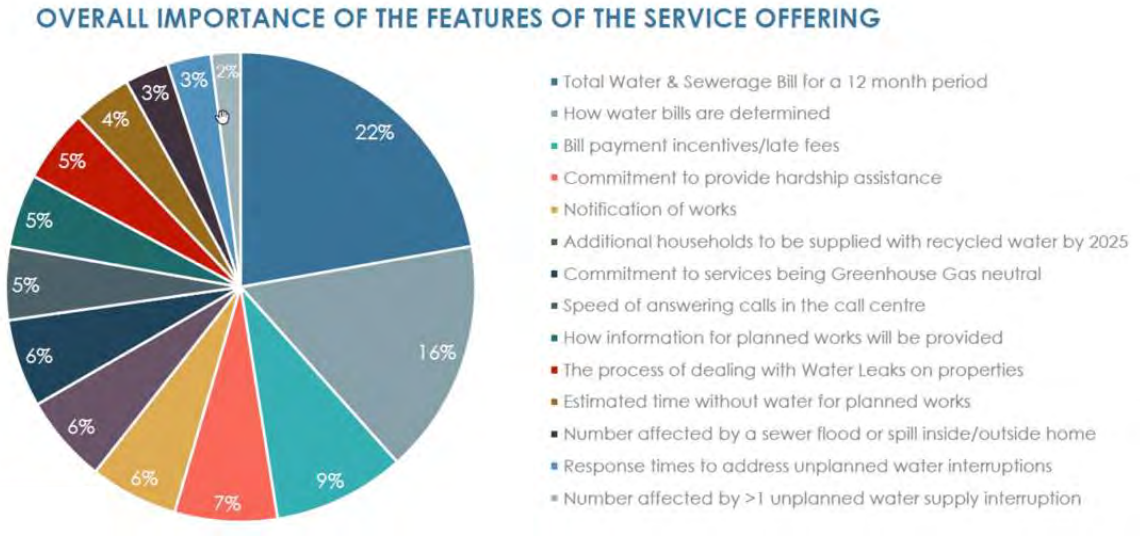


Figure 1. Service features influencing consumer choice behaviour. *Yarra Valley Water.*

This suggests that beyond the core business of delivering water that's safe to drink, then taking it away and returning it safely to the environment, there are plenty of opportunities where we can demonstrate what we mean by 'customer service'.

Planning for the future; renewing infrastructure before it fails; reducing our impact on the environment – these things matter to customers, and we need to engage with them on what and how we're doing this.

Our own research shows the appetite for this. Nearly two out of three people we surveyed on a range of customer issues said they would like to know more about the work Wellington Water does (Figure 2). More specifically (Figure 3): showing how we're looking after water quality; how to improve household water efficiency; planning for growth; and providing value for money all featured as priorities. That's one of the reasons we put together this magazine together, to share what we're up to and how we've achieving our customer outcomes.

Designing services around the customer is also important to improving experience. This will be a focus for our Customer Operations Group as it takes over the work of managing engagement around the more disruptive aspects of our work.

Creating a positive experience for customers is important because we are becoming increasingly aware of how important customer behaviours are on our future water use. So while we may not have the opportunity to get in touch regularly and directly with all of our customers through a quarterly reminder to conserve water or not to flush wet wipes, we need to work even harder to build trust with our communities so we can work together to achieve the outcomes we want.

2018-21 Statement of Intent measure **update**

Our customers will have positive interactions with us because we will measure and improve their customer experience satisfaction (SOI measure 10).

UPDATE: Our market research is one measure used to track customer experience satisfaction (together with call-backs and our door-to-door surveys). Customers that rated their satisfaction as good/very good was 83 per cent. Compared to 83 per cent (2018) and 84 per cent (2017).

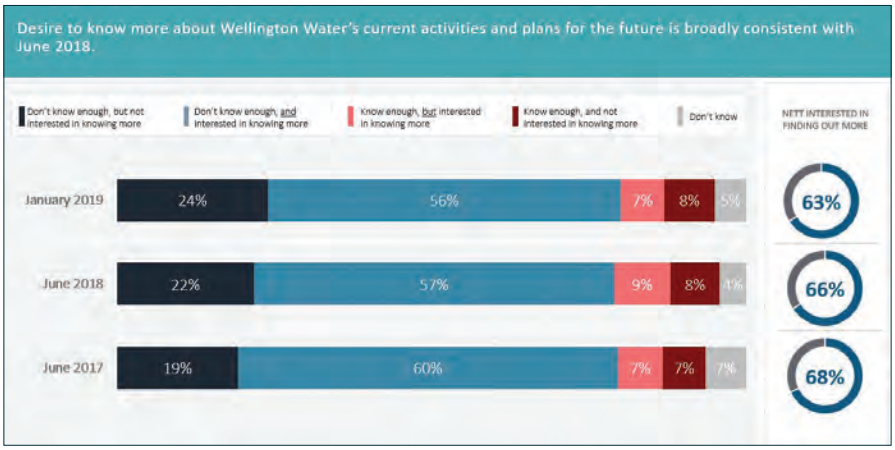


Figure 2. Interest in knowing more about Wellington Water activity.
Survey of 400 metropolitan Wellington residents, January 2019 (Colmar Brunton).

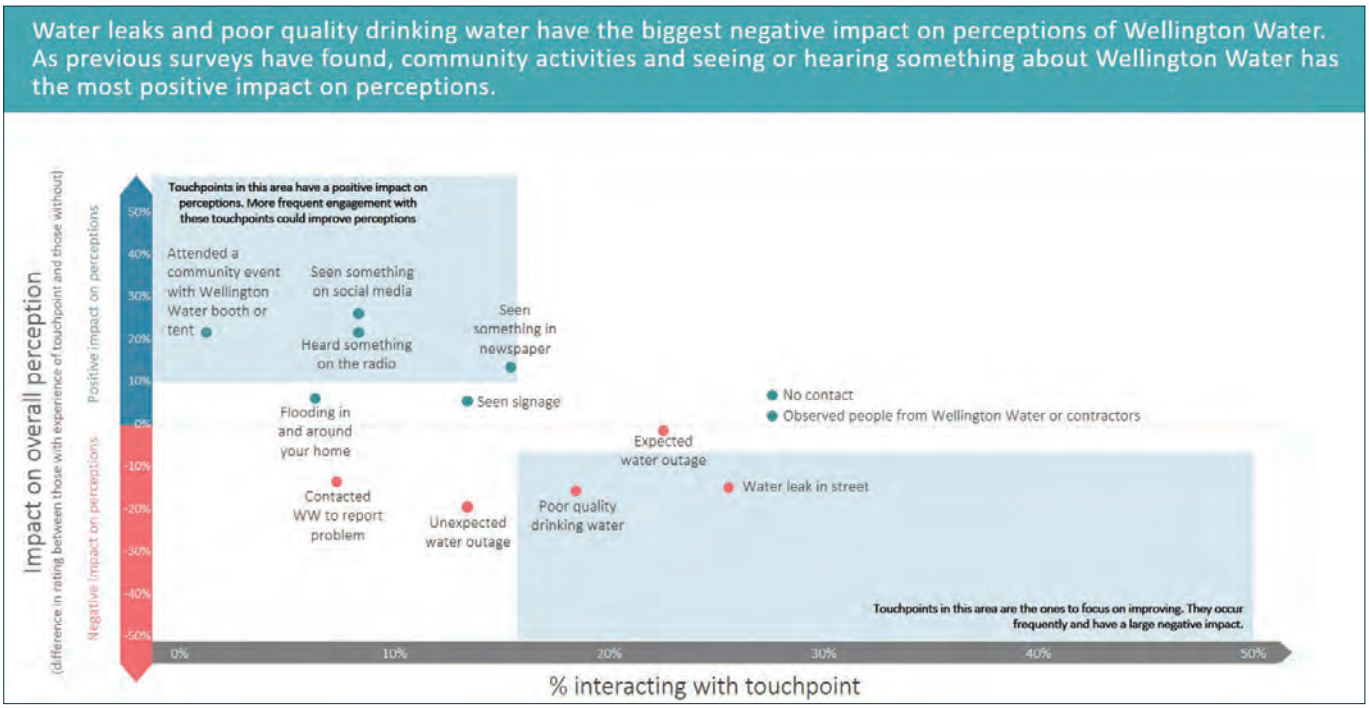


Figure 3. Areas of interest in Wellington Water's performance – improvement priorities.
Survey of 400 metropolitan Wellington residents, January 2019 (Colmar Brunton).

community connections

Getting out and about in the community.

Getting out and about in the community is an important way to connect directly with our customers. Our Community Engagement team attends a range of events such as fairs, festivals, and school visits. We also take school and community groups on tours of our water treatment plants, so they can learn first-hand about where our water comes from, how it's treated and delivered to their homes.

Many of our events lately have involved supporting Neighbours Day and the Wellington Region Emergency Management Office's Community Hub events in Newlands and Wallaceville.

Attending these events gives us the opportunity to let communities know about our above-ground emergency water network and explain how this network will operate and provide drinking water to their communities following an earthquake (or other natural disaster affecting our water network).

What is the above-ground emergency water network?

The drinking water supply network that supplies the metropolitan Wellington region (Lower Hutt, Upper Hutt, Wellington, and Porirua) is vulnerable. Underground pipes and reservoirs could be badly damaged in a significant earthquake, and as a result, some suburbs could be without drinking water for more than 100 days.

Our above-ground emergency water network will supply over 400,000 people across Wellington from day eight following an earthquake (or other natural disaster affecting our water network).

We've identified and built community water stations across the metropolitan Wellington region. These water stations extract and treat water from bores, streams and/or rivers.

Each community water station will have a 20,000 litre emergency water bladder which acts as a reservoir.

Utes, trailers, and vans will be the 'pipes' in the emergency water network. Water collection points (5000 lire bladders and tap stands) will be set up in locations such as schools, parks and key roadsides areas.

The aim is to make water collection points easily accessible from every home (within 1000 meters). Locations will be advised through official information channels following the emergency.


A:


A:


B:

A: Wallaceville Community Hub exercise hosted by WREMO was an opportunity to talk to the community and explain our above ground emergency water network.

B: Our 5000 litre distribution point bladder and tap stand on display at the Newlands Community Hub exercise.

2018-21 Statement of Intent measure **update**

Our customers will be resilient in the event of a natural disaster because we will improve the number of households that have drinking water stored and have a plan for the safe disposal of their wastewater (SOI measure 9).

UPDATE: In January 2019 we asked our customers about their water storage and if they had a plan for safe disposal of wastewater (wees and poos). Consistent with previous years, more than seven in 10 residents have less than 20 litres of water stored per person for emergencies. Four in ten Wellington residents have a plan in the event that they are unable to use their toilet. This leaves six in ten without a plan or unsure of their plan. Upper Hutt residents and homeowners are more likely to have a plan than average, while renters and those aged under 40 are less likely. Of those that do have a plan in place, roughly half are planning on digging a long drop and a third are planning on using the two bucket system.

keep the good things flowing

We all have a role to play in making sure our wastewater network works as it should.

We deliver 145 million litres per day (m/l/d) of safe drinking water to our customers (the residents of the metropolitan Wellington region). This water is used in lots of different ways in their homes and communities. We then take 165 m/l/d of used water from people's kitchens, bathrooms and laundry (wastewater), deliver it safely to one of our four wastewater treatment plants, treat it, and discharge it safely into the ocean.

Normally, this process runs smoothly and the water flows easily. But sometimes, pipes can get damaged, tree roots can cause issues, illegal cross-connections can overwhelm the network with stormwater when it rains, and people can put things down toilets and sinks that don't belong there, causing blockages.

It's important we keep our wastewater network in tip-top shape, because no one wants raw sewage overflows impacting the swimability of our beaches and rivers, or causing damage to our customers' homes and property.

Unfortunately, a lot of people treat the wastewater network like a disposal unit – a `flush and walk away' mentality. However, unlike toilet paper, items like wet-wipes, pads, tampons, wrappers, hair, condoms, incontinence pads, nappies, etc. don't break down once they are flushed.

While many of these products are labelled and marketed as `flushable' (wet wipes, tampons, pads, and incontinence pads) they are not. These items clump together and form large blockages within pipes and at pump stations.

When fats and oils are poured into the kitchen sink, they cool and harden in the pipes. Flushing your pipes with hot water might keep it from solidifying for a short time, but it will eventually cool again, and when it does, it will build up, resulting in a `fatberg'.

When a blockage occurs within our customer's boundary (on private property), it can cost the homeowner a lot of money in plumber's bills to fix. If the blockages happen within the public wastewater system, it costs ratepayers a lot to repair or even replace damaged pipes and pumps.

Meet Louie and Tapitha!

Our latest wastewater marketing campaign, `Keep the good things flowing', is all about helping our customers understand what should and should not go down the drain and why, as well as providing them with other options and alternatives.

We wanted to create a shareable, newsworthy, and impactful campaign that would help our customers to engage with a typically yuck topic – wastewater (wees and poos). Using humour is a good way to tackle a difficult issue and make it simple to understand.

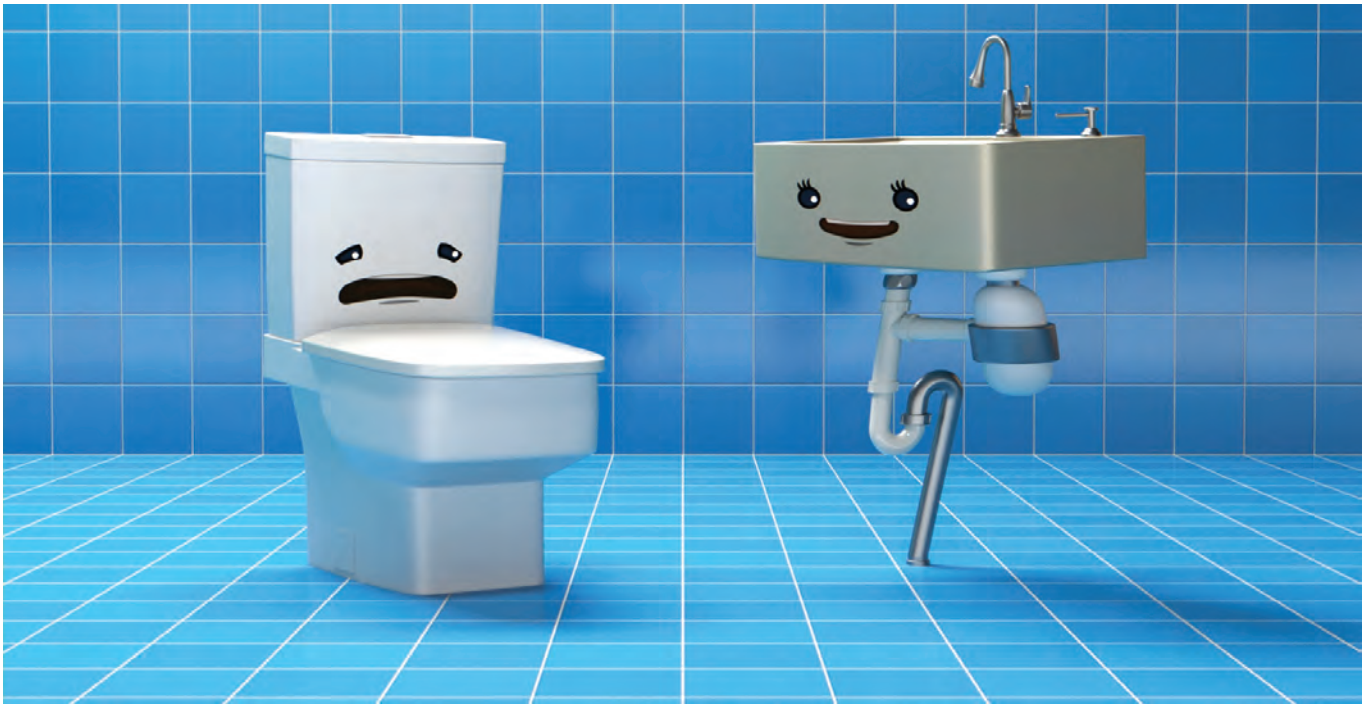
The campaign involves a series of short videos, built around two simple animated characters: Louie (a toilet) and Tapitha (a kitchen sink). Our loveable characters can't believe what some people put into them.

Louie and Tapitha have conversations that cover specific issues like flushing wet wipes and tampons or pouring fats and oils down the sink, the potential costs related to these issues, and communicate the message that **flushing without thinking is not ok**.

By talking about things that are a bit taboo or gross we hope to start a conversation and help people think about their actions.

Over the coming months, stay on the lookout for Louie and Tapitha – and keep the good things flowing!

To learn more about our wastewater network and how you can look after it visit: **wellingtonwater.co.nz/your-water/wastewater/**



Introducing Louie (left) and Tapitha (right). Our loveable characters can't believe what some people put into them!

Our new wastewater marketing campaign 'Keep the good things flowing' features episodes about Wet Wipes, Fats and Oils, and Tampons.

six principles

Taking a principles-based approach to drinking water management.

1. A high standard of care must be embraced

Our Safe Drinking Water Committee has been meeting on a monthly basis. The aim of the committee is to regularly bring together people from across Wellington Water to consider ways to further reduce drinking water safety risks and build our safe drinking water culture internally and across our wider water whānau (our consultants, contractors and suppliers), so we can continue to deliver on our service goal of providing safe and healthy water.

The committee worked with our staff, consultants and contractors to develop a Safe Drinking Water Policy. This policy is an important step in formalising the level of service we are committed to, and in increasing our focus on water quality management on behalf of our client councils. It provides a guiding document and basis from which more detailed processes and implementation strategies can be developed, and will be inserted into our Regional Water Safety Plan.

2. Protection of source water is of paramount importance

Treated water from the Waiwhetu Aquifer continues to be safe to drink and is a vital resource for the region - and we want to keep it that way. To do so, we have initiated an update of the catchment risk assessment for the aquifer that is being completed alongside our Waterloo wellfield renewal strategy work. This work will help us and our client councils to identify risks that might impact on water quality in the future.

We continue to reinforce the ongoing need for protection of water supply catchments from human-caused pollution through collaborative engagement with the Greater Wellington Regional Council (GWRC) and our client councils who control land use activities.

We also work alongside the GWRC and the Department of Conservation to protect our surface water catchments from pests.

3. Maintain multiple barriers against contamination

Installing ultraviolet light treatment at the Gear Island Water Treatment Plant (completed in March 2019) means we now have a multi-barrier approach to the treatment of all water we extract from the aquifer.

However, we can't afford to become complacent, and we must remain vigilant as we continue to manage system risks. As the Havelock North Stage Two Report states "the safety of a supply or security of a source can never be assumed to remain static even where, at one point in time, reasonable confidence exists."

Drinking water testing to check residual chlorine levels.

Installation of ultraviolet treatment at our Gear Island Water Treatment Plant.

4. Change precedes contamination

Change of any kind (for example personnel, governance, and equipment) should be monitored and responded to with due diligence. We are mindful of the need to carefully manage the transition in our maintenance contract supplier over the next year or so to ensure we manage contamination risks appropriately, and this is a regular discussion topic for our Safe Drinking Water Committee.

5. Suppliers must own the safety of drinking water

Our Safe Drinking Water Committee provides greater assurance for the delivery of safe drinking water through regularly bringing together knowledgeable, experienced, committed, and responsive personnel with dedication to providing consumers with safe drinking water.

Our monitoring and sampling programme is on track. However, we are still operating multiple management systems across the bulk water supply and local authority networks for our water quality sampling and testing information.

To address this, we are transitioning the local authority testing and sampling information into the same system used for the bulk water supply, and this is expected to be completed by the end of the 2018/19 financial year. This will provide better oversight of the sampling programme and results to ensure we pick up system changes quickly and can respond effectively to adverse monitoring signals.

6. Apply a preventive risk management approach

We've submitted our draft Regional Water Safety Plan to the regulator (the Ministry of Health). This regional plan will ensure we adopt a source-to-tap approach when managing system risks. The work we are doing has highlighted a number of areas where we can further improve risk management processes and procedures, many of which are already underway. We'll continue to work on these with implementation of them being monitored by our Safe Drinking Water Committee. ▶

Steve checking over our equipment at Wainuiomata Water Treatment Plant.

safe drinking water policy

Water is the lifeblood of **Papatūānuku** (Earth Mother), and binds the **whakapapa** (genealogy) with **Ranginui** (Sky Father).

The **kawa ora** (life principle) of water exists in continuous movement between the sky and land.

This **tikanga** (policy) is about **wai ora**, water that nourishes our communities, our physical and spiritual health. It is a connecting force joining us to the world around us, and is critical to our **survival**, our **prosperity** and our **resilience**.

Wai ora is a **taonga**. It demands our protection. We have an obligation to protect and honour it in its own right and for the sustenance of coming generations.

These are values that Wellington Water embraces.

Meeting our commitment to protect **wai ora** means our water must be healthy, safe and cared for.

Wai ora demands high standards, strict controls, focus and a commitment from Wellington Water, our suppliers, communities and customers to ensure its integrity is without question – to be honoured, safe, accessible and not wasted.

Wai ora is the lifeblood of a thriving community.

We are committed to making sure our people, assets and networks can be relied on twenty-four hours a day, seven days a week, to uphold our commitment to **wai ora** and our communities.

Wai ora requires everyone at Wellington Water to work together to protect its integrity, ensure the safety of those who consume it and uphold its mana and mauri. Our network must perform to the highest standards so we can ensure the safety and protection of **wai ora**, our communities and customers.

At Wellington Water, we are all committed to:

- **taking responsibility** for protecting wai ora and **maintaining the highest standard of care** for its delivery
- **protecting** the source of wai ora, **caring** for it as precious taonga and building the requirements of wai ora into our work
- **honouring** the environment when we take wai ora from its source and **ensuring its safety** for our customers
- **using a risk-based approach** to managing and protecting our network from anything that could make wai ora unsafe
- developing and maintaining a **resilient network** that will recover from natural disasters and adapt to climate change
- **monitoring for changes** that could put the safety, integrity, mana and mauri of wai ora at risk
- **building** the requirements and expectations of our customers, stakeholders, regulators and client councils into our work
- **continually improving** the way we do things and looking for ways to enhance the mana and mauri of wai ora. ■

2018-21 Statement of Intent measure **update**

Our customers will feel confident the drinking water we provide is safe because we will maintain 100 per cent compliance with the Drinking Water Standards New Zealand and we will monitor the treated water to make sure there have been no transgressions (SOI measure 1).

UPDATE: For the period (1 July – 31 December) we've maintained 100 per cent compliance with the Drinking-water Standards New Zealand and we have had no transgressions.

We will safeguard our drinking water by completing our Regional Water Safety Plan (SOI measure 20).

UPDATE: Our draft regional Water Safety Plan (which includes the service delivery improvement plan) was completed and submitted to the regulator (Ministry of Health) December 2018.

We will supply wholesome drinking water at an acceptable standard (taste, clarity, and odour) by maintaining satisfaction (SOI measure 21).

UPDATE: For the period (1 July – 31 December) customer satisfaction is tracking at 99.9 per cent or 0.74 complaints per 1,000 connections.

encouraging household resilience

Have you stepped up to be a water hero?

As a part of our emergency water resilience 'Water Hero' campaign we ran an interactive quiz during January/February which asked Wellingtonians `are you a water hero?'

The quiz provided an opportunity for our customers to learn what it takes for their household to be prepared in the event of a natural disaster. For example if the underground drinking water and wastewater pipes are broken, people will need to rely on the water they have stored at home because there will be no water in the taps, and people will need a plan for the safe disposal of their wastewater (wees and poos) because they won't be able to flush the toilet.

We had 786 people take part in the quiz, and all participants went into the draw to win a Water Hero Prize Pack (Baby Weber BBQ, 200L water tank, two buckets, and a spade) valued at $500.

The quiz was also a great chance for us to get a better understanding of what our customers know and how we can improve our communications to them.

- 83 per cent of people said that they had water stored at home. However, only 19 per cent have enough water stored to last seven days. We recommend people store twenty litres of water, per person, per day for at least seven days. That's 560 litres for a four person household.
- 59 per cent of people have a plan for the safe disposal of their wastewater (wees and poos), with many Wellingtonians planning to dig a long drop in the backyard.

While it's great to see people have some water stored, we have a lot to do to make sure people know that they need to have enough water stored to last seven days, and raise awareness about the need to have a plan for an emergency toilet.

To learn more about how to prepare your household for an emergency visit **wellingtonwater.co.nz/your-water/emergency-water/** ▶

Quiz prize draw winner

Our quiz prize draw winner (Melissa Norling) was announced in March. We took the opportunity to drop off Melissa's winnings and ask her about how her family has prepared for an emergency.

Meet our water hero

After completing our quiz, Melissa is now more aware about what her young family needs to do to prepare for an emergency and what she needs to do to be a Water Hero.

We asked her a few questions about how her and her family have been preparing around their home.

When did you start preparing for an emergency?

We've always had bits and pieces, but when our daughter Lily was born we started thinking more seriously about it. Our house is quite small, so we don't have a lot of room for storage. So, while we've got a little bit stored, it's probably not as much as we need, so I guess that water storage tank is going to come in very handy!

Who in your household has taken charge of emergency planning?

I've purchased bits and pieces, and my partner's got things as well. But, when it comes to a plan, we're probably not quite there.

Did taking part in our Water Hero quiz make you think more about being prepared?

Yup, definitely!

Awesome! So after completing the quiz, did you go out and buy things?

We already had some stuff, but I bought more after doing the quiz. I got a better first aid kit since we only had loose bits and pieces before that, so I purchased a proper full first aid kit for emergencies so that everything was in one place.

What other supplies have you got around the house?

Just some basic food items, water, and other first aid items.

Do you have a plan in place to manage your wastewater?

No, we don't!

Well I guess you do now since you have the buckets!

Haha, yeah!

What's a tip that you have to be prepared in an emergency?

To get ready and think way ahead, cause you never know when it's going happen. Just get it done instead of procrastinating like we have.

ready to respond in emergencies

How our customer hub team is working to own customer issues.

Christine (left) and Des (right) working together in our customer hub.

We live in a region which experiences a number of natural hazard events. In recent times these have been more frequent, particularly short-burst rainfall events.

No matter what the event, our client councils and customers can rely on us to be out in communities dealing with issues and working hard to get our services back up as quickly as possible.

A key component of customer satisfaction is that as an organisation we've made a commitment to own customer issues. This means putting the customer at the heart of everything we do, keeping them well informed, and providing a resolution to issues.

To make sure we provide good customer service throughout this process, our customer hub team maintains a record of all customer issues. Once issues are resolved our customer hub team uses call-backs (a simple phone survey) to rate the satisfaction with the customer service, communications, and information they received during and after the event. We take the average of these ratings to determine the overall customer satisfaction rating.

We then use insights from this feedback to make improvements to the way we work. ▶

case study: Wellington central business district flooding

A recent example of how our customer hub team deals with customer issues, was the short-burst rainfall event in early March.

We use a predictive weather forecast application called NowCast to monitor weather events that might affect the metropolitan Wellington region. Thanks to NowCast our customer hub team was able to send an advanced warning out to our operations and maintence contractor City Care before the wet weather event hit. This gave City Care the opportunity to proactively check and clear known problem areas within our stormwater network before the rain came.

The sheer volume of rain that fell in a short period of time caused significant surface flooding, and our stormwater network within the Wellington central business district became overwhelmed.

We activated our internal emergency management team (a cross-organisation team of experts who come together to manage large events). This team works closely with our customer hub team, so that they are able to provide affected customers with accurate information and timely responses.

As a result of the significant rainfall we received five reports of flooding throughout the metropolitan Wellington region.

Three of the five flooding reports were known issues that we're currently working on/investigating. Another two were road related issues, where we provided support to the Wellington City Council road maintence team as needed.

In the case of this particular event, we completed two call-backs. One customer said they felt well informed and were impressed with the regular update, while the other customer said they felt they needed to follow us up for updates to find out new information. Overall customer satisfaction was 42 per cent.

This rating indicates that we have room to improve. However, it's a good benchmark to use as a comparison for future events. ■

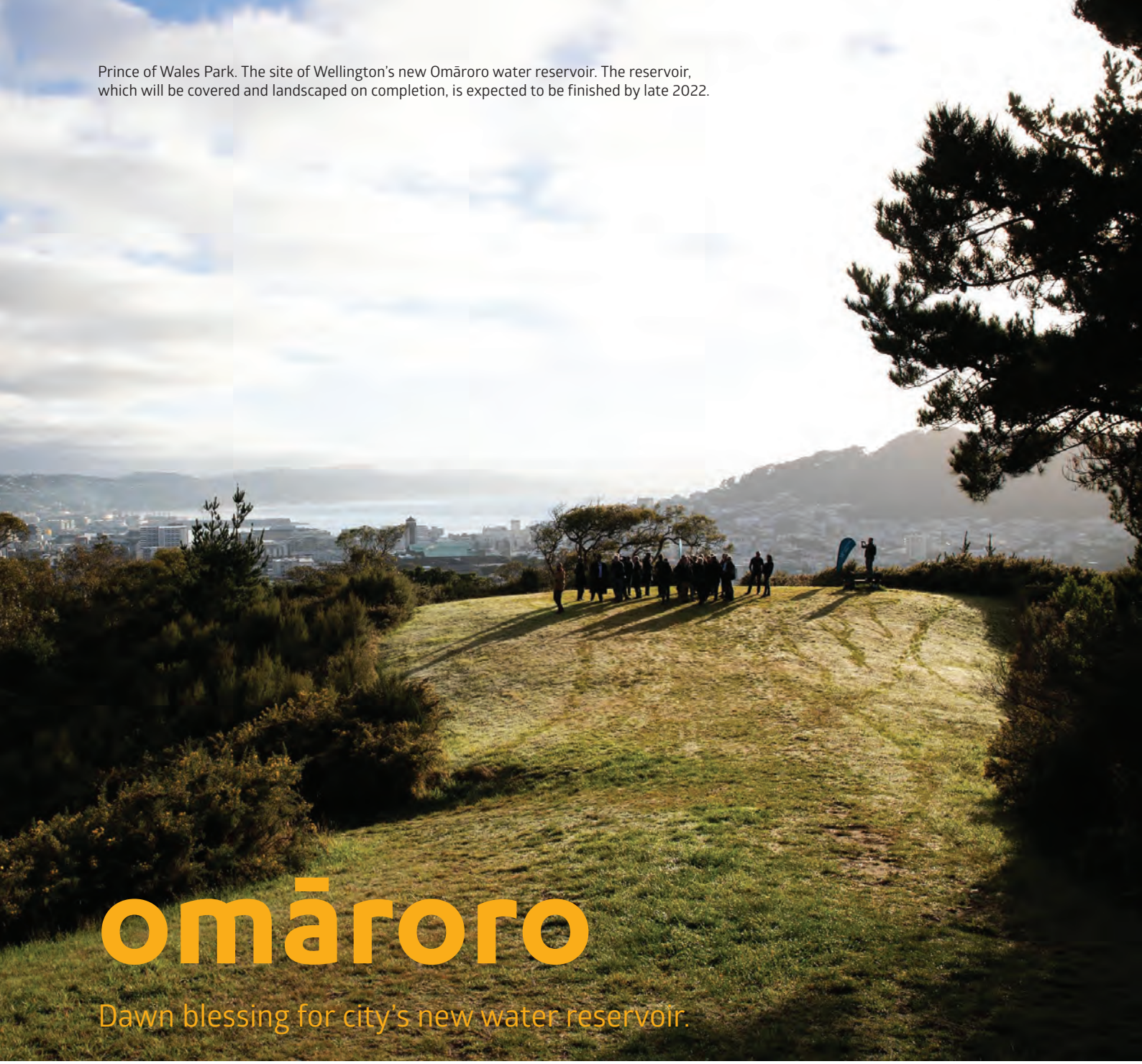
Paul (above) is working on resolving a customer issue.

2018-21

Statement of Intent measure **update**

We'll respond to customer issues following a significant event (flooding, earthquake, landslip, major service failure) by keeping an accurate record of all issues that occur and working through them with our customers within agreed timeframes (SOI measure 31).

UPDATE: In the case of this particular event, we complete two call-backs. One customer said they felt well informed and were impressed with the regular update, while the other customer said they felt they needed to follow us up for updates to find out new information. Overall customer satisfaction was 42 per cent.



Prince of Wales Park. The site of Wellington's new Omāroro water reservoir. The reservoir, which will be covered and landscaped on completion, is expected to be finished by late 2022.

omāroro

Dawn blessing for city's new water reservoir.

A dawn blessing for Wellington City's new Omāroro water reservoir in the Town Belt has marked the first phase of construction for the project that will more than double the city's water storage.

Hosted by Wellington City Council and Wellington Water, the ceremony was held on 9 April at the site of the reservoir, Prince of Wales Park. It included a traditional blessing by local iwi Taranaki Whānui and formal gifting of the name Omāroro to the project.

Omāroro is one of largest water resilience infrastructure projects in the region, a 35 million litre buried concrete reservoir and a new supporting pipeline along Wallace Street.

Wellington Mayor Justin Lester said the Taranaki Whānui blessing symbolises the project's significance in supporting the city's future.

"As well as our iwi partners, I'd also like to thank the local community who have worked closely with our team to help us get to this point.

"This is a cornerstone project for the future of Wellington that will ensure we have enough safe water to meet our day-to-day needs, even as we grow. But it is only part of the picture. We all have a role to play in reducing our water use - and so limiting the need for more of these costly and disruptive works," the Mayor said.

As well as providing more water storage in case of disaster, Omāroro will expand existing water storage, allowing for essential maintenance, repair, and upgrade works of other reservoirs to be carried out - with minimal disruption to local water supply. ▶

Wellington Mayor Justin Lester and representatives from Taranaki Whānui blessing the site.

Construction of the pipe works and reservoir will take place over the next three years. From late April, contractors will have started work in Wallace Street to lay pipes connecting Omāroro reservoir to the network, which also provides an opportunity to renew wastewater and stormwater pipes. Mayor Lester acknowledged this would affect traffic flows and likely lead to some frustration.

"Working in this narrow arterial route will disrupt traffic, parking and pedestrian access as well as impacting some residents.

"We will continue to work closely with the community throughout the project to make sure we're doing as much as we can to reduce this.

"However, we ask for patience and an understanding that Omāroro is important, helping provide our city with a more secure water supply, making more water available in an emergency and reducing disruptions to water supply during regular water network maintenance."

The reservoir, which will be covered and landscaped on completion, is expected to be finished by late 2022.

Keep up to date with the progress of this project here: **wellingtonwater.co.nz/work-in-your-area/omaroro-reservoir**

Resilient networks that support our economy

To make sure we provide three water networks that are resilient to shocks and stresses we will plan for long term drinking water source reliability to meet future demand (drinking water sustainability is one of our future services studies), and help improve the resilience of Wellington's eastern suburbs and central business district by progressing the cross harbour pipeline and by delivering the Omāroro Reservoir towards the end of the Long-term Plan period, with the ultimate goal being a resilient supply of drinking water.

In addition to the major capital works projects like Omāroro Reservoir is only one part of a comprehensive regional response to resilience challenges.

We have been working with Wellington Regional Emergency Management Office and Regional Public Health and a key aspect of our approach to building resilience is the concept of people and businesses being self-sufficient for the first seven days following a significant earthquake. We recommend our customers store 20 litres of water per person per day for at least seven days to make sure their household is self-sufficient. We are also working to raise awareness of the need for households to have a plan for the safe disposal of their wastewater.

From day eight onwards we will be able to provide water through our community water stations – an above-ground emergency water network of bores and surface water treatment stations and desalination plants, supported by a mobile distribution network out to communities.

You can read more about the resilience work we are doing, and how you can get prepared, by visiting **wellingtonwater.co.nz/your-water/emergency-water**

2018-21

Statement of Intent measure **update**

We'll complete major drinking water projects by 2021: Omāroro (complete detailed design - subject to funding); Bell Road (commence detailed design); Aotea (complete preliminary design); and Silverstream (commence detailed design). (SOI measure 29).

UPDATE: Omāroro (commenced detailed design) Bell Road/Moe-i-te-Rā (currently on hold) Aotea (completed consents). Silverstream (completed preliminary design. Once the preferred option is agreed, commence consenting and detailed design phases).

our water, our future

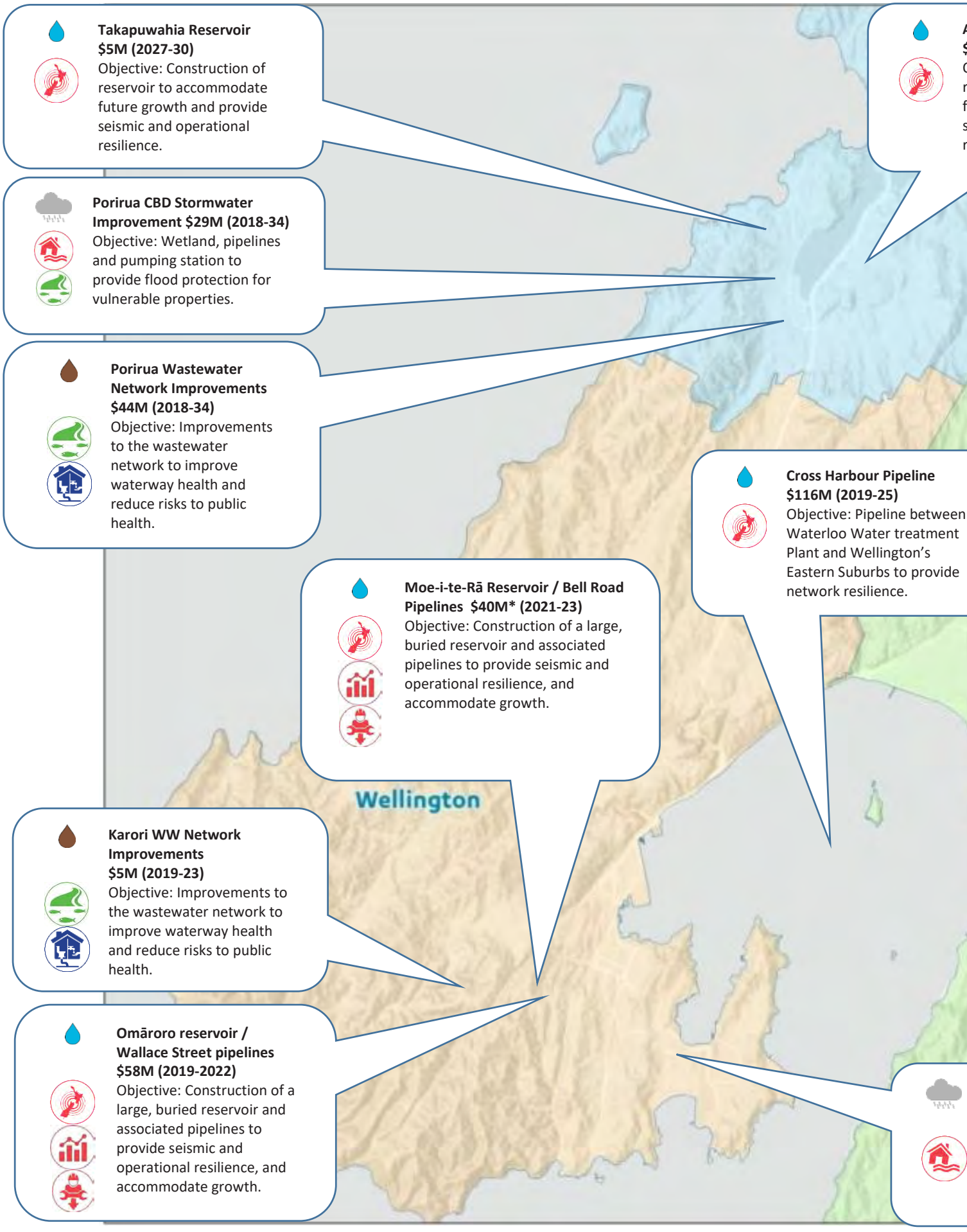
Here's some of the big projects we're working on around the region.

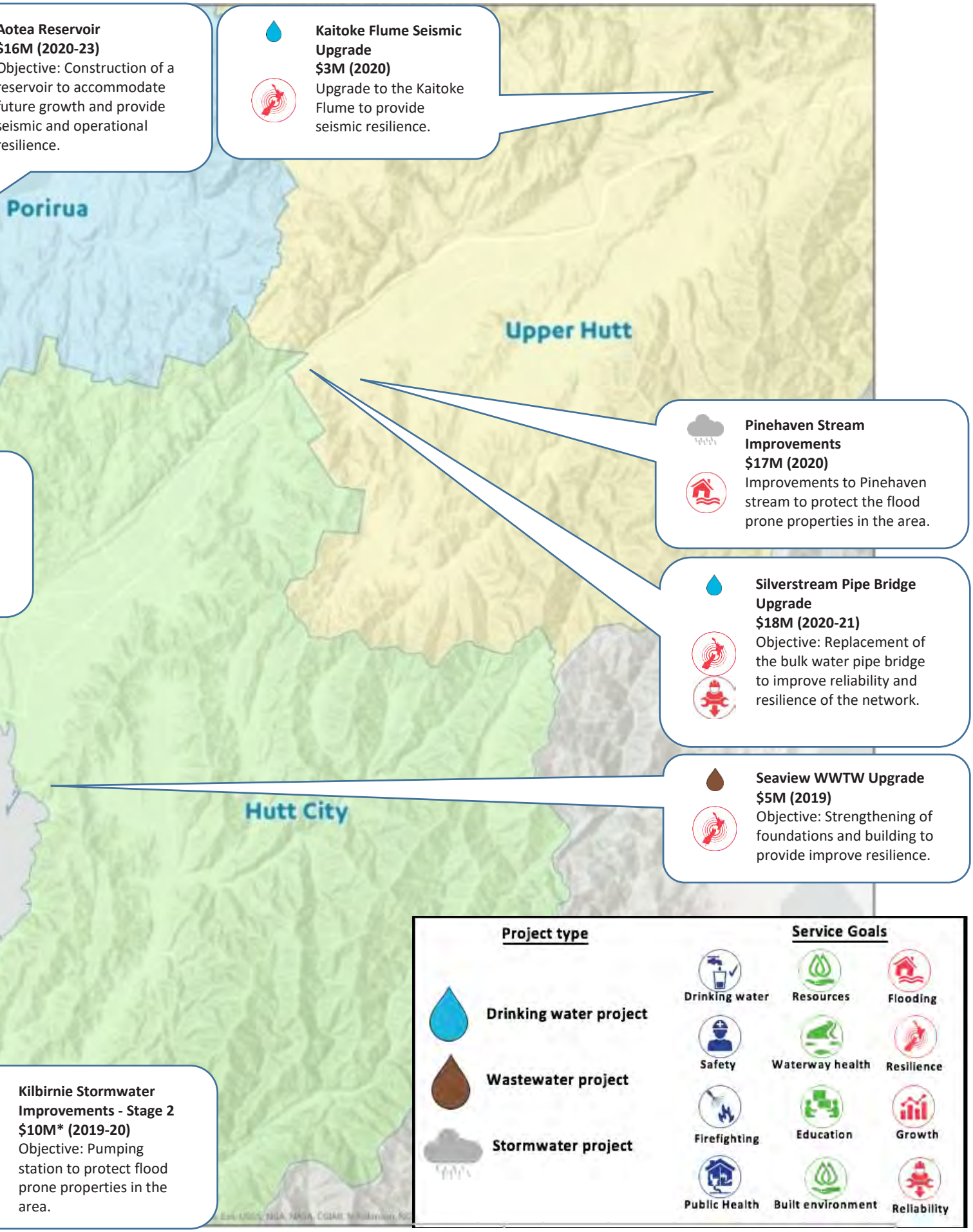
Our major capital expenditure (capex) projects includes the development and delivery of works which have a high monetary value, are required urgently, significant technical or managerial complexity, or have greater levels of risk.

The current capex programme includes the following projects:

- Silverstream pipe-bridge replacement (Greater Wellington Regional Council) – the concept design for the replacement pipeline beneath State Highway two (SH2) and over Silverstream bridge is nearing completion with a recommendation to construct a new pipe bridge across the Hutt River/Te Awa Kairangi to keep the pipeline above the flood levels and the Wellington fault line.
- Cross Harbour Pipeline (Greater Wellington Regional Council) – site investigations are being undertaken to provide information to inform the pipeline route selection as part of the concept design development. The investigations include hydrographic surveys and bores to confirm ground conditions.
- Seaview Wastewater Treatment Plant seismic strengthening (Hutt City Council). The ground improvements are well progressed and works to the building are expected to commence in June 2019.
- Porirua central business district stormwater improvements (Porirua City Council) – consent applications and detailed design of the project elements are progressing with a plan to commence procurement of the physical works mid-2019.
- Aotea and Takapuwahia reservoirs (Porirua City Council) – physical works are expected to commence in 2022, with the construction of two reservoirs to accommodate future growth, and provide seismic and operational resilience for the drinking-water network. This work will be completed by 2030.
- Porirua wastewater network improvements (Porirua City Council) – a network improvement plan is being developed define what work is required to the wastewater network to prevent overflows to into streams and harbour to improve the health of our waterways and risks to public health. The plan is due to be complete in late 2019.
- Pinehaven stream stormwater improvements (Porirua City Council) – consent applications and detailed design are underway with a plan to commence physical works in early 2020 to protect flood prone properties in the area.
- Omāroro reservoir and Wallace Street pipelines (Wellington City Council) – construction planning of the pipelines to and from the proposed reservoir have commenced with local community engagement and temporary traffic management submissions. Construction of the reservoir is planned to commence in early 2020.
- Kilbirnie stormwater improvements (Wellington City Council) – the works are currently on hold at the request of Wellington City Council who have requested a review of the current proposals.
- Karori wastewater network improvements (Wellington City Council) – a network improvement plan is being developed to define the works required to improve the health of our waterways and reduce any risks to public health. Engagement has started with the local community to reduce the volume of stormwater entering the wastewater network from private properties.
- Moe-i-te-Rā reservoir and Bell Road pipelines (Wellington City Council) – the works are currently on hold at the request of Wellington City Council who have requested a review of the current proposals.

Details of the proposed project are shown on the following map.


Takapuwahia Reservoir
$5M (2027-30)
Objective: Construction of reservoir to accommodate future growth and provide seismic and operational resilience.
Porirua CBD Stormwater Improvement $29M (2018-34)
Objective: Wetland, pipelines and pumping station to provide flood protection for vulnerable properties.
Porirua Wastewater Network Improvements $44M (2018-34)
Objective: Improvements to the wastewater network to improve waterway health and reduce risks to public health.
Cross Harbour Pipeline
$116M (2019-25)
Objective: Pipeline between Waterloo Water treatment Plant and Wellington's Eastern Suburbs to provide network resilience.
Moe-i-te-Rā Reservoir / Bell Road Pipelines $40M* (2021-23)
Objective: Construction of a large, buried reservoir and associated pipelines to provide seismic and operational resilience, and accommodate growth.
Wellington
Karori WW Network Improvements
$5M (2019-23)
Objective: Improvements to the wastewater network to improve waterway health and reduce risks to public health.
Omāroro reservoir / Wallace Street pipelines
$58M (2019-2022)
Objective: Construction of a large, buried reservoir and associated pipelines to provide seismic and operational resilience, and accommodate growth.


Aotea Reservoir
$16M (2020-23)
Objective: Construction of a reservoir to accommodate future growth and provide seismic and operational resilience.
Kaitoke Flume Seismic Upgrade
$3M (2020)
Upgrade to the Kaitoke Flume to provide seismic resilience.
Porirua
Upper Hutt
Pinehaven Stream Improvements
$17M (2020)
Improvements to Pinehaven stream to protect the flood prone properties in the area.
Silverstream Pipe Bridge Upgrade
$18M (2020-21)
Objective: Replacement of the bulk water pipe bridge to improve reliability and resilience of the network.
Seaview WWTW Upgrade
$5M (2019)
Objective: Strengthening of foundations and building to provide improve resilience.
Hutt City
Kilbirnie Stormwater Improvements - Stage 2
$10M* (2019-20)
Objective: Pumping station to protect flood prone properties in the area.
Project type
Drinking water project
Wastewater project
Stormwater project
Service Goals
Drinking water
Resources
Flooding
Safety
Waterway health
Resilience
Firefighting
Education
Growth
Public Health
Built environment
Reliability

news

A look at what's been happening at Wellington Water, and the water sector

Searching for leaks from above

SureSearch (part of Cardno) have been flying their drone around the streets of Kelburn looking for leaks in our water supply network. The flights are a trial to see if this approach is a useful addition to our leak-finding toolkit. The drone is fitted with a thermal imaging camera that can 'see' the temperature difference between any water and the surrounding soil.

At this time of year they are flying late in the afternoon as the water leaks should be more visible after the ground has had a day in the sun. They are only flying over the roads and not over private property.

Once the images are collected they will be run through analytical tools that identify potential water leaks. The data is also matched against the geographic information system (GIS) data for our network location so we can distinguish between leaks and naturally occurring groundwater (which is also a reason they do not fly after rain). Once identified, a ground-based crew will go out and look to validate the potential leaks with conventional tools. As a further bit of innovation, they are going to try some alternative data processing approaches to see if we can see any wastewater leaks as well.

The purpose of the trial is to see whether the drone will help us find leaks more efficiently than conventional ground-based methods. It is likely to be more expensive on a 'per kilometre' basis, so we'd like to understand where it might be most effective and use it to complement existing methods.

The drone is operated by a crew of two – one person flying the drone and the other capturing the images. The drone is typically flying about 40 metres high (vertically) with images taken roughly every 10 metres (horizontally).

The speed at which they work is dictated by the surroundings – Kelburn with its steep roads and high trees is slower than the straight, flat streets of Petone would be.

Wellington Water got a commendable second place (out of 13) in the 2019 drinking water taste test competition.

Water Industry Operations Group

The Water Industry Operations Group of New Zealand (WIOG) is a national not-for-profit incorporation formed in 2006 by a group of water and wastewater operations professionals. WIOG's membership covers professionals in water and wastewater treatment, reticulation, construction, asset management, engineering, supply owners and industry suppliers.

In May, WIOG held its annual conference in Christchurch. This year's theme 'building resilience' explored ways in which the water sector is developing resilient systems, assets and operations, so that business continuity risk is well managed in the face of adverse conditions. Topics included real life examples of lessons learned from major events; good response and recovery practices; and current activities that are strengthening resilience.

Wellington Water was well represented at the conference with a number of our staff travelling to Christchurch to attend. A highlight of the conference was receiving a commendable second place in the drinking water taste test competition and William Stewart receiving the operator of the year award.

Drinking water taste test 2019

Water authorities from around New Zealand competed for the title of Best Tasting Tap Water in the Water Industry Operations Group (WIOG) water taste test 2019.

The competition (held during WIOG's annual conference) judged drinking water samples on qualities like colour, clarity, odour, and mouthfeel during a series of blind taste tests.

The three finalists (out of a field of 13) for the 2019 competition were Wellington Water, Waimate District Council, and Timaru District Council.

This year the winner Timaru District Council was recognised as providing the best drop. Wellington Water received a commended second place. Judges comprised an independent panel of industry experts.

While the competition itself is all in the spirit of good fun, there is a meaningful undertone to it – recognising the hard work of those who ensure safe, clean drinking water is available to us, every day.

WIOG Chair, and Wellington Water staff member, Nick Hewer-Hewitt said that the general public would probably be surprised to learn the complexities involved in delivering high-quality water to our taps each day.

"The competition is testament to the excellent quality of New Zealand water and to the skill and commitment of the operational employees who deliver it to our communities. Many of us turn on taps for a drink, to cook, and shower, with little consideration of what it takes to operate and maintain the water infrastructure," said Hewer-Hewitt. "We want to celebrate our unsung heroes – the water operators and the maintenance crews who work year-round to ensure we have safe water of a consistently high quality."

Judges check clarity of water samples.

Nick Hewer-Hewitt presents William Stewart with his operator of the year award.

Operator of the year award

William (Will) Stewart was named Water Industry Operations Group's Operator of the Year. Will received a framed certificate and as a part of his prize gets the opportunity to attend a study visit to water and wastewater plants in Australia later this year.

Will started with the Greater Wellington Regional Council's (GWRC) Bulk Water Operations group in 2011 as a fitter in the mechanical maintenance team. He soon became a top performer in this team displaying initiative and a high quality work ethic and commenced a Bachelor of Engineering Degree in 2013.

In September 2014, the GWRC Bulk Water group transitioned to the newly formed Wellington Water. In 2016, Will successfully applied for a position as a Water Treatment Technician and quickly became a highly valued team member. Will continued to impress people with his ability to quickly familiarise himself with the water treatment processes, his knowledge retention, and experience gained over the years (both academically and in the field). In 2017 he started a Water Treatment Diploma, which he completed within a year.

During 2017, he was successful in applying for the vacant Project Facilitator position within the team. He remains 'hands on' both in his facilitator role and assisting the water treatment technicians. In 2018, Will gained second place, at the Palmerston North WIOG conference, for his paper on Cyanobacteria pertaining to Te Marua water treatment plant storage lakes.

Will manages to perform all his responsibilities to a very high standard taking on any challenge whilst retaining a calm and methodical attitude and good humour. Congratulations Will!

The Hutt River/Te Awa Kairangi in Upper Hutt.

ki uta ki tai – from mountains to the sea

How healthy are our waterways?

From a Te Ao Māori world view, ki uta ki tai (from the mountains to the sea) is the recognition that water moves through the landscape and has numerous interactions on its journey.

Water is a taonga (treasure) of huge importance to iwi and enhancing the mauri (health and wellbeing) of our waterways is a priority. Māori often consider their personal health and the health, both spiritually and physically, of their iwi to be closely linked to the health of their water bodies. For māori environmental degradation has led to traditional values embedded in their water-bodies being either compromised or lost completely.

Ki uta ki tai acknowledges the connections between the atmosphere, surface water, groundwater, land use, water quality, water quantity, and the coast. It also acknowledges the connections between people and communities, people and the land, and people and water. A lot of the journey of our water from the catchments where the rain falls to where it enters the sea is impacted by these interactions and the services (wastewater, stormwater, and drinking water) we provide.

While the services that our three water networks provide are vital to a modern and successful economy, they can also have a negative impact on water in the environment.

Water quality in the metropolitan Wellington region is variable. In cases where water limits have already been exceeded, progress towards meeting long-term targets is required using a range of methods such as regulations (e.g. limiting land use activities), public education, investment (e.g. infrastructure renewals), and integrated catchment management.

Larger rivers, flowing out of forested ranges are in 'excellent' or 'good' health, such as the upper reaches of the Hutt river/ Te Awa Kairangi at Kaitoke or the Wainuiomata/Orongorongo rivers (where we collect our drinking water). In contrast streams and rivers of degraded water quality (e.g. fair or poor) are located in largely urban catchments.

Degraded fresh waterways include the upper and lower reaches of Porirua stream, the Waiwhetu stream in Lower Hutt, and the Karori and Kaiwharawhara streams in Wellington City. These streams often contain elevated E.coli concentrations, nutrients, and poor water clarity. At times, high levels of heavy metals are found in some urban streams. Although most of our urban streams are not generally used for swimming, high levels of E. coli bacteria still indicate a health risk to people playing in or near the water. ▶

For the region's coastal areas, the story is also mixed. Water quality is generally acceptable at beaches throughout the region. However, Wellington Harbour contains a range of contaminants from urban stormwater such as lead, copper and zinc; these levels are highest in Evans Bay and Lambton Basin – a clear indication that contaminants and toxins from nearby urban stormwater and other uses accumulate in the harbour sediments.

During stormy weather conditions, heavy rain and wind can churn up sediment from the bottom of the waterway or sea, releasing pathogens in the sediment back into the water.

The deeper parts of Porirua Harbour are also impacted by contaminants, and the situation is even worse in the Onepoto arm where heavy metal concentrations are near or above early warning guidelines.

During the summer months, swimming spots throughout the region are monitored. Weekly summer monitoring of bacteria levels has shown that Plimmerton (at South Beach), and Porirua Harbour (at the Rowing Club) regularly breach national recreational water quality guidelines. This is due to faecal contamination from a combination of birdlife, wastewater leaks and infiltration, and stormwater runoff.

Polluted urban streams also empty into the sea where they can affect swimming beaches. Some of our popular spots, such as Eastbourne and Petone, are graded 'fair' because guidelines are sometimes breached, especially after rainfall. Owhiro Bay (Wellington) and Robinson's Bay (Eastbourne) have been graded 'poor' because of faecal contamination, at least partly due to wastewater and stormwater infrastructure problems.

Water quality in all waterways is always of greatest concern up to 48 hours following rain fall.

Stormwater enters our waterways untreated. In urban areas stormwater and wastewater leaks or overflows are the main sources of contamination. During wet weather, rainwater from roofs, roads, car parks, and other surfaces is piped directly into rivers, streams, and the coast. During very heavy or prolonged rainfall, wastewater overflows can result in untreated wastewater being discharged to rivers or the coast via the stormwater system.

During dry weather, cracked or blocked wastewater pipes as well as illegal cross connections of our wastewater pipes to the stormwater system can also cause contamination of our waterways. Large numbers of birdlife such as ducks, geese, and seagulls can also contribute to faecal contamination, especially in dry weather.

Water quality regulations are signalling that a 'business as usual approach' to three waters management (e.g. managing the impacts of stormwater and wastewater overflows) may no longer deliver the required levels of service from an environmental outcomes and compliance perspective.

The government's National Policy Statement for Freshwater Management directs regional councils to establish environmental limits or objectives in their regional plans, and to take a more integrated approach to managing fresh and coastal water.

Waiwhetu stream in Lower Hutt.

Wainuiomata river in Wainuiomata.

“like botox for the ground” – new technique builds resilience

The infrastructure that supports the water network could be negatively impacted after a large earthquake, resulting in significant disruption to the management of drinking water and wastewater. We’re taking this risk seriously, and are working to improve resilience across the network.

Tristan Reynard, Project Director (right) explaining importance of resilient infrastructure to Lower Hutt Mayor Ray Wallace (left) and Lower Hutt Deputy Mayor and Wellington Water Committee Chair David Bassett (centre left), with Nick Clendon, Associate Engineering Geologist, Coffey (centre right).

In early May, work began on ground improvement at the Seaview Wastewater Treatment Plant, where new resin injection technology is being used to strengthen the ground underneath key buildings, improving the resilience of the plant.

Lower Hutt Mayor, Ray Wallace and Lower Hutt Deputy Mayor and Wellington Water Committee Chair, David Bassett recently visited the Seaview Wastewater Treatment Plant to check in on the progress of the ground improvement works currently underway.

“It’s incredibly important that key infrastructure such as the Seaview Wastewater Treatment Plant has the capability to operate as normal following a large quake, said Ray Wallace. “Wellington Water is working towards improving the resilience of these key plants, and it’s brilliant to see innovative technologies like this being used to keep normal operations going while the upgrade happens.”

Fran Wilde, chair of the Wellington Lifelines infrastructure group, shared her support for this work on earthquake resilience.

“This is a great example of how our region is now focussing on our essential lifeline infrastructure,” she said.

"Wellington's earthquake risk is well known so all our lifeline providers are now stepping up with enhancement programmes. But householders also need to plan to be on their own for a period after a big event. So as we mark this occasion we should also have a think about how we would manage those essentials of life such as wastewater disposal if the big one struck our region tomorrow".

Ground Engineering experts, Mainmark, have developed a non-invasive ground improvement and liquefaction mitigation technique, Terefirm™ Resin Injection, which can be applied under existing structures. Wellington Water's Seaview project team has likened the technique to "botox for the ground".

Going as deep at 7m into the ground (at the Seaview location), the engineered resin is injected through thin tubes, and distributes in a veining pattern through the soil. It then crystallises and expands to three to four times its original size. The resin works to create stable ground underneath key buildings in the plant, so it can move as one rather than being pushed and pulled in different directions during an earthquake. Improving resilience isn't just about being prepared for a large earthquake or disaster, it's about repairing and recovering quickly. With the goal of having the plant continue to operate following a large earthquake, it's important that we create strong foundations underneath existing structures, which will allow for reduced re-build efforts and a quicker return to full operation.

Mainmark team in the process of injecting resin through injection tubes 7m into the ground.

Originally researched by Mainmark in the Christchurch red zone, and underneath an operational retail space, Terefirm™ Resin Injection is a practical solution for the treatment plants and other important infrastructure in the water network, as they can continue to operate as normal while ground improvement works are being completed. ■

Mike Baker of Mainmark (right) explaining the injection process and locations at the Seaview Plant to Lower Hutt Mayor Ray Wallace (centre) and Lower Hutt Deputy Mayor and Wellington Water Committee Chair David Bassett (left).

Point of injection in ground at Seaview Wastewater Treatment Plant.

service goals

We deliver our services by focusing on three customer outcomes: safe and healthy water; respect for the environment; and resilient networks that support the economy.

Our performance in these areas is reported through the delivery of twelve service goals (four service goals for each customer outcome). The following update is at 31 March 2019.

Customer Outcome 1: **Safe and healthy water**

Much of the metropolitan Wellington region's water is sourced from protected catchments, though we will always face challenges that threaten the safety of service to our customers. Some challenges are emerging from our new understanding of the Waiwhetu aquifer. We are constantly monitoring change and its impacts on our operations. We face a rapidly changing regulatory environment. Safe and healthy water is also affected by wastewater and stormwater entering land and waterways – particularly during heavy rain events. This is likely to get worse, with aging infrastructure, urban growth and more extreme weather events. Until we have reduced these occurrences we continue to rate this outcome as amber.

On Track Some concern Off track

Safe and Healthy Water			YTD Status	Quarterly Status Q1	Q2	Q3	Q4
We provide safe and healthy drinking water	Stay the same						
We operate and manage assets that are safe for our suppliers, people and customers	Stay the same						
We provide an appropriate region-wide fire-fighting water supply to maintain public safety	Stay the same						
We minimise public health risks associated with wastewater and stormwater	Stay the same						

We provide safe and healthy drinking water

We are compliant with the New Zealand Drinking-water Standards. Changes to the Drinking-water Standards will be incorporated into our compliance monitoring. The regional Water Safety Plan (WSP) that prioritises improvements to mitigate drinking water quality risks remains with the regulator (Ministry of Health) for approval. All drinking water quality issues continue to have overview by our Drinking Water Safety Committee. A policy setting out the objectives for the committee has been developed. We have commenced work to implement improvements identified in the Regional Water Safety Plan.

We operate and manage assets that are safe for our suppliers, people and customers

Recent issues with surcharging manholes during flooding events (causing hazards for our community) have resulted in a programme of fixing manhole lids prone to surcharging. Future work will focus on developing a sound understanding of the health and safety risks from the assets that we manage.

We provide an appropriate region-wide firefighting water supply to maintain public safety

The hydrant performance testing work programme is on track across the region. Where non-compliant hydrants are found they are prioritised for upgrade works. Fire and Emergency New Zealand operating under its new legislation is keen to have regular dialogue with us in order to improve firefighting services.

We minimise public health risks associated with wastewater and stormwater

There are network capacity and condition issues that can cause wastewater overflows and result in contamination of our waterways. This can result in public health concerns. Work is ongoing throughout the region to minimise the number of wet weather overflows. Eliminating dry-weather overflows continues to be a challenge. Our ability to now identify smaller contained overflows that may not reach watercourse, has led to an increase in the reported number of overflows. No dry weather overflows occurred in quarter three, but we will not achieve the outcome at year end.

Customer Outcome 2: **Respect for the environment**

Freshwater quality in the metropolitan Wellington region is variable. Some of our larger rivers flowing out of forested catchments are in excellent health. In contrast, some of our streams, rivers and coastal areas are degraded. In some places, urbanisation is contributing to the degradation of water quality through increased stormwater volumes flowing directly into waterways. Our wastewater network can also result in increased pollution in waterways from leaks in aging pipes and overflows during heavy rain events. We are improving long-term environmental outcomes through both asset and non-asset solutions, reinforced by the recent publication of the Te Awarua-o-Porirua Whaitua Improvement Plan. The impact of these initiatives is either unknown or variable, so we continue to rate this outcome amber.

On Track Some concern Off track

Respectful of the environment			YTD Status	Quarterly Status Q1	Q2	Q3	Q4
We manage the use of resources in a sustainable way	Improve						
We will enhance the health of our waterways and the ocean	Improve						
We influence people's behaviour so they are respectful of the environment	Improve						
We ensure the impact of water services is for the good of the natural and built environment*	Improve						

We manage the use of resources in a sustainable way

Increasing trend in per capita demand for water is slowing, potentially due to a milder start to the summer. If the overall trend continues it is likely that the regional limit of 374 litres per day (per person) will be exceeded within the next few years. If this occurs we will need to consider accelerating supply/demand initiatives to achieve a sustainable water supply. We have commenced work on identified alternative demand management initiatives as an outcome of the Future Services Study.

We will enhance the health of our waterways and the ocean

We monitor freshwater sites and beaches, and some of these sites exceed current pollution target levels. Community expectations are rising and central government policy has been updated to reflect this. There is a long-term ongoing initiative to identify and remove sources of pollution, and we're mapping a pathway for the enhancement of our networks to achieve the new standards.

We influence people's behaviour so they are respectful of the environment

We've developed stormwater and drinking water campaigns at the end of 2017/18 which were out in market at the start of 2018/19. The 'Where does it go?' stormwater campaign nudged people to stop and think before they undertake activities using the stormwater network, showing connections between their actions, our networks, and the environment. Our 'Love Every Drop' campaign showed customers where their water comes from, educated them on how to look after our water, and provided them with alternatives/solutions to their actions.

We ensure the impact of water services is for the good of the natural and built environment

We are developing a comprehensive consents database to ensure that we can accurately track our consenting and regulatory performance in one place. The Whaitua Implementation Plan (WIP) has been issued for the Te Awarua-o-Porirua. The WIP includes outcomes that will drive our future levels of service. We continue to monitor, and participate where appropriate, in national water policy and work streams such as the National Planning Standards – Network Utilities, and Ministry for the Environment's Urban Water Principles.

Customer Outcome 3:
Resilient networks that support the economy

The overall reliability of our three water networks will be compromised during significant natural events; these include flooding from high-intensity wet weather. We want our networks to be adaptive to ongoing stresses such as the impacts of sea level rise, and flexible so that they can recover quickly from the shocks and stresses of natural events. We are both investigating and investing to improve our performance; however, a green rating is a long-term aspirational goal. Understanding the limitations of our networks, so that improvements can be made, is vital to supporting growth in the region and minimising the impacts of events such as flooding. Due to the extent of the regional issues, we currently rate this outcome red.

On Track Some concern Off track

Resilient networks support our economy*			YTD Status	Quarterly Status Q1	Q2	Q3	Q4
We minimise the impact of flooding on people's lives and proactively plan for the impacts of climate change	Improve						
We provide three water networks that are resilient to shocks and stresses	Improve						
We plan to meet future growth and manage demand*	Improve						
We provide reliable services to customers	Stay the same						

We minimise the impact of flooding on people's lives and proactively plan for the impacts of climate change

Completion of our hydraulic models by 2021 will allow us to better understand the likely impact of flooding on communities. There are known flood risk areas that will need improved flood mitigations. Programmes are being developed and prioritised to understand the scale and urgency of an appropriate response.

We provide three waters networks that are resilient to shocks and stresses

Our Community Infrastructure Resilience project with the commissioning of all water stations with the exception of desalination options, which are with Wellington City Council for funding approval. We are continuing to prioritise work on projects identified in the Towards 80-30-80 Strategy with planning for the delivery of the Cross Harbour Pipeline in progress and commencement of work on the Omāroro reservoir inlet and outlet pipelines.

We plan to meet future growth and manage demand

We are continuing a programme of catchment assessments where growth is anticipated that will recommend future upgrades to the infrastructure, allowing councils to plan for and fund those works through future Long-term Plans. These studies will use the Three Waters Strategy as a guideline, meaning that the designs are forward looking in terms of resilience, environmental outcomes and the use of alternative solutions to traditional infrastructure. Increasing resources are being needed to identify infrastructure required for growth initiatives especially the Porirua East Development.

We provide reliable services to customers

Response to non-urgent repairs has been slowing; there is room for improvement with the implementation of the Alliance. Increased awareness around health and safety requirements, has meant that more planning is now being carried out prior to the works on site.

changing behaviours

Using customer research to inform our marketing campaigns.

Every year we ask our customers about their perceptions, attitudes and behaviours towards water and the services we offer. This year we have moved to a six-monthly survey format (January/June) so we are able to use the insights we get to adapt our communications, marketing, and education campaigns in a timely way.

The online survey is conducted on our behalf by Colmar Brunton (using their customer panel). The January 2019 survey was completed by 402 participants aged 18 plus from throughout the Wellington metropolitan region (100 participants from Porirua, 101 participants from Upper Hutt, 101 participants from Lower Hutt, and 100 participants from Wellington).

Results are post-weighted so each city's results are representative of their population by age and region. The overall results have also been weighted by the population of each city, so each city's influence on the overall result is proportionate to their population.

What do our customers think about us and the services we offer?

We start the survey by asking our customers "Can you name the organisation that provides water services in your area?" This helps us get an understanding of whether our customers know where their water comes from, and how their services are delivered.

- Unprompted and prompted awareness of Wellington Water as the organisation that provides water services to the region have increased. In total, 60 per cent of residents are now aware that Wellington Water provides water services on behalf of our five client councils (compared to 56 per cent in June 2018).

We also ask our customers to rank (in order of importance) our three customer outcomes: safe and healthy water; respectful of the environment; and creating resilient water networks.

- Providing safe and healthy drinking water continues to be viewed as the most important (93 per cent ranked as important/very important); creating resilient networks (81 per cent) and respectful of the environment (77 per cent).

We then ask a bit more detail about people's satisfaction with the services we provide (on behalf of our client councils) and their customer experience. Satisfaction with people's interactions with Wellington Water has improved slightly since the last measure (June 2018). In particular, satisfaction in general among those who experienced an expected water outage, observed people from Wellington Water working in their communities, and those that reported a problem.

What are our customers' perceptions and attitudes towards water services?

It's important we have an understanding of what our customers' perceptions and attitudes are towards water conservation, so we're able to effectively design and promote behaviour change campaigns.

- Compared to June 2018, more customers believe conserving water is necessary, and that they should be doing more than they are currently. However, the proportion who feel they have the information they need to conserve more water remains at just under 60 per cent.

People's attitudes towards water conservation has also improved.

- Seventy per cent now think it's necessary to conserve water where they live (up from 60 per cent in June 2018) and 96 per cent now believe water is a limited resource (up from 86 per cent in June 2018) which shouldn't be wasted.

However, while attitudes have improved, the number of water conservation behaviours people are currently doing has remained the same as in June 2018 (seven

Our 'garden watering restrictions meter' ad had the highest recall (people remembering they had seen the ad when asked) 16 per cent.

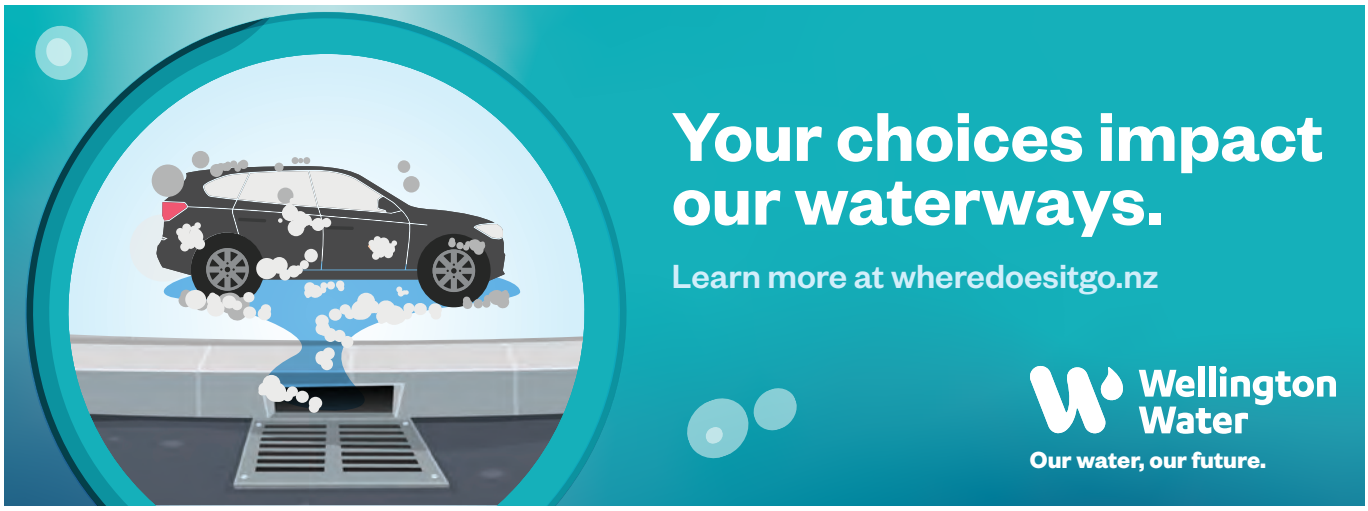
behaviours per household). The most common water conservation behaviour is using the single flush function on a dual flush toilet. There has been a decrease in the proportion of residents who followed local watering day and time restrictions in the last six months.

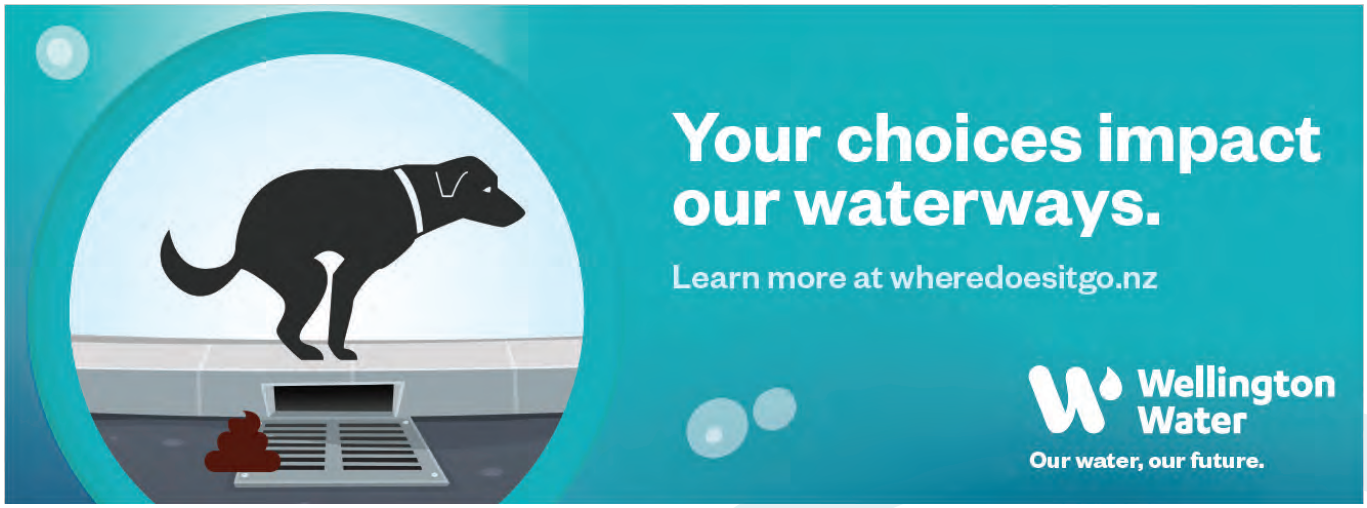
Compared to our June 2018 survey, more Wellington residents believe conserving water is necessary, and that they should be doing more than they are currently. However, the proportion who feel they have the information they need to conserve more water remains at just under 60 per cent.

In the past 12 months to January 2019, our customers had 1.8 interactions on average per household with Wellington Water; this compares to 1.9 in June 2018.

- 71 per cent of Wellington residents interacted with Wellington Water, compared to 72 per cent in June 2018.
- 49 per cent had an issue (a water leak/poor quality drinking water/unexpected water outage/flooding at home/reported a problem), compared to 51 per cent in June 2018 and 43 per cent in June 2017.

Water leaks and poor-quality drinking water have the biggest negative impact on perceptions of Wellington Water. As previous surveys have found, community activities and seeing or hearing something about Wellington Water has the most positive impact on perceptions.





Our stormwater campaign 'Where does it go' received 9 per cent recall.

Residents who observed Wellington Water and their contractors working in their communities appreciated that they were working hard to fix problems. Those who contacted Wellington Water to report a problem often mentioned whether the issue had been (permanently) resolved or not – those satisfied had their problem resolved in a timely manner, while those dissatisfied report recurring issues.

We asked how people wanted to be informed of planned maintenance work, and there is a clear preference for letters, or flyers, delivered to home addresses.

- People aged 60 plus have higher preference for letters or flyers to be delivered to their home address (98 per cent).
- Signage featured as the second most popular option with 46 per cent.
- People aged 40 and under have higher preference for social media notifications (26 per cent).
- This was closely followed by advertisements or notices in their local newspaper.

How well are our marketing campaigns performing?

We asked our customers if they've 'seen or heard any advertising, public notices, or promotions from Wellington Water in the last six months.'

- 46 per cent of residents recall hearing or seeing something from Wellington Water in the last six months. This is a good result for unprompted awareness.
- 36 per cent recall seeing at least one of the advertisements asked about. Colmar Brunton noted that the recall of the campaigns shown is higher than their non-television commercial campaign norm (29 per cent).

Of the campaigns asked about, the 'garden water restrictions meter' ad had the highest recall, followed by our 'Love Every Drop' ad. Only three per cent recall seeing the Water Lovers video, and Fatburg/Ragmonster ads. It's important to note that Water Lovers advertising would have just started at the time of this survey (this campaign is promoted between November – April), and

Fatburg and Ragmonster were specifically targeted towards families through our Plunket partnership and Tots to Teens advertising.

While people thought the ads had "points that were relevant to me" and that the "points made in the ad were believable", they rated low compared to norms on "easy to understand", "told me some new information", and "prompted me to take action".

We asked our customers about their water storage and if they had a plan for safe disposal of wastewater (wees and poos) in an emergency. Consistent with previous years, more than seven in 10 residents have less than 20 litres of water stored per person for emergencies. Four in ten Wellington residents have a plan in the event that they are unable to use their toilet. This leaves six in ten without a plan, or unsure of their plan. Upper Hutt residents and homeowners are more likely to have a plan than average, while renters and those aged 40 years old and under are less likely.

Of those that do have a plan in place, roughly half are planning on digging a long drop and a third are planning on using the two bucket system.

What we've learned and what we'll change

We conduct this research so we can better understand our customers' perceptions, attitudes and behaviours towards water and the services we offer. It's also an opportunity for us to use the insights we get to adapt our communications, marketing, and education campaigns in a timely way.

Below are a few of the learnings we've taken from the January 2019 survey.

- Our marketing tactics should focus on the promotion of a wide range of water conservation behaviours.
- Our marketing and communications needs to be refined to make sure messages are easy to understand, provides new information, and has a clear call to action.
- Making sure people have the information needed to conserve more water can be achieved by making sure we are using a good mix of channels to reach our customers (print, radio, digital, etc.)
- We need to review communications channels and tactics regarding Garden Watering restrictions. Are we being clear and targeted enough?
- Community activities (attending a community event with our Wellington Water booth or tent) and seeing or hearing something about Wellington Water (social media, radio, newspaper) has the most positive impact on perceptions. Conversely, poor drinking water and a water leak in the street have a negative impact on perceptions. We should continue to have a managed and consistent presence at community events throughout the region, and continue to increase our presence by having a clear channel strategy.
- We need to review how we make the most of outdoor signage and flyers to better inform customers about planned work.
- There's an opportunity to increase household resilience and awareness for the need to have water storage and a wastewater plan. These messages should be promoted all year through community events and advertising. We'll continue to partner with Regional Public Health and Wellington Regional Emergency Management Office to make sure our messages are consistent. ■

2018-21

Statement of Intent measure **update**

Our customer will reduce the amount of water they are using at home because they have the information they need to be able to make informed decisions and change their behaviours (SOI measure 5).

UPDATE: Our garden watering restrictions awareness campaign runs from September – April each year, we use print, radio and digital advertising to reach our audiences. We also run our summer demand campaign 'Love Every Drop' which we us to encourage water conservation all year round. Our market research is showing good recall of both campaigns (compared to national norms).

Our customers will have positive interactions with us because we will measure and improve their customer experience satisfaction (SOI measure 10).

UPDATE: Our market research is one measure used to track customer experience satisfaction (together with call-backs and our door-to-door surveys). Customers that rated their satisfaction as good/very good was 83 per cent. Compared to 83 per cent (2018) and 84 per cent (2017).

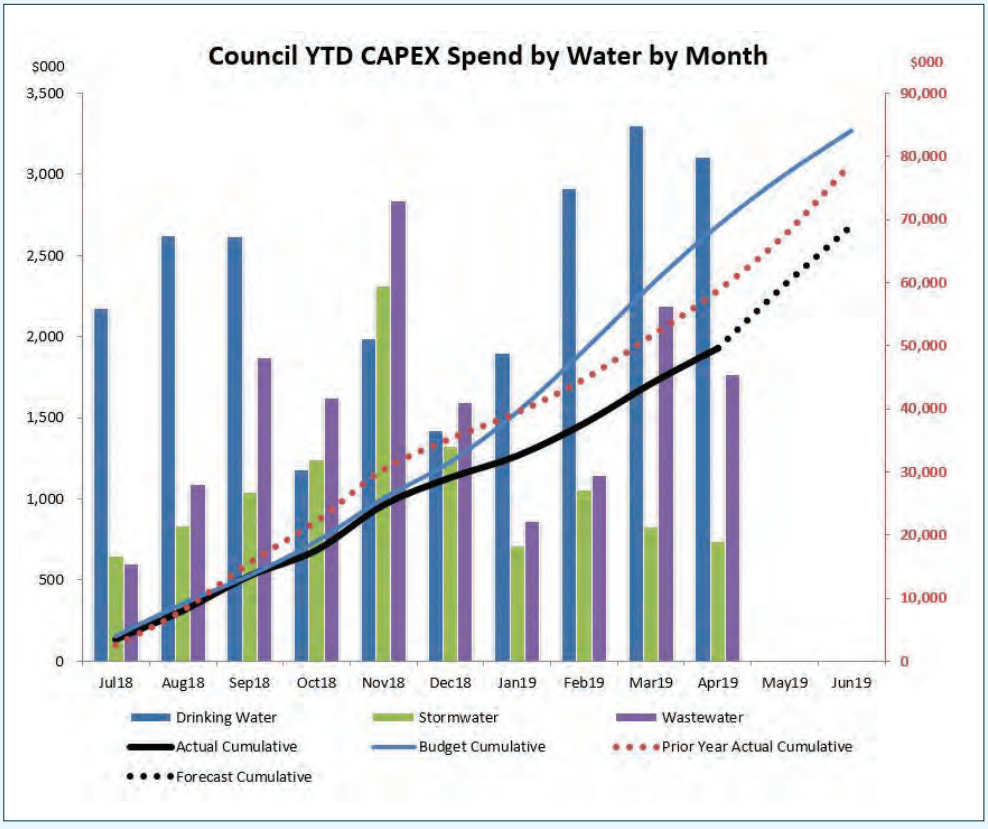
tracking our performance

The Capex Spend By Water, By Month graph shows, on the right-hand scale, how we are tracking at spending what the region has budgeted on renewing and improving the three waters networks. The solid black line is what we've spent or accrued; the black dots are our forecast, and the red dots are what we spent and how last year.

The left-hand scale shows how much we've spent so far on each of the three waters – drinking (blue bar), storm (green bar) and waste (purple bar).

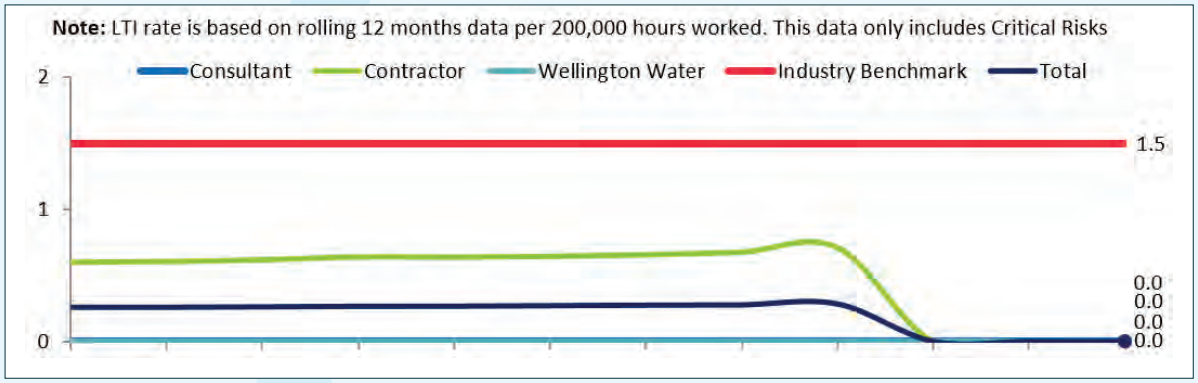
Our overall programme delivery is now tracking below the forecast for the year. One of the main reasons for this has been the impact of significant cost increases in project delivery. The effect of this is to delay work as we must re-prioritise the programme to stay within budget, and in some cases re-evaluate cost-benefit business cases. We then need to manage other constraints such as resource availability – for example having the right equipment and people available to do the necessary work.

As we've noted earlier, this is the first of a three year rolling programme, so we do have greater opportunity to spread and make up for the underspend from this year. Embedding new processes internally and with our extended family of suppliers, such as our new contractor panel arrangement, will help us be more adaptive in dealing with future programme changes.



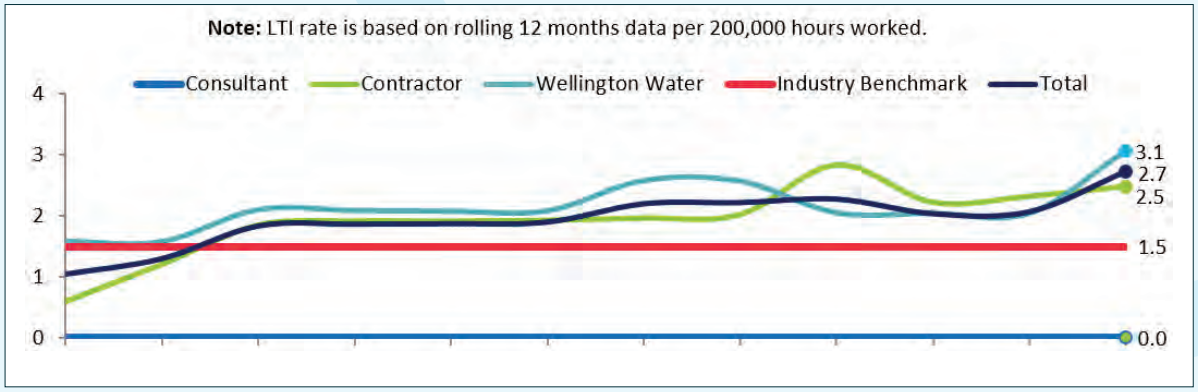
Health and safety

Critical Risk – Lost Time Injury Frequency Rate (LTIFR)



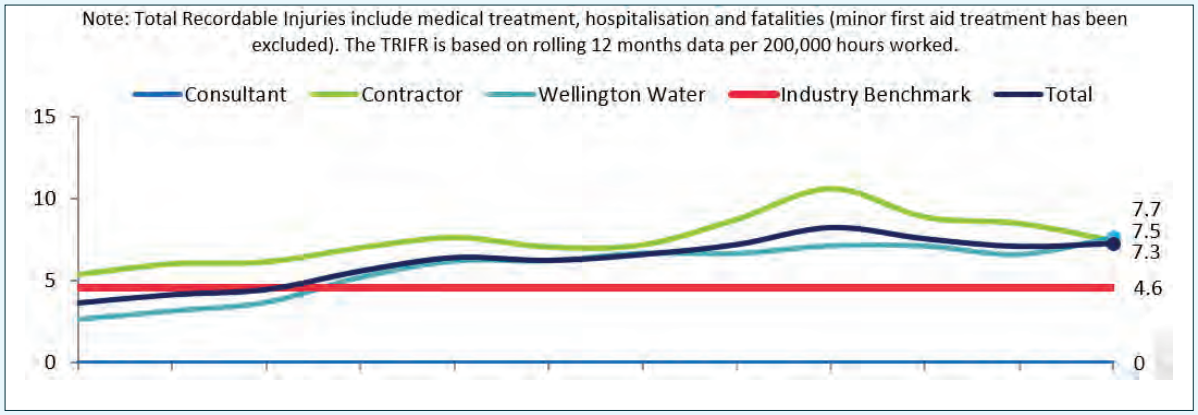
This graph aims to show Lost Time Injuries (LTI) sustained from any of our nine identified critical risks (risks that are common to our activities and have the potential to serious harm us or cause death). The graph below shows our LTI stats across all incident types. Almost all of our LTI's originate from working with hand tools, manual handling, or slips, trips and falls. Resultantly, the controls we have in place to prevent serious incidents are effective at preventing LTI's. The contractor line shows one LTI. A contractor lost the tip of his finger while working with fixed plant (water meter) in January 2019.

Lost Time Injury Frequency Rate (LTIFR)



We have had two serious LTIs this quarter causing the Wellington Water LTIFR on an upward trajectory. The decrease in staff work hours over the summer break will also have an effect on the trend line. One staff member was away for 19 days resting a sore wrist injured while opening a rusty manhole with a sledge hammer, the other staff member is off work for six weeks following surgery on this thumb from a grinder incident. Both incidents have been investigated and we're designing interventions to reduce our lost time injury frequency rate (LTIFR) across all incident types.

Total Recordable Injury Frequency Rate (TRIFR)



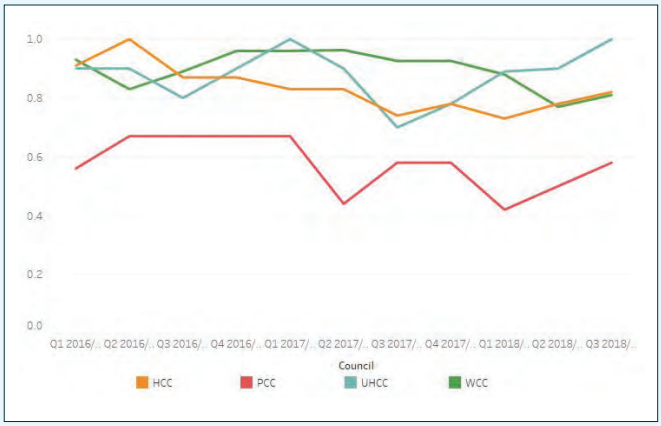
Despite the TRIFR being above the industry average of 4.6 for the Construction Industry, the number of injuries requiring medical treatment has trended downward over the past four quarters from 34 to 16.

Two of these injuries were serious and an additional two incidents had the potential to be serious. We have worked to understand the root causes and have put controls in place to prevent reoccurrence.

Freshwater quality

Target: 90 per cent of all freshwater sites have a rolling 12 month median < or + 1000 colony forming units (cfu)/100ml.

We currently monitor freshwater sites and beaches. Some of these sites exceed pollution target levels. This is a long-term ongoing initiative to identify and remove sources of pollution. Test results from freshwater monitoring sites have shown a decline in water quality over the last 12 months.

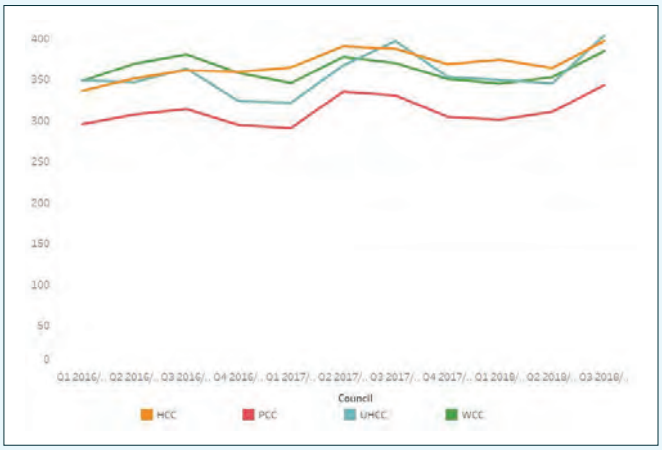


Drinking water usage trends

Increasing trend in per capita for water is slowing, potentially due to a milder summer. If the overall trend continues it's likely the regional limit of 374 litres per person (per day) will be exceeded within the next few years.

Average drinking water consumption per resident per day as at the end of quarter three (31 March 2019).

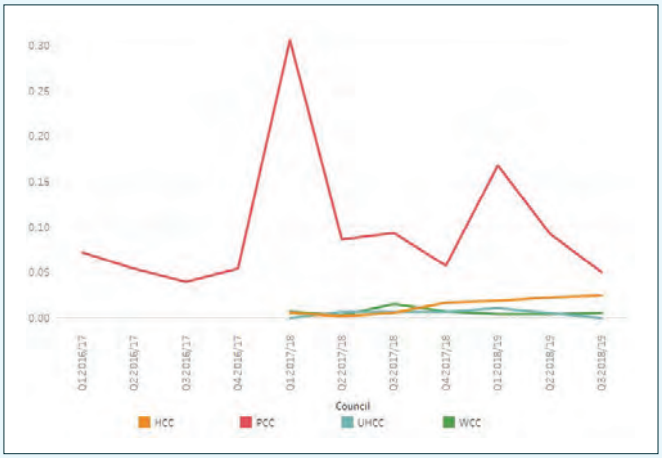
- HCC 397 litres per day (target 345).
- PCC 343 litres per day (target 335).
- UHCC 404 litres per day (target 335).
- WCC 384 litres per day (target 365).



Stormwater pipeline blockages

Target: < 0.5 pipeline blockages per kilometre of pipeline.

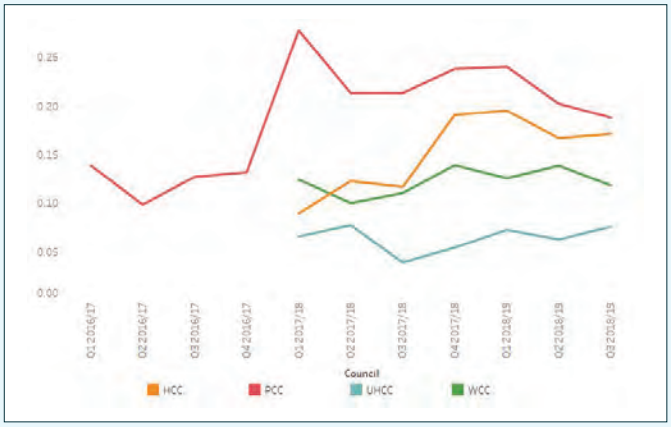
There was a high number of stormwater pipeline blockages in Porirua during the wetter months in July and August 2018, meaning the performance for the first quarter is slightly above the annual target. All blockages were responded to (cleared) within timeframes and did not result in flooding issues for dwellings or businesses. Over the last two quarters the result for this measure has improved.



Wastewater pipeline blockages

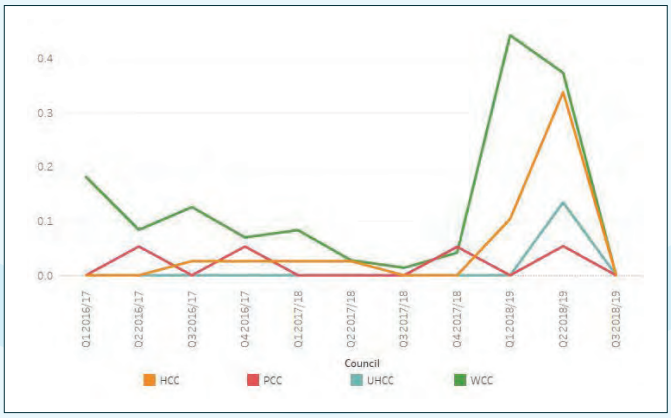
Target: < 0.8 pipeline blockages per kilometre of pipeline.

Blockages continue to be an issue, however we are tracking within our target.



Wastewater overflows (dry weather)

Eliminating dry-weather overflows continues to be a challenge. No dry weather overflows occurred in quarter three, however we will not achieve the target for Year end due to blockages in quarter one and two.



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Wellington Water is owned by the Hutt, Porirua, Upper Hutt and Wellington city councils, and Greater Wellington Regional Council. The councils are all equal shareholders.

Our vision is to create excellence in regional water services so communities prosper. Our customers, the residents of the metropolitan Wellington region, use the services we provide: drinking water; wastewater; and stormwater in their homes, businesses, and communities every day.