



Understanding the performance of your water networks



**Hoaketanga: Ka ora te wai, ka ora te
whenua, ka ora ngā tāngata.**

**Purpose: If the water is healthy, the land is
healthy, the people are healthy.**

- A national not-for-profit organisation which promotes the sustainable management and development of New Zealand's three waters (drinking water, wastewater and stormwater).
- ~2,500 members are drawn from all areas of the water management industry including regional councils and territorial authorities, consultants, suppliers, government agencies, academia and scientists.



Today we will cover

- Introduction to Water New Zealand
- What the national performance review can tell you about your assets
- How to access and navigate sources of information
- Understanding and accessing water quality compliance information
- Questions



Aspects of water system performance



Questions to ask

1. How effective is my sewerage network at preventing raw sewage from entering the environment?
2. How much water is being wasted through my water networks?
3. What condition are my assets in?
4. What levels of service are my customers receiving?
5. How does investment in my networks compare with other parts of New Zealand?
6. How safe is my water to drink?

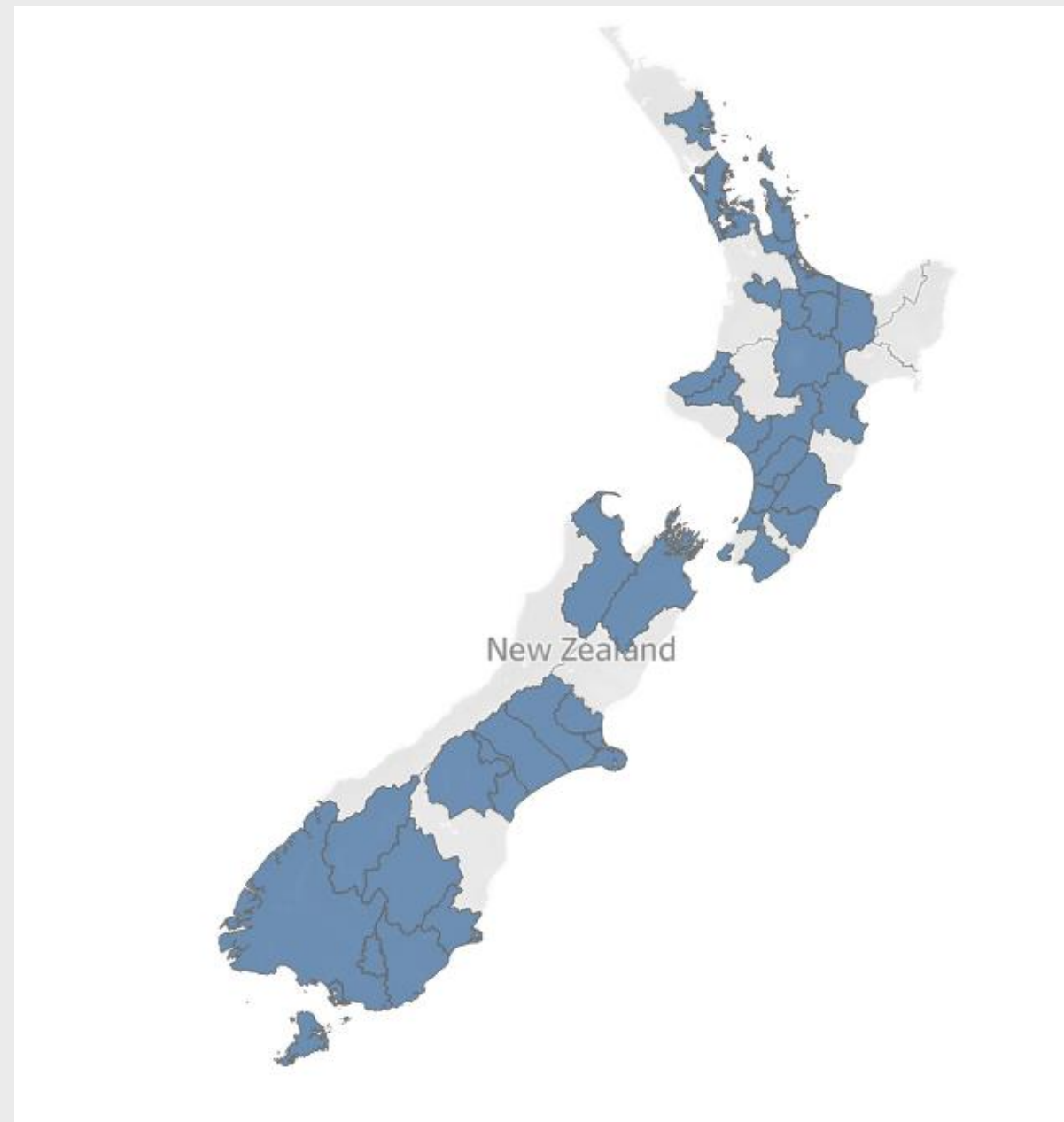
Places to look for answers

The screenshot shows a web browser window with the URL <https://www.waternz.org.nz/NationalPerformanceReview>. The main content area features a large banner image of children playing in a swimming pool. The banner includes the Water New Zealand logo, the text "National Performance Review", and a circular graphic with "2019-2020". To the right of the banner are two main sections: "INTERACTIVE DATA PORTAL" with a green plus icon, and "PERFORMANCE DASHBOARD" with a blue background. Below the dashboard section, it states "Available to report participants only." and "Contact Pip Donnelly if password access is required." The browser's taskbar at the bottom shows the Windows logo, a search bar, and various application icons. The system tray on the right indicates a temperature of 12°C, the date 19/09/2021, and the time 9:06 PM.

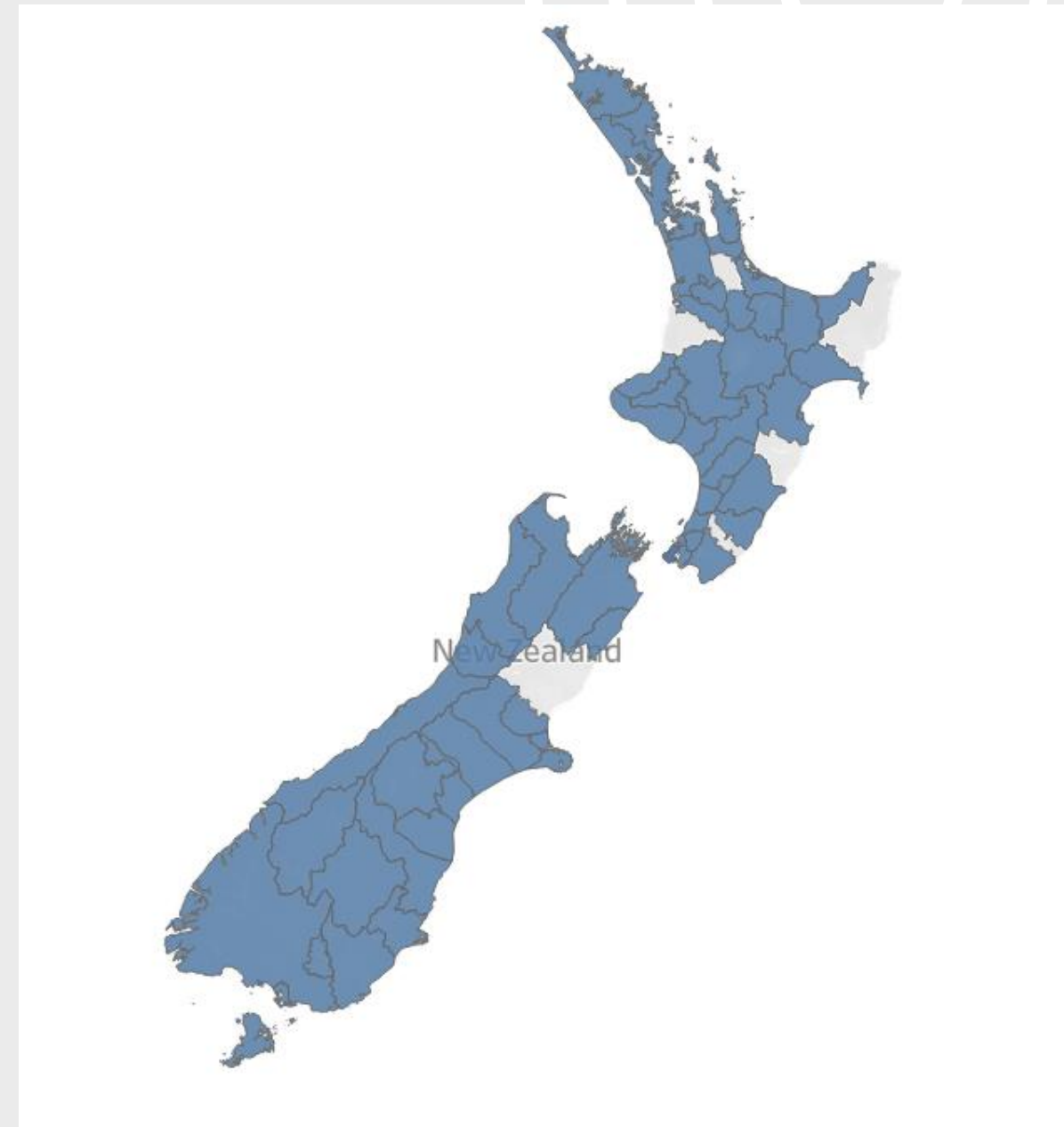
The image shows the cover of the "Annual Report on Drinking-Water Quality 2019-2020". At the top left is the Ministry of Health logo with the Māori name "MANATU HAORA" below it. At the top right is the "New Zealand Government" logo. The title "Annual Report on Drinking-Water Quality 2019-2020" is prominently displayed in the center. At the bottom left, it says "Released 2021" and at the bottom right, "health.govt.nz".

Coverage of the National Performance Review

Districts in the 2019/20 dashboard



Districts who have provided data post 2014

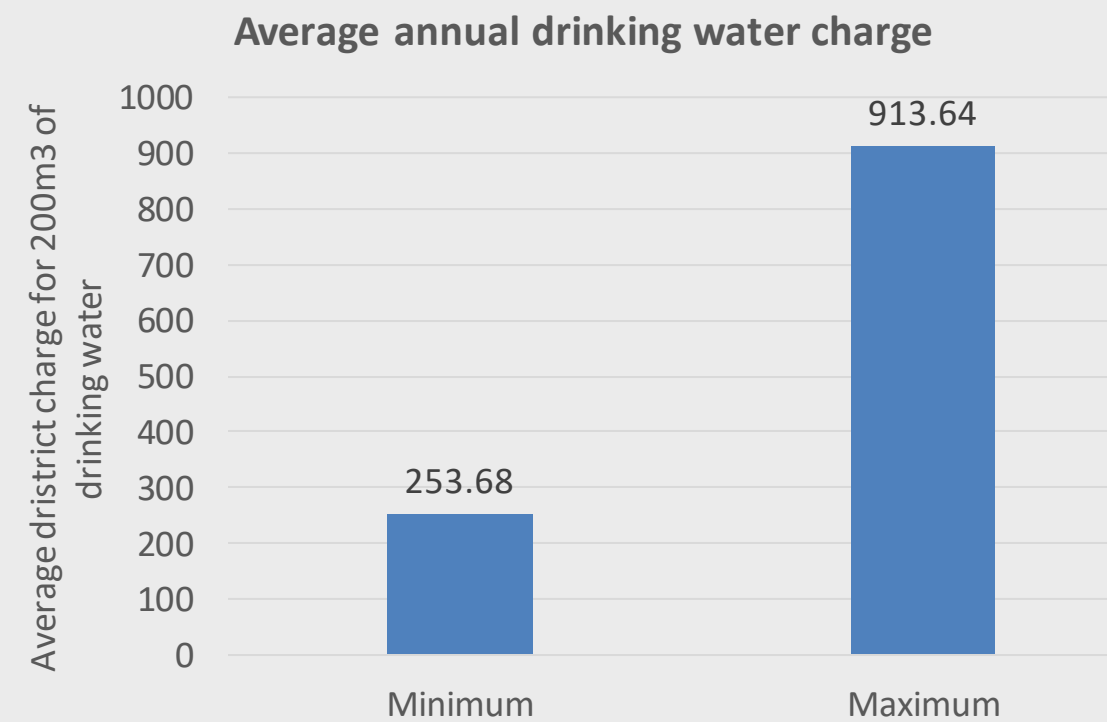
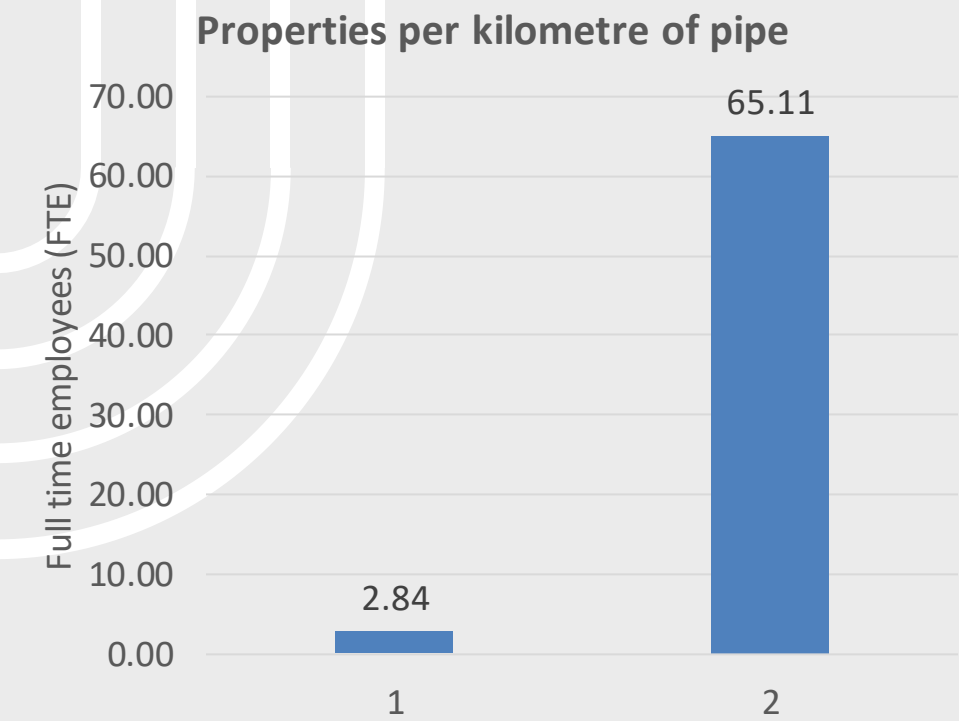
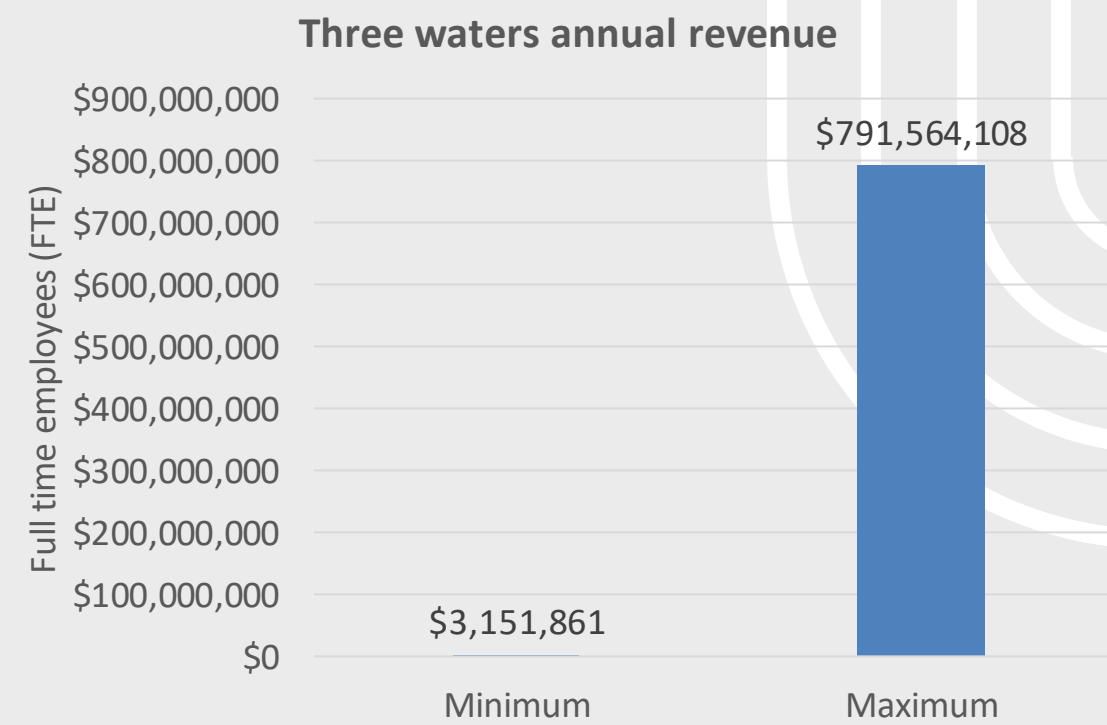


Districts we do not have data for

- Carterton District Council
- Central Hawkes Bay District Council
- Gisborne District Council
- Hurunui District Council
- Kawerau District Council
- Matamata-Piako District Council
- Waitomo District Council

New Zealand's water service providers

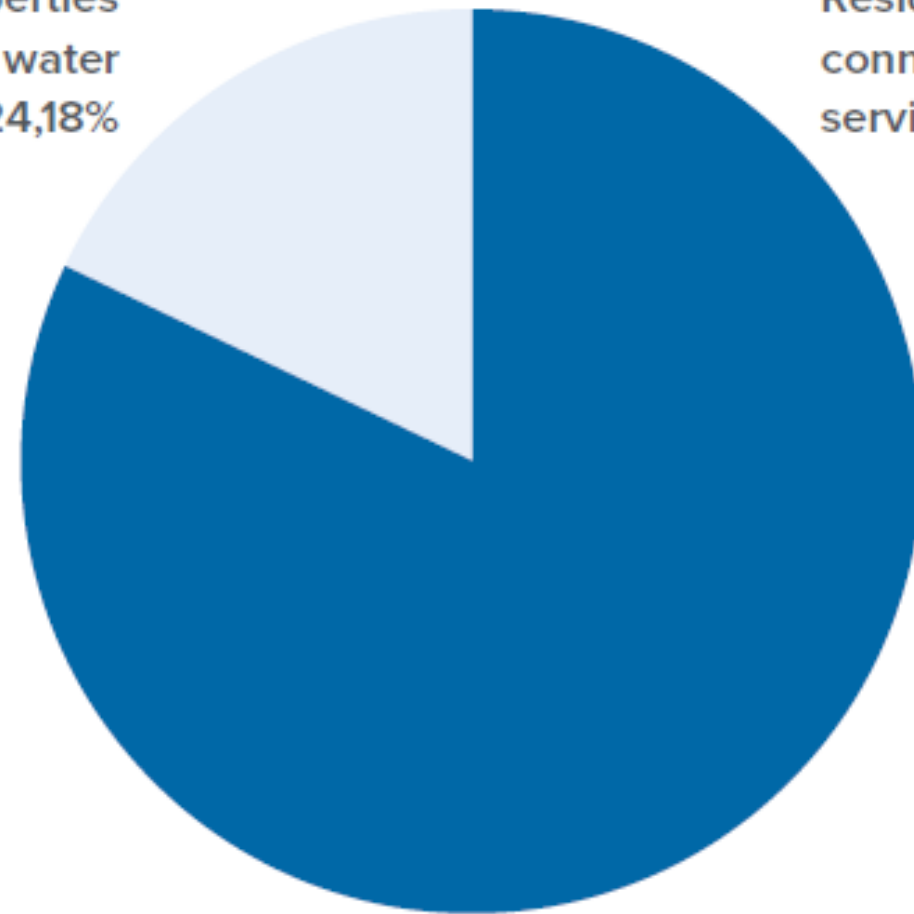
Range of values from water service providers in the 2019/20 National Performance Review



Reticulated network coverage

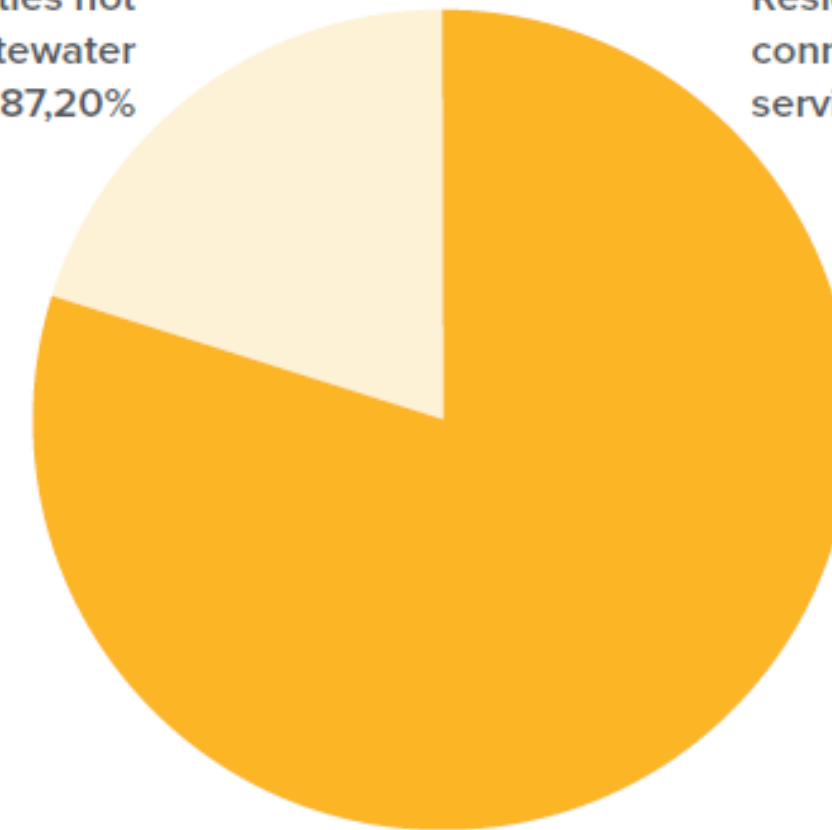
Percentage of residential properties connected to water and wastewater services (serviced by participants in the 2019/20 National Performance Review)

Residential properties not connected to water services, 288,124,18%



Residential properties connected to water services, 1,337,602,82%

Residential properties not connected to wastewater services, 326,287,20%



Residential properties connected to wastewater services, 1,299,439,80%

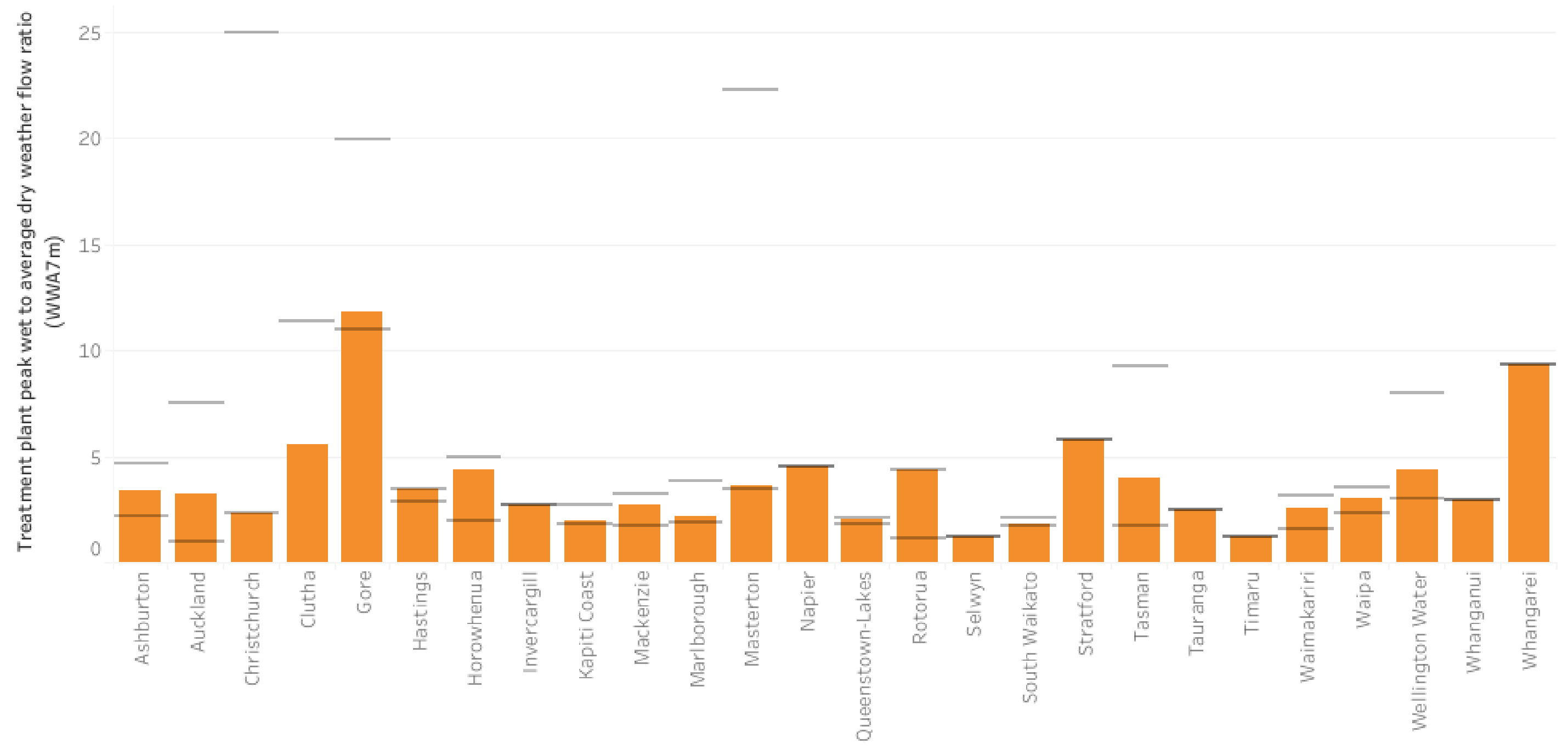
How effectively is my sewerage system protecting the environment from raw sewerage?

Sewage escape route	Leaking sewage to the environment through pipes	Blocking up or breaking down	Exceeding capacity and overflowing as a result of rainfall	Wastewater treatment failure
Associated performance measure	Suggested by Inflow and infiltration, in turn indicated by averaged dry weather to peak wet weather flows	Wastewater overflows occurring in dry weather	Wet weather wastewater overflows	Wastewater treatment plant consent non-conformance (also consent expiry date)
Information source	The National Performance Review			Regional council compliance report NZ WWTP inventory for a summary

Leaking sewage to the environment through pipes

Peak wet to average dry weather flow ratio at wastewater treatment plants

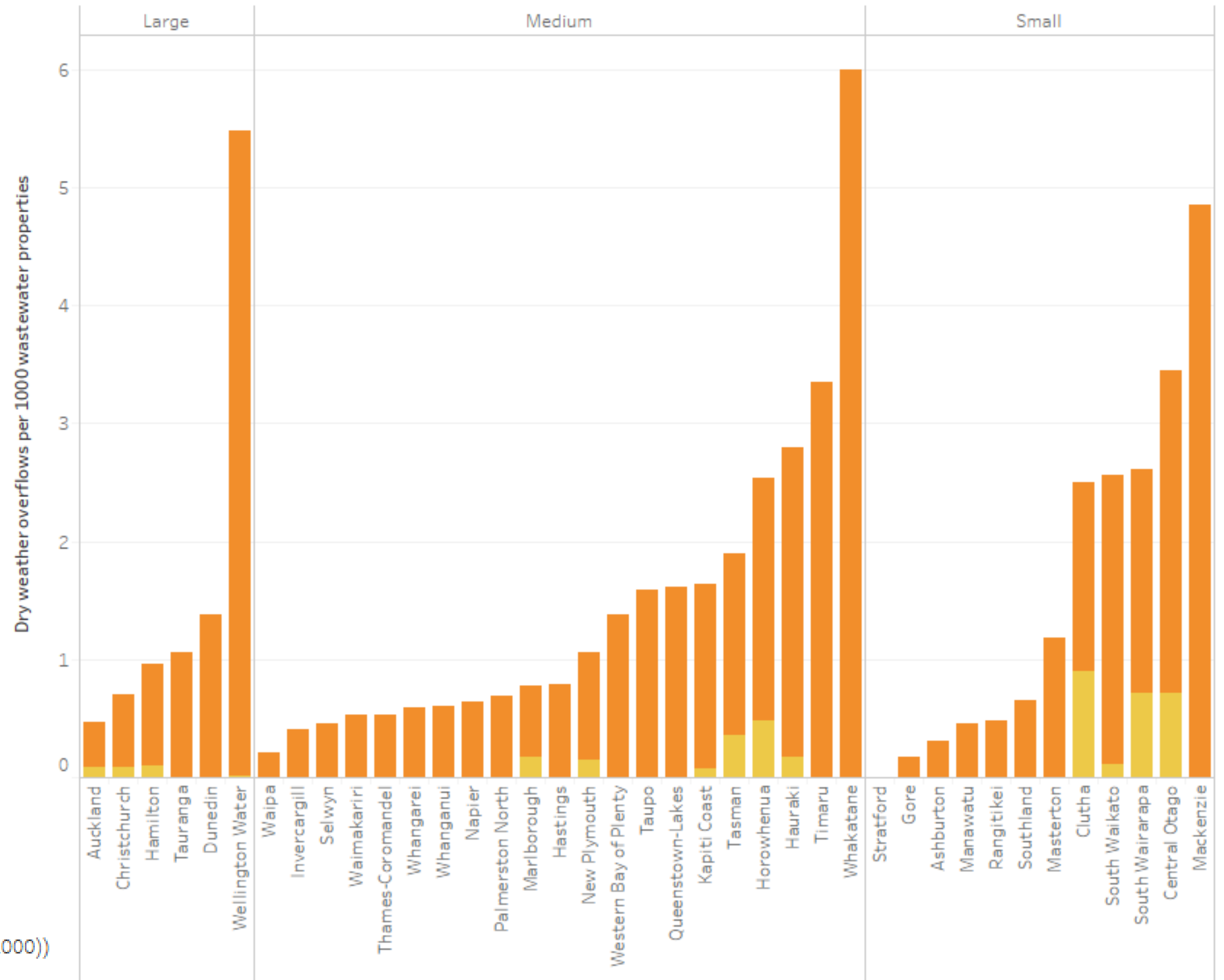
The bars show the flow weighted average for participants with multiple treatment plants. The grey dashes show maximum and minimum values.



Dry weather wastewater overflows

Dry weather overflows per 1000 wastewater properties serviced listed by cause

The graph distinguishes between dry weather overflows caused by blockages or mechanical failures (including power outages). In instances where a breakdown by cause was not available all dry weather overflows have been assigned to blockages as a default.



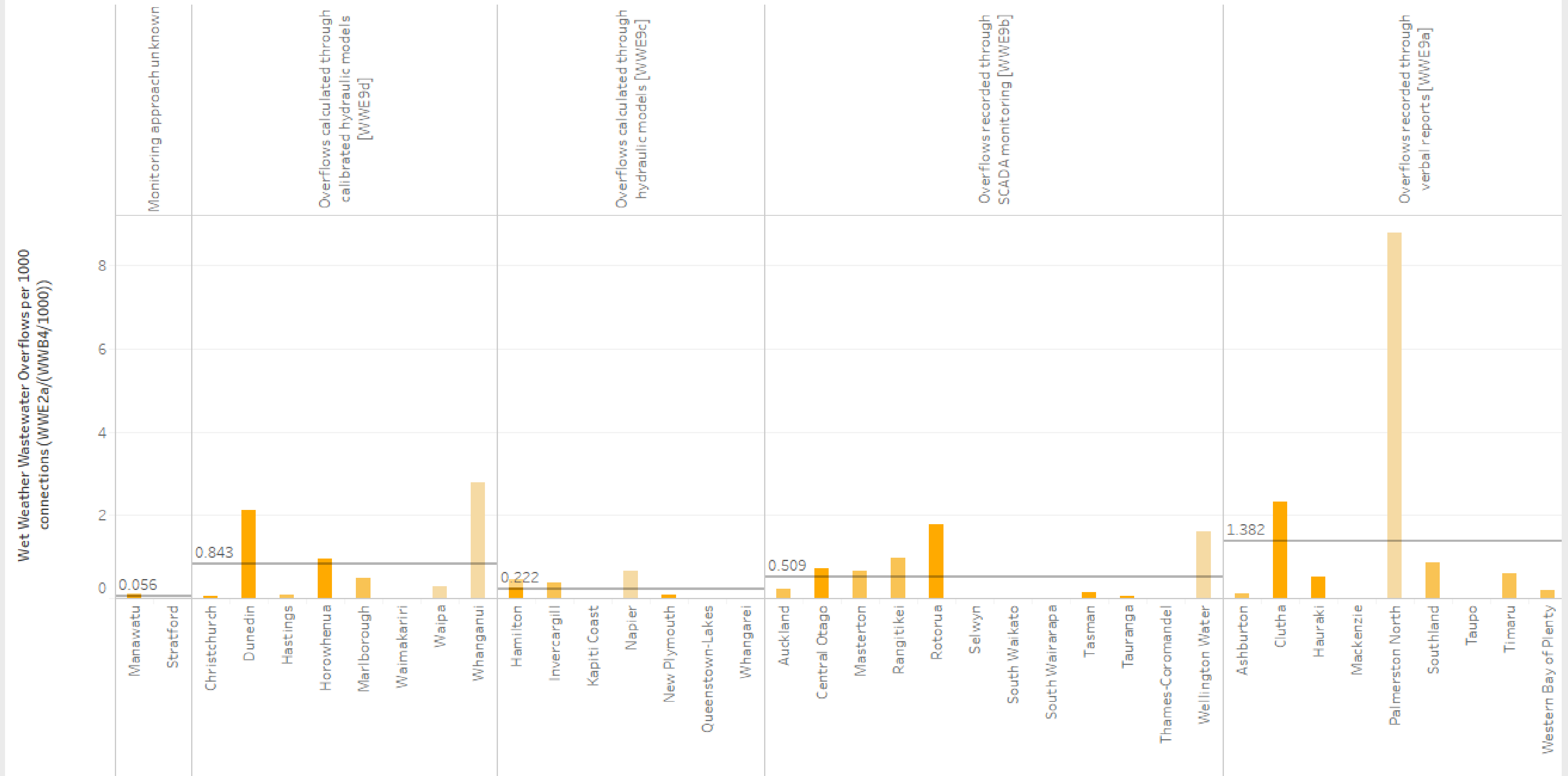
Measure Names

- Overflows caused by blockages per 1000 serviced properties (WWE1a/(WWB4/1000))
- Overflows caused by mechanical failures per 1000 serviced properties (WWE1b/WWB4/1000)

Wet weather wastewater overflows

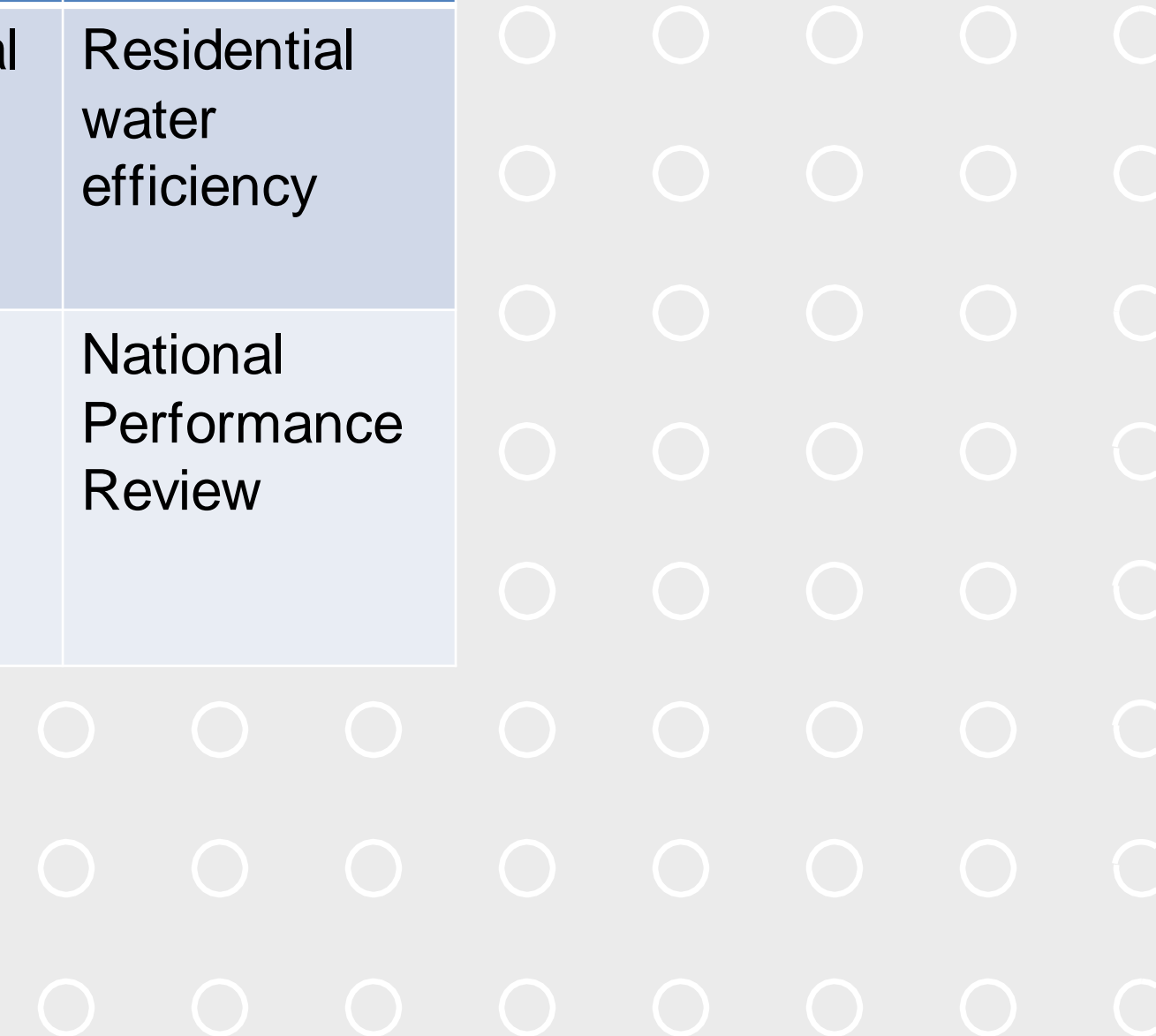
Wet weather overflows per 1000 connections to the wastewater network

Categorised by the approach in place to record wet weather overflows. The shade of the column indicates participants confidence in their data.

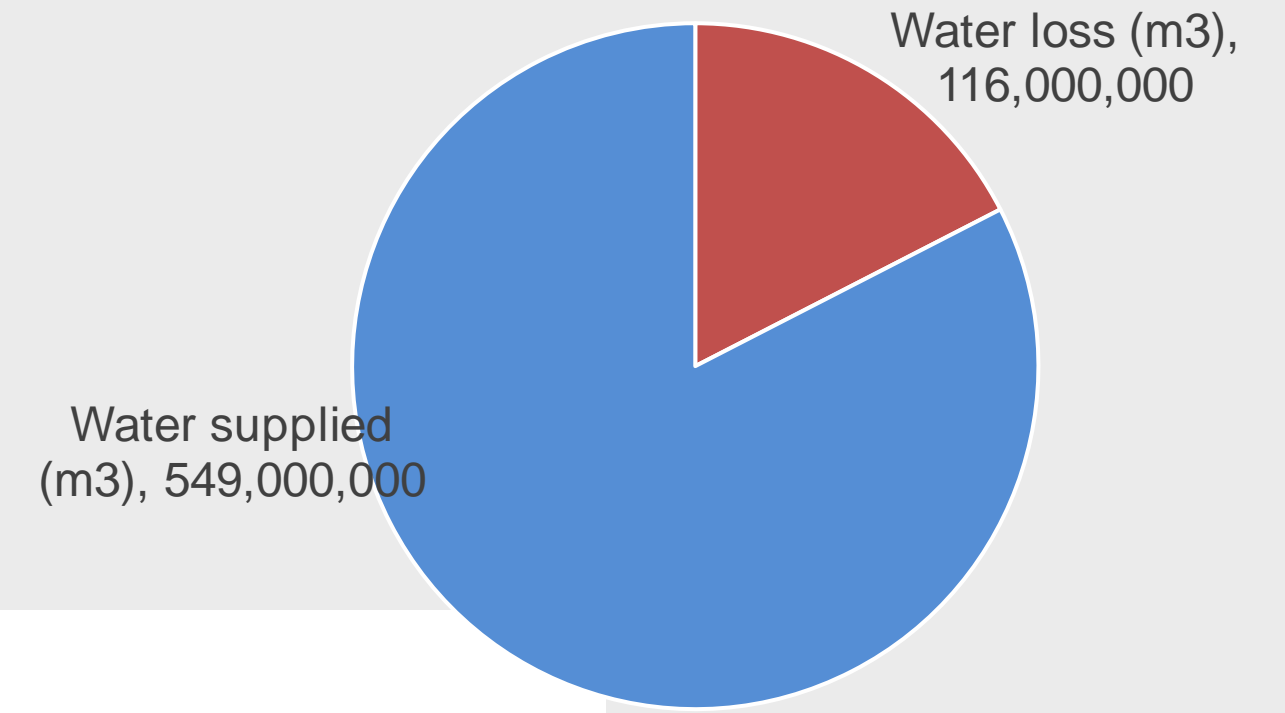


How much water is being wasted in my drinking water networks?

Source of water wastage	Lost on the delivery to customers			Customer efficiencies
Associated performance measure	Percentage losses	Infrastructure leakage index	Current annual real losses	Residential water efficiency
Information source	Council annual reports (DIA Non-financial performance measure rules)	National Performance Review		National Performance Review

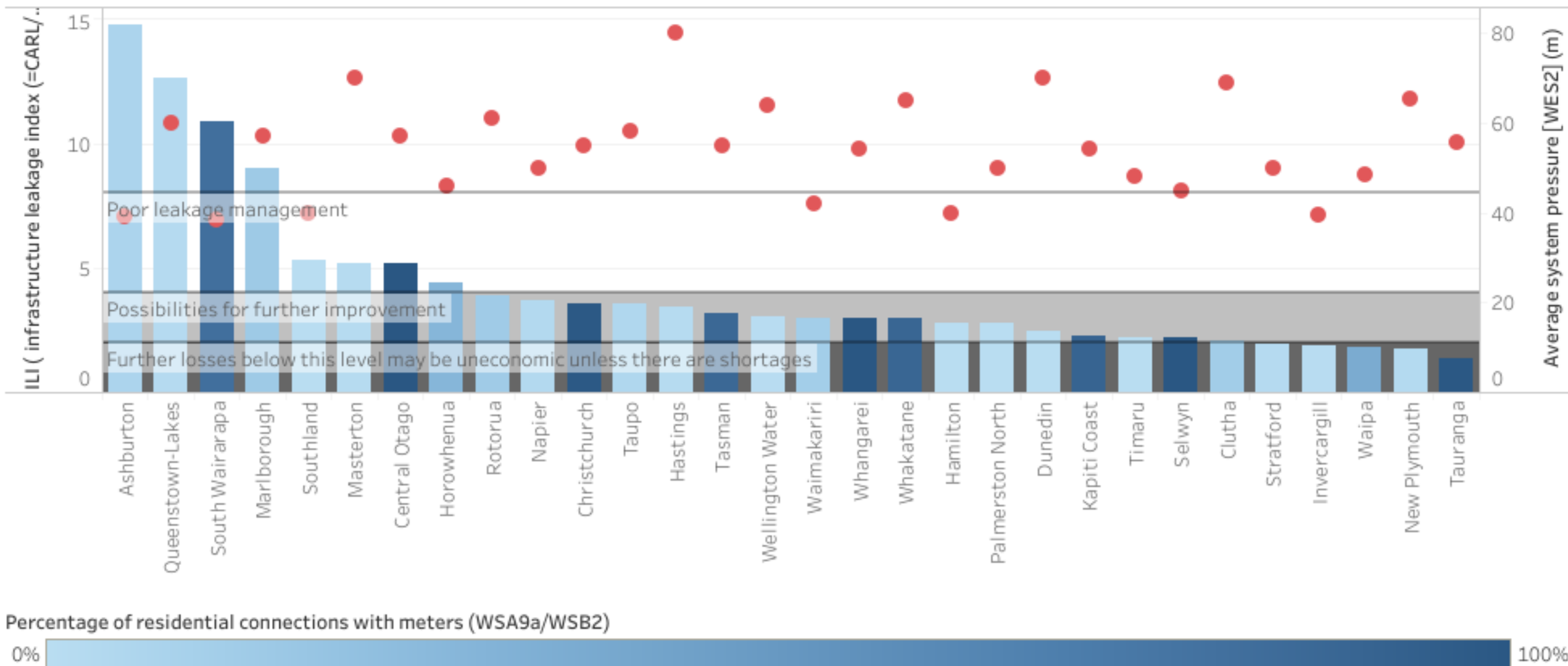


Water loss



Infrastructure leakage index

The Infrastructure leakage index is a non-dimensional performance indicator used for comparing the operational management of real water losses. It is the ratio of *Current Annual Real Losses* to *Unavailable Annual Real Losses*. Corresponding performance bands, contained in *Water New Zealand, Water Loss Guidelines, 2010* are shown on the figure. Infrastructure leakage indicators, shown on bars, have been colour scaled based on levels of residential metering, as this affects the accuracy of water loss calculations. Average system pressure, in m head, is indicated using the red dots, as this has a large bearing on water loss.

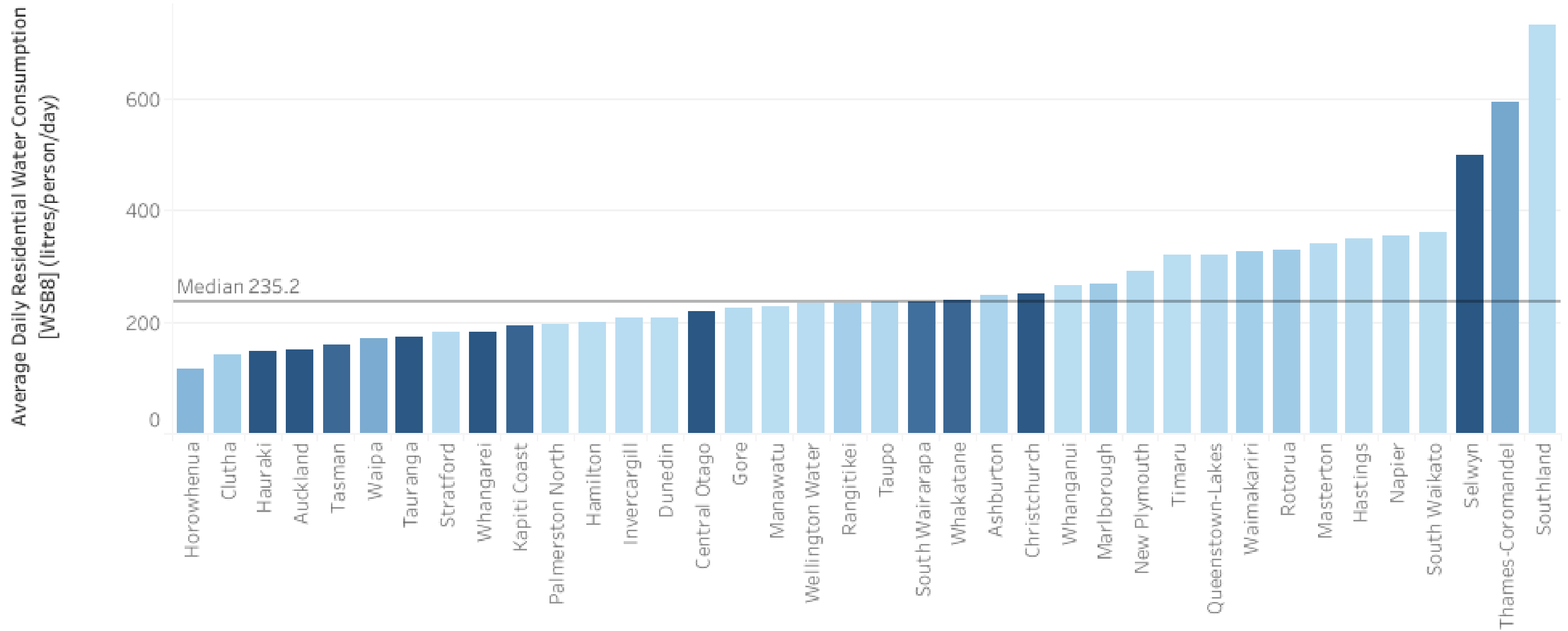


Residential water efficiency

Average daily residential water use (litres/person/day)

Bars are colour coded according to the proportion of the network that has residential water metering.

Percentage of residential connections with meters (WSA9a/WSB2)



What condition are my assets in?

Associated National Performance Review measures

Performance outcomes	Waterloss	Inflow and infiltration
Condition assessments	Percentage of pipelines assessed in poor or very poor condition	Percentage of pipelines that have not received a condition grading
Asset age	Average pipeline age	
Investment levels	Depreciation (has expenditure been keeping pace with depreciation)	Balanced budget (has actual expenditure been keeping pace with that budgeted for)

Pipeline condition assessment approaches in use

Pipeline condition assessment approach	Number of service providers employing approach		
	Water	Wastewater	Stormwater
NAMS International Infrastructure Management Manual (IIMM)	6	6	7
New Zealand Pipe Inspection Manual	2	13	11
IPWEA Condition Assessment and Asset Performance Guidelines	1	1	1
IPWEA Practice Note 7: Water Supply and Sewerage	1	1	0
New Zealand Infrastructure Asset Grading Guidelines	1	2	0
In-house	9	7	8
Informal	7	4	5

What level of service are my customers receiving?

Associated National Performance Review measures

Fault attendance times	Service interruptions
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How does investment in my network compare with other regions in New Zealand?

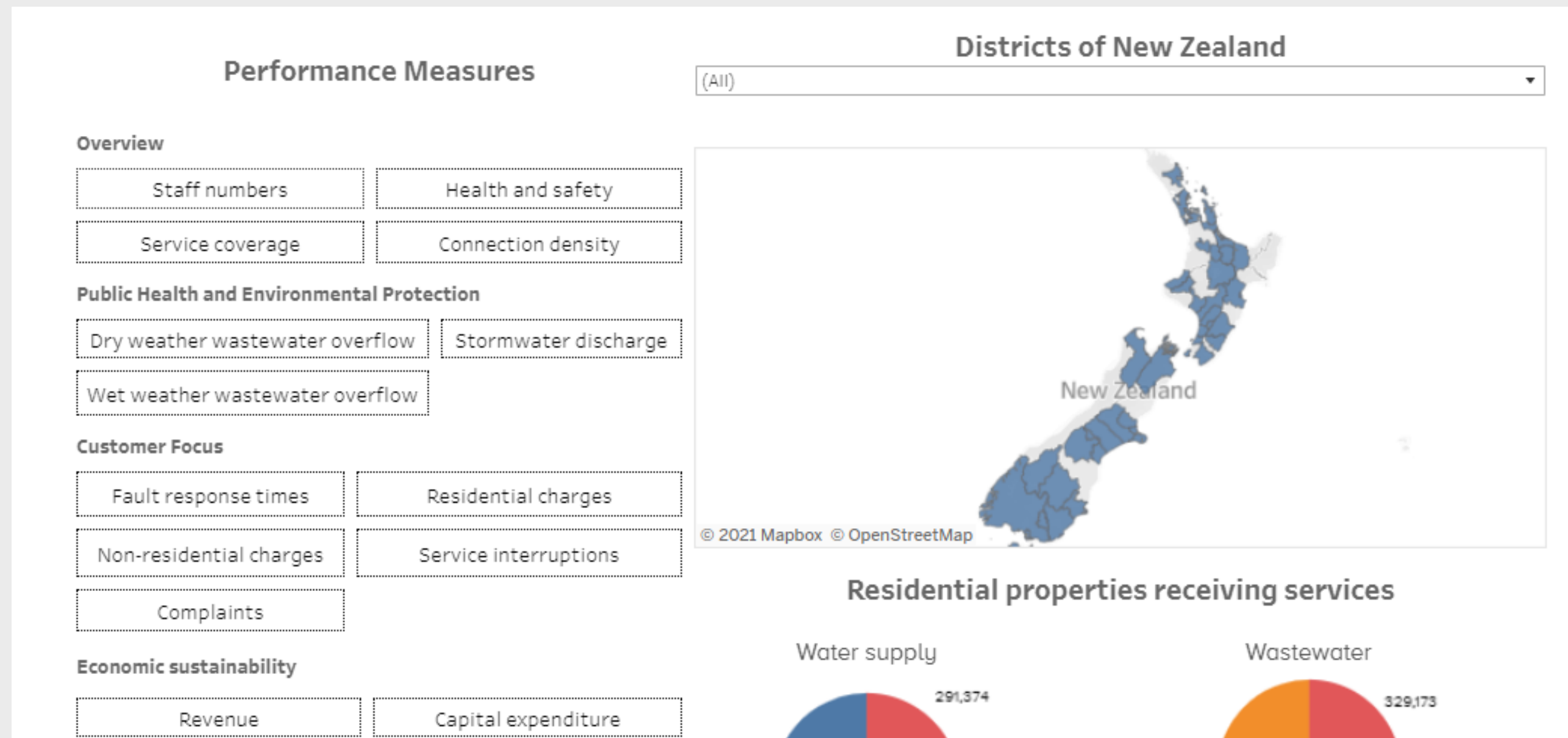
Associated National Performance Review measures

Operating expenditure	Capital expenditure	Customer charges	Staff numbers	Cost coverage
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Using the national performance review dashboard

[Participant data portal](https://www.waternz.org.nz/ParticipantDataPortal)

<https://www.waternz.org.nz/NationalPerformanceReview>



Other national performance review resources

Performance dashboard



Customised report



health.govt.nz/publication/annual-report-drinking-water-quality-2019-2020

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Annual Report on Drinking-water Quality 2019-2020

Published online: 14 June 2021

The Ministry of Health has published its Annual Report on Drinking-water Quality 2019-2020. The report summarises drinking-water compliance for the 486 registered networked drinking-water supplies that served populations of more than 100 people in the compliance period from 1 July 2019 to 30 June 2020. The supplies provided water to 4,142,000 people in total.

The report describes how these supplies met the requirements of the Drinking-water Standards for New Zealand and their progress towards meeting the requirements of the Health Act 1956 during the

Annual Report on Drinking-water Quality 2019-2020

Downloads

- > Annual Report on Drinking-water Quality 2019-2020 (pdf, 1.2 MB)
- > Annual Report on Drinking-water Quality 2019-2020 (docx, 431 KB)

Document help

- > Help with downloads
- > Copyright

Related websites

National Compliance with Drinking Water Standards (Ministry of Health)



Drinking Water for New Zealand



- Home
- Water Supplies
- Water Carriers
- Laboratories
- NZ Processes
- Reference

An information source for the public, and those managing New Zealand drinking-water quality

Quick link to ...

- How good is a supply?
- Find a laboratory
- Find a water carrier
- Fluoridated supplies
- Fluoridation map
- NZ Processes
- Contacts

Individual Water Supplies

Click this map of New Zealand to find your supply and its compliance with the standards.

or Search:

Example: Entering **akar** will find both **Akar**oa and Paek**akar**iki.

See also: [Fluoridated supplies map](#)



New Zealand Processes

Click the tap for knowledge on NZ drinking-water supplies, who looks after them and what [processes](#) are in place to ensure clean, safe water.



About this Website

Use this website to see public information about the following aspects of drinking water supplies in New Zealand:

- All networked supplies serving 25 people or more.
- Compliance with the Standards for supplies using the latest official data publicly released in a finalised Annual Review.
- All currently registered water carriers (tankered supplies).
- All laboratories that are recognised by the Ministry of Health as suitable for monitoring water samples.

There are also links to Ministry of Health documents and other <https://www.drinkingwater.org.nz/external/documents.asp> in New

Site Statistics, using National DWO data to 14 Sep 2021.

Water supplies	686
Distribution zones within supplies	909
Treatment plants	815
Water sources	1,160

The 686 supplies include ...:	Count	Population
Networked supplies	677	4,221,291
Bulk supplies	1	350,000
RADWS supplies	8	1,058

Drinking Water Database for New Zealand

The former "Water Information New Zealand" (WINZ) database was progressively replaced by "Drinking Water Online" (DWO) from July 2017 onwards.

DWO is a web-based system accessible by all networked water suppliers and district health boards.

From March 2018, this website uses DWO data, which will again be updated weekly.

See more about DWO [here](#).

Domain and topic

- Water quality
- Recreational water
- Waterborne diseases related to recreational water
- Notifications of potentially waterborne disease wi

Key Information

[Indicator Factsheet](#) and [metadata](#).

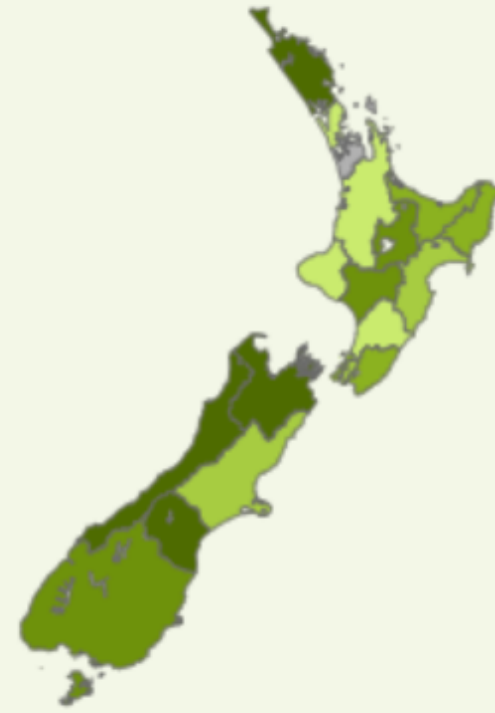
Source: Institute of Environmental Science and Research Ltd. (ESR). National Database of notifiable diseases (EpiSurv).

- In 2015–19, only three District Health Boards (DHBs) had sufficient risk factor information for campylobacteriosis notifications to allow a reliable calculation of the rate of cases where recreational water contact was a risk factor. Twelve DHBs had enough risk factor data for

Guide

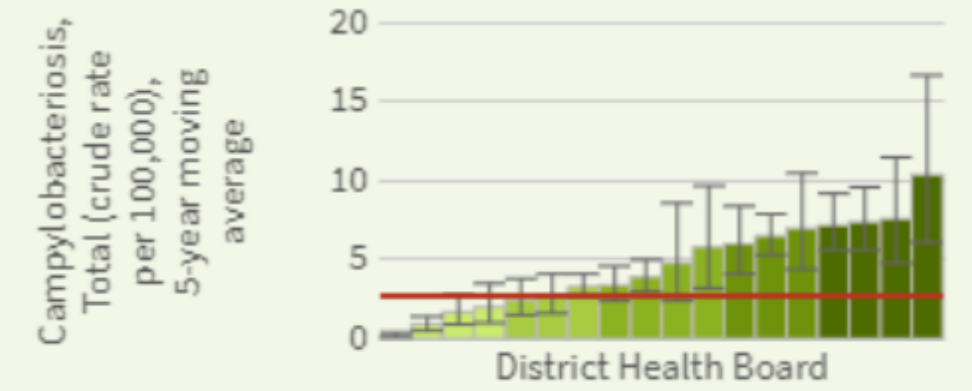
Share

Water quality | Recreational water | Waterborne diseases related to recreational water quality | Notifications of potentially waterborne disease with recreational water as a risk factor | Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average (2015-2019)



Geography

Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average



Water quality | Recreational water | Waterborne diseases related to recreational water quality | Notifications of potentially waterborne disease with recreational water as a risk factor

100,000), 5-year moving average

District Health Board	Count	Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average (2015-2019)
Auckland	3	Not Available
Bay of Plenty	41	3.4

Links to information shared in this presentation

- [The National Performance Review report](#)
- [The National Performance Review dashboard](#)
- [Environmental Health Intelligence New Zealand](#)
- [Environmental Health Intelligence New Zealand Dashboard](#)
- [Ministry of Health Report on Drinking Water Quality](#)
- [ESR Drinking Water for New Zealand 2018/19 data dashboard](#)
- [Inflow and infiltration guidelines](#)

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