Wellington Water

Three Waters Report and Outlook

FOR THE QUARTER ENDED 31 DECEMBER 2015

Wellington Water's first community day – together with PCC, Cardno and Ngati Toa, we installed around 100 "Drains to Harbour" signs to stormwater grates in Porirua at the end of December

Our water, our future.

Our operating conditions

CONTRACTOR PRICING INCREASING

Feedback from our suppliers is that demand for skilled labour is starting to heat up, and is beginning to result in competition for particular skills. As the economy expands and the housing development markets within Auckland and Christchurch increases pressure on infrastructure and investment, we expect to see further pressure on labour. Labour costs are a significant portion within our programmes.

We've noticed a drop off in the number of contractors pricing work for us across the region, with a number of smaller contractors withdrawing from the market. We believe this is a result of the increased emphasis on health and safety and quality requirements – although it's interesting to note the impact of our new fencing policy on completion of one project (see story on p12).

As well as that, increased infrastructure spending in the region means we're competing for resources within an increasingly constrained market. The result is that we've noticed a shift upwards in pricing. Whether this is a trend or a blip we don't know yet, but we are watching closely as it is a risk to successful delivery of our programmed works.

On the plus side the capital goods price index for pipelines dropped from the previous quarter by 0.4%, although overall the index has increased by 2.4% over the same quarter last year.

New connection applications

Quarter 2 (October – December)
This quarter: 87
Previous quarter: 97
Year to date: 322
This quarter, last year: 95
Year to date, last year: 338

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OUTCOME 1

Our Water is safe to drink

Our drinking water met national drinking water standards, and our networks complied with Ministry of Health requirements. There were no reported incidents of public health relating to water.

13,228.8 million litres of safe drinking water delivered to 138,500 connections.

In the same quarter last year (October – December 2014), we delivered 12,396.4 million litres.

Summer starts off dry

Summer has gotten off to a rather dry start with December rainfall totals in our water catchment areas at well below average levels. Kaitoke only received 29% of its usual December rainfall, while Wainuiomata and Orongorongo received 48% and 52% respectively. Low rainfall of course means less water in our rivers, and both the Hutt River and Wainuiomata River were at less than half (47%) of their average December flows. While these low rain levels are a concern there is currently sufficient water in our rivers and aquifer to supply the expected summer demand.

Demand for water in our four cities is higher than we would like for this time of year, with a number of days already over our 150 million litres (ML) target. Our highest water demand day so far this summer was Tuesday 15 December with 163.4 ML.

UPDATE ON SUPPLY FACTORS:

Geosmin – Geosmin levels in the storage lakes are currently low and can be removed by the treatment process at the Te Marua Water Treatment Plant.

Algae – A species of algae has been detected in Lake One that is known to be capable of producing toxins. We've isolated the lake as a precaution and will begin an enhanced monitoring regime in January. It is likely that this monitoring will continue for some time while a long term solution is investigated. We can use the lake water (if needed), provided the sample results remain below the drinking water standard limits. All test results to date have been clear.

Increasing awareness of "odds & evens" watering restrictions

The "odds & evens" garden watering restrictions are a key tool for us to help smooth out the peaks in summer water demand. The more we can spread the demand for water out across the week, the better our system can cope. This summer we're using print ads in local papers as well as radio ads on five stations to remind residents that "odds & evens" garden watering restrictions are in place now.

One of the garden watering restriction print ads we're running this summer.

OUTCOME 1

Our Water is safe to drink

Ashburton's experiment

The majority of councils in New Zealand have watering restrictions up their sleeves to roll out when appropriate. However, this summer one council bucked the trend: Ashburton District Council.

In October 2015, Ashburton District Council announced they would not impose garden watering restrictions for the 2015-16 summer for urban residents. They aim to collect baseline data on summer water usage and see how effective the "SMART Watering" programme is (an Irrigation New Zealand education programme).

Things haven't gone swimmingly though; they put out a notice on 4 December warning that soaring water consumption could see watering restrictions being imposed. The warning must have worked, as of 8 January no restrictions had been imposed.

We'll be watching with interest to see how they go over the rest of summer!

Locals' attitude 'disappointing'

CONTINUED P3

Hosing ...strictions

Ashburton Mayor Angus McKay

OUR VIEW

Water use data will point way

Siv Oldham EDITOR

Ashburton Guardian newspaper articles about the no watering restriction plan.

Outcome	Strategic Goal	Aspirational Direction	Quarterly Status Q1	Q2	Q3	Q4	Current long term trend
Safe Drinking Water	We provide safe and healthy drinking water	Stay the same					

OUTCOME 2

We are respectful of the environment

Outcome	Strategic Goal	Aspirational Direction	Quarterly Status Q1	Q2	Q3	Q4	Current long term trend
Respectful of the environment	We minimise our impact on waterways and the ocean	Improve					
	We minimise waste	Improve					
	We minimise our impact on the natural and built environment	Stay the Same					
	We influence people's behaviour to minimise impact on the environment	Improve					

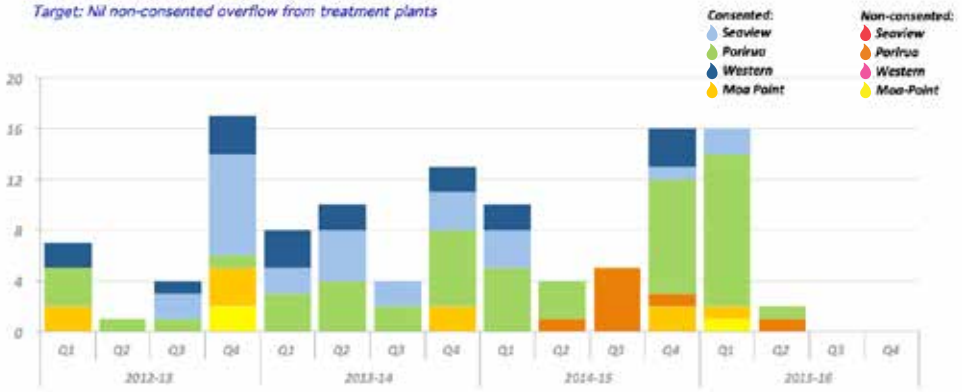
FRESH WATER QUALITY: % of sites compliant

Target: 90% of all freshwater sites have a rolling 12 month median < or = 1000cfu/100ml3

	Current	Target		Current	Target	
HCC	86%	90%		PCC	67%	90%	
UHCC	100%	90%		WCC	92%	90%	

DISCHARGE EVENTS FROM TREATMENT PLANTS

Target: Nil non-consented overflow from treatment plants



OUTCOME 2

We are respectful of the environment

Check out the water quality of your favourite swimming spot before you leave home

We've teamed up with Greater Wellington Regional Council, Wellington City Council, Hutt City Council, Masterton District Council and Regional Public Health to support Summer Check, a one-stop web based information site which allows people to stay up-to-date on the water quality at their favourite swimming spot.

Summer Check monitors the water quality at 87 popular swimming spots throughout our region and holds up-to-date information on toxic algae, weather conditions, sun protection, water safety and harbour and boating information.

www.gw.govt.nz/summer-check

Monitoring and investigating water quality

MONITORING PROGRAMME – BEACHES

All bathing beaches in Wellington, Lower Hutt and Porirua were suitable for recreational purposes during November and December (the start of the bathing season).

Monitoring is carried out at 23 sites in Wellington, 10 in Porirua and 13 in Lower Hutt. We conduct the monitoring programme jointly with GWRC, WCC, PCC and HCC. The bathing beaches are monitored weekly in summer (from November to March) and monthly in winter (April to October) and are tested for enterococci, an indicator for identifying faecal contamination.

We keep a close eye on the water quality monitoring data so that we can react quickly and launch an investigation if the water quality does not meet acceptable levels.

MONITORING PROGRAMME – RIVERS

Our target for freshwater sites is that 90% of all freshwater sites have a rolling 12-month dry weather median of less than 1,000cfu (colony forming units, an indicator of faecal contamination). During this quarter, Wellington and Upper Hutt met this target while Lower Hutt and Porirua did not (86% and 67% respectively). We are working towards meeting the targets for both Lower Hutt and Porirua.

Monthly monitoring is carried out at 27 freshwater sites in Wellington, 9 in Porirua, 10 in Upper Hutt and 24 in Lower Hutt.

INVESTIGATION PROGRAMME

We also have an active investigation programme aimed at identifying faults in the private and public network. Investigations are carried out at sites which do not meet the water quality limit (rolling 12-month dry weather median < 1,000cfu).

Recent investigations have revealed broken sewer laterals, cross connected sewer laterals, blocked gully traps and sewer mains in poor condition. Some of these faults are fixed easily, however others can take longer – for example a cracked sewer main will need to be proposed for renewal and then placed into the capital works programme, depending on its priority.

OUTCOME 2

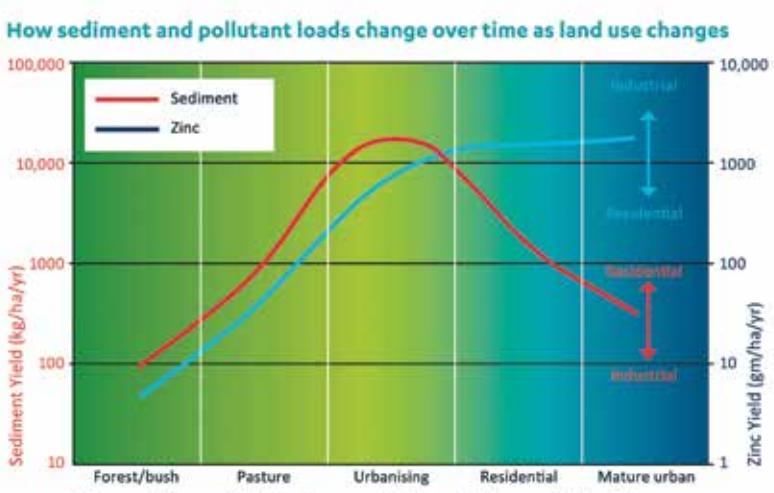
We are respectful of the environment

Stormwater and contaminants

When we think of stormwater contaminants or pollution, most of us would think of things like oil spills, toxic chemical spills or other big pollution incidents. While these incidents do happen, they are not the only cause of stormwater contamination.

As rainfall runs off over roads and roofs, it picks up sediment, petrochemicals and metals such as zinc, copper or lead and carries them through the stormwater network to the nearest stream or beach. These contaminants, especially heavy metals, can build up over time in ever increasing concentrations.

The graph below shows how sediment and zinc yields change as cities become more intensively developed.



Reference: Urban runoff databook: a manual for the preliminary evaluation of urban stormwater impacts on water quality.

Research suggests that most of the zinc in our stormwater comes from unpainted or badly maintained galvanised iron roofs. In industrial areas, there are often large areas of unpainted roofing, which results in more than 95% of the zinc in stormwater coming from roof runoff.

While runoff from heavily used roads also contains zinc and other contaminants, it is a smaller proportion of the total amount entering our harbours. Stream bank erosion, exposed soils and poorly controlled construction activities can contribute to high levels of sediment in our streams and coastal waters. The brown plume of water at the mouth of the Hutt River, visible after a rainfall event, is a prime example of sediment ending up in our harbour.

A mix of source control and treatment is needed to help reduce the amount of contaminants in our streams and harbours. Source control means reducing contaminants at their source, one example of this would be to encourage the use of building products that generate less zinc. Treatment involves removing contaminants from stormwater run-off areas like roads, where contaminants build up as a result of normal use.

Wellington Water has a wide range of activities designed to improve our water quality. Some of these include:

- Culvert inspection programmes and maintenance
- Sump cleaning
- Outfall inspection
- Environmental sediment control management during construction
- Trade waste management plan

More details on stormwater contaminants can be found in our latest issue of the ICMP News – check it out at: ***wellingtonwater.co.nz/your-water/stormwater.***

OUTCOME 3

Networks that are resilient, now and in the future

Outcome	Strategic Goal	Aspirational Direction	Quarterly Status Q1	Q2	Q3	Q4	Current long term trend
Resilient now and in the future	We minimise 3 waters service outages and impact on our customers	Stay the same					
	We minimise the impact of flooding on people's lives	Improve					
	We provide an appropriate region wide fire-fighting water supply	Stay the same					
	We operate and manage assets that are safe for our suppliers, people and customers	Improve					
	We provide a seismically resilient network	Improve					
	We minimise the risks associated with the loss of water services due to land movement	Improve					
	We plan for sustainable water sources, future demand, growth and climate change	Improve					

Making progress on resolving flooding issues

Following the heavy rain events in April and May last year, we've been working hard to find solutions and ways of minimising any future flooding. Many of these problems came from the public and private stormwater systems, which couldn't cope with the amount of rain that fell.

Some of the worst areas affected were Aro Valley/Brooklyn Road, Basin Reserve/lower Adelaide Street, Kent Terrace, Kilbirnie, Queens Drive (Lyall Bay), Old Bank Arcade, Rakau Road, Salisbury Terrace and Tawa. In some of the areas the flood waters entered properties and caused significant water damage. These areas have been classified as high priority for investigation and we've been working hard to find suitable solutions to minimise the risk of this happening again.

OUTCOME 3

Networks that are resilient, now and in the future

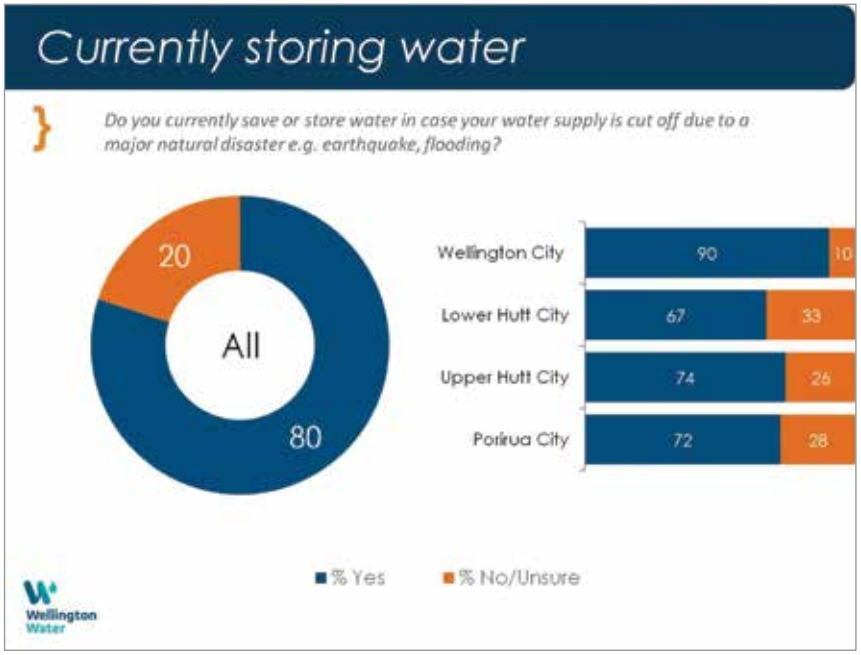
Water supply resilience project making strides

The Water Supply Resilience project has made good progress over the last quarter. The main activities have included developing a list of recommended projects, engaging with stakeholders, and finding out what our customers are thinking and doing to prepare for a natural disaster.

We commissioned some research to help us better understand customers' preparedness and likely acceptance of proposed levels of service for water following a major earthquake.

The main findings (by telephone survey of 300 residents, 75 each from Lower Hutt, Upper Hutt, Porirua and Wellington) were:

- 80% of respondents reported they're storing water in case of an emergency
- 85% of those who are storing water, are storing tap water
- 79% of people who store water, store enough for at least three days
- 58% expect water to be available from a neighbourhood collection point two days after a major event
- 59% expect to walk more than 500m to collect water
- 56% expect to treat water they've collected after an event
- 58% expect water to be restored to their street about four weeks after an earthquake
- 90% support more investment to prepare the water supply network for natural disasters



Survey results extract showing how prepared each of our cities are.

Wellington Water: Health and Safety

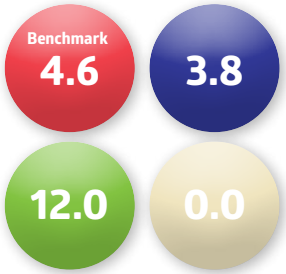
All Health and Safety Incidents

(includes first aid injuries, injuries , lost time injuries, medical treatment injuries, return to work injuries, serious harm injuries, moderate injury, near hit /miss incidents and hazards)

Benchmarking data has been obtained from the Business Leaders Safety Forum. WWL is comparing performance to the forum's figures for the mining, utilities and work management industry. This is the sector Watercare are contributing data to.

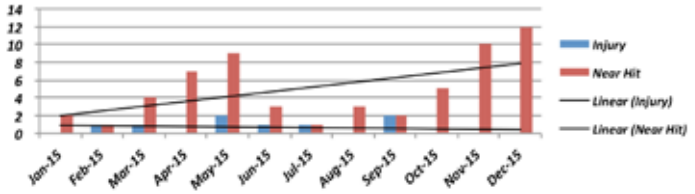
- Wellington Water
- Contractors
- Consultants

Total injury frequency rate



Total trends (Rolling 12 month)

Contractor/consultants (from WWL database)



Near miss reporting on the increase

The total recordable injury rates over the last 12 months show a steady decline. In the case of Wellington Water, direct operations injury rates are now below the industry average from the Business Leaders Safety Forum. The contractor rate is expected to steadily decline over the next two quarters as we maintain our focus on up-front safety planning.

Quarter Two had a significant decrease in reporting compared to Quarter One. The reports from this quarter comprise of near misses and first aid events – a year ago these types of event were seldom reported, if at all. Actual damage to third party services or property has decreased significantly over time. This indicates the culture is slowly turning around to be more open and people feel safe to speak up about near misses and health and safety risks.

Wellington Water: Programme delivery

Contractors take health and safety focus on board

Our focus on health and safety in the first half of the year has resulted in a significant step change across our programme. The highlight for the quarter was the successful introduction of our site safety fencing policy, and the noticeable change in culture from our suppliers. We will continue to focus on health and safety as we move closer to the implementation of the Health and Safety Reform Act in April.

We've been heavily focusing on our forward design programme and 2016-17 construction programme planning. Already 80% of next year's programme is briefed and with consultants for design, and we'll have a draft tendering and construction schedule available in February.

We've also introduced a fast tracking programme to prepare project briefs, designs and construction programmes, with the aim of achieving a rolling three-year plan for capital expenditure projects across the region.

The result of this will be improved programme delivery and a smoother workload for our contractors, which will help with their planning and project completion.

We're also working with our consultants on the quality of investigative work and designs, so we reduce construction risks and delays caused by unexpected changes.

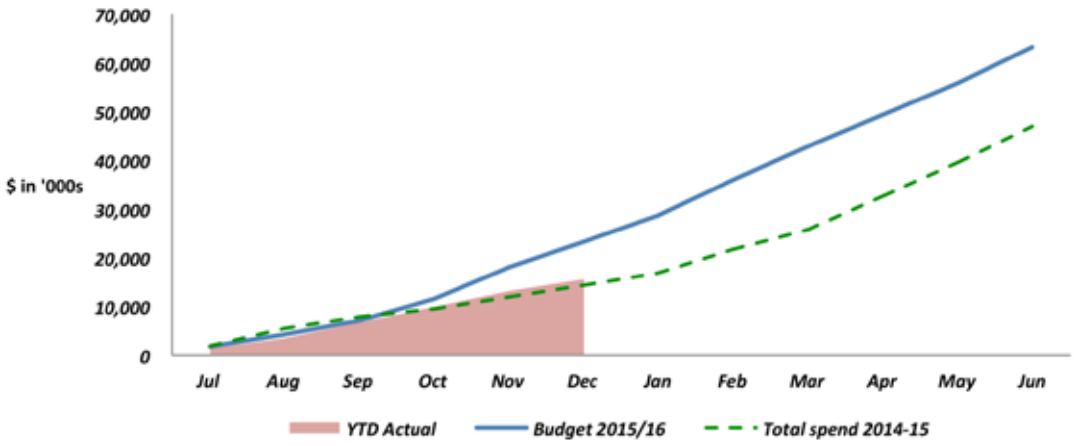
We have 295 active projects across our work programme. At this stage 12% are complete, 71% are underway and on track, 8% are off track but we expect them to be complete by year end, and 3% we think will still be off track at year end. Five per cent of projects are on hold – reasons for this include higher than expected tender prices, and changes in priority.

At the halfway point of the financial year, we're behind where we wanted to be with project completion. We've tendered 80% of our annual programme and awarded 69%. At this stage, following adjustment of the programme, we anticipate an overall completion rate of 94% of projects versus our target minimum of 95%.

We have agreement from PCC to review and slow down our capex programme to ensure we can deliver best value through better planning, this will result in us putting some work on hold. We are planning to have the revised programme agreed with PCC in March.

Capital expenditure, as at 31 December 2015, vs year-end forecast

Capex YTD spend (excludes consultancy)



Wellington Water: Value for money

New fencing rules create value, happy customers

Wellington Water's new fencing policy reaped dividends in late 2015, just a month after it was implemented.

In the past, contractors used road cones and barrier poles to define worksites and direct pedestrians. Putting a fence around a work site keeps members of the public safe, so in September 2015 Wellington Water implemented a fencing policy for all construction work sites.

Wellington Pipelines' work site in Cuba Street, Wellington was one of the first to be impacted by the new policy. Pleasingly, after the job was finished, we observed some additional benefits that helped the contractor, members of the public and Wellington Water.

"It was fantastic" says Mike Check, the Wellington Water Project Manager for the job. *"We discovered that in the end, putting a fence around the site led to a whole lot more than "just" a safer public. It was like the gift that kept on giving!"*

Wellington Pipelines erected a 1.8m high fence around the site in October 2015, with a plan to work 5 weeks before Christmas renewing the stormwater pipe, and five weeks after Christmas doing the same to the sewer pipe.

With a static worksite, Wellington Pipelines was able to close the street, and work normal hours, rather than restricted hours each day. This meant the job was finished before Christmas in just six weeks, instead of 10 weeks in total. In terms of cost, there were savings in project management fees, and in projected costs of communications planning and implementation in January. For Wellington Pipelines, they saved four weeks of construction labour costs, management costs and set up fees.

On hearing the news of the early closure, a resident in a nearby block of flats was delighted. *"She said she was glad she wouldn't see us outside her flat after Christmas. We took that as a compliment!"* said Mike.

A survey of stakeholders after we finished revealed similar satisfaction in the reduced timeframe.

For Wellington Pipelines, the fencing meant less interruption. Not only did members of the public know exactly where to go (and didn't have to ask the workers), the Wellington Pipelines staff didn't have to worry about directing foot and car traffic. They could just get on with the job.

Ben Carey, Manager of the Project Management team at Wellington Water, says we'll use the knowledge we gained on this job in the future to plan for projects. *"This is a good example of how a bit more cost up-front can mean savings in the future. We're really pleased with the result in Cuba Street".*

Work underway in Cuba Street.

Wellington Water: National and local agendas

At the national level...

Wellington Water is supporting some work with Water New Zealand to help shape the future direction of the water sector. We are on a steering group that will facilitate an agreement to lift three waters performance across the country and increase national consistency of how water businesses operate. A common framework will be developed over the course of the year and Wellington Water will share its knowledge to support this work.

The former Local Government Minister, Paula Bennett, said last year that the community's rejection of a supercity didn't signal the end of local government reform in Wellington. We understand that the Commission is currently considering what reform could occur to the water and transport sectors.

We coordinated a joint response from our client councils to the Local Government New Zealand report on improving three waters. Our submission included considering the option of a council controlled organisation model.

The Land and Water Forum released its fourth report (November 2015), seeking Government support for 60 recommendations that relate to efficient water use and discharges, the need for better data, giving iwi priority access to unallocated water and requiring councils to implement agreements between the Crown and iwi to recognise iwi rights and interests in freshwater. It also suggests

urban volumetric metering (where population growth is projected to be significant) and revising trade waste by-laws to encourage pre-treatment and recycling of trade waste before disposal into municipal wastewater systems, as well as "water sensitive urban design" for building and upgrading stormwater and roading infrastructure and residential urban development. There are many other suggestions to read more go to: ***www.landandwater.org.nz***. We await Governments response to this report.

We are also considering implications of recent Resource Management Act amendments.

On the local level...

In terms of water supply resilience, we are joining forces with Wellington Electricity and NZTA to use a business case approach to show how network vulnerabilities interact and to identify the critical interdependencies.

The Local Government Commission is reviewing Wellington Water to consider how the regions three waters arrangements compare with other relevant models in New Zealand and overseas. Also given Wellington Water has only recently been set up, the review will determine whether improvements to the current model can be made. We await the results of this review.

One of our 5 client councils (Porirua City Council), has recently undergone a restructure that proposes some changes to the way its three waters are managed.