Long Term Plan 2018-28
Service Plan for Water Supply

As at March 2018

Approvals		
Role	**Name**	**Signature and date of sign-off**
Finance Manager	Peter Langbein	Approved February 2018
Head of Three Waters and Waste	John Mackie	Approved 2 March 2018 
General Manager(s)	David Adamson	

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What does the overall Group of Activities do and why do we do it?

Christchurch City Council builds, owns, operates and maintains water sources, networks and treatment plants to provide safe drinking (potable) water to the community. The service is focused on ensuring a reliable supply of safe drinking water to support healthy communities and a prosperous economy.

The service which includes the abstraction, treatment, storage and distribution of water is core business for the Council, required by the Local Government Act 2002 and the Health Act 1956.

Council implements these services for the community through planning, day to day operations, planned and reactive maintenance, repair and renewal of damaged infrastructure, building new infrastructure and implementing improvements to the system and measures its performance in terms of safety, quality and reliability.

1. What does this activity deliver?

The objective of the activity is to abstract, treat and distribute water in a way that protects public health without negative effects on the environment. This is physically delivered in the following ways:

- Provide a safe and reliable potable water supply
- Secure and protect water from contamination
- Monitor water quality for compliance with the Drinking-water Standards for New Zealand (DWSNZ)
- Plan, regulate, build, maintain, manage and renew water supply systems.

The Council supplies water to approximately 160,000 residential and business customers through seven urban water supply schemes and six rural water supply schemes, via 3,400 km of mains and sub-mains 35 reservoirs, 129 pump stations, 160 wells and 7 stream intakes and 7 water treatment plants. The water supply system is monitored and controlled by an extensive SCADA system; however costs of the SCADA system are provided through the Wastewater activity.

2. Why do we deliver this activity?

Providing good-quality water infrastructure that is efficient, effective and appropriate to present and anticipated future circumstances is one of the purposes of local government as set out in the Local Government Act 2002.

Providing a water supply that is safe to drink and sustainable is a fundamental requirement for safe and healthy urban communities. The community expects the Council to provide good quality, reliable water services in a cost-effective, equitable and sustainable manner.

This activity is also undertaken in accordance with:

- Drinking-water Standards for New Zealand (2005, revised 2008)
- Health Act 1956
- Resource Management Act 1991
- Health and Safety at Work Act 2015
- National Policy Statement on Urban Development Capacity 2016
- Water Supply, Wastewater and Stormwater Bylaw 2014

The Council must deliver the water supply service to comply with:

Safe drinking water standards: The Health Act 1956, as supported by the Drinking-Water Standards for New Zealand specifies standards for drinking water quality and securing a safe supply.

Abstraction of raw water: The Council is consented in terms of the Resource Management Act 1991 on the volume of water which it may sustainably take from a given water resource.

Water services assessments: The Local Government Act 2002 requires a territorial authority to asses, from a public health perspective, the adequacy of its water supply in light of health risks, quality of service, current and future demand and regulatory compliance with drinking water standards.

Fire flow: Although the New Zealand Fire Service Firefighting Water Supplies Code of Practice is not mandatory, the Council provides fire hydrants as part of its urban water reticulation system and aims to maintain the minimum expected water supply for firefighting at 25 litres per second with a resulting residual pressure of not less than 100 kilopascals (kPa).

Development capacity to meet demand: The National Policy Statement on Urban Development Capacity 2016 directs local authorities to provide sufficient development capacity for housing and business growth to meet demand, including the provision of adequate infrastructure for supporting greenfield sites or intensification of existing urban environments. The focus is on ensuring responsive and integrated planning to service urban growth areas. The Council must ensure that there is enough serviced development land for the next three years, and have serviced land or funding in the Long Term Plan to ensure that there is enough serviced development land for the next ten years.

The Christchurch City Council Water Supply Strategy 2009-2039 provides the strategic framework for the water supply service.

The water supply service is critical for achieving and supporting Council's strategic directions, including:

- Safe and sustainable supply water supply and improved waterways including:
    - Communities are actively involved in programmes that promote water conservation, water quality and valuing our waterways
    - The quality and quantity of aquifer water provides high quality sustainable drinking water now and in the future
- Informed and proactive approaches to natural hazard risks
    - We manage and adapt to the impacts and consequences of natural hazards
    - Infrastructure is designed and built to withstand expected natural hazard risks
    - Partner with communities to minimise, mitigate, manage and adapt to natural hazard risks
    - Wide understanding of our natural hazard risks contributes to building community resilience.

There are several Community Outcomes that relate directly to the water supply service:

- Safe and healthy communities
- High quality drinking water
- Sustainable use of resources
- Modern and robust city infrastructure and facilities network.

3. Specify Levels of Service

The Levels of Service, Performance Measures and Performance Targets for the Water Supply activity are provided below.

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
						Year 1	Year 2	Year 3	
						2018/19	2019/20	2020/21	
Supplying potable water to properties, through the provision of infrastructure to take, treat (where appropriate), store, deliver, maintain, manage and monitor the supply.									
12.1.1	Council operates water supplies in a reliable and responsive manner	Community outcome: Modern and robust city infrastructure and facilities network	Resident satisfaction surveys	New target – no current performance		Target 1 Proportion of residents satisfied with reliability of water supplies: ≥ 85%	Target 1 Proportion of residents satisfied with reliability of water supplies:≥ 85%	Target 1 Proportion of residents satisfied with reliability of water supplies:≥ 85%	Target 1 Proportion of residents satisfied with reliability of water supplies:≥ 85%
		Community outcome: Modern and robust city infrastructure and facilities network	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.	15.8 in 2015/16	Average of 7.8 in Water NZ National Performance Review 2015/16.	Target 2 Number of unplanned interruptions per 1,000 properties served per year: ≤ 16 Non-LTP	Target 2 Number of unplanned interruptions per 1,000 properties served per year: ≤ 16 Non-LTP	Target 2 Number of unplanned interruptions per 1,000 properties served per year: ≤ 16 Non-LTP	Target 2 Number of unplanned interruptions per 1,000 properties served per year: ≤ 16 Non-LTP

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
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12.1.1 cont'd	Council operates water supplies in a reliable and responsive manner	Community outcome: Modern and robust city infrastructure and facilities network	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.	0.82 in 2015/16		Target 3 Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year: ≤ 1	Target 3 Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year: ≤ 1	Target 3 Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year: ≤ 1	Target 3 Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year: ≤ 1
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, Water Supply non-financial performance measure 4d	Number of complaints divided by the total number of properties connected to the water supply network divided by 1,000.	1.24 in 2015/16	Average of 4.17 in Water NZ National Performance Review 2015/16.	Target 4 Number of continuity of supply complaints per 1,000 properties served per year: ≤ 2	Target 4 Number of continuity of supply complaints per 1,000 properties served per year: ≤ 2	Target 4 Number of continuity of supply complaints per 1,000 properties served per year: ≤ 2	Target 4 Number of continuity of supply complaints per 1,000 properties served per year: ≤ 2
		Community outcome: Modern and robust city infrastructure and facilities network	Resident satisfaction surveys	New targets – no current performance		Target 5 Proportion of residents satisfied with Council response to water supply faults: ≥ 85%	Target 5 Proportion of residents satisfied with Council response to water supply faults: ≥ 85%	Target 5 Proportion of residents satisfied with Council response to water supply faults: ≥ 85%	Target 5 Proportion of residents satisfied with Council response to water supply faults: ≥ 85%

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
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12.1.1 cont'd	Council operates water supplies in a reliable and responsive manner	Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, Water Supply non-financial performance measure 3a	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.	0.6 hours in 2015/16	Average of 0.63 hours in Water NZ National Performance Review 2015/16.	Target 6 Median time from notification to attendance of urgent call-outs: ≤ 1 hour	Target 6 Median time from notification to attendance of urgent call-outs: ≤ 1 hour	Target 6 Median time from notification to attendance of urgent call-outs: ≤ 1 hour	Target 6 Median time from notification to attendance of urgent call-outs: ≤ 1 hour
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, Water Supply non-financial performance measure 3b	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.	1.7 hours in 2015/16	Average of 2.98 in Water NZ National Performance Review 2015/16.	Target 7 Median time from notification to resolution of urgent call-outs: ≤ 5 hours	Target 7 Median time from notification to resolution of urgent call-outs: ≤ 5 hours	Target 7 Median time from notification to resolution of urgent call-outs: ≤ 5 hours	Target 7 Median time from notification to resolution of urgent call-outs: ≤ 5 hours
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, Water Supply non-financial performance measure 3c	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.	4.6 hours in 2015/16	Average of 18 hours in Water NZ National Performance Review 2015/16.	Target 8 Median time from notification to attendance of non-urgent call-outs: ≤ 3 days	Target 8 Median time from notification to attendance of non-urgent call-outs: ≤ 3 days	Target 8 Median time from notification to attendance of non-urgent call-outs: ≤ 3 days	Target 8 Median time from notification to attendance of non-urgent call-outs: ≤ 3 days

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
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12.1.1 cont'd	Council operates water supplies in a reliable and responsive manner	Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, Water Supply non-financial performance measure 3d	Reported in monthly contract reports from the Contractor. 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.	11.6 hours in 2015/16	Average of 29 hours in Water NZ National Performance Review 2015/16.	Target 9 Median time from notification to resolution of non-urgent call-outs: ≤ 4 days	Target 9 Median time from notification to resolution of non-urgent call-outs: ≤ 4 days	Target 9 Median time from notification to resolution of non-urgent call-outs: ≤ 4 days	Target 9 Median time from notification to resolution of non-urgent call-outs: ≤ 4 days
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, Water Supply non-financial performance measure 4c	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	1.77 in 2015/16	Average of 2.66 in Water NZ National Performance Review 2015/16.	Target 10 Number of pressure or flow complaints per 1,000 connections per year: ≤ 2	Target 10 Number of pressure or flow complaints per 1,000 connections per year: ≤ 2	Target 10 Number of pressure or flow complaints per 1,000 connections per year: ≤ 2	Target 10 Number of pressure or flow complaints per 1,000 connections per year: ≤ 2
		Community outcome: Modern and robust city infrastructure and facilities network	The number of complaints about the Council's response to complaints received under 12.1.1 Target 4,	New LoS – no current performance		Target 11 Number of complaints regarding Council's response to	Target 11 Number of complaints regarding Council's response to	Target 11 Number of complaints regarding Council's response to	Target 11 Number of complaints regarding Council's response to

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
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12.1.1 cont'd	Council operates water supplies in a reliable and responsive manner	Department of Internal Affairs, Water Supply non-financial performance measure 4e	12.1.1 Target 10, 12.3.1 Target 2 and 12.3.1 Target 3 received through the call centre, expressed per 1,000 properties connected to the Council's water supply system			complaints about drinking water taste, odour, pressure or flow, or continuity of supply per 1,000 properties connected to the Council's water supply system per year: ≤ 0.6	complaints about drinking water taste, odour, pressure or flow, or continuity of supply per 1,000 properties connected to the Council's water supply system per year: ≤ 0.6	complaints about drinking water taste, odour, pressure or flow, or continuity of supply per 1,000 properties connected to the Council's water supply system per year: ≤ 0.6	complaints about drinking water taste, odour, pressure or flow, or continuity of supply per 1,000 properties connected to the Council's water supply system per year: ≤ 0.6
12.2.1	Council water supplies are safe to drink	Community outcome: Safe and healthy communities	Resident satisfaction survey	New LoS – no current performance		Target 1 Proportion of residents satisfied with the safety of Council water supplies : ≥ 80% Non-LTP	Target 1 Proportion of residents satisfied with the safety of Council water supplies : ≥ 80% Non-LTP	Target 1 Proportion of residents satisfied with the safety of Council water supplies : ≥ 80% Non-LTP	Target 1 Proportion of residents satisfied with the safety of Council water supplies : ≥ 80% Non-LTP
		Community outcome: Safe and healthy communities	Report from Ministry of Health on water supply risk grade	Ba in 2015/16		Target 2 MoH risk grade for urban water	Target 2 MoH risk grade for urban water	Target 2 MoH risk grade for urban water	Target 2 MoH risk grade for urban water

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
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12.2.1 cont'd	Council water supplies are safe to drink	Community outcome: Safe and healthy communities	Report from Ministry of Health on water supply risk grade	Da in 2015/16		supplies (excluding the Northwest supply zone and Lyttelton Harbour): Ba Non-LTP Target 3 MoH risk grade for the Northwest urban water supply zone: Da	supplies (excluding the Northwest supply zone and Lyttelton Harbour): Ba Non-LTP Target 3 MoH risk grade for the Northwest urban water supply zone: Da	supplies (excluding the Northwest supply zone and Lyttelton Harbour): Ba Non-LTP Target 3 MoH risk grade for the Northwest urban water supply zone: Ba	supplies (excluding the Northwest supply zone and Lyttelton Harbour): Ba Non-LTP Target 3 MoH risk grade for the Northwest urban water supply zone: Ba
		Community outcome: Safe and healthy communities	Report from Ministry of Health on water supply risk grade	Bb in 2015/16		Non-LTP Target 4 MoH risk grade for Lyttelton Harbour: Bb	Non-LTP Target 4 MoH risk grade for Lyttelton Harbour: Bb	Non-LTP Target 4 MoH risk grade for Lyttelton Harbour: Bb	Non-LTP Target 4 MoH risk grade for Lyttelton Harbour: Bb
		Community outcome: Safe and healthy communities	Report from Ministry of Health on water supply risk grade	Uu in 2015/16		Non-LTP Target 5 MoH risk grade for rural water supplies: Uu Target 6	Non-LTP Target 5 MoH risk grade for rural water supplies: Cc Target 6	Non-LTP Target 5 MoH risk grade for rural water supplies: Cc Target 6	Non-LTP Target 5 MoH risk grade for rural water supplies: Cc Target 6

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
						Year 1	Year 2	Year 3	
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12.2.1 cont'd	Council water supplies are safe to drink	Community outcome: Safe and healthy communities	Three Waters & Waste Technical Services team report on the number of properties assessed and required to install backflow prevention devices	106		Number of highest risk properties assessed and required to install backflow prevention devices each year: ≥ 100	Number of highest risk properties assessed and required to install backflow prevention devices each year: ≥ 100	Number of highest risk properties assessed and required to install backflow prevention devices each year: ≥ 100	Number of highest risk properties assessed and required to install backflow prevention devices each year: ≥ 100
						Target 7	Target 7	Target 7	Target 7
		Community outcome: Safe and healthy communities Department of Internal Affairs, Water Supply non-financial performance measure 1a	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ	100% in 2015/16	96.8% of all supplies for >100 people, from Ministry of Health Annual Report on Drinking-water Quality 2014-2015	Proportion of urban residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%	Proportion of urban residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%	Proportion of urban residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%	Proportion of urban residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%
						Target 8	Target 8	Target 8	Target 8
		Community outcome: Safe and healthy communities Department of Internal Affairs, Water Supply non-financial performance measure 1a	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ	100% in 2015/16	96.8% of all supplies for >100 people, from Ministry of Health Annual Report on Drinking-water Quality 2014-2015	Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.5%	Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%	Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%	Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%

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12.2.1 cont'd	Council water supplies are safe to drink	Community outcome: Safe and healthy communities Department of Internal Affairs, Water Supply non-financial performance measure 1b	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ	76.6% in 2015/16	80% of all supplies for >100 people, from Ministry of Health Annual Report on Drinking-water Quality 2014-2015	Target 9 Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 79%	Target 9 Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 99.8%	Target 9 Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 99.8%	Target 9 Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 99.8%
		Community outcome: Safe and healthy communities Department of Internal Affairs, Water Supply non-financial performance measure 1b	Report to the Drinking Water Assessor on compliance with the Drinking-water Standards for NZ	8.5% in 2015/16	80% of all supplies for >100 people, from Ministry of Health Annual Report on Drinking-water Quality 2014-2015	Target 10 Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 8.5%	Target 10 Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 8.5%	Target 10 Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 19%	Target 10 Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 19%
		Community outcome: Safe and healthy communities	Three Waters & Waste Asset Management team report on water safety plans	100% in 2015/16	95% of all supplies for >100 people, from Ministry of Health Annual Report on Drinking-	Target 11 Proportion of water supply zones with a MoH approved	Target 11 Proportion of water supply zones with a MoH approved	Target 11 Proportion of water supply zones with a MoH approved	Target 11 Proportion of water supply zones with a MoH approved

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
						Year 1	Year 2	Year 3	
						2018/19	2019/20	2020/21	
					water Quality 2014-2015	Water Safety Plan: 100%	Water Safety Plan: 100%	Water Safety Plan: 100%	Water Safety Plan: 100%
12.3.1	Council provides high quality drinking water	Community outcome: high quality drinking water	Resident satisfaction survey	New LoS – no current performance		Target 1 Proportion of residents satisfied with quality of water supplied: ≥ 90%	Target 1 Proportion of residents satisfied with quality of water supplied: ≥ 90%	Target 1 Proportion of residents satisfied with quality of water supplied: ≥ 90%	Target 1 Proportion of residents satisfied with quality of water supplied: ≥ 90%
		Community outcome: high quality drinking water Department of Internal Affairs, Water Supply non-financial performance measure 4a	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	0.63 in 2015/16	Average of 1.84 in Water NZ National Performance Review 2015/16	Target 2 Number of water clarity complaints per 1,000 connections per year: ≤ 1.0	Target 2 Number of water clarity complaints per 1,000 connections per year: ≤ 1.0	Target 2 Number of water clarity complaints per 1,000 connections per year: ≤ 1.0	Target 2 Number of water clarity complaints per 1,000 connections per year: ≤ 1.0
		Community outcome: high quality drinking water Department of Internal Affairs, Water	The number of complaints about water taste received through the call centre, expressed per 1,000	0.34 in 2015/16	Average of 0.21 in Water NZ National Performance Review 2015/16	Target 3 Number of water taste complaints per 1,000	Target 3 Number of water taste complaints per 1,000	Target 3 Number of water taste complaints per 1,000	Target 3 Number of water taste complaints per 1,000

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
						Year 1	Year 2	Year 3	
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12.3.1 cont'd	Council provides high quality drinking water	Supply non-financial performance measure 4a Community outcome: high quality drinking water Department of Internal Affairs, Water Supply non-financial performance measure 4	properties connected to the Council's water supply system 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	0.14 in 2015/16	Average of 0.50 in Water NZ National Performance Review 2015/16	connections per year: ≤ 0.5 Target 4 Number of water odour complaints per 1,000 connections per year: ≤ 0.5	connections per year: ≤ 0.5 Target 4 Number of water odour complaints per 1,000 connections per year: ≤ 0.5	connections per year: ≤ 0.5 Target 4 Number of water odour complaints per 1,000 connections per year: ≤ 0.5	connections per year: ≤ 0.5 Target 4 Number of water odour complaints per 1,000 connections per year: ≤ 0.5
12.4.1	Council water supply networks and operations demonstrate environmental stewardship	Community outcome: sustainable use of resources	Resident satisfaction survey Total volume of water abstracted from resource consent	New LoS – no current performance 50.76 in 2015/16	Average of 12 in Water NZ National	Target 1 Proportion of residents satisfied with the sustainability of Council water supplies: ≥ 85% Non-LTP Target 2 Total volume of water	Target 1 Proportion of residents satisfied with the sustainability of Council water supplies: ≥ 85% Non-LTP Target 2 Total volume of water	Target 1 Proportion of residents satisfied with the sustainability of Council water supplies: ≥ 85% Non-LTP Target 2 Total volume of water	Target 1 Proportion of residents satisfied with the sustainability of Council water supplies: ≥ 85% Non-LTP Target 2 Total volume of water

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
						Year 1	Year 2	Year 3	
						2018/19	2019/20	2020/21	
12.4.1 cont'd	Council water supply networks and operations demonstrate environmental stewardship	Community outcome: sustainable use of resources	compliance reports to ECan.		Performance Review 2015/16.	abstracted for urban water supplies in millions of cubic metres per year: ≤ 55	abstracted for urban water supplies in millions of cubic metres per year: ≤ 55	abstracted for urban water supplies in millions of cubic metres per year: ≤ 55	abstracted for urban water supplies in millions of cubic metres per year: ≤ 55
		Community outcome: sustainable use of resources Department of Internal Affairs, Water Supply non-financial performance measure 5	Total volume of water abstracted minus the leakage from the public network divided by the total population served by Council's water supply networks	272 in 2015/16	Average of 321 in Water NZ National Performance Review 2015/16	Target 3 Average consumption of drinking water per day in litres per resident per day: ≤ 298	Target 3 Average consumption of drinking water per day in litres per resident per day: ≤ 298	Target 3 Average consumption of drinking water per day in litres per resident per day: ≤ 298	Target 3 Average consumption of drinking water per day in litres per resident per day: ≤ 298
		Community outcome: sustainable use of resources Department of Internal Affairs, Water Supply non-financial performance measure 2	Calculated from night time flow measurement and total water abstraction	11.7% in 2015/16	Average of 24% in Water NZ National Performance Review 2015/16	Target 4 Percentage of real water loss from Council's water supply network: ≤ 15.0%	Target 4 Percentage of real water loss from Council's water supply network: ≤ 15.0%	Target 4 Percentage of real water loss from Council's water supply network: ≤ 15.0%	Target 4 Percentage of real water loss from Council's water supply network: ≤ 15.0%
			Number of infringement notices received in relation to resource consents for water supply	0 in 2015/16		Non-LTP Target 5 Number of infringement notices for	Non-LTP Target 5 Number of infringement notices for	Non-LTP Target 5 Number of infringement notices for	Non-LTP Target 5 Number of infringement notices for

Performance Standards Levels of Service		Results	Method of Measurement	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10 2027/28
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						2018/19	2019/20	2020/21	
12.4.1 cont'd	Council water supply networks and operations demonstrate environmental stewardship	Community outcome: sustainable use of resources				major or persistent breaches of resource consents regarding the operation of the water supply network, as reported by ECan or Council: 0	major or persistent breaches of resource consents regarding the operation of the water supply network, as reported by ECan or Council: 0	major or persistent breaches of resource consents regarding the operation of the water supply network, as reported by ECan or Council: 0	major or persistent breaches of resource consents regarding the operation of the water supply network, as reported by ECan or Council: 0
		Community outcome: sustainable use of resources	Total power used from all water supply pump stations divided by total volume of water pumped	0.29 in 2015/16	Average of 3.37 for water supply energy consumption in Water NZ National Performance Review 2015/16	Non-LTP Target 6 Annual average power (kWh of electricity) used to pump each cubic metre of water: 0.35	Non-LTP Target 6 Annual average power (kWh of electricity) used to pump each cubic metre of water: 0.35	Non-LTP Target 6 Annual average power (kWh of electricity) used to pump each cubic metre of water: 0.35	Non-LTP Target 6 Annual average power (kWh of electricity) used to pump each cubic metre of water: 0.35

4. What levels of service do we propose to change from the current LTP and why?

The following is a summary of level of service changes.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
12.0.2 LTP	Ensure potable water is supplied in accordance with the Drinking Water Standards for New Zealand	MoH risk grading of the NW water supply zone: Ba	12.2.1 Non-LTP Target 3	Council water supplies are safe to drink	MoH risk grade for the Northwest urban water supply zone: Da	Performance target changes required as delays in the well drilling programme means that improvement in grade will not occur as soon as previously projected. Changed to a non-LTP performance measure as the majority of the public do not understand the Ministry of Health (MoH) risk grade system.
		MoH grading of rural water supplies: Cc	12.2.1 Non-LTP Target 5	Council water supplies are safe to drink	MoH risk grade for rural water supplies: Uu	Performance target changes required as postponement of Banks Peninsula water treatment plant improvement projects means that improvement in grade will not occur as soon as previously projected. Changed to a non-LTP performance measure as the majority of the public do not understand the MoH risk grade system.
12.0.2 LTP	Ensure potable water is supplied in accordance with the Drinking Water Standards for New Zealand	Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 99.8%	12.2.1 LTP Target 9	Council water supplies are safe to drink	Proportion of urban residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 79%	Performance target changed in 2018/19 due to delays in well drilling programme.
		Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.8%	12.2.1 LTP Target 8	Council water supplies are safe to drink	Proportion of rural residents supplied water compliant with the DWSNZ bacterial compliance criteria: ≥ 99.5%	Performance target changed in 2018/19 due to Duvauchelle water treatment plant needing to be upgraded to comply with DWSNZ
		Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria: ≥ 99.8%	12.2.1 LTP Target 10	Council water supplies are safe to drink	Proportion of rural residents supplied water compliant with the DWSNZ protozoal compliance criteria: 8.5%	Performance target changed in year one to reflect delays in improvements to Banks Peninsula water treatment plants.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
12.0.2 LTP	Ensure potable water is supplied in accordance with the Drinking Water Standards for New Zealand	Proportion of complaints remediated to the customers' satisfaction: ≥95%	12.1.1 LTP Target 11	Council operates water supplies in a reliable and responsive manner	Number of complaints regarding Council's response to complaints about drinking water taste, odour, pressure or flow, or continuity of supply per 1,000 properties connected to the Council's water supply system per year: ≤ 0.6	Deletion of a performance measure for overall satisfaction with the water supply service and creation of five performance measures splitting the overall satisfaction into satisfaction with water supply reliability, satisfaction with response to water supply faults, satisfaction with safety of water supplied, satisfaction with quality of water supplied and satisfaction with the sustainability of the water supply. This change was made to better align with New Zealand and international standards for levels of service and performance measures.
12.0.1 non-LTP	Supply continuous potable water to all customers	Number of unplanned interruptions per 1,000 properties per year: ≤20	12.1.1 LTP Target 2	Council operates water supplies in a reliable and responsive manner	Number of unplanned interruptions per 1,000 properties served per year: ≤ 16	Performance target reduced based on historic performance. Changed to a LTP performance measure as number of interruptions is something the public can understand and is interested in.
		Number of unplanned interruptions greater than 4 hours duration per week each year: ≤1.75	12.1.1 Non-LTP Target 3	Council operates water supplies in a reliable and responsive manner	Weekly average of the number of unplanned interruptions of greater than 4 hours duration each year: ≤ 1	Words "weekly average" added to the performance measure as this is what has always been reported. Performance target reduced based on historic performance.
12.0.1 LTP	Supply continuous potable water to all customers	Number of continuity of supply complaints per 1,000 customers per year: ≤ 3	12.1.1 LTP Target 4	Council operates water supplies in a reliable and responsive manner	Number of continuity of supply complaints per 1,000 customers served per year: ≤ 2	Performance measure changed to clarify how the number of customers is measured. Performance target changed based on historic performance.
		Number of pressure or flow complaints per 1000 connections per year: ≤ 3	12.1.1 LTP Target 10	Council operates water supplies in a reliable and responsive manner	Number of pressure or flow complaints per 1,000 connections per year: ≤ 2	Performance measure changed to clarify how it is measured. Performance target changed based on historic performance.
12.0.4 non-LTP	Maintain pumping efficiency in city's reticulation (excluding rural townships)	Annual average kWh of electricity used per m3 of water pumped: ≤ 0.37	12.4.1 Non-LTP Target 6	Council water supply networks and operations demonstrate environmental stewardship	Annual average power (kWh of electricity) used to pump each cubic metre of water: 0.35	Performance target changed based on historic performance.
12.0.5 LTP	LOS description: Ensure consent compliance	Number of infringement notices for significant and/or repeated minor breaches of resource consents regarding	12.4.1 Non-LTP Target 5	Council water supply networks and operations	Number of infringement notices for major or persistent breaches of resource consents regarding the operation of the water supply	Performance measure wording clarified to reflect best practice.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
		water supply network operation as reported by ECan or CCC: Zero		demonstrate environmental stewardship	network, as reported by ECan or Council: 0	
12.0.6 LTP	Maintenance of the reticulation network - Reduce the percentage of real water loss from the local authority's networked reticulation system	Target: ≤ 15.4% water loss	12.4.1 LTP Target 4	Council water supply networks and operations demonstrate environmental stewardship	Percentage of real water loss from Council's water supply network: ≤ 15.0%	Performance measure wording clarified to reflect best practice. Performance target changed based on historic performance.
12.0.1 non-LTP	Supply continuous potable water to all customers	Percentage of urgent urban leaks responded to within 1 hour of the leak being reported: ≥95%	N/A	N/A	N/A	Four performance measures relating to the percentage of leaks responded to or repaired within a set time period are proposed for deletion. New performance measures created to meet the DIA requirements measure the median time for response or repair, therefore the historic performance measures are irrelevant.
		Percentage of urgent rural leaks responded to within 2 hours of the leak being reported: ≥95%			N/A	Four performance measures relating to the percentage of leaks responded to or repaired within a set time period are proposed for deletion. New performance measures created to meet the DIA requirements measure the median time for response or repair, therefore the historic performance measures are irrelevant.
		Percentage of medium leaks repaired within 1 working day of being reported ≥90%			N/A	Four performance measures relating to the percentage of leaks responded to or repaired within a set time period are proposed for deletion. New performance measures created to meet the DIA requirements measure the median time for response or repair, therefore the historic performance measures are irrelevant.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
		Percentage of minor leaks repaired within 3 working day of being reported. ≥90%			N/A	Four performance measures relating to the percentage of leaks responded to or repaired within a set time period are proposed for deletion. New performance measures created to meet the DIA requirements measure the median time for response or repair, therefore the historic performance measures are irrelevant.
12.0.3 non-LTP	Monitor the condition of the water supply network	Number of breaks per 100km of water main each year. (excluding 3rd party damage): ≤ 30	N/A	N/A	N/A	Performance measures in the 2015 LTP for the annual number of breaks per 100 kilometres of main or submain are proposed for deletion. These performance measures were intended to show if the renewals programme was sufficient; however as the number of breaks is the main criteria for a pipe to become a renewal candidate, the number of breaks would be expected to rise as more pipes reach end of life irrespective of renewals programme funding levels.
		Number of breaks per 100km of sub-main each year. (excluding 3rd party damage): ≤ 135			N/A	Performance measures in the 2015 LTP for the annual number of breaks per 100 kilometres of main or submain are proposed for deletion. These performance measures were intended to show if the renewals programme was sufficient; however as the number of breaks is the main criteria for a pipe to become a renewal candidate, the number of breaks would be expected to rise as more pipes reach end of life irrespective of renewals programme funding levels.
12.0.2 LTP	Ensure potable water is supplied in accordance with the Drinking Water Standards for New Zealand	MoH risk grading of the urban water supplies (excluding NW zone): Ba	12.2.1 Non-LTP Target 2	Council water supplies are safe to drink	MoH risk grade for urban water supplies (excluding the Northwest supply zone and Lyttelton Harbour): Ba	Lyttelton Harbour was previously included in the urban water supply but has a lower grade due to the condition of the network, so now shown separately as 12.2.1 Target 4. Changed to a non-LTP performance measure as the majority of the public do not understand the MoH risk grade system.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
12.0.2 LTP	Ensure potable water is supplied in accordance with the Drinking Water Standards for New Zealand	Number of water taste complaints per 1,000 customers per year: ≤ 1	12.3.1 LTP Target 3	Council provides high quality drinking water	Number of water taste complaints per 1,000 connections per year: ≤ 0.5	Performance measure changed from customers to connections to accurately reflect how this is measured. Performance target reduced to be in line with benchmarking and historical performance, which is expected to be maintained.
N/A	N/A	N/A	12.1.1 LTP Target 1	Council operates water supplies in a reliable and responsive manner	Proportion of residents satisfied with reliability of water supplies: ≥ 85%	Deletion of a performance measure for overall satisfaction with the water supply service and creation of five performance measures splitting the overall satisfaction into satisfaction with water supply reliability, satisfaction with response to water supply faults, satisfaction with safety of water supplied, satisfaction with quality of water supplied and satisfaction with the sustainability of the water supply. This change was made to better align with New Zealand and international standards for levels of service and performance measures.
N/A	N/A	N/A	12.2.1 LTP Target 1	Council water supplies are safe to drink	Proportion of residents satisfied with the safety of water supplies: ≥ 80%	Deletion of a performance measure for overall satisfaction with the water supply service and creation of five performance measures splitting the overall satisfaction into satisfaction with water supply reliability, satisfaction with response to water supply faults, satisfaction with safety of water supplied, satisfaction with quality of water supplied and satisfaction with the sustainability of the water supply. This change was made to better align with New Zealand and international standards for levels of service and performance measures. Target proposed changed from ≥90% to ≥80% following the findings of the Havelock North Drinking Water Inquiry.
N/A	N/A	N/A	12.3.1 LTP Target 1	Council provides high quality drinking water	Proportion of residents satisfied with the quality of water supplied: ≥ 90%	Deletion of a performance measure for overall satisfaction with the water supply service and creation of five performance measures splitting the overall satisfaction into satisfaction with water supply reliability, satisfaction with response to water supply

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
						faults, satisfaction with safety of water supplied, satisfaction with quality of water supplied and satisfaction with the sustainability of the water supply. This change was made to better align with New Zealand and international standards for levels of service and performance measures.
N/A	N/A	N/A	12.2.1 Non-LTP Target 4	Council water supplies are safe to drink	MoH risk grade for Lyttelton Harbour: Bb	Lyttelton Harbour was previously included in the urban water supply but has a lower grade due to the condition of the network, so now shown separately.
N/A	N/A	N/A	12.4.1 LTP Target 1	Council water supply networks and operations demonstrate environmental stewardship	Proportion of residents satisfied with the sustainability of Council water supplies: ≥ 85%	Deletion of a performance measure for overall satisfaction with the water supply service and creation of five performance measures splitting the overall satisfaction into satisfaction with water supply reliability, satisfaction with response to water supply faults, satisfaction with safety of water supplied, satisfaction with quality of water supplied and satisfaction with the sustainability of the water supply. This change was made to better align with New Zealand and international standards for levels of service and performance measures. Target proposed changed from ≥90% to ≥85% following the findings of the Havelock North Drinking Water Inquiry.
N/A	N/A	N/A	12.4.1 Non-LTP Target 2	Council water supply networks and operations demonstrate environmental stewardship	Total volume of water abstracted for urban water supplies in millions of cubic metres per year: ≤ 55	Creation of a new performance measure for the total volume of water abstracted from urban area aquifers for the Christchurch water supply. This performance measure existed in previous LTPs but was accidentally omitted from the 2015 LTP. It provides a direct comparison between current demand and maximum permitted water abstraction.

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

The water supply service is managed according to best practice to ensure that Council complies with its statutory obligations and can achieve the levels of service expected by the community. Council staff and its operations and maintenance contractors manage the water supply service in the following way:

Plan: assess current supply and demand, determine future needs and identify, evaluate and recommend options to achieve an optimal water supply service

Regulate: issue standards, specifications and bylaws to ensure that the water supply service is safe and reliable and enforce adherence through Council's consent processes

Build: design, specify and procure contractors to build new assets

Operate: ensure that water infrastructure is operated efficiently and effectively

Maintain: perform planned maintenance for a reliable and compliant service

Repair and renew: repair assets when required; review asset condition in the context of condition, age, material, maintenance, etc. and establish a prioritised programme for asset renewal to ensure effectiveness and efficiency of supply

Customer services: receive, prioritise and respond to customer complaints and requests for services.

How are renewal works identified and prioritised?

Detailed methodologies are available in the Draft Lifecycle Management Manual with results in the 2018 Water Supply Asset Management Plan.

At a high level:

- Long term (years 4-30) budget planning is based on installation year and theoretical useful life where the theoretical useful life takes into account material, manufacturer, manufacturing standard, high level criticality condition assessment results and expert judgement from literature.

- Short term (years 1-3) budgets and programs identify and prioritise specific renewals projects based on condition assessment results, performance assessment results, breakage rates, operating costs, criticality, obsolescence, risk and alignment with transport (road) renewal works.

How are projects identified and prioritised for growth and improvement programmes?

- 50 WS Reticulation New Mains, 870 WS New Wells for Growth and 1258 WS New Pump Stations for Growth - master plans have been prepared for providing water supply services to all unserviced greenfield areas. These are used to inform the projects that make up these programmes, and these projects are prioritised based on where there is the most demand for growth. For efficiency, the delivery of water and wastewater servicing for greenfield areas is often planned to occur at the same time.
- 37836 WW Additional Infrastructure Programme and 37844 WS Additional Infrastructure Programme - these programmes are used to compensate developers for upsizing the water and wastewater infrastructure they are constructing for their development, to accommodate future growth in the area. Projects are prioritised on a first come first served basis.

6. What financial resources are needed?

Table 6.1 – Current and Proposed Budget

WATER SUPPLY- WATER SUPPLY				
	2017/18 Annual Plan	2018/19	2019/20	2020/21
	000's			
Supply Potable Water	15,364	19,438	20,282	21,057
Secure and Protect Water	1,085	1,087	1,127	1,160
Monitor Water Quality	105	105	108	110
EQ - Water Supply	28	70	73	74
Activity Costs before Overheads	16,582	20,700	21,589	22,401
Corporate Overhead	2,006	2,513	2,635	2,453
Depreciation	27,927	34,582	35,663	36,967
Interest	2,512	3,057	3,507	4,630
Total Activity Cost	**49,027**	**60,852**	**63,394**	**66,450**
Funded By:				
Fees and Charges	613	625	637	650
Grants and Subsidies	-	-	-	-
Total Operational Revenue	**613**	**625**	**637**	**650**
Net Cost of Service	**48,414**	**60,227**	**62,757**	**65,800**
Funding Percentages:				
Rates	98.7%	99.0%	99.0%	99.0%
Fees and Charges	1.3%	1.0%	1.0%	1.0%
Grants and Subsidies	0.0%	0.0%	0.0%	0.0%
Capital Expenditure				
Improved Levels of Service	216	652	128	52
Increased Demand	10,287	2,111	3,044	3,271
Renewals and Replacements	10,565	24,549	24,583	42,125
Total Activity Capital	**21,067**	**27,312**	**27,755**	**45,448**

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

The capital programme as put forward in the Long Term Plan aims to achieve compliance with statutory obligations in providing the water supply service in accordance with customer expectations. The programmes (in bold, highlighted in blue) and their underlying projects are shown in Table 7.1, along with the drivers and implications if delayed or not implemented.

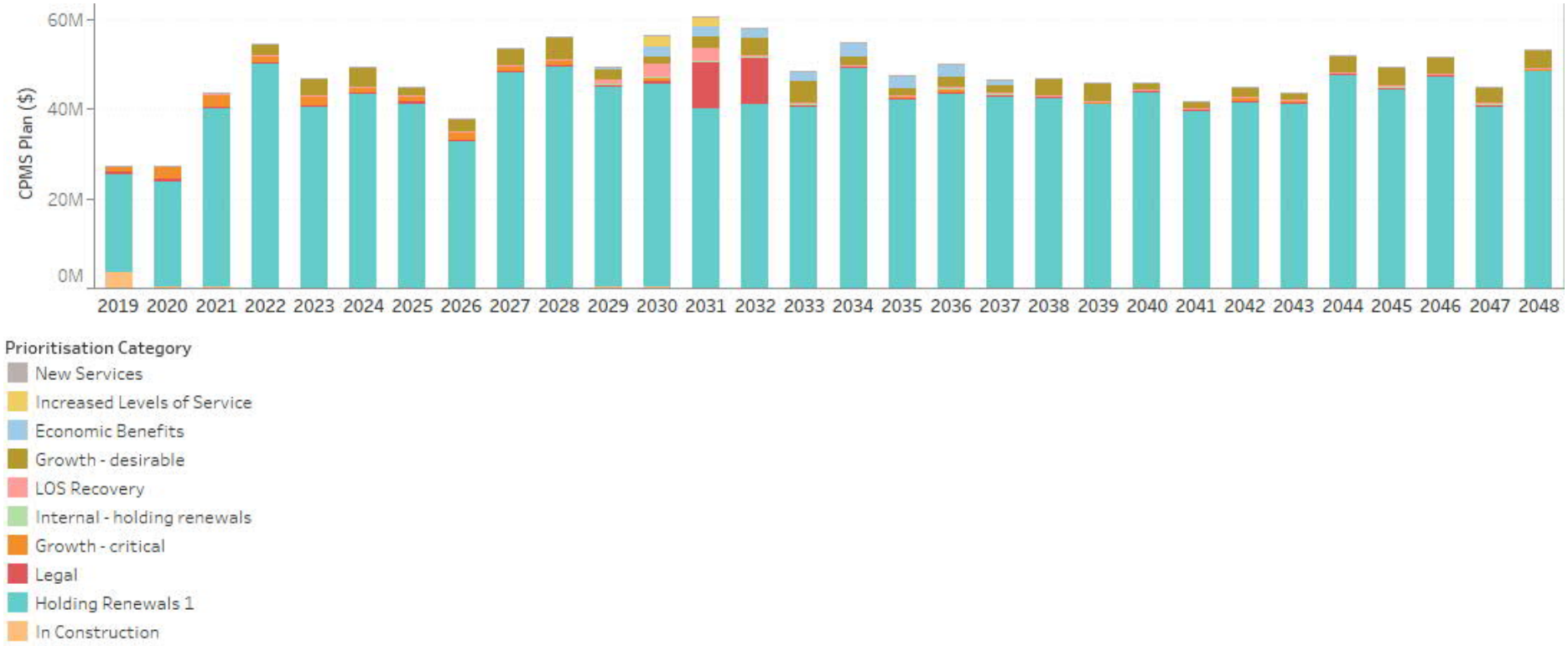
60M
40M
20M
0M
CPMS Plan ($)
2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048
Prioritisation Category
New Services
Increased Levels of Service
Economic Benefits
Growth - desirable
LOS Recovery
Internal - holding renewals
Growth - critical
Legal
Holding Renewals 1
In Construction

Table 7.1 Capital Programme – Water Supply

CPMS ID	Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed or not implemented
50	**WS Reticulation New Mains**	**8,476**	**104**	→ Infrastructure for urban development → Capacity for growth	→ Non-compliance with statutory requirement to provide development infrastructure for growth → Shortage of developable land increases cost of sections and houses → Developers install infrastructure that is undersized for future growth
	plus defined projects:				
38943	WS Highfield Water Supply Mains	3,452	3,452		
39192	WS Knights Stream Park Link Main	40	40		
37844	**WS Additional Infrastructure Programme**	**2,188**	**0**		
	plus defined projects:				
49	WS Subdivisions Add Infra for Development	628	628		
43336	**Water Supply Improvements Programme**				
	plus defined projects:				
18760	WS Duvauchelle DWSNZ upgrade Stage 2	300	300	→ Compliance with DWSNZ → Supply continuous safe drinking water → Minimize need for carting of water	→ Continued non-compliance with DWSNZ → Non-compliance with statutory requirement to provide safe drinking water → Impact on customer satisfaction with reliability of supply (12.1.1, Target 1) and quality of supply (12.3.1 Target 1) → Continued high operating costs to maintain treatment plant and tanker water to Duvauchelle when raw water is too turbid to treat → Not this is a low cost, high risk upgrade option, not the recommended low risk, high cost option which would cost $1.8M
64	**WS Land Purchase for Pump Stations**	**1,416**	**0**	→ Infrastructure for urban development → Capacity for growth	→ Non-compliance with statutory requirement to provide development infrastructure for growth → Shortage of developable land increases cost of sections and houses
870	**WS New Wells for Growth**	**8,178**	**104**		
1258	**WS New Pump Stations for Growth**	**10,945**	**0**		
	plus defined projects:				
24198	WS Gardiners New Pump Station	645	645		

CPMS ID	Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed or not implemented
					→ Increase in pressure and flow complaints (12.1.1 Target 10) → Negative impact on customer satisfaction with reliability of supply (12.1.1, Target 1)
51	**WS Mains Renewals**	**261,183**	**23,649**	→ Improve reliability of supply → Improve quality of supply (flow and pressure) → Reduce unplanned interruptions → Reduce maintenance costs for pipe repairs → Best practice asset management → Sustain high quality drinking water → Water loss reduction	→ Increased operating costs → Targets for unplanned interruptions not achieved (12.1.1 Targets 2 and 3) → Increase in complaints about continuity of supply impacted (12.1.1 Target 4) → Increase in pressure and flow complaints (12.1.1 Target 10) → Potential increase in water quality complaints (12.3.1 Targets 2, 3 and 4) → Water loss targets not achieved (12.4.1 Target 4 → Negative impact on customer satisfaction with reliability, safety quality and sustainability (12.1.1 Target 1, 12.2.1 Target 1, 12.3.1 Target 1, 12.4.1 Target 1)
	plus defined projects:				
888	WS Lyttelton R&R Rail Tunnel Pipeline	20,983	13,504		
17885	WS Eastern Tce Trunk Main Renewal	9,326	4,641		
41284	WS Riccarton Road - Harakeke to Matipo	2,176	2,176		
37234	WS Mains Renewal - Cannon Hill Cresc, Michael Ave and Centaurus Rd	1,832	1,832		
37246	WS Mains Renewal - Trafford St, Le Roi Way, Dulcie Pl, Momorangi Cres and Jocelyn St	1,533	1,533		
37220	WS Mains Renewal - Kilmarnock St and Withells Rd	1,188	1,188		
37243	WS Mains Renewal - Governors Bay Rd and Sumner Rd - Lyttelton	1,095	1,095		
37253	WS Mains Renewal - Guildford St, Wayside Ave and Wadhurst Pl	1,091	1,091		
37219	WS Mains Renewal - Mairehau Rd and McBratneys Rd	792	792		
33237	WS Mains Renewal - Cheriton St, Eureka St, Hampshire St and Brokenhurst St	229	229		
43337	WS Mains - Peacocks Gallop – Sumner	577	577		
41874	**WS Mains Renewals Affiliated with Roading Works**	**4,265**	**4,265**		
53	**WS Infra R&R Reticulation Submains**	**34,611**	**4,218**		
33281	Ch Ch Water Submain Renewals - Package C	1,186	1,186		
37847	**WS Meter Renewal Programme**	**2,491**	**0**	→ Sustain water demand management → Best practice asset management → Reduce cost of repairs	→ Inability to accurately monitor consumer water consumption → Inability to charge commercial users for water consumption
	plus defined projects:				
89	WS R&R Submains Meter Renew	861	861		
52	**WS Headworks Well Renewals**	**34,145**	**8,580**	→ Sustain high quality drinking water	

CPMS ID	Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed or not implemented
	plus defined projects:			→ Maintain MoH risk grade → Best practice asset management → Reduce risk of failure	→ Non-compliance with statutory requirement to provide safe drinking water → Decrease in MoH risk grade → Risk of non-compliance with DWSNZ → Risk of unplanned interruptions (12.1.1 Targets 2 and 3) → Impact on customer satisfaction with reliability, safety and quality (12.1.1 Target 1, 12.2.1 Target 1, 12.3.1 Target 1)
6340	Wrights Pump Station Well Renewal	1,111	1,111		
73	**WS Pumping & Storage Civils and Structures Renewals PRG**	**29,695**	**4,430**	→ Sustain high quality drinking water → Reduce risk of contamination	→ Non-compliance with statutory requirement to provide safe drinking water → Risk of non-compliance with DWSNZ → Impact on customer satisfaction with quality of supply (12.3.1 Target 1)
32587	WS Reservoir Roof Renewal	226	226		
33813	CCPwPS1076 Jeffreys Suction Tank Replacement	1,772	1,772		
2363	WS - WSPS & Reservoir Safety Improvements	140	89		
17901	**WS Pump Station MEICA R&R**			→ Maintain reliability of supply → Avoid unplanned interruptions → Reduce risk of failure → Best practice asset management → Reduce cost of maintenance	→ Potential increase in customer complaints (12.1.1 Targets 4 and 10) → Negative impact on customer satisfaction with reliability (12.1.1 Target 1) → Increased operating and maintenance costs
33722	WS Pump Station MEICA R&R Project for FY2016-2018	500	5000		
45449	WS Pump & Storage MEICA Renewals for FY2019 Project	1,071	1,071		
37845	**WS Pumping & Storage Reactive Renewal PRG**	**3,192**	**880**		
41882	**WS Pumping & Storage Electrical Renewals PRG**	**11,779**	**2,204**		
41883	**WS Pumping & Storage Mechanical Renewals PRG**	**2,107**	**567**		
41884	**WS SCADA Software Renewals PRG**	**667**	**184**		
41886	**WS Treatment Plant ICA Renewals PRG**	**7**	**0**		
41887	**WS Treatment Plant Electrical Renewals PRG**	**187**	**0**		
41888	**WS Treatment Plant Mechanical Renewals PRG**	**129**	**0**		

CPMS ID	Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed or not implemented
41894	**WS Treatment Plant Reactive Renewals**	**419**	**115**		
42082	**WS Pumping & Storage ICA Renewals PRG**	**4,032**	**2,025**		
43873	**WS Headworks Backflow Prevention**	**2,779**	**766**	→ Sustain high quality drinking water → Reduce risk of contamination	→ Non-compliance with statutory requirement to provide safe drinking water → Risk of non-compliance with DWSNZ → Impact on customer satisfaction with quality of supply (12.3.1 Target 1)
102	**NW NZDWS Compliance**			→ Improve MoH risk grading for Northwest zone and sustain MoH risk grading elsewhere → Sustain compliance with DWSNZ → Improved monitoring of drinking water compliance → Confirm groundwater security	→ Non-compliance with statutory requirement to provide safe drinking water → Improved MoH risk grade not achieved (12.2.1 Targets 2 - 5) → Decrease in MoH risk grade → Risk of non-compliance with DWSNZ → Impact on customer satisfaction with safety and quality of supply (12.2.1 Target 1, 12.3.1 Target 1)
	plus defined projects:				
14866	Bexley Pump Station EQ Replacement in Rawhiti Zone	5,079	5,079		
41252	WS Drinking Water Sampling Point Installations	150	77		
41253	WS Secure Groundwater / Age Dating	378	178		
37846	**WS Water Supply Security Programme**	**225**	**65**		
865	WS Water Supply Security	225	77		
41881	**WS Water Supply Modelling PRG**	**1,213**	**408**	→ Ability to plan for urban development → Optimize infrastructure → Confirm fire fighting flow capacity and pressure → Improved management for cost optimization	→ Would not meet National Policy Statement on Urban Development Capacity requirement to provide development infrastructure for growth → Non-optimized capital investment → Inability to manage quality of service (pressure and flow) to meet demand
37848	**WS New Connection Programme**	**8,777**	**0**	→ Connect new customers → Ensure connections to Council standard including backflow prevention devices → Recover costs for new connections	→ Customer connections not to standard could impact on drinking water safety
45	WS New Connections	3,453	3,453		

8. Are there any significant negative effects that this activity will create?

Negative Effect	Mitigation
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.
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.
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.
Over extraction limits water available for growth of the city.	Maintain network in good condition to reduce leaks. Operate within water take consents. Reduce water demand through water conservation measures.
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.
Natural disasters cause widespread damage to the water supply network	Earthquake design guidelines incorporated in Council's Infrastructure Design Standard and Construction Standard Specifications.

Negative Effect	Mitigation
	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.
Earthquake legacy of reduced asset lives and red zone infrastructure	Provide for and manage deferred replacement of assets (not addressed by SCIRT).

9. Does this Service Plan need to change as a result of a service delivery review?

A Service Delivery Review report (Section 17A) for this activity has been carried out. Based on the outcome of this report no changes to the service plan or delivery model are required.