Three Waters Infrastructure and Environment Committee
AGENDA

Notice of Meeting:

An ordinary meeting of the Three Waters Infrastructure and Environment Committee will be held on:

Date: **Wednesday 9 March 2022**
Time: **9.30am**
Venue: **By audio/visual link**

Under the current provisions of the Covid-19 Protection Framework (the Traffic Alert system) meeting attendance is only possible via an Audio/Visual link or by viewing a live stream: http://councillive.ccc.govt.nz/live-stream. Please request the access details from Andrew.Campbell@ccc.govt.nz for the audio/visual link.

Membership

Chairperson	Councillor Pauline Cotter
Deputy Chairperson	Councillor Phil Mauger
Members	Mayor Lianne Dalziel
	Deputy Mayor Andrew Turner
	Councillor Jimmy Chen
	Councillor Catherine Chu
	Councillor Melanie Coker
	Councillor Mike Davidson
	Councillor Celeste Donovan
	Councillor Anne Galloway
	Councillor James Gough
	Councillor Yani Johanson
	Councillor Aaron Keown
	Councillor Sam MacDonald
	Councillor Jake McLellan
	Councillor Tim Scandrett
	Councillor Sara Templeton

2 March 2022

Principal Advisor
Jane Davis
General Manager Infrastructure,
Planning & Regulatory Services
Tel: 941 8884

Andrew Campbell
Committee & Hearings Advisor
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Note: The reports contained within this agenda are for consideration and should not be construed as Council policy unless and until adopted. If you require further information relating to any reports, please contact the person named on the report.

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Ōtautahi–Christchurch is a city of opportunity for all

Open to new ideas, new people and new ways of doing things – a city where anything is possible

Principles

- Being open, transparent and democratically accountable
- Promoting equity, valuing diversity and fostering inclusion
- Taking an inter-generational approach to sustainable development, prioritising the social, economic and cultural wellbeing of people and communities and the quality of the environment, now and into the future
- Building on the relationship with Te Rūnanga o Ngāi Tahu and the Te Hononga–Council Papatipu Rūnanga partnership, reflecting mutual understanding and respect
- Ensuring the diversity and interests of our communities across the city and the district are reflected in decision-making
- Actively collaborating and co-operating with other local, regional and national organisations

Community Outcomes

Resilient communities

- Strong sense of community
- Active participation in civic life
- Safe and healthy communities
- Celebration of our identity through arts, culture, heritage, sport and recreation
- Valuing the voices of all cultures and ages (including children)

Liveable city

- Vibrant and thriving city centre
- Sustainable suburban and rural centres
- A well connected and accessible city promoting active and public transport
- Sufficient supply of, and access to, a range of housing
- 21st century garden city we are proud to live in

Healthy environment

- Healthy water bodies
- High quality drinking water
- Unique landscapes and indigenous biodiversity are valued and stewardship exercised
- Sustainable use of resources and minimising waste

Prosperous economy

- Great place for people, business and investment
- An inclusive, equitable economy with broad-based prosperity for all
- A productive, adaptive and resilient economic base
- Modern and robust city infrastructure and community facilities

Strategic Priorities

- **Enabling active and connected communities to own their future**
- **Meeting the challenge of climate change through every means available**
- **Ensuring a high quality drinking water supply that is safe and sustainable**
- **Accelerating the momentum the city needs**
- **Ensuring rates are affordable and sustainable**

Ensuring we get core business done while delivering on our Strategic Priorities and achieving our Community Outcomes

- Engagement with the community and partners
- Strategies, Plans and Partnerships
- Long Term Plan and Annual Plan
- Our service delivery approach
- Monitoring and reporting on our progress

THREE WATERS INFRASTRUCTURE AND ENVIRONMENT COMMITTEE OF THE WHOLE - TERMS OF REFERENCE NGĀ ĀRAHINA MAHINGA

Chair	Councillor Cotter
Deputy Chair	Councillor Mauger
Membership	The Mayor and All Councillors
Quorum	Half of the members if the number of members (including vacancies) is even, or a majority of members if the number of members (including vacancies) is odd.
Meeting Cycle	Monthly
Reports To	Council

Delegations

The Council delegates to the Three Waters Infrastructure and Environment Committee authority to monitor and make decisions on:

- Water supply, conservation and quality *(for the avoidance of doubt the Council retains its authority on matters relating to the Governments Water Reform).*
- Receive regular updates from the Water Management Zone Committees.
- Stormwater drainage including the Land Drainage Recovery Programme.
- Natural environment, including the waterways, aquifers, ecology and conservation of resources.
- Natural hazards protection, including flood protection and river control.
- Solid waste collection, processing and disposal including landfills.
- Sewage collection, treatment and disposal.
- Applications to the Biodiversity Fund.

Bylaws

The Council delegates to the Committee authority to:

- Oversee the development of new bylaws within the Committee's terms of reference, up to and including adopting draft bylaws for consultation.
- Oversee the review of the following bylaws, up to and including adopting draft bylaws for consultation.
    - Trade Waste Bylaw 2015
    - Waste Management Bylaw 2009
    - Water Supply, Wastewater and Stormwater Bylaw 2014

Submissions

- The Council delegates to the Committee authority:
- To consider and approve draft submissions on behalf of the Council on topics within its terms of reference. Where the timing of a consultation does not allow for consideration of a draft submission by the Council or relevant Committee, that the draft submission can be considered and approved on behalf of the Council.

Limitations

- This Committee does not have the authority to set project budgets, identify preferred suppliers or award contracts. These powers remain with the Finance and Performance Committee.
- The general delegations to this Committee exclude any specific decision-making powers that are delegated to a Community Board, another Committee of Council or Joint Committee. Delegations to staff are set out in the delegations register.
- The Council retains the authority to adopt policies, strategies and bylaws.
- The Council retains its authority on matters relating to the Governments Water Reform.
- The following matters are prohibited from being subdelegated in accordance with LGA 2002 Schedule 7 Clause 32(1) :
- the power to make a rate; or
- the power to make a bylaw; or
- the power to borrow money, or purchase or dispose of assets, other than in accordance with the long-term plan; or
- the power to adopt a long-term plan, annual plan, or annual report; or
- the power to appoint a chief executive; or
- the power to adopt policies required to be adopted and consulted on under this Act in association with the long-term plan or developed for the purpose of the local governance statement; or
- the power to adopt a remuneration and employment policy.

Chairperson may refer urgent matters to the Council

As may be necessary from time to time, the Committee Chairperson is authorised to refer urgent matters to the Council for decision, where this Committee would ordinarily have considered the matter. In order to exercise this authority:

- The Committee Advisor must inform the Chairperson in writing the reasons why the referral is necessary.
- The Chairperson must then respond to the Committee Advisor in writing with their decision.
- If the Chairperson agrees to refer the report to the Council, the Council may then assume decision-making authority for that specific report.

Part A **Matters Requiring a Council Decision**
Part B **Reports for Information**
Part C **Decisions Under Delegation**

TABLE OF CONTENTS

Karakia Tīmatanga

1. Apologies Ngā Whakapāha

At the close of the agenda no apologies had been received.

2. Declarations of Interest Ngā Whakapuaki Aronga

Members are reminded of the need to be vigilant and to stand aside from decision making when a conflict arises between their role as an elected representative and any private or other external interest they might have.

3. Confirmation of Previous Minutes Te Whakaāe o te hui o mua

That the minutes of the Three Waters Infrastructure and Environment Committee meeting held on Wednesday, 9 February 2022 be confirmed (refer page 8).

4. Public Forum Te Huinga Whānui

A period of up to 30 minutes will be available for people to speak for up to five minutes on any issue that is not the subject of a separate hearings process.

There were no public forum requests received at the time the agenda was prepared.

5. Deputations by Appointment Ngā Huinga Whakaritenga

Deputations may be heard on a matter or matters covered by a report on this agenda and approved by the Chairperson.

There were no deputations by appointment at the time the agenda was prepared.

6. Presentation of Petitions Ngā Pākikitanga

There were no petitions received at the time the agenda was prepared.

Christchurch City Council

Christchurch City Council

Three Waters Infrastructure and Environment Committee
OPEN MINUTES

Date: Wednesday 9 February 2022
Time: 9.34am
Venue: Council Chambers, Civic Offices, 53 Hereford Street, Christchurch

Present

Chairperson	Councillor Pauline Cotter
Deputy Chairperson	Councillor Phil Mauger
Members	Mayor Lianne Dalziel
	Deputy Mayor Andrew Turner
	Councillor Jimmy Chen
	Councillor Catherine Chu - via audio/visual link
	Councillor Melanie Coker
	Councillor Mike Davidson
	Councillor Celeste Donovan - via audio/visual link
	Councillor Anne Galloway
	Councillor Yani Johanson
	Councillor Aaron Keown
	Councillor Sam MacDonald
	Councillor Jake McLellan - via audio/visual link

Principal Advisor
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Part A **Matters Requiring a Council Decision**

Part B **Reports for Information**

Part C **Decisions Under Delegation**

Karakia Tīmatanga: Given by Councillor Cotter

The agenda was dealt with in the following order.

1. Apologies Ngā Whakapāha

Part C
Committee Resolved TWIA/2022/00001

That the apologies received from Councillors Gough, Scandrett and Templeton for absence and Councillor Chu for early departure be accepted.

Councillor Cotter/Councillor Mauger **Carried**

2. Declarations of Interest Ngā Whakapuaki Aronga

Part B
There were no declarations of interest recorded.

3. Confirmation of Previous Minutes Te Whakaāe o te hui o mua

Part C
Committee Resolved TWIA/2022/00002

That the minutes of the Three Waters Infrastructure and Environment Committee meeting held on Wednesday, 8 December 2021 be confirmed.

Deputy Mayor/Councillor MacDonald **Carried**

4. Public Forum Te Huinga Whānui

Part B
There were no public forum presentations.

5. Deputations by Appointment Ngā Huinga Whakaritenga

Part B
There were no deputations by appointment.

6. Presentation of Petitions Ngā Pākikitanga

Part B
There was no presentation of petitions.

7. Selwyn Waihora Zone Committee Minutes

Committee Resolved TWIA/2022/00003

That the Three Waters Infrastructure and Environment Committee receives the Minutes from the Selwyn Waihora Zone Committee meetings held on 3 November 2020, 1 December 2020 and 6 April 2021.

Councillor Galloway/Deputy Mayor **Carried**

Councillor Keown joined the meeting at 9.49am during discussion on item 8.
Councillor Coker left the meeting at 9.55am and returned at 10.03am during discussion on item 8.
Councillor MacDonald left the meeting at 10.08am and returned at 10.14am during discussion on item 8.
Councillor Chu left the meeting at 10.14am during discussion on item 8 and did not return to the meeting.

8. Three Waters Infrastructure and Environment Committee - Resource Recovery - November/December 2021

Committee Comment

1. The Committee requested that Staff provide an update on the utilisation of landfill gas by Council users.
2. The Committee requested that Staff provide an update on the achievements of the Handheld Battery Recycling programme and look at possible options or ways to expand the programme throughout the city

Committee Resolved TWIA/2022/00004 Officer Recommendation accepted without change

Part B

That the Three Waters Infrastructure and Environment Committee:

1. Receive the information in the Three Waters Infrastructure and Environment Committee – Resource Recovery – November/December Report

Councillor Cotter/Councillor Chen **Carried**

Karakia Whakamutunga: Given by Councillor Cotter

Meeting concluded at 10.30am.

CONFIRMED THIS 9th DAY OF MARCH 2022.

COUNCILLOR PAULINE COTTER
CHAIRPERSON

Item 7

7. Three Waters Bi-monthly Report December 2021/January 2022

Reference Te Tohutoro: 22/164044

Report of Te Pou Matua: Helen Beaumont, Head of Three Waters

General Manager Pouwhakarae: Jane Davis, General Manager Infrastructure, Planning & Regulatory Services

1. Brief Summary

1.1 The purpose of this report is to update the Three Waters Infrastructure and Environment Committee on work occurring in the Three Waters portfolio during December 2021 and January 2022 (Attachment A).

1.2 Key points in this report:

1.2.1 The three waters reform programme is proceeding with an ambitious timeline and new requests for information from Councils.

1.2.2 The three waters bylaws are out for public consultation with hearings planned for March 2022.

1.2.3 The Stormwater Management Plan for the Ihutai-Estuary and Coastal catchment will go out for consultation at the end of February 2022 and must be lodged with Environment Canterbury by end of June 2022.

1.2.4 Water Safety Plans are being revised to meet the requirements set out by Taumata Arowai – draft standards and rules released in December 2022.

1.2.5 Work is underway to estimate the costs of fluoridating the Council's drinking water supplies – estimates and timeframes to be provided to the Ministry of Health by 11 March 2022.

1.2.6 Capital delivery proceeds under the red light of the Covid framework with some supply delays – excellent progress on Lyttelton harbour wastewater, water and wastewater mains renewals across the city, the smart water pilot in the Rawhiti zone, and upper Heathcote stormwater basins and wetlands.

1.2.7 Work continues to optimise the operation of the Christchurch wastewater plant following the fire in November 2021 and reduce the odours affecting the neighbourhood.

1.2.8 The planning teams are busy with the high volumes of consents for subdivision and new builds.

2. Officer Recommendations Ngā Tūtohu

That the Three Waters Infrastructure and Environment Committee:

1. Receive the information in the Three Waters Bi-monthly Report December 2021/January 2022 Report

Attachments Ngā Tāpirihanga

No.	Title	Page
A	Three Waters Infrastructure and Environment Committee report - December 2021/January 2022	13

Additional background information may be noted in the below table:

Document Name	Location / File Link
Not applicable	Not applicable

Confirmation of Statutory Compliance Te Whakatūturutanga ā-Ture

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:
  (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
  (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories Ngā Kaiwaitohu

Author	Helen Beaumont - Head of Three Waters
Approved By	Jane Davis - General Manager Infrastructure, Planning & Regulatory Services

Eels found in Ngā Puna Wai Reserve

THREE WATERS INFRASTRUCTURE AND ENVIRONMENT COMMITTEE

December 2021/January 2022 report

Christchurch City Council | February 2022

TABLE OF CONTENTS

PLANNING AND POLICY

Central Government Water Reform

Central government's Three Waters Reform programme responds to significant challenges faced by New Zealand's three waters system. The programme will transform the legislative arrangements for and the delivery of three waters services. The government confirmed on 27 October 2021 that water services delivery will be transitioned to four water service entities which would be separate from the 67 local authorities currently delivering these services.

The timeline for the programme continues to be ambitious as shown in the Government's updated timeline. Please see appendix 1.

Working Group to support entity design improvements

In late 2021, in response to challenges raised by Local Authorities at the mandated entities and governance, Government set up a Working Group on Representation, Governance and Accountability of new Water Services Entities;. The group, comprising representatives from Iwi/Māori and Local Authorities, provides opportunities during the drafting of the Water Services Entity Bill to make immediate improvements to aspects of the reform design – representation, governance and accountability – keeping within the following bottom lines:

- Good governance
- Partnership with mana whenua
- Public ownership
- Balance sheet separation.

National Transition Unit (NTU)

In January 2022, the National Transition Unit released a Transition Information Pack. It provides a summary timeline and outlines the objectives, roles and responsibilities for the transition as well as how the Unit will engage with Councils.

An outline of the work streams, principles, sought outcomes and overall timeline is provided in the indicative roadmap. Please see appendix 2.

Request for Information – Workforce

On 31 January 2022, the NTU released a Request for Information on the 3 Waters workforce. The response deadline is 1 March 2022 with information on:

- Individual role information for all roles including 3 Waters accountabilities
- Collective agreements for union members with 3 Waters accountabilities
- General information on training, leadership and development programmes
- Support available to staff impacted by the transition
- High level information on certain types of work that are out-sourced; this includes our two 3 Waters maintenance contracts.

Department of Internal Affairs Stimulus Funds programme

All projects are underway and the fifth quarterly report to the Department of Internal Affairs (DIA) was submitted on 25 January 2022. The deadline for completing stimulus funds work is 30 June 2022.

The DIA has increased the threshold for a Project Substitution Request. As such a DIA formal change request is not required for the small project changes proposed in January 2022. The October change request included a number of new projects at the Christchurch Wastewater Treatment Plant. Following the fire in November 2021 and given the extremely tight timeframes allowed for the work, a change has been made to increase the scope of other operational projects including deferred maintenance works at Water and Wastewater pump stations.

A summary report is provided as part of monthly updates to the Finance and Performance Committee by our Programme Management Office.

Three Waters bylaw review

The Water Supply, Wastewater and Stormwater Bylaw 2014 is proposed to be replaced by two new bylaws – the Water Supply and Wastewater Bylaw 2022, and the Stormwater and Land Drainage Bylaw 2022.The Committee adopted both draft bylaws for consultation with the community in November 2021.

Consultation opened on 29 November for an extended period of 10 weeks to account for the Christmas and New Year holidays. At the time of writing this report, six submissions have been received, with one week of the consultation period remaining.

Stakeholders with an interest in the proposed new Industrial Stormwater Discharge Licence were invited to attend an information session to learn more about the proposal, and have their questions answered. There were seventeen public attendees at the session held on 1 February 2022.

Council will make the final decisions on the two bylaws following a hearings panel process. Hearings will likely be held in March, with the Hearings Panel recommendations to Council on the final form of the bylaw expected to be presented to Council in May. Pending Council decision, the replacement bylaws will be in force from 1 July 2022.

COMPLIANCE AND QUALITY ASSURANCE

Health Safety and Wellbeing

There were a total of 73,748 hours worked in January, including Transport and Waste, and Three Waters internal staff.

A total of 39 events were reported in January. The events include 33 near misses, 4 first aid injuries, and 2 medical treatment injury and no days lost to time injury.

Please see appendix 3 for the detailed statistics and the measures of LTIFR (lost time injury frequency rate) and TRIFR (total recordable injury frequency rate) for January.

Resource consents

The Three Waters and Waste Unit holds 276 resource consents from Environment Canterbury authorising a broad range of construction and operational activities. At this time there are no outstanding enforcement actions and no significant non-compliance grades within the Three Waters Unit.

We continue to work closely with Environment Canterbury on the performance of the Christchurch wastewater treatment plant following the fire.

Comprehensive Stormwater Network Discharge Consent CRC214226

The Huritini / Halswell and Ōpāwaho / Heathcote River Stormwater Management Plans were adopted by Council on 9 December 2021, and were subsequently lodged with Environment Canterbury in December.

The Ihutai-Estuary and Coastal Stormwater Management Plan (SMP) is being prepared to go out for public consultation at the end of February 2022. This plan needs to be lodged with Environment Canterbury by 30 June 2022.

The Otukaikino/ Outer Area Christchurch SMP is being drafted and is planned to go out for public consultation at the middle of this year, before being presented to the Council for adoption in September 2022.

Preliminary discussions have been held with Ngāti Wheke on the development of the Te Pātaka o Rākaihautū / Banks Peninsula settlements Plan that is due for submission with Environment Canterbury in June 2023. Presentations and discussions on the Plan have been held with the Banks Peninsula Community Board and the Banks Peninsula Zone Committee and an engagement is now being developed along the advice they provided.

While the Comprehensive Consent technical feasibility and investigation programme is proceeding to expected timelines, we are reviewing and adjusting current work in an attempt to ensure that it is not unduly delayed, or reporting compromised, by COVID-19 disruptions.

Environment Canterbury undertook a Compliance Monitoring Review of the Comprehensive Consent in December 2021 and reported several minor administrative non-compliances; staff have subsequently addressed these through provision of further supporting documentation.

Water Safety Plans

A water safety plan documents a public health risk-based assessment and management process that aims to ensure a safe and secure supply of drinking water for consumers, protecting public health.

Under the Water Service Act 2021, a Water Safety Plan is compulsory for all water supplies from November 2022, independent of the population served. Under the Health Act 1956, only the supplies with a population higher than 500 needed to prepare a Water Safety Plan. The Council has been proactive and has updated four of the seven plans: Christchurch/Lyttelton, Little River, Wainui and Akaroa/Takamatua. We are now working on the remaining three plans to submit them by June 2022: Duvauchelle, Pigeon Bay and Birdlings Flat.

The Water Safety Plans need to be submitted to the regulator Taumata Arowai, however the plans will not be 'approved'. Once the Plans are lodged with Taumata Arowai, the regulator will review them against the requirements and monitor ongoing compliance.

Taumata Arowai started its duties on 15 November 2021 but is not yet ready to receive the Water Safety Plans. Taumata Arowai is working with Councils to set up the registration of each water supply and their sources, and visiting some supplies.

Progress made on updating the plans

The Council continues developing and improving the Water Safety Plans with consideration of the newly drafted standards and rules that Taumata Arowai released 20 December 2021. The standards and rules are open for consultation and staff are preparing submissions.

The Council has drafted the Water Safety Plan Volume C: Source Water Risk Management Plan for Christchurch/ Lyttelton as it is now a new requirement from the new regulator.

The Water Services Act has some additional minor requirements that need to be confirmed as being clearly included and identified within our currently prepared water safety plans, these are: inclusion of a source risk management plan, how will we comply with the recently released draft Compliance Rules and how we ensure that a sufficient quantity of drinking water is provided at each point of supply. Council's current Water Safety Plans consider the risks and protection of the source water, however, more studies and work will be required in the future to cover this aspect.

Taumata Arowai's proposed Drinking Water Quality Assurance Rules have removed the category of secure groundwater as a compliance option. However, the proposed S3 source rules in the Draft Drinking Water Quality Assurance Rules (Dec 2021) give an option for not providing a protozoa treatment barrier. The rules apply for groundwater sources deeper than 30 metres that draw water via a sanitary bore head, from which *E. Coli* and total coliforms have not been detected over a period of three years of monthly monitoring. Source water from aquifers 2, 3, 4 and 5 should be able to meet this classification.

Summary of WSPs for Council owned and operated water supplies

Water supply	Date planned submission to Taumata Arowai	Water Safety Plan status
Little River	February 2021	Plan ready to be submitted once Volume C completed.
Duvauchelle	March 2022	In progress
Wainui	January 2021	Plan ready to be submitted. Only requires formatting work to be separated in Volume A (General) and Volume B and addition of Volume C
Akaroa / Takamātua	December 2021	Plan ready to be submitted. Only requires formatting work to be separated in Volume A (General) and Volume B and additional of Volume C
Pigeon Bay	May 2022	In progress
Christchurch / Lyttelton	December 2021	Updating of risk tables to take into account work undertaken on backflow and lead investigation. Clarify sections relating to source risk management plan and other WSA additions.
Birdlings Flat	June 2022	In progress

Unacceptable risks from the Christchurch/Lyttelton water safety plan

The risk assessment undertaken for the 2020 Christchurch/Lyttelton water safety plan identified four risks as being unacceptable and requiring corrective action. The corrective action includes ongoing chlorine treatment for two of these risks until they are satisfactorily addressed. None of these unacceptable risks are associated with the groundwater source but rather with water storage tanks and the water distribution systems:

1. Major microbial contamination of storage tank serving >5,000 people due to cracks in roof or below ground walls allowing contaminated water to enter.
2. Introduction of contaminating material into the distribution system due to leaching of lead in lead jointed pipes.
3. Introduction of contamination due to no / inadequate / faulty / incorrectly installed backflow prevention device.
4. Civil emergency: earthquake or other large scale disruption.

Immediate measures were put in place to manage those risks, and longer term action plans are being developed with the ultimate goal of risk reduction and elimination. These measures are outlined below.

The Council has undertaken a review of the above risks in December 2021 given the work programme to fully characterise the risk related to leaching of lead in lead jointed

pipes; and to address the risk of contamination due to inadequate backflow prevention devices. These two risks have been re-evaluated and are now deemed acceptable.

The Council continues working on further reducing both risks through the pipe renewal programme and the backflow prevention devices installation.

FINANCIAL OVERVIEW

The numbers

Unit Activities									Three Waters	January 2022
Activity ($000's)	Year to Date				Full Year				Forecast Variance after C/F
	Actual	Budget	Variance	%	Forecast	Budget	Variance	%	
Flood Protection & Control Works	1,537	1,615	77	4.8%	2,712	2,712	-	0.0%	-
Stormwater Drainage	7,368	9,321	1,953	21.0%	13,535	15,024	1,489	9.9%	1,489
WW Collection, Treatment & Disposal	18,434	15,867	(2,568)	-16.2%	32,481	30,992	(1,489)	-4.8%	(1,489)
Water Supply	15,811	18,406	2,595	14.1%	26,231	26,231	-	0.0%	-
Eliminated Internal Activities	1,533	1,080	(453)	-42.0%	567	567	-	0.0%	-
Total Activities	**44,684**	**46,288**	**1,604**	**3.5%**	**75,525**	**75,525**		**0.0%**	

The operational result for January 2022 is $1.6 million less than budget year to date.

Stormwater Drainage: year to date spend is $1.9 million less than budget. This is mainly due to lower maintenance costs ($1.6 million). Maintenance spend within this activity has been consistently underspent over the past few years. One of the main reasons for this is that the infrastructure across the city has been renewed rather than repaired (thereby utilising capital budgets for much of their work as opposed to operational budgets for repairs). As a result, full year forecast is $1.5 million less than budget within maintenance.

Wastewater Collection, Treatment & Disposal: year to date spend is $2.5 million more than budget. Revenue from trade waste charges is $0.8 million less than budget; due to misalignment between billing cycle and phased budget. Maintenance costs are $1.4 million more than budget. Maintenance costs within this activity has been consistently overspend over the years although trending down slightly due to better management and utilisation of contracts. The full Year forecast is $1.5 million more than budget.

Water Supply: year to date spend is $2.6 million less than budget. This is mainly due water reform programme operational projects which is $2.4 million less than budget; this is a timing issue due to programme delays and the full year forecast is on budget.

Eliminated Internal Activities: year to date spend is $0.4 million more than budget. This is mainly driven by water reform programme operational projects which is $0.2 million less than budget; again a timing issue.

Capital expenditure year to date is $15.0 million less than budget. Forecast spend for the year is $15.0 million less than budget.

Activity ($000's)	Year to Date				Full Year			
	Actual	Budget	Variance	%	Forecast	Budget	Variance	%
Flood Protection and Control Works	7,999	17,414	9,415	54.1%	27,111	37,690	10,579	28.1%
Stormwater Drainage	6,337	9,191	2,854	31.1%	18,241	21,591	3,349	15.5%
Wastewater	30,383	31,631	1,248	3.9%	60,924	61,219	295	0.5%
Water Supply	28,033	29,716	1,683	5.7%	62,029	62,936	907	1.4%
Total Activities	**72,753**	**87,952**	**15,200**	**17.3%**	**168,306**	**183,436**	**15,130**	**8.2%**

WATER SUPPLY

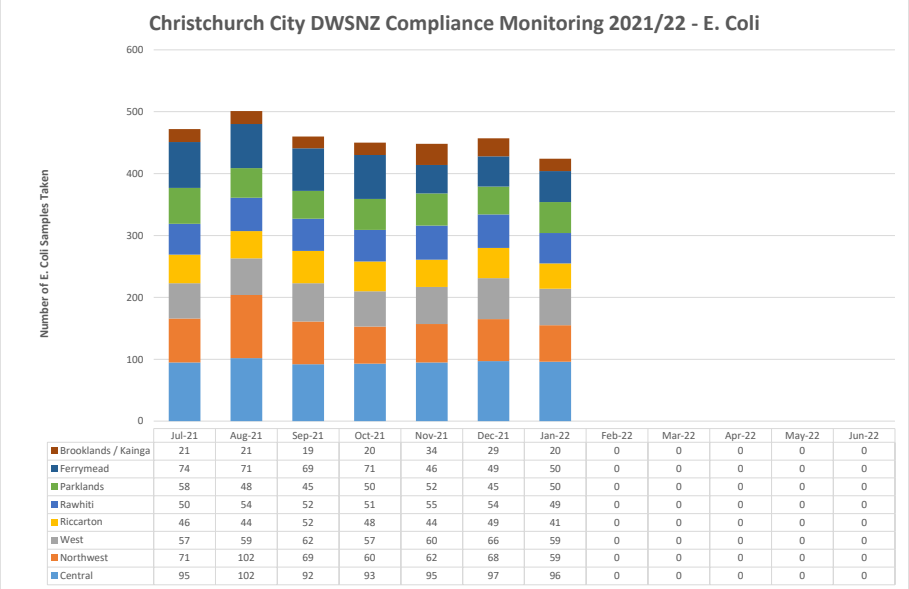
Drinking Water Quality

This section provides drinking water compliance quality monitoring related information for the period 1 July 2021 – 11 January 2022.

Escherichia coli Water Quality Monitoring

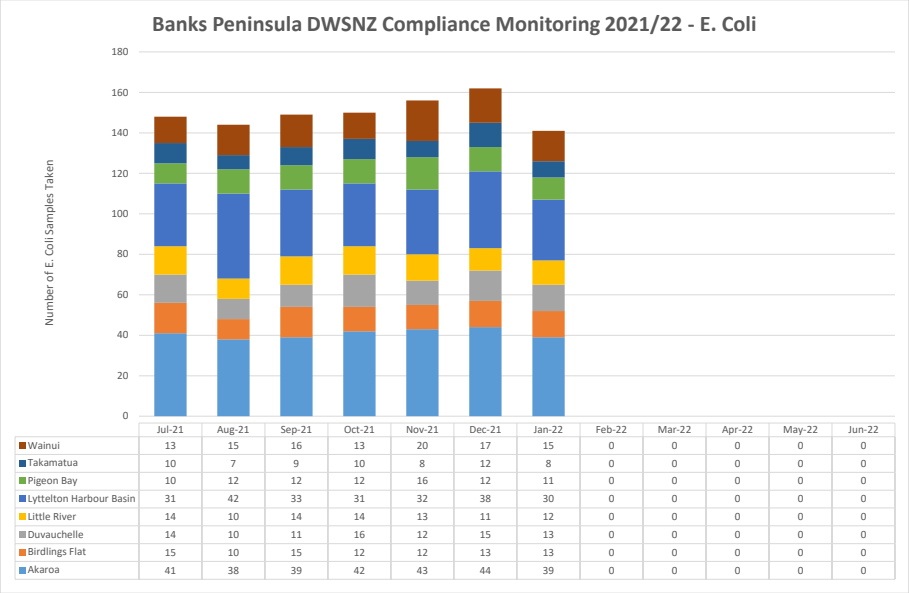
E. coli are common bacteria found in the gut of warm blooded animals and people. It is an indicator of faecal contamination and the presence of disease-causing organisms.

Figures 1, 2 and 3 show the number of *E. coli* samples taken by water supply zone. The number of *E. Coli* samples taken exceeded the requirements of the Drinking Water Standards for New Zealand. Figure 3 shows the number of samples taken at the Banks Peninsula water treatment plants, for the parameters required by the Drinking Water Standards for New Zealand.



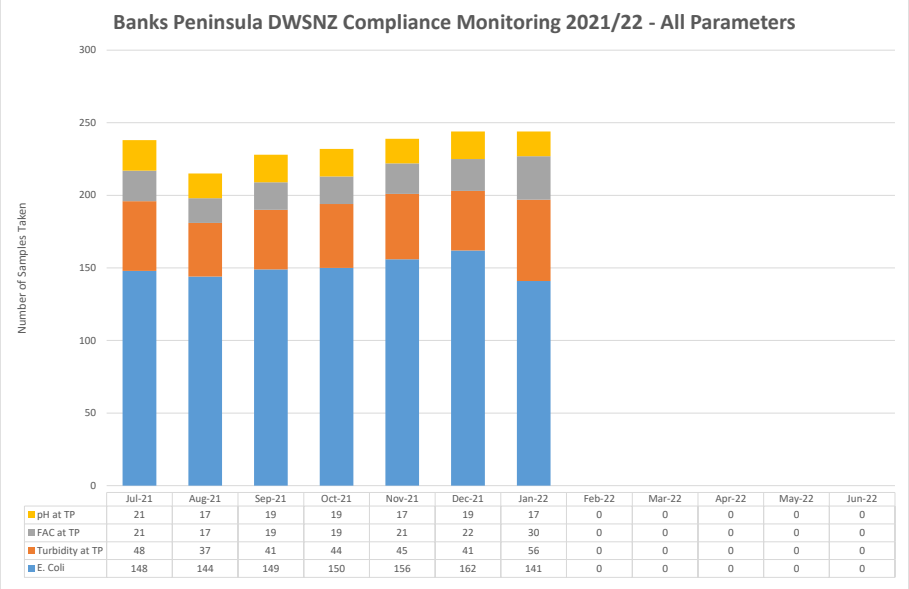
	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Brooklands / Kainga	21	21	19	20	34	29	20	0	0	0	0	0
Ferrymead	74	71	69	71	46	49	50	0	0	0	0	0
Parklands	58	48	45	50	52	45	50	0	0	0	0	0
Rawhiti	50	54	52	51	55	54	49	0	0	0	0	0
Riccarton	46	44	52	48	44	49	41	0	0	0	0	0
West	57	59	62	57	60	66	59	0	0	0	0	0
Northwest	71	102	69	60	62	68	59	0	0	0	0	0
Central	95	102	92	93	95	97	96	0	0	0	0	0

Figure 1: Number of E. coli samples taken for compliance monitoring purposes in Christchurch City



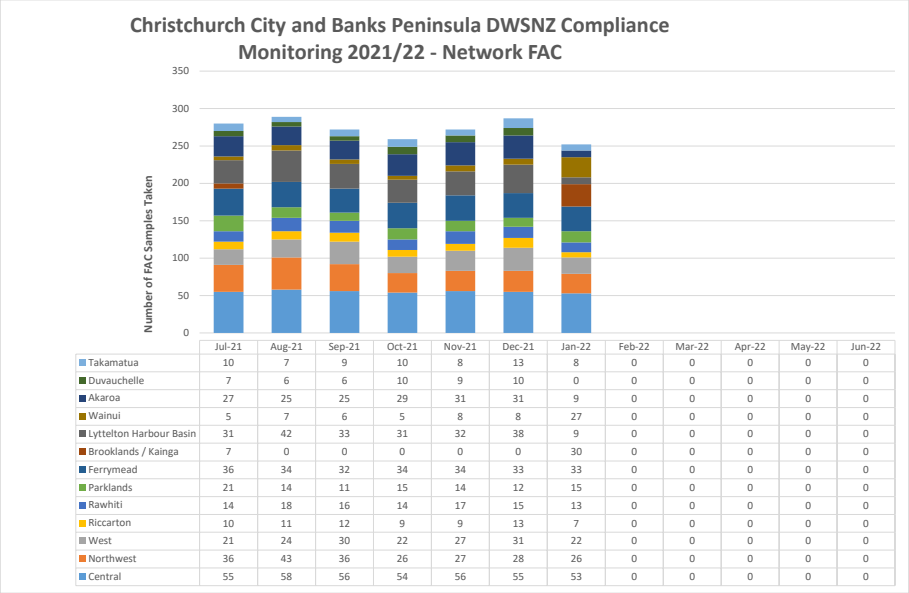
	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Wainui	13	15	16	13	20	17	15	0	0	0	0	0
Takamatua	10	7	9	10	8	12	8	0	0	0	0	0
Pigeon Bay	10	12	12	12	16	12	11	0	0	0	0	0
Lyttelton Harbour Basin	31	42	33	31	32	38	30	0	0	0	0	0
Little River	14	10	14	14	13	11	12	0	0	0	0	0
Duvauchelle	14	10	11	16	12	15	13	0	0	0	0	0
Birdlings Flat	15	10	15	12	12	13	13	0	0	0	0	0
Akaroa	41	38	39	42	43	44	39	0	0	0	0	0

Figure 2: Number of E. coli samples taken for compliance monitoring purposes on Banks Peninsula



	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
pH at TP	21	17	19	19	17	19	17	0	0	0	0	0
FAC at TP	21	17	19	19	21	22	30	0	0	0	0	0
Turbidity at TP	48	37	41	44	45	41	56	0	0	0	0	0
E. Coli	148	144	149	150	156	162	141	0	0	0	0	0

Figure 3: Number of pH, free available chlorine (FAC), turbidity and E. coli samples taken for compliance monitoring purposes at Banks Peninsula water treatment plants.

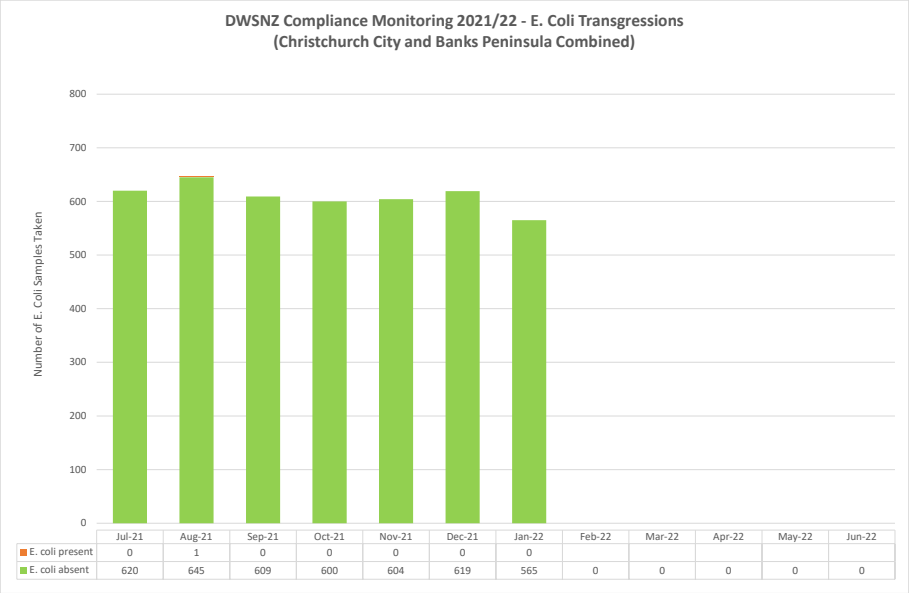


	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Takamatua	10	7	9	10	8	13	8	0	0	0	0	0
Duvauchelle	7	6	6	10	9	10	0	0	0	0	0	0
Akaroa	27	25	25	29	31	31	9	0	0	0	0	0
Wainui	5	7	6	5	8	8	27	0	0	0	0	0
Lyttelton Harbour Basin	31	42	33	31	32	38	9	0	0	0	0	0
Brooklands / Kainga	7	0	0	0	0	0	30	0	0	0	0	0
Ferrymead	36	34	32	34	34	33	33	0	0	0	0	0
Parklands	21	14	11	15	14	12	15	0	0	0	0	0
Rawhiti	14	18	16	14	17	15	13	0	0	0	0	0
Riccarton	10	11	12	9	9	13	7	0	0	0	0	0
West	21	24	30	22	27	31	22	0	0	0	0	0
Northwest	36	43	36	26	27	28	26	0	0	0	0	0
Central	55	58	56	54	56	55	53	0	0	0	0	0

Figure 4: Number of free available chlorine (FAC) samples taken in the distribution system.

E. coli Transgressions

Figure 5 summarises the results for *E. coli* each month.



	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
E. coli present	0	1	0	0	0	0	0					
E. coli absent	620	645	609	600	604	619	565	0	0	0	0	0

Figure 5: Number of E. coli negative and E. coli positive samples taken each month

Water supply planning

Work to support subdivision and building consents continues at a high level compared to the previous year. The asset planning team has provided development planning inputs as outlined below:

Description	Jul-Sep Q1 FY22	Oct-Dec Q2 FY22	Oct-Dec Q2 FY21
Subdivision Consents – advice & conditions	19	16	7
Engineering Acceptance of new subdivisions (WS)	17	4	10
Infrastructure Provider Agreements	2	0	2
BCN Engineering Acceptance	9	2	1

Fluoridation of drinking water

The Health (Fluoridation of Drinking Water) Amendment Act 2021, came into force on 13 December 2021 and provides the Director-General of Health with the power to issue a direction to water suppliers to fluoridate the public drinking water supply. Individual letters, to the Chief Executive and Mayor on the 15 December 2021, encourage Christchurch to start fluoridation-related preparatory work on community water supplies that service more than 500 people. Specific directions from the Director-General are expected mid-2022 however the Ministry of Health is encouraging local authorities to act proactively and to start the process to enable fluoridation. A limited amount of capital works funding will be available for local authorities that are willing and able to begin the capital works to fluoridate by the end of 2022. Financial support will be prioritized for communities with poor oral health.

The Ministry of Health has requested that Council should provide, by 11 March 2022, the estimated capital works cost to fluoridate the drinking water supplies as well as the timeframe required to implement fluoridation of its drinking water supplies.

A high level cost assessment for the implementation of fluoride dosing was undertaken in April 2017. A capital cost of $20 million and an operating cost of $1 million was projected, with no contingency. Staff identified the need to review the underlying assumptions on which the above cost estimate was based (for example dosing facilities outside, ensuring adequate mixing, updated monitoring requirements, etc.) and therefore, issued a statement of work for consultants to review and formalize the concept design, to update the cost estimate and to determine the potential implementation plan.

Water services needs assessment

This project has progressed well and the findings of site visits embarked upon by consultants and staff during November and December, are now being documented.

A contractor has been appointed to perform water flow and quality testing for the two exposed springs at Koukourārata / Port Levy.

Water supply rezoning master plan

This planning project has progressed at a slower pace than initially projected. Additional work had to be done to ensure that the Council's water hydraulic model is fit for purpose. The hydraulic model has now been passed onto the optimisation team, who will now continue to build and run the optimisation engine.

The future growth scenario will need to be adjusted on completion of the Intensification Plan Change and the Ōtautahi Christchurch Plan. The growth programmes, as directed by policy and draft legislation, are expected to significantly change growth projections. Rework will be required to adjust the master plan in response.

Water Supply Capital delivery

Projects have generally been unaffected by the change to the red traffic light setting. Staff and consultants have transitioned to hybrid working seamlessly and construction continues unhindered. There are risks to the programme which are influenced more broadly by the pandemic such as inflation and supply chain constraints.

Eastern Terrace 600mm diameter water main renewal

Status: Detailed Design **Budget**: $14 million
Update: The project consists of two portions – a 1.3km 180mm diameter water supply main along Eastern Terrace and a 2.5km 600mm diameter water supply main affecting 11 streets. The majority of the physical works undertaken to date are investigative and enabling works. The materials for the 600mm diameter pipe, manufactured and shipped from abroad, are expected in the first quarter of 2022. A recent shipping update indicated delivery of all long lead items to be in Christchurch by late February, slightly ahead of schedule. Major construction works are therefore on track to commence in April 2022.
Completion date: September 2023

Jeffreys suction tank replacement

Status: Procurement **Budget**: $6.02 million

Update: Includes construction of a new suction tank, demolition of the old (earthquake damaged) tank, replacement of reticulation pumps, and redevelopment of wells which have been out of service since the 2011 Canterbury Earthquakes. Also requires other mechanical, electrical and architectural elements.

Tender evaluation is underway, with award planned for mid-February 2022, and construction to commence in March 2022.
Completion date: March 2023

Ben Rarere new pump station

Status: Construction **Budget:** $6.96 million

Update: Construction is progressing well with the walls and floors for the suction tank and the pump station building completed. Over the coming months the focus will shift

to constructing the roof and installation of the mechanical and electrical elements of the scope.
Completion date: May 2022

Pump station building (foreground) and suction tank (background) at Ben Rarere PS.

Sydenham suction tank replacement

Status: Procurement **Budget:** $5.25 million

Update: this project involves construction of a new stainless steel suction tank and demolition of the abandoned, earthquake damaged, tank.

Detailed design is now complete. The project has been issued for tender with submissions from contractors due in February 2022. Construction is planned to commence in April 2022.
Completion date: March 2023

WS Riccarton mains renewal (Hansons Lane to Matipo Street)

Status: Construction **Budget:** $4.0 Million

Update: Construction began in June 2021. This section is about 1.75km long and will have 3 separate construction teams working simultaneously on different parts of the project. This is the third and final section of the WS Riccarton Road mains renewal. The work is progressing well.
Completion date: March 2022

Okains Bay new water supply

Status: Detailed design **Budget:** $2.6 million

Update: Water quality monitoring of the Opara Stream source has resulted in a more complex treatment process than was originally envisaged. The concept design is complete, but the latest cost estimate for the project has indicated that more budget may need to be found for the Construction Phase. In order to try and reduce costs, we are testing the market with a design build delivery approach.
Completion date: June 2023

PS1030 Spreydon well 2 & well 3 renewal

Status: Procurement **Budget**: $2.3 million
Update: The feasibility study conducted for the renewal of these two wells advised that one deep well will meet the project requirements. The new well will be drilled within the boundaries of the existing pump station site. The tender has been awarded with construction forecasted to commence in the next few weeks.
Completion date: January 2023

PS1007 Blighs Road pump station well 3 renewal

Status: Construction **Budget**: $1.08 million
Update: New well to be drilled within the boundaries of the existing pump station site. Existing well to be decommissioned outside the pump station site. The new well has been drilled to just above aquifer level 4. The station will need to be isolated for the works to continue, however this will interrupt the summer water use demand period. Therefore works are now on hold and will recommence in winter 2022.
Completion date: September 2022.

PS1077 Redwood pump station well 1 & well 2 renewal

Status: Construction **Budget**: $2.4 million
Update: One of the two wells has now been drilled to target depth and is being developed to determine the well's yield. Early indication is that the well's water has some sand in it at target flow and the well needs further development work; now underway. The drilling of the second well is planned to start in late February 2022.
Completion date: July 2022

New water supply well – Mays pump station

Status: Construction **Budget:** $1.95 million
Update: Well drilling commenced in August 2020 and the well has been drilled to 235m below ground level. Water has been encountered and the well is being developed. Well testing is underway to determine whether or not a pump is required. There have been delays during the project due to difficult aquifer conditions and Covid-19 lockdowns. The well is now planned to be in operation by end of April 2022.
Completion date: April 2022

Akaroa L'Aube Hill reservoir bypass

Status: Design and Construction **Budget**: $0.9million
Update: Works began in late February 2021 to install temporary bypass piping around the old reservoir and construct a small tank farm to supply water to Akaroa. The old reservoir had a capacity of approximately 2.2 million litres (2200 m^3).

A temporary set of tanks was established in March and April to provide 450m^3 of storage and allow the boil water notice to be removed. A 500m^3 storage tank was constructed

in June to provide storage for an average 24 hour demand; there is not have sufficient storage for peak summer demand and water restrictions are likely.

The final portion of works for this project is underway to install a spare generator; re-purposed from the Prestons WW vacuum station. This will reduce operational risks around the interim water storage being significantly smaller than ideal and ensure continuity of supply in a power outage of greater than 12 hours.

Completion date: June 2022.

Akaroa L'Aube Hill reservoir replacement

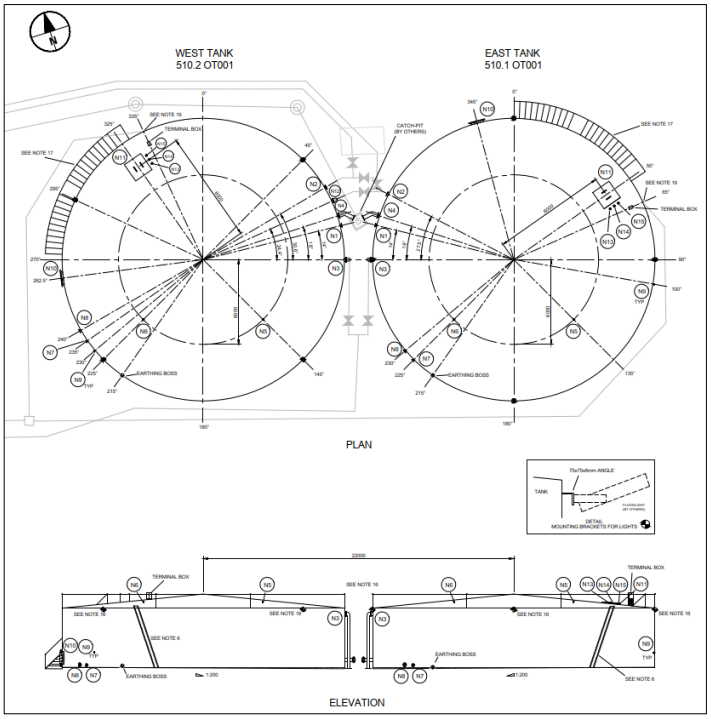
Status: Design and Construction **Budget**: $6,700,000

Update: A long term supply arrangement is required to ensure resilience and reliability of supply.

The project sets out to construct two new storage reservoirs of 1,000m^3 each and to modify the old storage reservoir into a raw water reservoir.

The project is in the early stages of planning and design.

Completion date: Expected project completion 2024.



Concept design of L'Aube Hill reservoirs.

WS suction tank and reservoir assessments/repairs

Status: Assessments/Repairs **Budget**: Under review

Update: A citywide inspection and repair programme of over 100 suction tanks and reservoirs and to bring these tanks to a 'demonstrably safe' standard. All reservoirs and suction tanks have had a quick non-intrusive external assessment to assist with

prioritising detailed assessments. Detailed internal assessments have been carried out on a number of tanks providing sufficient information to inform development of a draft programme charter; to execute over the next five to ten years.

A number of repairs are underway or planned for numerous tanks including:

- Denton suction tank – repairs ongoing
- Sockburn suction tank – awarded and most work planned for winter 2022
- Quarry Reservoir – design/build contract awarded and underway
- Hackthorne Reservoir – awarded, planning underway
- Mount Pleasant Reservoir 1 & 2 – in procurement from mid-February 2022
- Halswell Reservoir 2 - in procurement from mid-February 2022
- Estuary Reservoir – procurement phase
- Grassmere & Mays suction tanks – in procurement from mid-February 2022
- Gardiners suction tank – repair requirements being developed.

Completion date: The reservoir and tank work will be a five year rolling programme.

WS reticulation renewals programme

Status: Concept/ Initiate & Plan/ Investigate/ Design/ Procurement/ Construction / Handover and close **Budget**: circa $60.1 million

Scope: The programme (101 projects) is to renew existing water mains and sub mains within the reticulation network across the city.

Update: Projects are in different phases for FY22.

Concept	Initiate & Plan	Investigate	Design	Procurement	Construction	Handover / In Close or Closed	Total
7	6	8	14	11	35	20	**101**

Completion date: Those projects in construction are likely to be completed in FY22 and FY23

Rawhiti Smart Water Network Pilot

Status: Design and Construction **Budget**: $3.33 million

Update: a pilot smart water network is being undertaken across the Rawhiti water supply zone to provide an initial focused and dedicated implementation of the smart water network to inform the city-wide implementation. The purpose of this pilot is to demonstrate that continuous monitoring of flows, consumption, leaks, water quality, and water pressure will improve water safety, asset management, operational management, and sustainability.

To meet the Smart Water objectives the following packages of work are being completed

- **Package A – Smart Water Monitoring** – Adquadvance water network platform will be configured to bring the data from package B,C,D and E as well as existing SCADA data into a single unified platform for continuous monitoring, dash-boarding, trend analysis and event detection.

Current works: Configuration has commenced. Expecting to complete Field Acceptance Testing (FAT) milestone on February 2022.

- **Package B – Water Quality Monitoring** - a multi-parameter instrument comprising 5 sensors will measure in real-time; the pH, turbidity, conductivity, dissolved organic carbon and oxidation reduction potential of water supplied at Keyes pump station. This is being tested to determine whether ongoing monitoring of these parameters could be used to detect microbial contamination and support CCC's water safety plan.

  Current works: The sensors were commissioned on December 2021. We are observing the data and investigating the root cause of false SCADA alarms.

  Package C – Pressure transients and acoustics sensors - 20 Inflowmatix high frequency pressure sensors will be permanently installed to identify the magnitude, scale and causes of transients within the network, to enable actions to be taken to calm the network. The focus is on increasing asset life and establishing an additional control point for the water safety plan by maintaining a constant positive network pressure to reduce risk of water contamination.

  200 HWM PermaNET+ acoustics sensors will be installed to proactively monitor noise in order to detect 'escaping water' on critical mains. Leaks can then be isolated and rectified, reducing pipe failures and water losses.

  Current works: All inflowmatix transients and HWM acoustics sensors are now installed in the permanent locations. Scope of Works for the design of 4 AQS hydrophone acoustic sensors has been approved to monitor large diameter pipes (where HWM PermaNET+ are not suitable)

- **Package D – Smart Water Meter** – 1200 Itron Intelis ultrasonic smart meters will be installed onto customer connections to provide consumption data for a small dedicated DMA (district metered area). For the homeowner this means proactive and timely identification of leaks, and for the network, it will provide a daily water balance that will identify the real water losses in the DMA. The smart meters will also be able to detect backflow to further support water safety planning.

  Current works: The 30 proof of concept meters have been installed. We are observing how the meters are communicating. This proof of concept will assist to verify the smart lighting network performance as a suitable meter data communication platform.

- **Package E - Bulk Flowmeters** - 8 Khrone flowmeters and 8 Yokogawa pressure transducers are being installed to support the virtual separation of the Rawhiti system into smaller DMA's whilst ensuring that the water supplied into the zone can be measured under all operational conditions. This will provide the systems input volume as necessary to complete the daily water balance and will also provide more pressure data points for network control purposes.

  Current works: All site works are complete. Construction walkover completed on 01 December. We are experiencing delays in the commissioning of the meters due to incorrect software manipulation by the contractor. We are working with the contractor to resolve this issue and expecting to issue practical completion March 2022.

Completion date: June 2022

Water Supply Operations

The majority of pump stations and wells continue to perform as expected. The majority of the water supply assets were made available for the peak summer demand period.
LTP Measures - water and power consumption

- **Total Volume of Water Extracted** – water usage for December was significantly below 5 year average for the month, due to high rainfall. Current forecast for the year is On Target.
- **Average Consumption per Day per Resident** – YTD average is on target however monthly value was only just on target. Forecast is that this will be over target.

  Please note: consumption also contains industrial/commercial take-off which is only read and charged every 6 months. Estimated leaks are excluded.
- **Peak Hour Demand of Drinking Water per Connection per Hour** – On Target

  Please note: Peak demand flows include industrial/ commercial take-off, filling of reservoirs and leaks.
- **Peak Day Demand of Drinking Water per Connection per Day** – YTD average is on target however monthly value is higher than target.

  Please note: Peak demand flows include industrial/ commercial take-off, filling of reservoirs and leaks.
- **Annual Average kWh** – Above Target.

  Pumping efficiency was improved slightly in December.

Annual Plan KPIs	Target	YTD	July	Aug	Sept	Oct	Nov	Dec
Total Volume of Water Extracted in Million m3 per year (Mm3/yr)*	<=55	26.03	4.0	3.9	4.0	4.4	4.95	4.78
Average Consumption in Litres per Resident per Day Excluding Leaks (l/resident/d)**	<=298	274	249	243	261	274	319	298
Peak Hour Demand of Drinking Water per Connection per Hour (L/connection/hour)	<=105	75	63	66	69	73	84	94

Peak Day Demand of Drinking Water per Connection per Day (L/connection/day)	<=1,500	1281	1,029	1,036	1,178	1,291	1,553	1,599
Annual average kWh per m3 Water (kWh/m^3)	0.35	0.44	0.36	0.37	0.54	0.34	0.52	0.50

The temporary chlorination equipment has continued to perform well, with no incidences of note.

The upgrade of the UV water treatment installation at Main Pumps to dual instrument trains (to enable one reactor to work independently of the other) was completed and operated over the summer period with no significant issues.

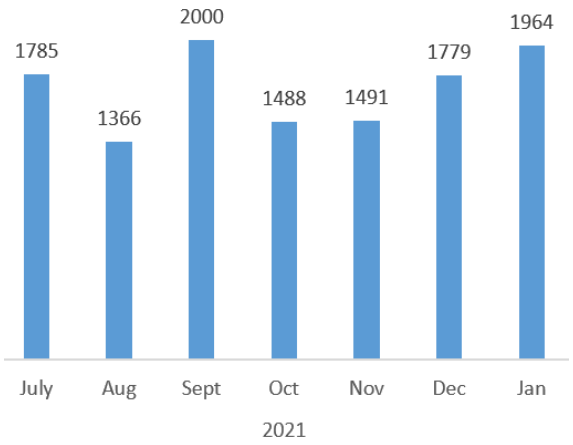
The relocation of the Network control room was completed in late February following significant delays experienced over the Christmas period.

Water Supply Reticulation

During July - December 2021 service levels were maintained, meeting urgent and 3 day response times. An escalation in jobs during late December and January 2022 coincided with our contractor losing a number of frontline staff. While there is a remediation plan in place this did result in some degradation of levels of service. It is expected that this will improve in the subsequent months to achieve a positive result at the end of FY22. Weekly water job monitoring and monthly contract interactions also remains in place.

In the first half of FY22 we responded to an average of 1651 jobs per month. The main categories of service requests continue to be for leaks on connections, sub-mains, hydrants and valves.

JOB VOLUMES



Response Times

CATEGORY		Target	JAN 2022	YTD
Water	Urgent - on site	1 hour	39 mins	37 mins
	Resolved	5 hours	7 hours	4 hours 10 mins
	Non-urgent - on site	72 hours	57 hours 19 mins	34 hours 12 mins
	Resolved	96 hours	60 hours 4 mins	36 hours 53 mins
Wastewater	Urgent - on site	1 hour	35 minutes	33 minutes
	Resolved Overflows	24 hours	12 hours 8 mins	4 hours 57 mins

WASTEWATER

Following the catastrophic fire at the Christchurch wastewater treatment plant on 1 November 2021, the wastewater treatment process upstream of the oxidation ponds was significantly affected, resulting in only partially treated wastewater being discharged to the ponds.

Oxidation pond midges

The fire and subsequent effects on treatment plant processes has reduced the water quality in the ponds, making them very unsuitable for the midge life-cycle. This has resulted in a significantly reduced number of midges.

Christchurch Wastewater Treatment Plant operations

The response and recovery plan following the fire has enabled continuous treatment of the wastewater albeit reduced in effectiveness; the wastewater discharge continues to meet the conditions of the discharge consent. The interim operation of the plant means that partially treated wastewater being discharged to the oxidation ponds and noticeable odour being produced from the plant and ponds. Significant efforts are being made through a dedicated project team to convert the part of the available plant, two of the four clarifiers, into a temporary activated sludge treatment plant. This will restore part of the wastewater treatment capacity lost in the fire, improve discharge quality and reduce the odours from the site.

Christchurch Wastewater Treatment Plant maintenance

The maintenance team have been working with the dedicated project team to assist with the implementation of the temporary activated sludge treatment plant. As a consequence of this, the attention on the planned and reactive maintenance has reduced, resulting in an increased backlog of maintenance jobs. Until the temporary activated sludge treatment plant has been installed and commissioned, this backlog could further increase.

Christchurch Wastewater Treatment plant risk

The risk profile has significantly changed as a consequence of the fire. This will be reviewed once the temporary activated sludge treatment plant has been installed and commissioned.

Wastewater planning

The asset planning team has provided development planning inputs for subdivisions and building consents, to the extent as outlined below:

Description	Jul-Sep Q1 FY22	Oct-Dec Q2 FY22		Oct-Dec Q2 FY21
Subdivision Consents – advice & conditions	19	↓	16 ↑	7

Engineering Acceptance of new subdivisions (WW)	8	↓	**3**	↓	6
Infrastructure Provider Agreements	1	↓	**0**	↓	2
Wastewater Capacity review and advice for BCN and RMA processes	475	↓	**434**	↑	274
BCN Engineering Acceptance					
• Gravity including build over pipe	21	↓	**8**	↑	6
• Local pressure sewer pumps	147	↓	**144**	↓	153

Wet weather wastewater overflow consent

Staff are in the process of preparing a consent variation application which intends to provide for consideration of Council's committed and completed improvements when evaluating the modelled compliance results.

Consultants have been appointed to deliver the conceptual designs for the overflow projects identified in the Long-Term Plan that is earmarked to resolve the current modelled non-compliance (as confirmed in the recent WW Optimisation Master Plan). Specific work to confirm the location and sizing for WW Somerfield Pump Station and Pressure Main and WW Eastern Terrace Wastewater Main Renewal.

Birdlings Flat Wastewater: Heads of Agreement

Staff prepared and submitted a variation proposal to Environment Canterbury which proposed an extension of the Heads of Agreement. Environment Canterbury noted that there is no reason to continue to be party to the Heads of Agreement, especially since it was clarified that the duration of land discharge (septic tank) consents are 15 years, irrespective of the Heads of Agreement. It was highlighted that the life expectancy of a septic tank is 15 years and that renewal of the consent is therefore pivotal in ensuring ongoing operational compliance.

The next step is for staff to embark on discussions with Wairewa Rūnanga with the view to terminate the Heads of Agreement, specifically because the provisions of the agreement have been honoured and staff are not mandated to agree services or projects outside of the long term planning process. In the interim, Environment Canterbury provided approval for the release of the building consent which was not approved because of the hold on the land discharge consent; however the hold on the land discharge consent will remain until discussions have been held with Wairewa Rūnanga.

Note that the water and sanitation needs of the Birdlings Flat community is to be assessed as part of the wider Banks Peninsula Water and Sanitary Needs Assessment project. The outcomes of the needs assessment will be used to develop a Banks Peninsula water and wastewater servicing strategy for Council's consideration and potential inclusion in the next Infrastructure Strategy. It is proposed that there should be ongoing communication and sharing of monitoring results between Council, Wairewa Rūnanga and Environment Canterbury.

Capital delivery – wastewater treatment plants, pump stations and reticulation

Lyttelton Harbour wastewater scheme

Status: Construction **Budget:** $60.7 million
Update: Work packages 1, 2 and 4 are complete – the submarine pipelines from Diamond Harbour and Governors Bay to Lyttelton; the pipeline through the Lyttelton tunnel; the pipe pipeline from NZTA Tunnel Control centre to PS0015 Alport Place.

Work package 3 – Cashin Quay (Lyttelton), Governors Bay, Diamond Harbour and Simeon Quay pump stations completed with minors works to do on Governors Bay prior to disconnection from network.

Full commissioning of the Simeon Quay pump station will not progress until the Heathcote pipeline has been completed (anticipated finish January/February 2022).

After commissioning of the whole scheme, the conversion of the existing treatment plants into buffer tanks will commence.

Witness testing at Diamond Harbour Pumping Station prior to handover to Operations

WW Akaroa Reclaimed Water Treatment & Reuse Scheme

Status: Investigation/Design **Budget:** Circa $74.5M
Update: In December 2020, the Council passed a series of resolutions supporting the irrigation of treated wastewater to sites in the Inner Bays of Akaroa Harbour.

Engineering consultants Stantec Ltd have been appointed to support the resource consent applications required for the reclaimed water treatment and reuse scheme, particularly consents required for the irrigation scheme. We are working towards lodging the application for these consents in Quarter 2, 2022.

We are working on a range of other elements including:

- Procurement of the final land parcel needed by the scheme.
- Reducing inflow and infiltration (I&I) into Akaroa's wastewater network with $3.9 million of water reform funding; expected complete by June 2022.

- Reducing discharges from the L'Aube Hill water treatment plant, which filters and treats stream water that is fed into the town water supply.
- Working with a Community Reference Group to address local issues.
- Finalising the contract packages and overall procurement strategy.

Figure 1. Hammond Point concept landscape plan.

Specific Resolution Updates:

Resolution 1, 2, 7, 8 and 9 were items noted by the Hearings Panel not requiring a specific staff action. These are not discussed here.

Resolutions 10 a, b, c, d , g, j, and 11 have been discussed around closed off in the previous TWIE report.

Resolution 3: Acknowledges the concerns of the community about the poor state of the wastewater network and recommends that the Council aims for less than 20% inflow and infiltration through its work on the Council network and that it also requires private property owners to repair their pipes.

Council staff are working on a range of initiatives to reduce I&I. A target reduction to 40% inflow and infiltration is expected at the end of 2021 and 30% is being targeted for the end of 2022. It is unlikely that the goal of 20% can be achieved at a reasonable cost however significant benefits will be realised at the expected level of improvement.

Resolution 4: Increases the promotion of water conservation measures in Akaroa to reduce the volume of wastewater, including the use of Smart Meters funded as part

of the 3 Waters Reform funding and notes the support by the Hearings Panel and some submitters for excess water charges to assist with this.

A Smart Meter roll out to allow daily water meter information to be collected for each rating unit is being planned. Significant work needs to be done around the communications system for this network of instruments, billing processes, community education into the system before excess use charging takes place.

In the interim meter readings have been stepped up to every three months (previously they were annual). High use properties will be subject to excess water use charges. It may be that frequent meter reads remain a more cost effective approach than a fully automated system.

Resolution 5: ***Regularly communicates progress on the repairs and of conservation measures to the community, Community Board and the Council and that the name of the project change to the Akaroa Reclaimed Water Treatment and Reuse Scheme.***

The most recent Council update was February 2022 and we will be updating the Community Board with a similar briefing.

Resolution 6: Requests Council Officers to work with the Community Board to establish a Community Reference Group including members from the local Rūnanga to ensure that community concerns about the approved Akaroa Reclaimed Water Treatment and Reuse Scheme are listened to and, where possible, addressed.

The Community Board has supported staff in the draft terms of reference for this group and selection of the group. As at November 2021 staff have met with the group three times and received very useful ideas and feedback. We expect the group to wrap up by the end of 2021 prior to our consent lodgement in 2022.

Resolution 10e: Requests Council Officers to investigate and incorporate where practical the following into detailed design of the scheme; the re-use of the current UV treatment unit in the new treatment plant to enable non-potable reuse.

This resolution will be addressed during detailed design of the project once the irrigation consent conditions are established. Until then we cannot lock in the wastewater treatment plant design. The resolution of this resolution is therefore a matter to be closed off in 12 – 24 months.

Resolution 10 f: Requests Council Officers to investigate and incorporate where practical the following into detailed design of the scheme; native tree plantings in Robinsons Bay to avoid key archaeological sites as recommended in the Heritage New Zealand submission and installation of interpretation signage for visitors to the site.

These aspects will be addressed during detailed design, though early concepts will be discussed with Heritage NZ and the Community Reference Group.

Resolution 12: Requests Council Officers to investigate and report back to the Council on the option of a scheme for local employment for the planting and maintenance of the native trees.

Our current path is to use a local seed gathering contractor to obtain the seed stock. The Council nursery in Christchurch will strike the seedlings. Either the Council nursey or a local nursery will prick out the seedlings and pot to grow to planting size.

The next stages of planting and maintenance will be tendered to the open market with a non-priced attribute in the tender assessment for the use of local labour. We are also in discussions with the Akaroa school around arranging visits to the nursey and establishing community planting days.

Resolution 14: Supports and requests Council Officers to explore the feasibility of a non-potable reuse (purple pipe) scheme for Akaroa, so that property owners could use the water for garden watering and other non-drinking purposes.

Refer to resolution 10. The full purple pipe reticulation presents a separate project and will need to be considered in future Long Term Plans.

Resolution 15: Requests Council Officers work with the Ministry of Health, the Canterbury District Health Board, Ngāi Tahu and water suppliers that are interested in non-potable reuse to develop non-potable re-use guidelines or standards for New Zealand.

Update will be provided at a later stage.

Resolution 16: Requests Council Officers discuss options for enabling non-potable reuse of treated wastewater with the Council as soon as practicable, should the regulatory framework change.

Update will be provided at a later stage.

Wastewater pump stations

Status: Investigation, design and construction **Budget:** variable

Scope/Update: A range of wastewater pump stations are undergoing renewals and/or capacity upgrades to address aging infrastructure risks, sewage overflows and increased population and loads. Works of note include:

- Minor modifications to PS00 31 and the rising main near McCormacks Bay. A flow test has been carried out and the team is reviewing the testing results to see if the project needs advancing to the next stage of remediation works.
- Working with WSP to create a concept design on the capacity and electrical upgrade to PS0013 in Woolston; determining design requirements including the number and size of pumps to ensure the upgrade will exceed demand in the area.
- PS0060 construction contract awarded to Citycare, pre-construction documents are being provided to the council. Expect to possess the site in Feb 2022.
- Programmed pump station electrical upgrades are continuing for the renewal of aging controllers, switchgear and automation (SCADA) that has passed its end of asset life. Decommissioning and replacing old gear with new SCADA Pack RTU's to improve the reliability of the monitoring of WW Lift station sites. The construction phase is due to be completed at the end of the year.
- Wastewater Pump & Storage Equipment Renewals 2019 (MEICA) completed for – Marshs Road, Rempstone Drive, Produce Lane, Scott Park and Claredon Terrace.

- Wastewater Pump & Storage Equipment Renewals 2020 (MEICA) covering 11 pump stations is in the defects period; to finish in first quarter of next year.
- Wastewater & Storage Equipment Renewals 2021 (MEICA) involves 9 WW pump stations – Harissons, Stapletons, Eastern Tce, Waimea, Stewarts Gully, Barnett, Balgay, Kainga and Riverlea – in the design phase.

Completion date: Ongoing over the next 1-3 years

Somerfield pump station & pressure main

Status: Investigation/to be initiated **Budget:** $7,723,749

Scope: A new pump station and pressure main to deliver flow from the PS20 (Heathcote River) catchment into the Southern Relief wastewater line.

Update: As the first step, a hydraulic options study is required to confirm the location of the new PS, parameters and other enabling work. WSP has started this hydraulic options study with a kick off meeting held late Jan 2022.

Completion date: Planned for 30 June 2025

Reticulation renewals

Status: Concept/ Plan/ Investigate/ Design/ Procurement/ Construction/ Close

Budget: $57.9 million

Scope: The programme (93 projects) is to replace/upgrade ageing wastewater reticulation network.

Update: Projects in different phases spread out across the city for FY22.

Concept	Plan	Investigate	Design	Procurement	Construction	In Close or Closed	Total
7	4	11	13	1	35	22	**93**

Completion date: Projects in construction are likely to be completed in FY22 and FY23

Hayton Road wastewater renewals

Status: Construction **Budget:** $ 5.3 million

Update: Installation of DN900 Perfect Pipe. Construction in progress, receiving and launch pits constructed, tunnel boring machine in place to drill below four Kiwirail Tracks at a depth of 4.7m. Renewal of the mains in Hayton road and Nga Mahi Road.

Completion date: June 2022

Pipe jacking under the railway lines is in progress

WW Riccarton mains Renewal (Hansons Lane to Euston Street)

Status: Construction **Budget:** $2.5 Million
Update: Construction began in June 2021. This section is about 1.75km long and will have 3 separate construction teams working simultaneously on different parts of the project. This is the third and final section of Riccarton Road to be completed.
Completion date: March 2022

STORMWATER AND WATERWAYS

Stormwater and Waterways Operations

The total rainfall for 2021 was about average compared to the last 10 years with a total of 655mm recorded at the Botanic Gardens. This was boosted over December with a 100mm rainfall event. Pre-planning for the event and good communication between Council staff and contractors resulted in no significant issues being reported. A brick barrell stormwater pipe in Lyttelton collapsed prior to the rain event which could have resulted in flooding of property and further damage to the network. Council staff and contractors provided an effective temporary solution prior to the rain event to significantly reduce that risk of this happening and has now been passed on to the asset manager and Capital Delivery team to resolve this with a permanent fix.

The team has observed that, compared to drier years, the majority of the waterways in Christchurch, most of which are spring-fed from the upper aquifer in the Christchurch aquifer system, have continued to flow high up in their catchments heading into the summer period. While the rainfall has been at or below average this year it is likely that the base recharge of the aquifers from the Waimakariri River has been consistent and there has been enough rainfall to maintain the water level in the upper aquifer.

There has been significant vegetation growth over the Nov/Dec period due to periods of high air temperature and sunshine hours interspersed with enough rain to promote growth. This has meant that vegetation maintenance has taken longer and resulted in Citycare getting behind in their scheduled rounds. Citycare have engaged extra field staff to catch up.

Following the December rain event a distinctive smell from the Cashmere Valley stormwater basin system was reported by nearby residents. The investigation, including testing for wastewater contamination, determined that it was decomposing organic matter within the basin system. This was caused by series of high temperature days (25^0C+) that decomposed the organic material that had deposited in the basin after the rain event.

Minor works have been identified and programmed to be undertaken to the Avon River temporary stopbanks in the first quarter of 2022. This includes raising crest levels, by up to 100mm in some areas, to the design level.

Investigation into improvements to Ilam Stream will progress over February and March.

Stormwater and Waterways Planning

The key areas of focus for the Stormwater and Waterways Team over this period has been on preparing project briefs, meeting the sustained level of increased workload for resource consents and building consents, responding to Elected Member requests on the Proposed Annual Plan and Stormwater Management Plan matters, supporting the Project Delivery Team with technical advice, contributing to the District Plan change proposal process, planning for the implementation of the Climate Resilience Strategy and advancing the Otakaro Avon River Corridor (OARC) programme implementation.

Team Resourcing

The continued high current and projected team workload coupled with staff vacancies and executive approval for an additional team member has brought a heightened focus on recruitment in the team. Attracting suitably qualified and experienced candidates is challenging in the current buoyant employment market.

Planning for Climate Resilience Strategy Implementation

The team is planning for the implementation of the Council's Climate Resilience Strategy, with a particular emphasis on one of the ten Implementation Programmes – Adapting and Greening Our Infrastructure – with an implementation workshop to be held with the Executive Leadership Team in February. One of the main issues identified is to ensure that climate resilience considerations form a meaningful and integrated part of the planning and execution of the next Council Long Term Plan (LTP); without this, implementation of the strategy in any tangible manner will simply not be achieved.

The Otakaro Avon River Corridor (OARC) Regeneration Plan - Implementation for Stormwater and Flood Management

With several projects within the OARC now moving into detailed design and/or construction phases, the team is increasingly providing support to the delivery phases of the programme, as well as providing increased planning input to the programme as necessitated by the bringing-forward of a significant ($20M) project within the proposed Annual Plan.

There are issues relating to the interface between several projects and Orion infrastructure which need to be urgently resolved to avoid project delays and potential significant additional costs. Steps are being taken to achieve a common understanding between the Council units involved of these issues, and to agree a strategy for resolution, within Council then with Orion. This will require Council input at both project and management/executive level.

Stormwater & Waterways Capital Delivery

The Stormwater and Waterways Delivery Team are actively managing 115 projects with a current year budget total of $58.2 million. Key project details are given below.

Cashmere Worsley flood storage

Status: Construction **Budget:** $ 27.2 Million

Update: Lower valley works complete and commissioned. Construction for upper valley works and landscaping approximately 99% complete. Dam construction scheduled to commence October 2022. Planting in the valley is in establishment and maintenance period with further planting being undertaken in Autumn/Winter 2022.

Completion date: June 2023

Eastmans, Sutherlands and Hoon Hay basins

Status: Detailed Design/Construction **Budget:** $29.9 Million

Update: Most of the basins and wetlands at the south end of the site are substantially complete and have begun treating stormwater and reducing flood risk. Pathways and bridges in this area are in progress and the southern area of the site will open to the public before the end of 2022.

Works are nearing completion for the Hoon Hay outlet siphon and Cashmere stream control structure. Eastman Central wetland design is on track for construction in 2022.

At the north end, Milns Wetland Cell construction works are scheduled to start early February 2022 and Eastman wetland cell construction works by April 2022. There will be further bulk earthworks in summer 22/23 to complete the north end.

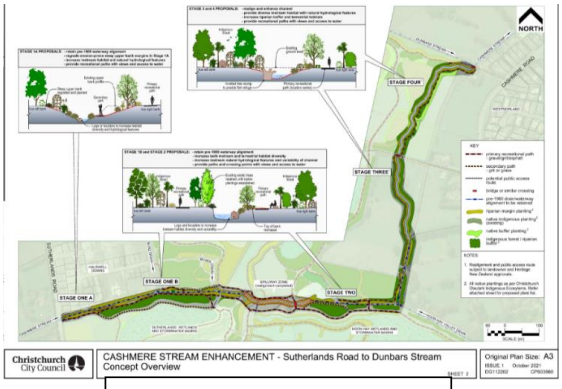
The final landscape plan will go to the community board for approval in 2022. Due to restricted supply of eco-sourced native plants, the planting of the site will be split over the next 3 planting seasons. This will be a significant native planting project with around 12,500 native trees and up to 350,000 other plants and shrubs.

Completion date: December 2024

Cashmere Stream enhancement

Status: Investigation/scheme design **Budget:** $3.1 Million

Update: The Cashmere Stream enhancement concept design and detailed design for stage 1a have been shared publically at street meetings and on Council's website. Construction of stage 1a is due to start in early March pending granting of consent and archaeological authority. Design for the downstream works is in progress, along with consenting and land negotiations. Retrospective payment for Q1 works has been received from the Ministry for the Environment.
Completion date: September 2024



Cashmere Stream Concept

Wigram East Retention Basin

Status: Construction **Budget:** $10.5 Million
Update: The wetland and basin extension portion of this project is complete and flood storage and water quality treatment is available. The automated control and instrumentation works are being finalised and will soon be operational.
Completion date: December 2021

Pump Station 205 - Avon

Status: Construction **Budget:** $6.9 Million
Update: Project to upgrade major pump station and create additional lift. Discharge canal bund, tide gates and stop logs complete. Pump station and screw pump upgrade contract underway with screw pump 1 (of 3) refurbishment nearing completion. Pump 1 is scheduled to be returned to service 17 February 2022. Screw pump 3 diesel engine failed during use in a December rain event and is not operational. Works have been rescheduled to minimise down time and the screw pump 3 drive train has now been removed. The condition of the pump station structure is requiring more work than originally forecast.
Completion date: August 2022

Blakes Road Stormwater Facility (Works 1)

Status: Construction **Budget:** $9.1 Million

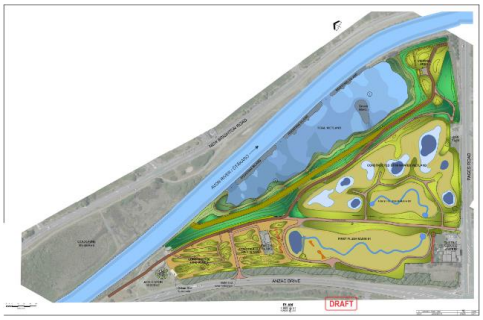
Update: Project to construct a first flush basin and wetland. As reported in Newsline and The Press, works were shut down between August 2021 and January after black billed gulls (at the time classified as critically endangered) began nesting at the site during. At its height there were about 750 nesting gulls in the colony. Management of water levels and predators lead to a successful breeding season. Work on site has since restarted with mainly landscaping left to do.

Completion date: May 2022

Waitaki Street (Ōtākaro Avon River Corridor) – Avon Flood Management

Status: Detailed design / Construction **Budget:** $12.2 Million

Update: Being developed to align with Ōtākaro Avon River Corridor Regeneration Plan. Pre-enabling works were carried out last year and main construction started in January 2022. Work will be done in stages with site establishment, followed by the stopbank, then the stormwater facility and finally landscaping. This project will integrate with other Council projects including New Brighton / Pages Road realignment project and cycle / pedestrian paths.



Completion date: June 2023

Waikākāriki - Horseshoe Lake Stormwater Treatment Facility

Status: Investigation / Scheme Design **Budget:** $13.3 Million

Update: Project to design and construct a first flush basin and stormwater treatment wetland. Challenges included dealing with contaminated land and biodiversity impacts.

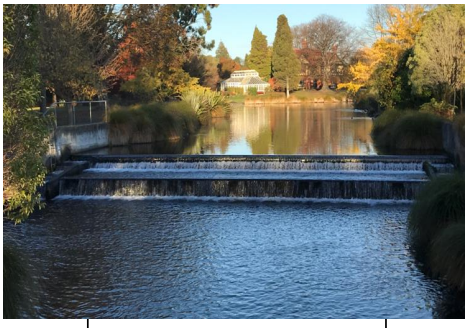
Completion date: June 2025

Waterway Structures Renewals/Fish Passage Barrier Remediation

Status: Detailed Design **Budget:** $1.1 Million

Update: Christchurch City Weir Report for barriers to fish passage has been completed and has prioritised four weirs in the Avon River Catchment. Top priority weir for remediation is at Mona Vale. Meetings held to brief Community Boards and key stakeholders. Now progressing a concept design to detailed design.

Completion date: June 2024



Mona Vale Northern Weir

Tennyson Street Brick Barrel

Status: Procurement **Budget:** $830,000

Update: Specialist brick barrel lining contractor procurement is in process for construction in late FY22.

Completion date: June 2022

Lyttelton Reticulation Renewals (Brick Barrels)

Status: Construction **Budget:** $5.2 Million

Update: Repair and renewal of Lyttelton's 100+ year old brick barrel stormwater drains totaling around 6km including the installation and modification of 30 new access manholes, with depths between 2m to 8m below ground. 13 manholes installed to date under the first phase of works, phase two to commence early 2022.

Completion date: June 2024

Ōtukaikino Stormwater Facility

Status: Investigation and Scheme Design **Budget:** $19.5 Million

Update: Construction of a first flush basin and wetland will serve 46 hectares of new business development and 72 hectares of existing residential area. The project will protect and enhance natural springs and enhance adjacent waterways. Houses on the land have been, or soon will be, demolished. Some early investigations including contamination and assessment of natural wetlands are being undertaken.

Completion date: Construction is budgeted for FY 26 to 28.

Mairehau Drain Timber Lining Renewal (Westminster to Crosby)

Status: Construction **Budget:** $3.2 Million

Update: Start of works delayed due to timber supply issues. Now expecting to commence in April.

Completion date: August 2022

Knights Drain Ponds

Status: Detailed Design **Budget:** $8.9 Million
Update: Design being finalised and tender documents for works being prepared. Construction planned to start September.
Completion date: June 2023

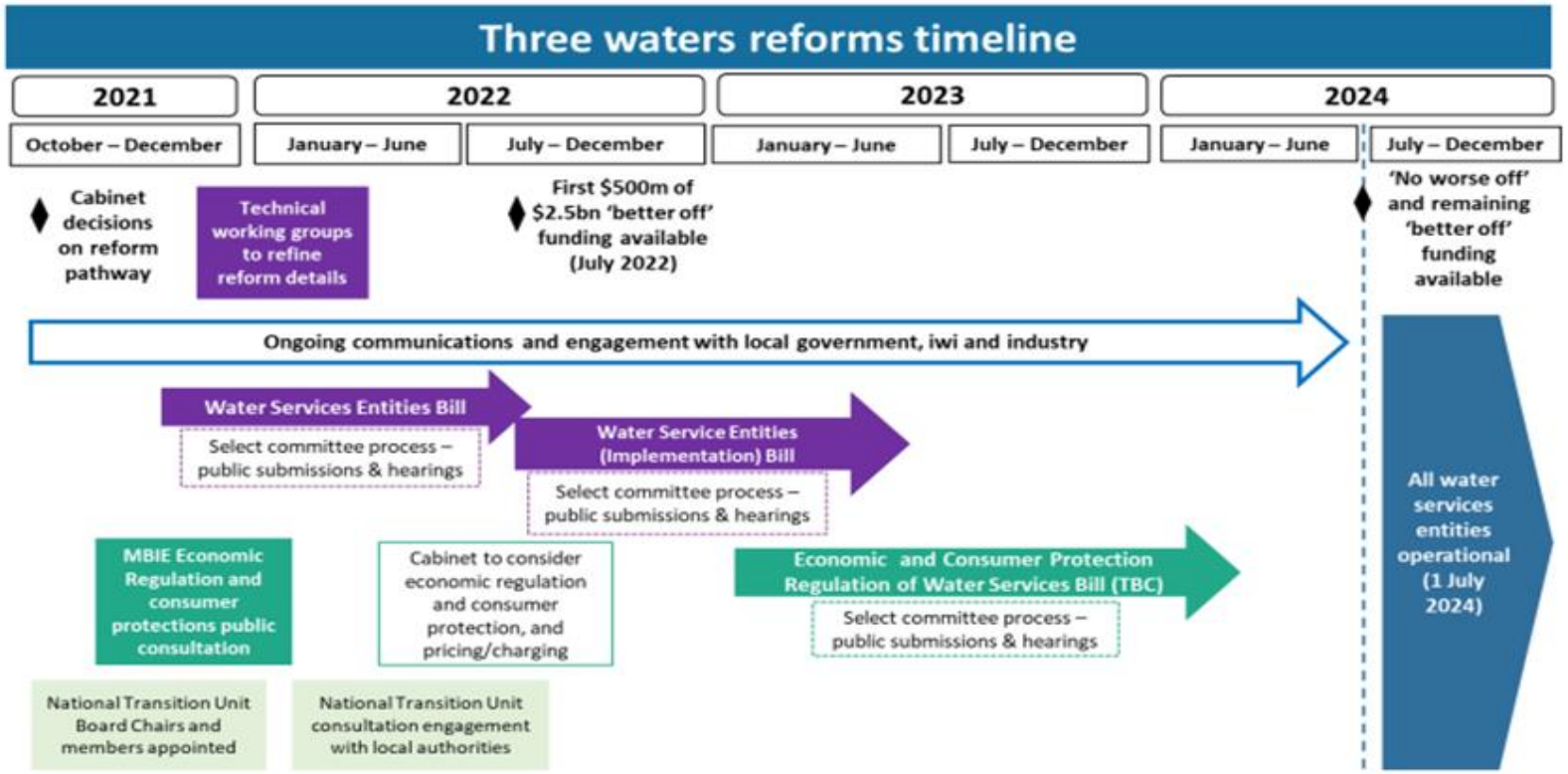
Greens Stormwater Facility

Status: Detailed Design **Budget:** $15.1 Million
Update: Detailed design underway with construction planned FY23/24. Update to Community Board on 22nd February.
Completion date: FY24

Manchester Street Brick Barrels Renewal (Purchas St to Bealey Ave)

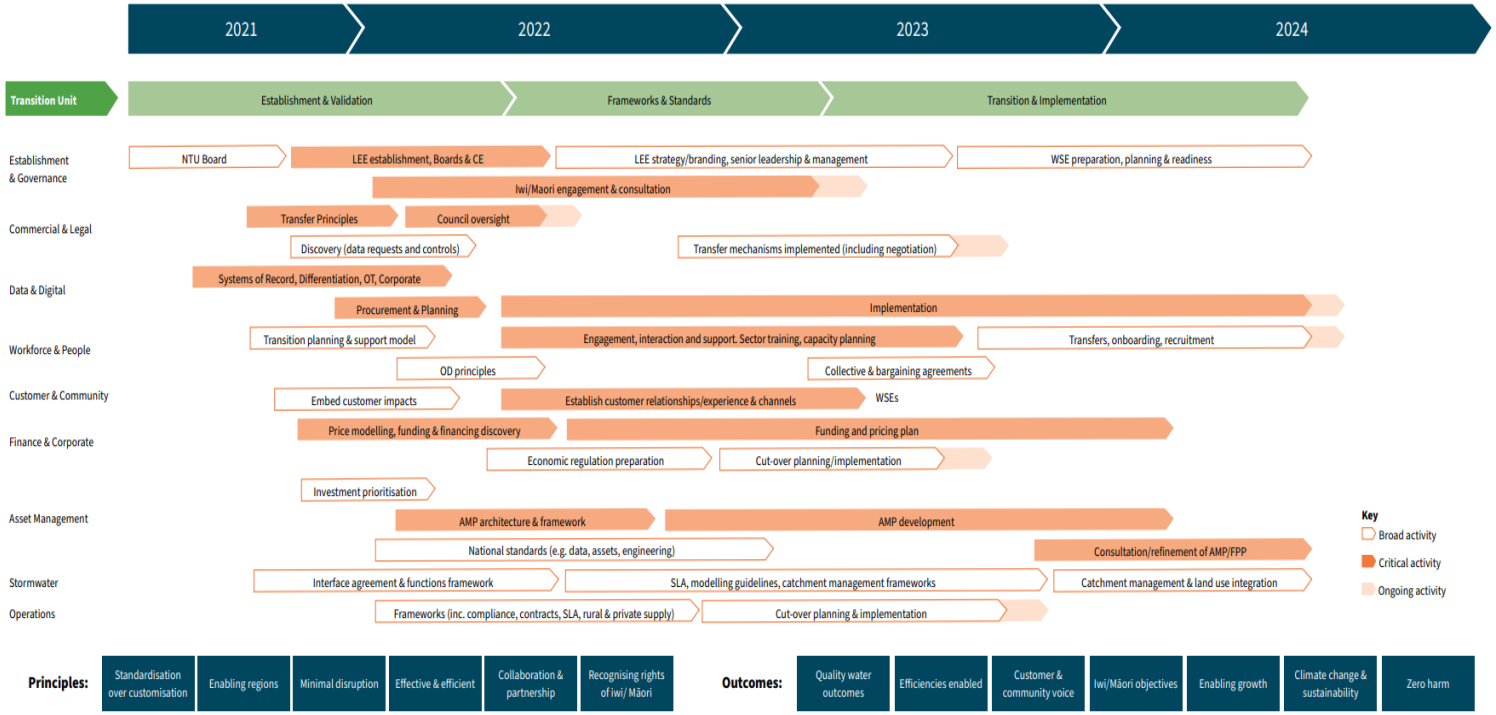
Status: Investigation **Budget:** $1.5 Million
Update: Site investigation underway, options report to follow. Detailed design to commence with construction planned FY23.
Completion date: FY23

APPENDIX 1 – THREE WATERS REFORMS TIMELINE



APPENDIX 2 – ROADMAP AND WORK STREAMS

Indicative Transition Roadmap



APPENDIX 3 – HEALTH SAFETY AND WELLBEING STATISTICS

Health Safety and Wellbeing Statistics
Three Waters Waste and Transport

Health Safety and Wellbeing Statistics - Month of January 2022	Totals	Land Drainage	Water Waste	Resource Recovery	Transport	Intern
Near Misses	33	0	21	12	0	0
First aid injuries (FAI)	4	0	0	1	2	1
Medical Treatment Injuries (MTI)	2	0	0	0	0	2
Lost Time Injuries (LTI)	0	0	0	0	0	0
No. of days lost to LTIs	0	0	0	0	0	0
No. of hours worked	73,748	169	9,183	3,605	33,653	27,138

Health Safety and Wellbeing Statistics - Year to Date - January 2022	Totals	Land Drainage	Water Waste	Resource Recovery	Transport	Intern
Near Misses	212	0	89	93	22	8
First aid injuries (FAI)	44	0	3	23	12	6
Medical Treatment Injuries (MTI)	14	0	2	1	5	6
Lost Time Injuries (LTI)	5	0	3	0	1	1
No. of days lost to LTIs	66	0	51	0	5	10
No. of hours worked	602,937	9,515	123,944	97,185	180,528	191,765
LTIFR	8.3	0.0	24.2	0.0	5.5	5.2
MTIFR	31.5	0.0	40.3	10.3	33.2	36.5
TRIFR (LTI + MTI)	39.8	0.0	64.5	10.3	38.8	41.7

Year to Date July 2021 - June 2022 (as at 10-02-2022)
Monthly Reporting URL
www.tinyurl.com/ngk32y5