

Three Waters

Quarterly Report

October to December 2024

ccc.govt.nz/water-and-drainage

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Addington Brook renewal.

Executive summary

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

We were primarily focused on preparing for managing our water supply and wastewater systems over the warm spring and summer seasons. Our Operations and Laboratory Teams were working during the holiday period to ensure the continuity and compliance of the services we provide.

There's an increase in visitors to Banks Peninsula over the summer period and we worked hard to minimise any disruptions in our services. Our staff visited customers in Banks Peninsula, looking for water leaks, checking water restrictors and backflow devices were working properly, as well as looking for sources of stormwater entering the wastewater network in Akaroa.

The creation of a Business Intelligence Team in the Three Waters Unit is having a positive impact on our work. The BI team specialise in providing expert advice, assistance, and implementation of solutions, which is helping the Unit to achieve our goals.

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

Since being set up the BI team has conducted a comprehensive review of our 2.9 million asset records, identifying potential data issues to enhance asset management efficiency and support strategic decision-making. They have a project underway to transition Infrastructure Design Standards data to the Three Waters Unit. This “as-built” data is for water supply, stormwater, wastewater and drainage assets. This will ensure we have accurate information to operate and maintain our assets.

They're also working on an ESRI based tool to allow planning engineers to develop new growth scenarios. These help us plan future asset upgrades and accommodate growth while achieving our levels of service.



Akaroa Harbour.



Te Kuru Wetland – water storage basin.

A snapshot of our network...

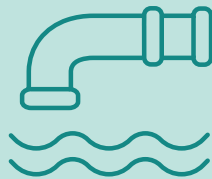
We're responsible for more than you might think.

Our three waters network...

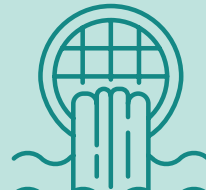
Christchurch City Council owns and operates the city's water supply, wastewater and stormwater network.



Water supply



Wastewater

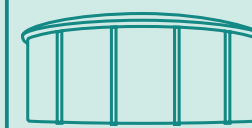


Stormwater

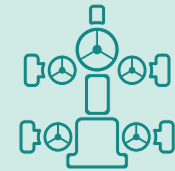
Strengthening our networks



Pump stations



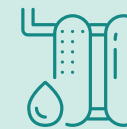
Reservoirs



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.

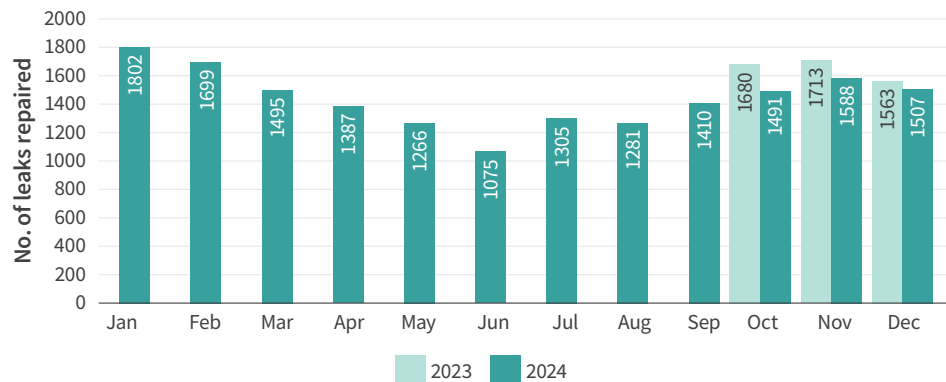
What we did, in numbers – October to December 2024



4586

Water leaks repaired

A year of repairs



99%

(397 out of 401)

of water supply resource consent conditions are compliant.



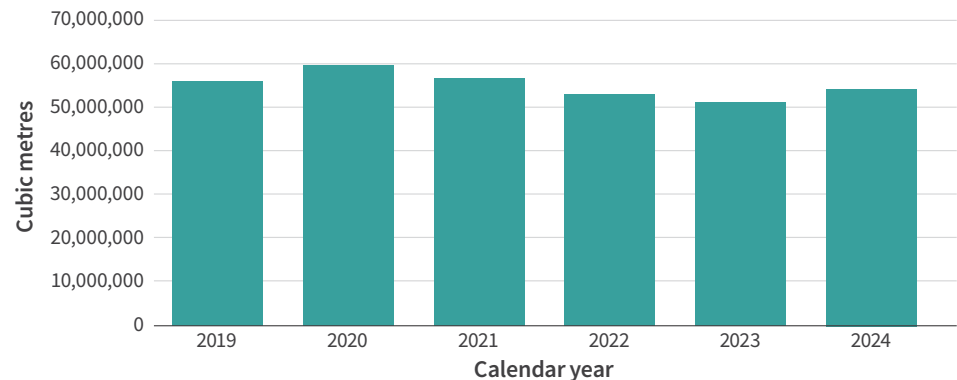
14,617,381m³

Water supplied across the district

How much we water each quarter

| Quarter | Year | Total (m ³) |
|--------------------|------|-------------------------|
| October – December | 2023 | 13,435,363 |
| January – March | 2024 | 15,233,542 |
| April – June | 2024 | 12,108,667 |
| July – September | 2024 | 12,007,446 |
| October – December | 2024 | 14,618,381 |

Year on year – how we compare



10 incidents

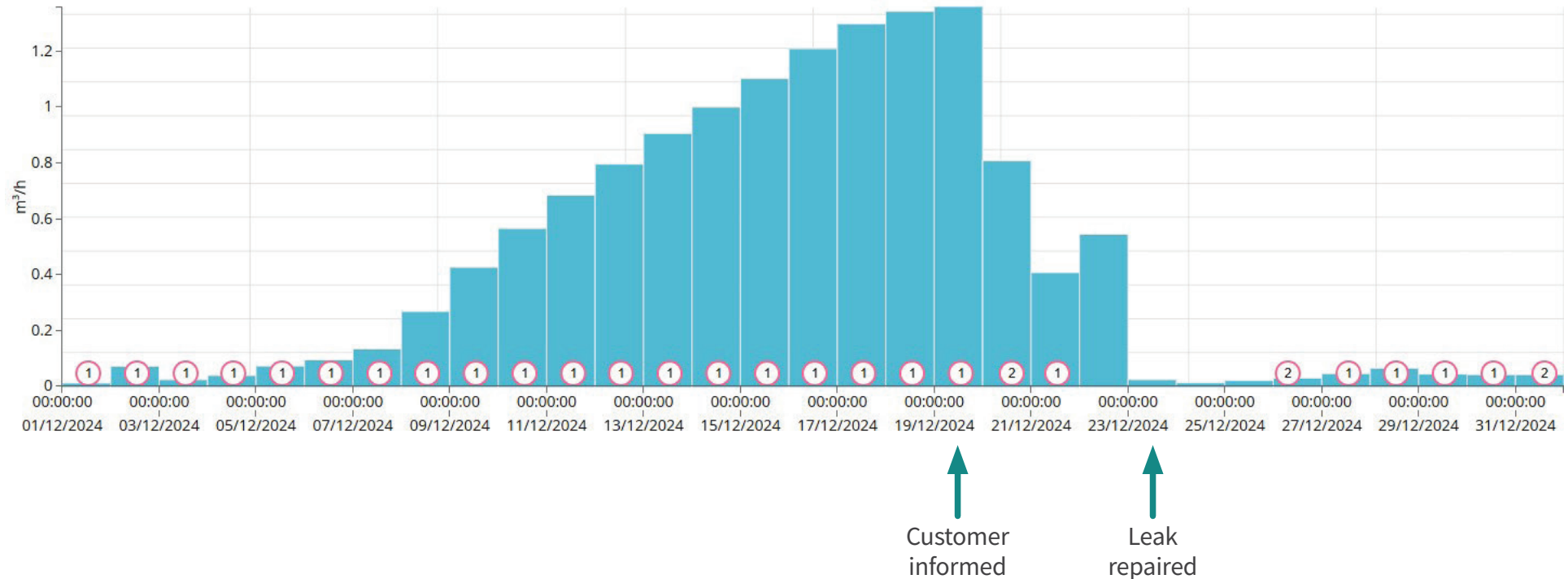
reported to the Water Services Authority – Taumata Arowai (more about this on page 9).

Smart water meters installed in Akaroa



Thanks to the new smart water meters installed in Akaroa, we can easily identify private leaks and high consumers. We inform residents that may have leaks so they can get them sorted and avoid paying excess water charges.

Below we can see an example of a private leak repaired after we communicated with the customer:



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.



98% of the class sampling programme

is completed with the remainder of the programme on track to be completed by April 2025. **Up 4% on last quarter.**

114 sources and 41 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 supply has five registered 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, geotechnical and archaeological assessments are underway.
- 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 the Water Services Authority – Taumata Arowai on research into viruses in groundwater. We're hopeful this research could inform future changes to how the Drinking Water Quality Assurance Rules requirements in relation to groundwater are considered.
- Our Main Pumps Station already operates with a protozoa barrier in place.
- All other non-Class 1 sources have been abandoned.

Source Water Risk Management Plans

The Water Services Act requires us to prepare and implement Source Water Risk Management Plans (SRMP) as part of the Water Safety Plans. During this quarter we started to capture aerial images of Banks Peninsula catchments with drones. This work was supported by the Technical Services and Design Unit and has allowed us to improve the risk assessment of our sources and categorise features including; land use, lack of fencing, animal presence near the intakes, construction works, erosion and others. We plan to do this annually to create a historical database.

In November 2024 the Water Services Authority – Taumata Arowai approved the revised version of the Drinking Water Quality Assurance Rules, changing some compliance requirements. The changes are mainly around reporting, sampling frequencies and determinants and will come into force on 1 January 2025. Three Waters staff have been working to make the necessary changes to sampling schedules and reporting to ensure compliance under the new requirements.



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 the Water Services Authority – 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 |
|--------------------------|---|--|--|---|
| CHR009 Christchurch | Water is non-compliant | 24/10/2024 10/11/2024 24/11/2024 25/11/2024 | 4 different Water Treatment Plants (WTP) delivered non-chlorinated water. | WTP were isolated and then reinstated once the chlorine dosing system was fixed. |
| | Service was interrupted >8hrs | 02/10/2024 10/10/2024 | Pipe breaks left some properties without water for more than 8 hours due to complexity of the repairs (closeness to a power pole and night works). | Pipe were repaired as soon as possible. Bottled water was available to those properties affected. |
| BIR001 Birdlings Flat | Water is non-compliant | 03/10/2024 | 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. |
| | Water is non-compliant | 03/12/2024 | pH of water leaving the treatment plant was measured to be 8.1 (indicating non-compliance with rule T2.21). | Treatment was adjusted. |
| DUV001 Duvauchelle | Water is non-compliant | 06/12/2024 | pH of water leaving the treatment plant was measured to be 8.04 (indicating non-compliance with rule T2.21). | Treatment was adjusted. |
| WAI138 Wainui | Water is non-compliant | 03/10/2024 | 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 January to March 2025

Banks Peninsula summer management

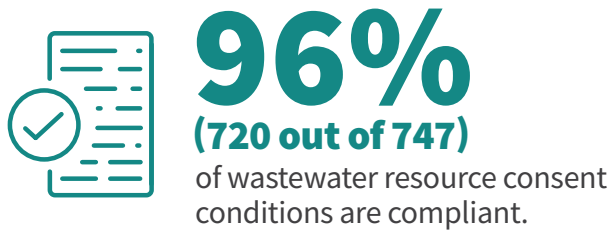
We're continuously monitoring our assets to ensure we can maintain a reliable supply of water to our customers throughout the summer season. We're monitoring stream levels to make sure we comply with our consents and manage demand appropriately. We're prepared to respond to weather events including dry/hot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



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 – October to December 2024



We completed a comprehensive programme in Banks Peninsula to improve the wastewater and stormwater systems as well as achieve consent compliance.

All properties in Akaroa, Duvauchelle, Tikao Bay and Wainui have now been checked for external wastewater and stormwater drainage compliance (**1367 properties in total**).

- 166 re-inspections have been undertaken
- 29 cross-connections (stormwater to wastewater)
- 10 properties recommended for pole cam inspection
- 251 non-compliant gully traps (height or other issue)
- 4 water leaks
- 6 grey water/wastewater cross connections (wastewater to stormwater)

Non-compliance figures – October to December 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 (January to March 2025)

Banks Peninsula wastewater

Approximately 100 re-inspection surveys are still to be reviewed by our staff, which will likely increase the final cross-connection and non-compliant gully trap count. We will also contact property owners to resolve identified drainage issues.

Christchurch Wastewater Treatment Plant

We work hard to keep the damaged Christchurch Wastewater Treatment Plant operating, while keeping odours to a minimum for residents.

Demolition of the Christchurch Wastewater Treatment Plant's fire-damaged trickling filters started in late November and quick progress is being made. Demolition of the walls was complete in mid-December and the team is now working on demolishing the foundations and central columns.

There was an increase in odour coming from the Wastewater Treatment Plant and oxidation ponds in December as the treatment process adjusted to summer mode. Staff made changes to our operations to address this including:

- reducing the number of primary tanks in service to prepare them for the lower flow experienced over summer.
- increasing the number of aeration lanes on the temporary activated sludge plant to prepare it for the lower, but more concentrated sewage flows over summer.
- changing the flow-path through the oxidation ponds to prepare them for summer.

These changes had a positive impact and odours from the plant and ponds reduced. When there's an increase in odour our staff take action straight away but it can take time for this to have an impact on odour. This is due to how long it takes for sewage to pass through the treatment plant and ponds. As a result, it takes time for any operational changes to effect and reduce the odour being released.



Demolition of the trickling filter tanks.



Monitoring and ops



13 million tons

total treated wastewater.



1262

webpage views.



2831 MWh

electricity generated from waste.



6

e-newsletters.



2 times

H₂S went over 0.03ppm.



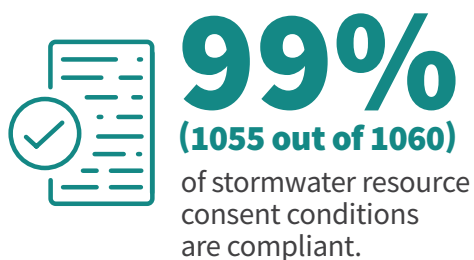
2

school visits.

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 – October to December 2024



We attended two construction industry expos to promote best practices about erosion and sediment control.



We finalised the CSNDC Implementation Plan.

We completed the five-year review of the Comprehensive Stormwater Network Discharge Consent (CSNDC) and applied to Environment Canterbury to change some of the conditions. The most important changes proposed are about:

- approving use of the MEDUSA stormwater model.
- extending the date of the Banks Peninsula Stormwater Management Plan submission.
- excluding construction sites with non-complying Erosion and Sediment Control Plans from the CSNDC
- changing CSNDC reporting submission frequency from annual to every second year.
- bringing all community engagement work required by the CSNDC under the banner of the “Community Waterways Partnership”.
- updating “Receiving Environment Objectives and Attribute Target Levels” to match current environmental standards.

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 January to March 2025

This quarter we'll complete and submit the CSNDC Environmental Management Plan to Environment Canterbury. The plan sets out how we'll monitor the mitigation of stormwater discharges into the environment.

A new easy-to-use app that provides a space for Council staff to record erosion and sediment control (ESCP) audits will be released. Data recorded in the app can be used to track city-wide compliance trends.



Christchurch City Council / Environment Canterbury stand at Conztruct building expo.



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, Canterbury Regional Council, Department of Conservation, Ministry for the Environment, Canterbury District Health Board, universities, schools, industry representatives, river care and other community groups.



Community Waterways Partnership hui – November 2024

What we did:

- In October we held the CSNDC Annual Report hui, where Council staff highlighted the most important results of the report.
- In November we held the Community Waterways Partnership hui. It was a great success and members reflected on the CWP's direction and actions for the last year, enjoyed presentations from some of our new partners and took part in a productive action planning workshop. There were insightful presentations on integrating Mātauranga Māori into our mahi and engaging with Ngāti Wheke. It was good to come together like this and reaffirm what the CWP is all about!
- The CWP contestable fund had a very good reception in the community. We received 14 funding requests, providing funding to eight of them. Funding these projects helps us achieve our outcomes in two ways – by improving our environment's health and creating a sense of community. We will follow up and assess the outcome of each of these projects during the year.

What people are telling us

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

Our team received a total of

8866
service requests
related to water and drainage.

The most common requests related to:



water leaks
4712



water supply
1131



water meter boxes
1069



surface water not
draining or being
blocked
655



new residential
water connections
357

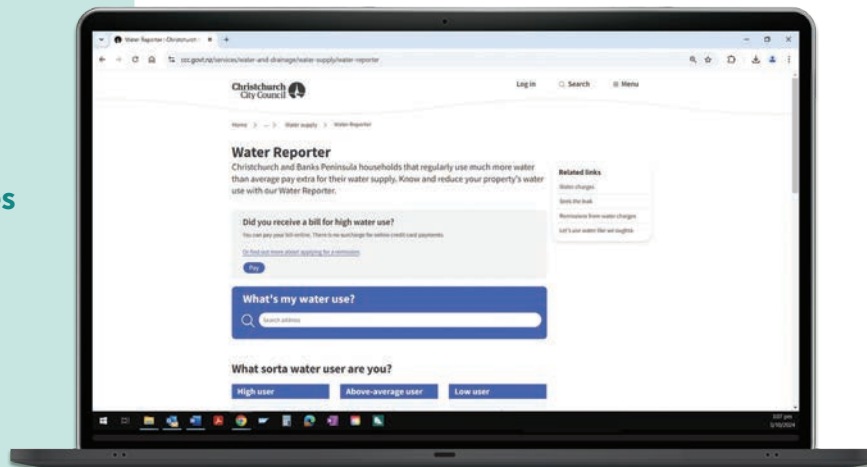
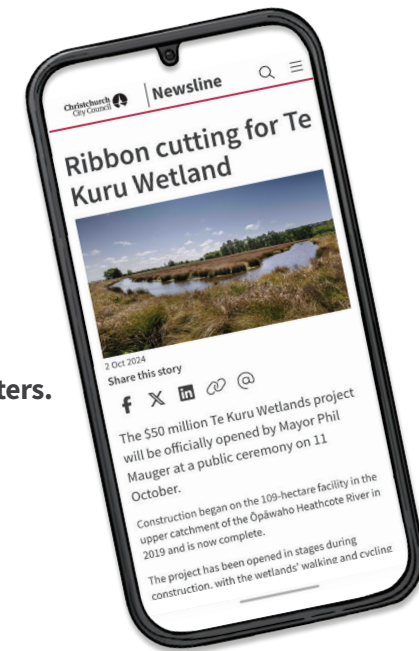
Reaching our communities

During the last quarter:

We published **5 Newsline stories** related to Three Waters.

The stories covered:

1. Te Kuru Wetland ribbon cutting
2. Water pipe upgrades on Aorangi Road
3. Addington Brook renewal progress
4. Keeping your dog safe from cyanobacteria
5. Demolition of trickling filters to get underway



We had **109,765 views** of our water webpages.

This represented **3.96%** of total views across the website, and **25,290 more views** than the previous quarter.

The top five pages were:

1. Water Reporter - used by residents to check their water use: **22,436 views**.
2. Our floor level map for building and resource consents, flood risk and property information: **11,450 views**.
3. Ilam wastewater project page: **10,389 views**.
4. Three waters asset network map showing where three waters assets are located: **8030 views**.
5. The water status map showing real-time water shut-off information: **7686 views**.