

# Three Waters

## Quarterly Report

July to September 2024

[ccc.govt.nz/water-and-drainage](https://ccc.govt.nz/water-and-drainage)

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## Executive summary

Our latest Three Waters Quarterly Report provides an update on our work to deliver safe and reliable water services for Christchurch residents.

During last quarter we submitted the Network Environmental Performance Measures (NEPM) report to Taumata Arowai. This is a mandatory requirement under the Water Service Act 2021 for public network operators and provides a clear and detailed picture of our networks' performance.

11 of our staff attended the WaterNZ Conference in Kirikiriroa-Hamilton in September, where 1700 water professionals met to talk about the challenges and opportunities in the water sector, presented research and shared experiences. We were very well represented, and two Council projects were presented on:

- Wastewater treatment emissions measurement
- Using technology in wastewater gravity main renewal design

Staff also attended the WaterNZ Drinking Water Quality Specialist Group workshop to share the work done about the Water Quality General Code of Practice.

We also presented a paper about different water regulatory systems and the impact of the new drinking water regulations in Christchurch water supplies at the International Water Association (IWA) – Water Safety Conference in September.

These events promote the links with water industry experts and create opportunities for the exchange of knowledge and experiences. It is also an opportunity to learn about the latest technical advances in water treatment, chemical products, asset management, leak detection and climate change.

Looking forward, we're preparing for managing our water supply over the warm spring and summer seasons. We're also continuing work to find sources of stormwater entering the wastewater network in Akaroa.



\*More detailed Three Waters project and financial information is available in reports from the Health and Safety Committee, PMO and finance.

## A snapshot of our network...

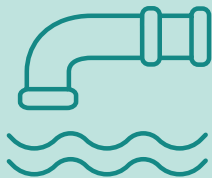
We're responsible for more than you might think.

### Our three waters network...

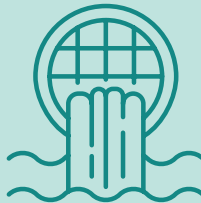
Christchurch City Council owns and operates the city's water supply, wastewater and stormwater network.



**Water supply**



**Wastewater**

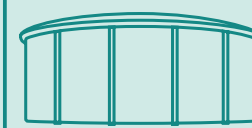


**Stormwater**

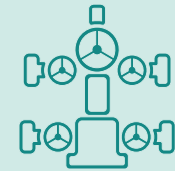
### Strengthening our networks



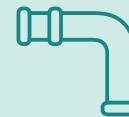
**Pump stations**



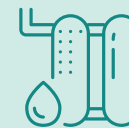
**Reservoirs**



**Well heads**



**Pipes**



**Treatment plants**



**Drainage**

### Helping our communities



**Education**



**Community engagement**



**Flood control**



**Customer service**



**Growth planning**



**Incident response**

### Looking after our environment



**Waterways**



**Stormwater basins**



**Wetlands - lake openings**

# Our water supply network

Christchurch City Council owns and operates a network of wells, intakes, treatment plants, reservoirs and pipes that deliver water to our residents. We do regular testing and maintenance to make sure our water is safe, and we're also carrying out upgrades to comply with the Government's drinking water rules.

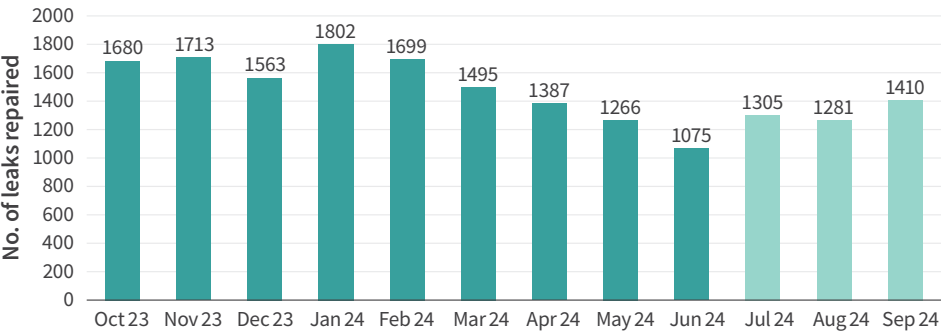
## What we did, in numbers – July to September 2024



3996

Water leaks repaired

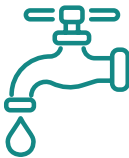
### A year of repairs



99%

(397 out of 401)

of water supply resource consent conditions are compliant.



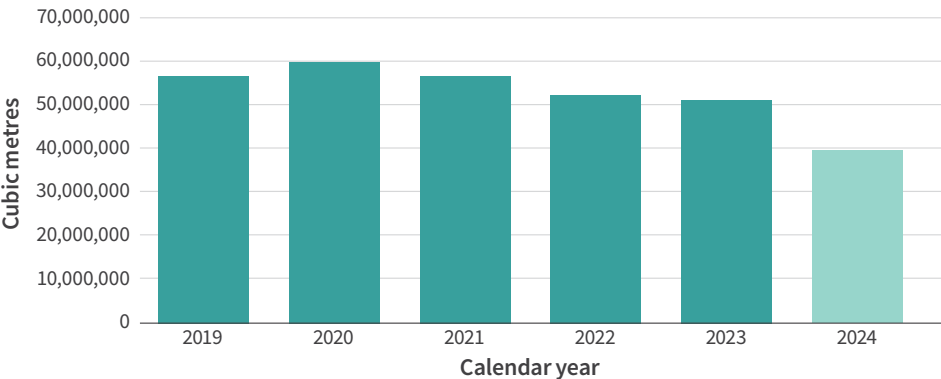
12,007,446m<sup>3</sup>

Water supplied across the district

### How much we water each quarter

Quarter	Year	Total (m <sup>3</sup> )
July – September	2023	11,752,281
October – December	2023	13,435,363
January – March	2024	15,233,495
April – June	2024	12,108,667
July – September	2024	12,007,446

### Year on year – how we compare



4 incidents

reported to Taumata Arowai. (More about this on page 7.)

## Drinking water compliance

We manage a high-quality and safe water supply network, which we monitor closely so we can quickly respond to any issues. Christchurch and Banks Peninsula water supplies are chlorinated to meet New Zealand drinking water laws. We're also working on additional upgrades to our water supply network to ensure we meet all Government rules and regulations.

While we upgrade our water supply network there are areas where our water supply isn't compliant. However, the requirement to treat our water with chlorine means our water has an extra level of protection against contamination. Many of the non-compliances will be resolved once we have completed upgrades to assets or completed longer term testing to confirm the quality of our water.

While we acknowledge that our water supply has non-compliances, we're focused on doing the work needed to achieve compliance while continuing to provide safe drinking water.

The Drinking Water Quality Assurance Rules include a range of rules, the most significant of which relate to the source (S rules), distribution (D rules) and treatment of water (T rules), which are key to making our supply compliant.

There are other non-compliances that aren't related to the S, D and T rules. These will also be resolved over time.

### Here's how we're tracking:

#### **S** Source rules relate to the quality of water at its source.

We expect to be able to demonstrate Class 1 status for most of the city's water supply, which would mean some treatment barriers for protozoa aren't required.



**94%** of the class sampling programme

is completed with the remainder of the programme on track to be completed by April 2025. **Up 7% on last quarter.**

**82** sources and **26** treatment plants

are now classified as Class 1 and are therefore protozoa compliant.

#### **D** Distribution rules relate to water in the distribution network.

They require a low level of chlorine to be present in water distributed across our network from treatment plant to tap.



**17/17** distribution zones were compliant during the quarter.

#### **T** Treatment rules relate to protection against bacteria and protozoa.

We're non-compliant with these rules while we upgrade our water supply, but have other protections in place to keep our water safe.



To achieve compliance, we need to install continuous water quality monitoring as well as complete some treatment plant upgrades in Banks Peninsula and Christchurch.

### For water sources that don't meet the Class 1 status criteria we have work under way to make the supplies compliant.

This includes:

- The Christchurch Supply (including Brooklands/Kainga) has 128 registered sources. Eight cannot be classified as Class 1 (Tanner Pump Station and Main Pumps)
- The Banks Peninsula supplies have five registered groundwater sources. Only Birdlings Flat well can be classified as Class 1.
- A project to upgrade the Tanner Pump Station to include a protozoa barrier is included in the Long Term Plan with funding allocated for 2024/25. The project is currently in the concept design phase and planning is well under way.
- A project to upgrade the Wainui Treatment Plant to include a protozoa barrier is also included in the Long Term Plan with funding allocated for 2024/25. The project is currently in the concept design phase and the barrier is expected to be installed by the end of 2025.
- We're working with Taumata Arowai on research into viruses in groundwater. We're hopeful this research could inform future changes to the Drinking Water Quality Assurance Rules requirements in relation to groundwater.
- Our Main Pumps Station already operates with a protozoa barrier in place.
- All other non-Class 1 groundwater sources in the city have been abandoned.

# Quarterly water supply controllable non-compliances

We test the water regularly to ensure it is safe to drink. When we do have controllable non-compliances, we take immediate action to assure the water supply and notify Taumata Arowai.

Controllable non-compliances are those we can control and avoid by improving our processes and procedures. To reduce the amount of these, we analyse the cause and undertake an action plan so they don't happen again.

These are the controllable non-compliances recorded during the last quarter:

Supply details	Drinking Water Safety, Compliance or Sufficiency Category	Date	Details	How was it resolved
BIR001 Birdlings Flat	Water is non-compliant	02/08/2024 16/08/2024 16/09/2024	FAC in water leaving the treatment plant was measured to be less than 0.5 mg/L (indicating non-compliance with rule T2.19).	Treatment was adjusted.
BIR001 Birdlings Flat	Water is non-compliant	03/09/2024	pH of water leaving the treatment plant was measured to be 8.1 (indicating non-compliance with rule T2.21).	Treatment was adjusted.
BUR005 Burnside Community Drinking Water Station	Water is or may be unsafe	24/09/2024	E. coli was detected in samples collected from the dispenser taps on the Burnside Community Drinking Water Station (samples from source and post treatment were compliant)	The tap was put out of order for a few hours until a thorough cleaning was undertaken. The water up to the tap was safe, as the analysis results were compliant.
WAI138 Wainui	Water is non-compliant	09/09/2024 16/09/2024	FAC in water leaving the treatment plant was measured to be less than 0.5 mg/L (indicating non-compliance with rule T2.19).	Treatment was adjusted.

## The quarter ahead October to December 2024

### Banks Peninsula summer preparation

We're preparing our assets and teams to ensure we can maintain a reliable supply of water to our customers throughout the summer season. We're monitoring stream levels to make sure we comply with our consents, and manage demand appropriately. We're prepared to respond to weather events including dry/hot weather and rainfall, public events, cruise ship arrivals, or any other situation that results in high water use.

### Leak detection

We have been identifying and repairing leaks during winter and the results will be released in the next quarterly report. We have targeted the zones with the worst ILI (Infrastructure Leakage Index) and are working towards improving this index for the whole city.

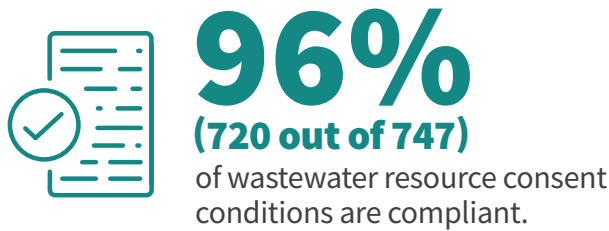




# Our wastewater network

Christchurch City Council maintains wastewater systems to provide the community with a safe and healthy environment through the appropriate treatment and discharge of wastewater.

## What we did, in numbers – July to September 2024



Since September, the Banks Peninsula wastewater treatment plants are paperless! The team has shifted their daily operations and reporting online, which means we can see, analyse and report on live data, eliminating the need to use and store paper.

## Non-compliance figures – July to September 2024

We operate the wastewater network under a resource consent from Environment Canterbury. When we do have non-compliances, we take action and notify Environment Canterbury. We didn't have new significant non-compliances recorded during the last quarter, but the following significant non-compliance remains in place:

Resource Consent – Condition	Activity	Reason for significant non-compliance grading	Actions taken
CRC213608 - 2	To discharge treated domestic wastewater onto land temporarily from the Wainui Wastewater Treatment Plant.	The discharge is not in the consented area as outlined in this condition.	This consent was issued to cover a temporary situation while the Council was removing an existing pine plantation at the current land treatment area (CRC091580). The pine removal has now been finished, and the irrigation field has been moved back to the original land, so this consent is no longer in use and will be surrendered.

## The quarter ahead October to December 2024

### Akaroa wastewater

We're more than halfway through an ongoing programme to check every property in Akaroa to look for sources of stormwater entering the wastewater network. From October until the end of the year we'll be contacting the owners of properties that need to repair their wastewater or stormwater systems. This includes a small number of properties with stormwater downpipes draining into the wastewater network. We're also seeing quite a few instances of gully traps at a lower level than the surrounding ground, which can allow rainwater to drain into the sewer network. Reducing the amount of rainwater getting into the sewer network will improve network capacity, which means fewer overflows into private properties and the environment.





## Christchurch Wastewater Treatment Plant



**15 million tons**

total treated wastewater.



**1014**

webpage views.



**2791 MWh**

electricity generated from waste.



**4**

e-newsletters.



**0 times**

H<sub>2</sub>S went over 0.03ppm.



**1**

school visit.

### Insurance settlement secures future for treatment plant

The Council and its insurers agreed a settlement in relation to the fire-damaged trickling filters at the Christchurch Wastewater Treatment Plant. The Council also approved replacement of the trickling filters with an activated sludge reactor.

This significant milestone allows us to move forward with building a resilient and more environmentally friendly wastewater treatment plant for our growing city.

Replacing the trickling filters with an activated sludge reactor will give the Council the opportunity to significantly reduce greenhouse gas emissions. Additionally, activated sludge reactors can deliver better environmental outcomes and have a smaller footprint that can be upsized to accommodate population growth.


Our team is now working hard to progress the design of the project. We're looking to appoint a contractor to start the demolition of the trickling filters. We also remain focused on keeping the damaged plant operating with minimal odour.



# Our stormwater network

Our stormwater system is being continually maintained and improved to make the city a safer and healthier place to live. The network includes open drains, pipes, pump stations, stopbanks, basins and more.

## What we did, in numbers – July to September 2024





# 99%

(1055 out of 1060)

of stormwater resource consent conditions are compliant.


The Ōtautahi-Christchurch Stormwater Story Storymap was made public. This webpage details the CSNDC *Annual Report* in layman’s terms to increase public knowledge around stormwater.

 [gis.ccc.govt.nz/portal/apps/storymaps/stories/b9bae12947cd47bdbb1e33745624aa71](https://gis.ccc.govt.nz/portal/apps/storymaps/stories/b9bae12947cd47bdbb1e33745624aa71)



Surface Water Quality Annual Report was submitted to Environment Canterbury, this is an Appendix of the CSNDC *Annual Report* submitted in June.

The Draft Implementation Plan for the CSNDC was provided to Mahaanui Kurataiao Ltd and the Department of Conservation for consultation.



Annual CSNDC Mahaanui Kurataiao Ltd and Council Hui was held.

We operate the stormwater network under a resource consent from Environment Canterbury. We didn't have new significant non-compliances recorded during the last quarter, but the following significant non-compliance remains in place:

Resource Consent – Condition	Activity	Reason for significant non-compliance grading	Actions taken
CRC231955 - 6	CSNDC – To discharge water and contaminants to land and water from the stormwater network.	The submitted versions of the Ōpāwaho/Heathcote, Huritini/ Halswell and Ōtukaikino Stormwater Management Plans do not meet the purpose of Condition 6.	The plans have been resubmitted addressing the non compliances identified by ECan.

## The quarter ahead October to December 2024

- Host the annual Community Waterways Partnership hui at Council
- Finalise the CSNDC Implementation Plan.
- Complete a 5-year review of CSNDC conditions and submit a change of conditions application to Environment Canterbury.
- Attend two construction industry expos to promote best practice erosion and sediment controls.
- Finalise several stormwater management plans currently being reviewed by Environment Canterbury.



## The Community Waterways Partnership (CWP)

The Community Waterways Partnership supports the development of community-based initiatives to improve the ecological health, indigenous biodiversity, cultural, and amenity value of our urban waterways.

The Partnership involves Christchurch City Council, Environment Canterbury, Department of Conservation, Ministry for the Environment, Te Whatu Ora – Health New Zealand Waitaha Canterbury, universities, schools, industry representatives, river care and other community groups.

### What we did:

- Banks Peninsula Water Zone Committee and Rotary District 9999 Community Action for Fresh Water signed up to the partnership.
- A World Rivers Day event was held bringing together river care groups, stakeholders, and the public to raise awareness about the importance of river conservation and inspire action to protect waterways. The event, organised by the Avon Ōtākaro Network and supported by the Ōpāwaho Heathcote River Network, Te Tuna Tāone and the Community Waterways Partnership, was designed to provide educational opportunities while offering entertainment and fun activities for families. With support from the broader Christchurch community and over 20 organisations, the event drew a large crowd, effectively engaging local families and promoting participation in environmental initiatives.
- We presented at the AGMs of the Avon Ōtākaro Network and Avon-Heathcote Estuary Ihutai Trust.
- Council stormwater expert Peter Christensen gave a talk at the August 'Green Drinks' networking event. He talked about creating spaces where water, nature and people harmoniously meet.
- The partnership's contestable fund is open until 25 October. A \$50k fund is available to encourage collaborative/community-scale initiatives that help improve and protect our urban waterways. We are very excited as last year we received a high volume of interesting projects that were successfully developed.
- We provided waterways education at two schools to 98 students and seven adults.
- We supported seven schools to do riparian plantings with a total of 257 students and 29 adults.
- We supported 50 students and five adults at two schools with waterways litter clean-ups.





## What people are telling us

During this quarter water supply was the fourth most common service request category after wheelie bins, graffiti and animals.

Our team received a total of

**6872**  
service requests  
related to water and drainage.

The most common requests related to:



water leaks  
**3059**



water meter boxes  
**775**



water supply queries  
**630**



new residential  
water connections  
**475**



drainage plans  
**246**

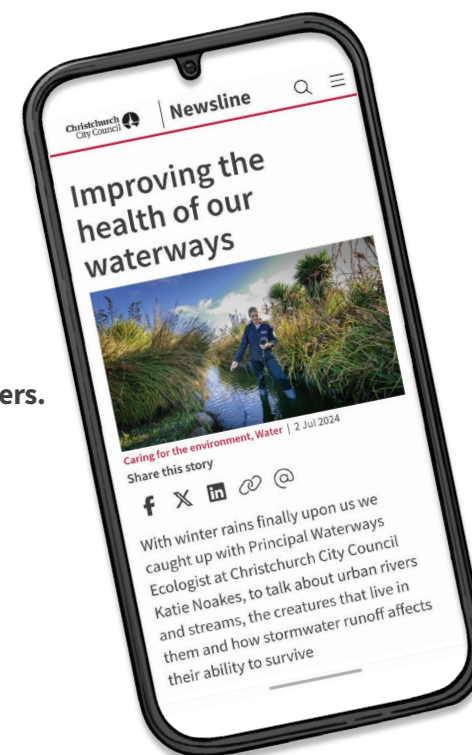
## Reaching our communities

During the last quarter:

We published **6 Newsline stories** related to Three Waters.

The stories covered:

1. Improving our urban waterways
2. Stormwater inspections around Whakaraupō Lyttelton Harbour
3. Akaroa stormwater inspections
4. First steps towards new Akaroa wastewater scheme
5. Ilam wastewater upgrade set to begin
6. Community Waterways Partnership Fund opening



We had **84,475 views** of our water webpages.

This represented **3.48%** of total views across the website, and **7126 more views** than the previous quarter.

The top five pages were:

1. The Water Reporter – used by residents to check their water use: **14,782 views**.
2. Our floor level map for building and resource consents, flood risk and property information: **14,725 views**.
3. The three waters asset network map: **7673 views**.
4. The water status map showing real-time water shut-off information: **4765 views**.
5. The Ilam wastewater renewal project page: **3333 views**.

