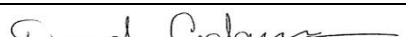
Long Term Plan 2018-28
Service Plan for Wastewater Collection, Treatment and Disposal

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 wastewater networks and wastewater treatment plants to protect public health and the environment. The service is focussed on providing a reliable, safe and resilient system for conveying wastewater away from properties for treatment and disposal.

Wastewater, also known as sewage, refers to the used water collected in internal drains from homes and businesses, and includes trade waste from industrial and commercial operations. Wastewater does not include stormwater drainage, which is collected, treated and re-introduced into the environment via a separate system.

Providing a wastewater collection, treatment and disposal service 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 in a number of ways, this includes planning, day to day operations, planned and reactive maintenance, repair or renewal of damaged infrastructure, building new infrastructure and implementing improvements to the system.

1. What does this activity deliver?

The objective of this activity is to provide wastewater collection, treatment and disposal in a way that protects the public and the environment. As a Council we:

- Collect, convey and treat wastewater in a safe, efficient and reliable manner
- Discharge treated wastewater to the environment in compliance with resource consents
- Reuse and/or dispose wastewater treatment by-products, including biogas and biosolids
- Provide laboratory services to monitor treatment processes and treated wastewater quality
- Plan, regulate, build, maintain, manage and renew wastewater systems.

The Council collects wastewater from approximately 160,000 customers in Christchurch, Lyttelton, Diamond Harbour, Governors Bay, Akaroa, Duvauchelle, Tikao Bay and Wainui, through 945 km of laterals 1,826 km of wastewater mains, 149 pump stations, 84 lift stations, and 34 odour control sites. It provides treatment at eight wastewater treatment plants and disposal via one outfall pump station, six ocean/harbour

outfalls and two land irrigation schemes. The wastewater reticulation and treatment infrastructure is monitored and controlled by an extensive communications system.

2. Why do we deliver this activity?

Providing good-quality wastewater 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 wastewater system that protects public health and the environment is a fundamental requirement for safe and healthy urban communities. The community expects the Council to provide good quality, reliable wastewater services in a cost-effective, equitable and sustainable manner.

This activity is also undertaken in accordance with:

- Health Act 1956
- Resource Management Act 1991
- Health and Safety at Work Act 2015
- Hazardous Substances and New Organisms Act 1996
- National Policy Statement on Urban Development Capacity 2016
- Water Supply, Wastewater and Stormwater Bylaw 2014
- Trade Waste Bylaw 2015.

The Council must deliver the wastewater collection, treatment and disposal service to comply with:

Resource consents: Resource consents set limits the volume and quality of treated wastewater that can be discharged to the environment. Council must ensure that treatment processes are able to comply with the consent conditions and must do regular sampling and testing to monitor compliance. Resource consents require the Council to control air discharges generated from its wastewater treatment processes. To comply with consent conditions adequate and reliable treatment processes must be maintained. The wet weather overflow resource consent sets limits on the location and frequency of wet weather overflows, and requires Council to monitor and report on any overflows.

Biosolids disposal: The Council manages the quality of biosolids to allow for its reuse or disposal. This means that Council must control the release of trade waste to avoid chemical contamination and must ensure that adequate treatment processes are maintained to disinfect sludge.

Air quality: The Council manages its wastewater network to avoid objectionable or offensive odours causing nuisance to nearby residents and businesses.

Avoid nuisance: In terms of the Health Act 1956 the Council must ensure that its wastewater collection, treatment and disposal service is delivered in a manner which is not offensive nor likely to be injurious to health. The Council has developed a bylaw to prevent or abate nuisances arising from its wastewater collection, treatment and disposal service.

Water services assessments: The Local Government Act 2002 requires a territorial authority to assess, from a public health perspective, the adequacy of its wastewater services in light of health risks, quality of service, current and future demand and the consequence of discharge to the environment.

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 Wastewater Strategy 2013 provides the strategic framework for the wastewater collection, treatment and disposal service.

The wastewater collection, treatment and disposal service is critical for achieving and supporting Council's Strategic Directions, including:

- Safe and sustainable supply water supply and improved waterways including:
    - Water quality in our waterways and wetlands is improved over time

- 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 wastewater service:

- Safe and healthy communities
- Healthy waterways
- 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 Wastewater Collection, Treatment and Disposal 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	
Collecting wastewater from properties within the reticulated area and conveying the wastewater to treatment plants									
11.1.1	Council wastewater services are reliable	Community outcome: Modern and robust city infrastructure and facilities network	Resident satisfaction surveys	New level of service – no current performance		Target 1 Proportion of residents satisfied with the reliability of wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with the reliability of wastewater services: ≥ 70%	Target 1 Proportion of residents satisfied with the reliability of wastewater services: ≥ 60%	Target 1 Proportion of residents satisfied with the reliability of wastewater services: ≥ 60%
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 3a	The median response time measured from the time that the Council receives notification of the overflow to the time that service personnel reach the site. Reported in monthly contract reports from the Contractor.	29 minutes in 2015/16	Average of 55 minutes for in Water NZ National Performance Review 2015/16	Target 2 Median time from notification to attendance of overflows resulting from network faults: ≤ 1 hour	Target 2 Median time from notification to attendance of overflows resulting from network faults: ≤ 1 hour	Target 2 Median time from notification to attendance of overflows resulting from network faults: ≤ 1 hour	Target 2 Median time from notification to attendance of overflows resulting from network faults: ≤ 1 hour

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	
11.1.1 cont'd	Council wastewater services are reliable	Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 3b	The median resolution time measured from the time that the Council receives notification of the overflow to the time that service personnel confirm resolution of the overflow. Reported in monthly contract reports from the Contractor.	1 hour 50 minutes in 2015/16	Average of 3 hours in Water NZ National Performance Review 2015/16	Target 3 Median time from notification to resolution of overflows resulting from network faults: ≤ 24 hours Non-LTP	Target 3 Median time from notification to resolution of overflows resulting from network faults: ≤ 24 hours Non-LTP	Target 3 Median time from notification to resolution of overflows resulting from network faults: ≤ 24 hours Non-LTP	Target 3 Median time from notification to resolution of overflows resulting from network faults: ≤ 24 hours Non-LTP
		Community outcome: Modern and robust city infrastructure and facilities network	Count of total number of blowbacks o maintenance work carried out by the Council or its contractors reported to the Council call centre in a financial year. Reported in monthly contract reports from the Contractor.	23 in 2015/16		Target 4 Annual number of properties affected by wastewater blowbacks due to maintenance work carried out by the Council or its contractors: ≤ 35	Target 4 Annual number of properties affected by wastewater blowbacks due to maintenance work carried out by the Council or its contractors: ≤ 35	Target 4 Annual number of properties affected by wastewater blowbacks due to maintenance work carried out by the Council or its contractors: ≤ 35	Target 4 Annual number of properties affected by wastewater blowbacks due to maintenance work carried out by the Council or its contractors: ≤ 35
		Community outcome: Modern and robust city infrastructure and facilities network	The number of complaints confirmed to be about wastewater odour received through the call centre,	0.52 in 2015/16	Average of 9.53 for all wastewater complaint types in Water NZ National Performance Review 2015/16	Target 5 Number of wastewater odour complaints per 1,000 properties	Target 5 Number of wastewater odour complaints per 1,000 properties	Target 5 Number of wastewater odour complaints per 1,000 properties	Target 5 Number of wastewater odour complaints per 1,000 properties connected to the wastewater

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	
11.1.1 cont'd	Council wastewater services are reliable	Department of Internal Affairs, wastewater non-financial performance measure 4a	expressed per 1,000 properties connected to the Council's wastewater system			connected to the wastewater network per year: ≤ 0.6	connected to the wastewater network per year: ≤ 0.6	connected to the wastewater network per year: ≤ 0.6	network per year: ≤ 0.6
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 4b	The number of complaints about Council's wastewater network received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system	0.53 in 2015/16	Average of 9.53 for all wastewater complaint types in Water NZ National Performance Review 2015/16	Target 6 Number of wastewater system fault complaints per 1,000 properties connected to the wastewater network per year: ≤ 0.6	Target 6 Number of wastewater system fault complaints per 1,000 properties connected to the wastewater network per year: ≤ 0.7	Target 6 Number of wastewater system fault complaints per 1,000 properties connected to the wastewater network per year: ≤ 0.8	Target 6 Number of wastewater system fault complaints per 1,000 properties connected to the wastewater network per year: ≤ 1.5
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 4c	The number of complaints about Council's wastewater system blockages received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system	6.19 in 2015/16	Average of 9.53 for all wastewater complaint types in Water NZ National Performance Review 2015/16	Target 7 Number of wastewater system blockage complaints per 1,000 properties connected to the wastewater network per year: ≤ 10	Target 7 Number of wastewater system blockage complaints per 1,000 properties connected to the wastewater network per year: ≤ 12	Target 7 Number of wastewater system blockage complaints per 1,000 properties connected to the wastewater network per year: ≤ 14	Target 7 Number of wastewater system blockage complaints per 1,000 properties connected to the wastewater network per year: ≤ 20

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	
11.1.1 cont'd	Council wastewater services are reliable	Community outcome: Modern and robust city infrastructure and facilities network	Lengths of pipe at condition 5 divided by total wastewater pipe length expressed as a percentage. Reported from Council asset management systems.	New level of service – no past performance	Average of 7% in Water NZ National Performance Review 2015/16	Non-LTP Target 8 Percentage of total wastewater gravity network pipework length at condition grade 5: ≤ 13%	Non-LTP Target 8 Percentage of total wastewater gravity network pipework length at condition grade 5: ≤ 13%	Non-LTP Target 8 Percentage of total wastewater gravity network pipework length at condition grade 5: ≤ 13%	Non-LTP Target 8 Percentage of total wastewater gravity network pipework length at condition grade 5: ≤ 13%
		Community outcome: Modern and robust city infrastructure and facilities network	Lengths of pipe at condition 5 based on inspection divided by total condition 5 pipe length expressed as a percentage. Reported from Council asset management systems.	New level of service – no past performance		Target 9 Percentage of wastewater gravity network pipework identified as condition grade 5 through physical inspection rather than theoretical modelling: ≥ 95%	Target 9 Percentage of wastewater gravity network pipework identified as condition grade 5 through physical inspection rather than theoretical modelling: ≥ 95%	Target 9 Percentage of wastewater gravity network pipework identified as condition grade 5 through physical inspection rather than theoretical modelling: ≥ 95%	Target 9 Percentage of wastewater gravity network pipework identified as condition grade 5 through physical inspection rather than theoretical modelling: ≥ 95%

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	
11.1.2	Council wastewater services are responsive	Community outcome: Modern and robust city infrastructure and facilities network	Resident satisfaction survey	New LoS – no current performance		Target 1 Proportion of residents satisfied with the responsive-ness of Council wastewater services: ≥ 80% Non-LTP	Target 1 Proportion of residents satisfied with the responsive-ness of Council wastewater services: ≥ 80% Non-LTP	Target 1 Proportion of residents satisfied with the responsive-ness of Council wastewater services: ≥ 80% Non-LTP	Target 1 Proportion of residents satisfied with the responsiveness of Council wastewater services: ≥ 80% Non-LTP
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 3a	The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor.	27 minutes in 2015/16	Average of 55 minutes for all types of wastewater networks in Water NZ National Performance Review 2015/16	Target 2 Median time from notification to arrival on-site for urgent faults on urban wastewater networks: ≤ 1 hour Non-LTP	Target 2 Median time from notification to arrival on-site for urgent faults on urban wastewater networks: ≤ 1 hour Non-LTP	Target 2 Median time from notification to arrival on-site for urgent faults on urban wastewater networks: ≤ 1 hour Non-LTP	Target 2 Median time from notification to arrival on-site for urgent faults on urban wastewater networks: ≤ 1 hour Non-LTP
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs,	The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel	61 minutes in 2015/16	Average of 55 minutes for all types of wastewater networks in Water NZ National	Target 3 Median time from notification to arrival on-site for urgent faults on rural	Target 3 Median time from notification to arrival on-site for urgent faults on rural	Target 3 Median time from notification to arrival on-site for urgent faults on rural	Target 3 Median time from notification to arrival on-site for urgent faults on

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	
11.1.2 cont'd	Council wastewater services are reliable	wastewater non-financial performance measure 3a	confirm resolution of the fault. Reported in monthly contract reports from the Contractor.		Performance Review 2015/16	wastewater networks: ≤ 2 hours	wastewater networks: ≤ 2 hours	wastewater networks: ≤ 2 hours	rural wastewater networks: ≤ 2 hours
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 3a	The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor.	2.6 hours in 2015/16	Average of 55 minutes for all types of wastewater networks in Water NZ National Performance Review 2015/16	Target 4 Median time from notification to arrival on-site for non-urgent faults on urban wastewater networks: ≤ 5 days	Target 4 Median time from notification to arrival on-site for non-urgent faults on urban wastewater networks: ≤ 5 days	Target 4 Median time from notification to arrival on-site for non-urgent faults on urban wastewater networks: ≤ 5 days	Target 4 Median time from notification to arrival on-site for non-urgent faults on urban wastewater networks: ≤ 5 days
		Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 3a	The median attendance time measured from the time that the Council receives notification of the fault to the time that service personnel confirm resolution of the fault. Reported in monthly contract reports from the Contractor.	2.0 hours in 2015/16	Average of 55 minutes for all types of wastewater networks in Water NZ National Performance Review 2015/16	Target 5 Median time from notification to arrival on-site for non-urgent faults on rural wastewater networks: ≤ 5 days	Target 5 Median time from notification to arrival on-site for non-urgent faults on rural wastewater networks: ≤ 5 days	Target 5 Median time from notification to arrival on-site for non-urgent faults on rural wastewater networks: ≤ 5 days	Target 5 Median time from notification to arrival on-site for non-urgent faults on rural wastewater networks: ≤ 5 days

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	
11.1.2 cont'd	Council wastewater services are responsive	Community outcome: Modern and robust city infrastructure and facilities network Department of Internal Affairs, wastewater non-financial performance measure 4d	The number of complaints about Council's wastewater system blockages received through the call centre, expressed per 1,000 properties connected to the Council's wastewater system	New level of service – no current performance		Target 6 Number of complaints regarding Council's response to issues with the Council wastewater system per 1,000 properties connected to the wastewater network per year: ≤ 0.1	Target 6 Number of complaints regarding Council's response to issues with the Council wastewater system per 1,000 properties connected to the wastewater network per year: ≤ 0.1	Target 6 Number of complaints regarding Council's response to issues with the Council wastewater system per 1,000 properties connected to the wastewater network per year: ≤ 0.1	Target 6 Number of complaints regarding Council's response to issues with the Council wastewater system per 1,000 properties connected to the wastewater network per year: ≤ 0.1
11.2.1	Council maximises public health through wastewater services	Community outcome: Safe and healthy communities	Resident satisfaction survey	New level of service – no current performance		Target 1 Proportion of residents satisfied with health protection provided by Council wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with health protection provided by Council wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with health protection provided by Council wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with health protection provided by Council wastewater services: ≥ 70%

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	
11.2.1 cont'd	Council maximises public health through wastewater services	Community outcome: Safe and healthy communities Department of Internal Affairs, wastewater non-financial performance measure 1	Number of dry weather overflows per 1,000 properties connected to the wastewater network. Reported in resource consent compliance reports to ECan.	0.67 in 2015/16	Average of 1.56 in Water NZ National Performance Review 2015/16	Target 2 Number of dry weather overflows from wastewater systems per 1,000 connected properties per year: ≤ 0.7	Target 2 Number of dry weather overflows from wastewater systems per 1,000 connected properties per year: ≤ 0.7	Target 2 Number of dry weather overflows from wastewater systems per 1,000 connected properties per year: ≤ 0.7	Target 2 Number of dry weather overflows from wastewater systems per 1,000 connected properties per year: ≤ 1.4
Operate and maintain treatment plants, discharge structures/outfalls and biosolids reuse/disposal									
11.3.1	Council disposes of wastewater in a responsible manner	Community outcome: Healthy waterways	Resident satisfaction survey	New level of service – no current performance		Target 1 Proportion of residents that are satisfied that Council disposes of wastewater in a responsible manner: ≥ 85%	Target 1 Proportion of residents that are satisfied that Council disposes of wastewater in a responsible manner: ≥ 85%	Target 1 Proportion of residents that are satisfied that Council disposes of wastewater in a responsible manner: ≥ 85%	Target 1 Proportion of residents that are satisfied that Council disposes of wastewater in a responsible manner: ≥ 85%
		Community outcome: Healthy waterways	Resource consent compliance reports to ECan.	0 in 2015/16		Target 2 Number of abatement notices regarding Council resource	Target 2 Number of abatement notices regarding Council resource	Target 2 Number of abatement notices regarding Council resource	Target 2 Number of abatement notices regarding Council resource consents related to discharges from

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	
11.3.1 cont'd	Council disposes of wastewater in a responsible manner	Community outcome: Healthy waterways Department of Internal Affairs, wastewater non-financial performance measure 2a	Resource consent compliance reports to ECan.	0 in 2015/16	Average of 0.15 in Water NZ National Performance Review 2015/16	consents related to discharges from wastewater systems per year: 0	consents related to discharges from wastewater systems per year: 0	consents related to discharges from wastewater systems per year: 0	wastewater systems per year: 0
		Community outcome: Healthy waterways Department of Internal Affairs, wastewater non-financial performance measure 2b	Resource consent compliance reports to ECan.	0 in 2015/16	Average of 0.04 in Water NZ National Performance Review 2015/16	Target 3 Number of infringement notices regarding Council resource consents related to discharges from wastewater systems per year: 0	Target 3 Number of infringement notices regarding Council resource consents related to discharges from wastewater systems per year: 0	Target 3 Number of infringement notices regarding Council resource consents related to discharges from wastewater systems per year: 0	Target 3 Number of infringement notices regarding Council resource consents related to discharges from wastewater systems per year: 0
		Community outcome: Healthy waterways Department of Internal Affairs, wastewater non-financial performance measure 2c	Resource consent compliance reports to ECan.	0 in 2015/16	Average of 0 in Water NZ National Performance Review 2015/16	Target 4 Number of enforcement orders regarding Council resource consents related to	Target 4 Number of enforcement orders regarding Council resource consents related to	Target 4 Number of enforcement orders regarding Council resource consents related to	Target 4 Number of enforcement orders regarding Council resource consents related to discharges from

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	
11.3.1 cont'd	Council disposes of wastewater in a responsible manner	Community outcome: Healthy waterways Department of Internal Affairs, wastewater non-financial performance measure 2d	Resource consent compliance reports to ECan.	0 in 2015/16	Average of 0 in Water NZ National Performance Review 2015/16	discharges from wastewater systems per year: 0 Target 5 Number of convictions regarding Council resource consents related to discharges from the wastewater systems per year: 0	discharges from wastewater systems per year: 0 Target 5 Number of convictions regarding Council resource consents related to discharges from the wastewater systems per year: 0	discharges from wastewater systems per year: 0 Target 5 Number of convictions regarding Council resource consents related to discharges from the wastewater systems per year: 0	wastewater systems per year: 0 Target 5 Number of convictions regarding Council resource consents related to discharges from the wastewater systems per year: 0
11.4.1	Council wastewater networks and operations demonstrate environmental stewardship	Community outcome: Sustainable use of resources	Resident satisfaction survey	New LoS – no current performance		Target 1 Proportion of residents satisfied with sustainability of wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with sustainability of wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with sustainability of wastewater services: ≥ 80%	Target 1 Proportion of residents satisfied with sustainability of wastewater services: ≥ 80%

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	
11.4.1 cont'd	Council wastewater networks and operations demonstrate environmental stewardship	Community outcome: Sustainable use of resources	Mass of biosolids sent for beneficial reuse divided by total mass of biosolids produced expressed as a percentage.	95.7% in 2015/16	Average of 3.3% in Water NZ National Performance Review 2015/16	Non-LTP Target 2 Proportion of biosolids diverted from landfill (beneficially reused): ≥ 95%	Non-LTP Target 2 Proportion of biosolids diverted from landfill (beneficially reused): ≥ 95%	Non-LTP Target 2 Proportion of biosolids diverted from landfill (beneficially reused): ≥ 95%	Non-LTP Target 2 Proportion of biosolids diverted from landfill (beneficially reused): ≥ 95%
		Community outcome: Sustainable use of resources	Total power consumption for the year to date divided by the volume of wastewater treated for the year to date.	0.20 in 2015/16	Average of 1.08 for combined wastewater conveyance and treatment in Water NZ National Performance Review 2015/16	Non-LTP Target 3 Power consumption – kWh of electricity per cubic metre wastewater treated at the Christchurch WWTP: ≤ 0.20	Non-LTP Target 3 Power consumption – kWh of electricity per cubic metre wastewater treated at the Christchurch WWTP: ≤ 0.20	Non-LTP Target 3 Power consumption – kWh of electricity per cubic metre wastewater treated at the Christchurch WWTP: ≤ 0.20	Non-LTP Target 3 Power consumption – kWh of electricity per cubic metre wastewater treated at the Christchurch WWTP: ≤ 0.20
		Community outcome: Sustainable use of resources	Total power consumption for the year to date divided by the mass of chemical oxygen demand removed in the year to date.	0.31 in 2015/16		Non-LTP Target 4 Power consumption – kWh of electricity per kilogram of chemical oxygen demand (COD) removed at the	Non-LTP Target 4 Power consumption – kWh of electricity per kilogram of chemical oxygen demand (COD) removed at the	Non-LTP Target 4 Power consumption – kWh of electricity per kilogram of chemical oxygen demand (COD) removed at the	Non-LTP Target 4 Power consumption – kWh of electricity per kilogram of chemical oxygen demand (COD) removed at the Christchurch WWTP: ≤ 0.33

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 2018/19	Year 2 2019/20	Year 3 2020/21	
11.4.1 cont'd	Council wastewater networks and operations demonstrate environmental stewardship	Community outcome: Sustainable use of resources	kWh of electricity used that is self-generated divided by the total power use in kWh expressed as a percentage.	88.9% in 2015/16		Christchurch WWTP: ≤ 0.33 Non-LTP Target 5 Proportion of electricity used at the Christchurch WWTP that is self-generated from treatment by-products: ≥ 75%	Christchurch WWTP: ≤ 0.33 Non-LTP Target 5 Proportion of electricity used at the Christchurch WWTP that is self-generated from treatment by-products: ≥ 75%	Christchurch WWTP: ≤ 0.33 Non-LTP Target 5 Proportion of electricity used at the Christchurch WWTP that is self-generated from treatment by-products: ≥ 75%	Non-LTP Target 5 Proportion of electricity used at the Christchurch WWTP that is self-generated from treatment by-products: ≥ 75%
Provide laboratory services as an integral part of monitoring and controlling treatment processes									
11.3.1 Non-LTP	Council disposes of wastewater in a responsible manner	Community outcome: Healthy waterways	Number of samples tested by an IANZ accredited lab divided by total number of samples tested expressed as a percentage.	100% in 2015/16		Target 6 Proportion of externally reported sampling and testing completed by an IANZ accredited laboratory: 100%	Target 6 Proportion of externally reported sampling and testing completed by an IANZ accredited laboratory: 100%	Target 6 Proportion of externally reported sampling and testing completed by an IANZ accredited laboratory: 100%	Target 6 Proportion of externally reported sampling and testing completed by an IANZ accredited laboratory: 100%

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)	
11.1.1 LTP	Minimise odour complaints from wastewater treatment plants	Number of odour events per 10,000 properties served: ≤0.1	N/A	N/A	N/A	With the combining of wastewater collection and wastewater treatment and disposal into a single service plan, this is a duplicate performance measure and is no longer required.
		Compliance with ECan resource consents for discharges to air: 100%			N/A	As compliance with the discharge to air resource consents are included in performance measures 11.3.1 Targets 2 – 5, this measures 11.3.1.2 to 11.3.1.5 this performance measure is no longer required.
11.0.1 non-LTP	Provide Wastewater collection in a safe, convenient and efficient manner	Number of properties affected by wastewater blowbacks per year due to network operations: ≤150	11.1.1 Non-LTP Target 4	Council wastewater services are reliable	Annual number of properties affected by wastewater blowbacks due to maintenance work carried out by the Council or its contractors: ≤ 35	Performance measure has been reworded to make it clear that the target is for blowbacks due to work carried out by the Council or its contractors, as the Council does not have control over other contractors.
		Median time for a CCC representative to arrive on site following notification of an urban fault: ≤1 hr	11.1.2 Non-LTP Target 2	Council wastewater services are responsive	Median time from notification to arrival on-site for urgent faults on urban wastewater networks: ≤ 1 hour	The 2015 LTP contained two performance measures for median response time following notification of urban network faults and for median response time following notification of rural network faults. These performance measures are required as they form the key performance indicators (KPIs) of the wastewater maintenance contract; however as the wastewater maintenance contract refers to urgent and non-urgent faults the two performance measures have been split into four, one for each of response time following notification of urgent urban

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
						faults, non-urgent urban faults, urgent rural faults and non-urgent rural faults.
		Median time until resolution following notification of an urban fault.≤24 hr	11.1.2 Non-LTP Target 4	Council wastewater services are responsive	Median time from notification to arrival on-site for non-urgent faults on urban wastewater networks: ≤ 5 days	The 2015 LTP contained two performance measures for median repair time following notification of urban network faults and for median repair time following notification of rural network faults. As the wastewater maintenance contract does not specify times to repair each fault these are surplus to requirements and proposed for deletion.
		Median time for a CCC representative to arrive on site following notification of a rural fault: ≤2 hr	11.1.2 Non-LTP Target 3	Council wastewater services are responsive	Median time from notification to arrival on-site for urgent faults on rural wastewater networks: ≤ 2 hours	The 2015 LTP contained two performance measures for median response time following notification of urban network faults and for median response time following notification of rural network faults. These performance measures are required as they form the key performance indicators (KPIs) of the wastewater maintenance contract; however as the wastewater maintenance contract refers to urgent and non-urgent faults the two performance measures have been split into four, one for each of response time following notification of urgent urban faults, non-urgent urban faults, urgent rural faults and non-urgent rural faults.
		Median time until resolution following notification of a rural fault: ≤24 hr	11.1.2 Non-LTP Target 5	Council wastewater services are responsive	Median time from notification to arrival on-site for non-urgent faults on rural wastewater networks: ≤ 5 days	The 2015 LTP contained two performance measures for median repair time following notification of urban network faults and for median repair time following notification of rural network faults. As the wastewater maintenance contract does not specify times to repair each fault these are surplus to requirements and proposed for deletion.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
11.1.2 LTP	Maintain consent compliance for wastewater treatment plants.	Number of abatement notices: 0	11.3.1 LTP Target 2	Council disposes of wastewater in a responsible manner	Number of abatement notices regarding Council resource consents related to discharges from wastewater systems per year: 0	Performance measure wording changed to reflect best practice.
		Number of infringement notices: 0	11.3.1 LTP Target 3	Council disposes of wastewater in a responsible manner	Number of infringement notices regarding Council resource consents related to discharges from wastewater systems per year: 0	Performance measure wording changed to reflect best practice.
		Number of enforcement orders: 0	11.3.1 LTP Target 4	Council disposes of wastewater in a responsible manner	Number of enforcement orders regarding Council resource consents related to discharges from wastewater systems per year: 0	Performance measure wording changed to reflect best practice.
		Number of convictions: 0	11.3.1 LTP Target 5	Council disposes of wastewater in a responsible manner	Number of convictions regarding Council resource consents related to discharges from the wastewater systems per year: 0	Performance measure wording changed to reflect best practice.
11.1.5 non-LTP	Manage Christchurch Wastewater Treatment Plant (CWwTP) electricity use	kWh of electricity per m3 flow through the plant: ≤0.20	11.4.1 Non-LTP Target 3	Council wastewater networks and operations demonstrate environmental stewardship	Power consumption – kWh of electricity per cubic metre wastewater treated at the Christchurch WWTP: ≤ 0.20	Performance measure wording changed to reflect best practice.
11.1.5 non-LTP	Manage Christchurch Wastewater Treatment Plant (CWwTP) electricity use	kWh of electricity per kg COD removed from wastewater: ≤0.33	11.4.1 Non-LTP Target 4	Council wastewater networks and operations demonstrate environmental stewardship	Power consumption – kWh of electricity per kilogram of chemical oxygen demand (COD) removed at the Christchurch WWTP: ≤ 0.33	Performance measure wording changed to reflect best practice.
11.1.6 non-LTP	Effectively use self-generated energy	Proportion of energy used at the CWwTP that is self-generated from bio-gas: ≥75%	11.4.1 Non-LTP Target 5	Council wastewater networks and operations demonstrate environmental stewardship	Proportion of electricity used at the Christchurch WWTP that is self-generated from treatment by-products: ≥ 75%	Performance measure wording changed to reflect best practice.
11.0.1 non-LTP	Provide Wastewater collection in a safe, convenient and efficient manner.	Proportion of urban blockages responded to within 1 hour of notification: ≥90%	N/A	N/A	N/A	Four performance measures relating to the percentage of blockages responded to or repaired within a set time period are proposed for deletion. New performance measures have been created to meet the

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
						DIA mandatory requirements to measure the median time for response or repair, so these performance measures are no longer required.
		Proportion of urban blockages responded to within 2 hours of notification: ≥99%			N/A	Four performance measures relating to the percentage of blockages responded to or repaired within a set time period are proposed for deletion. New performance measures have been created to meet the DIA mandatory requirements to measure the median time for response or repair, so these performance measures are no longer required.
		Proportion of rural blockages responded to within 2 hours of notification: ≥90%			N/A	Four performance measures relating to the percentage of blockages responded to or repaired within a set time period are proposed for deletion. New performance measures have been created to meet the DIA mandatory requirements to measure the median time for response or repair, so these performance measures are no longer required.
		Proportion of rural blockages responded to within 4 hours of notification: ≥99%			N/A	Four performance measures relating to the percentage of blockages responded to or repaired within a set time period are proposed for deletion. New performance measures have been created to meet the DIA mandatory requirements to measure the median time for response or repair, so these performance measures are no longer required.
11.0.1 LTP	Provide Wastewater collection in a safe,	Proportion of customers satisfied with the wastewater services: ≥75%	N/A	N/A	N/A	Deletion of a performance measure for overall satisfaction with the wastewater service and creation of five performance measures splitting the overall satisfaction

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
	convenient and efficient manner					into satisfaction with wastewater reliability, satisfaction with response to wastewater network faults, satisfaction with health protection provided by the wastewater service, satisfaction with quality of discharges from the wastewater systems and satisfaction with the sustainability of the wastewater service. This change was made to better align with New Zealand and international best practice for levels of service and performance measures.
11.0.3 non-LTP	Resource consents reporting	Report on number of overflow events: reports lodged on time: 100%	N/A	N/A	N/A	The resource consent for wet weather overflows from the wastewater networks required computer modelling of the wastewater network be completed by the end of the 2015/16 financial year. A performance measure was included in the 2015 LTP to ensure this happened. As the modelling has been completed and the conditions of the resource consent have been met, the performance measure is no longer required and is therefore proposed for deletion.
11.0.5 non-LTP	Minimise number of dry weather sewerage overflows	Targets to be set post computer modelling	N/A	N/A	N/A	The resource consent for wet weather overflows from the wastewater networks required computer modelling of the wastewater network be completed by the end of the 2015/16 financial year. A performance measure was included in the 2015 LTP to ensure this happened. As the modelling has been completed and the conditions of the resource consent have been met, the performance measure is no longer required and is therefore proposed for deletion.

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
11.1.2 LTP	Maintain consent compliance for wastewater treatment plants.	Number of significant and/or repeated minor breaches of resource consent for WwTPs or associated discharges: 0	N/A	N/A	N/A	Performance measure is covered by DIA mandatory performance measures for resource consents.
11.0.1 LTP	Provide Wastewater collection in a safe, convenient and efficient manner	Number of blockage complaints received per 1000 connected properties per year: ≤10	11.1.1 LTP Target 7	Council wastewater services are reliable	Number of wastewater system blockage complaints per 1,000 properties connected to the wastewater network per year: ≤ 10	Performance measure wording changed to reflect best practice. Change to performance target in 2019/20 and beyond as there is insufficient funding for renewing the wastewater network and increased wastewater blockages are expected as a result.
		Number of odour complaints received per 1000 connected properties per year: ≤0.3	11.1.1 LTP Target 5	Council wastewater services are reliable	Number of wastewater odour complaints per 1,000 properties connected to the wastewater network per year: ≤ 0.6	Performance measure wording changed to reflect best practice. Performance target changed based on historic performance.
		Number of sewerage system faults received per 1000 connected properties per year. (excludes blockages & odours) ≤0.3	11.1.1 LTP Target 6	Council wastewater services are reliable	Number of wastewater system fault complaints per 1,000 properties connected to the wastewater network per year: ≤ 0.6	Performance measure wording changed to reflect best practice. Performance target changed as the number of faults is expected to increase as the network deteriorates due to insufficient wastewater network renewals funding.
		Proportion of complaints remediated to the customers satisfaction: ≥95%	11.1.2 LTP Target 6	Council wastewater services are responsive	Number of complaints regarding Council response to issues with the Council wastewater system per 1,000 properties connected to the wastewater network per year: ≤ 0.1	Deletion of a performance measure for overall satisfaction with the wastewater service and creation of five performance measures splitting the overall satisfaction into satisfaction with wastewater reliability, satisfaction with response to wastewater network faults, satisfaction with health protection provided by the wastewater service, satisfaction with quality of discharges from the wastewater systems and satisfaction with the sustainability of the wastewater service. This change was made to better align with New Zealand and

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
						international best practice for levels of service and performance measures.
11.0.5 LTP	Minimise number of dry weather sewerage overflows	Number of dry weather sewerage overflows from the CCC sewer system per 1000 connected properties per year: 0.7	11.2.1 LTP Target 2	Council maximises public health through wastewater services	Number of dry weather overflows from wastewater systems per 1,000 connected properties per year: ≤ 0.7	Performance target changed as the number of dry weather overflows is expected to increase due to insufficient funding for wastewater network renewals.
11.1.3 non-LTP	Divert bio-solids from landfill	Proportion of bio-solids diverted from landfill: ≥95%	11.4.1 Non-LTP Target 2	Council wastewater networks and operations demonstrate environmental stewardship	Proportion of biosolids diverted from landfill (beneficially reused): ≥ 95%	Performance measure wording changed to reflect best practice.
N/A	N/A	N/A	11.1.1 LTP Target 1	Council wastewater services are reliable	Proportion of residents satisfied with the reliability of wastewater services: ≥ 80%	Deletion of a performance measure for overall satisfaction with the wastewater service and creation of five performance measures splitting the overall satisfaction into satisfaction with wastewater reliability, satisfaction with response to wastewater network faults, satisfaction with health protection provided by the wastewater service, satisfaction with quality of discharges from the wastewater systems and satisfaction with the sustainability of the wastewater service. This change was made to better align with New Zealand and international best practice for levels of service and performance measures. Performance target reduces over time as the wastewater network deteriorates and becomes more unreliable due to insufficient funding for wastewater network renewals.
N/A	N/A	N/A	11.1.1 Non-LTP Target 8	Council wastewater services are reliable	Percentage of total wastewater gravity network pipework length at condition grade 5: ≤ 13%	Creation of a new performance measure relating to the renewals programme. Specifically this covers the proportion of condition grade 5 (very poor condition) pipes in the network. Maintaining a low percentage of condition grade 5 pipes

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
						indicates that Council is renewing sufficient wastewater pipes to keep the network in an acceptable condition.
N/A	N/A	N/A	11.1.2 LTP Target 1	Council wastewater services are responsive	Proportion of residents satisfied with the responsiveness of Council wastewater services: ≥80%	Deletion of a performance measure for overall satisfaction with the wastewater service and creation of five performance measures splitting the overall satisfaction into satisfaction with wastewater reliability, satisfaction with response to wastewater network faults, satisfaction with health protection provided by the wastewater service, satisfaction with quality of discharges from the wastewater systems and satisfaction with the sustainability of the wastewater service. This change was made to better align with New Zealand and international best practice for levels of service and performance measures.
N/A	N/A	N/A	11.2.1 LTP Target 1	Council maximises public health through wastewater services	Proportion of residents satisfied with health protection provided by Council wastewater services: ≥ 80%	Deletion of a performance measure for overall satisfaction with the wastewater service and creation of five performance measures splitting the overall satisfaction into satisfaction with wastewater reliability, satisfaction with response to wastewater network faults, satisfaction with health protection provided by the wastewater service, satisfaction with quality of discharges from the wastewater systems and satisfaction with the sustainability of the wastewater service. This change was made to better align with New Zealand and international standards for levels of service and performance measures. Target aligned to resident satisfaction with health protection provided by the Council's wastewater

Amended LTP 2016-25			LTP 2018-28			Rationale
LOS ID	LOS Description	Target (FY17/18)	LOS ID	LOS Description	Target (FY18/19)	
						system is expected to decline as wastewater overflows decrease.
N/A	N/A	N/A	11.3.1 LTP Target 1	Council disposes of wastewater in a responsible manner	Proportion of residents that are satisfied that Council disposes of wastewater in a responsible manner: ≥ 85%	Deletion of a performance measure for overall satisfaction with the wastewater service and creation of five performance measures splitting the overall satisfaction into satisfaction with wastewater reliability, satisfaction with response to wastewater network faults, satisfaction with health protection provided by the wastewater service, satisfaction with quality of discharges from the wastewater systems and satisfaction with the sustainability of the wastewater service. This change was made to better align with New Zealand and international best practice for levels of service and performance measures.
N/A	N/A	N/A	11.4.1 LTP Target 1	Council wastewater networks and operations demonstrate environmental stewardship	Proportion of residents satisfied with sustainability of wastewater services: ≥ 80%	This change was made to better align with New Zealand and international best practice for levels of service and performance measures.

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

The wastewater collection, treatment and disposal service is managed according to best practice which aligns with the International Infrastructure Management Manual (IIMM) to ensure that Council complies with its statutory requirements and achieves the levels of service expected by the community. Council staff and its operations and maintenance contractors manage the wastewater collection, treatment and disposal service in the following way:

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

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

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

Operate: ensure that wastewater networks and treatment facilities are 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 data, 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 Wastewater 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, condition assessment results, expert judgement from literature and studies into earthquake related life reduction completed by SCIRT and high level criticality.

- Short term (years 1-3) budgets and programs identify and prioritise specific renewals projects based on condition assessment results, performance assessment results, blockage rates, operating cost, defect types, defect numbers, criticality, obsolescence, risk and alignment with transport (road) and storm water renewal works.

Following the methodology in the Draft Lifecycle Management Manual would result in repair of condition 3 assets, repair or renewal of condition grade 4 assets and renew of condition grade 5 assets. Due to budget constraints a reduced projects and programmes are proposed in this service plan limiting works to only the renewal of condition grade 5 assets.

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

- A city-wide wastewater optimisation project has been undertaken to determine the most cost effective suite of projects to achieve compliance with Council's wet weather overflow consent. This has identified four specific projects which are included in the LTP.
- 61 WW New Pumping Stations for Growth and 60 WW New Mains Programme - master plans for providing wastewater services to all unserviced greenfield areas have been prepared. These have been used to inform the projects within these programmes, and these projects have been 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.

6. What financial resources are needed?

Table 6.1 – Current and Proposed Budget

WASTEWATER- WW COLLECTION, TREATMENT & DISPOSAL				
	2017/18 Annual Plan	2018/19	2019/20	2020/21
	000's			
Collecting Wastewater from Properties	16,762	20,205	21,098	21,912
EQ - Wastewater Collection	442	1,015	1,054	1,072
Treat & Dispose of Wastewater Collected	11,919	12,060	13,031	13,753
Laboratory Services - Wastewater	705	550	563	531
Activity Costs before Overheads	29,828	33,830	35,746	37,265
Corporate Overhead	3,613	3,904	4,118	3,832
Depreciation	50,733	52,963	54,672	56,400
Interest	4,560	4,681	5,373	7,057
Total Activity Cost	**88,734**	**95,378**	**99,909**	**104,556**
Funded By:				
Fees and Charges	5,804	6,524	6,739	6,985
Grants and Subsidies	-	-	-	-
Total Operational Revenue	**5,804**	**6,524**	**6,739**	**6,985**
Net Cost of Service	**82,930**	**88,854**	**93,170**	**97,571**
Funding Percentages:				
Rates	93.5%	93.2%	93.3%	93.3%
Fees and Charges	6.5%	6.8%	6.7%	6.7%
Grants and Subsidies	0.0%	0.0%	0.0%	0.0%
Capital Expenditure				
Improved Levels of Service	8,741	12,896	14,279	20,673
Increased Demand	5,286	4,470	532	1,814
Renewals and Replacements	26,435	29,913	31,101	50,951
Total Activity Capital	**40,461**	**47,279**	**45,912**	**73,438**

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 to statutory obligations in providing the wastewater 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.

Table 7.1 Capital Programme - Wastewater

CPMS #	Candidate Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed / not implemented
42155	**WW Overflow Reduction Programme**			→ Reduce wet weather overflows	→ Statutory non-compliance – overflow consent → Risk to public health → Environmental pollution
874	WW Riccarton Trunk Main Project	470	470		
25805	WW Colombo St Trunk and Beckenham Cross Connection	1,160	1,160		
42153	WW Eastern Terrace Wastewater Main Upgrade	1,009	1,009		
42154	WW Somerfield Pump Station and Pressure Main	7,638	7,638		
43946	WW PS13 Tilford Street Pump Station and Pressure Main Capacity Upgrade	1,041	1,041		
43947	WW PS44 Opawa Road Pump Station Capacity Upgrade	132	132		
43334	**Wastewater Pumping Improvements Programme**			→ Provide capacity for growth → Support urban development	→ Statutory non-compliance – provide development infrastructure for growth
42193	WW Pump Station 60 Stage 2	1,215	1,215		
17873	WW PS65 Upgrade	995	995		
17875	WW PS58 Upgrade	0	1,159		
17876	WW PS20 Upgrade	27,725	0		
43512	SCIRT 11230 Delayed Pressure Tank Installation	449	449		
43335	**Wastewater Reticulation Improvements Programme**				
30172	WW Riccarton Interceptor - Upper Riccarton	7,504	1,870	→ Avoid manhole overflows → Reduce frequency of river overflows to comply with consent conditions → Provide capacity for growth via intensification and in greenfield areas → Remove wastewater capacity constraints → Reduce public health risk	→ Statutory non-compliance – overflow consents → Statutory non-compliance – provide development infrastructure for growth → Statutory non-compliance – avoid nuisance → Risk of dry weather overflows → Public health impacts → Impact on customer satisfaction
30173	WW Avonhead Road Wastewater Main Upgrade	5,140	3,926		
43333	**Wastewater Treatment Improvements Programme**				
596	WW Akaroa Wastewater Scheme	35,336	8,783	→ New discharge consent required → Provide capacity for growth → Improve treated wastewater quality	→ Statutory non-compliance – resource consents → Impact on customer satisfaction → Limited provision for growth

CPMS #	Candidate Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed / not implemented
				→ Consider land treatment and beneficial re-use of treated wastewater	
890	WW Lyttelton Harbour Wastewater Scheme	42,464	38,146	→ Resource consents require treated wastewater discharges to the harbour to cease → Provide capacity for growth → Address cultural preferences not to discharge to Lyttelton Harbour	→ Statutory non-compliance – resource consents → Impact on customer satisfaction
2214	WW Duvauchelle Treatment and Disposal Upgrade	4,698	1,575	→ New discharge consent required → Consider land treatment and beneficial re-use of treated wastewater	→ Statutory non-compliance – resource consents → Impact on customer satisfaction
61	**WW New Pumping Stations for Growth**			→ Provide capacity for growth → Maintain compliance with wet weather overflow consent	→ Statutory non-compliance – provide development infrastructure for growth → Statutory non-compliance – resource consents → Impact on customer satisfaction with reliability (11.1.1.1) → Increased number of wet weather overflows (11.2.1.2)
43216	WW Belfast PS62 Capacity Upgrade Stage 2	2,689	350		
60	**WW New Mains Programme**	**12,889**	**814**	→ Provide capacity for growth	→ Statutory non-compliance – provide development infrastructure for growth
	plus defined projects:				
9388	WW SE Halswell Sewer	2,128	2,128		
33836	WW Highfield Connection to Northcote Collector	2,158	2,158		
42603	WW Vacuum System Monitoring Equipment	2,286	1,533	→ Improve operations in terms of safety and efficiency → Optimise capacity → Provide data so that high inflow and infiltration can be identified and addressed	→ Inefficient operations → Safety issues for contractor → Risk of failure → Higher operating costs → High inflow and infiltration
37836	**WW Additional Infrastructure Programme**	**1,208**	**0**	→ Infrastructure for urban development → Provide capacity for growth	→ Statutory non-compliance – provide development infrastructure for growth → Shortage of developable land increases cost of sections and houses
	plus defined projects:				
94	WW Subdivisions Additional Infrastructure	1,896	502		

CPMS #	Candidate Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed / not implemented
					→ Developers install infrastructure that is undersized for future growth
35	**WW Wastewater Reticulation Renewals**	**298,300**	**27,735**	→ Avoid overflows → Prevent failures and spillages → Reduce inflow and infiltration → Best practice asset management → Reduce cost of maintenance → Control odour → Renew wastewater pipes in a co-ordinated manner with other infrastructure in the road corridor	→ **Increased opex costs of $1,040,000 over the first 5 years of the LTP will be required if this option is adopted** → Increased wastewater overflows → Increased maintenance and operating costs → Statutory non-compliance – avoid nuisance → Potential increase in odour complaints → Increase in number of faults → Impact on customer satisfaction with reliability (11.1.1.1) → Note the planned spend is only the available budget for the first three. There would be no co-ordination with roading, Otakaro, DCL or Regenerate Christchurch. This this will result in significant increases in opex, lower levels of service, increasing inflow and infiltration, dry weather and wet weather overflows, and digging up new roads for subsequent repairs and renewals if this option is adopted
	plus defined projects:				
24762	Whero Ave WW Retic - Diamond Harbour	1,350	1,350		
33627	WW Mains Renewal - Palmers Rd	1,372	1,372		
36131	WW Mains Renewal - Peacocks Gallop - Sumner	311	311		
41283	WW Riccarton Road - Harakeke to Matipo	7,787	7,787		
41880	WW Infra Renewals Wastewater Reticulation Affiliated with Roading Works	3,259	2,148		
44410	WW Mains Renewal - Tuam St Brick Barrel - Livingstone St to Saxon St	1,569	1,569		
33827	WW Mains Renewal - Akaroa Foreshore North (Beach Rd and Rue Jolie)	1,510	1,510		
44460	WW Mains Renewal - Penruddock Rise to 196 Cashmere Rd	630	630		
42135	WW Mains Renewal - Forest Dr	562	562		
33628	WW Mains Renewal - Cranford St / Sherborne St and Vicinity	484	484		
37835	**Wastewater Lateral Renewals PRG**	**8,116**	**3,593**		
44716	**WW Planned Lateral Renewals**	**2,945**	**2,945**		
2348	**WW Reactive Lateral Renewals PRG**	**1,065**	**1,050**		
2350	**WW Reticulation Structure Renewals**	**5,442**	**1,674**		
63	**WW Pumping and Storage ICA Renewals PRG**	**5,098**	**415**		
33897	WW Pump Station MEICA R&R Project for FY2016-2018	553	553		
3116	**WW Pumping and Storage ICA Renewals PRG**	**6,146**	**35**		
37834	**WW Pumping and Storage Reactive Renewals PRG**	**1,920**	**529**		

CPMS #	Candidate Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed / not implemented
41875	**WW Pumping and Storage Electrical Renewals PRG**	**8,539**	**2,439**		
41876	**WW Pumping and Storage Mechanical Renewals PRG**	**2,339**	**274**		
1376	**WW New Reticulation Odour Control - Waste Gen O/H**	**5,539**	**2,979**		
	Bamford St Odour Treatment	202	202		
37838	**WW Treatment Plant Electrical Renewals PRG**	**7,295**	**1,225**		
2435	WW - Wetwell Safety Improvements	47	23	→ Improved safety for workers	→ Statutory non-compliance – health and safety → Risk of worker injury
41878	**WW Local Pressure Sewer Systems Reactive Renewals PRG**	**384**	**110**	→ Replace pressure sewer system equipment when it fails → Prevent failures and overflows	→ Statutory non-compliance – avoid nuisance → Overflows on private property → Impact on customer satisfaction pertaining to reliability and response
37839	**WW Treatment Plant ICA Renewals PRG**	**21,088**	**3,278**	→ Ensure compliance with resource consents → Best practice asset management → Reduce cost of maintenance → Control odour	→ Statutory non-compliance – resource consents → Impact on customer satisfaction
	Wastewater Treatment Plant Renewals				
899	Step Screen Renewal	2,537	1,402		
2304	Trickling Filter Media Renewal	26,980	0		
2308	Gravity Belt Thickeners Renewal	405	0		
37152	Platform Renewals	73	0		
37153	Refurbish Amenities and Mezzanine Roof.	240	0		
37154	SCT Diffuser Pipework	156	0		
37155	Digester 5 and 6 Roof Membrane	433	433		
37157	Northern Toe Drain Pump Station	130	0		
2343	Roading Renewals	595	223		
2717	CWTP EQ Repair Occupied Buildings	5,853	5,853		
47123	CWTP Biogas Co-Generation Unit G1	4,164	4,164		
47125	CWTP Ponds Midge Control	3,335	920		
37245	WW CWTP Sludge Lagoon 3 EQ Repairs	2,221	2,221		

CPMS #	Candidate Title	10 Year Plan FY19-28 $'000	3 Year Plan FY19-21 $'000	Drivers	Implications if delayed / not implemented
30219	CWTP EQ Channels Restoration	2,100	2,100		
3117	Biosolids Dewatering Renewal	210	210		
47211	CWTP MLCG Renewal	207	207		
1006	Budget Only - EQ WWTreatment Plant Capex	1,420	1,420		
37837	**Laboratory R&R Programme**	**975**	**0**		
37	LW Laboratory Renewals and Replacements	307	307		
37840	**CWTP H&S Renewal Programme**	**725**	**200**		
41877	**WS H&S Renewals PRG**	**934**	**451**		
37841	**WW Treatment Plant Civils and Buildings PRG**	**931**	**507**		
37842	**WW Treatment Plant Reactive Renewal PRG**	**1,453**	**401**		
41393	**WW Treatment Plant Mechanical Renewals PRG**	**23,067**	**2,792**		
41872	**WW SCADA Software Renewals PRG**	**667**	**184**		
41873	**WW Wastewater Modelling PRG**	**1,414**	**609**	→ Ability to plan for urban development → Optimize wastewater networks → Optimize capital investment to provide for growth and reduce overflows → Identify capacity constraint areas	→ Statutory non-compliance – provide development infrastructure for growth → Statutory non-compliance – resource consents → Non-optimized capital investment → Inability to manage network capacity → Inability to manage overflows
41879	**WW H&S Renewals PRG**	**1,216**	**490**	→ Comply with health and safety requirements → Provide corrective actions on urgent health and safety items identified.	→ Statutory non-compliance – health and safety → Risk of worker injury

Note that no provision for new wastewater services in the residential red zone are included in the LTP, as the future of the red zone is yet to be decided.

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

Effect	Mitigation
Cost of operating wastewater collection, treatment and disposal systems	Follow documented procedures and industry best practice for cost minimisation. Follow technological developments and implement cost saving initiatives on a continuous improvement basis. Focus process key performance indicators on cost efficiency. Ensure staff are kept updated with technological and operational best practice through attendance at conferences and participation in specialist industry working groups.
Social, cultural and environmental effects of wastewater overflows	Maintain resource consent compliance. Reduce overflows through projects identified in the city-wide wastewater optimisation project. Fully calibrate wastewater network models through using recent flow monitoring data. Increase flow monitoring on wastewater pump stations and trunk sewers. Continue to implement processes for erecting signage and public notification where overflows could result in health risks. Provide on-site attenuation where required in capacity constraint areas. Clean and maintain siphons and wastewater mains in accordance with maintenance plan. Use flood modelling scenarios to identify areas at risk of inundation and undertake projects to reduce risk of flood water getting into the wastewater network.
Odour from wastewater networks and wastewater treatment plants	Odour control systems installed in problem areas. Operate odour control systems in accordance with procedures including regular maintenance to remove build-ups of odour causing compounds. Robust work planning at wastewater treatment plants to avoid odour events. Good design of wastewater networks to prevent creation of anaerobic conditions / adequate ventilation. Enforce trade waste bylaws.

Effect	Mitigation
	Monitor and control illegal discharge of chemicals and toxins to the wastewater system.
Potential for negative environmental effect of treated wastewater discharges	Maintain resource consent compliance. Operate and maintain treatment plant and disposal services according to best practice. Monitor trade waste discharges to ensure unacceptable pollutants are not released to the WWTP. Monitor and control illegal discharge of chemicals and toxins to the wastewater system to avoid process failure.
Cultural impact of effluent discharge to water bodies	Work collaboratively with Ngāi Tahu and local rūnanga to find cost effective solutions that address cultural concerns. Consider options to discharge treated wastewater from Akaroa and Duvauchelle to land instead of Akaroa Harbour. Implement the project to divert wastewater from Lyttelton, Governors Bay and Diamond Harbour to the Christchurch Wastewater Treatment Plant, instead of Lyttelton Harbour.
Biosolids disposal to the environment	Continue to dry biosolids to reduce volume, kill pathogens and enable reuse. Monitor trade waste discharges to ensure potential pollutants are not released to the wastewater treatment plants and carried over into the biosolids, maintaining quality of biosolids. Continue with beneficial reuse of biosolids.

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

A Service Delivery Review or Exemption 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.