Draft Long Term Plan 2021-31

Activity Plan

Water Supply

Adopted 4 March 2021

Christchurch City Council

Approvals

Role	Position	Name	For Draft LTP	
			Signature	Date of sign-off
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1. What does this activity deliver?

We're investing in Christchurch's future

This document explains what we propose to invest in over the next 10 years to manage the supply of water and ensure that it is safe to drink. This includes a summary of the investment required to meet future demand, undertake renewals, operate and maintain the infrastructure to deliver the services, and the steps we are taking to demonstrate safe drinking water without the need for chlorination in Christchurch, Lyttelton Harbour and Wainui. It gives Christchurch residents the opportunity to join the conversation by telling us what matters to them.

What we provide

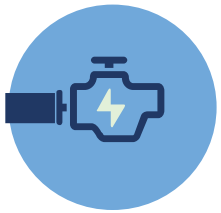
Christchurch City Council (Council) has a responsibility to ensure that its water services, infrastructure and water are managed in a way that supports the environmental, social, cultural and economic wellbeing of current and future generations. Council is responsible for the supply of water that is safe to drink.

The Council supplies water through approximately 160,000 residential and business connections, through seven urban water supply schemes and six rural water supply schemes. This equates to 50-55 billion litres of water in a typical year, which is the equivalent of around 22,000 full Olympic size swimming pools.

Key assets that Council manages in relation to water supply include:

Reticulation

1,813 km of water supply mains
1,510.9 km of water supply sub-mains
219 km of water supply laterals
14,412 fire hydrants
133,367 metered connections



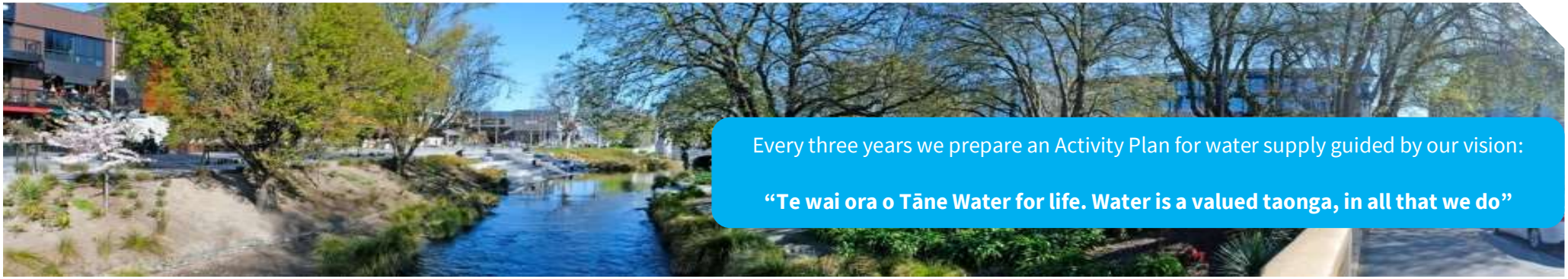
Station

689 pump sets
154 buildings
170 wells and wellheads
155 reservoirs and tanks

Treatment Assets

6 Water Treatment Plants:

- Akaroa
- Birdlings Flat
- Duvauchelle
- Little River
- Pigeon Bay
- Wainui



Every three years we prepare an Activity Plan for water supply 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 water supply activities that Council undertakes include:

Water supply pressure, flow and water source level monitoring

Ongoing monitoring for resource consent compliance, billing, network analysis, leak detection and transient mitigation.

Pressure management

Operating the networks within minimum and maximum pressures to balance customer water pressure, operational costs and sustainable water use.

Security of water supply

Water sources are managed, within consent limits, to ensure sufficient water is available to customers. This involves the management of long term water availability and also short term (seasonal) fluctuations. Informing customers of planned outages or any limitations on supply volumes.

Water meter management

Commercial and industrial water meters measure consumption so that customers can be charged appropriately. Domestic meters are not used for direct charging but provide consumption information. Water meter management includes meter reading, repair and replacement. Replacing old meters with smart meters provides an opportunity to improve data analysis.

Water quality management

Routine sampling provides compliance with the Drinking-water Standards for New Zealand. Routine flushing is carried out in some parts of the network. Specific testing and flushing is done in response to water quality complaints or adverse sampling results.

Backflow prevention

Commercial and industrial customers require certified backflow prevention devices to prevent contaminants from entering the public water supply network. Backflow monitoring and enforcement forms a key part of New Zealand Drinking Water Standards and is a requirement of the Building Act.

Leak detection and management

Water loss in the network is managed by detecting and fixing leaks. Reducing leakage means that current supply volumes can reach more customers and demonstrates Council's approach to sustainable water use.

Laboratory services

Laboratory services analyse water samples to check treatment processes and demonstrate compliance with New Zealand Drinking Water Standards.

2. Community Outcomes – why do we deliver this activity?

	Community Outcomes	Describe in 2-3 sentences how the activity effects the Community Outcome
Primary Outcome 1	Safe and healthy communities	1. We manage the public drinking water supplies to protect human health. In doing so we: • Protect the community from water-borne diseases • Ensure the public water supplies meet safety and health risk standards.
Primary Outcome 2	High quality drinking water	• Ensure that public drinking water has no objectionable or offensive taste, odour or appearance.
Secondary Outcome 1	Sustainable use of resources and minimising waste	2. We sustainably manage drinking water sources by : • Limiting the quantity of water abstracted so as to prevent waterway health deterioration; • Promoting sustainable use of drinking water through water conservation measures and education. • Limiting resource use, both for water abstraction and for water treatment.
Secondary Outcome 2	Modern and robust city infrastructure and community facilities	3. We strive for a resilient public drinking water supply network, to support a healthy community, healthy environment and prosperous economy by: • 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 disruptions to the water supply service.
Secondary Outcome 3	Great place for people, business and investment.	4. We strive to manage costs and intergenerational debt by: • Controlling costs to minimise rates increases • Maintaining networks to prevent future generations inheriting a network in need of significant expenditure.

The information below summarises how the water supply activity contributes to Council's community outcomes.

PRIMARY OUTCOME - SAFE AND HEALTHY COMMUNITIES

We manage the public drinking water supplies to protect human health by:

- Protecting the community from water-borne diseases
- Aiming to ensure that public water supplies meet safety and health risk standards

SECONDARY OUTCOME - SUSTAINABLE USE OF RESOURCES AND MINIMISING WASTE

We sustainably manage drinking water sources by:

- Limiting the quantity of water take to prevent deterioration of waterways and aquifers
- Promoting sustainable use of drinking water through water conservation measures and education
- Limiting resource use, both for water take and for water treatment

SECONDARY OUTCOME - GREAT PLACE FOR PEOPLE, BUSINESS AND INVESTMENT

We strive to manage costs and intergenerational debt by:

- Controlling costs to minimise rates increases
- Maintaining networks to prevent future generations inheriting a network in need of significant expenditure

We manage the quality of public drinking water by:

PRIMARY OUTCOME - HIGH QUALITY DRINKING WATER

- Ensuring that public drinking water has no objectionable or offensive taste, odour or appearance

SECONDARY OUTCOME - MODERN AND ROBUST CITY INFRASTRUCTURE AND COMMUNITY FACILITIES

We strive for a resilient public drinking water supply network, to support a healthy community, healthy environment and prosperous economy by:

- Minimising damage from natural disasters by setting minimum requirements for new infrastructure to improve network resilience
- Gathering an evidence base to support asset lifecycle decision making
- Performing lifecycle management to minimise whole of life costs
- Aiming to minimise disruptions to the water supply service

3. Strategic Priorities – how does this activity support progress on our priorities?

Strategic Priorities	Activity Responses
Enabling active and connected communities to own their future	Active citizenship supported and promoted via • the Community Water Partnership (assuming that it will incorporate not only surface water and stormwater matters but also water conservation and efficiency) • support to water management zone committee activities • contributing to annual residents surveys, including views on the public water supply
Meeting the challenge of climate change through every means available	How the asset base itself will be affected by rising groundwater, sea level rise, sand accretion, coastal erosion, increased flooding, and changes to rainfall patterns, frequencies and intensities needs to be understood, as do the changing conditions the system will need to manage. Understanding is essential in developing and implementing strategies which relate capital expenditure on assets to the threats of climate change impacts such as the effects of rising sea level on coastal infrastructure. This will enable prudent levels of infrastructure investment in areas under threat, assist in adaptation planning and resilience building, and avoid wasted investment in assets which will become redundant through climate change effects well before the end of their economic life. Adjusting the water supply activity to account for climate change adaptation and mitigation will be undertaken as follows. 1. Adaptation will be in response to impacts such as: • increased peak demand with predicted warmer and drier weather • changing groundwater levels, and availability • reduced flows in surface water sources of some Banks Peninsula water supplies • rising shallow groundwater levels in parts of the city affecting underground horizontal infrastructure and construction costs • saltwater/freshwater interface in groundwater and saltwater intrusion 2. Mitigation will be in response to impacts such as: • Where the changes will not reduce reliability or water quality, reducing carbon footprint through changes in design, material choice and construction methods of infrastructure assets

Strategic Priorities	Activity Responses
	• reducing carbon footprint through changes in water supply activity operation (pumping requirements and energy efficiency, fuel use and alternative fuels)
Ensuring a high quality drinking water supply that is safe and sustainable	Safe and sustainable water supply is the primary purpose of this activity and includes: • preparing water safety plans that assess the risks to our water supply and the improvements needed to address unacceptable risks, and implementing those improvements • undertaking upgrades so that water supplies comply with the drinking water standards • starting to roll out a smart water monitoring system, including smart water meters, real time water quality data, and sensors to detect leaks and rapid pressure fluctuations that can damage our network • undertaking annual water conservation campaigns, implementing water restrictions when needed • undertaking infrastructure renewal and replacement programmes that minimise the decline in network condition to reduce risk of contamination and catastrophic failure • using modern and resilient methods and materials for new infrastructure
Accelerating the momentum the city needs	A healthy economy is supported by: • providing a safe, reliable and sustainable water supply that caters for growth • a modern and resilient infrastructure base
Ensuring rates are affordable and sustainable	Providing the essential service of water supply where financial decisions are prioritised using an evidence base that accounts for: • risk • public health, safety and security of supply • levels of service (e.g. disruption to customers) • asset lifecycle cost considerations

Our water supply initiatives over the next 10 years also support Council's strategic priorities by:

Enabling active and connected communities to own their future

- Supporting the Community Water Partnership, which educates and empowers communities to help resolve water issues
- Supporting water management zone committee activities
- Increasing customer engagement and consultation through the Long Term Plan process and annual resident surveys to help inform levels of service

Meeting the challenge of climate change through every means available

- Adapting to increased peak demand with predicted warmer and drier weather
- Reducing our carbon footprint through changes in design, material choice and construction of new assets, without compromising water quality or reliability
- Reducing our carbon footprint through changes in pumping requirements, energy efficiency and the use of alternative fuels
- Understanding the impacts of sea level rise and changing rainfall patterns on our infrastructure network.

Ensuring a high quality drinking water supply that is safe and

- Preparing water safety plans that assess the risks to our water supply and the improvements needed to address unacceptable risks, and implementing those improvements
- Undertaking upgrades so that water supplies comply with the drinking water standards
- Improving water efficiency and conservation through education, leak detection and demand management
- Implementing a renewal and replacement programme that limits the decline in network condition to reduce the risk of contamination
- Using modern and resilient methods and materials in water supply infrastructure projects.

Accelerating the momentum the city needs

- Providing a safe, reliable and sustainable water supply that caters for growth
- Investing in modern and resilient infrastructure for water supply

Ensuring rates are affordable and sustainable

- 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

4. Increasing Resilience

Council monitors and manages a number of risks in relation to water supply and undertakes improvements to improve resilience to human-made and natural hazards.

Natural Disasters

Leaks: The water supply network is vulnerable to water loss through leakage or breaks across the network. The water supply renewal programme will target assets that need replacing to reduce water loss, improve the efficiency of the network and enable Council to continue to provide safe drinking water. Historic underinvestment means that our water supply network is deteriorating and leakage is increasing. Based on funding available we expect to take 18 years before our pipe network reaches the national average of 6% very poor condition pipes in 2039.

Earthquakes: Earthquakes can cause damage to infrastructure and cut off or reduce access to safe drinking water. Council is investing in pipes, made from modern materials, through the renewal programme that are more resilient in the event of an earthquake.

Tsunamis: A tsunami event could result in large quantities of debris or sediment (small particles) entering our waterways, which may cause damage to assets (e.g. pipes and pump stations).

Climate Change

Drought: An increased risk of drought, coupled with rising demand for water use puts pressure on water sources. Land use intensification in source areas for Christchurch's groundwater also increases the risk of nitrates from farming entering Christchurch's drinking water supply. Council monitors the quality of water and continues to forecast likely future demand for water supply.

Flooding: Wellheads have been raised above ground and above flood levels, reducing the risk of contaminating the water supply in a flood.

Sea Level Rise: Sea level rise and coastal erosion may make it difficult to service some properties in the future. Salt water, increased sediment and coastal erosion may also damage surface assets in coastal areas. Council modelling shows that sea level rise could impact up to ten percent of the planned water main and sub-main renewals by 2065 and a further four percent by 2120.

Societal Changes

Population Health: Declining water quality can lead to potential health risks. To provide safe drinking water, permanent chlorination may be required. Fluoridation may be mandated to improve dental health.

Housing and Social Inequity: Homeowners currently pay the cost of water through general rates. Council is considering charging for water supply based on usage. This means those who use less water will pay less. It is expected that the ongoing cost of upgrading water supply infrastructure will be spread across current and future generations.

Business as Usual

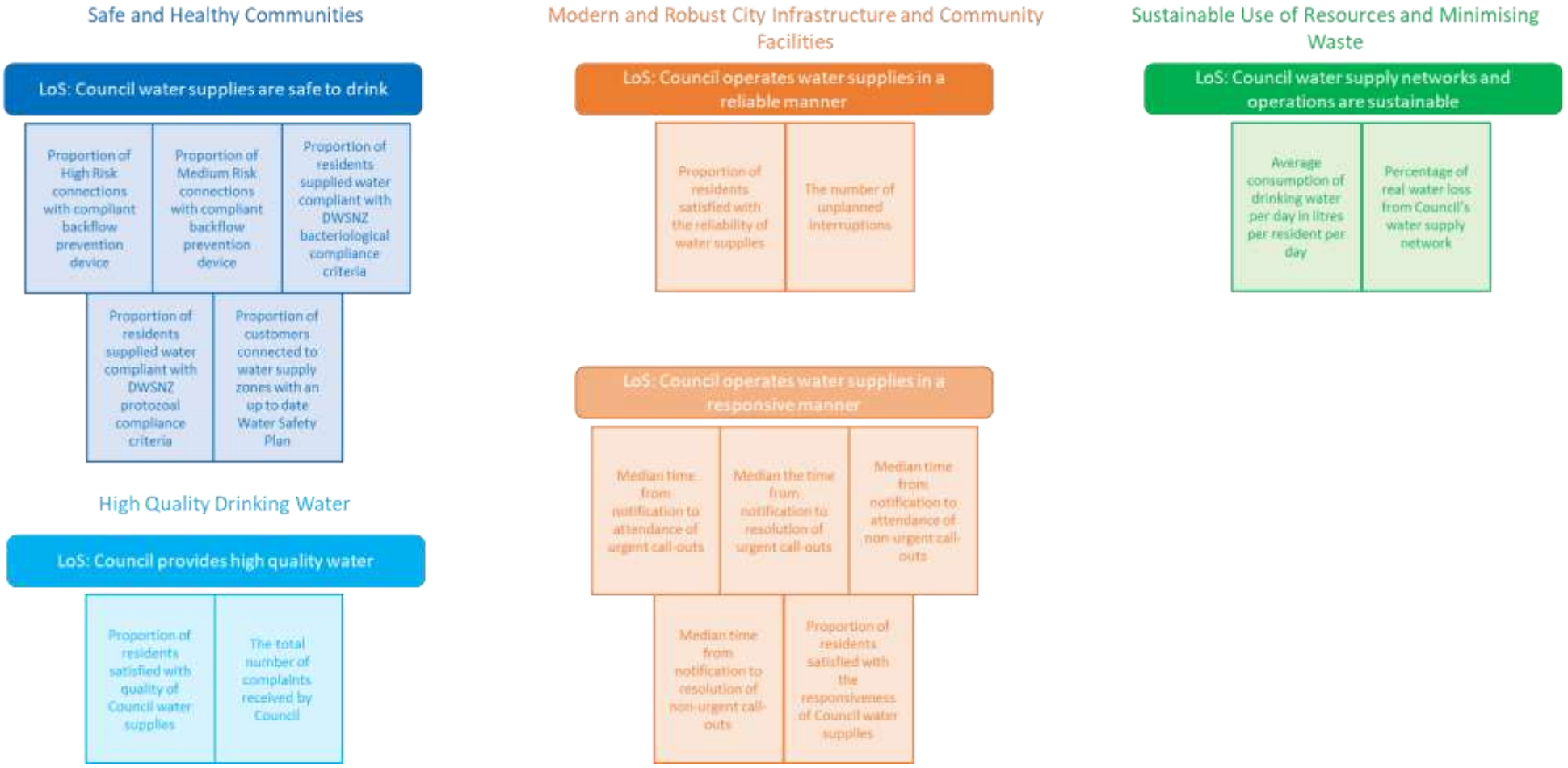
Historical Land Use Contamination: Historical land contamination has the potential to contaminate the water supply and increase the rate of asset deterioration. Design and material selection in renewal and upgrade projects aims to minimise this risk.

Technical Obsolescence: Failure of assets where replacements and parts are unavailable will potentially cause lengthy shutdowns. Electronic assets and control systems are especially susceptible to this. Projects avoiding obsolescence can be costly as significant upgrades of associated assets are often required.

Network Calming: Network rezoning and pressure reduction accompanied by installation of soft starting pumps will reduce the occurrence of potentially destructive pressure transients.

5. Specify Levels of Service

Council's Levels of Service (LoS) measures enable us to monitor and report against our outcomes and service performance. To support the Activity Plan for water supply we have produced a set of quantitative outcomes and outputs to track the contribution of water supply over time. In this Long Term Plan the LoS are grouped under each of the five community outcomes to clearly demonstrate the linkage between what we do, why we do it and to measure progress towards the overall vision for water supply in Christchurch. The following pages provide an overview of the LoS for each community outcome. These are the community facing LoS and will be published in our Statement of Service Provision. Council also has a number of internal management performance measures to assess service delivery.



Community outcome: Safe and Healthy Communities

Level of service: Council water supplies are safe to drink

A key level of service (LoS) for the water supply activity is that Council provides water that is safe to drink.

Water Safety Plans are used to demonstrate that the drinking water is safe. They assess and manage risks to the safety of drinking water associated with a particular drinking water supply.

One of the biggest risks to our water supply is backflow. This is caused when water pressure drops in the water distribution system causing water to flow in the opposite direction from private property back into the public water supply network. Because both homes and businesses use chemicals and other potential contaminants, backflow can be a major threat to the health and wellbeing of residents and visitors.

Backflow prevention devices (like the one in the image opposite) prevent potentially contaminated water flowing from private property back into the public water supply.

Backflow Prevention Device

Outputs

LoS Performance Measures	Current Performance	Benchmark	Performance Targets			
			Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31
12.0.2.2 – Proportion of High Hazard commercial connections with compliant backflow prevention device tested within the last year	New	None found	100%	100%	100%	100%
12.0.2.20 – Proportion of Medium Hazard commercial connections >38mm diameter with compliant backflow prevention device tested within the last year	New	None found	95%	98%	100%	100%
12.0.2.1 – Proportion of customers connected to water supply zones with an up to date Water Safety Plan	2018/19: 100%	98.3% (Ministry of Health Annual Report on drinking water quality 2018-2019)	100%	100%	100%	100%
12.0.2.9 – Proportion of residents (with supplies of > 100 customers) supplied water compliant with the DWSNZ bacterial compliance criteria	2019/20: 100% urban / 100% rural Equivalent to 100% overall.	95.3% (Ministry of Health Annual Report on Drinking-water Quality 2018-2019)	100%	100%	100%	100%
12.0.2.10 – Proportion of residents (with supplies of > 100 customers) supplied water compliant with the DWSNZ protozoal compliance criteria	2019/20: 0% urban / 8.5% rural Equivalent to 0.2% overall.	78.7% (Ministry of Health Annual Report on Drinking-water Quality 2018-2019)	≥ 0.3%	≥ 0.4%	≥ 0.4%	≥ 99.8%

Community outcome: High Quality Drinking Water

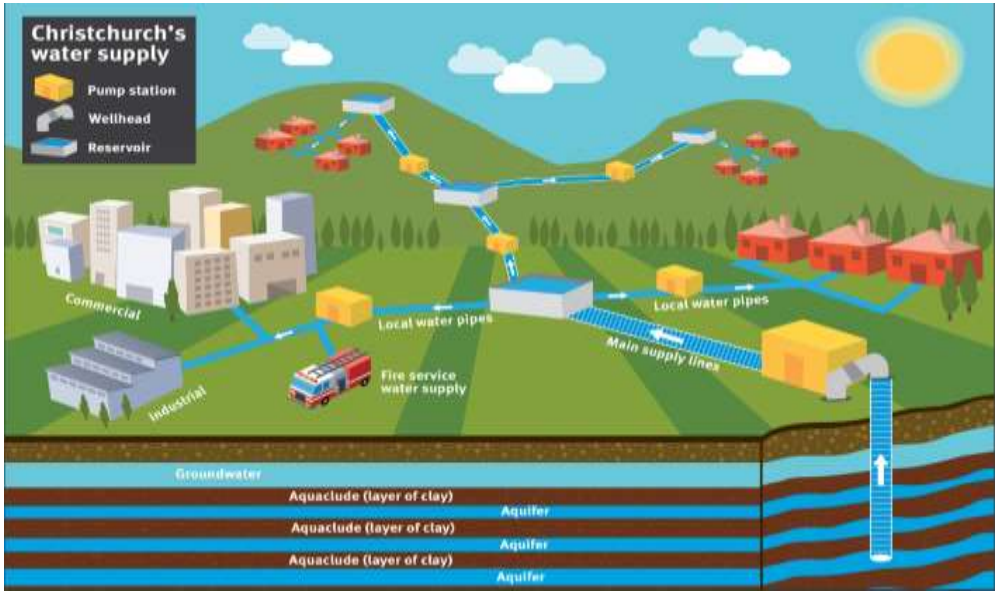
Level of service: Council provides high quality drinking water

A key level of service (LoS) for the water supply activity is that Council provides high quality drinking water. In the water industry, water quality refers to taste, smell and appearance. High quality drinking water therefore does not have any unpleasant taste or smell and appears clear.

Council monitors performance through an annual resident satisfaction survey and also reports the number of customer complaints related to water clarity, odour and taste.

The image opposite provides an overview of the Christchurch water supply system. It shows how water is drawn from a series of aquifers and reservoirs and distributed to residential, commercial and industrial customers via a network of local pipes and pump stations.

Christchurch's Water Supply



Outputs

LoS Performance Measures	Current Performance	Benchmark	Performance Targets			
			Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31
12.0.2.19 – Proportion of residents satisfied with the quality of Council water supplies	2019/20 = 48%	Watercare: 84%	≥55%	≥60%	≥65%	≥85%
12.0.1.16 – Number of water complaints received by Council about: - Drinking water clarity - Drinking water taste - Drinking water odour - Pressure or flow - Continuity of supply - Council's response to any of these issues Per 1,000 properties served per year	20119/20 = 3.14	2018/19 = 6.07 (Water NZ National Performance Review)	≤ 6.6	≤ 6.6	≤ 6.6	≤ 6.6

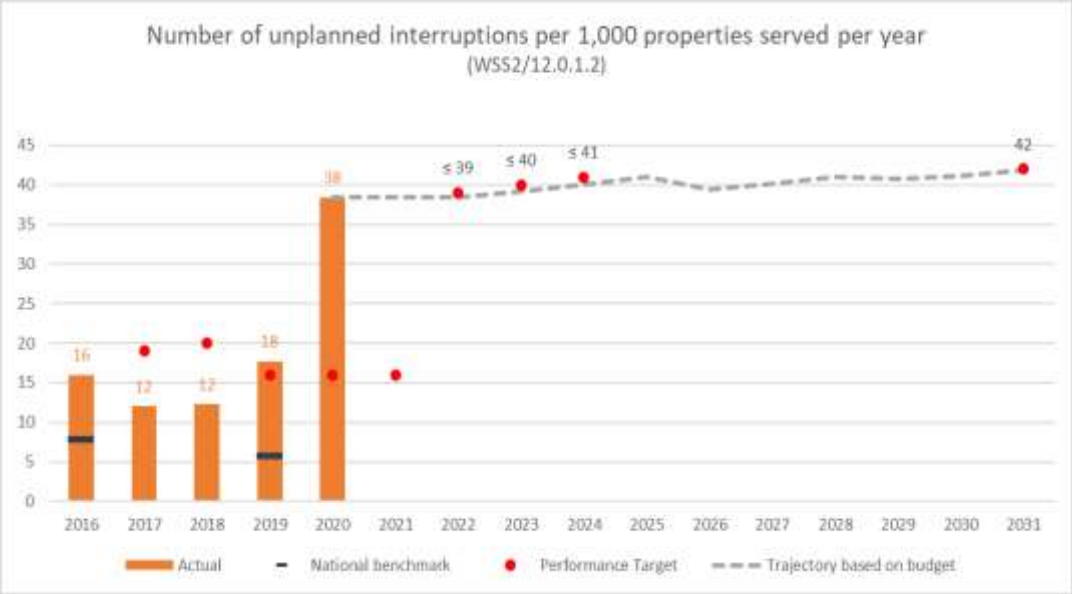
Community outcome: Modern and Robust City Infrastructure and Community Facilities

Level of service: Council operates water supplies in a reliable manner

A key level of service (LoS) for the water supply activity is that Council operates water supply networks, such as drinking water, in a reliable manner. This means that water is available when users need it. This contributes to the community outcome of modern and robust city infrastructure and community facilities.

The graph opposite shows the number of unplanned interruptions per 1,000 properties served per year for the last five financial years. The data shows increase in unplanned interruptions in 2019 and 2020 as a result of the deteriorating network.

The graphs also shows the performance targets that Council have set based on the number predicted number of unplanned interruptions over the next three years based on the level of funding available.



Outputs

LoS Performance Measures	Current Performance	Benchmark	Performance Targets			
			Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31
12.0.1.2 – Number of unplanned interruptions per 1,000 properties served per year	2020/21 = 38.43 interruptions	2018/19 = 7.9 (Water NZ National Performance Review)	≤39	≤40	≤41	≤42
12.0.1.13 – Proportion of residents satisfied with reliability of water supplies	2019/20 = 72%	Watercare: 84%	≥75%	≥80%	≥80%	≥60%

Community outcome: Modern and Robust City Infrastructure and Community Facilities

Broken Water Main

Level of service: Council operates water supplies in a responsive manner

Council has a responsibility to operate the water supply network in a responsive manner. This means Council staff and contractors respond to customer feedback and quickly resolve issues as they arise. This contributes to the community outcome of modern and robust city infrastructure and community facilities.

The image opposite shows a broken water main, illustrating the need for quick resolution of urgent call-outs. By operating in a responsive manner, Council can reduce the loss of water and the disruption caused to nearby residents.

Outputs

LoS Performance Measures	Current Performance	Benchmark	Performance Targets			
			Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31
12.0.1.10 – Median time (in hours) from notification to attendance of urgent call-outs	2019/20 = 0.41 hours	(Water NZ National Performance Review) 2018/19 = 0.5 hrs	≤ 1 hour			
12.0.1.12 – Median time (in hours) from notification to resolution of urgent call-outs	2019/20 = 2.37 hours	2018/19 = 2.4 hours (Water NZ National Review)	≤ 5 hours			
12.0.1.9 – Median time (in hours) from notification to attendance of non-urgent call-outs	2019/20 = 19.0 hours	2018/19 = 6.2 hours (Water NZ National Review)	≤ 72 hours			
12.0.1.11 – Median time (in hours) from notification to resolution of non-urgent call-outs	2019/20 = 21.1 hours	2018/19 = 20.2 hours (Water NZ National Review)	≤ 96 hours			
12.0.1.14 – The proportion of residents satisfied with Council responsiveness to water supply problems	2019/20 = 54%	Watercare: 84%	≥65%	≥70%	≥75%	≥85%

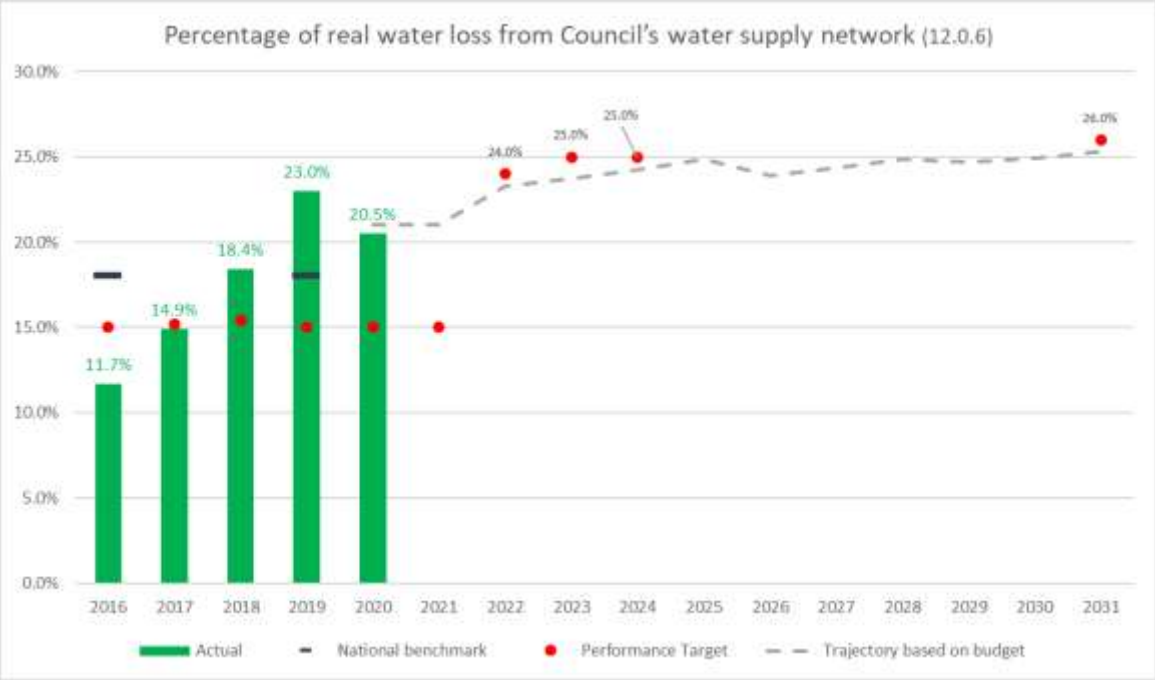
Community outcome: Sustainable Use of Resources

Level of service: Council water supply networks and operations are sustainable

Council seeks to operate water supply networks in a way that protects the environment through sustainable practices and demonstrating environmental stewardship. Council measures progress towards this outcome by monitoring and reporting the average consumption of drinking water per person, and the percentage of water lost through leaks in the water supply network. This contributes to the community outcome of the sustainable use of resources.

The graph opposite shows the percentage of real (physical) water loss from Council's water supply network. This is calculated from the night time flow and total water abstraction. In 2019/20 it was estimated that 20% of water loss occurred from the Council's water supply network in the FY2019/20. Ideally the target is to significantly reduce this water loss to 10% or less. Funding in the LTP will see an increase in water loss over the 10yr period.

Council operates a water conservation programme to encourage efficient use of water and private property leak repair.



Outputs

LoS Performance Measures	Current Performance	Benchmark	Performance Targets			
			Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31
12.0.7 – Average consumption of drinking water in litres per resident per day	2019/20 = 229 Litres	2018/19 = 294 Litres (Water NZ National Performance Review)	≤220	≤215	≤210	≤180
12.0.6 – Percentage of real water loss from Council's water supply network	2019/20 = 20.2%	2018/19 = 18% (Water NZ National Performance Review)	≤24%	≤25%	≤25%	≤26%

LOS number	C/M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
Council water supplies are safe to drink										
12.0.2.2	C	Proportion of High Hazard commercial connections with compliant backflow prevention device tested within the last year	New metric, no past performance.	None found.	≥100%	≥100%	≥100%	≥100%	Water Services team report on the properties assessed and required to install backflow prevention devices	Safe and healthy communities
12.0.2.20	C	Proportion of Medium Hazard commercial connections >38mm diameter with compliant backflow prevention device tested within the last year	New metric, no past performance.	None found.	≥95%	≥98%	≥100%	≥100%	Water Services team report on the properties assessed and required to install backflow prevention devices	Safe and healthy communities
12.0.2.9	C	Proportion of residents (with supplies of > 100 customers) supplied water compliant with the DWSNZ bacterial compliance criteria	Urban 2019/20: 100% 2018/19: 99.8% 2017/18: 98.9% Rural 2019/20: 100% 2018/19: 98.5% 2017/18: 89.4%	Ministry of Health Annual Report on Drinking-water Quality 2018-2019: 95.3%	100%	100%	100%	100%	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ Department of Internal Affairs, Water Supply non-financial performance measure 1a	Safe and healthy communities
12.0.2.10	C	Proportion of residents (with supplies of > 100 customers) supplied water compliant with the DWSNZ protozoal compliance criteria	Urban 2019/20: 0% 2018/19: 0% 2017/18: 0% Rural 2019/20: 8.5% 2018/19: 0% 2017/18: 0%	Ministry of Health Annual Report on Drinking-water Quality 2018-2019: 78.7%	≥ 0.3%	≥ 0.4%	≥ 0.4%	≥ 99.8%	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ Department of Internal Affairs, Water Supply non-financial performance measure 1b	Safe and healthy communities

[1] C/M – Community or Management level of service (LOS)
Community LOS - Previously known as LTP LOS. These are LOS that are community facing and will be published in our Statement of Service Provision.
Management LOS - Previously known as Non-LTP LOS. These are LOS that are measured in the organisation to ensure service delivery.

LOS number	C/ M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
12.0.2.1	C	Proportion of customers connected to water supply zones with an up to date Water Safety Plan	2019/20: 100% 2018/19: 100% 2017/18: 100% 2016/17: 100% 2015/16: 100%	Ministry of Health Annual Report on Drinking-water Quality 2018-2019: 98.3%	100%	100%	100%	100%	Quality & Compliance team report on water safety plans	Safe and healthy communities
12.0.2.21	M	Proportion of microbiological drinking water samples collected and analysed by an IANZ accredited and Ministry of Health registered laboratory.	2019/20: 100% 2018/19: 100% 2017/18: 100% 2016/17: 100% 2015/16: 100%	None found.	100%	100%	100%	100%	Number of samples analysed in an IANZ lab / Total number of samples analysed * 100	Safe and Healthy Communities
Council provides high quality water										
12.0.2.19	C	Proportion of residents satisfied with quality of Council water supplies	2019/20: 48% 2018/19: 37% Not measured prior to 2018.	Overall Resident Satisfaction: Watercare: 84% Wellington Water: 57% Dunedin: 74%	≥ 55%	≥ 60%	≥ 65%	≥ 85%	Residents Satisfaction Survey	High quality drinking water
12.0.1.16	C	Total number of complaints received by Council about: a) Drinking water clarity b) Drinking water taste c) Drinking water odour d) Pressure or flow e) Continuity of supply f) Council's response to any of these issues per 1,000 properties served per year.	2019/20: 3.14 2018/19: 4.02 2017/18: 2.40 2016/17: 4.25 2015/16: 4.12	Water NZ National Performance Review 2018/19: 6.07 2015/16: 9.38	≤ 6.6	≤ 6.6	≤ 6.6	≤ 6.6	Total number of complaints received through Council's call centre about clarity, taste, odour, pressure, flow, continuity of supply, or responses to complaints, multiplied by 1000/number of connections. Department of Internal Affairs, Water Supply Non-Financial Performance Measure 4.	High Quality Drinking Water
12.0.2.13	M	Number of water clarity complaints per 1,000 connections per year	2019/20: 0.33 2018/19: 0.35 2017/18: 0.54 2016/17: 0.82	Water NZ National Performance Review 2015/16: 1.84	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	The number of complaints about water clarity received through the call centre, expressed per 1,000 properties connected to the Council's water supply system.	High quality drinking water

LOS number	C/ M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
			2015/16: 0.63						Department of Internal Affairs, Water Supply Non-Financial Performance Measure 4a.	
12.0.2.14	M	Number of water odour complaints per 1,000 connections per year	2019/20: 0.28 2018/19: 0.44 2017/18: 1.34 2016/17: 0.15 2015/16: 0.14	Water NZ National Performance Review 2015/16: 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	The number of complaints about water odour received through the call centre, expressed per 1,000 properties connected to the Council's water supply system. Department of Internal Affairs, Water Supply non-financial performance measure 4c	High quality drinking water
12.0.2.15	M	Number of water taste complaints per 1,000 connections per year	2019/20: 0.45 2018/19: 0.81 2017/18: 1.12 2016/17: 0.53 2015/16: 0.34	Water NZ National Performance Review 2015/16: 0.21	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	The number of complaints about water taste received through the call centre, expressed per 1,000 properties connected to the Council's water supply system. Department of Internal Affairs, Water Supply Non-Financial Performance Measure 4b.	High quality drinking water
Council operates water supplies in a reliable manner.										
12.0.1.1	M	Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year	2019/20: 0.98 2018/19: 1.3 2017/18: 0.94 2016/17: 1.63 2015/16: 0.82	Watercare : 2.56	≤ 1.0	≤ 1.0	≤ 1.2	≤ 2.0	Monthly Contractor reports giving the total number of unplanned interruptions longer than 4 hours from notification to resolution each week divided by weeks to date.	Modern and robust city infrastructure and community facilities
12.0.1.2	C	Number of unplanned interruptions per 1,000 properties served per year	2019/20: 38.43 2018/19: 17.72 2017/18: 12.24 2016/17: 11.52 2015/16: 15.8	Water NZ National Performance Review 2018/19 : 7.9 2015/16 : 4.89	≤ 39	≤ 40	≤ 41	≤ 42	Monthly Contractor reports giving the total number of unplanned interruptions to date in a year divided by the number of properties served multiplied by 1,000.	Modern and robust city infrastructure and community facilities
12.0.1.13	C	Proportion of residents satisfied with reliability of water supplies.	2019/20: 72% 2018/19: 81%	Overall Resident Satisfaction: Watercare: 84%	≥ 75%	≥ 80%	≥ 80%	≥ 60%	Resident satisfaction surveys	Modern and robust city infrastructure

LOS number	C/M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
			Not measured prior to 2018.	Wellington Water: 57% Dunedin: 74%						and community facilities
12.0.1.7	M	Number of continuity of supply complaints per 1,000 properties served per year	2019/20: 1.27 2018/19: 1.57 2017/18: 1.13 2016/17: 1.3 2015/16: 1.24	Water NZ National Performance Review 2015/16: 4.17	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	Number of complaints divided by the total number of properties connected to the water supply network divided by 1,000. Department of Internal Affairs, Water Supply non-financial performance measure 4e	Modern and robust city infrastructure and community facilities
12.0.1.8	M	Number of pressure or flow complaints per 1,000 connections per year	2019/20: 0.80 2018/19: 0.85 2017/18: 1.27 2016/17: 1.45 2015/16: 1.77	Water NZ National Performance Review 2015/16: 2.66	≤ 2	≤ 2	≤ 2	≤ 2	The number of complaints about water flow or pressure received through the call centre, expressed per 1,000 properties connected to the Council's water supply system Department of Internal Affairs, Water Supply non-financial performance measure 4d	Modern and robust city infrastructure and community facilities
Council operates water supplies in a responsive manner.										
12.0.1.10	C	Median time (in hours) from notification to attendance of urgent call-out	2019/20: 0.41 2018/19: 0.62 2017/18: 0.55 2016/17: 0.55 2015/16: 0.55	Water NZ National Performance Review 2018/19: 0.5 2017/18: 0.51 2016/17: 0.50	≤ 1	≤ 1	≤ 1	≤ 1	The median response time measured from the time that the Council receives notification of the issue to the time that service personnel reach the site. Reported in monthly contract reports from the Contractor. Department of Internal Affairs, Water Supply non-financial performance measure 3a	Modern and robust city infrastructure and community facilities
12.0.1.12	C	Median time (in hours) from notification to resolution of urgent call-outs	2019/20: 2.37 2018/19: 2.01 2017/18: 1.78 2016/17: 1.71 2015/16: 1.72	Water NZ National Performance Review 2018/19: 2.4 2017/18: 2.5 2016/17: 2.3	≤ 5	≤ 5	≤ 5	≤ 5	The median resolution time measured from the time that the Council receives notification of the issue to the time that service personnel confirm resolution of the issue.	Modern and robust city infrastructure and community facilities

LOS number	C/ M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
									Reported in monthly contract reports from the Contractor. Department of Internal Affairs, Water Supply non-financial performance measure 3b	
12.0.1.9	C	Median time (in hours) from notification to attendance of non-urgent call-outs	2019/20: 19.0 2018/19: 4.6 2017/18: 50.4 2016/17: 33.6 2015/16: 4.6	Water NZ National Performance Review 2018/19: 6.2 2017/18: 13.9 2016/17: 6.4	≤ 72	≤ 72	≤ 72	≤ 72	The median response time measured from the time that the Council receives notification of the issue to the time that service personnel reach the site. Reported in monthly contract reports from the Contractor. Department of Internal Affairs, Water Supply non-financial performance measure 3c.	Modern and robust city infrastructure and community facilities
12.0.1.11	C	Median time (in hours) from notification to resolution of non-urgent call-outs	2019/20: 21.1 2018/19: 6.0 2017/18: 52.3 2016/17: 39.1 2015/16: 11.5	Water NZ National Performance Review 2018/19: 20.2 2017/18: 20.4 2016/17: 23.0	≤ 96	≤ 96	≤ 96	≤ 96	The median resolution time measured from the time that the Council receives notification of the issue to the time that service personnel confirm resolution of the issue. Reported in monthly contract reports from the Contractor. Department of Internal Affairs, Water Supply non-financial performance measure 3d	Modern and robust city infrastructure and community facilities
12.0.1.14	C	The proportion of residents satisfied with Council responsiveness to water supply problems	2019/20: 54% 2018/19: 60% Not measured prior to 2018.	Overall Resident Satisfaction: Watercare: 84% Wellington Water: 57% Dunedin: 74%	≥ 65%	≥ 70%	≥ 75%	≥ 85%	Resident satisfaction surveys	Modern and robust city infrastructure and community facilities
12.0.1.15	M	Number of complaints regarding Council's response to complaints about drinking water taste, odour, clarity, pressure or flow, or	2019/20: 0.01 Not measured prior to 2019.	None found	≤ 0.6	≤ 0.6	≤ 0.6	≤ 0.6	The number of complaints about the Council's response to complaints received under 12.1.1 Target 4, 12.1.1 Target 10, 12.3.1 Target 2 and 12.3.1 Target 3 received through	Modern and robust city infrastructure

LOS number	C/M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
		continuity of supply per 1,000 properties connected to the Council's water supply system per year							the call centre, expressed per 1,000 properties connected to the Council's water supply system. Department of Internal Affairs, Water Supply non-financial performance measure 4f	and community facilities
Council water supply networks and operations are sustainable										
12.0.4	M	Annual average power (kWh of electricity) used to pump each cubic metre of water	2019/20: 0.37 2018/19: 0.34 2017/18: 0.33 2016/17: 0.33 2015/16: 0.29	Water NZ National Performance Review 2015/16: 3.37	≤ 0.35	≤ 0.35	≤ 0.35	≤ 0.35	Total power used from all water supply pump stations divided by total volume of water pumped	Sustainable use of resources and minimising waste
12.0.5	M	Number of infringement notices for major or persistent breaches of resource consents regarding the operation of the water supply network, as reported by ECan or Council	2019/20: 0 2018/19: 0 2017/18: 0 2016/17: 0 2015/16: 0	Wellington Water: 0	0	0	0	0	Number of infringement notices received in relation to resource consents for water supply	Sustainable use of resources and minimising waste
12.0.9	M	Total volume of water abstracted for urban water supplies in millions of cubic metres per year	2019/20: 56.0 2018/19: 52.02 2016/17: 46.8 2015/16: 50.8	Christchurch specific measure, no benchmarks available.	≤ 55	≤ 55	≤ 55	≤ 55	Total volume of water abstracted from resource consent compliance reports to ECan.	Sustainable use of resources and minimising waste
12.0.7	C	Average consumption of drinking water in litres per resident per day	2019/20: 229 2018/19: 209 2017/18: 201 2016/17: 230 2015/16: 272	Water NZ National Performance Review 2018/19: 294 2017/18: 314 2016/17: 292	≤ 220	≤ 215	≤ 210	≤ 180	Total volume of water abstracted minus the leakage from the public network divided by the total population served by Council's water supply networks Department of Internal Affairs, Water Supply non-financial performance measure 5	Sustainable use of resources and minimising waste

LOS number	C/M[1]	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Primary Community Outcome
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31		
12.0.6	C	Percentage of real water loss from Council's water supply network	2019/20: 20.2% 2018/19: 23.0% 2017/18: 18.4% 2016/17: 14.9% 2015/16: 11.7%	Water NZ National Performance Review 2015/16: 24%	≤ 24%	≤ 25%	≤ 25%	≤ 26%	Calculated from night time flow measurement and total water abstraction. Department of Internal Affairs, Water Supply non-financial performance measure 2	Sustainable use of resources and minimising waste
12.0.6.2	M	Average Infrastructure Leakage Index (ILI) for all Council water loss zones.	2018/19: 3.73 2017/18: 2.81 2016/17: 2.55 2015/16: 2.35	Water NZ National Performance Review 2018/19: 3.125	≤ 3.21	≤ 3.28	≤ 3.28	≤ 3.35	Infrastructure Leakage Index = Real losses (L/connection/day)/ Unavoidable real losses (L/connection/day).	Sustainable use of resources and minimising waste
12.0.10	M	Peak day demand of drinking water in L per connection per day	2019/20: 1,617 2018/19: 1,402 2017/18: 1,667 2016/17: 1,360	None found.	≤ 1500	≤ 1450	≤ 1400	≤ 1000	Total volume of water abstracted from the public network on the peak day divided by the total number of properties served by Council's water supply networks	Sustainable use of resources and minimising waste
12.0.11	M	Peak hour demand of drinking water in L per connection per hour	2019/20: 103 2018/19: 96 2017/18: 115 2016/17: 92	None found.	≤ 105	≤ 100	≤ 95	≤ 85	Total volume of water abstracted from the public network on the peak hour divided by the total number of properties served by Council's water supply networks	Sustainable use of resources and minimising waste
12.0.15	M	10 year rolling historic ratio of renewals to depreciation	New Metric 2018/19: 32.6%	IPWEA Asset management financial indicator : 100%	≥50%	≥60%	≥70%	≥85%	Historic 10 year average renewals expenditure / Historic 10 year average depreciation	Great place for people. Business and investment
12.0.16	M	Increase Water Supply Asset Management Maturity towards agreed, appropriate level (Advanced 93)	New Metric 2019/20: 82 2018/19: 76 2015/16: 72	NZ Treasury Investor Confidence Rating (ICR) Asset Management Maturity Assessment (AMMA) Tool	82	82	82	93	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.	Modern and robust city infrastructure and facilities network

6. Does this Activity Plan need to change as a result of a Service Delivery Review (S17A)?

A Section 17A Service Delivery Review (S17A) is a legal requirement under the Local Government Act and determines whether the existing means for delivering a service remains the most efficient, effective and appropriate approach. The legislation requires that a S17A Service Delivery Review should periodically assess:

"The cost-effectiveness of current arrangements for meeting the needs of communities within its district or region for good quality local infrastructure, local public services, and performance of regulatory functions".

A review of water supply activities was initiated in July 2109 for two key reasons:

- the expiry of the existing 3 waters maintenance contracts and a desire to go out to market for these services
- to enable Council to be prepared for the outcomes of the Department of Internal Affairs' 3 Waters review

The section 17A review was completed in June 2020 and presented to Council in August 2020. The review confirmed that there were underlying challenges with the status quo. Central Government's water reform programme gained significant momentum in mid-2020 and Council agreed to sign a non-binding Memorandum of Understanding with the Crown at the same extra ordinary Council meeting in August 2020 regarding water reform. Due to the increasing pace of water reform, the status quo was the recommended way forward for the section 17A review. The reform is going to lead to significant changes to water service delivery across the country and adding in further structural change during the reform process was not seen to add value to Christchurch.

The Government has announced a new national water regulator and is reviewing how to improve the supply arrangements of drinking water, wastewater and stormwater, including financing provisions and decision-making capability. Any changes implemented at a national level will have an impact on Council's service delivery.

Given the uncertainty in terms of the outcomes and timing water reform, it is difficult to predict the impacts on the water supply activity service delivery structure. The AMP is prepared on a "business as usual" assumption. Potential outcomes include:

- Regional or larger asset owning 2 waters entity
- Regional, top of the South Island or full South Island entity that includes storm water and waterways

7. What levels of service are we proposing to change from the LTP 2018-28 and why?

A number of levels of service performance measures have been removed, modified or added from the previous LTP as summarised below.

LOS number	C/M	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Rationale for Addition	Options for consultation and engagement
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31			
Additions											
12.0.2.20	C	Proportion of Medium Hazard commercial connections >38mm diameter with compliant backflow prevention device tested within the last year	New metric, no past performance.	None found.	≥95%	≥98%	≥100%	≥100%	Water Services team report on the properties assessed and required to install backflow prevention devices	The Water Safety Plan identifies lack of backflow prevention and uncertainty about testing of backflow preventers as an unacceptable risk. This new measure measures the extent of this risk and Council efforts to eliminate it.	Management Level of service - None required
12.0.2.21	M	Proportion of microbiological drinking water samples collected and analysed by an IANZ accredited and Ministry of Health registered laboratory.	2019/20: 100% 2018/19: 100% 2017/18: 100% 2016/17: 100% 2015/16: 100%	None found.	100%	100%	100%	100%	Number of samples analysed in an IANZ lab / Total number of samples analysed * 100	This performance measure ensures our water testing complies with DWSNZ and water safety plan requirements.	Management Level of service - None required
12.0.1.16	C	Total number of complaints received by Council about: a) Drinking water clarity b) Drinking water taste c) Drinking water odour d) Pressure or flow e) Continuity of supply	2019/20: 3.14 2018/19: 4.02 2017/18: 2.40 2016/17: 4.25 2015/16: 4.12	Medians from WaterNZ National Performance Review 2018/19: 6.07 2015/16: 9.38	≤ 6.6	≤ 6.6	≤ 6.6	≤ 6.6	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.	This is a combination of 6 old performance measures. We propose to change the six existing performance measures from community to management Levels of Service for internal reporting but only report	None required

LOS number	C/M	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Rationale for Addition	Options for consultation and engagement
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31			
		f) Council's response to any of these issues Per 1,000 properties served per year.							Department of Internal Affairs, Water Supply Non-Financial Performance Measure 4.	the overall complaint number externally. Combining the six minimises the number of community performance measures and aligns us with other councils as well as aligning to national benchmarking.	
12.0.6.2	M	Average Infrastructure Leakage Index (ILI) for all Council water loss zones.	2018/19: 3.73 2017/18: 2.81 2016/17: 2.55 2015/16: 2.35	Median from WaterNZ National Performance Review 2018/19: 3.125	≤ 3.21	≤ 3.28	≤ 3.28	≤ 3.35	Infrastructure Leakage Index = Real losses (L/connection/day)/ Unavoidable real losses (L/connection/day).	Percentage water loss is a very poor measure of leakage as the percentage changes with water use even if leakage does not change. ILI is a recognised measure of leakage used for benchmarking.	Management Level of service - None required
12.0.10	M	Peak day demand of drinking water in L per connection per day	2019/20: 1,617 2018/19: 1,402 2017/18: 1,667 2016/17: 1,360	None found.	≤ 1500	≤ 1450	≤ 1400	≤ 1000	Total volume of water abstracted from the public network on the peak day divided by the total number of properties served by Council's water supply networks	Water shortages depend not only on the availability of water but also on the ability to transport water to customers. This performance measure provides a measure of the demand for water delivery. Demand informs upgrade requirements and measures performance of	Management Level of service - None required

LOS number	C/M	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Rationale for Addition	Options for consultation and engagement
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31			
										demand management measures.	
12.0.11	M	Peak hour demand of drinking water in L per connection per hour	2019/20: 103 2018/19: 96 2017/18: 115 2016/17: 92	None found.	≤ 105	≤ 100	≤ 95	≤ 85	Total volume of water abstracted from the public network on the peak hour divided by the total number of properties served by Council's water supply networks	Water shortages depend not only on the availability of water but also on the ability to transport water to customers. This performance measure provides a measure of the demand for water delivery. Demand informs upgrade requirements and measures performance of demand management measures.	Management Level of service - None required
12.0.15	M	10yr rolling historic ratio of renewals to depreciation	New Metric 2018/19 : 32.6%	Institute of Public Works Engineering Australasia (IPWEA) Asset management financial indicator : 100%	≥50%	≥60%	≥70%	≥85%	Historic 10yr average renewals expenditure / Historic 10yr average depreciation	This performance measure indicates if the network is being replaced/renewed at the rate at which it is wearing out. Adding this performance measure shows if the past renewals expenditure was sufficient.	Management Level of service - None required
12.0.16	M	Increase Water Supply Asset Management Maturity towards agreed, appropriate level (Advanced 93)	New Metric 2019/20: 82	NZ Treasury Investor Confidence Rating	82	82	82	93	Conduct assessment on alternate years Asset Management Maturity assessment	Historically the Improvement Plans identified and promoted every LTP never receive	Management Level of service - None required

LOS number	C/M	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Rationale for Addition	Options for consultation and engagement
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31			
			2018/19: 76 points 2015/2016 : 72 points	(ICR) Asset Management Maturity Assessment (AMMA) Tool					(AMMA) to be conducted every two years by an external assessor until appropriate level of maturity target is achieved.	funding and resource. This LoS it is hoped will drive change to support improvements in AM and the way the Water supply services are delivered.	

LOS number	C/M	Performance Measures Levels of Service (LOS)	Historic Performance Trends	Benchmarks	Future Performance Targets				Method of Measurement	Rationale for Deletion	Options for consultation and engagement
					Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 10 2030/31			
Deletions											
12.0.2.7	C	Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria	2018/19 : 100% 2017/18 : 98.9% 2015/16 : 100%	Ministry of Health Annual Report on Drinking-water Quality 2014-2015: 96.8%	≥ 99.8%	≥ 99.8%	≥ 99.8%	≥ 99.8%	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ Department of Internal Affairs, Water Supply non-financial performance measure 1a	We previously had separate LoS for bacterial compliance in rural and urban networks. As the DIA Non-Financial Performance Measures do not have the urban/rural split, we are now discarding one LoS and changing the other to cover all networks	None required
12.0.2.4	C	Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria	2018/19 : 0% 2017/18 : 0%	Ministry of Health Annual Report on Drinking-water Quality 2014-2015: 80.0%	≥ 19%	≥ 19%	≥ 19%	≥ 19%	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ Department of Internal Affairs, Water Supply non-financial performance measure 1b	We previously had separate LoS for bacterial compliance in rural and urban networks. As the DIA Non-Financial Performance Measures do not have the urban/rural split, we are now discarding one LoS and changing the other to cover all networks.	None required

LOS number	Old Wording	New Wording	Historic Performance Trends	Old Targets	New Targets	Rationale for Changes	Options for consultation and engagement
Modifications							
12.0.1.1	Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year	No change	2019/20: 0.98 2018/19 : 1.3 2017/18 : 0.94 2016/17 : 1.63 2015/16 : 0.82	Year 1: ≤ 1.0 Year 2: ≤ 1.0 Year 3: ≤ 1.0 Year 10: ≤ 1.0	Year 1: ≤ 1.0 Year 2: ≤ 1.0 Year 3: ≤ 1.2 Year 10: ≤ 2.0	We propose increasing the targets to align with the expected increased number of failures as shown by renewals models.	Management Level of service - None required
12.0.1.2	Number of unplanned interruptions per 1,000 properties served per year	No change	2019/20: 38.43 2018/19 : 17.72 2017/18 : 12.24 2016/17 : 11.52 2015/16 : 15.8	Year 1: ≤ 16 Year 2: ≤ 15 Year 3: ≤ 14 Year 10: ≤ 8	Year 1: ≤ 39 Year 2: ≤ 40 Year 3: ≤ 41 Year 10: ≤ 42	We propose increasing the targets to align with the expected number of failures as shown by renewals models.	Target moved in line with projections. Consultation not required.
12.0.1.7	Number of continuity of supply complaints per 1,000 properties served per year	No Change	2019/20: 1.27 2018/19: 1.57 2017/18: 1.13 2016/17: 1.30 2015/16: 1.24	Year 1: ≤ 2.0 Year 2: ≤ 2.0 Year 3: ≤ 2.0 Year 10: ≤ 2.0	No Change	We propose changing this from a community to a management level of service. External reporting will replace this and five other levels of service with a single level of service for total complaint numbers. This change would align Council with other councils and national benchmarking.	Management Level of service - None required
12.0.1.8	Number of pressure or flow complaints per 1,000 connections per year	No Change	2019/20: 0.80 2018/19: 0.85 2017/18: 1.27 2016/17: 1.45 2015/16: 1.77	Year 1: ≤ 2.0 Year 2: ≤ 2.0 Year 3: ≤ 2.0 Year 10: ≤ 2.0	No Change	We propose changing this from a community to a management level of service. External reporting will replace this and five other levels of service with a single level of service for total complaint numbers. This change would align Council with other councils and national benchmarking.	Management Level of service - None required

LOS number	Old Wording	New Wording	Historic Performance Trends	Old Targets	New Targets	Rationale for Changes	Options for consultation and engagement
12.0.1.13	Proportion of residents satisfied with reliability of water supplies.	No Change	2019/20: 72% 2018/19 : 81% Not measured prior to 2018	Year 1: ≥85% Year 2: ≥85% Year 3: ≥85% Year 10: ≥85%	Year 1: ≥75% Year 2: ≥80% Year 3: ≥80% Year 10: ≥60%	We propose reducing the target to a level likely to be achievable given past performance and the anticipated increase in failures.	Target moved in line with historic performance levels. Consultation not required.
12.0.1.14	Proportion of residents satisfied with the responsiveness of Council water supplies	The proportion of residents satisfied with Council responsiveness to water supply problems	2019/20: 54% 2018/19 : 60% Not measured prior to 2018	Year 1: ≥85% Year 2: ≥85% Year 3: ≥85% Year 10: ≥85%	Year 1: ≥65% Year 2: ≥70% Year 3: ≥75% Year 10: ≥85%	We propose amending the performance measure to improve understanding in resident surveys. We also propose to reduce the target to a level likely to be achievable given past performance ramping up to the previous target with time.	Target moved in line with historic performance levels. Consultation not required.
12.0.1.15	Number of complaints regarding Council's response to complaints about drinking water taste, odour, clarity, pressure or flow, or continuity of supply per 1,000 properties connected to the Council's water supply system per year	No Change	2019/20: 0.01 Not measured prior to 2019.	Year 1: ≤ 0.6 Year 2: ≤ 0.6 Year 3: ≤ 0.6 Year 10: ≤ 0.6	No Change	We propose changing this from a community to a management level of service. External reporting will replace this and five other levels of service with a single level of service for total complaint numbers. This change would align Council with other councils and national benchmarking.	Management Level of service - None required

LOS number	Old Wording	New Wording	Historic Performance Trends	Old Targets	New Targets	Rationale for Changes	Options for consultation and engagement
12.0.2.13	Number of water clarity complaints per 1,000 connections per year	No Change	2019/20: 0.33 2018/19: 0.35 2017/18: 0.54 2016/17: 0.82 2015/16: 0.63	Year 1: ≤ 1.0 Year 2: ≤ 1.0 Year 3: ≤ 1.0 Year 10: ≤ 1.0	No Change	We propose changing this from a community to a management level of service. External reporting will replace this and five other levels of service with a single level of service for total complaint numbers. This change would align Council with other councils and national benchmarking.	Management Level of service - None required
12.0.2.14	Number of water odour complaints per 1,000 connections per year	No Change	2019/20: 0.28 2018/19: 0.44 2017/18: 1.34 2016/17: 0.15 2015/16: 0.14	Year 1: ≤ 0.5 Year 2: ≤ 0.5 Year 3: ≤ 0.5 Year 10: ≤ 0.5	No Change	We propose changing this from a community to a management level of service. External reporting will replace this and five other levels of service with a single level of service for total complaint numbers. This change would align Council with other councils and national benchmarking.	Management Level of service - None required
12.0.2.15	Number of water taste complaints per 1,000 connections per year	No Change	2019/20: 0.45 2018/19: 0.81 2017/18: 1.12 2016/17: 0.53 2015/16: 0.34	Year 1: ≤ 0.5 Year 2: ≤ 0.5 Year 3: ≤ 0.5 Year 10: ≤ 0.5	No Change	We propose changing this from a community to a management level of service. External reporting will replace this and five other levels of service with a single level of service for total complaint numbers. This change would align Council with other councils and national benchmarking.	Management Level of service - None required
12.0.2.9	Proportion of urban residents supplied water compliant with the DWSNZ bacterial compliance criteria:	Proportion of residents (with supplies of > 100 customers) supplied water compliant with the DWSNZ bacterial compliance criteria	Urban 2019/20: 100% 2018/19: 100% 2017/18: 98.9% Rural 2019/20: 100% 2018/19: 98.9% 2017/18: 89.4%	Year 1: ≥ 99.8% Year 2: ≥ 99.8% Year 3: ≥ 99.8% Year 10: ≥ 99.8%	Year 1: 100% Year 2: 100% Year 3: 100% Year 10: 100%	We previously had separate LoS for bacterial compliance in rural and urban networks. As the DIA Non-Financial Performance Measures do not have the urban/rural split, we are now discarding one LoS and changing the other to cover all networks. Addition of the 100-customer minimum water supply size is proposed to align with the DWSNZ.	Adjusted in accordance with DIA requirements. Consultation not required.

LOS number	Old Wording	New Wording	Historic Performance Trends	Old Targets	New Targets	Rationale for Changes	Options for consultation and engagement
12.0.2.10	Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria:	Proportion of residents (with supplies of > 100 customers) supplied water compliant with the DWSNZ protozoal compliance criteria	Urban 2019/20: 0% 2018/19: 0% 2017/18: 0% Rural 2019/20: 8.5% 2018/19: 0% 2017/18: 0%	Year 1: ≥ 99.8% Year 2: ≥ 99.8% Year 3: ≥ 99.8% Year 10: ≥ 99.8%	Year 1: ≥ 0.3% Year 2: ≥ 0.4% Year 3: ≥ 0.4% Year 10: 99.8%	We previously had separate LoS for protozoal compliance in rural and urban networks. As the DIA Non-Financial Performance Measures do not have the urban/rural split, we are now discarding one LoS and changing the other to cover all networks. Addition of the 100-customer minimum water supply size is proposed to align with the DWSNZ. Duvauchelle Treatment plant completion late 2021 means compliance records will not be complete until late 2022 so year 1 target excludes Duvauchelle Bay. Uncertainty surrounding secure status of City groundwater supplies mean we cannot assume these supplies will meet requirements. Therefore the City population has been excluded from year 1-3 targets but assume to be included by year 10.	Adjusted in accordance with DIA requirements. Consultation not required.
12.0.2.2	Number of highest risk properties assessed and required to install backflow prevention devices each year.	Proportion of High Risk connections with compliant backflow prevention device tested within the last 12 months	2019/20: 475 2018/19: 110 2016/17: 100 2015/16: 106	Year 1: ≥ 100 Year 2: ≥ 100 Year 3: ≥ 100 Year 10: ≥ 100	Year 1: ≥ 100% Year 2: ≥ 100% Year 3: ≥ 100% Year 10: ≥ 100%	The Water Safety Plan identifies lack of backflow prevention and uncertainty about testing of backflow preventers as an unacceptable risk. This changed measure measures the extent of this risk and Council efforts to eliminate it.	Management Level of service - None required

LOS number	Old Wording	New Wording	Historic Performance Trends	Old Targets	New Targets	Rationale for Changes	Options for consultation and engagement
12.0.2.19	Proportion of residents satisfied with quality of Council water supplies	No Change	2019/20: 48% 2018/19: 37%	Year 1: ≥ 70% Year 2: ≥ 71.5% Year 3: ≥ 73% Year 10: ≥ 85%	Year 1: ≥ 55% Year 2: ≥ 60% Year 3: ≥ 65% Year 10: ≥ 85%	We propose reducing the targets to an achievable level given the recent past performance.	Target moved in line with historic performance levels. Consultation not required.
12.0.7	Average consumption of drinking water per day in litres per resident per day	No Change	2019/20: 229 2018/19: 209 2017/18: 201 2016/17: 230 2015/16: 272	Year 1: ≤ 298 Year 2: ≤ 298 Year 3: ≤ 298 Year 10: ≤ 298	Year 1: ≤ 220 Year 2: ≤ 215 Year 3: ≤ 210 Year 10: ≤ 180	Usage has been significantly less that the target since last LTP therefore the targets are reduced to close the gap between the target and our actual performance.	Target moved in line with historic performance levels. Consultation not required.
12.0.6	Percentage of real water loss from Council's water supply network	No Change	2019/20: 20.2% 2018/19: 23.0% 2017/18: 18.4% 2016/17: 14.9% 2015/16: 11.7%	Year 1: ≤ 15% Year 2: ≤ 15% Year 3: ≤ 15% Year 10: ≤ 15%	Year 1: ≤ 24% Year 2: ≤ 25% Year 3: ≤ 25% Year 10: ≤ 26%	The backlog of water mains past their end of life is large and predicted to increase. Given this deteriorating network condition it is likely leakage will increase as the backlog grows.	Target moved in line with historic performance levels. Consultation not required.

8.

9. How will the assets be managed to deliver the services?

Council staff undertake ongoing water supply planning work to determine what is required by the community now and in the future, what the options are, how works should be prioritised and the best way to deliver them. An Infrastructure Strategy is developed every three years to identify the significant infrastructure issues across all Council assets over the next thirty years. The significant infrastructure issues identified over the next thirty years are:

Managing assets through a global recession

Managing operational expenditure requirements

Managing and meeting the expectations of a growing and changing population

Adapting to and mitigating the impacts of climate change

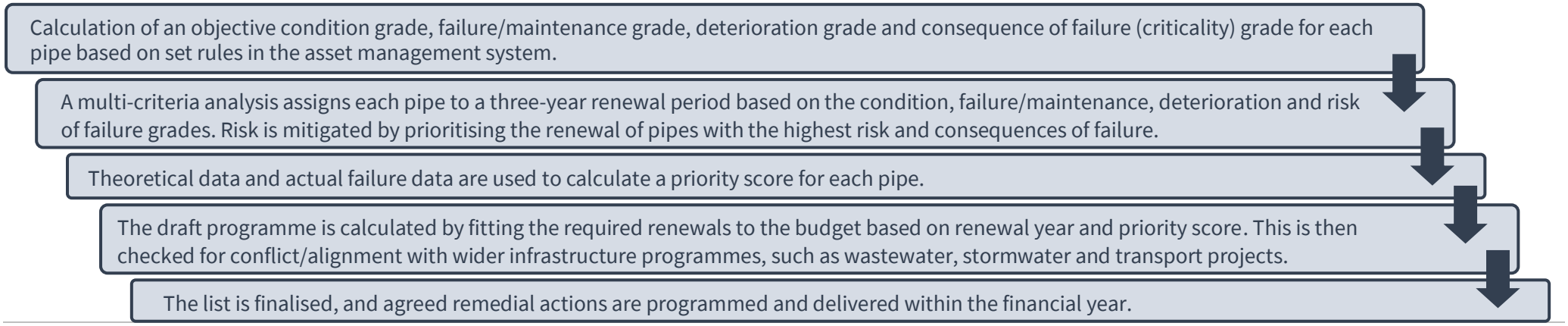
Protecting our environment through reducing greenhouse gas emissions

Managing the risks posed by a rapidly changing regulatory and commercial environment

One important shift from the 2018-48 Infrastructure Strategy is that earthquake recovery and regeneration is no longer a stand-alone significant issue. Earthquake recovery and regeneration continues to provide important context for infrastructure issues, investment planning and decision making. Although much of the rebuild is now complete, some of the issues the Council faces are in part a consequence of the earthquake's legacy.

How repair or renewal works are identified and prioritised?

Horizontal infrastructure refers to the network of pipes (typically below ground), and accounts for around 90% of the value of Council's water supply assets. Piped assets have a finite life. As pipes are buried underground, routine inspection and planned maintenance are costly and impracticable. Proactive inspections are carried out only on the pipes where failure would potentially have high or very high consequences on the network, community and environment. Reactive maintenance is carried out when issues are identified on the network, generally through service requests logged by the public. The process for repair or renewal of horizontal infrastructure is outlined below, and is explained in more detail in chapters 7 and 8 of the Asset Management Plan.



Vertical infrastructure refers to the pump stations and treatment plants (typically above ground). The key issues related to the management of both horizontal and vertical water supply infrastructure are summarised below. This section also includes an overview of the measures we are taking to respond to these issues.

HORIZONTAL INFRASTRUCTURE - Reticulation Network

Renewals: Around 3% of below ground assets were repaired or replaced as part of the earthquake rebuild, at a cost of $58million. The length of pipes requiring replacement in Council water supply networks has been increasing each year. Over the past ten years, investment has been less than a third of what is required to maintain the current standard. As a result 13.6% of water mains & sub-mains are now classified as being in a 'very poor' condition and have a high chance of failure.

Planned Expenditure: Returning the network to an acceptable condition as quickly as possible would achieve 8.9% very poor condition pipes by 2031 but require significant investment and unacceptable rates rises. Conversely, under a zero rates increase scenario, investment will be insufficient to maintain the current network condition and the network is predicted to deteriorate to 18.2% poor or very poor condition by 2031. Proposed investment is between the two options requiring a small rates increase but improving condition to 11.8% by 2031.

Deferral of Renewals: Deferral of renewal projects will increase service interruptions and operational costs. This will be managed by renewal/replacement of pipes with the highest risk of failure first. Prioritisation is continually reassessed so that pipes failing more frequently than others can move up the priority list and be replaced sooner. Leak detection will continue to focus on areas within the network with the highest leakage rates as shown by night flow data.

New Infrastructure Growth: Developers are responsible for supplying water infrastructure in new developments. However, projects to provide or increase water supply to growth areas will continue to be undertaken in consultation with developers.

VERTICAL INFRASTRUCTURE - Pump Stations and Treatment Plants

Pump Station Renewals: Twenty-five pumping stations were created, repaired or replaced as part of the earthquake rebuild, at a cost of $102million. Renewals at pump stations and treatment plants are required to maintain the supply of water and fall into five main areas:

- Water safety projects
- Health and safety projects
- Network calming projects
- Obsolescence projects
- End of life renewals

Historical Underinvestment: Underfunding has also occurred in vertical infrastructure assets. This renewals backlog increases the risk of service interruptions and water shortages to customers.

Contamination Risk: We have upgraded most of our wellheads, with just a small number still requiring improvements. These wellhead improvements reduce the risk of our groundwater becoming contaminated before it enters the pump station. Once the water enters pump stations there is still a risk of contamination. To prevent contamination there is a need to repair, refurbish or renew a number of reservoirs and suction tanks.

Health and Safety Requirements: Due to increasing health and safety requirements Council need to replace or upgrade assets that no longer comply and mitigate any sites containing asbestos. Guards for rotating equipment are also being assessed and it is expected that investment will be required to bring these up to standard.

Technical Obsolescence: Technical obsolescence occurs where a product is no longer produced or supported. This issue affects our control systems. Projects for obsolescence can be costly as significant upgrades are often required

10. What financial resources are needed?

Water Supply 000's	Annual Plan 2020/21	LTP 2021/22	LTP 2022/23	LTP 2023/24	LTP 2024/25	LTP 2025/26	LTP 2026/27	LTP 2027/28	LTP 2028/29	LTP 2029/30	LTP 2030/31
Activity Costs before Overheads by Service											
Supply Potable Water	15,417	16,142	17,056	17,735	18,608	18,745	19,672	20,589	20,853	21,668	22,608
Secure and Protect Water	3,076	3,532	3,437	3,518	3,612	3,701	3,794	3,890	3,993	4,102	4,209
Monitor Water Quality	110	88	89	90	92	96	97	99	103	105	107
	18,604	19,761	20,582	21,344	22,311	22,542	23,563	24,577	24,949	25,875	26,923
Activity Costs by Cost type											
Direct Operating Costs	5,725	6,432	6,340	6,506	6,683	6,874	7,069	7,276	7,506	7,742	7,977
Direct Maintenance Costs	8,312	9,558	9,204	9,705	10,330	10,234	10,906	11,576	11,574	12,109	12,768
Staff and Contract Personnel Costs	4,549	3,753	5,019	5,114	5,279	5,414	5,568	5,704	5,847	6,002	6,156
Other Activity Costs	18	18	19	19	20	20	21	21	22	22	23
	18,604	19,761	20,582	21,344	22,311	22,542	23,563	24,577	24,949	25,875	26,923
Activity Costs before Overheads	**18,604**	**19,761**	**20,582**	**21,344**	**22,311**	**22,542**	**23,563**	**24,577**	**24,949**	**25,875**	**26,923**
Overheads, Indirect and Other Costs	13,772	14,426	15,334	16,019	16,407	17,071	17,257	17,784	18,478	18,781	19,221
Depreciation	39,631	40,331	42,113	44,187	46,399	48,411	48,663	50,918	53,346	56,118	54,965
Debt Servicing and Interest	3,468	3,245	3,266	3,506	3,980	4,405	4,774	4,937	5,297	5,457	5,448
Total Activity Cost	**75,475**	**77,763**	**81,295**	**85,056**	**89,098**	**92,429**	**94,257**	**98,216**	**102,069**	**106,230**	**106,558**
Funded By:											
Fees and Charges	4,550	6,832	6,976	7,129	7,293	7,468	7,647	7,839	8,050	8,268	8,482
Grants and Subsidies	-	780	-	-	-	-	-	-	-	-	-
Cost Recoveries	-	-	-	-	-	-	-	-	-	-	-
Other Revenues	-	-	-	-	-	-	-	-	-	-	-
Total Operational Revenue	**4,550**	**7,612**	**6,976**	**7,129**	**7,293**	**7,468**	**7,647**	**7,839**	**8,050**	**8,268**	**8,482**
Net Cost of Service	**70,924**	**70,151**	**74,319**	**77,926**	**81,805**	**84,961**	**86,610**	**90,378**	**94,019**	**97,963**	**98,075**
Funding Percentages:											
Rates	94.0%	90.2%	91.4%	91.6%	91.8%	91.9%	91.9%	92.0%	92.1%	92.2%	92.0%
Fees and Charges	6.0%	8.8%	8.6%	8.4%	8.2%	8.1%	8.1%	8.0%	7.9%	7.8%	8.0%
Grants and Subsidies	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cost Recoveries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Capital Expenditure											
Replace Existing Assets	22,444	54,909	50,915	62,740	63,216	65,764	67,995	67,129	66,460	65,822	66,884
Improve the Level of Service	11,199	8,061	11,595	12,321	11,882	11,147	14,356	15,072	18,569	16,746	15,839
Meet Additional Demand	1,818	2,446	6,116	10,274	5,081	5,058	5,372	7,319	6,844	8,417	11,702
Total Activity Capital	**35,462**	**65,416**	**68,626**	**85,336**	**80,180**	**81,969**	**87,722**	**89,521**	**91,874**	**90,984**	**94,425**

Funding Consideration

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

Funding Policy

Funding Principles

User-Pays	Exacerbator-Pays	Inter-Generational Equity	Separate Funding?
High	**Low**	**Low**	**High**

The table above shows how Council has considered funding in relation to the Activity, using a simple high / medium / low scale:

- User-pays – the degree to which the Activity can be attributed to individuals or identifiable groups rather than the community as a whole;
- Exacerbator-pays – the degree to which the Activity is required as a result of the action (or inaction) of individuals or identifiable groups;
- Inter-generational equity – the degree to which benefits can be attributed to future periods; and
- Separate funding – the degree to which the costs and benefits justify separate funding for the Activity.

Where an Activity is paid for through a number of funding mechanisms, Council's practice is to meet its operating costs in the first instance from fees & charges and grants & subsidies (subject to the considerations outlined above). If the Activity requires further operational funding, this remainder is funded through rates.

This capital programme will be funded in accordance with the following principles:

Investment type	**Initial funding**	**Serviced and/or repaid by:**
• Renewal / replacement	• Rates and debt	• Rates
• Service Improvement and other assets	• Debt	• Rates
• Growth	• Debt and Development Contributions	• Rates and Development Contributions

Operating Cost Funding Policy

This table below shows Council's broad funding target for the Activity (i.e. how much is paid for by individuals / groups, and how much by the community as a whole), and the associated funding mechanism used (i.e. general rates, targeted rates, user charges, etc.). As the precise balance between individual / group and community funding may vary in practice (particularly for volumetric fees and charges), the funding target for each of the below tables is expressed in broad terms rather than specific percentages:

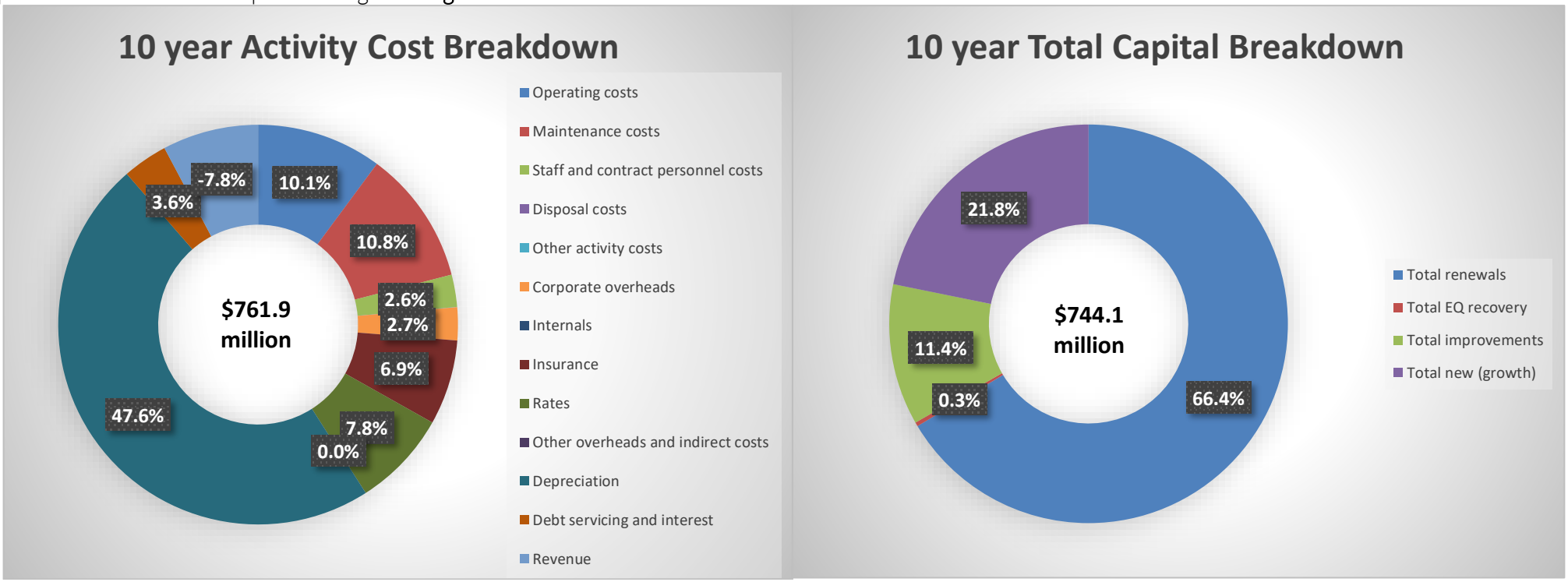
- Low = this source provides 0%-25% of the funding for this Activity;
- Medium = this source provides 25%-75% of the funding for this Activity; and
- High = this source provides 75%-100% of the funding for this Activity.

Funding Target		Funding mechanism	
Individual / Group	Community	Individual / Group	Community
High	**Low**	• **Targeted Rate (High)** • **Fees & Charges (Low)**	• **Grants and Other (Low)**

Capital Cost Funding Policy for this Activity

Rates	Borrowing	DC s	Grants and Other
Medium	**Medium**	**Low**	**Low**

The charts below illustrate the proposed spending over the next ten years. The chart on the left shows significant a breakdown of activity costs and the chart on the right provides a breakdown of capital funding. All budgets are un-inflated



The projected cost of providing the necessary core services covered by this activity, including operations, maintenance, renewal, upgrade and earthquake recovery over the 10 years of the Long Term Plan (LTP) from Financial FY22 – FY32 is $1,771 million to address a backlog of deferred renewals and deliver improvements to meet water safety plan requirements. The historic expenditure for the 10 year period FY2011 to FY2020 was $604 million.

The significant projected increase is primarily due addressing a backlog of deferred renewals and improvements needed to meet water safety plan requirements.

The funding allocated to providing the necessary core services covered by this Activity plan over the 10 years of the LTP is $1,506 million. This is 85% of the cost (as outlined above) to provide optimised asset management at the lowest lifecycle cost.

The allocated funding leaves a shortfall of $265 million over the 10 years of the LTP (all values exclude inflation). The resultant effect will be a reduction in levels of service to the community which will be reflected in the updated performance measure targets.

A snapshot of key financial indicators is shown below, including the historic ten year average and how this compares with the next LTP period.

	Historic	Recommended	Proposed	Change	Explanation
Asset Renewal funding ratios	2011-20 33.4%	10yr 100% 5yr 100% 3yr 100%	10yr 77.6% 5yr 69.9% 3yr 69.9%	↓	Shows what percentage of total recommended renewal cost will be funded.
Rate of annual asset renewal (FY22-24)		2.74%	1.87%	↓	How much of the asset stock will be renewed / replaced each year.
Rate of annual asset creation (FY22-24)		0.67%	0.59%	↓	This is an indicator of how much is been added to the asset stock each year.

Valuation Data

Annual Depreciation Expense (AD)

2020	**$38.1 million**	**+ 12%**
2017	$33.6 million	+ 28%
2015	$24.3 million	

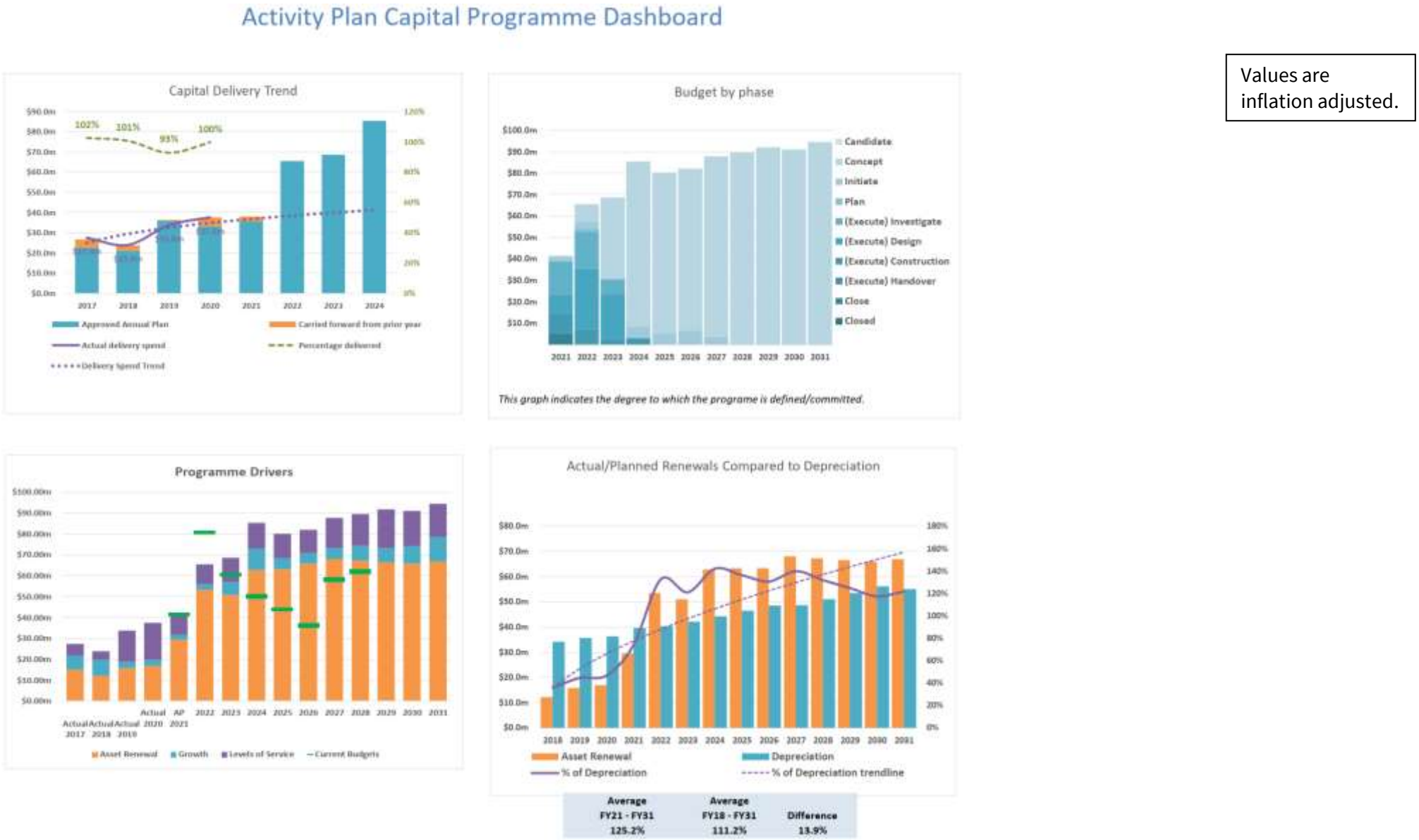
Replacement Cost (ORC)

2020	**$2,873 million**	**+ 13%**
2017	$2,496 million	+ 29%
2015	$1,777 million	

Annual Rate of Asset Consumption

2020	**1.33%**
2017	1.35%
2015	1.37%

11. How much capital expenditure will be spent, on what category of asset, and what are the key capital projects for this activity?



Values are inflation adjusted.

Draft LTP 2021/31 Capital Programme $000

Proposed Budget Detail

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Funding Programme	Group of Activities	Activity	Driver	ID	Title	Current Year Budget*	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025	Proposed 2026	Proposed 2027	Proposed 2028	Proposed 2029	Proposed 2030	Proposed 2031	Proposed Total LTP
Above Core																	
	Water Reform T1																
		Water Supply															
			Water Supply														
				Meeting Current Levels of Service													
					62350	WS Smart Water Monitoring System	700	2,695	-	-	-	-	-	-	-	-	-	2,695
				Meeting Current Levels of Service Total			700	2,695	-	-	-	-	-	-	-	-	-	2,695
				Asset Renewal													
					55783	WS Scruttons Road Pump Station to Lyttelton Road Tunnel & St Andrews Hill Road Mains Renewal	1,152	2,717	-	-	-	-	-	-	-	-	-	2,717
					55782	WS Riccarton Road Mains Renewal (Hansons to Matipo)	3,106	2,227	-	-	-	-	-	-	-	-	-	2,227
					55781	WS Libeau & Chemin Du Nache Mains Renewal	328	61	-	-	-	-	-	-	-	-	-	61
				Asset Renewal Total			4,586	5,005	-	-	-	-	-	-	-	-	-	5,005
			Water Supply Total				5,286	7,699	-	-	-	-	-	-	-	-	-	7,699
		Water Supply Total					5,286	7,699	-	-	-	-	-	-	-	-	-	7,699
	Water Reform T1 Total						5,286	7,699	-	-	-	-	-	-	-	-	-	7,699
Above Core Total							5,286	7,699	-	-	-	-	-	-	-	-	-	7,699

Draft LTP 2021/31 Capital Programme

Proposed Budget Detail

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$000

Funding Programme	Group of Activities	Activity	Driver	ID	Title	Current Year Budget*	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025	Proposed 2026	Proposed 2027	Proposed 2028	Proposed 2029	Proposed 2030	Proposed 2031	Proposed Total LTP
Core																	
	Core funding																
		Water Supply															
			Water Supply														
				Growth													
					1258 Programme - WS New Pump Stations for Growth	-	-	-	-	-	-	2,098	3,028	358	3,680	5,040	14,204
					50 Programme - WS Reticulation New Mains	-	-	1,221	1,138	1,166	1,196	1,227	1,260	1,311	1,349	1,386	11,253
					870 Programme - WS New Wells for Growth	-	-	-	-	-	1,205	826	1,696	1,788	1,840	1,890	9,245
					57800 WS Metro Sports Facility Wells & Pump Station	100	209	2,804	3,502	1,844	-	-	-	-	-	-	8,358
					64 Programme - WS Land Purchase for Pump Stations	-	-	-	1,571	-	1,651	-	-	1,788	-	1,890	6,900
					37848 Programme - WS New Connection	-	-	-	-	678	708	915	1,021	1,050	983	980	6,334
					60262 WS Carters Pump Station to Dyers Pump Station	-	-	496	2,619	1,090	-	-	-	-	-	-	4,205
					45 WS New Connections	1,171	1,253	1,282	1,149	-	-	-	-	-	-	-	3,685
					37844 Programme - WS Additional Infrastructure Programme	-	-	-	-	303	299	307	315	548	564	517	2,853
					49 WS Subdivisions Add Infrastructure For Development	140	306	313	296	-	-	-	-	-	-	-	915
					59938 WS Metro Pump Station to Antigua Street Link Main	50	440	-	-	-	-	-	-	-	-	-	440
					56129 WS Highsted Road Water Supply Main	82	338	-	-	-	-	-	-	-	-	-	338
					39192 WS Knights Stream Park Link Main	40	-	-	-	-	-	-	-	-	-	-	-
					38943 WS Highfield Water Supply Mains	777	-	-	-	-	-	-	-	-	-	-	-
					24198 WS Gardiners New Pump Station	20	-	-	-	-	-	-	-	-	-	-	-
				Growth Total		2,379	2,546	6,116	10,275	5,082	5,058	5,372	7,319	6,844	8,417	11,702	68,731
				Meeting Current Levels of Service													
					60007 WS Lyttelton Harbour Water Supply Security	-	-	-	-	-	-	2,823	5,799	8,942	9,201	9,449	36,213
					2201 WS City Water Supply Rezoning & Demand Management	-	-	-	524	2,953	3,027	3,105	3,189	3,577	3,680	3,150	23,205
					20716 WS Smart Customer Water Meters	-	-	-	2,095	2,148	2,201	2,258	2,319	2,384	2,454	2,520	18,380
					60258 Programme - Water Supply Safety Improvements	-	-	5,115	4,190	2,148	2,201	1,129	-	-	-	-	14,783
					59939 WS Smart Water Network	-	-	1,688	1,571	1,611	1,651	1,694	1,160	1,609	-	-	10,984
					45202 WS Wrights Suction Tank & Pump Station Building	-	-	-	-	150	1,020	2,457	1,677	-	-	-	5,304
					58140 WS Rezoning Linwood & Woolston Subzones	40	1,000	960	1,024	985	-	-	-	-	-	-	3,969
					60929 WS Tank & Reservoir Water Security Renewals	-	-	38	354	403	413	423	435	447	460	-	2,973
					57808 WS Duvauchelle Membrane Filtration	100	-	527	1,676	537	-	-	-	-	-	-	2,740
					58174 WS Above Ground Well Head Conversions	300	2,100	614	-	-	-	-	-	-	-	-	2,714
					60928 WS Pumping & Storage Water Security Improvements	-	-	20	189	215	220	226	232	238	245	-	1,585
					18281 WS Land Purchase for Catchment Protection	-	-	-	-	-	-	-	-	490	510	524	1,524
					43873 Programme - WS Backflow Prevention	-	20	112	72	68	70	91	102	105	98	98	837
					56783 WS Pressure & Acoustic Sensors	2,033	707	-	-	-	-	-	-	-	-	-	707
					41253 Programme - WS Secure Groundwater Modelling & Age Dating	26	8	44	58	55	56	73	81	83	79	78	615
					51454 WS Hydrogeological Groundwater Model	80	-	-	267	-	-	-	-	304	-	-	571
					57804 WS Aylmers Valley Well	60	-	552	-	-	-	-	-	-	-	-	552
					60330 WS Banks Peninsula Tank & Reservoir Water Security Renewals	-	-	20	189	215	110	-	-	-	-	-	534
					57806 WS Settlers Hill Well	30	-	327	-	-	-	-	-	-	-	-	327
					59941 WS Banks Peninsula Communal Fire Storage	-	-	-	-	54	55	56	58	60	-	-	283
					57807 WS Little River Well (01)	30	-	276	-	-	-	-	-	-	-	-	276
					43331 WS Birdlings Flat Improvements	-	-	-	-	268	-	-	-	-	-	-	268
					41252 Programme - WS Drinking Water Sampling Point Installations	-	9	50	65	61	57	0	(0)	11	0	0	253
					865 WS Security	74	49	50	48	(0)	(0)	0	-	-	-	-	147
					37846 Programme - WS Security	-	-	-	-	14	14	18	21	21	20	20	128
					6540 WS Wrights Pump Station Well Renewal	379	73	-	-	-	-	-	-	-	-	-	73
					2363 Programme - WS Water Supply Pump Station & Reservoir Safety Improvements	-	-	-	-	-	51	-	-	-	-	-	51
					51476 WS Auburn Avenue Well Head Conversion (Package 2)	11	-	-	-	-	-	-	-	-	-	-	-
					58175 WS Backflow Prevention for Water Safety Plan	1,624	-	-	-	-	-	-	-	-	-	-	-
					51482 WS St Johns Well Head Conversion (Package 2)	20	-	-	-	-	-	-	-	-	-	-	-

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Funding Programme	Group of Activities	Activity Driver	ID	Title	Current Year Budget*	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025	Proposed 2026	Proposed 2027	Proposed 2028	Proposed 2029	Proposed 2030	Proposed 2031	Proposed Total LTP
			53167	WS Averill Well Head Conversion	47	-	-	-	-	-	-	-	-	-	-	-
			51484	WS Carters Road Well Head Conversion (Package 3)	159	-	-	-	-	-	-	-	-	-	-	-
			50846	WS Kainga Well Head Conversion (Package 0)	15	-	-	-	-	-	-	-	-	-	-	-
			51485	WS Lake Terrace Road Well Head Conversion (Package 1)	36	-	-	-	-	-	-	-	-	-	-	-
			51479	WS Denton Well Head Conversion (Package 1)	58	-	-	-	-	-	-	-	-	-	-	-
			51489	WS Trafalgar Street Well Head Conversion (Package 1)	49	-	-	-	-	-	-	-	-	-	-	-
			53170	WS Jeffreys Well Head Conversion	27	-	-	-	-	-	-	-	-	-	-	-
			51492	WS Worcester Well Head Conversion (Package 3)	40	-	-	-	-	-	-	-	-	-	-	-
			51481	WS Brooklands Well Head Conversion (Package 1)	12	-	-	-	-	-	-	-	-	-	-	-
			51494	WS Sydenham Well Head Conversion (Package 5)	170	-	-	-	-	-	-	-	-	-	-	-
			50844	WS Mays Well Head Conversion (Package 2)	36	-	-	-	-	-	-	-	-	-	-	-
			51495	WS Addington Well Head Conversion (Package 5)	387	-	-	-	-	-	-	-	-	-	-	-
			7521	WS Grampian Pump Station Well Renewal (NWDWS)	35	-	-	-	-	-	-	-	-	-	-	-
			52095	WS Prestons - Additional Well Development & Well Head Construction	204	-	-	-	-	-	-	-	-	-	-	-
			51478	WS Dunbars Well Head Conversion (Package 1)	58	-	-	-	-	-	-	-	-	-	-	-
			62352	WS Rezoning - Hackthorne WSZ	160	-	-	-	-	-	-	-	-	-	-	-
			53165	WS Effingham Well Head Conversion (Package 4)	9	-	-	-	-	-	-	-	-	-	-	-
			52520	WS Sockburn Well Head Conversion (Package 4)	79	-	-	-	-	-	-	-	-	-	-	-
			53168	WS Parklands Well Head Conversion (Package 5)	79	-	-	-	-	-	-	-	-	-	-	-
			52521	WS Wilmers Well Head Conversion (Package 3)	34	-	-	-	-	-	-	-	-	-	-	-
			56258	WS Drinking Water Sampling Point Installations	77	-	-	-	-	-	-	-	-	-	-	-
			52522	WS Tara Well Head Conversion (Package 4)	53	-	-	-	-	-	-	-	-	-	-	-
			18639	WS Rāwhiti Rezoning	16	-	-	-	-	-	-	-	-	-	-	-
			51480	WS Wainui Street Well Head Conversion (Package 4)	15	-	-	-	-	-	-	-	-	-	-	-
			50840	WS Grampian Well Head Conversion (Package 0)	1	-	-	-	-	-	-	-	-	-	-	-
			52523	WS Spreydon Well Head Conversion (Package 4)	164	-	-	-	-	-	-	-	-	-	-	-
			50841	WS Grassmere Well Head Conversion (Package 2)	10	-	-	-	-	-	-	-	-	-	-	-
			52524	WS Woolston Well Head Conversion (Package 5)	89	-	-	-	-	-	-	-	-	-	-	-
			58177	WS Pump Station Resilience Renewal	800	-	-	-	-	-	-	-	-	-	-	-
			52525	WS Avonhead Well Head Security Improvement	47	-	-	-	-	-	-	-	-	-	-	-
			59324	WS Easements Over Water Supply Pipes in Banks Peninsula	70	-	-	-	-	-	-	-	-	-	-	-
			52526	WS Belfast Well Renewal	630	-	-	-	-	-	-	-	-	-	-	-
			50847	WS Main Pumps Ultra Violet Treatment	149	-	-	-	-	-	-	-	-	-	-	-
			52527	WS Marshland Well Head Conversion (Package 4)	49	-	-	-	-	-	-	-	-	-	-	-
			51475	WS Crosbie Well Head Conversion (Package 3)	29	-	-	-	-	-	-	-	-	-	-	-
			53161	WS Montreal Well Head Conversion (Package 4)	19	-	-	-	-	-	-	-	-	-	-	-
			51477	WS Picton Well Head Conversion (Package 3)	50	-	-	-	-	-	-	-	-	-	-	-
			53162	WS Thompson Well Head Conversion (Package 4)	32	-	-	-	-	-	-	-	-	-	-	-
			60546	WS Backflow Reduced Pressure Zone Valve Installation at Christchurch Wastewater Treatment Plant (RPZ)	69	-	-	-	-	-	-	-	-	-	-	-
			53163	WS Aston Well Head Conversion (Package 5)	71	-	-	-	-	-	-	-	-	-	-	-
			53164	WS Aldwins Well Head Conversion (Package 5)	30	-	-	-	-	-	-	-	-	-	-	-
			52491	WS Belfast Well Head Conversion (Package 4)	12	-	-	-	-	-	-	-	-	-	-	-
Meeting Current Levels of Service Total					8,984	3,966	10,395	12,322	11,883	11,147	14,356	15,072	18,271	16,747	15,839	129,999
Asset Renewal																
			51	Programme - WS Mains Renewals	-	1,098	12,629	33,251	37,583	37,570	41,601	46,388	47,688	49,072	50,396	357,276
			53	Programme - WS Submains Renewals	-	1,607	2,840	5,801	3,729	3,967	5,602	6,252	6,431	6,020	6,006	48,254
			888	WS Lyttelton Rail Tunnel Pipeline Renewals	-	100	512	5,238	5,369	6,454	3,567	-	-	-	-	21,239
			17885	WS Eastern Terrace Trunk Main Renewal	-	5,304	10,070	-	-	-	-	-	-	-	-	15,374
			57143	Programme - WS Reactive Water Meter Renewal	-	-	-	-	1,329	1,536	2,287	2,551	2,625	2,457	2,452	15,238
			52	Programme - WS Headworks Well Renewals	-	-	-	72	678	708	2,744	3,062	3,150	983	1,960	13,356
			41874	Programme - WS Mains Renewals Affiliated with Roading Works	-	-	1,033	1,088	1,017	1,062	1,372	1,531	1,575	1,475	1,470	11,623
			17924	WS Averill Street Pump Station Renewal (PS1005)	-	100	859	3,190	5,085	1,811	-	-	0	0	(0)	11,045

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			60152	WS Kerrs Road Pump Station Station Renewal (PS1022)	-	-	102	775	2,168	5,175	1,858	-	-	-	-	10,079
			60154	WS Grampian Street Suction Tank Renewal	-	-	26	236	1,074	3,435	2,909	1,909	-	-	-	9,587
			55790	WS Puriri, Kilmarnock, Wharenui, Ilam, Maidstone, Wainui, George, Division, Deans & Waimairi Mains Renewal	439	3,679	2,558	-	-	-	-	-	-	-	-	6,236
			42082	Programme - WS Pumping & Storage Instrumentation, Control & Automation Renewals (ICA)	-	-	1,182	1,041	448	396	513	572	693	659	656	6,160
			41882	Programme - WS Pumping & Storage Electrical Renewals	-	955	716	2,106	228	238	307	343	353	330	329	5,904
			33813	WS Jeffreys Road Pump Station Suction Tank Renewal (PS1076)	1,603	3,417	501	-	-	-	-	-	-	-	-	3,918
			60375	WS Mains Renewal - Multi-Use Arena - Barbadoes and Madras	-	-	315	3,415	-	-	-	-	-	-	-	3,730
			55786	WS Purau, Waipapa, Marine, Whero, Rawhiti & Te Ra Mains Renewal	285	2,068	1,535	-	-	-	-	-	-	-	-	3,602
			60079	Programme - WS Banks Peninsula Pumping & Storage Civils & Structures Renewals	-	-	250	-	-	-	-	642	730	1,032	614	3,267
			55797	WS Park, Governors Bay, Cressy, Pages, Buxtons & Gladstone Quay Mains Renewal	429	1,103	2,046	-	-	-	-	-	-	-	-	3,149
			55788	WS Fenchurch, Grosvenor, Paddington, Ealing, Camden, Uxbridge & Aldgate Mains Renewal	245	1,918	1,228	-	-	-	-	-	-	-	-	3,146
			58135	WS Ashgrove, Macmillan, Cashmere, Dyers Pass, Victoria, Barry Hogan & Hackthorne Mains Renewals	639	2,048	1,023	-	-	-	-	-	-	-	-	3,071
			57144	WS Reactive Water Meter Renewal	300	1,120	833	1,088	-	-	-	-	-	-	-	3,041
			55789	WS Grahams, Hounslow & Rembrandt Mains Renewal	194	1,659	1,333	-	-	-	-	-	-	-	-	2,992
			57142	Programme - WS Reactive Mains & Submains Renewal	-	-	450	254	237	248	320	357	367	344	343	2,919
			60163	WS Scarborough 1 Pump Station Relocation out of Rock Fall Zone	-	-	-	-	107	330	1,694	696	-	-	-	2,827
			37845	Programme - WS Pumping & Storage Reactive Renewal	-	-	-	-	285	297	384	429	441	412	412	2,660
			50449	WS Sydenham Suction Tank Replacment	900	2,632	-	-	-	-	-	-	-	-	-	2,632
			60155	WS Auburn Avenue Pump Station Renewal (PS1068)	-	-	-	105	795	248	1,129	290	-	-	-	2,566
			55796	WS Bridle Path, Station, Rollin, Marsden & Port Hills Road Mains Renewal	152	1,395	1,023	-	-	-	-	-	-	-	-	2,418
			55785	WS Rocking Horse, Heron, Plover, Mermaid & Pukeko Mains Renewal	127	1,366	1,023	-	-	-	-	-	-	-	-	2,389
			37847	Programme - WS Meter Renewal	-	-	194	227	213	222	287	320	315	294	294	2,366
			57801	WS Redwood Pump Station Well 1 & Well 2 Renewal (PS1077)	234	1,631	512	-	-	-	-	-	-	-	-	2,142
			60257	WS Spreydon Well 2 & Well 3 Renewal (PS1030)	180	1,400	716	-	-	-	-	-	-	-	-	2,116
			14866	WS Ben Rarere Pump Station Bexley Earthquake Replacement	2,616	1,949	-	-	-	-	-	-	-	-	-	1,949
			55801	WS Aranui & South New Brighton Area Submains Renewal 2022	36	1,917	-	-	-	-	-	-	-	-	-	1,917
			41883	Programme - WS Pumping & Storage Mechanical Renewals	-	-	122	146	151	158	204	228	272	358	254	1,895
			55798	WS Conway, Hollis, Centaurus, Palatine, Herbs & Eastern Terrace Mains Renewal	70	1,308	512	-	-	-	-	-	-	-	-	1,820
			73	Programme - WS Pumping & Storage Civils and Structures Renewals	-	-	347	290	(0)	(0)	0	0	197	737	184	1,755
			60073	Programme - WS Banks Peninsula Pumping & Storage Instrumentation, Control and Automation Renewals (ICA)	-	-	66	122	135	142	183	247	259	265	237	1,656
			41881	Programme - WS Modelling	-	-	-	-	176	184	238	266	273	255	254	1,646
			60153	WS Tara Street Replacement Building, Electrics & Controls	-	-	-	236	1,074	275	-	-	-	-	-	1,585
			60071	Programme - WS Banks Peninsula Pumping & Storage Mechanical Renewals	-	-	76	197	55	56	73	253	279	353	242	1,584
			63039	WS Mains Renewal - Lincoln Rd and Hazeldean Rd	-	147	1,413	-	-	-	-	-	-	-	-	1,560
			55802	WS North New Brighton Area & Bossu Road Submains Renewal	21	1,516	-	-	-	-	-	-	-	-	-	1,516
			58178	WS Hackthorne Reservoir Renewal	10	968	547	-	-	-	-	-	-	-	-	1,515
			60074	Programme - WS Banks Peninsula Pumping & Storage Reactive Renewal	-	-	158	72	135	142	183	204	210	196	197	1,497
			60326	WS Asbestos Removal	-	-	143	147	150	154	158	162	167	172	176	1,430
			41884	Programme - WS Control Software Renewals (SCADA)	63	-	176	195	181	88	113	126	130	121	122	1,253
			55784	WS Hackthorne & Dyers Pass Road to Takahē Pump Station Mains Renewal	1,719	1,094	-	-	-	-	-	-	-	-	-	1,094
			2355	WS Pump Stations Reactive Renewals	300	457	307	314	-	-	-	-	-	-	-	1,078
			60164	WS Lock Renewals	-	-	102	314	322	330	-	-	-	-	-	1,069
			60200	WS Woolston Well 3 Renewal (PS1065)	-	-	10	1,037	-	-	-	-	-	-	-	1,047
			60261	WS Montreal Street Well 2 Renewal (PS1027)	-	-	51	995	-	-	-	-	-	-	-	1,046
			60072	Programme - WS Banks Peninsula Pumping & Storage Electrical Renewals	-	-	75	182	82	85	110	123	126	118	117	1,017

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			58910	WS Quarry Reservoir Renewal	10	663	344	-	-	-	-	-	-	-	-	1,007
			60096	WS Blighs Road Pump Station Well 3 Renewal (PS1007)	80	977	-	-	-	-	-	-	-	-	-	977
			41877	Programme - WS Health & Safety Renewals	-	-	-	-	94	99	128	143	147	137	137	885
			60325	WS Pump Station – Diesel Tank Renewals to Meet Regional Plan	-	-	51	393	268	-	-	-	-	-	-	712
			58147	WS Cranford, Sherborne & Victoria Mains Renewals	420	441	-	-	-	-	-	-	-	-	-	441
			60162	WS Mount Herbert Reservoir Replacement	-	-	-	-	27	330	-	-	-	-	-	357
			89	WS Submains Meter Renewal	336	350	(0)	(0)	-	-	-	-	-	-	-	350
			57805	WS Birdlings Flat Well	30	-	327	-	-	-	-	-	-	-	-	327
			56060	WS Update Model Base Data	198	104	107	109	-	-	-	-	-	-	-	321
			48901	WS Pump & Storage Equipment Renewals 2020 (MEICA)	1,333	293	-	-	-	-	-	-	-	-	-	293
			48081	WS Mains Renewal - Halswell Junction Rd Roading Extension	485	293	-	-	-	-	-	-	-	-	-	293
			58162	WS London, Canterbury, Dublin, Oxford, Norwich, Gladstone, Exeter & Donald Mains Renewals	374	267	-	-	-	-	-	-	-	-	-	267
			50446	WS Suction Tank & Reservoir Renewals	1,785	260	-	-	-	-	-	-	-	-	-	260
			48893	WS Westmont, Bartlett, Peacock & Bridle Path Road Mains Renewals	841	244	-	-	-	-	-	-	-	-	-	244
			41894	Programme - WS Banks Peninsula Treatment Plant Reactive Renewals	-	-	-	-	24	25	32	36	37	34	34	222
			56683	WS Reactive Mains & Submains Renewal	647	196	-	-	-	-	-	-	-	-	-	196
			48907	WS Health & Safety Renewals	459	63	64	66	-	-	-	-	-	-	-	193
			41885	Programme - WS Banks Peninsula Treatment Plant Civils Structures Renewals	-	-	177	-	-	-	-	-	-	-	-	177
			50340	WS Grassmere Well Renewal (1)	726	161	-	-	-	-	-	-	-	-	-	161
			50437	WS Treatment Plant Reactive Renewals	39	39	40	41	-	-	-	-	-	-	-	121
			41888	Programme - WS Banks Peninsula Treatment Plant Mechanical Renewals	-	-	112	0	-	-	-	(0)	0	-	-	112
			58146	WS Port Hills Road Mains Renewals	934	98	-	-	-	-	-	-	-	-	-	98
			41886	Programme - WS Banks Peninsula Treatment Plant Instrumentation, Control & Automation Renewals (ICA)	-	-	50	(0)	-	-	-	-	-	-	0	50
			41887	Programme - WS Banks Peninsula Treatment Plant Electrical Renewals	-	-	30	-	-	(0)	-	0	(0)	-	-	30
			53169	WS Kerrs Well Head Conversion	0	-	-	-	-	-	-	-	-	-	-	-
			55800	WS Aranui Area Submains Renewal 2021	343	-	-	-	-	-	-	-	-	-	-	-
			45649	WS Pump & Storage Equipment Renewals 2019 (MEICA)	21	-	-	-	-	-	-	-	-	-	-	-
			48891	WS Mains Renewal of Colombo to Moorhouse Utility Tunnel	381	-	-	-	-	-	-	-	-	-	-	-
			50849	WS Sockburn Pump Station Communications Renewal Works	288	-	-	-	-	-	-	-	-	-	-	-
			56488	WS Barrington Mall, Hurunui Steet & Main North Road Mains and Submains Renewal	67	-	-	-	-	-	-	-	-	-	-	-
			41284	WS Riccarton Road - Harakeke to Matipo	118	-	-	-	-	-	-	-	-	-	-	-
			50368	WS Mains McCormacks Bay Road & Balmoral Lane Cliff Reactive Renewal	303	-	-	-	-	-	-	-	-	-	-	-
			55799	WS Buxtons, Horseshoe Lake, Huxley, Kingsley, King, Cardiff, Sydney, Ferry & Centaurus Submains Renewals	215	-	-	-	-	-	-	-	-	-	-	-
			47761	WS Christchurch Well Head Security	110	-	-	-	-	-	-	-	-	-	-	-
			51154	WS Sparks Roading & Cycleway Mains Renewal	275	-	-	-	-	-	-	-	-	-	-	-
			50455	WS Base Station Control Relocation Works (SCADA)	82	-	-	-	-	-	-	-	-	-	-	-
			50447	WS Worsleys Retaining Wall Renewal (1)	24	-	-	-	-	-	-	-	-	-	-	-
			50341	WS Mays Well Renewal (3)	1,217	-	-	-	-	-	-	-	-	-	-	-
			48892	WS Halswell Road Stream Crossing Mains Renewal	85	-	-	-	-	-	-	-	-	-	-	-
			50357	WS Automation Improvement Works 2019	55	-	-	-	-	-	-	-	-	-	-	-
			48902	WS Pump & Storage Equipment Renewals 2021 (MEICA)	1,256	-	-	-	-	-	-	-	-	-	-	-
			33796	WS Lake Terrace Road Water Supply Pump Station Generator (PS1023)	20	-	-	-	-	-	-	-	-	-	-	-
			48895	WS Balgay, Karamu & Minebank Mains Renewal	99	-	-	-	-	-	-	-	-	-	-	-
			57448	WS Warden Street Intersections Mains Renewal	54	-	-	-	-	-	-	-	-	-	-	-
			51528	WS Ilam, Libeau, Avonside, Sparks & Hendersons Mains Renewals	532	-	-	-	-	-	-	-	-	-	-	-
		Asset Renewal Total			24,803	48,404	50,915	62,743	63,220	65,765	67,995	67,130	66,463	65,825	66,887	625,348
		Level of Service Improvement														
			63367	WS Transient Mitigation	-	1,500	-	-	-	-	-	-	-	-	-	1,500
		Level of Service Improvement Total			-	1,500	-	-	-	-	-	-	-	-	-	1,500

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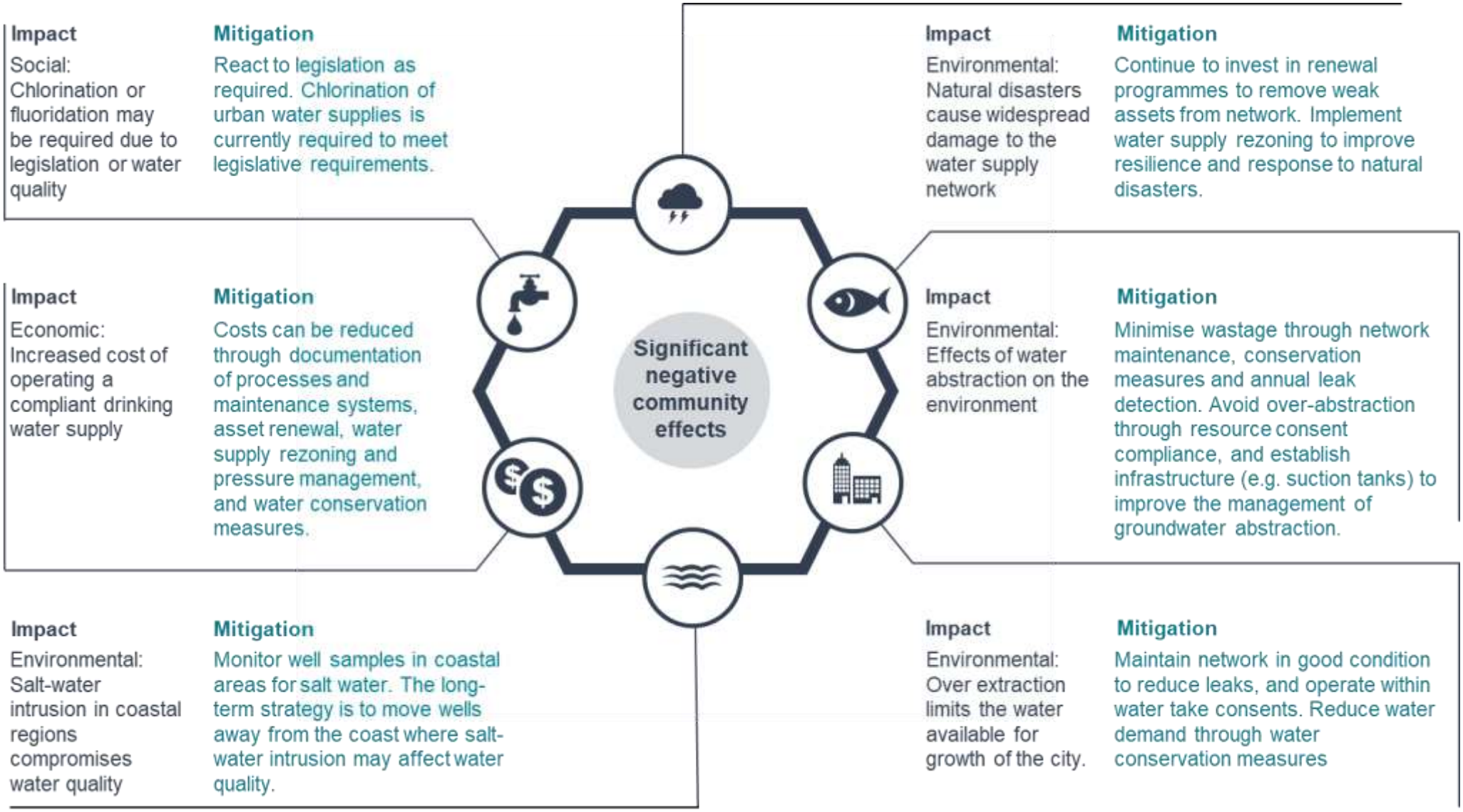
Funding Programme	Group of Activities	Activity	Driver	ID	Title	Current Year Budget*	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025	Proposed 2026	Proposed 2027	Proposed 2028	Proposed 2029	Proposed 2030	Proposed 2031	Proposed Total LTP
			New Service														
				52902	WS Okains Bay New Water Supply	62	1,300	1,200	-	-	-	-	-	-	-	-	2,500
				20713	WS New Small Supplies	-	-	-	-	-	-	-	-	298	-	-	298
				47762	WS Christchurch Temporary Chlorination	25	-	-	-	-	-	-	-	-	-	-	-
			New Service Total			87	1,300	1,200	-	-	-	-	-	298	-	-	2,798
		Water Supply Total				36,254	57,717	68,626	85,340	80,184	81,971	87,722	89,521	91,877	90,989	94,428	828,375
	Water Supply Total					36,254	57,717	68,626	85,340	80,184	81,971	87,722	89,521	91,877	90,989	94,428	828,375
Core funding Total						**36,254**	**57,717**	**68,626**	**85,340**	**80,184**	**81,971**	**87,722**	**89,521**	**91,877**	**90,989**	**94,428**	**828,375**
Core Total						36,254	57,717	68,626	85,340	80,184	81,971	87,722	89,521	91,877	90,989	94,428	828,375
Grand Total						**41,540**	**65,416**	**68,626**	**85,340**	**80,184**	**81,971**	**87,722**	**89,521**	**91,877**	**90,989**	**94,428**	**836,074**

* The Current Year Budget in the capital schedules may differ from the Annual Plan 2020/21 total capital in the financial summaries in section 9 above. The Current Year Budget includes any funding carried forward from the prior year-end and other changes approved since the Annual Plan was published.

12. Does this activity have any significant negative effects on social, economic, environmental or cultural wellbeing, now or in the future?

Negative Effect	Mitigation
Social	
1. Chemical addition may be required (chlorination or fluoridation) as dictated by legislation and/or water quality	React to Central Government legislation as required. Chlorination of urban water supplies not currently required. Fluoridate water if required by the Canterbury District Health Board.
Economic	
2. Cost of operating a compliant potable water supply	Documented processes and maintenance systems control costs. Improve network efficiency through asset renewal. Water supply rezoning and pressure management to reduce operating and maintenance costs. Reduce demand through water conservation measures. Assess and report cost efficiency and affordability.
Environmental	
3. Salt-water intrusion in coastal regions compromises water quality	Monitor well takes in coastal areas for salinity (conductivity) and investigate any changes. Long term strategy to move wells away from coast where salt-water intrusion may impact on quality.
4. Over extraction limits water available for growth of the city.	Maintain network condition to reduce leaks. Operate within water take consents. Reduce water demand through water conservation measures. Respond to notifications from Environment Canterbury regarding requests for new water takes.
5. Effects of water abstraction on the environment	Network maintenance and water conservation measures to minimise wastage. Annual leak detection programme to monitor and reduce water loss. Maintain resource consent compliance and avoid over-abstraction. Establish infrastructure (e.g. suction tanks) to improve management of groundwater abstraction.
6. Natural disasters cause widespread damage to the water supply network	Earthquake design guidelines incorporated in Council's Infrastructure Design Standard and Construction Standard Specifications. Well, pump station, reservoir and pipeline design more resilient infrastructure than previously. Uphold standards and specifications through the resource and building consent processes. Continue to invest in renewal programmes to remove weaker assets from network (e.g. AC pipes). Water supply rezoning to improve resilience and response to natural disasters.
Cultural	

The following diagram outlines the potential negative effects of water supply on the community, and summarises how these impacts can be minimised or mitigated.



13. What risks are identified and what controls and mitigations are planned?

Council's Risk Policy and assessment framework outlines its approach to managing risk. The framework provides a way to consistently identify, record and assess risks, and prioritise those that need to be mitigated.

Risk management is inherent in all of Council's water supply activity processes. Significant risk management strategies for this activity include:

- **Management escalation and review:** The Water Supply Unit holds a monthly management meeting to review progress on operational activities.
- **Asset design:** For Council delivered projects, all elements are designed and delivered in accordance with Council's Infrastructure Design Standards and Construction Standard Specification. These two documents set in place the expectations of fit-for-purpose design and construction practises.
- **Delivery:** During construction, quality assurance processes are in place to confirm that the works are undertaken in accordance with expectations and guidelines.

It is recommended that the risk tables in Section 5 of the AMP are viewed in conjunction with this Activity Management Plan to understand the challenges that face the water supply activity, the mitigation measures, and the residual risk levels.

In various briefing presentations to the Councillors, the following high level risks were outlined as being key to the activity. There are a number of more specific risks that affect the activity, but they are not presented in this document due to the number of risks and quantity of detail.

Risk Title **There is a risk that/of:**	**Caused By:**	**Resulting In:**	**Controls and Mitigations**
There is a risk that the groundwater that we use to supply Christchurch/Lyttelton, Wainui, Birdlings Flat, Little River and Akaroa/Takamatua receives microbial or chemical contamination.	• Wastewater seeping into the aquifer from broken or leaking pipes, septic tanks or wastewater overflows • Water abstracted from a well that is less than 1 year old. (microbial contamination may still be present) • Chemical or diesel spills seeping into the aquifer, leaching from contaminated sites • Intensive farming in the groundwater source area contaminates the groundwater with nitrate • Contamination of Wells and groundwater source, due to insufficient maintenance and renewals budget, lack of	• Illness and possibly deaths from drinking water contaminated water • Non-compliance with the Drinking-water Standards for New Zealand, which may lead to intervention by the drinking water regulator (e.g. requirement to chlorinate) • Inability to supply sufficient water to meet demand • Additional costs to treat contaminated water reputational damage	• Increased communications and engagement with community through community boards • Programmed wellhead security assessments • Programmed reservoir/suction tank assessments • Programmed CCTV inspections of high consequence of failure pipes • Regular maintenance • Appropriately resourced 3 waters business unit • Adequately funded renewals programmes • Confined aquifer system prevents microbial contaminants from entering the aquifers used for our water supply

Risk Title There is a risk that/of:	Caused By:	Resulting In:	Controls and Mitigations
	staff/contractor capability and capacity, or negligence • Abandoned or improperly decommissioned wells provide a direct route for contamination to enter the aquifer		• Microbial and chemical contamination monitoring, risk assessment and reactive processes • Drinking-water source protection zones and associated rules are included in the Land and Water Regional Plan • liaising with Environment Canterbury on groundwater protection matters • Double skinned heat exchangers to prevent loss of fluids into the aquifer • All CCC fuel tanks are above ground • Site audits of high hazard sites • Appropriate decommissioning and sealing of unused Council bores
There is a risk that the Council, as a water supplier, does not comply with the Drinking-water Standards for New Zealand or the Health Act.	• Loss of secure bore water status (Christchurch/Lyttelton and Wainui) • Not having an approved Water Safety Plan for each water supply that serves more than 500 customers (Christchurch/Lyttelton and Akaroa/Takamatua) • Not implementing the preventive measures and improvements in the Water Safety Plans • Not operating, maintaining, renewing and upgrading water supply infrastructure (including treatment plants) to meet the required standards • A failure to adequately respond to transgressions and escalate breaches of the standards or Act • Insufficient trained and experienced staff (Council and Citycare) • Inadequate funding of water supply renewals and upgrades and/or operations and maintenance	• Illness and possibly deaths from drinking water contaminated water • Regulator intervention, including issuing a compliance order, prosecution, fines, declaration of a drinking water emergency with a designated officer of the Ministry of Health taking control of the water supply • Increased capital, operational and maintenance costs • Reputational damage	• Approved Water Safety Plans for water supplies that serve more than 500 customers (Christchurch/Lyttelton and Akaroa/Takamatua) • Action plans to implement improvements in the water safety plans • Qualified and experienced staff for preparing and implementing Water Safety Plans, operating and maintaining the water supplies, and planning and delivering renewals and upgrades to water supply infrastructure • Audits of water supply operations and maintenance activities • Operational processes and procedures for the water supplies • Providing sufficient funding in the Long Term Plan for operational, maintenance and capital costs to ensure compliance

Risk Title There is a risk that/of:	Caused By:	Resulting In:	Controls and Mitigations
There is a risk that our water treatment plants at Duvauchelle, Little River, Akaroa, Birdlings Flat, Pigeon Bay and Main Pumps do not adequately remove contaminants from the source water.	• Contaminant load is greater than the treatment plant was designed for • Treatment plant not properly maintained and/or operated due to insufficient maintenance and renewals budget, lack of staff/contractor capability and/or capacity, or negligence • Break-down of treatment plant	• Illness and possibly deaths from drinking water which has received insufficient treatment to remove contaminants • Non-compliance with the Drinking-water Standards for New Zealand, which may lead to intervention by the drinking water regulator • Increased operational and maintenance costs • Inability to supply sufficient water to meet demand • Reputational damage	• Multi-stage treatment system (coagulation / flocculation, membrane and chlorination) • Use of alternative groundwater source if stream sediment loads are high (Akaroa and Little River) • Turbidity monitoring at the intakes and automatic bypass if stream sediment loads are high • Visual inspections of streams to check for cyanobacteria • Qualified and experienced Maintenance staff to operate and maintain the water treatment plants • Audits of treatment plant operations and maintenance activities • Rules in the Land and Water Regional Plan control activities in Water Supply Protection Zones • Making submissions on resource consents that pose a contamination risk, submitting on changes to the Land and Water Regional Plan and liaising with Environment Canterbury on surface water supply catchment protection matters • Implementation of the Canterbury Water Management Strategy • Treated water storage tanks so that water can still be provided during short outages • Tankering water from another nearby water supply if the treatment plant cannot treat water sufficiently • Planned upgrade to the Duvauchelle water treatment plant included in the Annual Plan • Fire bans during high risk times

As discussed above, there are a number of activity specific risks that were identified as part a robust risk identification process during the Asset Management Plan (AMP) writing process, initially to identify the activity specific related from the ProMapp risk register, and then expand on this with the risks and challenges that face the business. All of these risks are contained in Section 5.3.2 - Activity Specific Risks and relate to risks such as:

1. Major/critical infrastructure failure;
2. Outdated or inadequate hydraulic models to effectively inform planning decisions;
3. Climate change effects on infrastructure;
4. Impacts on economic development ;
5. Insufficient investment of CAPEX and OPEX; and
6. Inability to meet Councils Carbon Neutrality goals - The Government has recognised the pressing need for long-term greenhouse gas emissions reductions, setting national targets in 2019 which CCC have in turn adopted.
   These are:

    - Net zero gas emissions by 2045
    - 50% reduction from 2016/17 baseline levels by 2030 (excluding methane)
    - 25% minimum reduction in methane by 2030 and 50% reduction by 2045

There are no specific projects or programmes included in the long term plan currently that specifically target the reduction of our green house gas emissions and address climate change but all projects delivered proactively seek to reduce carbon where opportunities exist.