

Long Term Plan 2024-34 Activity Plan

Wastewater collection, treatment and disposal

- *Council operates wastewater services in a reliable manner*
- *Council has high wastewater discharge quality*
- *Council operates wastewater services in a responsive manner*
- *Public health is protected from Council wastewater services*
- *Council wastewater networks and operations are sustainable*

Adopted 25 and 27 June 2024

Final Version

- The Long Term Plan 2024-2034, and all its associated documents, including amendments to the draft LTP were adopted by Council on the 27th of June 2024. Approved changes, as appropriate, have been reflected in this Activity Plan.
- Uploaded 26 June 2024

Approvals

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			Signature	Date of sign-off
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1. What this activity delivers

We are responsible for wastewater collection, treatment and disposal.

We collect wastewater from around 170,000 homes, businesses and industries, and maintain 1,030 kilometres of laterals, 2,004 kilometres of wastewater mains, 150 pump stations, 84 lift stations and 34 odour control sites.

We're investing in Christchurch's future

This document outlines the wastewater infrastructure and services we propose to invest in over the next 10 years to safeguard public health and protect the environment. It is based on the recommendations documented within the council's wastewater asset management plan. This includes a summary of the investment required to meet future demand, prevent further deterioration of network infrastructure and maintain current levels of service. It gives Christchurch residents the opportunity to join the conversation by telling us what matters to them.






What we provide

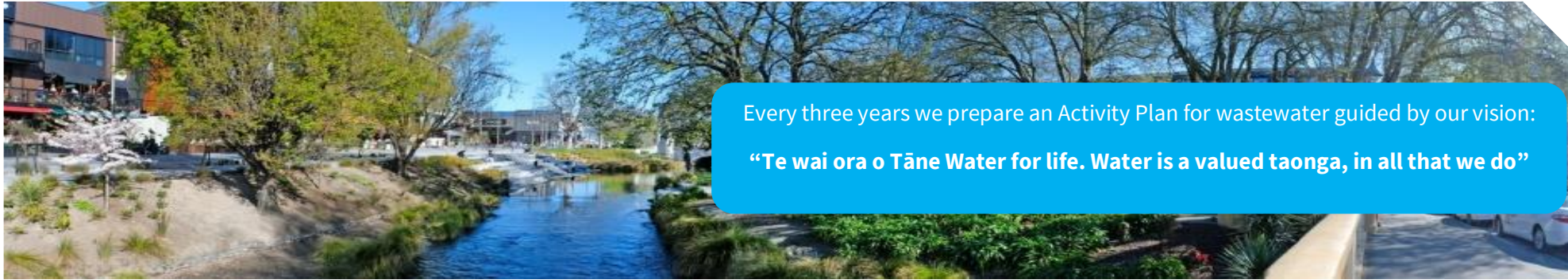
Wastewater is grey water and sewage collected from household drains, and commercial and industrial premises. It is conveyed through an underground network of pipes and pumped to treatment plants, where contaminants are removed before it is discharged safely back into the natural environment. The collection and treatment of wastewater keeps residents safe from waterborne illnesses and protects our environment.

We provide for the continuous collection and conveyance of wastewater from approximately 170,000 properties, and maintain a wastewater network of pipes and pumps, odour treatment facilities, treatment plants, ocean outfalls and land irrigation schemes.

We plan and deliver new and improved wastewater systems and manage, operate and maintain our assets to comply with resource consent conditions, to protect the health of waterways and to provide capacity for future demand. Our accredited laboratory monitors results from the treatment plants to ensure that discharged treated effluent meets the required quality standards of our resource consents.

This activity includes the following services:

Services		Contributes to Community Outcomes
	Council has high wastewater discharge quality Wastewater discharge quality is an important aspect of maintaining healthy waterways and protecting the natural environment. Samples of treated discharged wastewater are taken and analysed for a range of contaminants. These results are provided to Environment Canterbury to comply with resource consent monitoring requirements on a quarterly basis.	<ul style="list-style-type: none"> A thriving prosperous city
	Public health is protected from Council wastewater services Wastewater contains human waste, food scraps and debris, so dry weather overflows can have an impact on river quality and cause a risk to public health. Dry weather overflows typically occur in small pipes, and are more frequent than wet weather overflows, however typically these have a smaller impact.	
	Council operates wastewater services in a reliable manner Wastewater reliability is measured through resident satisfaction and the number of complaints received through the call centre.	<ul style="list-style-type: none"> A green, liveable city
	Council operates wastewater services in a responsive manner Responsiveness is measured through the time taken both to arrive on site following the notification of an issue, and by the time taken to resolve the issue.	
	Council wastewater networks and operations are sustainable We manage the wastewater network in a way that promotes sustainable use of resources, energy efficiency and resilience. This is by encouraging the re-use of by-products generated through the wastewater treatment process, such as the use of methane in energy production and dried sludge for land remediation.	



Every three years we prepare an Activity Plan for wastewater guided by our vision:
“Te wai ora o Tāne Water for life. Water is a valued taonga, in all that we do”

Achieving the vision will mean that water resources and taonga are managed in an integrated way to provide people, communities and future generations with access to safe and sufficient water resources, maintain the integrity of freshwater ecosystems and manage hazards from flooding and sea level rise.

The key wastewater activities that Council undertakes include:

Wastewater monitoring and control

Monitoring and control of wastewater flow and quality, including the social, cultural, environmental, economic and technological impacts of wastewater operations.

Inflow and infiltration control

Inflow refers to stormwater or surface water that enters the wastewater network through unauthorized connections or ponding that overflows directly into gully traps. Infiltration describes the entry of groundwater into the network, through broken pipes or joints. Excess inflow and infiltration can overload the system and result in untreated wastewater overflowing into the environment. The Council aims to reduce inflow and infiltration that occurs within the public wastewater system so that our wastewater systems are not overloaded and to reduce wastewater overflows to the environment. Our Water Supply and Wastewater Bylaws require customers to maintain their private wastewater drains to avoid introducing inflow and infiltration into the public wastewater system.

Current estimations show the proportion of Inflow and Infiltration to be 30% of the total annual flow to the Christchurch wastewater treatment plant. During storm events inflow and infiltration can more than triple instantaneous flows.

Wastewater overflow management

Overflows occur when untreated wastewater discharges onto public or private property, waterways or the sea. They occur when the wastewater, inflow and

infiltration volumes are greater than the system can accommodate, typically during heavy rainfall events, or when wastewater pipes become blocked. To reduce overflows, the Council cleans wastewater pipes that are prone to blocking and repairs or replaces leaky wastewater pipes through its renewal programme.

Wastewater treatment

Wastewater is transported along the network to a wastewater treatment plant where it is treated, before being discharged to the land or sea. The Council is responsible for planning, constructing, operating and maintaining a cost-effective and resilient wastewater collection, treatment and disposal system.

Treatment by-product management

Wastewater treatment practices create various by-products, such as sludge and gases that either need to be disposed of, re-used or destroyed. A key Council wastewater activity is the efficient treatment, disposal and/or recycling of wastewater treatment by-products.

Laboratory services

Laboratory services monitor and analyse treatment processes and products to demonstrate compliance with consent discharge conditions.

A snapshot of provision and use for 2023/24:



Reticulation

- ✓ 1,639 km gravity wastewater mains
- ✓ 300 km pressure wastewater mains
- ✓ 64 km vacuum wastewater mains
- ✓ 1,003 km wastewater laterals
- ✓ 28,948 manholes
- ✓ 9,405 local pressure sewer system tanks
- ✓ 4,353 vacuum sewer system chambers



Pumping

- ✓ 150 pump stations
- ✓ 84 lift stations
- ✓ 3 vacuum stations
- ✓ 248 pump station control systems
- ✓ 34 odour control sites



Treatment & Disposal

- ✓ 5 wastewater treatment plants
- ✓ 1 outfall pump station
- ✓ 3 ocean / harbour outfalls
- ✓ 2 land irrigation schemes

Where we came from

The Christchurch wastewater system has evolved from various community reticulations schemes, some dating back to 1875. The Bromley site was established as a sewage farm in 1882 and developed upstream treatment works in 1962. The wastewater network was further standardised in 1989, when five local bodies were merged into the new Christchurch City Council, with Banks Peninsula District Council also merging in 2006.

Our network and services were disrupted by the Canterbury earthquakes of 2010 and 2011. Significant assessment and rebuild work followed, under the Stronger Christchurch Infrastructure Recovery Team (SCIRT) alliance. This programme did not address all earthquake damage and many pipes with varying levels of defects remain. New pipework has been installed to enable wastewater schemes at Governors Bay and Diamond Harbour to be pumped to Bromley and to allow Lyttelton's treatment plant to be decommissioned, ceasing the discharge of wastewater to the harbour.

Wastewater systems in Akaroa and Duvauchelle are due for replacement.



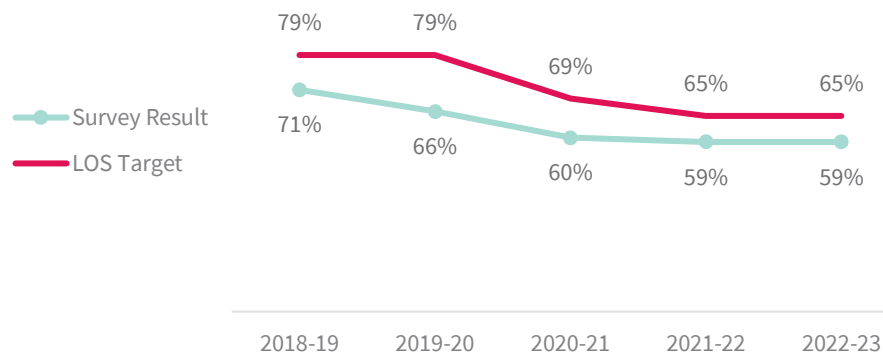
Christchurch Wastewater Treatment Plant.

What our community is saying



59% are satisfied

LOS 11.0.1.16 Proportion of residents satisfied with the reliability and responsiveness of wastewater services



Source: Residents Survey

Who our key customers are: Christchurch City and Banks Peninsula residents

Who our key stakeholders are: Christchurch City and Banks Peninsula residents

What we do: Provide and maintain a network that collects, treats and disposes of the city's wastewater.

What you think: 59% are satisfied with the reliability and responsiveness of wastewater services.





What you say: "I'm satisfied with wastewater collection [...] excellent compared to other places in the world!"

Community outcomes:






- A thriving prosperous city
- A collaborative confident city
- A green, liveable city



2. Why we deliver this activity

2.1. Community Outcomes: How this activity contributes

Community Outcomes	Contribution*	Key contributions to achieving our community outcomes
 <p>A collaborative confident city Our residents have the opportunity to actively participate in community and city life, have a strong sense of belonging and identity, and feel safe</p>	★★★★	<p>Protecting public health by limiting exposure to human waste in accordance with:</p> <ul style="list-style-type: none"> • Health Act 1956 • Hazardous Substances and New Organisms Act 1996 • Resource Management Act 1991 • Health and Safety at Work Act 2015 • Water Supply, Wastewater and Stormwater Bylaw 2014 • Trade Waste Bylaw 2015
 <p>A green, liveable city Our neighbourhoods and communities are accessible and well-connected, supporting our goals to reduce emissions, build climate resilience and protect and regenerate the environment, especially our biodiversity, water bodies and tree canopy</p>	★★★★	<p>Reducing wastewater overflows to waterways:</p> <ul style="list-style-type: none"> • Ensure infrastructure is resilient <p>Limiting resource use and encouraging by-product re-use:</p> <ul style="list-style-type: none"> • Use biogas production from wastewater treatment plant
 <p>A cultural powerhouse city Our diverse communities are supported to understand and protect their heritage, pursue their arts, cultural and sporting interests, and contribute to making our city a creative, cultural and events ‘powerhouse’</p>	★★	<p>Council response to mana whenua cultural objectives (land discharge of treated effluent):</p> <ul style="list-style-type: none"> • Converting to land based discharges of treated effluent where possible • New Akaroa WW Reclaimed Water Treatment and Reuse Scheme • New Duvauchelle WW Reclaimed Water Treatment and Reuse Scheme <p>Increased engagement and collaboration with mana whenua:</p> <ul style="list-style-type: none"> • Review and update the 3W Strategy Implementation Plan with mana whenua
 <p>A thriving prosperous city Our city is a great place for people, business and investment where we can all grow our potential, where enterprises are innovative and smart, and where together we raise productivity and reduce emissions</p>	★★★★★	<p>We strive for a resilient wastewater network, to support a healthy community, healthy environment and prosperous economy by:</p> <ul style="list-style-type: none"> • Minimising damage from natural disasters by setting minimum requirements for new infrastructure. • Gathering an evidence base to support asset lifecycle decision making. • Performing lifecycle management to minimise whole of life costs. • Minimising service disruptions. • Setting requirements for network condition and performance. <p>We strive to manage costs and intergenerational debt by:</p> <ul style="list-style-type: none"> • Controlling costs to minimise rates increases • Maintaining networks to prevent future generations inheriting a network in need of significant expenditure.
<p>*Level of contribution – what this means</p> <p>★★★★★ This activity is critical to the Council’s contribution to achieving this community outcome – we measure our impact with specific levels of service</p> <p>★★★★ This activity strongly supports the Council’s contribution to achieving this community outcome – we measure our impact with specific levels of service for some elements</p> <p>★★★ This activity supports the Council’s contribution to achieving this community outcome – we measure our impact with specific levels of service if practicable</p> <p>★★ This activity may provide incidental support to achieving this community outcome – it’s not cost-effective to measure our impact</p>		


2.2. Strategic Priorities - How this activity supports progress on our priorities

Strategic Priorities		Contribution*	How our strategic priorities influence the way we work
	Be an inclusive and equitable city which puts people at the centre of developing our city and district, prioritising wellbeing, accessibility and connection	★★★	<ul style="list-style-type: none"> Promote wellbeing through providing the community with clean and safe wastewater management Developing infrastructure solutions that will benefit the future generations
	Champion Christchurch and collaborate to build our role as a leading New Zealand city	★★	<ul style="list-style-type: none"> Collaborate with other Councils to learn and share best practices Show leadership within the Canterbury area for the wastewater collection, treatment and disposal activity
	Build trust and confidence in the Council through meaningful partnerships and communication, listening to and working with residents	★★	<ul style="list-style-type: none"> Increasing customer engagement and consultation through the Long Term Plan process and annual resident surveys to help inform levels of service Providing regular updates/communication to general public Meaningful partnerships/relationships/communication with consultants and contractors Consult and work closely with the community surrounding the Christchurch wastewater treatment plant regarding impact of odours
	Reduce emissions as a Council and as a city, and invest in adaptation and resilience, leading a city-wide response to climate change while protecting our indigenous biodiversity, water bodies and tree canopy.	★★★★	<ul style="list-style-type: none"> Reduce emissions at the Council offices Reduce emissions by focusing on the key greenhouse gas generators including <ul style="list-style-type: none"> Processes and activities associated with wastewater treatment Energy consumption in the form of electricity used for wastewater pumping, aeration, heating, etc. Travel associated with operations and maintenance activities Untreated wastewater overflows into the environment during high rainfall events (potential to increase with climate change) Set realistic and measurable goals for lowering emissions, although there has been no additional funding provided within the LTP to fund any new monitoring works or projects for greenhouse gas emissions or climate resilience. Continue to adhere to standards and regulations, for example ECAN resource consents, to protect our environment
	Manage ratepayers' money wisely, delivering quality core services to the whole community and addressing the issues that are important to our residents	★★★	<ul style="list-style-type: none"> Financial decisions are prioritised using an evidence base that accounts for risk, public health and safety, security of supply, disruption to customers, and asset lifecycle cost considerations to optimises expenditure and minimises building intergenerational debt Controlling costs to minimise rates increases Maintaining networks to prevent future generations inheriting a network in need of significant expenditure. Plan proactive investment to reduce what is spent in reaction to asset failures and disaster events


	<p>Actively balance the needs of today's residents with the needs of future generations, with the aim of leaving no one behind</p>		<ul style="list-style-type: none"> • Planning for today's needs as well as the future, accounting for growth, asset deterioration, changing regulations, financial constraints and the changing climate • Continue to monitor and assess effects of activity on the environment • Maintain networks to prevent future generations inheriting a network in need of significant expenditure
<p>*Levels of contribution – what this means</p>			
<p>★★★★ This activity is critical to achievement of this strategic priority – we measure our impact with actions and levels of service in the Strategic Priorities Action Plan</p> <p>★★★ This activity strongly supports achievement of this strategic priority – we measure our impact with actions and levels of service in the Strategic Priorities Action Plan for important elements only</p> <p>★★ This activity supports achievement of this strategic priority - we measure our impact with actions and levels of service in the Strategic Priorities Action Plan if practicable</p> <p>★ This activity may provide incidental support for the achievement of this strategic priority – it's not cost-effective to measure our impact</p>			

2.3. Climate Resilience Goals: How this activity supports climate resilience goals

Net zero emissions Christchurch

	<p>Key sources of greenhouse gas emissions from this activity includes:</p> <ul style="list-style-type: none"> Processes and activities associated with wastewater treatment, including: <ul style="list-style-type: none"> Primary, secondary, and tertiary treatment within the treatment process – biological processes (~47% of total CWTP plant emissions) Treated effluent discharged to ponds and to the marine environment (~49% of total CWTP plant emissions) Biogas and biosolids production and disposal (~4% of total CWTP plant emissions) Energy consumption in the form of electricity used for wastewater pumping, aeration, heating, etc Travel associated with operations and maintenance activities <ul style="list-style-type: none"> Untreated wastewater overflows into the environment during high rainfall events (potential to increase with climate change) 	
	<p>Wastewater Collection, Treatment and Disposal future proposals to take the following actions to reduce greenhouse gas emissions (pending funding and resource allocation):</p> <p>Operational/embedded greenhouse gas emissions</p> <ul style="list-style-type: none"> Develop a monitoring plan and monitor emissions from the wastewater treatment plant at Bromley. Consider and implement alternative treatment configurations which have lesser greenhouse gas emissions. Develop a greenhouse gas emissions baseline for the wastewater service operations and maintenance function. Explore renewable energy options such as solar power generation. Consider ways to reduce our carbon footprint through changes in design, material choice and construction of new assets without compromising service quality, reliability and resilience. 	<p>Greenhouse gas emissions by users of Wastewater Collection, Treatment and Disposal activity</p> <ul style="list-style-type: none"> Don't flush wet wipes, sanitary products, rags, fats and oils, or other items which may cause blockages and increase operational interventions. Regularly inspect and repair sewer drains to avoid inflow and infiltration which leads to wastewater overflows. Follow-up on required inspections of septic tanks to ensure systems are fit for purpose and not discharging untreated flows to the environment. Adopt water efficient appliances.

We understand and are preparing for the ongoing impact of Climate change

	<p>Key climate risks for the Wastewater Collection, Treatment and Disposal activity includes:</p> <ul style="list-style-type: none"> Sea Level Rise Related <ul style="list-style-type: none"> Some coastal wastewater assets may be at risk Limitations in asset life due to corrosion from saltwater Rainfall and Flooding Related <ul style="list-style-type: none"> Increased inflow and infiltration due to more frequent storm events that could increase overflow frequency Higher groundwater levels leads to increased infiltration that could increase overflow frequency Heat, Drought, Fire Related <ul style="list-style-type: none"> Increased odours in wastewater network because of higher temperatures and microbial activity Other
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<ul style="list-style-type: none"> ○ Increase in overflow events resulting in untreated wastewater flows to the environment have potential public health and environmental health impacts ○ Potential untreated overflow discharges into the ocean could cause beach closures or deterioration of water quality of receiving waters, impacting the mauri of the water for Māori and opportunities to practice mahinga kai ● Other impacts on assets and infrastructure (see the Wastewater Asset Management Plan for more details).
<p>Options being considering to reduce the risks to the Wastewater Collection, Treatment and Disposal activity and the community posed by those climate risks include:</p> <ul style="list-style-type: none"> ● Request (in terms of the Water Supply and Wastewater Bylaw 2022) the inspection and repair of sewer drains on private properties to avoid rainwater or groundwater from entering the wastewater system ● Provide educational resources and messaging relating to wastewater use best practices such as not flushing wet wipes and separation of fats and oils ● Undertake a programme to identify and eliminate tree planting over pipes to avoid damage that leads to groundwater infiltration ● Reduce stormwater and potentially seawater inflow and infiltration through continuance of renewals programme ● Fund the implementation of projects identified to reduce the frequency of wastewater overflows ● Explore options for increased resilience of the wastewater system against climate change impacts and fluctuating operational statuses. <p>Note – none of these options have received any additional operational funding into the planning teams, therefore any of these concepts will need to be undertaken at the expense of existing tasks being undertaken or not at all.</p>

We are guardians of our natural environment and taonga

<div data-bbox="91 1023 188 1118" data-label="Image"> </div> <p>A pilot projects that was proposed to be undertaken to support understanding and minimising greenhouse gas emissions and responding to climate change impacts but not provided with any 2024-2034 LTP funding is:</p> <p>Council have engaged a consultant to investigate future options for the long-term plant development with a focus on options to deal to future population growth, modern technology, and a reduction in greenhouse gas emissions.</p> <p>Currently the plant is operating with no secondary treatment or clarifier redundancy and limited capacity to treat additional flow and/or pollutant load. Combined, these factors increase the vulnerability of the plant to impacts of unforeseen events and the effects of climate change. It is critical to progress the process of selecting and implementing sustainable development of the plant.</p> <p>As a whole, wastewater treatment is one of the largest greenhouse gas emitting sources within the Three Waters area. As a first, the programme involves development of a system to measure real time emissions from the plant and treatment processes with the goal of highlighting where the largest sources of emissions within the treatment process are occurring. Collecting this information presently in the temporary plant configuration will help to provide insight into potential cost-efficient and greenhouse gas reduction effectiveness of potential permanent recovery solutions. Continuance of the measuring and reporting of greenhouse gas emissions to provide detailed emissions reporting supports contribution towards Christchurch District and Christchurch City Council’s emissions targets. There is also an opportunity to consider embodied and operational carbon targets in the ongoing development of the plant.</p> <p>As no OPEX funding has been provided through the 2024-2034 LTP for this project, it will remain as an initiative to be undertaken should funding be made available in the future.</p> <p>The current level of services set-out already begin to address accountability of the activity functions in relation to climate change vulnerability and greenhouse gas emissions.</p>
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At present, efforts concerning greenhouse gas emissions reduction are to be focused on establishment of an emissions baseline through monitoring and data collection. This information can then be used for effective future decision making in an effort to reduce greenhouse gas emissions. Unfortunately, as no OPEX funding has been provided, the comparative assessments of greenhouse gas emissions won't be completed and therefore cannot be used to inform future investment decisions towards reducing the carbon footprint of Council and Christchurch District

With regard to climate change impacts and vulnerabilities, it is noted that the risks with respect to climate change is dependent on a variety of factors, some which Council has influence over and others that are driven on a global scale. Therefore, there is some uncertainty associated with the lack of funding and extent of work requirements to sustain and improve effectiveness of the wastewater collection, treatment, and disposal system. If climate change impacts are realised sooner or differently than predicted, there is a risk of lesser performance for some current levels of service such as an increased frequency of overflows.

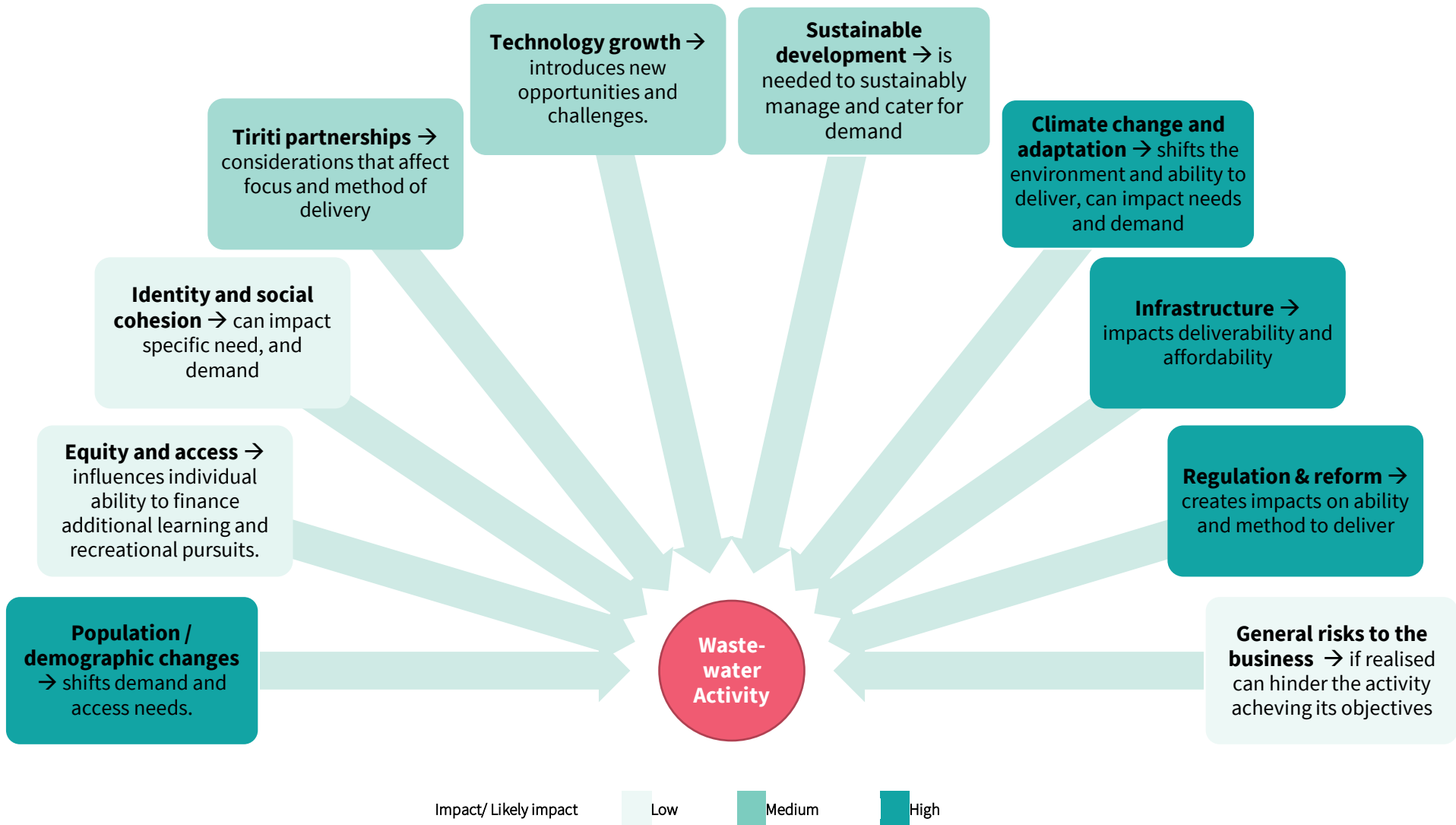
Commentary on how climate change is incorporated into the existing levels of service is outlined below. It is noted that future levels of service may be developed following the greenhouse gas emissions baseline data gathering and provision of funding:

- Public health is protected from Council wastewater services
 - This level of service is centred on limiting dry weather wastewater overflows which are caused by blockages. Educational resources and messaging relating to wastewater use best practice also contribute to this service measure.
- Council operates wastewater services in a reliable manner
 - The reliability measure of service is dependent on management of the activity to respond to climate change impacts. It is noted that climate change may contribute to an increased number of complaints due to conditions such as greater odours due to temperature rises, and increased overflows due to flood events.
- Council has high wastewater discharge quality
 - During typical operation, wastewater is treated at the plant before being discharged to the environment. It is noted that climate change (particularly an increase in temperatures) may have a positive effect on the effectiveness of treatment processes and discharge quality. However, this element will be considered as part of the wastewater treatment plant permanent recovery work.
- Council operates wastewater services in a responsive manner
 - Climate change impacts include increased frequency and size of storm events which will likely contribute to an overwhelming of the wastewater network capacity and cause overflows. The current level of service aims to respond and notify overflows in a timely manner. Ongoing scheduled work to renew the network will help to address one of the contributing factors to the causes of overflows.
- Council wastewater networks and operations are sustainable
 - Adoption of processes to measure existing greenhouse gas emissions, considering options to reduce greenhouse gas emissions during the future development of the wastewater treatment plant, and all contribute to this level of service.

3. How we are planning for future impacts

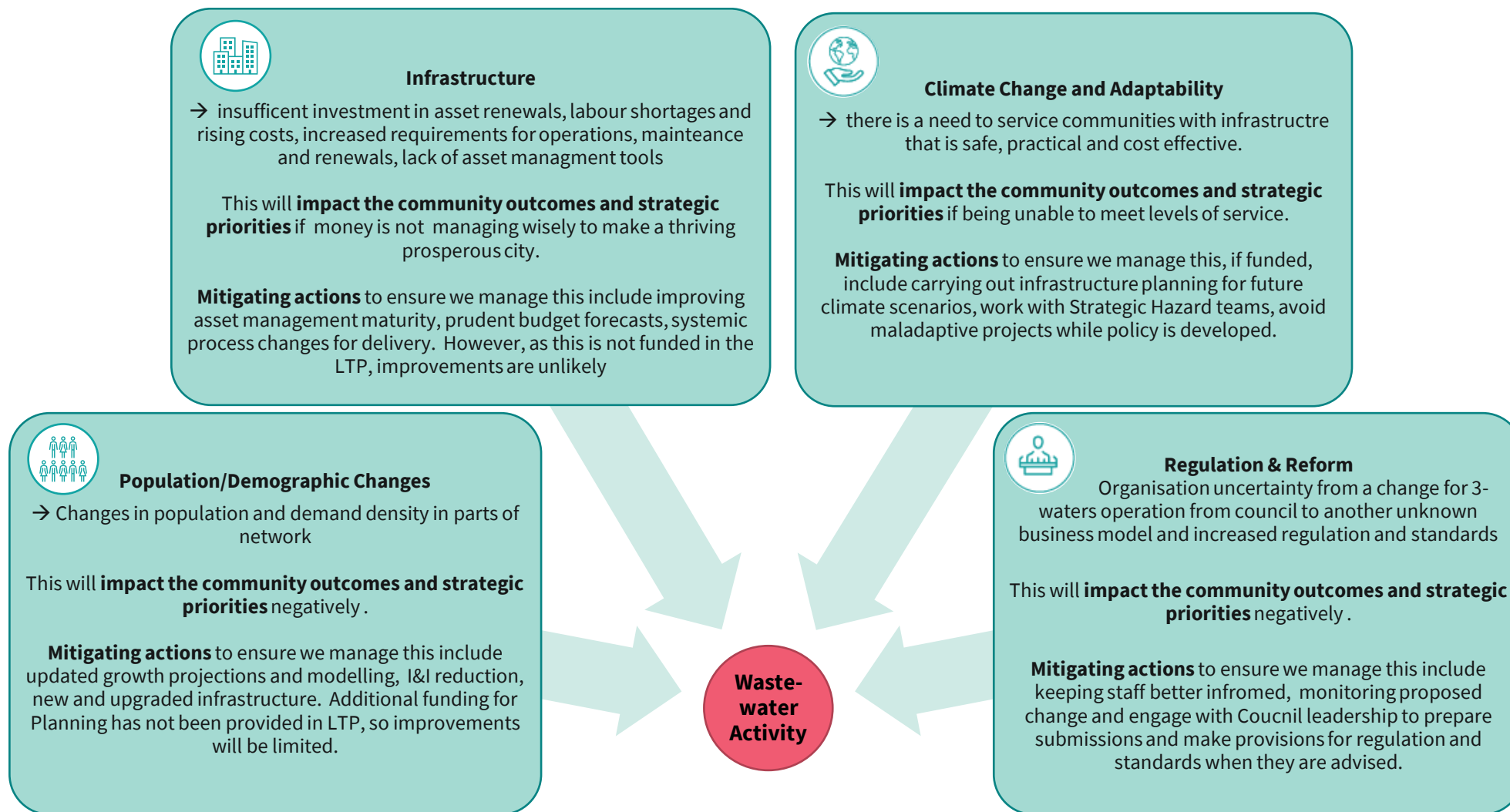
There are various factors influencing current and future demand for Council library facilities and the ability to deliver them. These are listed below.

3.1. Issues impacting current and future activity demand and deliverability



3.2. The high impact issues and mitigations planned

The more prominent ones that in particular effect our Community Outcomes or Strategic Priorities are summarised on this page. For further details on issues, including the current status, future projections, likely impact and mitigations please see Appendix B.



4. Our levels of service

Council's Levels of Service (LoS) measures enable us to monitor and report against our outcomes and service performance. See Appendix A: Levels of Service Details for more detail.

Services & Level of Service Statements, with Measures of Success and future year Targets

Level of Service statement (What we will provide)	Measures of success (What our community can expect)	Performance Targets/Outputs			
		2024/25	2025/26	2026/27	2027 - 34
Council operates wastewater services in a reliable manner					
Council operates wastewater services in a reliable manner, minimising the number of complaints around wastewater issues	Proportion of residents satisfied with the reliability and responsiveness of wastewater services (11.0.1.16)	≥68%	≥70%	≥72%	≥72%
	Total number of complaints received per 1000 connections by Council per year about (DIA 4) (11.0.1.10): a) Wastewater odour b) Wastewater system faults c) Wastewater system blockages d) Council's response to wastewater issues	≤ 10.7			
	Percentage of total wastewater gravity network pipework length at condition grade 5 (very poor) (11.0.1.18)	≤ 17%	≤ 18%	≤ 19%	≤ 19% - ≤ 26%
Council operates wastewater services in a responsive manner					
Council operates wastewater services in a responsive manner following notification of an issue	Median time (in hours) from notification to attendance of overflows resulting from network faults (DIA 3a) (11.0.1.5)	≤ 1			
	Median time (in hours) from notification to resolution of overflows resulting from network faults (DIA 3b) (11.0.1.6)	≤ 12			
Public health is protected from Council wastewater services					
Public health is protected from Council wastewater services by minimising dry weather overflows	Number of dry weather overflows from wastewater systems per 1,000 connections per year (DIA 1) (11.0.5.2)	≤ 0.7			≤ 0.7 - ≤ 0.8
Council has high wastewater discharge quality					
Council has high wastewater discharge quality complying with resource consents	Number of abatement notices, infringement notices, enforcement orders and convictions regarding Council resource consents related to discharges from wastewater systems per year (DIA 2) (11.1.2.0)	0			

5. How assets will be managed to deliver the services

The Wastewater portfolio is made up of reticulation (pipe and non-pipe assets), pump stations, lift stations, monitoring stations, odour control, and treatment assets. The Asset value of this Activity is \$5.6 Billion.

Managing our assets

Assets are provided by the activity by three key means: Asset improvement/growth, renewals, and vested assets from development. Development infrastructure is driven by private developers, meaning that the timing of new infrastructure, handover provisions and accounting for new operations and maintenance spending can be difficult to manage.

New and upgraded assets for growth and improved levels of service are generally required to meet compliance and regulatory requirements (eg the Water Services Regulator Act, the Water Services Act, the Water Services Entities Act, Freshwater NES) or in response to climate change or resilience to natural hazards.

Renewal projects are required to replace assets at the end of their useful lives to prevent critical and chronic asset failures and moderate the level of reactive operational and maintenance spending.

Council's largest capital expenditure category for this activity is for asset renewal, predominantly driven by the prioritised reticulation renewal programme (mains and sub-mains).

The Wastewater activity is primarily the responsibility of Council's internal Three Waters and Waste Unit. Council's Three Waters and Waste Network Operations Team operates the Christchurch Wastewater network and also operate the Banks Peninsula schemes and treatment plants. Maintenance activities on the network are carried out by Citycare Limited.

Looking forward

The longer-term strategic direction for wastewater collection, treatment and disposal is supported by Council's Te Wai o Tane - Integrated Water Strategy. This provides Council's vision, goals, objectives and suggested implementation actions for the city's water, wastewater and stormwater services. Wastewater asset management strategies are expected to align with the Integrated Water Strategy objectives.

The current context surrounding the wastewater activity will continue to influence the current and future outlook. This includes new water regulation, water industry service delivery reform, renewal of ageing infrastructure, responses to climate change, addressing risk and resilience, managing overflows, moving to data-rich smart technology solutions, engaging with customer expectations, and managing financial constraints.

The business has not able to make use of the "*Ōtautahi Christchurch Climate Change Strategy (2021)*" as there have been insufficient policy or guidance for the activity to work within the framework of goals and programmes in the strategy. Therefore, the emphasis of climate within this LTP is welcomed by the business.

It is well known that the Christchurch Wastewater Treatment Plant is a major source of council's greenhouse gas emissions, with only basic information currently being collected. Therefore, the emphasis of climate within this LTP is welcomed by the business.

The Draft Infrastructure Strategy (IS) contains some key significant issues, including “*We need to improve our understanding of our infrastructure so we can make the best decisions for our community*”. This is an on-going issue that additional resource is needed to make any improvements to data collection or management. There are a number of processes that need to be improved, for example the ability to collect and update condition data to be able to create renewal models with accurate funding projections. Many of these issues are also reflected within the Risk Table of the Strategic Asset Management Activity Plan which is the key team responsible for guiding the organisation with all things asset management.

One of the key requests for OPEX pertained to the licencing fees for the “Smart” network control systems associated with Councils local pressure sewer system (LPSS) and vacuum systems networks. To date the cost for the monitoring systems has been met by prioritising funding from elsewhere in the activity, therefore reducing the funding available for carrying out other reactive and planned works.

If the “smart” network controllers aren’t funded, there is a risk of service/licencing contracts with suppliers being cancelled and then alarms in the public LPSS or vacuum networks not being received by operations staff, and overflows of wastewater occurring on private property, therefore reprioritisation of spend may be required.

Without continued investment in asset management the condition of our vertical assets such as pump stations and pressure mains will not be improved resulting in renewals being scheduled relying on basic information such as age. It also means that accurate and more targeted renewal profiles cannot be prepared.

Additionally, there is a continued need to provide for consequential OPEX related to operating the large capital projects currently being built or proposed for the future e.g. current projects such as the upgrade to the Akaroa Treatment Plan to reduce wastewater discharge into the Akaroa Harbour, or the new pumpstation at Selwyn Street designed to mitigate some of the overflows into the Heathcote. Bids for consequential OPEX will be included in future plans

The way forward for implementation of any climate change resilience or greenhouse gas reduction initiatives is to embed this thinking in all our planning processes, rather than fund initiatives separately.

Comparative assessments of greenhouse gas emissions will in the future be used to inform future investment decisions towards reducing the carbon footprint of Council and Christchurch District

One of the key messages within the Infrastructure Strategy, Financial Strategy and the Mayors Letter of Expectation is ensuring that the capital programme is appropriate and deliverable.

We acknowledge that while past performance is valuable for learning, it is crucial to focus on the changes required to enhance delivery processes and ensure the capital program's deliverability. Three Waters has and continues to make systematic changes to delivery that will enable the delivery of the Capital program. The following are changes being undertaken to improve the efficiency of capital delivery:

- Development of a 3-year delivery program
- Improved scheduling, resourcing and allocation
- Improved program management
- Pipe renewals delivered through a multi-year performance based contract with Tier 1 contractors
- Contingency funds to be held at program level for low risk projects
- Development of a capital works program that is agile and can react to project delays that will invariably occur on a capital works program of this size
- Increased investigations and designs ahead of plan, this will remove the risk of procurement delays impacting the capital program

By recognizing the need for improvement and implementing the necessary changes, we are confident in achieving successful outcomes for the program and it is deliverable. There are sufficient contractor resources in the market, the challenges in supply chain are being overcome through advanced planning, and design resources are available. This is all made possible with a well developed

program and schedule, allowing our delivery partners to prepare and allocate resources to support our capital program.

Reducing the capital program would increase the risk profile to Council. The program is developed to meet the level of service targets, avoid the sweating assets that would increase operational costs, and undertaking projects required to meet growth demands.

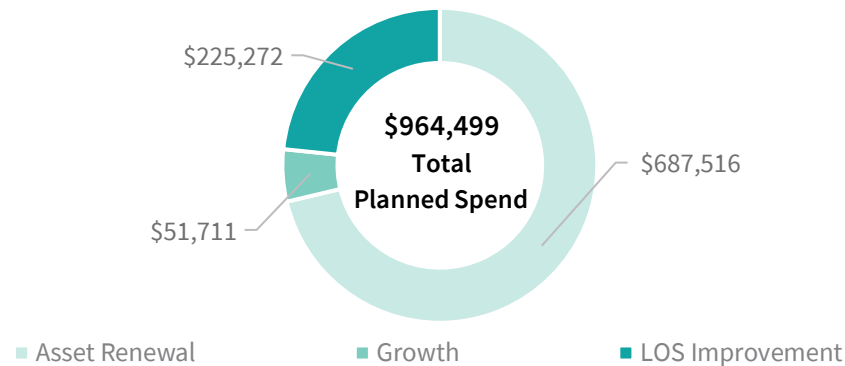
The current capital programme has been designed to balance between deliverability and achieving levels of service. As improved asset data allows robust business cases to be developed, additional funding will be requested in future Long Term Plans to fund programmes of work that require increased investment.

Please refer to the [Wastewater Asset Management Plan](#) for more information on these assets.

6. Capital expenditure and key capital projects

To ensure the continued ability to deliver on our activities and services, and contributing to our community outcomes and strategic priorities, projects have been planned and budgeted for the next 10 years.

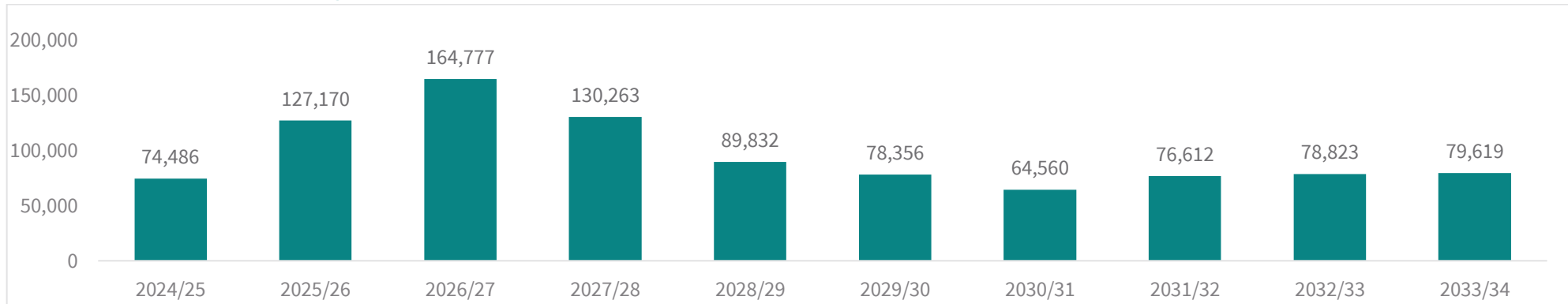
**Wastewater collection treatment and disposal
Capital Programme over 10 years (\$000)**



Planned significant projects and programmes include:

1. Reticulation Renewal Programme \$346m
2. Wastewater Treatment Plant renewals and replacements \$181m
3. Akaroa Wastewater Reclaim and Reuse \$94m
4. Selwyn St Pump Station & Pressure Main \$52m
5. Grassmere Wet weather Storage \$31m
6. Fitzgerald Ave Brick Barrel Mains Renewal \$21m
7. Duvauchelle Wastewater Treatment & Disposal Upgrade

Total Planned Capital Programme summary (\$000)



See [Wastewater Asset Management Plan](#) for more detail on the Planned Capital Programme.

7. Financial resources needed

7.1. Resources needed

Wastewater collection, treatment and disposal

000's	LTP 2024/25	LTP 2025/26	LTP 2026/27	LTP 2027/28	LTP 2028/29	LTP 2029/30	LTP 2030/31	LTP 2031/32	LTP 2032/33	LTP 2033/34
Activity Costs Before Overheads by Service										
Responsively Operates Wastewater Services	17,073	17,364	18,032	18,675	19,199	19,794	20,401	20,831	21,256	21,652
Reliably Operates Wastewater Services	11,552	12,067	12,336	12,619	12,851	13,133	13,413	13,671	13,941	14,210
Council has high wastewater discharge quality Public Health Protected From Wastewater Services	2,168	2,231	2,280	2,332	2,386	2,438	2,489	2,539	2,590	2,639
Wastewater Networks & Operations Are Sustainable										
	30,793	31,662	32,647	33,626	34,436	35,365	36,303	37,042	37,787	38,501
Activity Costs by Cost Type										
Direct Operating Costs	10,755	11,091	11,360	11,647	11,558	11,839	12,116	12,358	12,606	12,845
Direct Maintenance Costs	14,654	15,016	15,605	16,163	16,599	17,099	17,620	17,973	18,332	18,680
Staff and Contract Personnel Costs	5,277	5,445	5,569	5,701	6,162	6,307	6,444	6,585	6,721	6,845
Other Activity Costs	107	110	113	115	118	121	123	126	128	130
Overheads, Indirect and Other Costs	31,724	34,290	35,120	36,196	37,380	37,895	38,649	39,886	40,312	41,085
Depreciation	91,912	96,039	100,088	105,125	109,438	113,034	116,415	119,627	122,887	125,982
Debt Servicing and Interest	12,500	14,993	17,071	19,613	21,090	21,861	22,526	22,958	22,939	23,144
Total Activity Cost	166,929	176,984	184,926	194,561	202,344	208,154	213,894	219,513	223,925	228,712
Funded By:										
Fees and Charges	6,710	6,904	7,056	7,219	7,385	7,547	7,706	7,860	8,017	8,169
Grants and Subsidies										
Cost Recoveries	243	250	256	261	267	273	279	285	290	296
Other Revenues										
Total Operational Revenue	6,953	7,155	7,312	7,480	7,652	7,820	7,985	8,144	8,307	8,465
Net Cost of Service	159,977	169,830	177,614	187,081	194,692	200,334	205,909	211,368	215,618	220,247
Funding Percentages										
Rates	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%
Fees and Charges	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Grants and Subsidies	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cost Recoveries	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other Revenues	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Capital Expenditure										
Improved Service Levels	14,768	23,576	53,007	47,687	36,392	24,542	9,384	8,990	5,575	1,354
Increased Demand	5,097	13,229	13,120	5,604	2,274	3,590	2,832	1,242	1,425	3,298
Renewals & Replacements	54,622	90,365	98,651	76,971	51,167	50,225	52,344	66,380	71,824	74,967
Total Activity Capital	74,486	127,170	164,777	130,263	89,832	78,356	64,560	76,612	78,823	79,619

7.2. Funding consideration and outcome

Section 101 Local Government Act 2002 - Funding Consideration. The following tables are based on the financials from the previous page.

Council funds the Wastewater Activity predominately through the general rate. This means that most funding comes from property owners, mostly on the basis of the rateable value of their property.

- **Operating expenditure** is largely funded through general rates as the Wastewater Activity benefits the community as a whole, and the benefits are received mostly in the same year the expenditure is incurred.
- **Capital expenditure** is largely funded from borrowing, with some funding from development contributions. Funding from rates is used to service the capital expenditure debt.

This funding approach is based on applying the following main funding principles to determine the funding policy.

Funding principles considered for operating costs

Consideration for funding method	Result	Implication
User-Pays <i>the degree to which the Activity can be attributed to individuals or identifiable groups rather than the community as a whole</i>	High	Funded from fees and charges
Exacerbator-Pays <i>the degree to which the Activity is required as a result of the action (or inaction) of individuals or identifiable groups</i>	Low	Funded from rates
Inter-Generational Equity <i>the degree to which benefits can be attributed to future periods</i>	Low	Funded in year costs are incurred
Separate Funding? <i>the degree to which the costs and benefits justify separate funding for the Activity</i>	High	Funded from rates

Outcome: Funding for operating costs

Source	Proportion funded*	Funding Mechanisms
Individual / Group	High	Targeted Rate (High) Fees & Charges (Low)
Community	Low	Grants & Other (Low)

Funding of net capital expenditure

Net means after specific capital grants/subsidies/funding

Category of capex	How it is funded initially - Refer also to Financial Strategy	Proportion*
Renewal/replacement	<i>Mix of rates and debt, but mostly rates – because the renewal / replacement programme is continuous. In future years, debt repayment is funded by rates.</i>	Medium
Service improvement	<i>Debt – because the benefits of capital expenditure on service improvement are received in future periods. In future years, debt repayment is funded by rates.</i>	Medium
Growth	<i>Development contributions and debt – because the benefits of capital expenditure relating to growth are received in future periods. In future years, debt repayment is funded by a mix of development contributions and rates.</i>	Low

Outcome: Initial funding for capital

Initial funding source	Proportion of capex funded*
Rates	High
Borrowing	Low
Development Contributions	Low
Grants and Other	Low

* Low = this source provides 0%-25% of the funding for this Activity, Medium = this source provides 25%-75% of the funding for this Activity, High = this source provides 75%-100% of the funding for this Activity

More information on the Council's Finance and Funding Policies can be found in the [Financial Strategy](#) and the [Revenue and Financing Policy](#)

8. Possible significant negative impacts on wellbeing



This activity may have significant negative effects on social, economic, environmental or cultural wellbeing of the local community, now or in the future.

Negative Effect	Mitigation
Social	
Social, cultural and environmental effects of wastewater overflows	<p>Maintain resource consent compliance.</p> <p>Reduce overflows through projects identified in the city-wide wastewater optimisation project.</p> <p>Fully calibrate wastewater network models through using recent flow monitoring data.</p> <p>Increase flow monitoring on wastewater pump stations and trunk sewers.</p> <p>Continue to implement processes for erecting signage and public notification where overflows could result in health risks.</p> <p>Provide on-site attenuation where required in capacity constraint areas.</p> <p>Clean and maintain siphons and wastewater mains in accordance with maintenance plan.</p> <p>Use flood modelling scenarios to identify areas at risk of inundation and undertake projects to reduce risk of flood water getting into the wastewater network.</p>
Impact of high numbers of midges at houses nearby to the Christchurch wastewater treatment ponds	<p>Midge control programme:</p> <ul style="list-style-type: none"> - Jet boat and midge dredge on the ponds every fortnight during breeding season - Midge traps deployed and weekly monitoring programme
Odour from wastewater networks and wastewater treatment plants	<p>Odour control systems installed in problem areas.</p> <p>Operate odour control systems in accordance with procedures including regular maintenance to remove build-ups of odour causing compounds.</p> <p>Robust work planning at wastewater treatment plants to avoid odour events.</p> <p>Restoration of the secondary treatment process at Christchurch wastewater treatment plant</p> <p>Good design of wastewater networks to prevent creation of anaerobic conditions / adequate ventilation.</p> <p>Enforce trade waste bylaws.</p> <p>Monitor and control illegal discharge of chemicals and toxins to the wastewater system.</p>
Economic	
Cost of operating wastewater collection, treatment and disposal systems	<p>Documented processes and maintenance systems control costs.</p> <p>Improve network efficiency through asset renewal.</p>

	<p>Condition assessment and I&I reduction to reduce operating and maintenance costs.</p> <p>Consider trenchless technology solutions during design phase decisions</p> <p>Assess and report cost efficiency and affordability.</p>
Environmental	
Potential for negative environmental effect of treated wastewater discharges	<p>Maintain resource consent compliance.</p> <p>Operate and maintain treatment plant and disposal services according to best practice.</p> <p>Monitor trade waste discharges to ensure unacceptable pollutants are not released to the WWTP.</p> <p>Monitor and control illegal discharge of chemicals and toxins to the wastewater system to avoid process failure.</p>
Dry and wet wastewater overflows	<p>Reduce overflows through projects identified in the city-wide wastewater optimisation project.</p> <p>Maintain / clean wastewater pipes that are prone to blocking.</p> <p>Repair or replace leaky wastewater pipes through renewal programme.</p>
Biosolids disposal to the environment	<p>Continue to dry biosolids to reduce volume, kill pathogens and enable reuse.</p> <p>Monitor trade waste discharges to ensure potential pollutants are not released to the wastewater treatment plants and carried over into the biosolids, maintaining quality of biosolids.</p> <p>Continue with beneficial reuse of biosolids.</p> <p>Implementation of biosolids master plan to reduce operational carbon</p>
Carbon generated from wastewater services	<p>Document Council's baseline emissions relating to wastewater collection and treatment.</p> <p>Implementation of biosolids master plan to reduce operational carbon</p>
Cultural	
Cultural impact of effluent discharge to water bodies	<p>Work collaboratively with Ngāi Tahu and local rūnanga to find cost effective solutions that address cultural concerns.</p> <p>Discharge treated wastewater from Akaroa and Duvauchelle to land instead of Akaroa Harbour.</p>

(Note: for any new projects or works to be undertaken will mean current tasks being carried out would need to be stopped as no new operational funding has been provided through the 2024-2034 LTP process.)

Appendices



A. Appendix A: Levels of Service detail

A.1. Continuous Improvement Review (S17A) – Recommendations for change

No Continuous Improvement Reviews (S17A) have been identified for this Activity.

A.2. Levels of Service: Performance measures in detail

Note: With the proposed repealing of the Water Services Bills and uncertainty over future proposed models, the Levels of Service below may need to be reviewed and updated within the LTP period.

Level of Service statement (What we will provide)	LOS	Measures of success (What our community can expect)	Performance Targets/Outputs				Method of Measurement	Community Outcome	Historic Performance Trends	Benchmarks	C/M
			2024/25	2025/26	2026/27	2027 - 34					
Council operates wastewater services in a reliable manner											
Council operates wastewater services in a reliable manner, minimising the number of complaints around wastewater issues	11.0.1.16	Proportion of residents satisfied with the reliability and responsiveness of wastewater services	>=68%	>=70%	>=72%		Resident satisfaction surveys	A green liveable city	2023: 59% 2022: 59% 2021: 60% 2020: 66% 2019: 71%	Dunedin 22/23: 68% (satisfied with how DCC manages the sewerage system)	C
	11.0.1.15	Annual number of properties affected by wastewater blowbacks due to maintenance work carried out by the Council or its contractors		<35			Count of total number of blowbacks due to maintenance work carried out by the Council or its contractors reported to the Council call centre in a financial year. Reported in monthly contract reports from the Contractor.	A green liveable city	2023: 19 2022: 7 2021: 20 2020: 31 2019: 21	Blowbacks can occur in Christchurch wastewater network due to flat grades and remaining earthquake damage. No performance data found for blowbacks at other NZ Councils or wastewater service suppliers.	M
	11.0.1.10	Total number of complaints received per 1000 connections by Council per year about (DIA 4): a) Wastewater odour b) Wastewater system faults c) Wastewater system blockages d) Council's response to wastewater issues		<=10.7			Total number of complaints received through Council's call centre about odour, system faults, blockages or responses to complaints multiplied by 1000/number of connections. <i>Department of Internal Affairs, Wastewater Non-Financial Performance Measure 4.</i>	A green liveable city	2023: 9.96 2022: 10.12 New measure in 2022 combining 4 individual performance measures	Medians from Water NZ National Performance Review 2021/22: 2.70 2018/19: 10.81	C
	11.0.1.8	Number of wastewater odour complaints per 1,000 connections to the wastewater network per year (DIA 4a)		<=0.6			The number of complaints about Council's wastewater network received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system <i>Department of Internal Affairs, wastewater non-financial performance measure 4a</i>	A green liveable city	2023: 0.01 2022: 0.62 2021: 0.06 2020: 0.41 2019: 0.36	Value for Christchurch from Water NZ National Performance Review 2021/22: 0.58	M
	11.0.1.7	Number of wastewater system blockage complaints per 1,000 connections to the wastewater network per year (DIA 4c)		<=6		<=6 – <=7	The number of complaints about Council's wastewater system blockages received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system <i>Department of Internal Affairs, wastewater non-financial performance measure 4c</i>	A green liveable city	2023: 0.13 2022: 1.74 2021: 0.18 2020: 1.88 2019: 4.17	Value for Christchurch from Water NZ National Performance Review 2021/22: 1.61	M

Level of Service statement (What we will provide)	LOS	Measures of success (What our community can expect)	Performance Targets/Outputs				Method of Measurement	Community Outcome	Historic Performance Trends	Benchmarks	C/M
			2024/25	2025/26	2026/27	2027 - 34					
	11.0.1.9	Number of wastewater system fault complaints per 1,000 connections to the wastewater network per year (DIA 4b)	≤4.0				The number of complaints about Council's wastewater network received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system. <i>Department of Internal Affairs, wastewater non-financial performance measure 4b</i>	A green liveable city	2023: 0.38 2022: 7.76 2021: 0.58 2020: 3.30 2019: 0.56	Value for Christchurch from Water NZ National Performance Review 2021/22: 0.51	M
	11.0.1.18	Percentage of total wastewater gravity network pipework length at condition grade 5 (very poor)	≤17%	≤18%	≤19%	≤19% - ≤26%	Lengths of pipe at condition grade 5 divided by total wastewater pipe length expressed as a percentage. Condition deterioration since inspection to be included when assigning a condition grade to a pipe. Reported from Council asset management systems.	A green liveable city	2023: 8.22% 2022: 11.54% Change in measurement method for 2021/22.		C
	11.0.1.19	Percentage of wastewater mains with high or very high consequences of failure inspected as scheduled in their lifespan	≥80%				Considering only pipes scheduled for inspection in the CCTV inspection programme: Length of pipe inspected divided by total length of pipe. Reported from Council Asset Management Systems.	A green liveable city	2023: 64.05% 2022: 66.7% Changed Metric in 2022 Past performance not comparable to new measurement methodology.		M
Council has high wastewater discharge quality											
Council has high wastewater discharge quality complying with resource consents	11.1.2	Number of abatement notices, infringement notices, enforcement orders and convictions regarding Council resource consents related to discharges from wastewater systems per year (DIA 2)	0				Resource consent compliance reports to ECan. <i>Department of Internal Affairs, wastewater non-financial performance measure 2.</i>	A thriving prosperous city	2023: 0 2022: 0 2021: 0 2020: 0 2020: 0 2019: 0	Average from Water NZ National Performance Review. 2015/16: 0.19	C
	11.1.2.1	Number of abatement notices regarding Council resource consents related to discharges from wastewater systems per year (DIA 2a)	0				Resource consent compliance reports to ECan. Resource consent compliance reports to ECan. <i>Department of Internal Affairs, wastewater non-financial performance measure 2a</i>	A thriving prosperous city	2023: 0 2022: 0 2021: 0 2020: 0 2019: 0	Average from Water NZ National Performance Review. 2021/22: 22.5	M
	11.1.2.2	Number of convictions regarding Council resource consents related to discharges from the wastewater systems per year (DIA 2d)	0				Resource consent compliance reports to ECan.. <i>Department of Internal Affairs, wastewater non-financial performance measure 2d</i>	A thriving prosperous city	2023: 0 2022: 0 2021: 0 2020: 0 2019: 0	Average from Water NZ National Performance Review. 2021/22: 0 2015/16: 0	M

Level of Service statement (What we will provide)	LOS	Measures of success (What our community can expect)	Performance Targets/Outputs				Method of Measurement	Community Outcome	Historic Performance Trends	Benchmarks	C/M
			2024/25	2025/26	2026/27	2027 - 34					
Council operates wastewater services in a responsive manner	11.1.2.3	Number of enforcement orders regarding Council resource consents related to discharges from wastewater systems per year (DIA 2c)		0			Resource consent compliance reports to ECan. <i>Department of Internal Affairs, wastewater non-financial performance measure 2c</i>	A thriving prosperous city	2023: 0 2022: 0 2021: 0 2020: 0 2019: 0	Average from Water NZ National Performance Review. 2021/22: 0	M
	11.1.2.4	Number of infringement notices regarding Council resource consents related to discharges from wastewater systems per year (DIA 2b)		0			Resource consent compliance reports to ECan. <i>Department of Internal Affairs, wastewater non-financial performance measure 2b</i>	A thriving prosperous city	2023: 0 2022: 0 2021: 0 2020: 0 2019: 0	Average from Water NZ National Performance Review. 2021/22: 5	M
	11.1.4	Proportion of externally reported sampling and testing completed by an IANZ accredited laboratory		100%			Number of samples tested by an IANZ accredited lab divided by total number of samples tested expressed as a percentage.	A thriving prosperous city	2023: 100% 2022: 100% 2021: 100% 2020: 100% 2019: 100%	Watercare Laboratory is IANZ accredited. Wellington Water uses IANZ accredited laboratories.	M
Council operates wastewater services in a responsive manner											
Council operates wastewater services in a responsive manner following notification of an issue	11.0.1.5	Median time (in hours) from notification to attendance of overflows resulting from network faults (DIA 3a)		<=1			The median response time measured from the time that the Council receives notification of the overflow to the time that service personnel reach the site. Reported in monthly contract reports from the Contractor. <i>Department of Internal Affairs, wastewater non-financial performance measure 3a</i>	A green, liveable city	2023: 36 minutes 2022: 34 minutes 2021: 0.53 hours 2020: 0.54 hours 2019: 0.55 hours	Median Results from Water NZ National Performance Review. 2021/22: 0.33 2018/19: 0.55 2015/16: 0.92	C
	11.0.1.6	Median time (in hours) from notification to resolution of overflows resulting from network faults (DIA 3b)		<=12			The median resolution time measured from the time that the Council receives notification of the overflow to the time that service personnel confirm resolution of the overflow. Reported in monthly contract reports from the Contractor. <i>Department of Internal Affairs, wastewater non-financial performance measure 3b</i>	A green, liveable city	2023: 2 hours 7 minutes 2022: 2 hours 15 minutes 2021: 2.1 hours 2020: 1.9 hours 2019: 2.41	Water NZ National Performance Review 2021/22: 3.3 2018/19: 2.8 2015/16: 3.0	C
	11.0.6.4	Number of complaints regarding Council's response to issues with the Council wastewater system per 1,000 connections to the wastewater network per year (DIA 4d)		<=0.1			The number of complaints about Council's wastewater system blockages received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system <i>Department of Internal Affairs, wastewater non-financial performance measure 4d</i>	A green, liveable city	2023: 0.05 2022: No data found 2021: 0.014 2020: 1.88 2019: 0.10	Value for Christchurch from Water NZ National Performance Review 2021/22: 2.70	M

Level of Service statement (What we will provide)	LOS	Measures of success (What our community can expect)	Performance Targets/Outputs				Method of Measurement	Community Outcome	Historic Performance Trends	Benchmarks	C/M
			2024/25	2025/26	2026/27	2027 - 34					
	11.0.1.1	Median time (in hours) from notification to arrival on-site for urgent faults on rural wastewater networks (DIA 3a)		<=2			The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor. <i>Department of Internal Affairs, wastewater non-financial performance measure 3a</i>	A green, liveable city	2023: 1 hour 6 minutes 2022: 1 hour 3 minutes New measure in 2022	Median from Water NZ National Performance Review (combined urban and rural attendance times) 2018/19: 0.50	M
	11.0.1.2	Median time (in hours) from notification to arrival on-site for urgent faults on urban wastewater networks (DIA 3a)		<=1			The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor. <i>Department of Internal Affairs, wastewater non-financial performance measure 3a</i>	A green, liveable city	2023: 39 minutes 2022: 31 minutes New measure in 2022	Median Results from Water NZ National Performance Review (combined urban and rural response times) 2018/19: 0.50	M
	11.0.6.3	Median time (in hours) from notification to arrival on-site for non-urgent faults on rural wastewater networks (DIA 3a)		<=120			The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor. <i>Department of Internal Affairs, wastewater non-financial performance measure 3a</i>	A green, liveable city	2023: 5.11 hours 2022: 71 hours 31 minutes 2021: 3 days 2 hours 47 minutes 2020: 1 day 13 hours 57 minutes 2019: 2 hours 15 minutes	Median from Water NZ National Performance Review (combined urban and rural attendance times)	M
	11.0.6.2	Median time (in hours) from notification to arrival on-site for non-urgent faults on urban wastewater networks (DIA 3a)		<=120			The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor. <i>Department of Internal Affairs, wastewater non-financial performance measure 3a</i>	A green, liveable city	2023: 34.19 hours 2022: 28 hours 47 minutes 2021: 12 hours 7 minutes 2020: 2 days 11 hours 7 minutes 2019: 2 hours 17 minutes	Median Results from Water NZ National Performance Review (combined urban and rural response times)	M

Level of Service statement (What we will provide)	LOS	Measures of success (What our community can expect)	Performance Targets/Outputs				Method of Measurement	Community Outcome	Historic Performance Trends	Benchmarks	C/M
			2024/25	2025/26	2026/27	2027 - 34					
Public health is protected from Council wastewater services											
Public health is protected from Council wastewater services by minimising dry weather overflows	11.0.5.2	Number of dry weather overflows from wastewater systems per 1,000 connections per year (DIA 1)		<=0.7		<=0.7 – <=0.8	Number of dry weather overflows per 1,000 properties connected to the wastewater network. Reported in resource consent compliance reports to ECan. <i>Department of Internal Affairs, wastewater non- financial performance measure 1</i>	A thriving prosperous city	2023: 0.16 2022: 0.43 2021: 0.52 2020: 0.60 2019: 0.54	Median from Water NZ National Performance Review. 2021/22: 0.1 2018/19: 0.99	C
Council wastewater networks and operations are sustainable											
Council wastewater networks and operations are sustainable	11.1.5.1	Power consumption - kWh of electricity per cubic metre wastewater treated at the Christchurch wastewater treatment plant		<=0.55			Total power consumption for the year to date divided by the volume of wastewater treated for the year to date.	A green, liveable city	2023: 0.31 2022: 0.236 2021: 0.22 2020: 0.23 2019: 0.22		M
	11.1.5.2	Power consumption - kWh of electricity per kilogram of chemical oxygen demand (COD) removed at the Christchurch wastewater treatment plant		<=1.2			Total power consumption for the year to date divided by the mass of chemical oxygen demand removed in the year to date.	A green, liveable city	2023: 0.76 2022: 0.399 2021: 0.339 2020: 0.35 2019: 0.36		M
	11.1.3.1	Proportion of biosolids diverted from landfill (beneficially reused)		>=80%			Mass of biosolids sent for beneficial reuse divided by total mass of biosolids produced expressed as a percentage.	A green, liveable city	2023: 100% 2022: 100% 2021: 97.6% 2020: 100% 2019: 96.1%		M
	11.1.6	Proportion of electricity used at the Christchurch wastewater treatment plant that is self-generated from treatment by-products		>=30%			kWh of electricity used that is self-generated divided by the total power use in kWh expressed as a percentage.	A green, liveable city	2023: 49.1% 2022: 61% 2021: 66.7% 2020: 60.7% 2019: 74%		M
	11.1.10	10 year rolling historic ratio of renewals to depreciation (pipe reticulation)		>=45%		>=45% - >=50%	Historic 10yr average renewals expenditure / Historic 10yr average depreciation	A green, liveable city	2023: 61.2% 2022: 53.2% New measure added in 2022	100%: Institute of Public Works Engineering Australasia (IPWEA) Asset management financial indicator	M
	11.1.11	Increase Wastewater Asset Management Maturity towards agreed, appropriate level		>=77			Conduct assessment on alternate years Asset Management Maturity assessment (AMMA) to be conducted every two years by an external assessor until appropriate level of maturity target is achieved.	A green, liveable city	2023: 81 2022: 81 New measure added in 2022 2021: No data found 2020: 81	NZ Treasury Investor Confidence Rating (ICR) Asset Management Maturity Assessment (AMMA) Tool	M

A.3. Levels of Service changes from Long-term Plan 2021-31, and why

Related Levels of Service (now known as Measures of Success and Targets) have been grouped together under *Level of Service Statements*. This provides a *reduced suite of levels of service that are most critical and meaningful*, rationalising the overall number to be presented in the LTP and included in future performance reporting to ELT, Council and the community, while ensuring continued *transparency of non-financial performance across services*. Applying this process has resulted in no material changes to Measures of Success or Targets beyond those changes specifically set out below.

Deletions

This Activity has no deleted levels of service.

New

This Activity has no new levels of service.

Amendments

Activity / Level of Service	Change from 2021-31 LTP	Reason/Rationale	Options for Consultation
LoS 11.0.1.6 (C) Median time (in hours) from notification to resolution of overflows resulting from network faults (DIA 3b)	Target changed: <ul style="list-style-type: none"> From: ≤ 24 To ≤ 12 	Overflow is a serious issue as wastewater running through the streets or on private property can introduce public health issues. Given this risk, and past performance, a median target of only 12 hours is more appropriate.	Standard consultation through elevation into the Consultation Document.
11.1.11 (M) Increase Wastewater Asset Management Maturity towards agreed, appropriate level	Target changed <ul style="list-style-type: none"> from ≤ 82 in year 2023/24 and ≤ 93 in year 10, to “77” across all years, 	The targets in the 2021-2031 LTP were based on the Asset Management Maturity Assessment (AMMA) carried out in 2020, and the proposed improvement levels recommended. The most recent AMMA carried out rated 3 waters at a Core/Intermediate level of maturity. As there was no	Management measure, no consultation required.

		overall score given as per previous AMMA results, we have taken the minimum score of an Intermediate rating as being representative of where we currently are - 77. As no OPEX funding has been provided for asset management improvement within this LTP, asset management maturity is not expected to improve.	
LoS 11.0.1.1 (M) Median time (in hours) from notification to arrival on-site for urgent faults on rural wastewater networks (DIA 3a)	Changed from a Community measure to a Management measure.	These LoS are more technical management measures that will contribute to the success of the community measures, specifically LOS 11.0.1.5 & 11.0.1.6 – which are also DIA measures – that measure the median time (in hours) from notification to attendance / notification to resolution of overflows resulting from network faults.	Consultation not specifically required as LOS is retained in the Activity plan. Change also noted in the Statement of Service Provision.
LoS 11.0.1.2 (M) Median time (in hours) from notification to arrival on-site for urgent faults on urban wastewater networks (DIA 3a)			
LoS 11.0.6.3 (M) Median time (in hours) from notification to arrival on-site for non-urgent faults on rural wastewater networks (DIA 3a)			
LoS 11.0.6.2 (M) Median time (in hours) from notification to arrival on-site for non-urgent faults on urban wastewater networks (DIA 3a)			
The following four targets have been reviewed to reflect the current and expected operational methods for the waste treatment plant. These proposed changes are based on the usage to date since we had the temporary activated sludge plant and the Oxidation Pond aerators in.			
11.1.5.1 (M) Power consumption - kWh of electricity per m3 of wastewater treated at the CWTP	Target changed <ul style="list-style-type: none"> from ≤ 0.24 to ≤ 0.55 	As a result of doubled kWh consumption.	Management measure, no consultation required.

<p>11.1.5.2 (M) Power consumption - kWh of electricity per kg of COD removed at CWTP</p>	<p>Target changed</p> <ul style="list-style-type: none"> • from <=0.40 • to <= 1.2 	<p>As a result of doubled kWh consumption, and less COD could be treated due to the temporary process. New KPI calculation base on historic monthly KPI</p>	<p>Management measure, no consultation required.</p>
<p>11.1.3.1 (M) Proportion of biosolids diverted from landfill (beneficially reused)</p>	<p>Target changed</p> <ul style="list-style-type: none"> • from >=95% • to >= 80% 	<p>Additional buffer for emergency solids management as secondary sludge production has doubled and the ongoing digester foaming issues.</p>	<p>Management measure, no consultation required.</p>
<p>11.1.6 (M) Proportion of electricity used at the CWTP that is self-generated</p>	<p>Target changed</p> <ul style="list-style-type: none"> • from >=65% • to >= 30% 	<p>Based on SCADA data and generator ratings.</p>	<p>Management measure, no consultation required.</p>
<p>11.0.1.16 (C) Proportion of residents satisfied with the reliability and responsiveness of wastewater services</p>	<p>Change from draft to final LTP Target proposed changed from</p> <ul style="list-style-type: none"> • 2024/25 – 2026/27: >=65% • 2027-34: Between >=65% to >=60% <p>To</p> <ul style="list-style-type: none"> • 2024/25: >=68% • 2025/26: >=70% • 2026/27: >=72% • 2027-34: >=72% 	<p>During Council’s consideration of the 2023-2024 Residents Survey Results report (6 March 2024) the meeting requested an assessment of how the Residents Survey results align with levels of services and future planned targets for the draft Long-Term Plan 2024-34 (which was adopted prior to the release of the 2023/2024 resident survey results).</p> <p>In response to the request, it is proposed to adjust the future satisfaction target for the Wastewater Collection, Treatment and Disposal activity: Recommend an increase to the reliability and responsiveness of wastewater services satisfaction target, to increase from 65% to 68% for year 1, increase again to 70% in year 2, and to 72% in year 3. This is due to continued good levels of contracted response rates, and planned improvements for customer engagement and communication.</p>	<p>Update to Statement of Service Provision</p>
<p>11.0.5.2 (C)</p>	<p>Change from draft to final LTP</p>		

<p>Number of dry weather overflows from wastewater systems per 1,000 connections per year (DIA 1)</p>	<p>Change from per 1,000 connected properties, to per 1,000 connections. As a result of feedback from Audit NZ.</p>		
<p>11.0.1.10 (C) Total number of complaints received per 1000 connections by Council per year about (DIA 4)</p> <p>11.0.1.8 (M) Number of wastewater odour complaints per 1,000 connections to the wastewater network per year (DIA 4a)</p> <p>11.0.1.7 (M) Number of wastewater system blockage complaints per 1,000 connections to the wastewater network per year (DIA 4c)</p> <p>11.0.1.9 (M) Number of wastewater system fault complaints per 1,000 connections to the wastewater network per year (DIA 4b)</p> <p>11.0.6.4 (M) Number of complaints regarding Council's response to issues with the Council wastewater system per 1,000 connections to the wastewater network per year (DIA 4d)</p>	<p>Change from draft to final LTP</p> <p>Change from per 1,000 connected properties or per 1,000 properties connected, to per 1,000 connections. As a result of feedback from Audit NZ.</p>		

B. Appendix B: Possible issues impacting the Activity & the mitigations planned

Information for future impacts was collated in preparation of the draft LTP 2024-34 to inform Councillor decisions and community consultation. This section was not updated for final LTP adoption.

B.1. Changing customer needs

Population / demographic changes (high impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans/actions
Population growth	389,300 in 2022	<ul style="list-style-type: none"> Council's wastewater master plan is based on a population projection of 450,000 in 2068. 	<ul style="list-style-type: none"> Existing wastewater pipes and pump stations to be upgraded to accommodate growth If upgrades do not occur in line with growth, the wastewater system will be overloaded and can lead to overflows into the environment 	<ul style="list-style-type: none"> Fund WW network and pump station upgrades as aligned to the growth projection Incorporate updated growth projections and modelling into planned wastewater works
Population growth (general and in specific areas)		<ul style="list-style-type: none"> High demand for intensification in the Shirley and Aranui vacuum sewer catchment areas 	<ul style="list-style-type: none"> The Shirley and Aranui vacuum sewer systems do not have capacity to accommodate growth The problem is exacerbated by high inflow and infiltration from private properties 	<ul style="list-style-type: none"> Apply an infrastructure qualifying matter in areas where capacity has already been exceeded and where funding not assigned to upgrade infrastructure (vacuum sewer systems) Allow only like-for-like development Initiate infrastructure planning to determine the options and costs for increasing capacity to allow intensification in these areas Encourage inspection and repairs of private sewer drains

Shifts within city (e.g., growing communities, possible future managed retreat)		<ul style="list-style-type: none"> It is considered that changes will be seen in the number and location of growth as a result of Plan Change 14 (Housing and Business Choice Plan Change) and concurrent spatial planning activities; It is as yet uncertain what the quantum and rate of intensification will be across the City 	<ul style="list-style-type: none"> Growth may exceed the capacity of infrastructure at a localised level – and can result in wastewater overflows; The WW Master Plan on which this Activity Plan is based does not provide adequately for the upgrades that may be needed to accommodate growth 	<ul style="list-style-type: none"> Wastewater master planning to be reviewed and updated with population growth changes The wastewater master plan to be extended to consider the upgrade requirements of the local pipe network (DN150 pipes) to accommodate intensification
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Equity and access (low impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Incomes/discretionary income	In 2019, the city's median equivalised household income was \$62,300	<ul style="list-style-type: none"> Rising cost of living putting pressure on rates increases 	<ul style="list-style-type: none"> Reduction in levels of service if required funding is not in place 	<ul style="list-style-type: none"> Front foot public debate and engage with customers regarding the value of wastewater services
Growing gap rich and poor	The bottom 20% of households had a median income of \$32,300. The top 20% of households had a median income of \$105,700.	<ul style="list-style-type: none"> Household charges subject to change with new legislation 	<ul style="list-style-type: none"> Change in funding model and perception will bear differently on different customers 	<ul style="list-style-type: none"> Any changes in charging mechanisms will be led by any new changes to the way that 3-waters services are provided to the public.

Identity and social cohesion (low impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Cultural identity		<ul style="list-style-type: none"> Council response to mana whenua cultural objectives (land discharge of treated effluent) 		<ul style="list-style-type: none"> Converting to land based discharges of treated effluent where possible

				<ul style="list-style-type: none"> • New Akaroa WW Reclaimed Water Treatment and Reuse Scheme • New Duvauchelle WW Reclaimed Water Treatment and Reuse Scheme
Rising crime, rallies, protests (safety)		<ul style="list-style-type: none"> • Increased vandalism and theft 		<ul style="list-style-type: none"> • Acknowledge need to invest in security features
Safety staff and public		<ul style="list-style-type: none"> • Increased risk for frontline staff and contractors 		<ul style="list-style-type: none"> • Acknowledge need to invest in training and staff safety protocols • Budget for additional operational costs

B.2. Tiriti Partnerships (medium impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Mana whenua cultural awareness	<ul style="list-style-type: none"> • Increased genuine engagement and collaboration with mana whenua • Increased training for staff on how the business affects Māori values. Provision of sincere guidance from Management to staff	<ul style="list-style-type: none"> • Minor (generally) increase cost in projects due to engagement time and cost. • Minor cost to look at updating the 3 Waters Strategy Implementation Plan 	<ul style="list-style-type: none"> • Review and update the 3W Strategy Implementation Plan with mana whenua. • Guidance and leadership from management with a focus on co-governance 	<ul style="list-style-type: none"> • Increased genuine engagement and collaboration with mana whenua • Increased training for staff on how the business affects Māori values. • Provision of sincere guidance from Management to staff
Te mana o te wai	As above, more direction is needed.	<ul style="list-style-type: none"> • Changes required to give effect to Te mana o te wai 	<ul style="list-style-type: none"> • Provision of funding required to meet the requirements of the Action Plan 	<ul style="list-style-type: none"> • Review and update 3W Strategy Implementation

			<ul style="list-style-type: none"> Minor (generally) increase cost in projects due to engagement time and cost. 	<p>Plan with respect to Te mana o te wai</p> <ul style="list-style-type: none"> Increased level of engagement and planning on individual project levels
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B.3. Technological growth (medium impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Changing technology	Council has invested in the installation of smart control systems to monitor and control remotely the local pressure and vacuum systems installed by SCIRT and Council in areas where gravity sewers aren't practical or cost effective.	<ul style="list-style-type: none"> Better monitoring data New methods of data collection More digital solutions Alternate pipe network solutions 	<ul style="list-style-type: none"> Technology increase reliance on new plant that must be suitably maintained to ensure the performance and desired benefits are realised. Increased requirements for staff to monitor the technology and report on it. Additional costs for network licences and software resource. 	<ul style="list-style-type: none"> Smart local pressure sewer systems Smart Vacuum sewer monitoring system <p>Note –The OPEX funding requested to operate the smart local pressure and vacuum systems through the 2024-2034 LTP process has not been provided, likely resulting in network failures risks, and overflows on private property.</p>
Digital security	Standard IT security processes are relied upon for asset operation and data security.	<ul style="list-style-type: none"> More wastewater data available and administered by Council More sophisticated hacking and cyber-attack technology and techniques 	<ul style="list-style-type: none"> May affect the operation of wastewater network 	<ul style="list-style-type: none"> Maintain separate operations communication network

B.4. Resilience and environmental considerations

Climate change & adaptation (high impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Sea Level Rise		<ul style="list-style-type: none"> Some coastal wastewater assets may be at risk Limitations in asset life due to corrosion from saltwater 		<p>Options being considering to reduce the risks to the Wastewater Collection, Treatment and Disposal activity and the community posed by those climate risks include:</p> <ul style="list-style-type: none"> Request (in terms of the Water Supply and Wastewater Bylaw 2022) the inspection and repair of sewer drains on private properties to avoid rainwater or groundwater from entering the wastewater system Provide educational resources and messaging relating to wastewater use best practices such as not flushing wet wipes and separation of fats and oils Undertake a programme to identify and eliminate tree planting over pipes to avoid damage that leads to groundwater infiltration Reduce stormwater and potentially seawater inflow and infiltration through continuance of renewals programme
Rainfall and Flooding		<ul style="list-style-type: none"> Increased inflow and infiltration due to more frequent storm events that could increase overflow frequency Higher groundwater levels leads to increased infiltration that could increase overflow frequency 		
Heat, Drought, Fire		<ul style="list-style-type: none"> Increased odours in wastewater network because of higher temperatures and microbial activity 		
Extreme rainfall events		<ul style="list-style-type: none"> Increase in overflow events resulting in untreated wastewater flows to the environment have potential public health and environmental health impacts Potential untreated overflow discharges into the ocean could cause beach closures or deterioration of water quality of receiving waters, impacting the mauri of the water for Māori and opportunities to practice mahinga kai 		

				<ul style="list-style-type: none"> • Fund the implementation of projects identified to reduce the frequency of wastewater overflows • Explore options for increased resilience of the wastewater system against climate change impacts and fluctuating operational statuses. <p>3-waters has supported the CHAP team’s bid for additional funding to be able to plan for the climate change resilience and adaptability.</p>
Population movement due to managed retreat and adaptation		<ul style="list-style-type: none"> • Yet to be advised 	<ul style="list-style-type: none"> • Dependent on decisions • Some wastewater assets in coastal environment may have to be relocated (Rapaki, Cass Bay) 	<p>An initial focus on infrastructure that supports:</p> <ul style="list-style-type: none"> • Short-term (now, and LTP years 1-3) • Medium term (LTP years 4-6) • Longer term (LTP years 6 – onwards)
Increasing numbers of extreme weather events change utilisation of physical and digital assets			<ul style="list-style-type: none"> • Higher frequency of wastewater flows • Under sizing of projects to reduce wastewater overflows 	<ul style="list-style-type: none"> • Fully calibrate wastewater network models through using recent flow monitoring data. • Increase flow monitoring on wastewater pump stations and trunk sewers. • Regular updates to the wastewater optimisation master plan to consider climate change impacts

Sustainable development (medium impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Managing GHG emissions (per table above)		<p>Key sources of greenhouse gas emissions from this activity includes:</p> <ul style="list-style-type: none"> • Processes and activities associated with wastewater treatment, including: <ul style="list-style-type: none"> ○ Primary, secondary, and tertiary treatment within the treatment process – biological processes (~47% of total CWTP plant emissions) ○ Treated effluent discharged to ponds and to the marine environment (~49% of total CWTP plant emissions) ○ Biogas and biosolids production and disposal (~4% of total CWTP plant emissions) • Energy consumption in the form of electricity used for wastewater pumping, aeration, heating, etc • Travel associated with operations and maintenance activities • Untreated wastewater overflows into the environment during high rainfall events (potential to increase with climate change) 		<p>Wastewater Collection, Treatment and Disposal are taking the following actions to reduce greenhouse gas emissions:</p> <p>***As per table (Section 2.3)</p> <p>Comparative assessment of greenhouse gas emissions to be completed and therefore used to inform future investment decisions towards reducing the carbon footprint of Council and Christchurch District</p>
Ethical markets & procurement		<ul style="list-style-type: none"> • Change in political and cultural expectations about how procurement happens (local and mana whenua suppliers) 		<ul style="list-style-type: none"> • Use indicator score for measuring local supply chain including community benefits • 3 Waters reform will likely prompt change that comes

				with new Entity, water regulator, and economic regulator
Resilience & risk		<ul style="list-style-type: none"> Increased expectation for climate resilient to be built into infrastructure solutions 		Develop 3 waters climate change resilience framework
Natural hazards		<ul style="list-style-type: none"> Flood, earthquake, tsunami, and fire risk continue to be planned for – with an increasing hazard impact exacerbated by climate change Increasing design and planning parameters to further include climate change predictions 		Maintain natural hazard risk and resilience framework, and incorporate 3 waters climate change resilience framework
Triple bottom line		<ul style="list-style-type: none"> Increased expectation for financial, social and environmental bottom line reporting 		Continue to incorporate triple bottom line analysis and reporting at a strategic planning level

B.5. Infrastructure (high impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Delivering on what we say and looking after what we've got	Currently underinvesting in renewals, we “sweat” our assets. Delivery is too slow to meet the requirements of the work that is needed for meeting the needs of both growth/improvement projects and renewal projects.	<ul style="list-style-type: none"> The continual underinvestment in renewals will lead to an asset base that is continually being “sweated” relying on an increased OPEX through reactive maintenance repairs. There is no current method within the corporate data and financial structure to be able to track the effects of delaying capital spend on OPEX costs meaning that decisions on optimising CAPEX vs OPEX costs 	<ul style="list-style-type: none"> Reduced ability to carry out well informed asset renewals programme to replace asset base that has reached full depreciation in a timely manner. Growth projects are slow to deliver, risking breach of consent conditions. Increased overall project costs. 	<ul style="list-style-type: none"> Working with Councils procurement teams to change the way we deliver projects to increase capital delivery with selected current Tier 1 contractors. Develop programmes of work to review and inspect assets so we have a better understanding of the condition and performance of our assets.

	<p>We do not invest enough in asset management to improve our data, how we plan for renewals, and how we collect and use information.</p>	<p>for renewals is unable to be carried out.</p> <ul style="list-style-type: none"> • The delivery of growth projects is extended due to the currently followed systemic process not being efficient through the design and procurement process. • There is an unquantifiable risk to public/private infrastructure due to failure of lined drains which do not have a current process for renewal forecasting beyond what the operations team report. 		<ul style="list-style-type: none"> • Improvement items have been recommended in the previous 2 AMP's, these items will improve the ability to look after what we've got. • Ensure whole-of-life maintenance costs are identified and the required OPEX is factored into future budgets before asset investment decisions are made. <p>Some additional OPEX funding has been provided to the planning teams through the 2024-2034 LTP to allow some asset management improvement plan items to be carried out to better manage the asset base smarter or more cost effectively.</p>
<p>Resilience to impacts of climate change</p>		<ul style="list-style-type: none"> • Increased infiltration and inflow (rising groundwater/high intensity rainfall events) • Uncertain scenarios around coast area servicing and/or retreat. Waiting for policy direction • Unknown extent of climate change impacts but future policy, actions and directives are inevitable 	<ul style="list-style-type: none"> • Infrastructure capacity issues • Unfeasible to service some areas 	<ul style="list-style-type: none"> • Continue to prioritise renewals around I&I risks • Increasing renewal programme • Waiting on Central Government direction. Then developing and following policy on managed retreat <p>No additional OPEX funding in the 2024-2034 LTP to address any climate change challenges,</p>

				other than embedding it within our planning processes. Any additional work in this space will need to be managed through existing budgets and reprioritising current commitments.
Planning and investing for growth		<ul style="list-style-type: none"> • Population increase • Population intensification in parts of the network 	<ul style="list-style-type: none"> • Infrastructure capacity issues 	<ul style="list-style-type: none"> • I&I reduction • New infrastructure to increase capacity • Upgrade existing infrastructure to increase capacity
Understanding and maintaining the condition of our infrastructure	<p>There has not been any emphasis on improving asset management processes over recent years, particularly in Land Drainage.</p> <p>While we have reasonable confidence in asset data held in SAP the lack of asset management systems within SAP mean we don't make best use of data.</p>	<ul style="list-style-type: none"> • There has not been an increase in the way that asset management has been improved in the wastewater activity. Any improvements to asset management maturity over recent years has been due to changes in framework and policy improvements, not how data is used or processes for the use of data. • It is hoped that that the Strategic Asset Management team will be mandated with the requirement to improve asset management maturity to an appropriate level, which will include providing guidance and support to 3 Waters. • Council needs to advise on the level of asset management maturity that it is willing to fund. From this point, advice on the risks and likely OPEX costs can be better provided to elected officials. 	<ul style="list-style-type: none"> • Disruption to services • Increased costs of meeting regulation • Reliance on OPEX to manage shortfalls in managing assets for timely renewal. 	<ul style="list-style-type: none"> • OPEX funding for an asset improvement programme has been requested for the 3 Waters Asset Management team. • It is hoped that the SAP improvement programme will provide improved processes. <p>Some additional OPEX funding has been provided to the planning teams through the 2024-2034 LTP to allow for better asset management practices.</p>

B.6. Regulations & reform (high impact)

Issue/driver	Present Position	→ Projection	Impact on services	Mitigating plans
Three Waters reform	Recent changes to the legislation has slowed down the timeframe for reform, with some question if there is a change in central government.	<ul style="list-style-type: none"> Organisational change and upheaval with move from Council delivery to new Entity model Increased regulation and standards The business has had piecemeal involvement with reform to date with all requests for information being managed by staff not within the business. Not all key staff have been involved with NTU meetings at times when they should be. 	<ul style="list-style-type: none"> Unknown effects on the services due to uncertainty on timeframe for reform. Staff are affected by uncertainty over how reform will affect their jobs. Uncertainty over future budget availability to continue identified work programmes e.g. OARC. Many and varied Service Level Agreements will be needed, but nothing has yet been discussed. 	<ul style="list-style-type: none"> Participate with the National Transition Unit Process Monitor proposed changes and engage with Council Leadership to prepare submissions. Make provisions for regulation and standards when they are advised. <p>Update – with the change of government, Three Waters reform has been stopped. It is unclear what this means for council and how 3-waters infrastructure will be managed in the future.</p>
Resource Management reforms	Multiple pieces of legislation were proposed and being developed by the government that affect the 3-waters business, particularly the National Environmental Standards.	<ul style="list-style-type: none"> Increased regulation and standards 	<ul style="list-style-type: none"> Unknown impacts until the legislation is put into effect and various teams have had a chance to review and comment. 	<ul style="list-style-type: none"> With the change of government, reform has been stopped. It is unclear what this means for council and how 3-waters infrastructure will be managed in the future to meet any required environmental standards.

B.7. Identified Business Unit Risks

The main risks to the activity have been discussed in Section 3.2.3 of the Wastewater Asset Management Plan. Below are some risks that are more general and affect the 3-Waters Business. Risks are recorded and periodically reported to the Executive Leadership Team and the Audit and Risk Management Committee.

Strategic priorities risk is associated with	Risk Description	Impact	Likelihood	Inherent Risk Rating	Controls / Mitigations	Residual Risk Rating
<ul style="list-style-type: none"> Manage ratepayers' money wisely, delivering quality core services to the whole community and addressing the issues that are important to our residents. 	<p>Economic Environment on Capital Programme There have been significant financial increases affecting Council due to changes in the current economic environment that started with the onset of the Covid-19 Pandemic.</p> <p>There is a risk of:</p> <ul style="list-style-type: none"> Capital programme forecasts will be underdeveloped requiring additional funding. Inability to source key materials/products. Failure to meet levels of service Inability to meet compliance requirements 	Moderate	Highly Likely	High	<ul style="list-style-type: none"> Ensure realistic contingency amounts are included in the project/programme estimates. Ensure that suitable escalation calculations are carried out and used. Ensure projects are carried out in a timely fashion to prevent undue escalation during the design phase of the project. Consider having a stand-alone “escalation” budget that can be called upon to top up projects if needed over the financial year and returned to the general Council funds if not required. 	Medium
<ul style="list-style-type: none"> Manage ratepayers' money wisely, delivering quality core services to the whole community and 	<p>Three waters reform Give the change to a new coalition government There is considerable uncertainty on the reform process, what changes may be required, how the reform process will progress – if at all - what staff will be affected, and</p>	Moderate	Likely	Medium	<ul style="list-style-type: none"> More open and transparent information to be provided from internal CCC staff involved with decision making on the reform process. 	Medium

Strategic priorities risk is associated with	Risk Description	Impact	Likelihood	Inherent Risk Rating	Controls / Mitigations	Residual Risk Rating
addressing the issues that are important to our residents.	<p>how work flows will be managed in the future.</p> <p>There is a risk of:</p> <ul style="list-style-type: none"> • Staff well-being and stress levels as the process continues. • Disengagement of staff. • Loss of institutional knowledge if staff leave. • Lack of advice from the Department of Internal Affairs (DIA) to give any surety to staff. • Disillusionment with the current way that 3-waters is being underfunded and resourced within council may cause staff to leave for the private market. 					
<ul style="list-style-type: none"> • Be an inclusive and equitable city which puts people at the centre of developing our city and district, prioritising wellbeing, accessibility and connection. 	<p>Staff wellbeing</p> <p>If the level of organisational demands continues to be highly ambiguous and reactive, then staff will feel pressured and have unreasonable workloads.</p> <p>There is a risk of:</p> <ul style="list-style-type: none"> • Staff burnout and related health issues 	Moderate	Highly Likely	High	<ul style="list-style-type: none"> • Increased leadership engagement with teams on wellbeing • Increased EAP, People and Culture connections • Wellbeing activities embedded into day-to-day working culture. • Development of unit programme of work to prioritise activities and manage individual workloads. 	Medium

Strategic priorities risk is associated with	Risk Description	Impact	Likelihood	Inherent Risk Rating	Controls / Mitigations	Residual Risk Rating
<ul style="list-style-type: none"> Manage ratepayers' money wisely, delivering quality core services to the whole community and addressing the issues that are important to our residents. 	<ul style="list-style-type: none"> Absenteeism and productivity impacts Increased recruitment costs if retention impacted 					
<ul style="list-style-type: none"> Be an inclusive and equitable city which puts people at the centre of developing our city and district, prioritising wellbeing, accessibility and connection. Manage ratepayers' money wisely, delivering quality core services to the whole community and addressing the issues that are important to our residents. 	<p>Recruitment and retention of skilled staff If Council and the activity have a high level of staff turnover, then there is less skilled and experienced staff to deliver the activities.</p> <p>There is a risk of:</p> <ul style="list-style-type: none"> Staff wellbeing negatively impacted by workload changes. Level of service achievement is impacted. Increased cost of external resourcing to achieve schedule requirements 	Moderate	Likely	Medium	<ul style="list-style-type: none"> Increased staff wellbeing programmes Work with staff on personal development opportunities including internal secondments. Use exit interviews to identify opportunities for improvement. Development of leadership opportunities and training Increase remuneration to closer match the private sector. 	Low

Strategic priorities risk is associated with	Risk Description	Impact	Likelihood	Inherent Risk Rating	Controls / Mitigations	Residual Risk Rating
<ul style="list-style-type: none"> Manage ratepayers' money wisely, delivering quality core services to the whole community and addressing the issues that are important to our residents. 	<p>Asset Management Policy advice and performance</p> <p>If Asset Management advice is not understood and taken into consideration across the organisation, then Elected Members and Community expectations of Council Assets will not be met.</p> <p>There is a risk of;</p> <ul style="list-style-type: none"> Clear asset management priorities will not be embedded at the needed operational level to see the required changes. Decision-making is not informed by evidence-based advice. The necessary investment into asset management will not occur. Councils Asset management will not align with national legislation or best practice 	Major	Highly Likely	High	<ul style="list-style-type: none"> Develop a comprehensive communication plan to ensure that Asset Management advice is effectively communicated to all relevant stakeholders, including elected members, staff, and the community. Use clear and concise language to explain Asset Management principles, objectives, and benefits. Avoid jargon and technical terms that may hinder understanding. Foster a collaborative culture by creating forums, workshops, or focus groups where stakeholders can exchange ideas, share experiences, and contribute to Asset Management discussions. Provide training programs and resources to enhance the knowledge and skills of staff members and elected members regarding Asset Management principles, processes, and decision-making frameworks. <p>Some additional OPEX funding has been provided to the 3-waters Asset Management teams through the 2024-2034 LTP to investigate asset management improvement items. However, no changes to this risk are likely over the LTP period.</p>	High