Activity Management Plan 2025-34

WASTEWATER

May 2025

www.waitaki.govt.nz
t. 03 433 0300 e. service@waitaki.govt.nz
20 Thames Street, Private Bag 50058, Oamaru 9444

Waitaki
DISTRICT COUNCIL
TE KAUNIHERA Ā ROHE O WAITAKI

Prepared by:
Waitaki District Council
20 Thames Street
Private Bag 50058
OAMAMU 9495

Revision history

Revision number/date	Descriptions
A: March 2024	Preliminary reviewed draft AMP for Waters Services Team review
B: September 2024	Revised draft AMP for Water Services Team review
C: October 2024	Revised draft AMP for Audit NZ review
D: May 2025	Final AMP for review

Document acceptance

Action	Name	Position	Signed	Date

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1 Executive Summary

Introduction

This Activity Management Plan (AMP) provides an overview of how the Waitaki District Council (Council) intends to manage the wastewater activity and associated assets in an efficient, cost effective and sustainable manner.

The plan:

- outlines key issues, goals, objectives, and the levels of service that the Council will provide to its communities.
- provides information on any new projects and expenditure that are required to meet future demand as well as details about life cycle management and maintenance.
- provides an overview of costs and how the wastewater activity is funded, the risks and uncertainties involved in undertaking the activity, and how we manage those are also outlined in the plan.

What we do

Council provides eight wastewater systems that collect, treat and dispose of liquid waste to acceptable environmental standards. These wastewater systems are located at:

- Duntroon (limited service area)
- Kurow
- Lake Ōhau
- Moeraki
- Ōamaru (including Kakanui & Weston)
- Ōmārama
- Otematata
- Palmerston.

Council supports this service by:

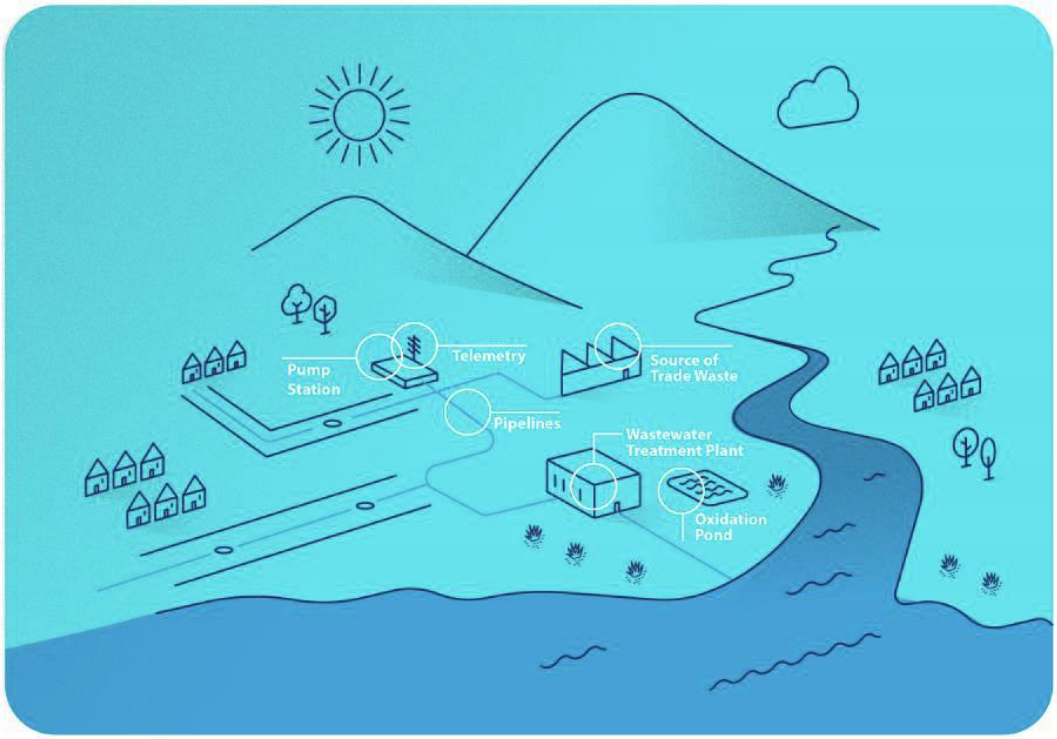
- Providing, operating and maintaining wastewater infrastructure in compliance with New Zealand legislation, standards and resource consents
- Responding to call outs and service disruptions quickly and efficiently
- Planning for future development and needs.

Key components of our wastewater systems

Overall, there are 204 kilometres of reticulation, 2,138 manholes, 29 pump stations and 8 treatment plants. The reticulation varies from 100mm to 600mm in diameter.

Our wastewater infrastructure is currently valued at $282,749,279 (treatment plants, pump stations, manholes and reticulation).

Below is an overview of the key components of the wastewater activity.



Why we do it

Council has a legal obligation under the Health Act 1956 to improve, promote, and protect public health within the District.

We also have an obligation under the Local Government Act to promote the social, economic, and environmental wellbeing of our communities. Council's wastewater activity contributes primarily to the following community outcomes:

- Prosperous district
    - Attractive to new opportunities
    - Support local businesses
- Valued environment:
    - Protecting our diverse landscapes and water bodies
    - Meeting environmental and climate change challenges
- Quality services:
    - Robust core infrastructure and services
    - Strong communities:
- Enable safe and healthy communities

Council's Strategic Framework was adopted in 2023. It guides Council decision-making, providing a focus for staff and elected members for all activities and service delivery.

Council's principal goal for wastewater over the next nine years is to:

- Protect the health of the community in urban housing areas, eliminating the need for individuals to provide their own wastewater system (which carries much higher health risks)
- Provide a cost-effective trade waste disposal system for commercial and some industrial users, eliminating the need for them to provide their own wastewater systems
- Provide acceptable collection, treatment and disposal systems for the use of communities

Managing negative effects of wastewater

Significant negative effects associated with the wastewater activity include odour and sludge disposal from treatment plants. The wastewater network is operated under the resource consent framework, which requires that any adverse environmental effects associated with the discharges be mitigated. Sludge disposal options will be investigated for treatment plant sludge.

The quality of treated effluent is continually monitored to ensure compliance with environmental standards and consent conditions. Overflows and spills from the network can also cause a negative effect. The identification and implementation of improvements reduce the risk of such occurrences.

A Capacity Study for Oamaru, including overflow mitigation investigations and implementation of appropriate measures, is currently underway. Other capacity studies for smaller networks are planned over the next nine years. Council will continue to identify and implement methods of making wastewater collection and treatment services more efficient and sustainable.

Levels of service

Council's overarching goal for wastewater treatment and disposal, over the next nine years, is to support and promote the health and wellbeing of the community and the environmental by providing a lawful, sustainable and cost-effective wastewater service for the community.

We will continue to take all practicable steps to comply with relevant legislation, regulations and resource consents, and to report on performance.

The current Levels of Service and target Levels of Service, that Council is aiming to achieve in the future, are shown on the following page. As Council and its customers are generally satisfied with the current Levels of Service provided, most of the target Levels of Service remain unchanged.

It should be noted that the target Levels of Service are not intended as a formal customer contract. Rather Council's responsibility is initially to aim to achieve these levels and then to achieve them more cost effectively through a process of continual improvement

In accordance with 261B of the Local Government Act 2002, Non-Financial Performance Measures were adopted on 12 November 2013 and came into force on 30 July 2014. These Performance Measures required Local Authorities to report on the performance of the key activities of water supply, wastewater, stormwater, flood protection and roads annually from 2015/16. Since then, Council only reports on the mandatory measures as this covers the key expectations in terms of the delivery of the service.

Overview of levels of service framework for wastewater

Community outcomes	How this activity contributes	Levels of service	Performance measures/(targets)*
Strong Communities Enable safe and healthy communities	Protecting communities from wastewater related health issues by providing community reticulates systems in agreed areas	Council will provide affordable, reliable wastewater disposal systems	The number of dry weather overflows from Council's sewerage system (fewer than four sewerage overflows per 1,000 connections (<20 total))
Valued environment Protecting our diverse landscapes and water bodies Meeting environmental and climate change challenges	Acknowledging and incorporating the natural environment in design, construction, operation and maintenance of infrastructure	Council will provide wastewater systems that protect the natural environment	Compliance with Council's resource consent conditions for discharge from its sewerage system measured by the number of abatement or infringement notices, enforcement orders and convictions (nil for all)
Quality services Robust core infrastructure and services	Timely response to service requests and system failures	Council will respond to problems quickly	Response to a callout (One hour attendance time for sewerage overflows) Resolution of a callout (24 hours resolution time for sewerage overflows)
Prosperous district Attractive to new opportunities Foster a diverse and resilient economy	Maintaining quality and continuity of wastewater services	Community perceives the wastewater system is reliable and safe	Wastewater complaints (fewer than 12 complaints per 1,000 connections)

*Detailed performance measures, including compliance, are outlined on the following pages.

How well are we doing

Performance Measure 1 – system and adequacy

The number of dry weather sewerage overflows from Council's sewerage system expressed per 1,000 sewerage connections to Council's system.

Measure	Current performance 23/24 (22/23)	Target 2024-25	Target 2026-34
Number of dry weather overflows	**2.2/1000 - Achieved (1.3/1,000)**	<4/1,000 (<20 total)	<4/1,000 (<20 total)

Performance Measure 2 – discharge compliance

Compliance with Council's resource consents for discharge from its sewerage system are measured by the number of the following compliance actions received by Council:

- abatement notices
- infringement notices
- enforcement orders, and
- convictions.

Measure	Current performance 23/24 (22/23)	Target 2024-25	Target 2026-34
Number of Abatement notices	**1* (2) - Not achieved**	Nil	Nil
Number of Infringement notices	**Nil (Nil)**	Nil	Nil
Number of Enforcement orders	**Nil (Nil)**	Nil	Nil
Number of Convictions	**Nil (Nil)**	Nil	Nil

*In 2023/24 there was one infringement notice for breach of an abatement notice, issued August 2023 relating to the Palmerston Wastewater Treatment Plant (EN.RMA.21.0075 – Palmerston WWTP). Work is being carried out at the treatment plant to meet the requirements of the abatement notice. For example, a new bore was installed on 24 May 2024 and will be used for future sampling.

Performance Measure 3 – fault response times

Where Council attends to sewerage overflows resulting from a blockage or other fault in Council's sewerage system, the following median response times are measured:

- Attendance time: from the time that Council receives notification to the time that service personnel reach the site, and
- Resolution time: from the time that Council receives notification to the time that service personnel confirm resolution of the blockage or other fault

Measure	Current performance 23/24 (22/23) (median)	Target (median) - hours 2024-25	Target (median) - hours 2026-34
Attendance time	**0.9 (1.8) hrs - Achieved**	1 hr	1 hr
Resolution time	**3.3 (8.6) hrs - Achieved**	24 hrs	24 hrs

Performance Measure 4 – customer satisfaction

The total number of complaints received by Council about any of the following:

a. Sewage odour
b. Sewerage system faults
c. Sewerage system blockages, and
d. Council's response to issues with its sewerage system

This is expressed per 1,000 properties connected to Council's sewerage system

Measure	Current performance 23/24 (22/23)	Target 2024-25	2026-34
Total number of complaints about sewerage system	**9/1,000 - Achieved (9/1,000)**	<12/1,000	<12/1,000

Key AMP changes and additions since the 2021 AMP

Key changes to the Wastewater activity since 2021 include:

- Legislative changes to how Water Services are delivered through Local Water Done Well
- Development and testing of models for our wastewater networks - Oamaru has been completed, other network models are under **development**

Where we are headed

Government reform

Following the change of Government in 2023, Council is required to implement the "Local Water Done Well" reforms, which will require us to reconfigure our water service delivery in a financially sustainable way. This will require Council to investigate collaborative models and partnerships that could support efficient and cost-effective water service management.

Under the new Local Government (Water Services Preliminary Arrangements) Act 2024, we must then produce a water service delivery plan by September 2025 detailing how water services will be delivered in a financially sustainable way by 2028. This will require Council to decide how much and when to invest, and what to charge water supply consumers. The budgets for the AMP have been informed by the early development of this plan.

Council's implementation of the water services delivery plan will be monitored by the Department of Internal Affairs or the new economic regulator.

Compliance

Achieving compliance with the legislation and water services regulations is ongoing. Further compliance requirements are anticipated regarding the way wastewater is treated and disposed of.

Operation and maintenance costs of the upgraded wastewater plants are expected to be significantly higher due to more sophisticated treatment plants and increased monitoring of wastewater discharges to comply with the regulations, new environmental standards and regional council rules and consents.

In May 2024, Taumata Arowai introduced the Network Environmental Performance Measures and Guide 2024. From 1 July 2024, wastewater network operators are required to report certain Measures to them by 30 September 2024. This is a mandatory requirement under the "Environmental Performance Measures Record Keeping Requirements for Drinking Water and Wastewater Network Operators Notice 2024".

There are also requirements to capture and report certain wastewater Measures for the year 1 July 2024 to 30 June 2025, and report these to them by 30 September 2025.

Asset planning

In addition to the need to comply with water services legislation, there is an ongoing need to improve the quality of wastewater asset information to support maintenance and renewal planning and development of the network to improve resilience and meet compliance requirements. The continued development and implementation of a robust asset renewal programme is an ongoing area of focus.

Summary of key challenges for wastewater management:

The following issues, if not addressed, are likely to impact on Council's ability to meet service levels for wastewater over the next 10 years:

Balancing spending and funding	Including the increasing costs Council faces to collect, treat and dispose of wastewater, increasing compliance requirements and community expectations for Council to deliver more for less, and the community's ability to pay for services
Compliance and reform	Including meeting new environmental standards and the requirements of the new Local Water Done Well legislation

Environmental compliance	Council operates the wastewater systems under resource consents granted by two Regional Councils (Otago and Canterbury). These consents apply to wastewater collection and discharge and require significant sampling, monitoring, operation and maintenance methodologies and regular reporting. Notably, the Duntroon communal septic tank is no longer a permitted activity. Council applied for a short-term consent for the existing system to allow appropriate investigation, consideration of options in meeting regional rules and environmental standards and consultation
Separated wastewater and stormwater systems	Inflow – through illegal connections such as roof downpipes, yard drains, or indirect connections with stormwater pipes. Infiltration –through joints, cracks and misaligned pipelines. Exfiltration - escape of wastewater from the wastewater collection system into the surrounding soil via cracks or malfunctioning pipe joints.
Ageing infrastructure	The average age of our wastewater network is increasing, which may increase infiltration/exfiltration and affect levels of service and the resilience of wastewater networks.
Climate change and increasing magnitude of storm events	This is having a notable impact on the Waitaki district. Consequently, the resilience of Council's key infrastructure is being increasingly challenged. Storm events can significantly increase the volume of stormwater entering the wastewater network, overwhelming the capacity of the network and treatment facilities.
Coastal erosion	This puts some of our coastal wastewater assets at risk - notably the Orwell Street pumpstation. The Regina Street pumpstation is threatened by coastal erosion within two decades, and any upgrades and decisions made around the TY Duncan Wastewater Treatment Plant need to be cognisant of the long-term erosion trends.
Population and economic growth	This is likely to place greater demand on our wastewater networks and pressure on existing capacity.

A full outline of key issues and Council's planned response to these is included on page 28.

How will we get there?

Council intends to continue to operate and maintain its existing wastewater networks over the next nine years. The physical operation and maintenance of wastewater systems will continue to be contracted out.

Council plans to maintain the current levels of service for the life of this plan unless legislation, consent conditions, or community expectations change. Over the next nine years Council plans to:

- Continue to collect, treat, and dispose of wastewater
- Comply with regional rules and environmental standards
- Plan for future development and needs
- Consult with the community on issues such as health and legislative compliance issues

Ongoing maintenance work, and work to improve the capacity and operation of wastewater systems, will be necessary over the next nine years. Development and implementation of a robust renewal plan will also be necessary to ensure that the wastewater network continues to be maintained in an operational state in the future.

Meeting ever increasing environmental rules will require significant capital costs and ongoing operational costs.

Funding

This activity is funded by targeted rates collected from properties that are connected to our wastewater networks in urban areas.

An overview of planned expenditure is outlined in the following tables and charts.

Planned operational expenditure – 2025 to 2027

The operations and maintenance programme covers all day-to-day activities that are required to manage the wastewater activity.

Due to impending changes to service delivery under the Local Water Done Well reforms, Council is only including operational budgets for waters activities for years 2025-26 and 2026-27 for this Activity Management Plan and the Long Term Plan:

Operational budget	LTP Budget (000's)	
	2025/26	2026/27
Payments to staff and suppliers	3,491	5,451
Finance costs	347	546
Internal charges and overheads applied	39	49
Total	**3,876**	**6,045**

Capital programme summary 2025-34

Council's goals for wastewater for the next nine years are supported by significant projects. These are summarised and grouped by their funding sources in the following tables:

Project & Description	Year	Amount
New capital works – funded from loan, and development contributions and reserves to create new assets or improve service levels		
Plant upgrades (Oamaru, Duntroon, Kurow, Ohau)/improvements	2025-29	$6,250,000
Beach Rd catchment upgrade	2030/31	$3,000,000
Duplicate rising main (Oamaru)	2032-34	$20,000,000
New pump station for Oamaru (once Orwell St pumpstation is upgraded and Regina Lane pumpstation is abandoned)	2033/33	$1,000,000

Project & Description	Year	Amount
Oamaru Creek – wastewater syphon capacity upgrade	2031/32	$2,000,000
Capacity studies (Kurow, Waitaki Valley, Oamaru)	2025/29	$415,000
Overflow mitigation (Oamaru, Palmerston)	2027-32	$2,950,000
Trade Waste	2026-34	$3,200,000
Consent renewals/monitoring equipment/disposal field agreements	2025-28	$280,000
Mains upgrades/replacement (Kurow, Omarama, Otematata, Moeraki)	2026-34	$2,340,000
Risk Management Plans (Oamaru, Lake Ohau, Omarama, Otematata, Kurow, Duntroon, Moeraki, Palmerston)	2026-33	$295,000
Total		**$41.7million**

Project & Description	Year	Amount
Renewals – funded from depreciation reserves to renew assets and maintain current service levels		
Mains Renewals	2024-34	$21,685,000
Facilities Renewals (including Orwell Street pumpstation relocation)	2026-34	$23,100,000
SCADA renewals	2026-32	$1,670,000
Consent renewals	2025-34	$150,000
Total		**$46.6million**

Project & Description	Year	Amount
Operational projects – funded from operational budgets		
Inflow and infiltration reduction programme	2025-34	$2,350,000
Bylaw reviews and updates and Sanitary Assessment	2025-31	$450,600
Desludging ponds/wetland	2025-31	$6,100,000
Conditions assessments (excluding mains)	2027-34	$1,050,000
Sewer main inspection and cleaning programme	2025-34	$2,100,000
Manhole assessments and other monitoring	2025-34	$650,000
Total		**$12.5 million**

Key Projects

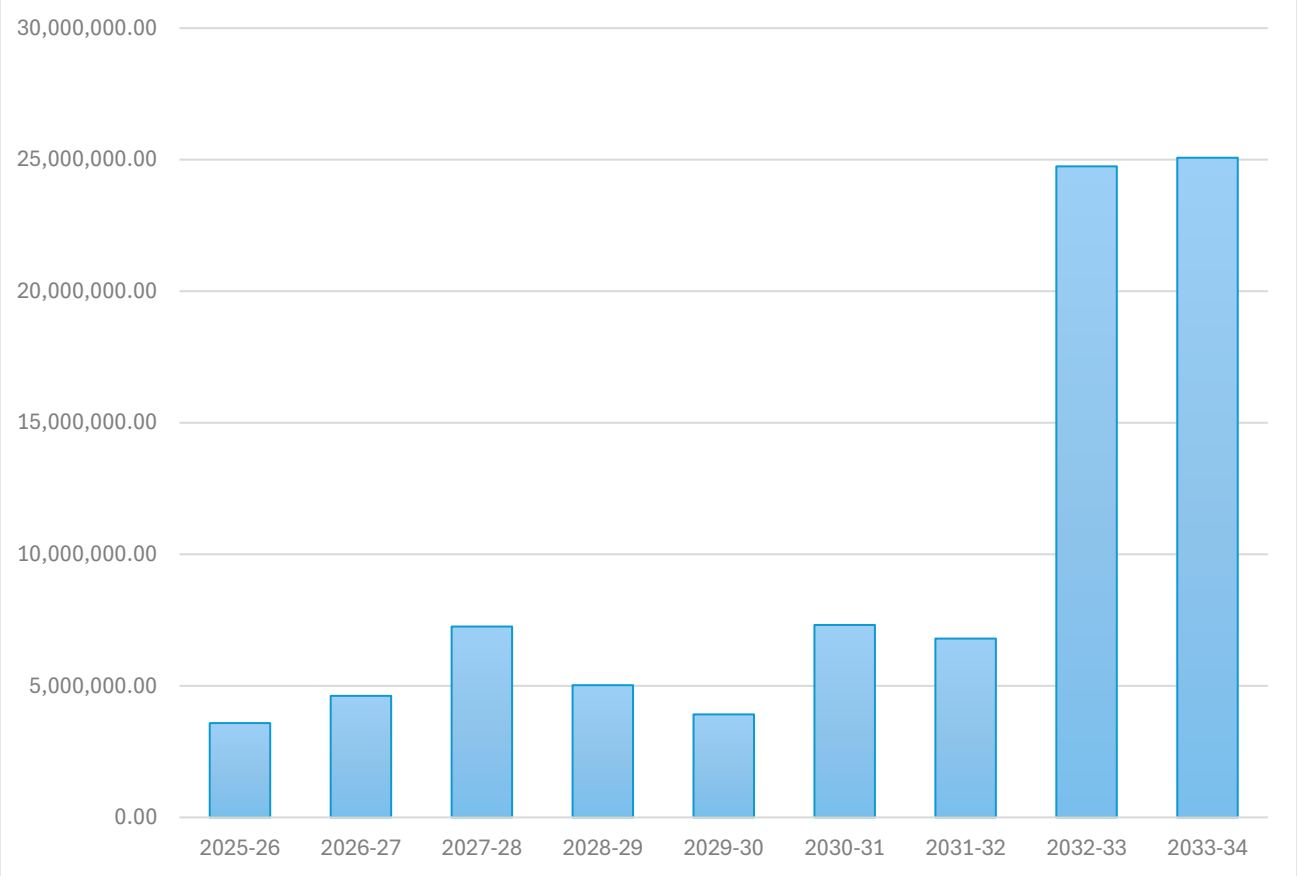
Capacity studies for the Kurow, Waitaki Valley, and Oamaru networks to identify existing wastewater collection treatment and disposal system deficiencies, and develop conceptual solutions to inform future upgrades.

Wastewater treatment plant upgrades – including interim upgrades for the Ōamaru plant, and upgrades for the Duntroon, Kurow and Lake Ōhau treatment plants to comply with resource consent requirements and environmental standards. In considering options for upgrading plants, consideration will be given to providing increased resilience and capacity.

Renewals safeguard the wastewater collection, treatment and disposal systems through optimum replacement of assets nearing the end of their operational life. The cost for renewal work (that is - upgrades, refurbishment or replacement of existing facilities and pipes to maintain capacity or performance) for wastewater is estimated to be **$63.3m** over the next nine years. All wastewater network renewal work will be funded by the annual depreciation provision where funds are available.

Network resilience and capacity upgrades to major network capacity includes renewing or relocating the Orwell Street Pump Station (a critical assets for the Ōamaru wastewater network), upgrading the Beach Road Pump Station (catchment area), the Ōamaru Creek Syphon upgrade, and duplicating the Ōamaru trunk rising main, and other works to reduce the risks of overflows to prevent environmental contamination and protect public health.

Wastewater capital and renewal projects 2025-34



What we cannot do

There are some operations and maintenance activities, and capital projects, that are required but are lower in priority and unable to be undertaken within the next nine years due to affordability and Council borrowing limits.

Council has been through an extensive process of ranking the most critical aspects of the programme and only including work that is considered critical to meeting service levels – or improving service levels to meet compliance requirements - now and over the next nine years. These are intended to be included in our Water Service Delivery Plan, as required under the Local Government (Water Services Preliminary Arrangements) Act 2024.

The remainder of the work has either been deferred, reduced in scope or removed from the programme. This includes a major upgrade of the Oamaru Wastewater Treatment Plant in anticipation of the current resource consent for the plant expiring in 2038. Due to uncertainty around what the compliance requirements for wastewater will be going forward, and how this will impact on the consent and upgrade costs, Council has deferred this project.

Funding impact statement

Council's Funding Impact Statement (FIS) for this activity is included in Appendix 1. This summarises in one place how this activity will be funded and how those funds will be applied over the next nine years.

Risk, assumptions and uncertainties

Our present budget levels are generally sufficient to continue to manage risks in the medium term, albeit with a focus on the most essential areas of the programme. However, if there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to resource constraints, there will be consequences to levels of service.

There are also factors outside of the Council's control that can change and have an impact on Council's ability to achieve what it planned. The key risks and assumptions that relate to this activity include the impact of Government changes to water legislation, climate change impacts and the impact of growth.

The following uncertainties and key assumptions are specific to the wastewater activity:

- Local Water Done Well: The nature of service delivery in response to these changes is uncertain. For the development of this plan, the service delivery model for the wastewater activity has changed under Council's Transformation projects and will change again within the next few years under Local Water Done Well.
- We cannot be certain about the demand on our wastewater networks from industrial users in the future. We have assumed that demand from existing industries will be in line with historic demand. We have not planned for additional wet industries. If demand on our networks is significantly different to what we have assumed, it may have an impact on our future programme and budgets.
- Due to the uncertainty of how long each asset will last, and to assist with renewal planning, an average expected life is assigned for types of assets. Some assets will fail before reaching the end of their expected useful life and some will last longer. We have assumed we will be able to manage this variance within set budgets by prioritising renewals annually.

2 Introduction

The purpose of this Activity Management Plan is to outline and to summarise in one place, the Council's strategic management and long-term approach for the provision and maintenance of its Wastewater activity. This is achieved through the planned management of assets, compliance with regulatory requirements, and the funding needed to provide the appropriate levels of service.

2.1 Rationale for Council involvement

The provision of wastewater collection, treatment and disposal is a core function of local government. It is the duty under the Health Act 1956 to improve, promote, and protect public health within their districts.

In terms of the Local Government Act 2002 the ongoing operation of wastewater services is required unless specific approval is sought to withdraw from the activity in whole or part.

Council's wastewater assets contribute to conserving public health and therefore enhance the quality of life of residents in urban areas of the District.

The service protects public and environmental health, and it is considered necessary and beneficial to the community.

2.2 Goal and principal objectives for water supply

Council's goal for its water supply activity is:

To *Protect Public Health and the Environment*, while also continuing to support growth and economic development.

We plan to:

- Ensure the health of the community where urban housing exists, thereby eliminating the need for individuals to provide their own wastewater system (which carries much higher health risks)
- Provide a cost-effective trade waste disposal system for commercial and some industrial users, thereby eliminating the need for individuals to provide their own wastewater system
- Provide acceptable collection, treatment and disposal systems for the use of communities.

By doing so, Council seeks to ensure:

- Wastewater is removed reliably from urban properties
- The natural environment is not polluted
- Problems are resolved promptly
- Council manages the wastewater service wisely.

2.3 Strategic alignment

In 2023, Council adopted a strategic framework for Waitaki, as outlined on page 9 of this document. This framework guides Council's decision-making, providing a focus for staff and elected members for all activities and service delivery.

The Waitaki District Council vision for the future is:

Waitaki, the Best Place to Be / Waitaki – Whenua taurikura

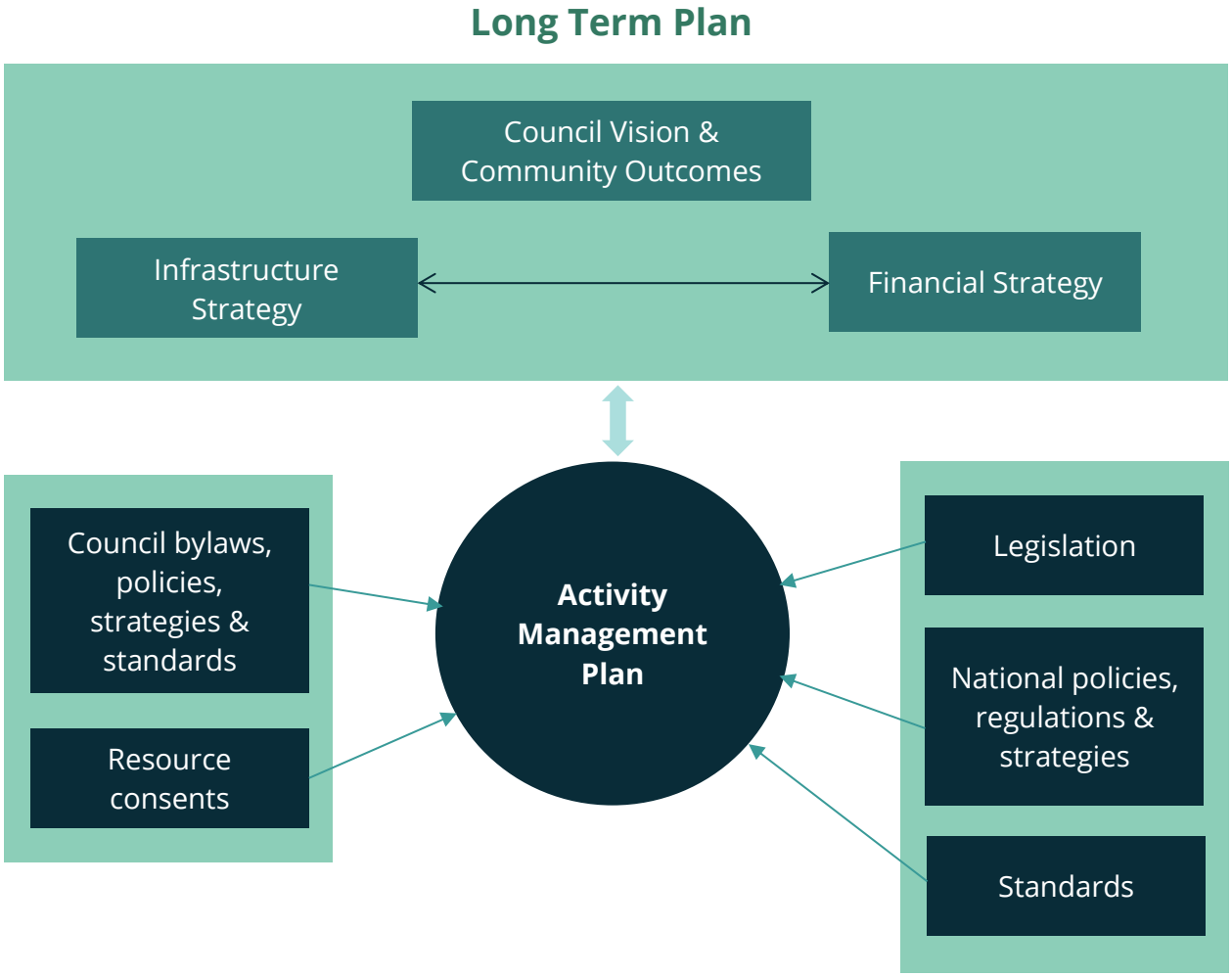
The following key objectives (community outcomes) will contribute to achieving this vision:

- Strong Communities
    - Enabling safe, healthy communities
    - Connected, inclusive communities
    - Promoting a greater voice for Waitaki
    - Celebrating our community identity
- Valued Environment
    - Protecting our diverse landscapes and water bodies
    - Meeting environmental and climate change challenges
- Prosperous District
    - Attracting new opportunities
    - Supporting local businesses
    - Fostering a diverse and resilient economy
- Quality Services
    - Robust core infrastructure and services
    - Community facilities and services we are proud of

To deliver the vision there must be a clear 'line of sight' between the high-level organisation policy, strategic plan and objectives, and the daily activities of managing our assets.

This Activity Management Plan (AMP) is a key part of the planning process and is guided by the framework. It supports and underpins the financial forecasts and work programmes contained in documents like Council's Long Term Plan and Annual Plans.

The drivers and constraints that influence how Council manages its activities are both internal and external and include legislations, policies, strategies and standards:



2.4 Long Term Plan

The Long Term Plan sets Council's strategic direction and work programme for the 10 years ahead. It outlines the services we will provide, the projects we will undertake, the cost of doing this work, how it will be paid for and how we will measure quality and our effectiveness.

The issues we face, and the context within which we work, are continually evolving. For this reason, a Long Term Plan is produced every three years.

Council resolved to defer the 2024 Long Term Plan for a year, meaning that Council produced an enhanced 2024-25 Annual Plan and a nine-year Long Term Plan for 2025-34. There will only be two years between the next two Long Term Plans to bring the three-yearly planning cycle back into line.

The decision comes after the Government gave local authorities the flexibility to defer their Long Term Plans amid uncertainty around the future of three waters service delivery in 2023.

2.5 Infrastructure Strategy

Council's Infrastructure Strategy informs this Activity Management Plan. The strategy takes a 30-year view, laying out the most likely scenarios for how our critical infrastructure will be managed, and the important challenges and decisions we are likely to face as a community.

Water supply delivery has been included in this Infrastructure Strategy for years 1 to 3 only, with the assumption that Council will continue to deliver the activity over this time. Following recent Government reform, Council must reconfigure its water service delivery in a financially sustainable way. By September 2025, Council is required to document, through a water service delivery plan, how water can be financially sustainably delivered for the district by 2028. This may include a joint Council delivery model or a Council Controlled Organisation.

The Infrastructure Strategy has identified the following key issues affecting Council's infrastructure in the next 30 years: Compliance and reform; Climate change and resilience; Growth and demand; Ageing infrastructure; Meeting community needs and expectations

2.6 Financial Strategy

The primary purpose of the Local Government Act 2002 (LGA) is to promote prudent financial management. Our Financial Strategy, which must address the nine years of the Long Term Plan, needs to consider all relevant aspects of the LGA including the need to balance current and future needs of the community. This is particularly relevant to the Strategy, as it sets out Council's approach to how it intends to allocate levels of spending over the short and medium term and how it will use the funding options available to it to share the funding between the current and future residents and ratepayers.

The Strategy must provide a context for consultation on Council's proposals for funding and expenditure by making transparent the overall effects of those proposals on the local authority's services, rates, debt, and investments.

Among other things, it must also outline the expected capital expenditure on network infrastructure required to maintain existing levels of service, quantified limits on rate increases and borrowing, and an assessment of our ability to provide and maintain existing levels of service and to meet additional demands for services within those limits.

More information about the Strategy is included under **Section 9: Financial summary**.

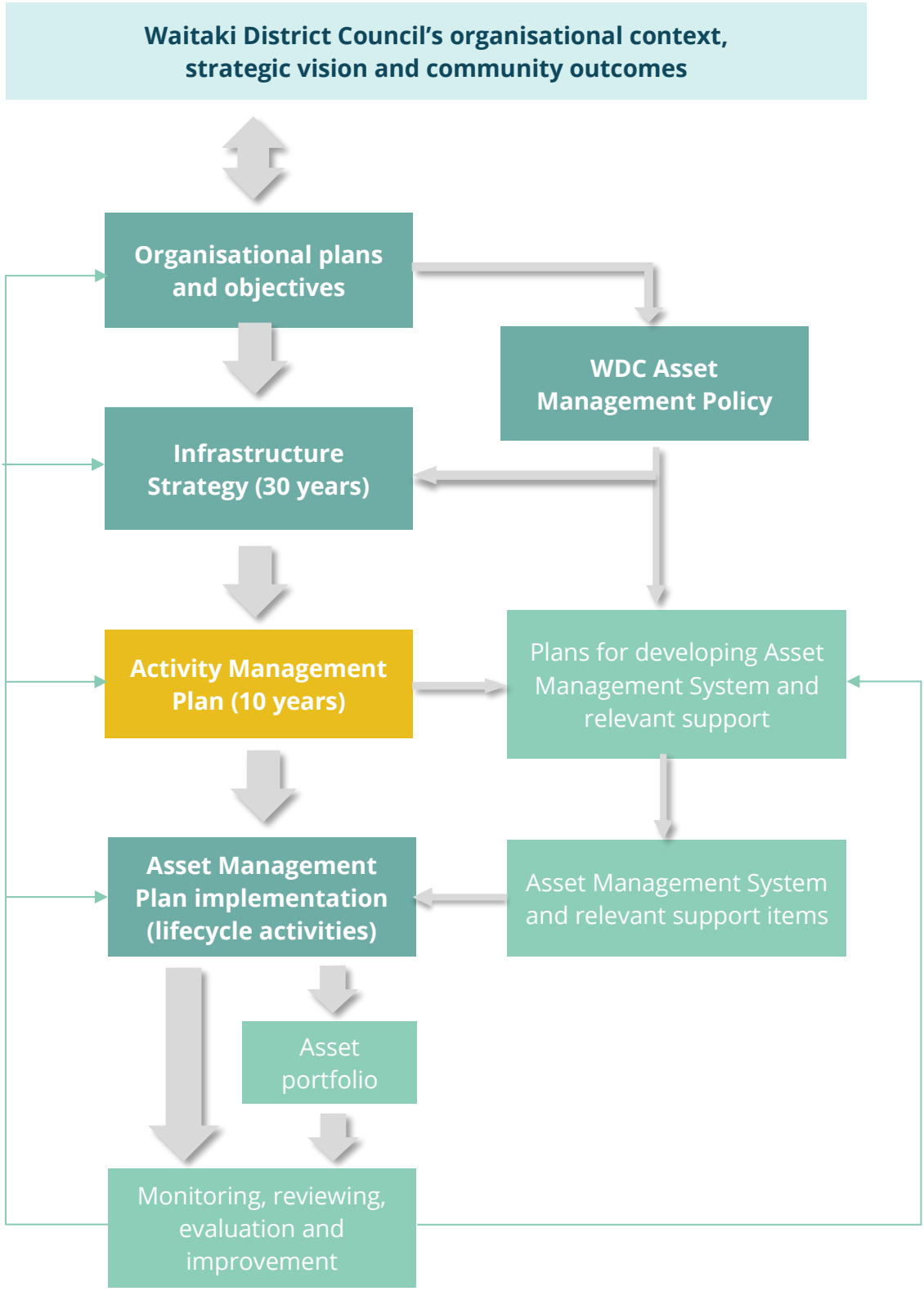
2.7 Key Council wastewater management documents

The following water supply-specific Council-adopted documents are key to this activity:

- Asset Management Policy 2010
- Trade Waste Bylaw 2021 [view here]
- Sewer laterals ownership policy (Council resolution WDC 2023/185)

Appendix 5 of this plan provides further details and outlines all other key legislation and regulation, and other Council plans and policies with linkages to the Wastewater Activity.

The diagram below outlines this connectivity between the asset planning cycle for Wastewater, and Council's broader planning context:



2.8 Community outcomes and the four well-beings

The Local Government (Community Well-being) Amendment Act 2019 resulted in a change in the purpose of local government, which is to promote community wellbeing.

This means local authorities are again responsible for improving the social, economic, environmental and cultural wellbeing of our communities.

Council's collection, treatment and disposal of wastewater contributes to all four well-beings to varying extents through alignment to its strategic framework and meeting the levels of service outlined in this Activity Management Plan.

Community outcomes	Levels of service	Community wellbeing contribution
Strong Communities Enable safe and healthy communities	Council will provide affordable, reliable wastewater disposal systems	**Economic** – protecting public health and maintaining business continuity **Social/cultural** – community and cultural resilience through better health outcomes
Valued environment Protecting our diverse landscapes and water bodies Meeting environmental and climate change challenges	Council will provide wastewater systems that protect the natural environment	**Environmental** – protecting the health of ecosystems and water bodies for future generations **Economic** – minimising the cost of wastewater collection, disposal and treatment for households and businesses **Social/cultural** – the environment is valued and cared for in accordance with social and cultural expectations
Quality services Robust core infrastructure and services	Council will respond to problems quickly	**Environmental** – protecting the health of the environment for future generations **Economic** – keeping businesses and households running and resilient **Social/cultural** – supporting quality of life through reliable, consistent service delivery and quick resolution of issues
Prosperous district Attractive to new opportunities Foster a diverse and resilient economy	Community perceives the wastewater system is reliable and safe	**Economic** – supporting economic resilience and growth **Social/cultural** – ensuring wastewater services meet current and future community and cultural needs

2.9 Engagement on strategic direction

Council has determined customer expectations for wastewater services through formal and informal consultation with the community over many years.

Appropriate community participation in Council decision-making is desirable and enhances the quality of decision-making for the district, and we are committed to the principle of consultation with or without the specific legislative requirements.

Council adopted its first Significance and Engagement Policy in 2014, and in August 2023, a new Significance and Engagement Policy was adopted. The policy provides a procedure to determine the significance of any decision and provides a community engagement guide.

Long Term Plan engagement

This Activity Management Plan informs and is informed by Council's Long Term Plan – which includes a review and update of its Financial Strategy and Infrastructure Strategy.

Council consults with the community during every three yearly Long Term Plan process and will engage with the community to develop the 2025-34 Long Term Plan in a variety of ways – both to meet statutory requirements and in accordance with its Significance and Engagement Policy 2023.

This engagement included:

- Pre-engagement activities to develop aspects of the draft plan
- A one-month consultation period through a Consultation Document identifying Council's key proposals for progressing its strategic vision and framework for the Waitaki District for the next nine years
- A targeted social media campaign
- Drop-in sessions at various locations around the district.

Fostering Māori Contribution to Council's Decision-making Process

Iwi-Council partnership is a key driver for achieving long term success and equitable outcomes within the Waitaki District.

Council is committed to strengthening its relationships with mana whenua and continuously fostering the development of Māori capacity to contribute to local decision-making processes, through giving effect to the principles of Te Tiriti o Waitangi and by participating in genuine and meaningful engagement with mana whenua.

Council acknowledges Te Rūnanga o Ngāi Tahu is the representative of Ngāi Tahu Whānui and that where any enactment requires engagement with any iwi or any iwi authority, that engagement shall, with respect to matters affecting Ngāi Tahu Whānui, be held with Te Rūnanga o Ngāi Tahu.

Council endeavours to engage genuinely and meaningfully with mana whenua.

Te Mana o te Wai refers to the vital importance of water. When managing freshwater, it ensures the health and well-being of the water is protected and human health needs are provided for before enabling other uses of water.

The National Policy Statement NPS-FM 2020 intends for tangata whenua to be involved in the management of freshwater (including decision-making processes). Giving effect to Te Mana o te Wai requires local authorities to actively involve tangata whenua (to the extent they wish to be involved) in freshwater management.

To further foster the development of Māori capacity to contribute to local decision-making, Council is actively taking steps towards developing Council's internal capability for engaging with mana whenua, by investing in opportunities for both the Governance Team and Council staff to develop their knowledge of Te Ao Māori and build their cultural competency.

2.10 Monitoring and Reporting

Measuring and reporting on customer levels of service is achieved through the customer satisfaction survey. More than half (68%) of residents are connected to the Ōamaru Water Supply and 8% are connected to the Waihemo Water Supply. As a result, the resident satisfaction survey is conducted among these consumers.

The resident satisfaction survey is undertaken annually and is used as a benchmark for the following year. The trend across the results of each year's survey provides a long-term view of Council's performance.

Reporting on the achievement of customer levels of service can be compared across different activity groups to provide internal benchmarking within Council and combined to provide an indication of the contribution towards community outcomes and wellbeing.

Measurement and reporting of technical service standards is essential for the prudent management of the water activity. Measures reported on in our Annual Report are mandated by the Department of Internal Affairs.

2.11 Asset Management Policy

Council's 2010 Asset Management Policy sets the appropriate level of asset management practice for Council's Water Activity as 'Core Plus'.

'Core Plus' (now referred to as 'Intermediate') asset management practice is undertaken at a level between 'Core' and 'Comprehensive' practice. The focus is to build on the basic technical activity management planning of 'Core' practice by introducing improved maintenance management and more advanced asset management techniques (as appropriate). Further use is made of risk management, asset lifecycle management, and service standard optimisation techniques.

3 Strategic challenges and responses

In developing the Infrastructure Strategy in advance of the 2025-24 Long Term Plan, Council identified key issues relevant to the Wastewater activity, which are summarised below. Council's general responses to these issues are also included.

Government reform

Following a change of Government in 2023, Council is required to implement the "Local Water Done Well" reforms, which will require us to reconfigure our water service delivery in a financially sustainable way.

This requires Council to explore collaborative models and partnerships that could enhance the efficiency and cost-effectiveness of water service management. Additionally, a water service delivery plan must be developed by September 2025, outlining how water services can be provided in a financially sustainable manner by 2028.

When, how much to invest, and what to charge in three waters will not be just for Councils in the future. A decision on the water services model for the Waitaki district will be required within 1-2 years of this strategy being in place. A water services delivery plan is required to be developed by September 2025 documenting how affordable water services – including water and wastewater - can be delivered by Council. Council will be required to follow these plans, and they will be monitored by Department of Internal Affairs or the economic regulator.

The capital expenditure budgets for the AMP have been informed by the early development of the water services delivery plan.

Compliance

Achieving and maintaining compliance with legislation, resource consents and environmental standards is ongoing. Significant investment by Council in wastewater infrastructure to support this over the next nine years is needed.

Much of Council's wastewater infrastructure is aging and the risk of non-compliance is increasing accordingly. Recent non-compliances have highlighted this. Planned programmes, capacity studies, renewals and upgrades through the 2025-34 Long Term Plan are intended to both reduce and better manage this risk and ensure compliance.

Notably, Council is seeking an amendment to the consent conditions for the Palmerston Wastewater Treatment Plant, following an abatement notice from Otago Regional Council in 2024. Council engineers believe the plant is meeting environmental standards but that the consent parameters are creating non-compliance.

Asset planning

In addition to compliance, there is an ongoing need to improve the quality of the wastewater network asset information to support maintenance planning and development of the wastewater network to meet future demand. The continued development and implementation of a robust asset renewal plan is an ongoing area of focus.

The District's current and future health and environmental wellbeing relies heavily on the responsible collection, treatment and disposal of wastewater.

Overview of key challenges

Challenge	Impacts	Response
Balancing spending and funding	Council is continuing to face increasing costs to deliver water supply – including inflation, interest rates, insurance. There are also increasing compliance requirements and community expectations for Council to deliver more for less. While inflationary pressures in the procurement of materials have eased, cost increases are still being experienced across the board. This has had an impact on the cost of delivering projects. The Waitaki community also has a relatively low discretionary income and population density relative to many parts of New Zealand which can result in a reduced willingness / ability to pay.	In general Council will seek to: ○ Use appropriate funding mechanisms. ○ Fund growth-driven capital expenditure through development contributions. ○ Fund capital expenditure to increase levels of service through borrowing ○ Fund renewals from revenue sources e.g. rates and charges ○ Fund depreciation on most infrastructural assets. Council will also consider the following measures to address the issue of affordability over the lifetime of this Strategy: ○ Appropriately prioritising Council work programmes ○ Scaling the size of Council's capital programme to ensure that it's deliverable ○ Deliver a new waters service delivery model in accordance with "Local Waters Done Well" requirements.

Challenge	Impacts	Response
Compliance and reform	Council will be required to implement the "Local Water Done Well" reforms and reconfigure its water service delivery in a financially sustainable way. This will require Council to investigate collaborative models and partnerships that may support efficient and cost-effectiveness water service management. Over the next 10 years, some consents relating to our wastewater networks will need to be renewed and the standards and conditions relating to these expected to change. Reporting requirements for Regional Councils continue to increase in terms of both complexity and detail, which has required a corresponding increase in time and resources to manage.	Maintain a close watching brief and be open to finding optimum solutions that meet the requirements of central and regional government. Producing a water service delivery plan by September 2025 detailing how water can be delivered in a financially sustainable way by 2028. Meeting our consent requirements and environmental standards for wastewater collection, treatment and disposal. Our plan includes budgets to complete upgrades to our plants or network when our consents are required to be renewed. Communicate with both regional councils - Environment Canterbury and Otago Regional Council - on Regional Policy Statement changes and development and regional plan changes.
Ageing infrastructure	The average age of our wastewater networks is increasing. This means service interruptions or total failure become more likely, which may affect levels of service and result in public health issues and environmental harm.	Overall, Council's approach to ageing water supply infrastructure will be to: • Prioritise asset replacement based on the asset's degree of criticality. • Renew critical assets before the end of their useful life. • Provide for progressive replacement of individual assets that have reached their end of life. • Renew non-critical infrastructure when failure rates become intolerable. • Continue to improve data collection on asset condition and performance. • Review levels of service on non-critical assets.

Challenge	Impacts	Response
Ōamaru wastewater network capacity and resilience	Over the coming decades, it is expected that the Oamaru wastewater network will come under pressure from increasing demand. Furthermore, the network infrastructure is ageing and the treatment plant's consent expires in 2036. The risk of non-compliance, public health issues and environmental harm – along with potential economic impacts - will increase without appropriate investment into this infrastructure.	A capacity study for Oamaru wastewater is currently underway. Significant investment is planned to ensure the broader network has sufficient capacity and resilience to meet demand, achieve compliance and meet Council's goals for its wastewater activity and community outcomes. Council is also investing in an ongoing inflow and infiltration reduction programme to maximise capacity within the current network.
Climate change and resilience - general	The changing climate is having a notable impact on the Waitaki district. Consequently, the resilience of Council's key infrastructure is being increasingly challenged. Climate change may mean that the lifespan of our assets is shorter than planned, or that maintenance costs increase. It may also mean that repairs are needed more frequently or that materials deteriorate more quickly.	Council's ongoing response to climate change is influenced by central and regional government direction. One challenge in this space is that the Waitaki district spans two regional council boundaries – Canterbury and Otago. A Canterbury Climate Partnership Plan has been developed with input from all Canterbury councils, including Waitaki, and shows how councils will work together on specific climate actions to help minimise the impacts of climate change on Canterbury's communities and ecosystems. The plan includes ten primary actions focused on addressing key gaps, priority risks, and opportunities. Otago Regional Council has also prepared an Otago Climate Change Risk Assessment summarising the key risks that the Otago region is facing due to climate change. Council has developed high level climate change projections for the Waitaki District as part of phase 1 of its Climate Change Risk Framework. A Council Climate Strategy is due to be developed in 2025. This strategy will

Challenge	Impacts	Response
		identify how Council will respond to climate change both within the organisation and across the district, and document Council's roles and responsibilities to meet climate adaptation and mitigation goals. It will also document the Council's roles and responsibilities in achieving climate adaptation and mitigation goals: o Apply national and regional directives and relevant legislation o Initiate conversations and planning with climate-impacted communities o Allocate adequate funding in current and future long-term plans to address the implications of climate change o Increase knowledge, data and capability in understanding the effects of climate risks and to make decisions based on the effects of climate risks o Apply climate risk into design of long-life infrastructure o Embed prioritisation of investment decisions in a way that improves infrastructure resilience
Increasing magnitude of storm events	Storm events can increase the volume of water entering the wastewater network through inflow and infiltration, overwhelming the capacity of pipes, pumpstations, and treatment plants.	Upgrades and renewals for wastewater infrastructure will be undertaken and designed to increase resilience to storm events – e.g. Orwell Street Pumpstation. Council is also undertaking work to increase the resilience of existing treatment plants in both the shorter and longer terms, notably the Oamaru Wastewater Treatment Plant.
Coastal erosion	Coastal mains, pumpstations, and treatment plants are potentially at risk from increasing coastal erosion.	Council will continue monitoring coastal wastewater infrastructure and planning for future relocation, if required.

Challenge	Impacts	Response
Growth and demand	Population and economic growth will create additional demand on wastewater networks over the coming decade – notably for the Ōamaru networks and treatment plant.	Council will plan for additional wastewater network and treatment capacity to cope with increased demand for the service due to population growth or increased usage. We are committed to sustainable growth and effective demand management. We will invest in wastewater infrastructure strategically. We will also: • Prioritise investment in compliance-driven wastewater infrastructure. • Ensure existing commitments are completed before investing in new initiatives.
Meeting social and cultural needs and expectations	There is increasing recognition of the significance and cultural value of water to Mana Whenua, which may impact existing wastewater disposal methods and locations. There are changing social views on water use, with more emphasis on sustainable use of this resource, which may conflict with economic development aspirations.	Council will continue to ensure that the social and cultural expectations and needs of our communities are well considered for current and future generations. This will include continuing to provide reliable and resilient waters infrastructure, while seeking to balance the needs and views of different interests. Overall, we will: • Engage with community, where appropriate, to understand local priorities. • Review activities where ratepayers are subsidising private or commercial benefit.
Recruitment and retention	Recruitment and retention of suitably qualified and experienced water engineers will be an ongoing challenge for the sector, as uncertainty around the direction of the Government's Local Water Done Well continues.	Council's Transformation project has created a new organisational structure to foster a more integrated approach to all its activities, including asset planning and compliance. The programme also seeks to make Council an employer of choice by providing greater opportunities for staff to diversify their roles. This model is expected to remain in place for the first few years of the plan until Council's Water Services Delivery Plan is confirmed and fully implemented.

4 Our wastewater assets

The wastewater assets are fundamental to Council's statutory responsibilities and strategies for protecting public and the environment.

Council owns eight separate wastewater systems consisting of Ōamaru and seven urban areas.

Overall, Council's wastewater collection and treatment systems comprise:

- 204 kilometres of reticulation
- 2,138 manholes
- 29 pump stations
- 8 treatment plants.

The reticulation varies from 100mm to 600mm in diameter.

Replacement value of treatment plants, pump stations and reticulation is estimated at approximately $282.7m as of September 2024.

4.1 Public wastewater systems

Table 4.1-1: Council-owned wastewater systems summary

System	Population	Length of Reticulation (km)	Manholes	Pump Stations	Treatment facility	Replacement Value 2024
Ōamaru	15,561	143	1,574	18	Aeration lagoon Multiple oxidation ponds Land disposal	$190,887,176
Duntroon	81	0.35	9	-	Septic tank Subsurface disposal	$354,469
Kurow	330	.10	42	-	Oxidation pond Wetlands	$13,611,964
Lake Ōhau	36	2.9	35	-	Oxidation pond	$9,031,727
Moeraki	130	22.5	49	8	Oxidation pond Wetlands Land disposal	$13,258,621
Ōmārama	270	22.5	93	2	Oxidation pond Wetlands Subsurface disposal	$16,600,596
Otematata	195	15.5	169	-	Primary & Secondary Treatment Subsurface disposal	$12,790,972
Palmerston	948	16.8	180	2	Oxidation pond Land disposal	$26,213,754
Wastewater Total	**17,551**	**348**	**2,151**	**29**		**$282,749,279**

Source – *Population – Taumata Arowai Registered Pop. (July 2022) and 2018 Census); Assets – 2024 Asset Valuation*

Significant changes over the past 10 years include:

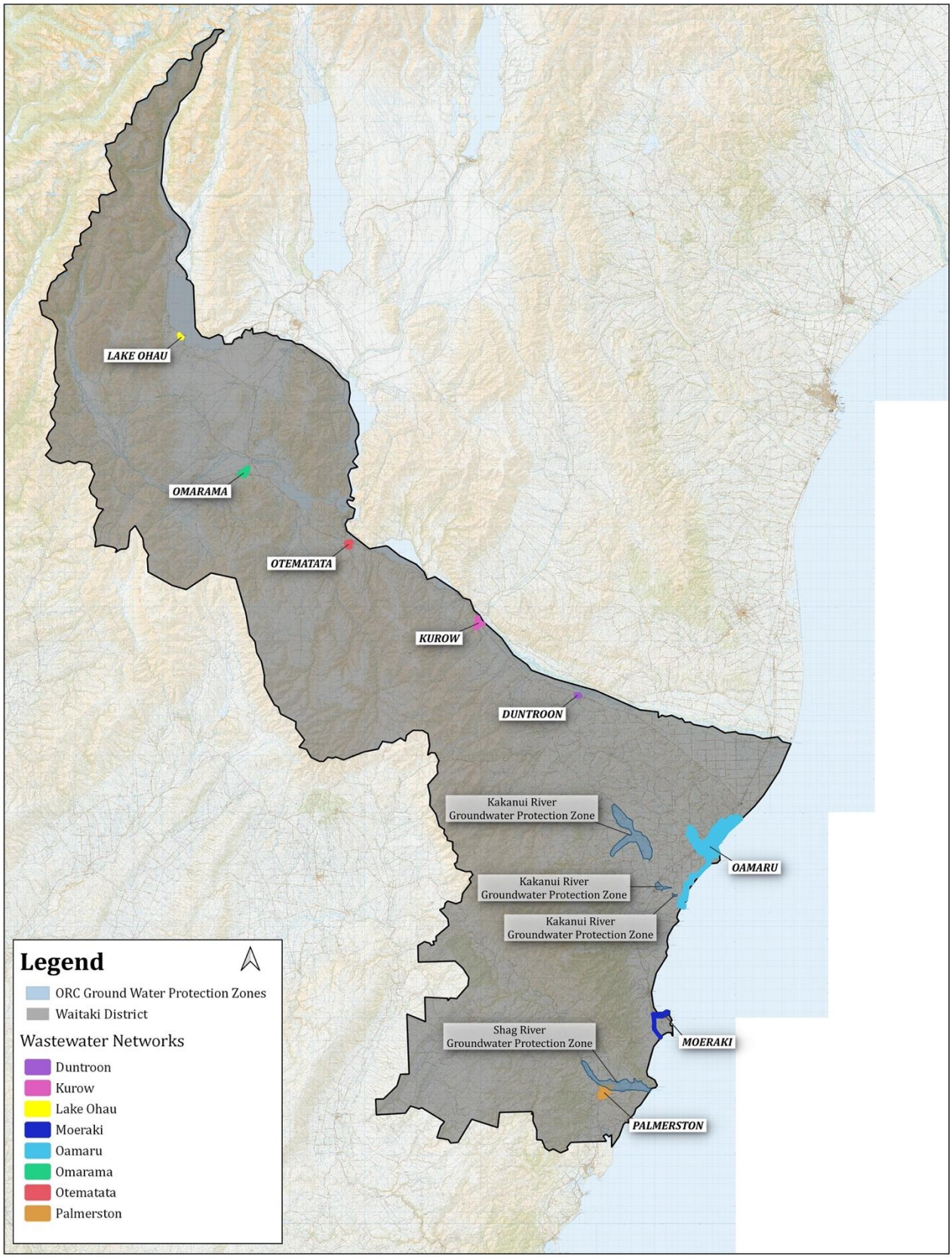
- Kakanui connected to Ōamaru (2015)
- Otematata subsurface disposal (2011)
- Ōmārama subsurface disposal (2019)
- Moeraki land disposal (2019)
- Duntroon system being granted a resource consent extension until 2026 (2021).
- At Palmerston the land disposal area was increased (2022)
- Upgrades to the Kurow Wastewater Treatment Plant – including installing a meter and connecting to SCADA (2022)
- Beach Rd pumpstation switchboard replaced (2023)
- Inflow and Infiltration programme undertaken for Oamaru (2023)

The new assets at the Ōmārama and Moeraki wastewater treatment plants are captured in the June 2021 valuation and are reflected in the replacement values in this AMP.

In addition to those areas that are served by public schemes, private wastewater systems serve some areas. It is estimated that 80% of the District's population have access to a reticulated wastewater system with the remainder being served by individual septic tanks and associated disposal systems.

In accordance with Section 6, Schedule 10 of the LGA, Council has reviewed the Water and Sanitary Services Assessment aligned with the three yearly Long Term Plan frequency and has identified any variations.

Figure 4.1-2: Community wastewater systems



4.2 Private wastewater systems

Within the communities that are not served by Council infrastructure there have been no significant changes since the 2005 assessment following reviews in 2020 and 2024. The private wastewater systems and campgrounds wastewater systems within the Waitaki District are tabled below.

Table 4-1.1: Private Wastewater Systems

Community/Area Name	Community Type	Population		Wastewater Treatment	Management
		Normal	Peak		
Alliance Freezing Works - Pukeuri	Commercial		800	Primary and secondary plant	Private
Danseys Pass Holiday Park	Campground/Park		150	Septic Tank	Private
Falstone Campground	Campground			Septic Tank	Council
Five Forks School	School	50		Raised Bed Effluent Disposal System	Private
Gemmells Crossing Camp	Community	0	70	Septic Tank	Private
Hampden	Township			Septic Tank	Private
Herbert	Township			Septic Tank	Private
Lake Benmore Holiday Park	Campground/Park		100	Septic Tank	Private
Lock Laird Campground	Campground		100	Septic Tank	Council
Macraes Mine (Oceana Gold)	Commercial	100	100	Septic Tank	Private
Maheno	Township	150		Septic Tank	Private
Ohau Lodge	Commercial	80	160	Ponds	Private
Ohau Ski field	Commercial			Septic Tank	Private
Parson Rock Camp Ground	Campground		150	Septic Tank	Council
Reidston	Township	75		Septic Tank	Private
Sailors Cutting Campground	Campground			Septic Tank	Council
Waitaki Bridge Park	Community	10	60	Septic Tank	Private
Waitaki Mouth Kaik Reserve	Community	35	100	Septic Tank	Private
Waitaki Mouth Motor Camp	Campground/Park		200	Septic Tank	Private
Wildlife Reserve Campground	Campground		250	Septic Tank	Council

Hampden township

Hampden township's wastewater is treated and disposed of through on-site systems, predominantly septic tanks and soak holes. Issues with the performance of some systems have been identified in the past and the establishment of a reticulated system was investigated.

Options may include a long-term contract for continued cleaning and inspection of septic tanks or a Council-owned reticulation, treatment and disposal system. In the short term, on-going cyclic cleaning and inspection of septic tanks in Hampden will continue being undertaken until a long-term solution is confirmed.

In 2022, the Water Services team engaged Waugh Infrastructure Management to complete an assessment of issues relating to the current on-site wastewater systems (septic tanks) in the Hampden township, and potential options for future centralised wastewater collection and disposal (pumped or gravity reticulation networks).

The Issues and Options report considered three main concepts for improvement: transition to modern on-site wastewater systems, centralised gravity network and a centralised pumped network.

Transition to modern wastewater systems involved Council helping property owners who currently have the older style septic tanks to install the modern equivalents which treat wastewater to a far greater standard. The report identified this could cost in total in the order of $5.9m (2022 costing).

The installation of a centralised gravity system was estimated to cost in the order of $9m (2022 estimate). Of this, $2.9m is attributed to Moeraki Wastewater Treatment Plant upgrades and $6.1m to the network. These values were based on past assessments by Beca and inflated, so are not representative of actual installation costs.

A centralised pumped system involves pumps at each property but allows smaller diameter pipe work in the reticulation network. The installation of such a reticulation system was estimated to cost in the order of $7.4m. The report identified that because some treatment would still happen in the on-site wastewater systems before being pumped, less upgrading would be needed at the Moeraki Wastewater Treatment Plant however upgrades are still expected to be in the order of $2.1m bring the costing of the pumped reticulation option to $9.5m.

If Hampden users were to fully fund this $9m of work, property owners could be facing annual costs of $3500 if funded by a 20-year loan.

If the costs were funded district wide, paying these off over 20 years the per annum cost would be in the order of: Centralised - $386.

Regulatory changes and increased environmental standards, and community desire, prompted Council to revisit the options for future management of Hampden wastewater during the 2024/25 financial year. Until outcomes of this have been determined and a decision made by Council, a budget is not included in the Long Term Plan.

4.3 Wastewater reticulation

Council owns and maintains the wastewater network from the collector sewer mains to the treatment facility and disposal system.

The laterals from the private individual properties to the Council collector mains are the responsibility of the property owner. Private property owners are advised of their responsibility through the Land Information Memorandum (LIM) process.

Council's standard advisory note states "*All private drains which service a property are the responsibility of the owner of that property being serviced. Ownership of the private drain will be from the 'Y' junction on the sewer, or any other relevant point of connection to the public scheme, to the dwelling or place of use*".

Council is currently investigating the implications of taking ownership of these sewer laterals to improve control over works in the road corridor and developing an associated Sewer Lateral Ownership Policy. It is assumed that the lateral condition, location, installation quality and workman standards would be aligned with Council standards, and change in ownership would result in an annual operational expense.

Once sewage leaves the private lateral it enters the public wastewater system. Flows are generally via gravity and pipes are normally only part full and have some air present.

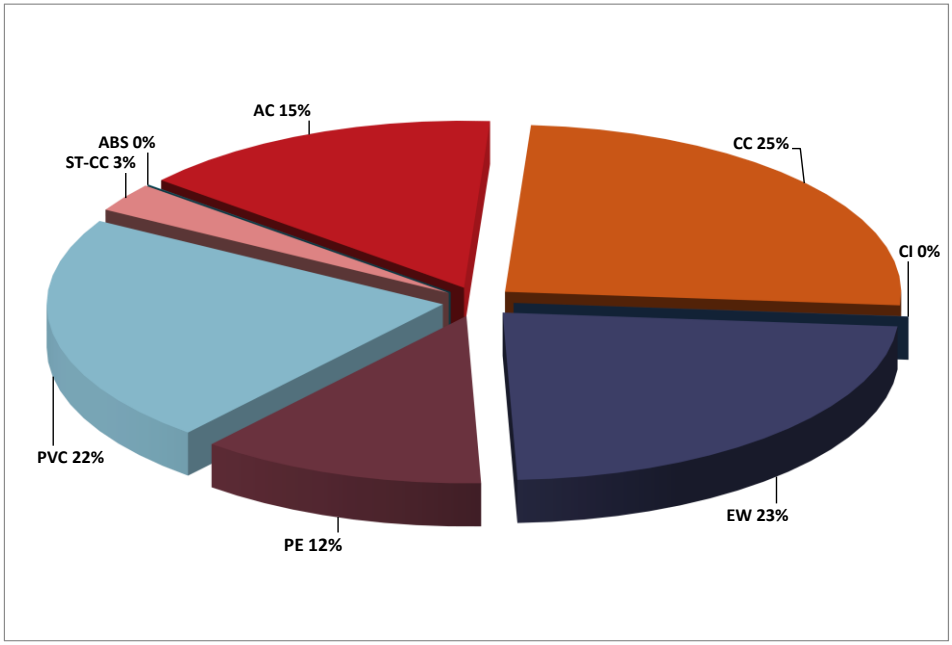
The sewer reticulation consists of reticulation sewers, collector sewers and trunk mains, with manholes located throughout the reticulated system.

- Reticulation sewers are a network of pipes including property connections that receives wastewater from customer properties. Reticulation sewers are generally Ø100-150mm

- Collector sewers are the network of pipes that connect the reticulation pipes within a reticulation area or a group of reticulation areas.

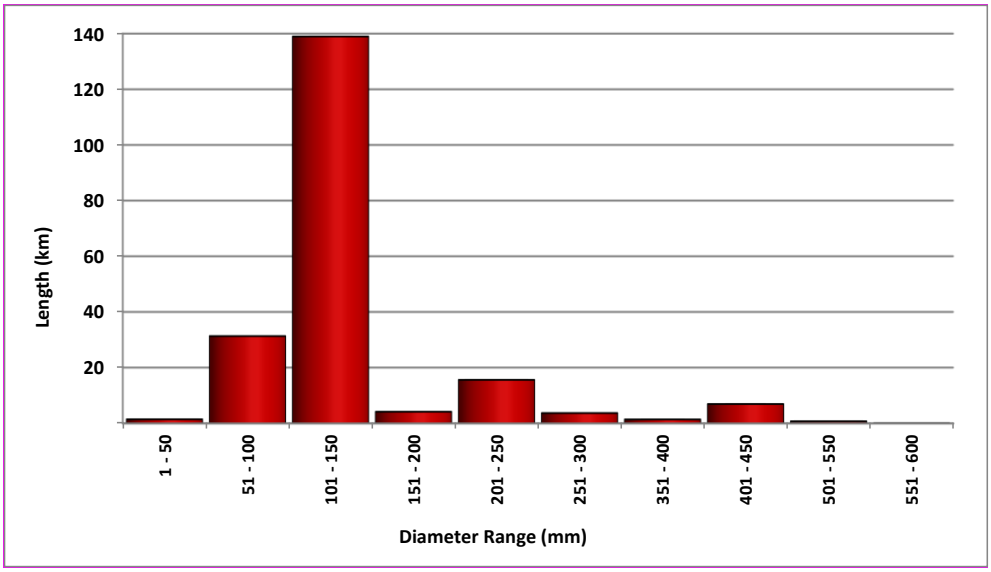
- Trunk sewers connect to the collector sewers and transport the wastewater to the wastewater treatment plant. Trunk sewers are generally the largest pipes in the network. Property connections are not connected to collector sewers.

Figure 4.3-1: District wide wastewater main material distribution



- 70% of the reticulation consists of three materials – CC 25%; EW 23%; PVC 22%
- The remaining 30% is made up of five materials – AC; PE; St; Abs; CI

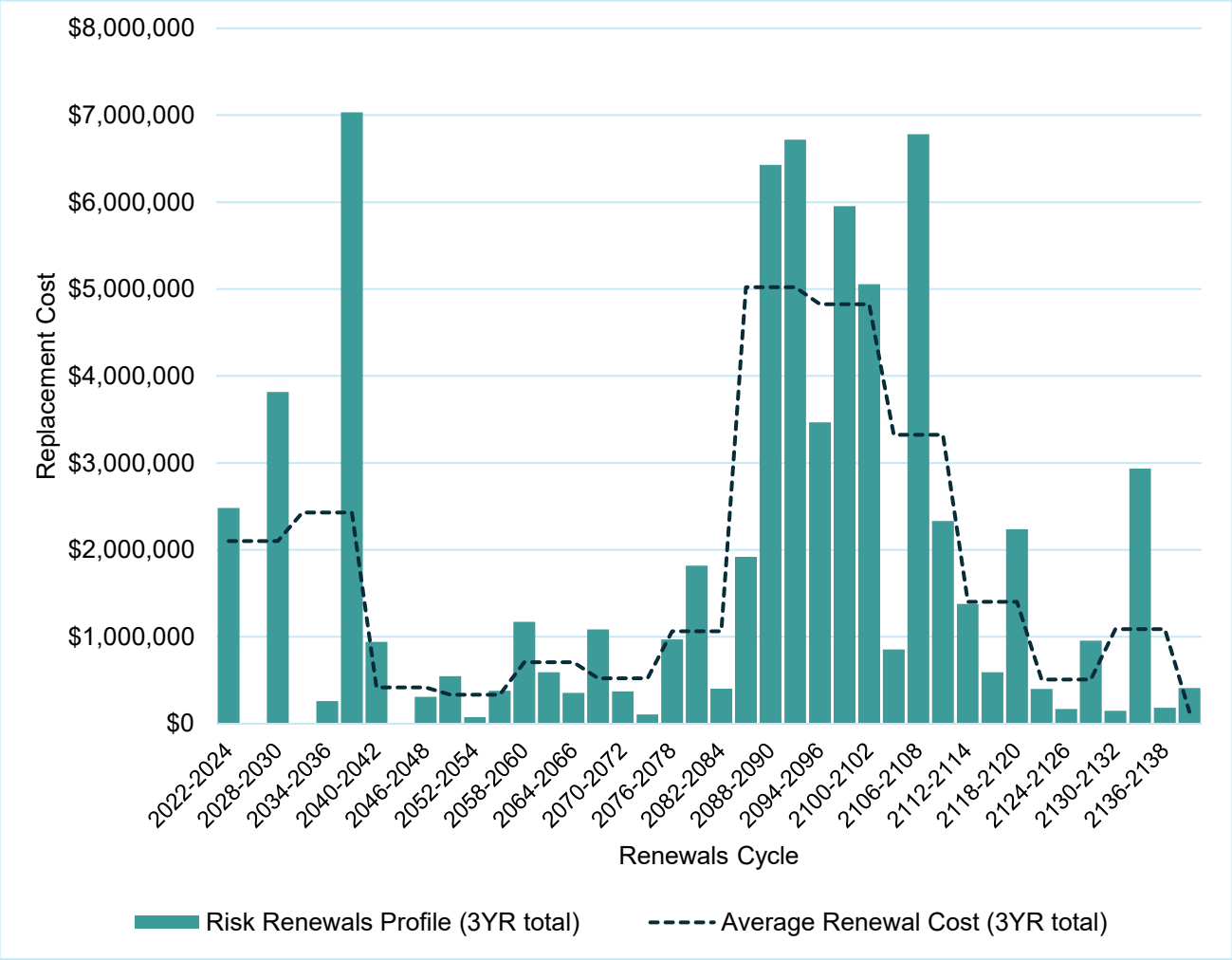
Figure 4.3-2: District wide wastewater main material distribution



- 84% of the reticulation is 32-150mm diameter
- 5% of the reticulation is greater than 300mm diameter

In 2022, an analysis was undertaken on renewals based on risk and impacts on annual average renewal costs over the next 100+ years to inform renewals programming and budgets.

Figure 4.3-3: Risk renewal and average renewal cost



Manholes

A sewer manhole is a sewer access point with a removable cover which allows human and machine access to a (typically buried) sewer.

The manhole provides several functions, such as to:

- conduct inspections
- connect two sewers when there is a change of grade or alignment or size
- provide a junction where two or more sewers meet

Manholes are usually constructed from reinforced concrete, either precast or formed in-situ. There are **2,151 manholes** in the Council wastewater systems.

Pump stations

A wastewater pump station is designed to pump wastewater from one location via a rising main to a remote location at a higher level.

Wastewater pump stations are an integral and vital component of the wastewater network. The integrity of the wastewater system is very dependent on the proper functioning of the wastewater pump stations where these exist. Failure of a pump station can potentially lead to wastewater overflows to land, natural waterways and the ocean.

There are several different types of wastewater pump stations, including wet well/dry well pump stations. The exact combination of components will vary from one pump station to another, but they are typically made up of the following basic components:

- Sump
- Intake pipe work
- Pumps
- Pump building/structure
- Discharge manifold and pipework

The rising main is not seen as part of the pump station, but it has a significant effect on the performance of the pump and therefore designed in conjunction with the pump station.

There are **29 pump stations** within the Council wastewater systems with the majority (18) in Ōamaru.

4.4 Wastewater treatment plants

A wastewater treatment plant is a facility for treating wastewater (sewage). The wastewater treatment plants are an integral part of, and perform an important function in, the wastewater system. Failure to treat the wastewater adequately will result in environmental contamination and associated public health risks.

The Ōamaru Wastewater Treatment Plant consists of a screen structure, dewatering equipment, an aeration lagoon (out of operation), two facultative oxidation ponds, three maturation ponds, pump station, 21-hectare overland flow area, wetlands, control building and outfall structure.

The rural wastewater treatment plants primarily treat domestic wastewater as there are no large industries contributing high contaminant loads to the wastewater system. The rural systems range from basic oxidation ponds to primary and secondary treatment.

While in the past, Council was able to maintain its wastewater treatment plants to a high standard and in good condition with ongoing maintenance, several of our facilities are well through their operational life and are unable to meet legislative changes and demand increases. New environmental standards for wastewater under development by Taumata Arowai will inform the scope and nature of our treatment upgrades going forward, including the Ōamaru Wastewater Treatment Plant.

4.5 Discharge/disposal

An important aspect of the wastewater treatment plant is to ensure that the district's natural water sources are managed responsibly. Resource consents are held for the various activities relating to the wastewater activity such as treatment (including odour) and the disposal of treated wastewater at the wastewater treatment plants.

Discharge/disposal is generally to land or to water. Disposal is progressively upgraded from discharge to water to discharge to land in compliance with increased environmental standards. The resource consent conditions set out the sampling locations, frequency and water quality parameters required.

The Duntroon communal septic tank used to operate under a permitted activity rule. Under the Canterbury Land and Water Regional Plan the system is no longer a permitted activity. Council applied for a short-term consent to allow appropriate investigation and consideration of options to meet regional rules and environmental standards. During February 2021 Environment Canterbury issued permits, CRC20179 and CRC213039, consenting the existing activity for a 5-year period. Council will consult with the community on options and implications.

During 2022 the Otago Regional Council (ORC) approved a change in conditions for the Palmerston Wastewater Treatment Plant. This allowed increasing the irrigation area from 6.57ha (excluding the border dyke area) to 12ha. An abatement notice was issued by ORC in 2024 for breaching this consent, however, Council engineers believe the plant is performing to the required standard and that the parameters of the consent conditions are creating the non-compliance issue.

4.6 Buildings

Buildings are often an intrinsic part of the public perception of its Council. Maintenance of public buildings to a good standard throughout their lifecycle is essential to demonstrating a responsible and acceptable level of service.

Treatment facilities and larger pump stations are contained within above ground buildings. These range from basic sheds to fit-for-purpose type buildings. The buildings usually house pumps, control gear, telemetry and treatment equipment.

The buildings are recorded in the IPS AMIS with the building's age and replacement value. Buildings are treated as a component of the facility i.e. similar to a pump at a pump station.

Housekeeping of buildings forms part of the Operation and Maintenance Contract and Operation and Maintenance Manuals where these are available.

4.7 Critical assets

Critical assets are those assets in which failure would result in a major disruption to the supply of conveyance or treatment of wastewater, or levels of service.

Criticality is best defined as assets that have a *high consequence* of failure (not necessarily a high probability of failure). The Criticality Assessment of the wastewater assets resulted in compilation of High and Medium criticality assets for further analysis.

Criteria for considering criticality of water assets:

- Location of asset, e.g. under a railway
- Asset type, e.g. pump station
- Network configuration, e.g. single feed to town
- Customer numbers and type, e.g. business, hospital, etc.

To assess the severity of consequence of failure, a Criticality Assessment considers the failure against the four well-beings (social, economic, environmental and cultural), alignment with Council's objectives, and how important the asset is in delivering the wastewater service to agreed Levels of Service.

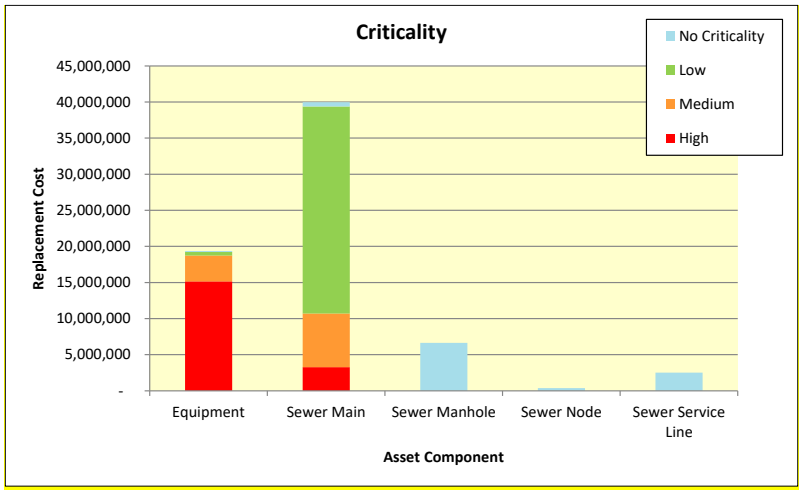
Criteria for the three water assets consideration:

- Location of asset, e.g. under railway
- Asset type, e.g. pump station
- Network configuration, e.g. single feed to town
- Customer type, e.g. CBD.

During 2011/12 Council engineers completed a criticality assessment of Wastewater facilities and reticulation assets. This project identified High and Medium criticality assets for further analysis and the criticality was recorded against the asset within the IPS AMIS.

This process was repeated for reticulation assets in 2023 and the results are being used to ensure the criticality assessment is considered in prioritising inspections, investigations, maintenance and renewal strategies.

The figure below shows the asset components and their replacement value in relation to its criticality.



- 27% of all assets are highly critical
- 78% of equipment are highly critical
- 8% of mains are highly critical

The above figure (from the 2012 assessment) clearly shows that based on replacement value the highest proportion of critical assets is within the wastewater facilities where wastewater is treated and disposed of. Of all the highly critical assets 82% are equipment and 18% wastewater mains.

Approach to managing critical assets

As part of our risk-based approach, critical assets are monitored, inspected, and maintained more regularly than non-critical assets to ensure Council gets the best life out of these assets, and they remain fit for purpose. This proactive management includes:

- Prioritising condition assessments
- Adjusting economic lives with respect to renewal profiles
- Prioritising / deferring renewals
- Prioritising expenditure
- Operation and maintenance planning

Knowing our wastewater assets:

We do this by:

- Maintaining a robust asset condition profile.
- For wastewater pipes - asset conditions being ascertained when carrying out repairs or renewals. Facility site visits are conducted at specified frequencies under the Operation and Maintenance Contracts.

Criticality Category	Condition Assessments	Renewal
Critical Assets - trunk mains, rising mains and large diameter mains servicing significant areas or key industries or businesses/customers	Condition assessments performed during connections and pipe repairs. Detailed analysis obtained as deemed necessary by CCTV inspections.	Renewal timing is based on conservative base life and actual condition assessments of assets and estimated future deterioration. Our Infrastructure Strategy states that critical assets will be replaced before the end of their design life.
Non-Critical Assets – distribution network of local reticulation, collector, and smaller trunk mains	Sample inspections of material types and age bands during connections and pipe repairs. Greater proportion for assets nearing end of base life. Inspections of assets associated with major roading asset renewals to confirm condition. CCTV inspections on representative pipes from which condition can be inferred to other areas of similar age and material.	Generally, 'run to failure' with renewals on a reactive basis. Our Infrastructure Strategy states that non-critical assets will be replaced when their condition becomes 'intolerable'.

Currently listed water supply critical assets

The following assets are listed in our Infrastructure Strategy as being 'critical':

- All wastewater treatment plants
- Some trunk mains

The Otago Lifelines Group's Vulnerability and Interdependency Study – August 2024 identifies three wastewater pump stations in Oamaru's Orwell Street, Beach Road and Regina Lane as the most critical for the Waitaki district.

4.8 Wastewater mains in private property

Access to Council's infrastructure is primarily controlled by the LGA 2002 (section 181). Council may enter private land to inspect, alter, renew, repair or clean any work provided that the infrastructure was constructed with the landowner's permission.

Council's engineers consider the protection provided under the LGA 2002 as appropriate where public utilities travel through or across private land. Private property owners are made aware of the presence of public utilities on private properties during the request for a Project Information Memorandum and/or a Land Information Memorandum.

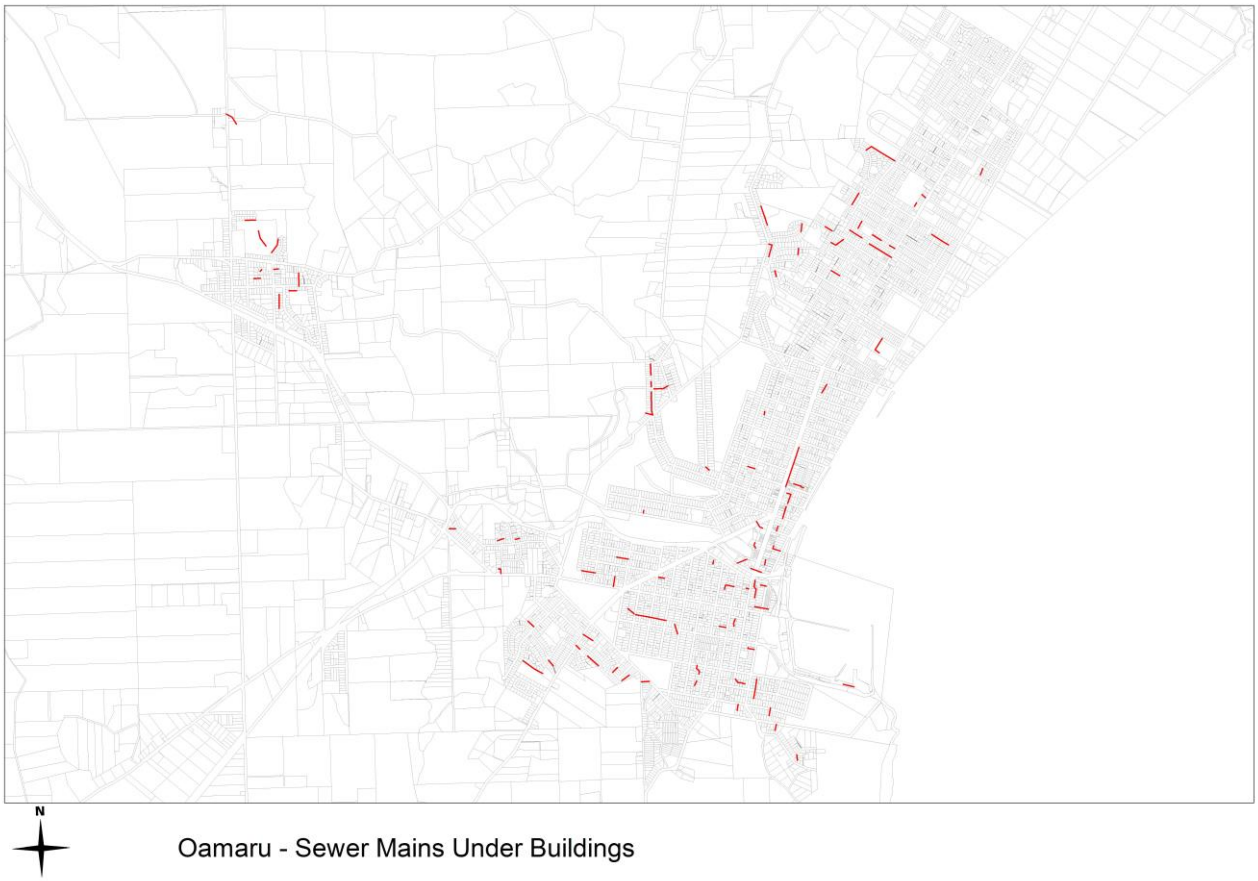
Public wastewater mains encroached by structures (buildings and swimming pools) were identified during the criticality project. This entailed identifying those mains where a structure's roofline was within half a metre of the centre of the pipe. The lengths of mains affected in part by structures are tabled below:

Table 4.8-1: Mains on private properties affected by structures

Scheme	Total Length of Pipe (m)	% of Total Length
Duntroon	47	16%
Kakanui	200	2%
Kurow	197	2%
Lake Ōhau	284	10%
Moeraki	951	10%
Ōamaru	7,386	6%
Ōmārama	1,019	15%
Otematata	6,011	58%
Palmerston	360	2%

It should be noted that it is not an accurate reflection of the actual sections of mains affected e.g. if a 20-metre section of main travels through a property and 10 metres of this is very close to or under a building, the system counts the full 20 metres length.

Figure 4.8.1: Utilities on private property - Ōamaru



However, this still shows that there is a significant portion of wastewater mains that are encroached by structures and any maintenance work on these sections will be significantly influenced by limited access, potential for damage to structures during maintenance work and unnecessary external loadings on trenches and wastewater mains. This is the result of historical approvals of building work, however now Council Engineers do not allow any building work/structures near public utilities infrastructure as this has the potential to seriously compromise the integrity of the asset and the ability to efficiently maintain the asset.

Under the Electricity Act 1992 all connecting power supply lines to facilities vested by Network Waitaki, installed pre-1993, are protected. Power lines outside this criterion requires easements to protect the infrastructure.

5 Levels of service

Levels of service:

- Define explicitly the standards required from the wastewater system
- Are an expansion of Council's Strategic Framework (as outlined in the previous section)
- Largely shape Council's detailed planning

In providing wastewater services to the community, Council must balance the standard of service desired with the cost of providing the service. The Levels of Service are designed by Council to represent the best level of service possible for a cost that the community can afford and is willing to pay.

5.1 Determining levels of service

Levels of service for the Wastewater activity are determined by taking into consideration the needs of the community at both a general population level and an individual supply level.

Ultimately, determining levels of service goes beyond affordability. It is also about balancing the social, cultural and economic needs and aspirations of consumers with environmental sustainability, affordability and our ability to collect, treat and dispose of wastewater for current and future generations in an equitable, safe and consistent manner.

The following inputs were used as a basis for these considerations:

- Council's vision and community outcomes
- Supply areas and factors such as predominant land and water use, population and water availability
- Feedback from the community by way of consultation and engagement processes, and resident surveys
- The non-financial performance measures (Department of Internal Affairs), which came into force on 30 July 2014 following an amendment to the Local Government Act

The Wastewater activity also takes guidance from documents such as *Developing Levels of Service & Performance Management Guidelines: Creating Customer Value from Community Assets* produced by the National Asset Management Steering Group. This manual develops methods for organisations providing local government infrastructure services to establish their levels of service and what their customers value. It explores balancing the levels of service provided against the associated costs and then benchmarking the service levels provided.

5.2 Measuring and monitoring performance

In 2010 the Local Government Act 2002 was amended, requiring local authorities to use non-financial performance measures when reporting to their communities, with the aim of encouraging greater public participation in decision-making processes.

The performance measures do this through providing better information about the actual levels of service. The non-financial performance measures came into force on 30 July 2014 and Council has reported against these since the 2015/2016 Annual Report (noting that performance measure 1 has been updated and must be reported on from 1 July 2025).

Council had developed its own Performance Measures in the past, but because the mandatory measures cover key expectations in terms of service delivery, Council now only uses the Levels of Service statements aligned with the new mandatory performance measures.

To enable this, Council reviewed the customer service requests system to align it with the mandatory performance measures and ensured the Contractor reporting aligned with the 'tasks'. Council's asset management information system (AMIS) and customer request management (CRM) database have been programmed to allow reporting aligned with the non-financial performance measures and to ensure consistency and accuracy of reporting. The following table provides an overview of the levels of service, performance measures and targets:

Levels of service	Performance measures	Performance targets
Council will provide affordable, reliable wastewater disposal systems	The number of dry weather overflows from Council's sewerage system	Fewer than four sewerage overflows per 1,000 connections (<20 total)
Council will provide wastewater systems that protect the natural environment	Compliance with Council's resource consent conditions for discharge from its sewerage system measured by the number of abatement or infringement notices, enforcement orders and convictions	Nil for all
Council will respond to problems quickly	Response to a callout	One hour attendance time for sewerage overflows
	Resolution of a callout	24 hours resolution time for sewerage overflows
Community perceives the wastewater system is reliable and safe	Wastewater complaints	Fewer than 12 complaints per 1,000 connections

For linkages between these measures and Council's Strategic Framework, refer to page 11 in the Executive Summary.

5.3 Level of service changes

Council reviews its levels of service every three years, as part of the Long Term Plan process. While we have not formally explored service level options with the wider community as part of this AMP, it considered that we generally have a good understanding of the community's needs through a variety of consultation processes and feedback. Additionally, we have a good understanding of industry standards and expectations, which is why the Levels of Service from the previous Long Term Plan have been retained.

5.4 Service level improvements

Balancing the need to maintain or improve service levels with affordability is a key issue for our community over the coming nine years. Council plans to undertake a range of projects over this period driven by the need to ensure we can meet all Level of Service targets in the short and longer terms.

Council is focused on investment to maintain or meet current service levels over the next 9 years. Only one service level improvement is planned:

Duntroon wastewater (IBIS#2467):	$2.5m has been budgeted for this project. Options for upgrading the wastewater treatment in Duntroon may include provided a reticulated system for the township (beyond what is only currently provided for 10 households). If confirmed as the preferred option, this would improve service levels for all other households in the township which currently have on-site disposal systems (septic tanks).

5.5 Monitoring of service levels

Council undertakes specific activities and monitoring protocols to ensure levels of service can be measured and reported on:

Levels of service	Related activities	Monitoring tools
Council will provide affordable, reliable wastewater disposal systems	Monitoring number of justifiable complaints Ensuring sufficient capacity within the system Minimising overflows Minimising infiltration flows	CRM database Contract performance monitoring Capacity analysis Trade Waste Bylaw SCADA reports Inflow and infiltration inspections

Levels of service	Related activities	Monitoring tools
Council will provide wastewater systems that protect the natural environment	Treating and disposing of wastewater in an appropriate manner Complying with resource consent conditions and environmental standards Undertaking robust, consistent treatment processes	Inspections, sampling and monitoring at frequencies specified by resource consents Annual monitoring reports Operations manuals Contract performance monitoring
Council will respond to problems quickly	Meeting the response and resolution times specified in the Operations and Maintenance Contract	Contract performance monitoring CRM database Customer satisfaction survey
Community perceives the wastewater system is reliable and safe	Completing operations, maintenance and projects on time and within budgets Advising customers of any interruption to service or other issues in a timely manner	Contract performance monitoring CRM database Customer satisfaction survey Project Management Liaison Team – using the RICE tool (reach, impact, confidence and effort) and RAIDD analysis framework (risks, assumptions, issues, and dependencies) to oversee and manage project risk, budgets and timeframes

6 Demand and planning for the future

The ability to predict future demand for services enables the Council to plan and identify the best ways of meeting that demand. That may be through a combination of demand management and investing in developing or improving the supply network.

This section provides an overview of key drivers of demand and what demand management measures the Council has planned to implement.

6.1 Demand Drivers

The future demand for Wastewater services will change over time in response to a wide range of influences, including:

- population growth
- changes in demographics
- climate change
- water consumption*
- stormwater entry to the wastewater system (inflow/infiltration)
- local economic factors, including industrial and commercial demand
- seasonal factors (tourism)
- land use change
- extensions to the wastewater system to service currently un-reticulated areas
- changing technologies
- changing legislative requirements
- changing regional and district planning requirements
- environmental awareness.

*Most water supplied for domestic, commercial and industrial purposes is subsequently discharged into the wastewater system. Significant exceptions are:

- Water supplied for irrigation purposes
- Unaccounted for water (leakage and firefighting)

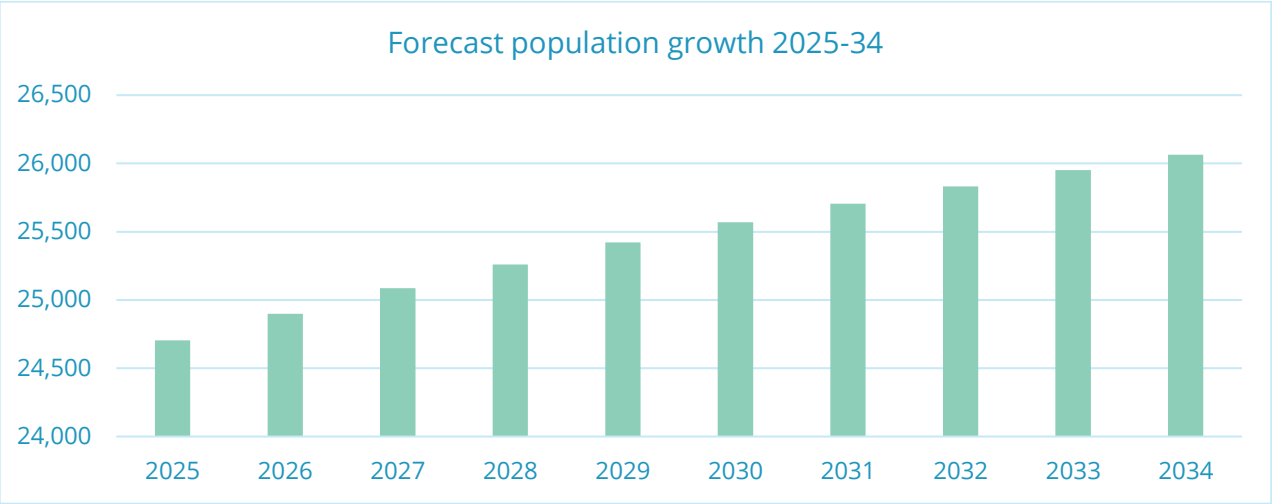
Wastewater originating from private water supplies (bores) may also be discharged into the wastewater system, along with wastewater from other sources such as tanker discharges

Increasing demand for new wastewater services or on existing services may generate a requirement for the development of additional infrastructure, or increased capacity within existing infrastructure. Expenditure programmes need to be planned to fund the capital works and associated on-going operational expenditure.

Where a reduced demand is forecast it may be appropriate to renew assets with a lesser capacity, operation expenses may decrease, or an asset may become surplus to requirements.

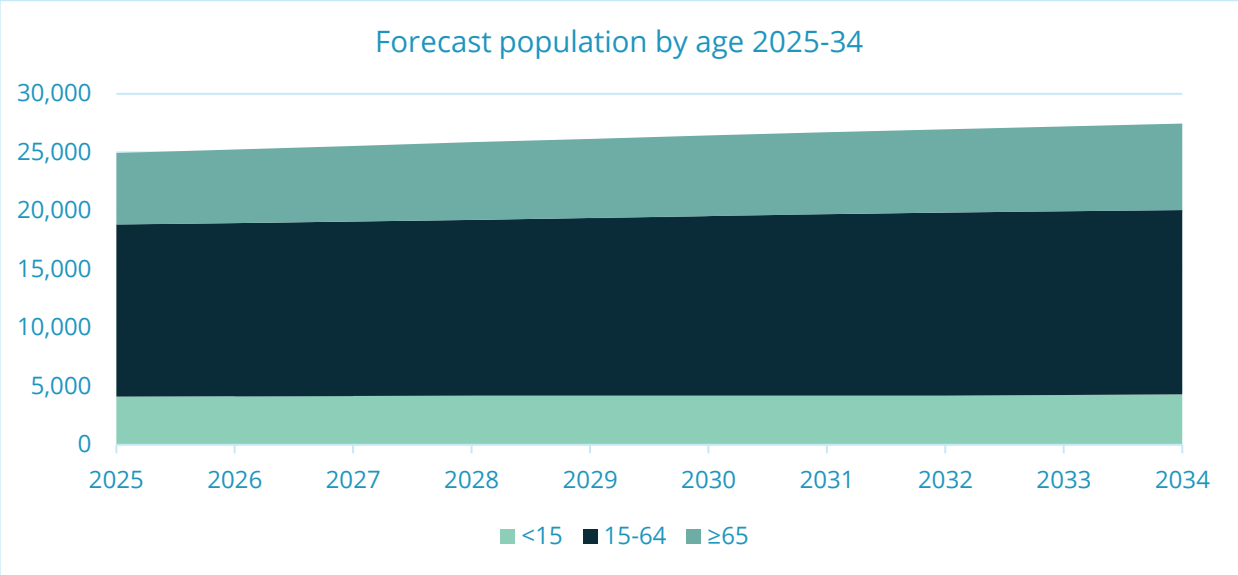
Population Growth

Waitaki's total population is forecast to increase 10.1% by 2034 and by 22.1% by 2054. These estimates are based on high growth-rate forecasts prepared for Council by Infometrics in 2024.



High growth-rate forecasts prepared for Council by Infometrics in 2024 indicate Waitaki will continue to be an ageing population over the next 10-30 years, with increasing numbers of individuals aged 65 years and above (≥65), and relatively stable numbers of individuals aged under 15 years (<15).

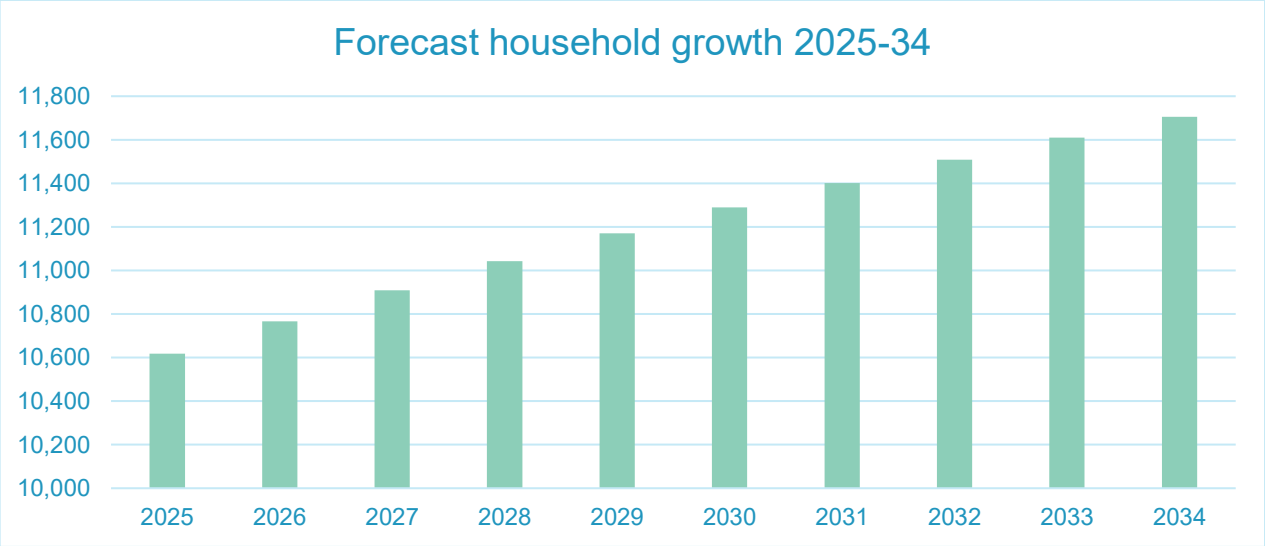
- The total number of individuals aged under 15 years in the Waitaki District is forecast to increase by 4.6% by 2034 (to form 15.7% of Waitaki's total forecast population in 2034)
- The total number of individuals aged between 15 and 64 years in the Waitaki District is forecast to increase by 7.1% by 2034 (to form 57.3% of Waitaki's total forecast population)
- The total number of individuals aged 65 years and above in the Waitaki District is forecast to increase by 21.1% by 2034 (to form 26.9% of Waitaki's total forecast population in 2034)



Increasing numbers of individuals aged 65 and above in the district, and relatively stable numbers of individuals aged under 15 years, mean a high proportion of the district will likely be on fixed incomes. This will make affordability of services - including wastewater collection, treatment and disposal - a more pressing issue.

Residential growth

The total number of household units in Waitaki District is estimated to increase by 11.9% by 2034 (1,242 household units). These estimates are also based on high growth-rate forecasts prepared for Council by Infometrics in 2024.



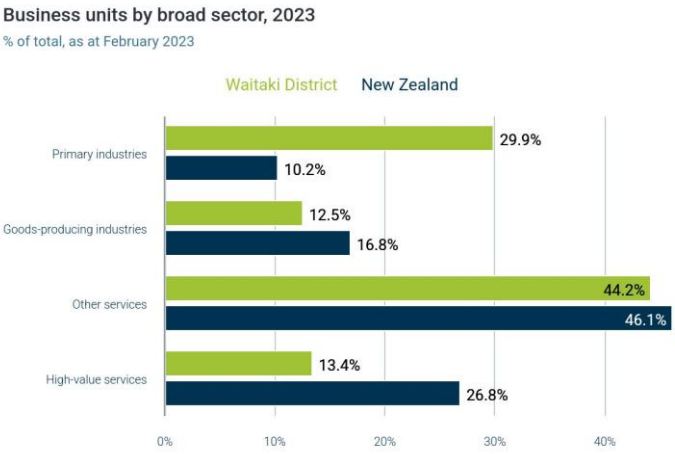
Household growth does not necessarily equate to high household occupancy rates, especially in an ageing population like Waitaki where a large percentage of household units are child-free and/or inhabited by just one or two individuals.

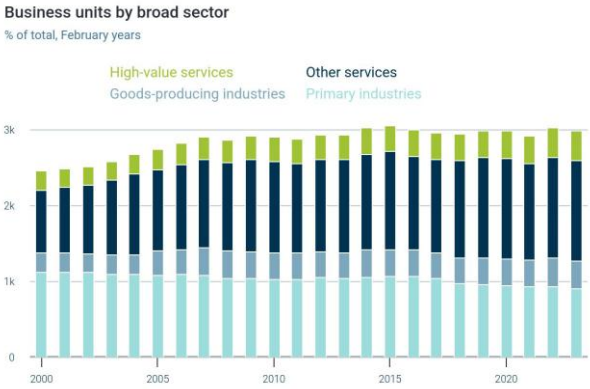
Over-estimating demand for infrastructure and services based on household growth could therefore lead to over-investment in infrastructure and services which are not needed, but with a limited ability for the usually resident population to pay for it, limiting Council's ability to set rates at affordable levels.

The demand for lifestyle development increases but, unlike its traditional form of hobby farms and relative self-sufficiency, the modern form has been for large executive housing set in expansive grounds around the fringes of the main urban centres, mainly Ōamaru. Generally, lifestyle blocks are not connected to reticulated wastewater networks and are unlikely to have a noticeable impact on network demand.

Economic development and impacts on wastewater systems

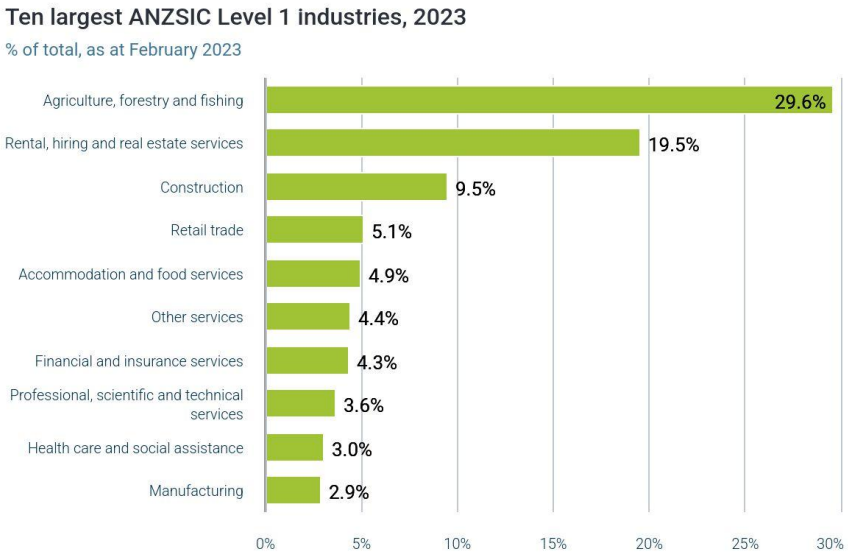
In 2023, primary industries and 'other services' continued to dominate Waitaki's economy, continuing a trend that has continued for more than two decades (Source: Infometrics).





'Other services' accounted for the largest proportion of business units (44.2%) in Waitaki District, which was lower than in New Zealand (46.1%).

Goods-producing industries accounted for 12.5% in Waitaki District, compared with 16.8% in New Zealand and accounted for the smallest proportion in Waitaki District (12.5%) compared.



Given the relatively stable distribution of broad sectors, modest growth in business units for each sector over the past two decades, and makeup of dominant industries, it is anticipated there will be not be any significant growth in demand on our wastewater network capacity as a result of economic development in any one broad sector over the next nine years.

Industrial/commercial Use

The district is growing and there may be some increasing demand for water and pressure on wastewater networks over the next nine years from some specific industrial and commercial users. Generally, the industry type and process use will determine the amount of the water

and capacity in the wastewater network these users will consume. Large industrial users are metered and billed on a volumetric rate, and their pricing structures provide incentive to use water efficiently.

Table 6.1-1

Large industrial consumers	Other large users
Lean Meats Oamaru	Retirement villages
Oamaru Wool Spinners	Aquatic Centre
Rainbow Confectionery	Secondary schools with swimming pools/hostels)
Whitestone Cheese	Hotels and motels

Climate change

The Waitaki district, like many other places, will be experiencing the threat of a changing climate. Increasing significant weather events, prolonged drought, rising sea-levels and coastal erosion will put pressure on our infrastructure and we need to adapt and find sustainable solutions. The way we build our infrastructure and cater for demand will need to reflect this new reality.

Given the increasing challenges posed by climate change, we anticipate that Council will need to invest heavily in resilience measures. This could include infrastructure upgrades to withstand extreme weather events, moving infrastructure away from the coast, and initiatives to mitigate the impacts of flooding.

Tourism

Waitaki is a popular destination for holiday makers and tourists and there is an increased seasonal pressure on wastewater systems due to an influx of visitors during peak summer periods. The Waitaki Valley Lakes areas of Kurow, Otematata and Omarama, in particular, experience significant increases demand because of the number of visitors to holiday homes during the summer months.

Technology

Over the coming years, technology will provide new opportunities that have strong potential to positively affect the management of water supply infrastructure. Technology may make wastewater treatment and network inspections and monitoring easier, quicker and cheaper, and enable us to address issues more efficiently.

Environmental awareness

There is growing awareness of the environmental impact of wastewater discharges on the receiving environment across community and stakeholders. Iwi have been challenging the management and discharge of wastewater to freshwater, and coastal water for many decades. There is an increasing pressure on councils to improve management and treatment of wastewater. This will increase the financial costs associated with treatment processes.

6.2 Monitoring demand for wastewater flow

Monitoring tools

The following tools are used to assess and analyse current demand and demand trends over time. Although it should be noted there are some limitations on the data available through these tools for some networks:

Table 6.2-1

Wastewater demand	Monitoring method
Long term flow data from individual systems and pump stations	Without reliable historical data it is difficult to ascertain the spare capacity at any given time and therefore predict when additional capacities are required. Daily and weekly flows are monitored through SCADA and pump hour analysis. Resource consent compliance provides further confirmation of current performance (e.g. Oamaru and Palmerston non-compliances). Acquisition and replacement of flow meters to validate actual flow data and design data has been undertaken since the last AMP to support monitoring for capacity.
Infiltration rates	Infiltration rates cannot be ascertained in most systems. When the infiltration rate is controlled to an agreed level, this can assist in using additional capacity that may normally be wasted. Council engineers believe that the wastewater mains are mainly above the water table. Soil conditions are such that there is not a significant amount of infiltration, with the exception of Palmerston. CCTV records also show very little infiltration at pipe joints or cracked pipes. Up to 30% of the wastewater reticulation has had CCTV inspections carried out. Inflow is believed to be the most significant contributor to increased flows within the wastewater collection system in Ōamaru. A district wide inflow/infiltration programme to ensure the collection system is maintained to operate at optimum capacity is included as a project is included in the Long-Term Plan 2025-34.
Water supply data	Daily average supply trends across unrestricted water supplies can provide some indication of what demand on individual wastewater networks is over time – including use by large industrial users, which is monitored separately through metering data. It doesn't however account for inflow from tankers bringing waste from septic tanks to treatment plants.
Population projections and business unit growth	These enable us to understand future demand and where growth is most likely to occur.
Design capacity	The design capacities for the individual systems are required to allow ongoing assessments of spare capacity. This includes the capacities of pumping stations, treatment and disposal systems. This information can then be readily used to show any spare or over capacity in all areas of the systems.

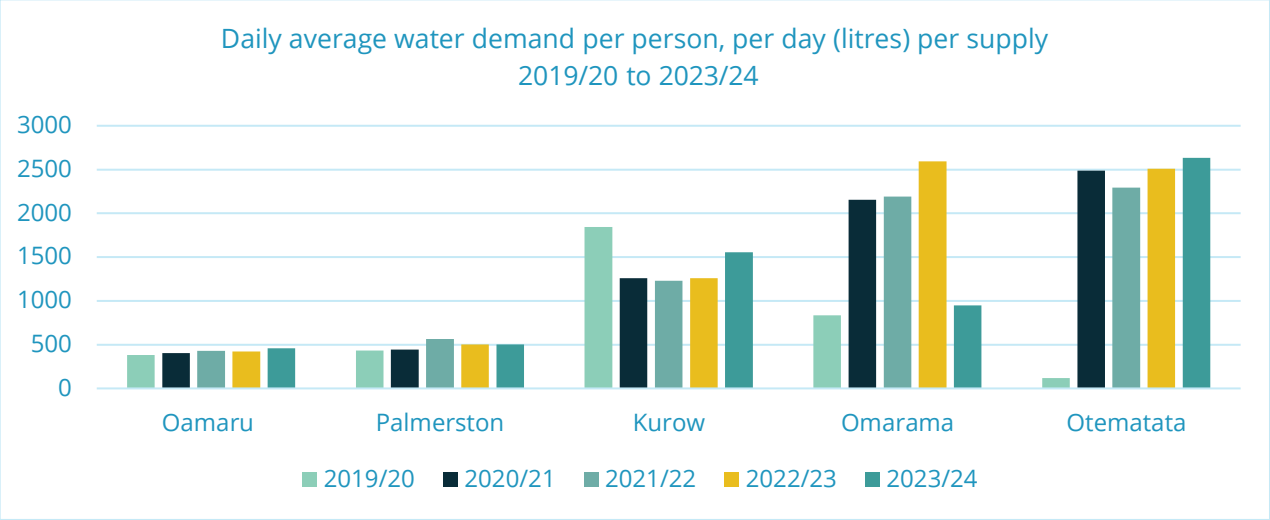
6.3 Current and projected demand

Estimated water demand across unrestricted Waitaki supplies

The following tables show data trends for unrestricted water supply demand (based on production) over the past five years for towns with wastewater networks. Trends in water demand can help us monitor changes in flow rates into the wastewater networks from households (that is, water not used for consumption or watering lawns and gardens).

Figure 6.3-1: Unrestricted supplies - average daily consumption per person (trend)

These are based on the figures and calculations used to report on the DIA's Non-Financial Performance Measures. They are based on overall water supplied for each supply (demand) and based on usually resident population, with allowance made for visitors.



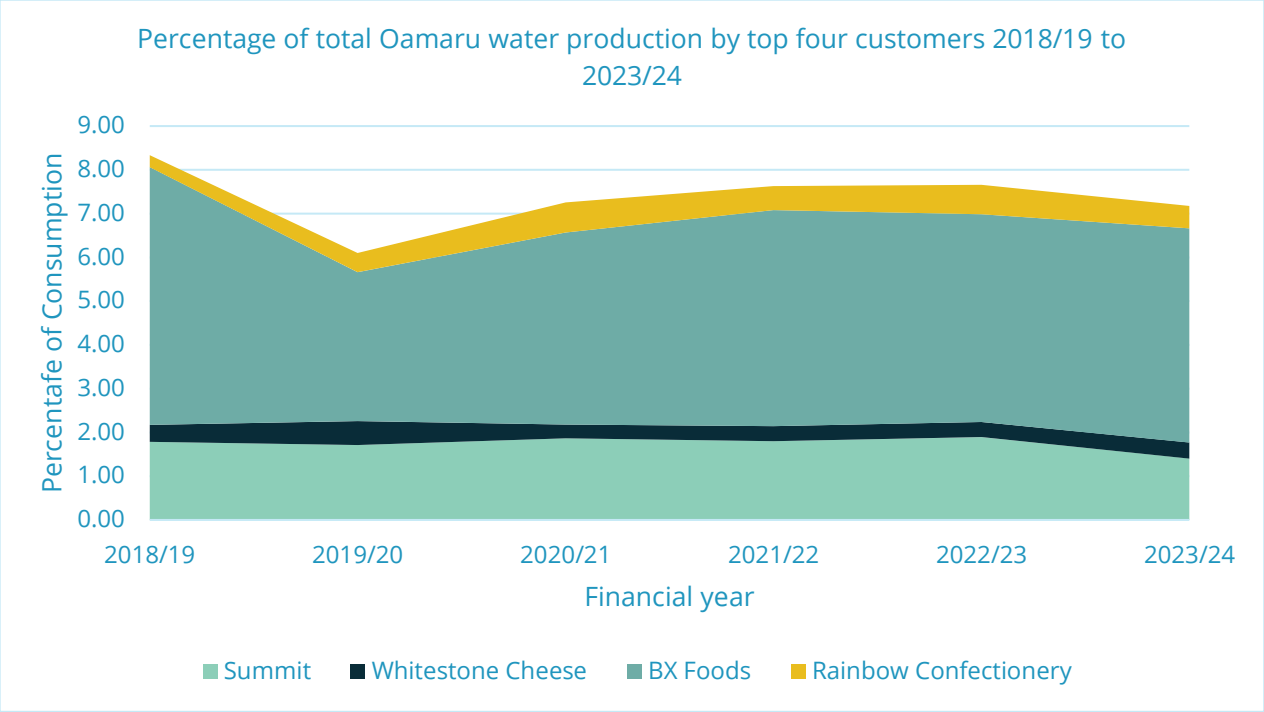
The charts above indicates relatively consistent water demand per person and per connection for Oamaru and Palmerston over the past five years, and for Kurow and Otematata over the past four years.

Large water users (metered) – Oamaru

Due to the large volumes of water used by these customers, they are deemed 'extraordinary' users of the water supply and are therefore metered. The following graphs shows actual percentage of consumption based on metered water used per annum.

The graph shows our biggest user is BX Foods also sometimes referred to as Lean Meats Oamaru. Water use by these businesses has been relatively stable over the past five years and is not expected to increase significantly over the term of this plan and, therefore, no significant additional demand on the wastewater network is anticipated from these businesses.

Figure 6.3-2: Large water customer water use

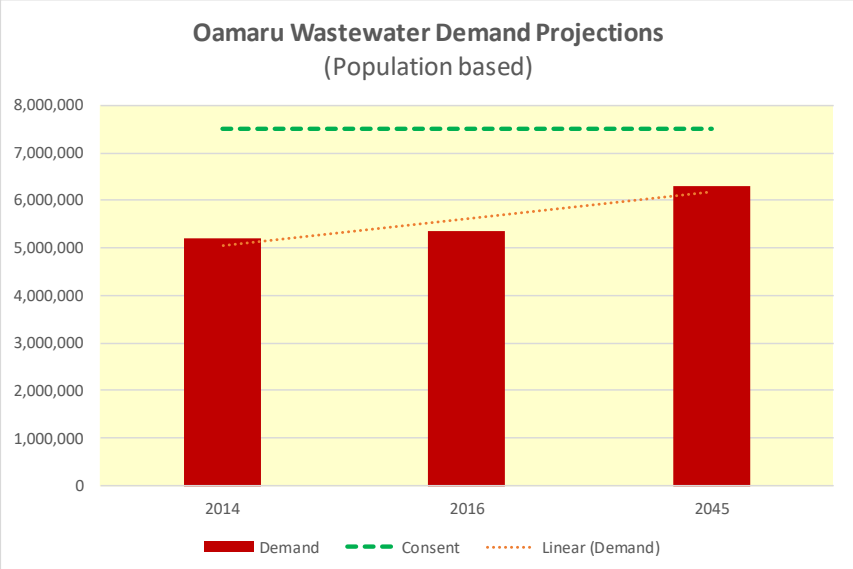


Projected wastewater demand across systems

The following graphical representation of projected demand is based on:

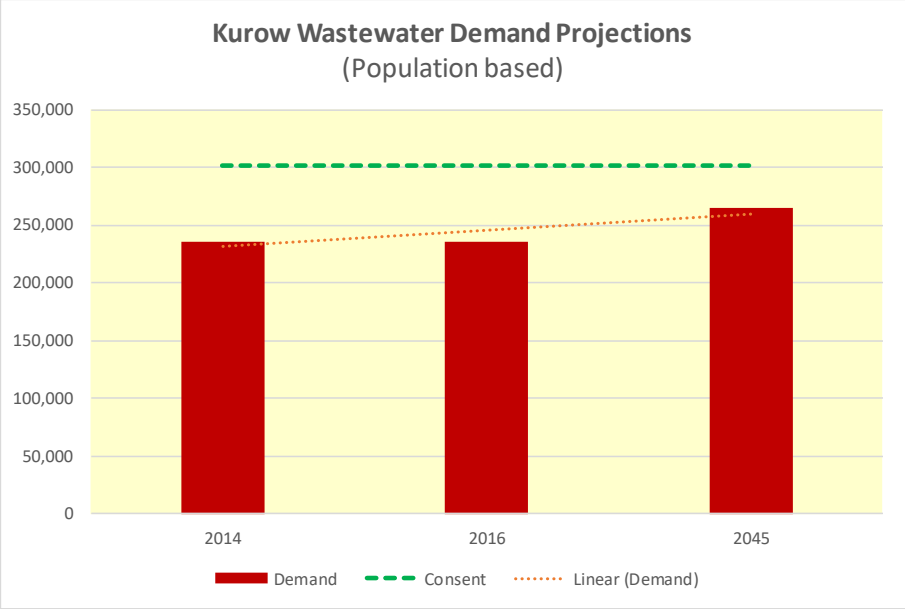
- Using the annual average daily inflow and dividing that with the population figures provides a volume (litres/person/day) which is then multiplied with the projected population figure for year 2045.
- This is not refined and the total inflow into the WWTP.

Figure 6.3-3: Demand – Ōamaru population based projections



The above graph shows that the projected Ōamaru wastewater inflow is well within the consented limits for the next 30 years, but there are issues around BOD5 loading. The projected demand includes the Weston and Kakanui systems.

Figure 6.3-4: Demand – Kurow Population Based Projection



The above graph shows that the projected Kurow wastewater inflow is well within the consented limits for the next 30 years.

The projected demand for Ōmārama, Otematata, Moeraki and Palmerston are similar and within consented limits.

6.4 Future use and spare capacity

Ōamaru wastewater system capacity and overflow mitigation

Overflow and spillage of raw sewage from the wastewater network is known to occur because of operational or capacity failure. The resulting uncontrolled discharge adversely impacts the health of the natural environment and can present a considerable risk to public health. Future growth coupled with age related decay of the network and the impact of changing climatic conditions are expected to increase the frequency and severity of these discharges.
Wastewater pumping stations are critical infrastructure and two are currently being exposed to an unacceptably high level of physical risk.
Oamaru's wastewater network is, at certain times, not able to accommodate current wastewater flows and there are multiple locations where wastewater overflows are known to occur across the network. For this reason, it is necessary to improve the capacity of the wastewater network to meet current volume in addition to accommodating future volume contributions.

During 2017 Council engaged Fluent Infrastructure Solutions Ltd to investigate and report on the performance of the Ōamaru wastewater system with particular focus on wet weather

overflows. This investigation considered flow monitoring, pump records, pump capacities, rainfall data and water supply data – including existing emergency storage at wastewater pump stations.
The report made several recommendations, mainly focussed on increasing pump capacity and emergency storage at existing pump stations. Council engineers noted these, but investigations have been ongoing to find the optimal solution that carries the least risk and provides the optimal cost-to-benefit ratio for the community now and in the future, while protecting public health and the environment.
The resulting works identified for the Long Term Plan 2025-34 place initial emphasis of addressing known overflow issues while being sympathetic to future needs and direction of the wastewater system as a whole. These are in addition to other treatment plant-focused projects aimed at maintaining resource consent compliance until a future treatment plant upgrade is confirmed.

Table 6.4-1: Oamaru wastewater system overflow mitigation projects

IBIS#	Project	Description	Year/s	Budget
2459	**Oamaru wastewater overflow mitigation**	Works required to support overflow mitigation across the wastewater system	2029-32	$2,500,000
4586	**Oamaru Creek - wastewater syphon capacity upgrade**	Physical works to increase capacity across the Ōamaru Creek to prevent WW overflows on Tees St	2031/32	$2,000,000
4587	**Duplicate wastewater rising main**	Duplication of the Ōamaru trunk wastewater pump main	2032-34	$20,000,000
4598	**Relocation of Orwell St pump station**	Relocation of the pumpstation due to coastal erosion and capacity improvements	2032-34	$20,000,000
4585	**Oamaru additional wastewater pump station**	A new pumpstation as a replacement for the one currently located at Regina Lane (to be abandoned due to coastal erosion)	2032-33	$1,000,000

Ōamaru Wastewater Treatment Plant Capacity Study

An Ōamaru Wastewater Treatment Plant Capacity Study is planned for 2025/26. This will include an assessment of the site's ability to meet future regulatory (and growth) requirements following discussions with the Regional Council (and Taumata Arowai) and development of conceptual solutions for improvement.

This follows on from a project which started in 2018 that considered the basis for the future analysis of development and renewal scenarios for the Ōamaru Water Supply and Wastewater systems - including conceptualised, indicatively costed solutions aligned with predicted stakeholder and community needs. It considered:

- Why systems are needed
- The projection period
- Who are we serving?
- Where will we serve?
- When is it needed?

The area considered for wastewater was vastly more constrained than for water supply, with selected areas in reasonable proximity to Ōamaru and established townships making up the target areas.

The resulting report provided a summary of the design basis that should be applied to Ōamaru wastewater design.

The Basis for the Capacity Studies can be viewed here and the Oamaru Wastewater Treatment Plant Performance study here.

Until the Capacity Study has concluded, and future consenting and other requirements are fully understood, Council has budgeted a total of $2,043,000 for interim improvements to the Wastewater Treatment Plant in the Long Term Plan from 2025 to 2027 to help ensure appropriate and sufficient treatment capacity **(IBIS# 4474).**

District-wide wastewater capacity and overflow mitigation projects

Other wastewater systems within the district have also identified for capacity study work and overflow mitigation projects.

Table 6.4-2: District-wide wastewater overflow mitigation and capacity projects

IBIS#	Project	Description	Year/s	Budget
1075	**Kurow Wastewater Treatment Plant capacity study**	An assessment of the sites ability to meet future regulatory (and growth) requirements following discussions with the Regional Council and development of conceptual solutions for improvement. The adopted solutions will result in a new capital project such as a new treatment plant.	2026/27	$65,000
1084	**Duntroon Wastewater Treatment Plant upgrade**	Required to comply with new consent conditions and environmental standards.	2025/26	$2,600,000
2463	**Palmerston wastewater overflow mitigation**	Design and construction of confirmed solution such as overflow storage, larger pumps and/or duplication of rising main.	2026-2028	$450,000
4580	**Kurow Wastewater Treatment Plant upgrade**	Required to comply with new consent conditions and environmental standards.	2032-33	$1,000,000
4609	**Overflow capacity – Waitaki Valley**	A capacity study to assess requirements such as overflow storage.	2027-2029	$220,400

6.5 Influencing and managing demand

Council has several tools available that influence demand - including metering and pricing, restrictors on rural supplies, consent conditions, restrictions, and conservation education programmes when needed.

Demand Management Plan

The Demand Management Plan involves implementing strategies to reduce effluent flows and promote more efficient network operations. These strategies involve altering or repairing the asset to achieve the target. The effluent flow reduction strategies proposed to be used by Council are outlined in the table below:

Table 6.5-1: Effluent flow reduction strategies

Strategy	Description
Stormwater Separation	Removal of stormwater ingress into the wastewater system through smoke testing to identify private and public cross-connections, followed by upgrading of the stormwater system
Response Time	Prompt response and rectification of reported leaks
Replacement/ Rehabilitation Programme	A Renewal Programme to ensure assets are not utilised beyond their useful life when the risk of unidentified failure is greatly increased
Codes of Practice	Enforcement of appropriate Engineering Codes of Practice to ensure all maintenance is carried out to the relevant standard
Infiltration Reduction	Implementing an on-going infiltration reduction programme
Technical Standards	Ensuring new assets are constructed to the correct standards and tested appropriately before being commissioned
Standard Materials	The use of standard (high quality) materials
Quality Audits	To ensure all standards are being met

The Demand Management Plan also involves implementing non-asset strategies to manage the demand for a service. Non-asset solutions for proposed current and future use by Waitaki District Council are outlined in the table below.

Table 6.5-2: Demand management – non asset strategies

Strategy	Description
Water Conservation/ Public Education	Encouraging water conservation (within the household) and understanding the issues concerning the wastewater system through public education and advertising campaigns
Property Inspections	Encouraging property owners to comply with Council's Bylaws and stormwater discharge requirements
New Domestic Technology	Encouraging the adoption of new technologies in the home such as low-flow showerheads and dual flush toilets

The Council's future demand management approach will be a continuation of the effluent flow reduction strategies noted in the table above. This will be further strengthened by hydraulic

modelling where necessary, which will enable the infiltration reduction to be quantified and improved upon.

The reporting requirements in the Levels of Service (Non-Financial Performance Measures) will allow management of the mechanisms to ensure the strategies are effective and improved on where required. An increase in overall flow monitoring to ascertain the domestic usage will enable changes in use patterns to be reported/acted on if required.

7 Risk and resilience

7.1 Introduction

A systematic and consistent approach to risk assessment improves Council's ability to manage its assets within resource limitations and to prioritise expenditure and actions that can avoid or mitigate the effects of an identified event.

Risks can be grouped into financial, operational, or organisational categories. Their negative consequences can seriously impact public health and safety, incur financial loss or adversely affect public image. The risks identified might be relevant to many activities and be of concern at corporate level, or they might be localised, at an asset-specific level.

This section describes the risk management processes used for the wastewater activity. Assessment and management of risk provides defensible tools for the communities and Council to develop prudent work programmes that support sustainable development.

7.2 Corporate risk management approach

Council adopted a new Risk Management Policy in February 2023. It recognises that sound risk management is a function that will support better decision-making, increase awareness of potential issues, and strengthen the organisation's capability and maturity. It was reviewed in December 2024.

The new policy is aligned to the principles of the ISO31000:2018 Risk Management Standard. It contains details of the risk management approach to be followed by Council and details the methods used to identify, assess, manage, and report on risk. It references the different types of risk and details the differing approach to the management of each.

This policy applies to all employees and governing body members of Council.

WDC's Risk Management Framework comprises five main elements:

- Operational Risk Management
- Project Risk Management
- Key Risk Management
- Issue Management
- Operational Risk Event Management

Council aims to identify and manage all types of risk faced by the organisation. Risks are documented in one of three ways:

1. Key Risk Register
2. Operational Risk Register
3. Project RAIDD (Risks, Assumptions, Issues, Dependencies, Decisions) Log

Council will identify Operational Loss Events and report financial losses to the Performance, Audit, and Risk Committee.

Issues, whether because of a known risk crystalising, or identified through other means, will be managed appropriately through to resolution.

Risks are categorised and documented in the appropriate format, as show in the table below.

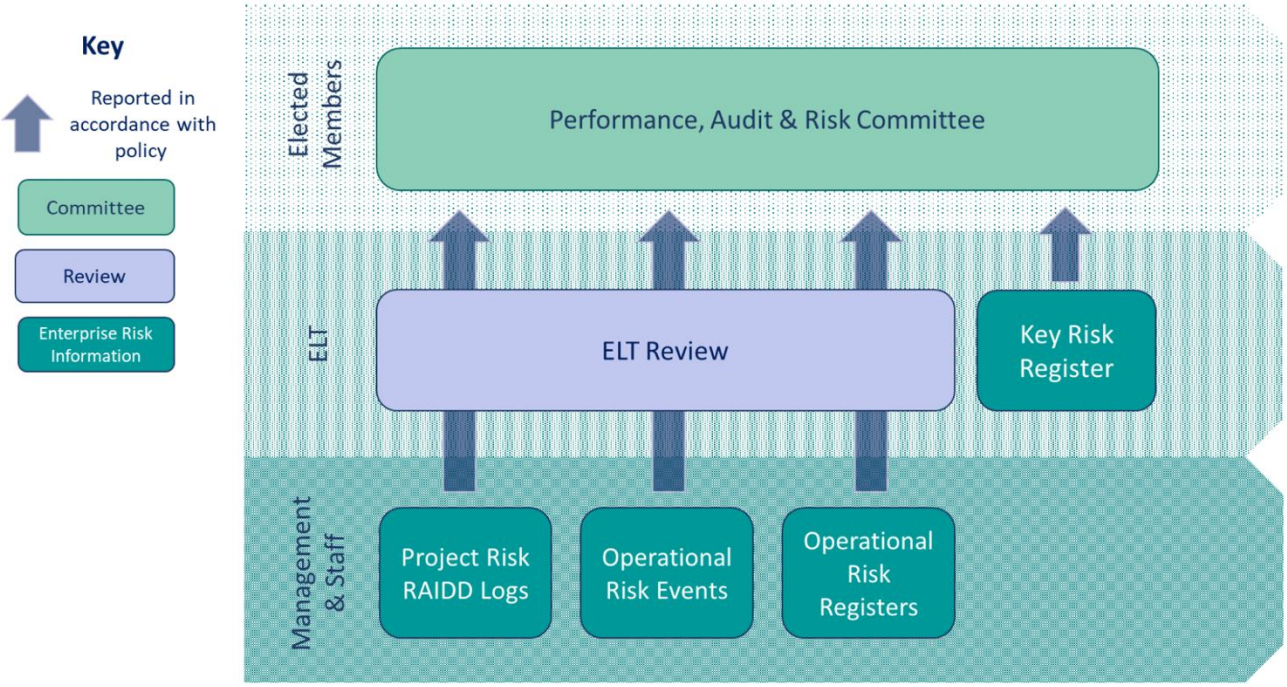
Risk categorisation

Risk Type	Sub-category	Description	Document
Financial	Credit	The risk that a counterparty may default of their obligations (a given financial claim is not paid in full) or have their credit rating downgraded.	Key Risk Register
	Liquidity	The risk that an organisation is unable to meet its financial liabilities as they fall due.	
	Market	The risks that arise due to fluctuations in the value of, or income from, the assets of an organisation.	
Operational	People	Loss resulting from inadequate or failed internal people.	Operational Risk Register or
	Process	Loss resulting from inadequate or failed internal processes	
	Systems	Loss resulting from inadequate or failed internal systems.	
	External	Loss resulting from an external event.	
Strategic	N/A	Risks that are created or affected by the chosen strategy of an organisation.	Key Risk Register
Project	N/A	Risks associated with the design, implementation, and delivery of a project. Most of these risks should close with the project, but some may be transferred to Business-as-Usual dependent on what is being delivered by the project.	Project RAIDD Log

Corporate risk management framework

The diagram below shows ownership of sources of risk information and how these are connected and reported to the Performance, Audit, and Risk Committee (PAR).

Risk Management Framework Diagram



7.3 Key strategic risk management documents for water

Council has developed the following key documents to guide and support risk management specific to the water supply activity:

Type	Document	Purpose	Document links
Bylaws	Trade Waste Bylaw 2021	The bylaw has been developed to ensure the district's water supplies are managed and regulated in a way that meets the needs of all consumers.	Trade Waste Bylaw
Policies	Sewer Lateral Policy	To set out Council's approach to managing privately owned sewer laterals.	
	Asbestos Cement Pipe Policy 2023 risk management plan	To clarify and confirm Council's approach to managing any Council-owned AC pipe in public or private land.	AC Pipe Policy
	Procurement Policy 2023	This policy defines Waitaki District Council's approach to the procurement of all works, goods or services to support the community in an affordable and efficient manner. It provides a standardised approach to procurement for all Council departments.	Procurement Policy

7.4 Key risks and management approaches for wastewater

Council has identified the following strategic risks and control measures for water supply activities:

Strategic risk	Description	Controls/future controls
Affordability and financial sustainability	Risk that service needs outweigh available budget, due to ongoing external cost increases or increased regulatory requirements, resulting in rates becoming unaffordable, or Council's financial position becoming unsustainable.	• Working together with other Councils and agencies to share knowledge and ideas. • Prioritisation tool will focus resources when undertaking Annual and Long-Term Planning • New Financial Strategy
3 Waters Management	Risk that Council is unable to effectively deliver 3 Waters activity, due to increasing regulatory standards and changes, or changes in central government expectations. This could result in increased financial outlay, reduction in service levels, significant rate increases, community dissatisfaction, and non-compliance with revised standards.	• Multi-council potential responses being developed • Engaging with other Councils to share information • External resourcing to assist with Water Services Delivery Plan development • Re-prioritising work programme to reflect changed environmental and financial regulatory environment
Political Uncertainty	Risk that Council's priorities and actions are not aligned with central government expectations or reform activity due to political uncertainty, or lack of external consideration in decision-making, resulting in inefficient use of time, resources, and funds, public dissatisfaction, and reputational damage.	• Central government decisions and updates are monitored and discussed as a standing agenda item at ELT meetings • When submitting Annual Plan Projects, managers must state where decisions and direction have the potential to be impacted by central government decisions and direction • Modelling of impacts of reforms • Membership of networks across regions and local government • LTP forecasting assumptions
Climate Change	Risk that the negative impacts of Climate Change are more severe or difficult to manage because of Council inaction and lack of understanding or strategy, resulting in environmental harm, an inability of Council to effectively respond to weather events or coastal erosion, loss of key income streams for the district, breach of legislation, and increased financial burden.	• Newly created Climate Change role (this control will develop further as the role becomes more established) • Climate Change declaration agreed • Water sensitive urban design principles incorporated into District Plan (partially implemented) • Design/placement of new infrastructure considers climate change vulnerabilities

Strategic risk	Description	Controls/future controls
Critical Asset/Infrastructure Failure or Damage	Risk that a critical asset or infrastructure fails or is damaged, due to a one-off incident, failure to identify ongoing deterioration, or maintenance/ oversight processes not being followed or not being fit for purpose, resulting in critical services/infrastructure being unavailable to the community, financial loss, and potential reputational damage.	• Water maintenance contract in place and performance regularly monitored • Water assets managed via AMPs • Assets valued on a 3-yearly basis and insured as appropriate

7.5 Key operational risks and management approaches

Risk	Description	Management approach
Resource consents	Risk that resource consent requirements are breached due to lack of knowledge or understanding, sites not performing to design standards, resulting in abatement notices, infringement fines, reputational damage, environmental harm, and damage to relationship with regional councils.	• Non-compliance is investigated and either resolved or a project proposal completed • Ongoing review of site performance against design and consent requirements • Relationship management with the regional council • Requirements documented to be referred to as necessary • Staff training on resource consents undertaken
Wastewater service provision	Risk that wastewater provisions are inadequate or not fit for purpose due to procedural failings, historical engineered overflow, or lack of oversight and monitoring resulting in legislative breach, possibility of prosecution, reputational damage, financial loss, resident dissatisfaction, and potential harm.	• Asset Management Plans in place detailing management of critical assets, their condition, and performance • Capacity study of wastewater • Construction capital projects to improve resilience and capacity • Investigative work undertaken to assess condition of pipes on a regular asset-wide basis (CCTV) - First Stage complete - many more stages to go • Overflow, inflow and infiltration project underway • Palmerston Stour Street project underway • Risk management plans • screening - removal of solids prior to further treatment • Trade waste receipt improvements • Waste Water Treatment Plant resilience improvements ongoing - Underway with the first 2 new high-capacity aerators in Oamaru and Palmerston wastewater overflow mitigation project

Risk	Description	Management approach
Lack of formal agreement for Council owned assets on private property	Council's current approach to seeking agreement from private landowners to have Council owned assets installed on their property is via a brief signed written agreement as opposed to a legal easement or purchase of the land. While Council has rights under the LGA, once the assets are installed ongoing efficient operation of the site and future upgrades are dependent upon a good relationship with the landowner.	• Consider land purchase or legal easements on a case-by-case basis • Legal review of current written agreements to ensure fit for purpose • Relationship management with landowners • Staff understanding of current agreements and terms
Health and Safety	Risk that a member of staff, the public, an on-site worker, or elected member has an accident or incident on Council premises or whilst conducting activities on behalf of Council, resulting in potential fine, breach of legislation, reputational damage, personal injury, illness, or death.	• All contracts state contractors must adhere to H&S requirements • Contractor risk assessments prior to activity being undertaken • Formalise agreements with external organisations • H&S meeting held weekly • Open bodies of water fenced (some locations - all wastewater) • H&S meeting held weekly • Site hazards identified and documented, signed by contractors on site
Resource Capacity	Risk that Waters Team resource staffing capacity is exceeded due to an inability to retain or recruit staff, leading to service degradation, loss of key knowledge and capabilities, staff dissatisfaction, and reputational damage.	• Flexible working to increase staff satisfaction and improve retention • Plan for 3 waters transition - staffing • Salary benchmarking to enable market-rate for new employees • Seconding consultant resource for operational work • Staff pay reviews - internal benchmarking
Training and Development	Risk that Waters Team members are not able to adequately perform required duties due to a lack of training or development opportunities, resulting in service degradation, reputational damage, staff dissatisfaction.	• Attendance at regional and national forums/ conferences • Budget increase and/or review for appropriateness • Ongoing professional development undertaken • On-going training is available for staff involved in infrastructure asset management and contract management includes attendance workshops, seminars, and conferences • Regular open and transparent conversations around industry changes and the implications • Specific course or seminar attendance • Training needs identified in 1-1s with managers

Risk	Description	Management approach
Systems – Data	Risk that information is inaccessible, compromised, or lost, due to system inadequacies or failures, resulting in breach of legislation, impacts on water supplies, potential fines, financial loss, reputational damage, customer harm, and public dissatisfaction.	• Data back-ups daily • Institutional knowledge held by staff • SCADA - support from Plunket / Q Tech • Support from IT and service providers
Systems availability	Risk that systems are unavailable or inaccessible, due to system failure or access issues, resulting in breach of legislation, impacts on water supplies, potential fines, financial loss, reputational damage, customer harm, and public dissatisfaction.	• Compliance software implementation • SCADA budget specifically allocated • security monitoring at water treatment facilities - Allied (site access) • Support from IT and service providers • Systems updates completed regularly
Contractor Management	Risk that contractor performance is unsatisfactory due to contract management activities not being effectively defined or undertaken, resulting in service degradation, inability to achieve value for ratepayers, consent non-compliance, and reputational damage.	• Contract / relationship owners in place • External consultant support • formal escalation process in place • Improved contactor relationship • Performance report actioning • Performance reporting undertaken • QA / audits • Staff training on contract management • Weekly meetings with contractors
Contractor Capacity and Costs	Risk that contractors are unable to provide services within expected budgets due to capacity issues or cost increases, resulting in increased financial outlay, reduction in successful delivery of planned projects, and reputational damage.	• Alliancing • Continue building relationships with existing and potential contractors, to expand and retain contractor pool • Maintaining competition between local contracting firms to support achievement of best value • Situation reports to ELT and Council via Activity updates • Supplier Agreements/panels
Weather Events	Risk that drinking water, wastewater, or stormwater provisions or infrastructure are compromised due to a severe weather event, resulting in remediation requirements, reputational damage, financial loss, and breach of legislation.	• AMPs document measures in place to protect infrastructure • Checks completed on vulnerable infrastructure ahead of and following events • Completion of the wastewater overflow mitigation project, including upgrades • generators for water facilities and sewers • Relationship with Network Waitaki (in the event of lost power) • Water storage to allow for selective abstraction • Waters Business Continuity steps documented

Risk	Description	Management approach
Process Documentation	Risk that critical institutional knowledge is lost due to processes not being documented or documented inaccurately or securely, resulting in customer harm, financial loss, reputational damage, and staff dissatisfaction.	• Knowledge sharing/shadowing - institutional knowledge held • Processes Promapped • Succession planning in place
Decision-making alignment	Risk that decisions made outside the Waters department negatively impact Waters team activity due to lack of consideration or engagement, resulting in unplanned activity requirements, undefined responsibilities, and staff dissatisfaction.	• Engagement approach - feeding into reforms and central government initiatives • Internal relationship management • Process to agree responsibility where decisions are made outside the Waters Team /impacting the team/ without team agreement
Procurement Processes	Risk that inappropriate suppliers are awarded work as a result of procurement processes and practices not being aligned with policy or best practice, resulting in reputational damage, financial loss, and potential service delivery impacts.	• Audits of procurement activity • External support and resource • Institutional knowledge utilised • Procurement Policy compliance • Senior Team Review/approval of procurement approaches • Use of the non-standard procurement/policy exemption requests reviewed by GM
Budget Management	Budget holders not signing off invoices due to management line changes and Authority system restrictions for approval.	• To be addressed in the context of Council's Transformation organisational design changes.

7.6 Risk management approaches for other key risks

In addition to the highest risks and management approaches outlined in the previous section, Council also manages other key risks, including:

- Renewal of aging wastewater assets

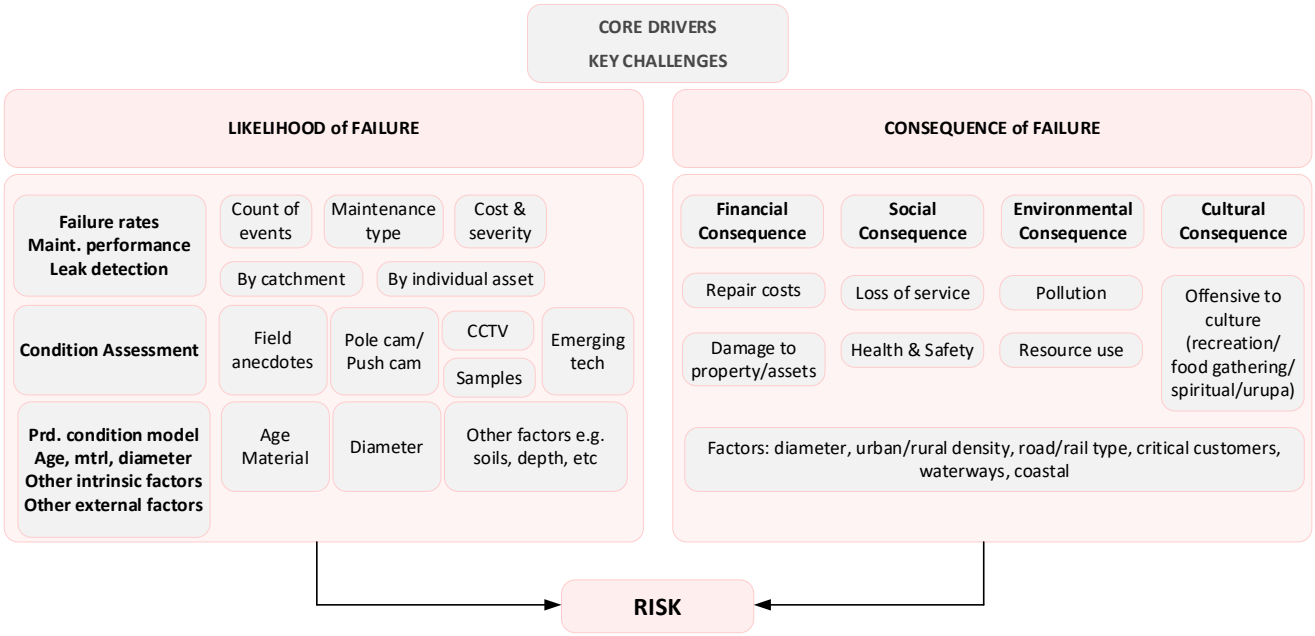
Renewal of aging water assets

Risk assessment for our water assets is the combination of:

- Likelihood
- Consequence

The following diagram provides a snapshot of the components considered under 'likelihood of failure' and 'consequence of failure' i.e. the renewals risk assessment.

Figure 7.6-1: Renewal risk assessment



This guides the intervention strategy of 'when to':

- Renew
- Assess condition
- Validate data

Criticality

The criticality of an asset reflects the consequence of the asset failing (not the probability). High criticality assets are best defined as assets which have a high consequence of failure (not necessarily a high probability of failure).
Criticality of assets is used within the water service to enable clear identification of critical assets, enabling these assets to be managed more proactively to mitigate the risk associated with their failure. This proactive management includes:

- Prioritising condition assessments
- Adjusting economic lives with respect to renewal profiles
- Prioritising/deferring renewals
- Prioritising expenditure
- Operation and maintenance planning
- Priorities for collecting asset information to the required level of confidence

Conditions assessments were previously performed on an ad-hoc basis due to lack of capacity within the Waters team. This has improved in recent years, with a more formalised an assessment programme and budget now in place.

Managing operation and maintenance contract risk

The Operation and Maintenance Contract (#613) records numerous risk management procedures including but not limited to:

- Best appropriate practices for staff including contractors and materials
- Illegal connections
- Critical consumers
- Shutdowns
- Health and Safety
- Asbestos handling
- Civil Defence Emergency expectations
    - Provide sufficient plant and personnel on site to enable the emergency work to be undertaken
    - Advise the engineer immediately if unable to either commission sufficient resources or undertake the emergency work
    - Co-operate with the appropriate authorities i.e. Police, Civil Defence
    - Carry out emergency work immediately if such work is essential to ensure the health and safety of the community or to protect the environment
    - Prioritise emergency work to reduce the risk to the community and environment to acceptable levels
    - Advise the engineer immediately of any situation where the emergency is likely to continue and affect the health and safety of the community and the environment
- Traffic control and management
- Overflows and clean up

Whitestone Contracting Limited (WCL) is a local entirely owned by the Waitaki District Council and operates as a Council Controlled Organisation. There is a statement of intent between Council and WCL for WCL to provide assistance to Council during emergency events.

7.7 Climate change

Projected changes

Climate change is an important consideration in the Council's Long Term Planning. Guidance from the New Zealand government based on the best available climate science is used to support the planning.

The Ministry for the Environment information on: https://www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region/otago provides a summary of projected climate changes over the periods 2031–2050 (referred to as 2040) and 2081–2100 (2090) compared to the climate of 1986–2005 (1995).

Temperature - Compared to 1995, temperatures are likely to be 0.6˚C to 0.9˚C warmer by 2040 and 0.6˚C to 2.8˚C warmer by 2090. By 2090, Otago is projected to have from 4 to 25 extra days per year where maximum temperatures exceed 25˚C, with around 13 to 45 fewer frosts per year.

Rainfall - will vary locally within the region. The largest changes will be for particular seasons rather than annually. Otago is expected to become wetter, particularly in winter and spring.

According to the most recent projections, extreme rainy days are likely to become more frequent in Otago by 2090 under the highest emissions scenario.

Snowfall - the Otago region is likely to experience significant decreases in seasonal snow. By the end of the century, the number of snow days experienced annually could decrease by as much as 30-40 days in some parts of the region. The duration of snow cover is also likely to decrease, particularly at lower elevations.

Less winter snowfall and an earlier spring melt may cause marked changes in the annual cycle of river flow in the region. Places that currently receive snow are likely to see increasing rainfall as snowlines rise to higher elevations due to rising temperatures. For rivers where the winter precipitation currently falls mainly as snow and is stored until the snowmelt season, there is the possibility of larger winter floods.

Wind – the frequency of extremely windy days in Otago by 2090 is likely to increase by between 2 and 5 per cent. Changes in wind direction may lead to an increase in the frequency of westerly winds over the South Island, particularly in winter and spring.

Storms - future changes in the frequency of storms are likely to be small compared to natural inter-annual variability. Some increase in storm intensity, local wind extremes and thunderstorms is likely to occur.

Sea level rise - New Zealand tide records show an average rise in relative mean sea level of 1.7 mm per year over the 20th century. Globally, the rate of rise has increased, and further rise is expected in the future.

Climate change and wastewater networks

The changing climate is having a notable impact on the Waitaki district. Consequently, the resilience of Council's key infrastructure is being increasingly challenged.

Climate change may mean that the lifespan of our assets is shorter than planned, or that maintenance costs increase. It may also mean that repairs are needed more frequently or that materials deteriorate more quickly.

Council's climate projections report (2023) provides a current summary of climate change risks the Waitaki District will be facing, now and into the future. Council's *Overview of Coastal Hazards Report 2024* provides evidence of the coastal hazards that the district faces, many which will affect our water infrastructure.

We are anticipating advances in coastal erosion along the district's coastline – particularly in North Oamaru and south of Kakanui.

Storm events are anticipated to become more frequent and result in a higher magnitude of impact in the future.

We are also anticipating ongoing issues associated with increases in high intensity storm events in Kakanui, Otematata, Omarama, Kurow and Oamaru North - including Muddy Creek.

To provide appropriate solutions to the challenges anticipated, Council will need to address community concerns and expectations. Additionally, it must have a clearer picture of the value of the assets at risk, determine the beneficiaries of any proposed solutions, and assess the cost and liability to Council.

Moeraki is subject to ongoing landslip issues primarily caused by large, slowly creeping movements in the underlying mudstone. This geological instability poses a high risk of damage to wastewater network assets in certain parts of Moeraki.

Specifically for our wastewater networks, we anticipate climate change will result in:

	Sea level rise and coastal erosion	Rainfall and storm events	Temperature
Wastewater	Key wastewater infrastructure is in the coastal erosion zone which may be compromised	Increased likelihood of wastewater overflows and infiltration into the network	Changes in treatment processes

Our response

In 2022, Waitaki District Council established a new role of Climate Change Advisor to ensure that climate change and its implications are planned for and addressed. This role also leads the understanding and awareness of organisational and local climate risk and vulnerability.

Council's ongoing response to climate change is influenced by central and regional government direction. One challenge in this space is that the Waitaki district spans across two regional council boundaries – Canterbury and Otago.

Council is a partner to the Canterbury Climate Partnership Plan showing how councils will work together on specific climate actions to help minimise the impacts of climate change on Canterbury's communities and ecosystems. The plan includes ten primary actions focused on addressing key gaps, priority risks, and opportunities.

Otago Regional Council has also prepared an Otago Climate Change Risk Assessment summarising the key risks that the Otago region is facing due to climate change.

Council has developed high level climate change projections for the Waitaki District as part of phase 1 of its Climate Change Risk Framework. We have identified high risk coastal locations (Waitaki Coastal Hazard Strategy - High Risk Sites Options Assessment, September 2024) that are likely to need to be managed in the next 50-100 years. Sites relevant to wastewater infrastructure include:

- Oamaru Wastewater Treatment Plant - 2km stretch of coastline adjacent to the Oamaru Wastewater Treatment Plant (WWTP), from Spring Gully in the north to Landon Creek to the south.
- Oamaru North – stretch of coast from Orwell Street to Regina Lane.
- KiwiRail Yard - 1.7km from Weaver Street to approximately Oamaru Creek.

- Beach Road North - 2.8km from where Beach Road reaches the coast down to Gardiners Road.
- Beach Road South - 2.5km along the coastline from the intersection of Seadown Road and Thousand Acre Road to 190m north of the intersection of Beach Road and Fortification Road

Council's overall strategic direction

When responding to the effects of climate change, Council will prioritise the protection of Council assets over private assets and plans to:

- Build resilience into our core infrastructure to cater for future demand and other risks.
- Develop a Climate Change Strategy.

Approach to coastal erosion

Key options identified to address the coastal erosion issue in central Oamaru and on the Katiki coastline include:

- Status quo (emergency rock added on a needs basis)
- Managed retreat.

Council's preferred approach to is to co-operate with external agencies to support the ongoing erosion protection of their assets currently being undertaken by Kiwi Rail and NZTA to protect their assets.

Council's preferred approach for the remainder of the high-risk sites is to continue to monitor.

Wastewater-specific response

Our strategic response to the impact of climate change on our water supply assets is:

- Preventing adverse effects of climate change and natural hazards through careful planning of future development areas - i.e. we do not locate new communities and supporting infrastructure in areas at significant risk from hazards
- Working with neighbouring councils on water initiatives where there are mutual benefits
- Factoring climate change (such as flooding and droughts) into network operations and capital project design
- Continuing to investigate and implement measures to ensure responsible water use through efficient delivery and demand management measures
- Encouraging a more holistic approach wastewater management, operation and maintenance.

7.8 Emergency management and business continuity

Lifelines Management Plan – Civil Defence

The Civil Defence Emergency Management (CDEM) Act 2002 requires local authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Reduction, Readiness, Response and Recovery, and encourages cooperation and joint action with regional groups. Activities required are Risk Reduction, Readiness, Response and Recovery.

The following table indicates the required activities for the Water Operations in the areas of Risk Reduction, Readiness, Response and Recovery.

Table 7.8-1: Risk Reduction, Readiness, Response and Recovery

Activities required	Description	Include
Risk Reduction	Identifying hazards, describing risks, and taking actions to reduce the probability or consequences of potential events	Identify hazards
		Describe risks
		Reduction or Consequences
Readiness	Planning and preparation required to equip agencies and communities to respond and recover	Planning
		Preparation
Response	Address immediate problems after an emergency	Address immediate problems
Recovery	Addressing the long-term rehabilitation of the community	Addressing the long-term rehabilitation of the community

Activity management planning and contractual arrangements are in place to provide some measure of Risk reduction, Readiness, Response and Recovery.

A representative of Council meets with the Otago Lifelines Group monthly and keeps Council staff informed on key information. Organisations represented on the Lifelines include Otago Regional Council, Local Authorities, utility providers, fuel providers, etc.

Waitaki Civil Defence Emergency Management

Waitaki District Council is part of the Otago Civil Defence Emergency Management (CDEM) Group which includes four other local authorities within the Otago region.

Information on hazards, emergency planning advice and resources, including Community Response Guides please visit the Waitaki District page on the Otago Civil Defence and Emergency Management Group website.

Project AF 8

Project AF8 is a risk scenario-based earthquake response planning project, informed by thorough earthquake source, expression, and consequences science. The focus of the project is New Zealand's South Island Alpine Fault. Project AF8 commenced in July 2016, with funding from the Ministry of Civil Defence & Emergency Management's Resilience Fund and is managed by Emergency Management Southland on behalf of all South Island CDEM Groups.

Project AF8 has been initiated to introduce outline planning for response actions, resources, and overall coordination within and between CDEM Groups across the South Island.

The South Island Alpine Fault Earthquake Response (SAFER) Framework provides a concept of coordination of response and priority setting across all six South Island Civil Defence Emergency Management (CDEM) Groups and their partner organisations in the first seven days

of response. It is not intended to replace existing plans within agencies but to provide a coordinated picture of response across the South Island.

The SAFER framework includes:

- Scenarios
- Response assumptions
- Secondary and compounding risks such as:
- Aftershocks
- Ongoing structural failure
- Cascading landscape effects
- Tsunami
- Severe weather
- Communicable human diseases
- Impacts on response operations
- Consolidated response framework

Council will keep a keen eye on the response actions and resources from the AF8 project and work with CDEM Groups.

7.9 Infrastructure resilience

Council customers have a high expectation of continuing functionality and service delivery. Resilience is based on a design philosophy which acknowledges that failure will occur. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system.

The Waitaki CDEM office has identified public education as the foundation for improving levels of community resilience. Some collaborative work has already occurred locally but lacks an overall strategy in conjunction with the Group. Recent high profile natural disasters have raised public awareness, but there is still a significant need to increase actual preparedness – both in general (e.g. household plans and emergency supplies) and for specific circumstances (e.g. tsunami preparedness in coastal communities).

However, resilience is not only applicable to natural hazards but also needs consideration at an operational level where an asset failure is not necessarily a service failure.

Redundancy (duplication) does not provide resilience. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system. Robust systems are designed to prevent failure. Resilience is about the ability to plan and prepare for adverse events, the ability to absorb the impact and recover quickly, and the ability as a community to adapt to a new environment.

We must consider managing and mitigating the risks to, and the resilience of, our infrastructure assets from natural disasters. Council acknowledges that resilience is not only about physical assets, it is also about the people. It includes but is not limited to:

- Connecting people and communities (neighbour to neighbour; education; access to household resilience items etc.)
- Supporting community organisations
- The built environment and asset systems which are robust

Adverse events, natural disasters, climate change and the related impacts cannot be avoided. As a result Council has to factor this into Long Term Planning, civil defence planning, and in determining the infrastructure requirements moving forward to ensure the community's expectations are met with regard to safe and reliable services and general wellbeing.

In order to improve resilience Councils approach will be to:

- Actively participate in CDEM planning and activities, at both regional and local levels
- Investigate options for alternative service provision and system redundancy
- Identify critical assets and ensure mitigation methods are developed
- Obtain insurance where this is deemed to be the most cost-effective approach

As part of Council's approach to improved resilience, work has been undertaken to ensure appropriate spares and generators are available during emergencies to quickly and efficiently restore service interruptions.

7.10 Designations for facilities

In 2023, as part of Council's District Plan review, we reviewed current designations for existing wastewater infrastructure and developed proposals for new designations for sites where new wastewater supply infrastructure has been located.

A designation is a planning instrument that provides long term authorisation under the District Plan for certain activities to occur at a designated site. Designations are recorded on the District Plan Maps. In the case of wastewater infrastructure, a designation enables the ongoing operation, installation, maintenance, replacement, alteration, upgrading and removal of infrastructure at the site without the need for a resource consent, provided the activity is consistent with the purpose and conditions of the designation.

A designation makes any work needed on the infrastructure more efficient and cost-effective, while also providing clarity to landowners around what activities relating to the infrastructure can be carried out by Council on their property, and exactly where. It also ensures adequate protection for the infrastructure under the Resource Management Act 1991.

7.11 Insurance

Council's Insurance Policy covers the following Wastewater Infrastructural Assets:

- Buildings
- Reservoirs and storage facilities
- Intakes and bores

Policy exclusions include:

- Underground services i.e. reticulation and associated fittings
- Property located on or in ponds

All contractors undertaking work, including professional services or advice, for Council or on behalf of Council, are required to produce evidence that they hold, as a minimum, adequate insurance covering:

- Public liability

- Professional indemnity
- Contract works

Local Authority Protection Programme Disaster Fund

Council is a member of the Local Authority Protection Programme Disaster Fund (LAPP), a cash accumulation mutual pool. Civic Assurance is the Fund's Administration Manager. The LAPP Fund was established in 1993, to help its New Zealand local authority members pay their share of infrastructure replacement costs for water, sewage and other uninsurable essential services damaged by natural disaster.

Central government's Disaster Recovery Plan states that beyond a threshold, central government will only pay 60% of restoration costs. Local government is responsible for the remaining 40% thus effectively moving part of the onus from the taxpayer to the ratepayer. Central government will only provide their 60% following a major catastrophe provided that the local authority can demonstrate it can meet the remaining 40% through:

- Proper maintenance
- The provision of reserve funds
- Effective insurance, or
- Participation in a mutual assistance scheme with other local authorities

Of the 78 local authorities in New Zealand, 22 are currently Fund members. Since the Canterbury earthquakes the Fund has rebuilt to more than $21m in reserves (2016) and provides protection (combined with Central Government funds) which caters for up to three events - at a value of up to $75M, $115M and $170M respectively. A third event will only be covered if one of the first two was an earthquake claim.

The number of members has reduced, resulting in less contributors, but it also means a lower reinsurance cost and the value of the Fund per member is higher.

The Fund is designed to cover local authority owned infrastructural assets which are considered generally uninsurable. These include:

- Water reticulation, treatment and storage.
- Sewage reticulation and treatment.
- Storm water drainage.
- Dams and canals.
- Flood protection schemes including stop banks, and
- Floodgates, seawalls and harbour risks such as buoys, beacons and uninsurable foreshore lighthouses
- Roads and bridges are not covered by the Fund as local authorities have access to New Zealand Transport Agency subsidies.

The Fund is designed as catastrophe protection only, covering serious disruptive loss or damage caused by sudden events or situations which may or may not involve the declaration

of a Civil Defence Emergency. Perils include but are not necessarily limited to earthquake, storms, floods, cyclones, tornados, volcanic eruption, tsunami and other disasters of a catastrophic nature such as a major gas explosion.

LAPP

Council is part of the Local Authority Protection Programme Disaster Fund (LAPP) which is a cash accumulation mutual pool with Civic Assurance as the Fund's Administration Manager.

The Fund was established in 1993 by Local Authorities to meet Government legislation brought out in 1991 and covers local authority owned infrastructural assets which are considered generally uninsurable. These include:

- Water reticulation, treatment and storage
- Wastewater reticulation and treatment
- Stormwater drainage
- Dams and canals
- Flood protection schemes including stop banks
- Flood gates, seawalls and harbour risks such as buoys, beacons and uninsurable foreshore lighthouses

Risk Pool

Risk Pool is a mutual fund created by New Zealand Local Authorities to provide long term, affordable legal and professional liability protection. The Fund was founded on the premise that, historically, the insurance industry has demonstrated inconsistency with the scope of cover, pricing, claims handling and capacity. Risk Pool commenced in 1997 and currently has 78 local authority members. Membership of Risk Pool is open to all local authorities. Contributions are levied according to each member's actual risk profile and claims experience.

Insurance Summary

Council's insurance summary is tabled below:

	Risk Pool		LAPP	AON Insurance (Agent)	
Components / Items	Public Liability	Professional Indemnity		Buildings & Contents	General Insurance
Reticulation			✓		
Treatment Plants and Pump Stations					✓
Electrical					✓
Mechanical					✓
Structural					✓
Staff	✓	✓			

Components / Items	Risk Pool		LAPP	AON Insurance (Agent)	
	Public Liability	Professional Indemnity		Buildings & Contents	General Insurance
Council Vehicles				✓	✓
Private property damage related to Wastewater damage	✓				

8 Lifecycle management

8.1 Overview

Lifecycle asset management focuses on management options and strategies from initial planning through to disposal, while considering all relevant economic and physical consequences. Effectively applying asset management principles will ensure reliable service delivery, reduce long-term ownership costs, and consequently lower service costs. A well-structured lifecycle management plan will reduce the long-term costs of ownership and in so doing reduce the service cost.

The Lifecycle Management Programme covers five key categories of work necessary to achieve the required outcomes. These key categories and goals are:

Table 8.1-1: Lifecycle Categories

Key Lifecycle Categories	Goal
Management Plan	
Management functions required to support the other Programmes	
Operations and Maintenance Plan	**To maintain the service potential of the assets and ensure that the assets achieve that potential**
To ensure efficient operation and serviceability of the assets so that they achieve their service potential over their useful lives. This includes the day-to-day work to keep the assets operating	
Renewal Plan	
To provide for the progressive replacement of individual assets that have reached the end of their useful lives (restores the original capacity)	
Development Plan	
To improve parts of the system currently performing below target service standards and to allow development to meet future demand requirements	**Meeting future demand** **Closing service gaps**
Disposal Plan	
To better plan for disposal of assets through rationalisation of asset stock or when assets become uneconomic to own and operate	**Appropriate disposal of assets**

8.2 Management strategies

Management and monitoring strategies set out the activities required to support the maintenance, operations, cyclic renewal and asset development programmes. These activities include:

- Strategic planning
- Data management and evaluation
- Business processes
- Monitoring
- Financial management.

The following management activities are used to achieve the desired outcomes.

Table 8.2-1: Management activities

Activity	Objective
Strategic Planning	
Strategic alignment	This AMP supports the achievement of the relevant Waitaki Community Outcomes
Service Levels	To develop Levels of Service aligned with Community Outcomes for community consultation
Human Resources	To develop the professional skills of the staff through adequate training and experiences
Data Management	
Asset Management	To optimise Asset Management Systems and develop functionality in line with business needs
Data Collection	Data collection programmes (condition, performance, asset registers) closely aligned with business needs and metadata standards implemented in accordance with documented quality processes
Quality Assurance	To ensure the GIS & AMS data is subject to defined quality assurance processes
Network Modelling	Development of computer-based hydraulic models of the water, and wastewater systems as required
Business Processes	
AMP Updates	To ensure the AMP is a strategic 'living' document through regular updating and 3 yearly reviews
Risk Management	Risk Management is an essential part of Asset Management and will be managed by the implementation of risk mitigation measures to maintain risk exposure at acceptable levels including, but not limited to, maintaining appropriate insurance cover, emergency response planning, condition monitoring of critical assets, preventative maintenance, use of telemetry, implementation of Water Safety Plans (WSP) and operations manuals and implementation of council's standards
Asset Valuation	To lay the foundation for several key asset management processes including asset renewal modelling and financial risk assessments
Statutory compliance	To identify legal obligations and ensure compliance
Quality Assurance	To document, review and implement quality processes
Monitoring	
Performance Measures	To ensure monitoring of the Levels of Service and reporting on mandatory Non-Financial Performance Measures
Compliance	To ensure water takes and discharges are within consent limits
Financial	
Budgeting	To ensure all expenditure programmes are in accordance with Council funding and budget preparation policies and procedures
Sustainable funding	To ensure the systems are managed in a financially sustainable manner over the long term

8.3 Operations and maintenance

The objective of maintenance and operational strategies is to maintain existing assets economically to:

- Achieve their service potential through efficient operation
- Achieve customer levels of service
- Achieve health and safety standards
- Reduce Council's exposure to risk due to unforeseen failure of assets

The operations and maintenance expenditure for assets is a significant proportion of the total lifecycle cost. Therefore, efficiencies in these day-to-day activities must be identified and implemented to lower the overall lifecycle cost. Council is committed to optimising the operation, maintenance and management of these assets.

Strategies have been adopted which are classed as "Non-Asset Strategies" that involve:

- Assessment of operation and maintenance vs replacement
- Review of service where it is more than the agreed Level of Service
- Demand management
- Policy
- Quality assurance
- Supervision
- Specifications
- Holding records

Maintenance work is defined as "all actions necessary for retaining an asset as near as practicable to its original condition but excluding rehabilitation or renewal". Maintenance strategies which apply to Council owned assets are classed as "Asset Strategies" and are divided into:

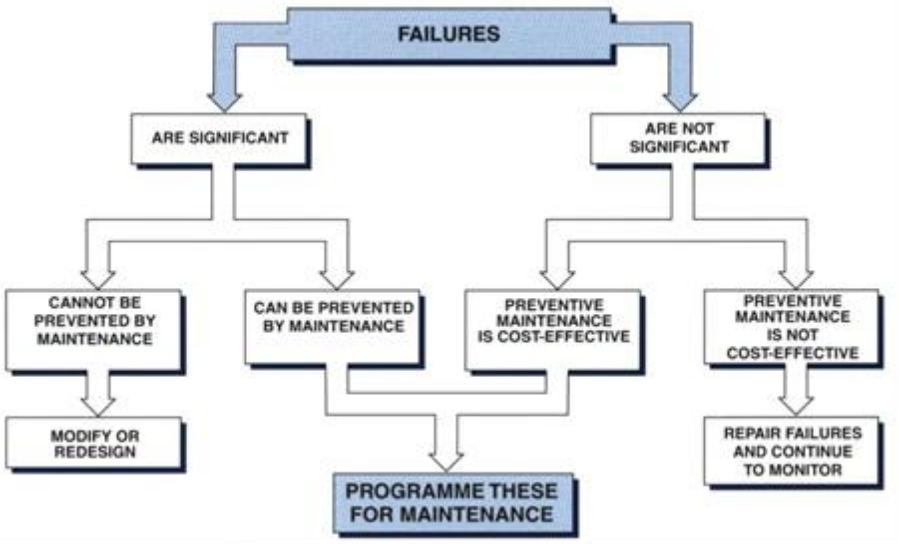
- Unplanned maintenance strategies
- Planned maintenance strategies

Unplanned maintenance includes all reactive maintenance such as repairs and modifications - usually following a reported fault or failure by the public, or which is obvious through a water leak (in the instance of a water supply network).

Planned maintenance includes preventive maintenance, servicing and condition monitoring. Planned maintenance is usually carried out at a given frequency either at fixed intervals or 'on condition' to preserve the required levels of service at a minimum cost. On Condition means that once an asset has degraded to a certain condition (detected through condition monitoring) a decision as to the most appropriate maintenance must be made. This does not mean once an asset has failed.

The process for the identification of whether planned maintenance strategies will be effective for an individual asset is as per the chart below (extracted from IIMM):

Figure 8.3-1: Maintenance Engineering Analysis Process



A recent development in maintenance planning is the Reliability Centred Maintenance approach which can be very effective for plant/equipment assets but not as effective for reticulation assets. Council is aware of this trend in maintenance planning and has applied this approach occasionally for facilities (reservoirs, treatment facilities, pump stations, SCADA).

Management and maintenance responsibilities

The day-to-day management of the Council wastewater systems is carried out by staff under a new organisational structure developed as part of Council's Transformation project. Management performance and performance of the water systems is monitored by Council and audited by Audit NZ.

Operations and maintenance are carried out by Council's appointed Contractor.

All maintenance data is recorded in the IPS AMIS database.

Maintenance and operational strategies

Table 8.3-1: Non-asset strategies

Strategy	Description
Alternative technologies	Alternative technologies are considered as appropriate
Approved materials	Only approved materials shall be used in the water supply to ensure the quality and longevity of the asset
Energy efficiency	Energy savings and management carried out in a logical manner for the facilities e.g. night pumping, etc.
Health and safety audits	Audits undertaken randomly to ensure all work completed by Council and Contractor staff complies with the Health and Safety in Employment Act and Traffic Management Regulations

Monitoring planned vs unplanned maintenance	The mix of planned vs unplanned maintenance will be analysed periodically to allow optimising of the activities
Network modelling	Network modelling is carried out to ensure renewal and capital works are programmed appropriately and assist in the identification of faults in the system when low pressures or flows are identified
Pressure monitoring	Pressure monitoring is carried out by Council staff to measure compliance with Levels of Service and calibrate network models
Supervision of facilities	Supervision of facilities is undertaken to ensure these buildings and critical assets are maintained appropriately
Telemetry system	The telemetry system will be utilised to assist in monitoring the wastewater demand profile, controlling operations and increase the knowledge of the asset operation therefore enabling efficiencies to be introduced
Wastewater meters	Wastewater meters are installed at several pump stations and treatment plants to provide accurate pump and flow records but not at all locations
Effluent quality	Routine sampling of effluent quality to comply with Resource Consent requirements

Table 8.3-2: Asset strategies (planned and unplanned)

Asset	Activity	Frequency	Comments
Facilities			
Treatment	Inspection	Daily	Or as appropriate
Pump stations	Inspection	Weekly	No formal programme exists for the cleaning and internal inspection of reservoirs and holding tanks. Cleaning and inspection is performed after WTP Upgrades.
Pumps	Tested	Monthly	
SCADA	Inspection	Annually	
Safe working load on lifting gear	Certification/Inspection	Annually	
Switchboards	Inspection by Electrician	Annually	District wide SCADA renewals are programmed over the life of this plan **(IBIS# 2464)**
Wastewater Mains			
Critical Mains	Inspection	Annually	TY Duncan and Moeraki Trunk Main into Treatment Plant IP 3W17 Current
Selected mains	Condition assessment by pipe sampling and CCTV inspections	As required	

Asset	Activity	Frequency	Comments
Mains	To proactively inspect, detect and repair wastewater reticulation pipes	Annual programme	Existing programme in budget
Mains	To proactively inspect, detect and repair wastewater reticulation pipes	Annual programme	Existing programme in budget
Siphons	Inspection		This is covered under the O & M Contract – Strategic Mains Inspection.
Pipe Bridges	Inspection		
Low grade, base of hills	Cleaning		
Cathodic Protection	Inspection	Annually	
Manholes			
Critical Manholes	Condition Inspection	Annually	Starting annually in 2027/28 (IBIS# 4575)
Vents	Inspections	Annually	
Connections			
Connections	Inflow and infiltration inspection	Annually	Programmed for 2025-34 (IBIS# 1201)
Unplanned Maintenance			
All	When a defect has been identified, remedial work is programmed before the risk and consequence of failure become unacceptable		
All	Priority is given to defects which are a safety hazard, likely to cause premature failure or severe economic deterioration		
All	Remain alert and prepared for emergency situations		
All	Respond to and repair failures by the most economic method available, making temporary repairs if major repairs or renewals are required		

Maintenance and operations manuals and procedures

Formal procedure manuals for headworks, treatment, reservoirs, and pump stations have been lacking in the past. These manuals are necessary to provide Council's engineers and contractors with appropriate documented emergency, operations, and maintenance procedures for Council's water assets.

Network performance monitoring

Council also records and monitors network performance through its asset management databases and GIS to ascertain parts of the network that are not performing as required.

Data recorded includes:

- The cost associated with each asset group (from the IPS work orders)
- Maintenance by failure mode – e.g. replace, repair, locate, flush
- Number of breaks by pipe material
- Location of work orders

Hydraulic Modelling

Hydraulic modelling of reticulation has progressed for the Oamaru wastewater network and the aim over the coming years is to progress to a more integrated and calibrated model of the complete systems.

Facilities condition assessments

No formal condition assessment has been performed on facility assets. However, facility site visits are conducted at specified frequencies (routine, weekly, monthly, quarterly, six monthly, and annually) under the Operation and Maintenance Contracts. These site visits include a visual assessment of facility asset components and all observations and actions taken documented in on site logbooks. This provides a repository of work performed and asset condition.

A condition assessment of all facilities is required to ensure that the renewal programme is:

- At an appropriate industry standard
- Complies with Audit requirements

CCTV inspections

Council has undertaken CCTV inspections of around 30 percent of the network to ascertain the condition of pipes. In the last three years, around 8km of wastewater pipeline inspected. Council has included an annual budget in the 2025-24 Long Term Plan for sewer main inspection and cleaning – that is, a cyclic CCTV, pigging and jetting programme **(IBIS# 4552).**

Inflow and infiltration

Infiltration refers to groundwater that seeps into sewer pipes through holes, cracks, joint failures, and faulty connections. Inflow is stormwater that quickly flows into sewers via roof drain downspouts, foundation drains, storm drain cross-connections, and through holes in manhole covers. Council undertakes smoke testing and other measures to help ascertain where inflow and infiltration may be impacting the network and has included an annual budget in the 2025-24 Long Term Plan for this **(IBIS# 1201)**.

8.4 Current Performance

Performance data includes but is not limited to:

- service quality (e.g. continuity, discharge quality)
- maintenance required

The maintenance performed is captured through the work order process. The service quality is captured through a range of methods

- discharge quality – monitoring as per resource consent requirements
- continuity – customer complaints and SCADA

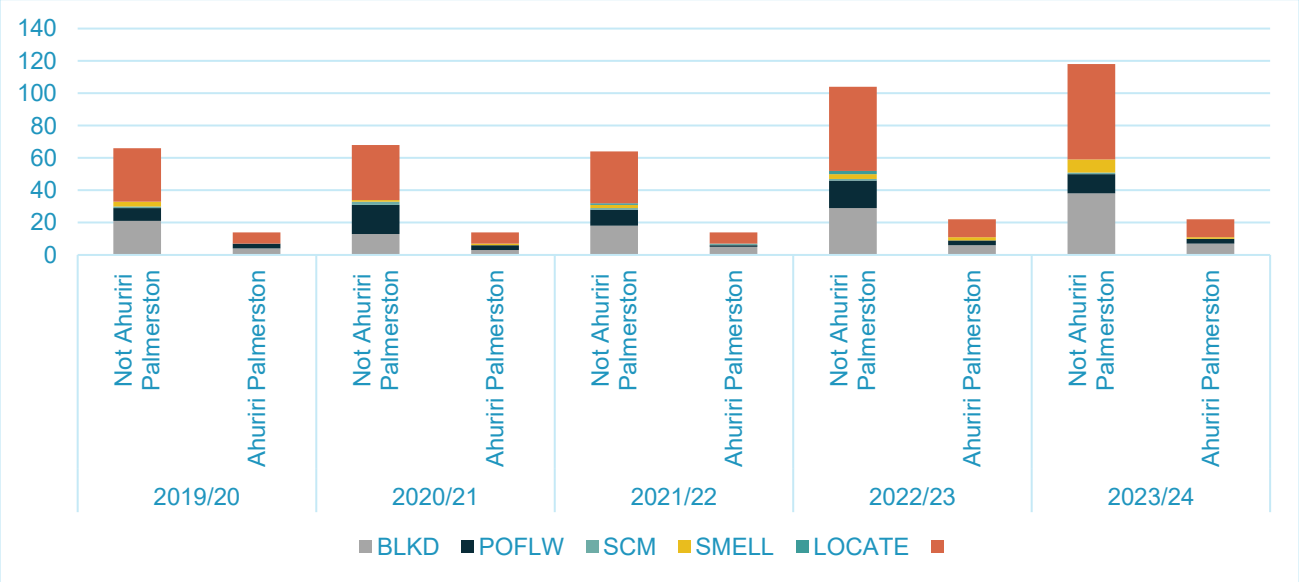
This information is continually monitored and recorded and provides the basis for evidence-based decision making. Facility performance can be linked to resource consents and effluent quality results. Section 9.16 discusses the resource consent monitoring and reporting indicating the facility operation is good.

Network performance trends

The following graphs provide an overview of the current performance of our wastewater systems.

The graph below shows faults reported to Council via our CRM system (Authority). CRM categories were changed during 2016/17 to Urgent (Ahuriri or Palmerston) and Urgent (Not Ahuriri or Palmerston), along with an 'odour' complaints category.

Figure 8.4-1: Faults reported (Authority) 2019/20 to 2023/24

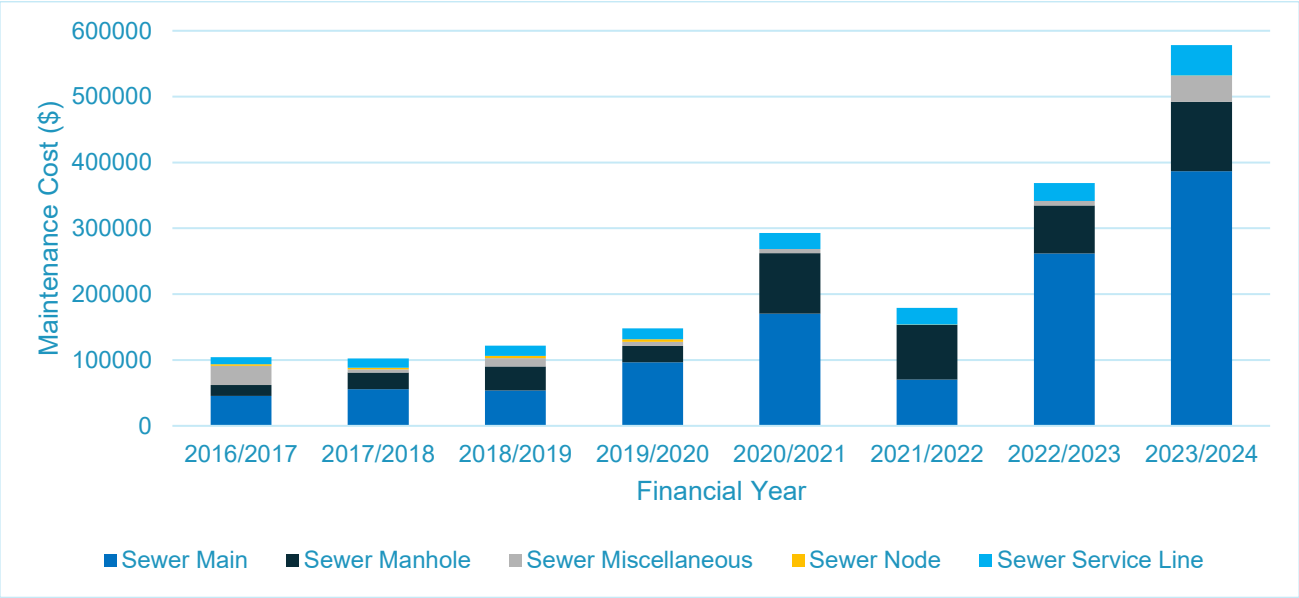


BLKD = blocked, **POFLOW** = public overflow, **SCM** = service cover missing

The graph below shows the cost associated with each asset (excluding facilities) and is taken from IPS work orders.

From this it is evident that sewer mains continue to account for much of our network maintenance costs. There was a significant spike in the maintenance costs during 2020/21, and again in 2022/23 and 2023/24, reflecting the impacts of Covid-19 and other national and international events that have escalated costs.

Figure 8.4-2: Maintenance by asset (IPS WO) 2016/17 to 2023/24



Non-Financial Performance Measures

Performance Measure 1 – system and adequacy

The number of dry weather sewerage overflows from Council's sewerage system expressed per 1,000 sewerage connections to Council's system.

Measure	Current performance 23/24 (22/23)	Target 2024-25	Target 2026-34
Number of dry weather overflows	**2.2/1000 - Achieved (1.3/1,000)**	<4/1,000 (<20 total)	<4/1,000 (<20 total)

Performance Measure 2 – discharge compliance

Compliance with Council's resource consents for discharge from its sewerage system are measured by the number of the following compliance actions received by Council:

- abatement notices
- infringement notices
- enforcement orders, and
- convictions.

Measure	Current performance 23/24 (22/23)	Target 2024-25	2026-34
Number of Abatement notices	**1* (2) - Not achieved**	Nil	Nil
Number of Infringement notices	**Nil (Nil)**	Nil	Nil
Number of Enforcement orders	**Nil (Nil)**	Nil	Nil
Number of Convictions	**Nil (Nil)**	Nil	Nil

*In 2023/24 there was one infringement notice for breach of an abatement notice, issued August 2023 relating to the Palmerston Wastewater Treatment Plant (EN.RMA.21.0075 – Palmerston WWTP). Work is being carried out at the treatment plant to meet the requirements of the abatement notice. For example, a new bore was installed on 24 May 2024 and will be used for future sampling.

Performance Measure 3 – fault response times

Where Council attends to sewerage overflows resulting from a blockage or other fault in Council's sewerage system, the following median response times are measured:

- Attendance time: from the time that Council receives notification to the time that service personnel reach the site, and
- Resolution time: from the time that Council receives notification to the time that service personnel confirm resolution of the blockage or other fault

Measure	Current performance 23/24 (22/23) (median)	Target (median) - hours 2024-25	2026-34
Attendance time	**0.9 (1.8) hrs - Achieved**	1 hr	1 hr
Resolution time	**3.3 (8.6) hrs - Achieved**	24 hrs	24 hrs

Performance Measure 4 – customer satisfaction

The total number of complaints received by Council about any of the following:

e. Sewage odour
f. Sewerage system faults
g. Sewerage system blockages, and
h. Council's response to issues with its sewerage system

This is expressed per 1,000 properties connected to Council's sewerage system

Measure	Current performance 23/24 (22/23)	Target 2024-25	2026-34
Total number of complaints about sewerage system	**9/1,000 - Achieved (9/1,000)**	<12/1,000	<12/1,000

8.5 Addressing performance issues

A previous audit of wastewater treatment plants to improve operational conditions and ensure optimum capacity identified several improvement items. These have been recorded, considered and appropriate actions assigned to the relevant parties i.e. internal staff and council contractor. These include but are not limited to:

- Compliance
    - Sampling and reporting
    - Sludge depth monitoring
    - Odour plan review
- Reactive
    - Replace valves
    - OWWTP screenings discharge performance
    - Overland flow harvesting
    - Determine purpose and form of O&M Manuals
- Planned
    - Develop process plan, key parameters and appropriate intervention
    - Review data collection and analysis to inform decision making

Several projects are scheduled over the next nine years aimed at addressing the performance of various components of the wastewater systems - including main renewals and upgrades, and overflow mitigation – to ensure service levels and consent compliance can be maintained. Notably, projects included in the first few years of the plan include a septage upgrade at the Oamaru Wastewater Treatment Plant **(IBIS# 4546),** site-specific screen installs **(IBIS# 4558)** and interim improvements at the Oamaru Wastewater Treatment Plan **(IBIS# 4474).**

Ōamaru Wastewater Treatment Plant Performance Study

The Ōamaru Wastewater Treatment Plant (OWWTP) was designed and constructed in the early to mid-1990's and has not undergone any significant upgrading since that time. The plant accepts raw wastewater (sewage) from the Oamaru township and outlying areas for biological treatment prior to discharge to Langdon Creek, immediately upstream of the creek mouth. The treatment system relies on natural processes that are vulnerable to temperature, sunlight, and wind. OWWTP operation and discharge is authorised by three individual resource consents that all expire in 2038.

Until recently, it was not clear how the wastewater treatment plant performs when considering the impacts of growth, Te Mana o te Wai, RMA reforms, National Policy Statements, and the aspirations of iwi, Taumata Arowai, and the general environmental and regulatory landscape.

An Oamaru Wastewater Treatment Plant Performance Study was completed in October 2023 and can be viewed here.

Theoretically, the treatment process can achieve a discharge that meets the consent requirements; however, recent performance has been poor, resulting in the issue of an abatement notice requiring immediate improvement of discharge quality. Investigation works undertaken in 2017 identified that the plant was overloaded when compared to traditional pond systems and aeration was used to address that. Since commissioning in 1994 the OWWTP, two significant improvement and operational initiatives have been carried out, being

the installation of additional aeration capacity and de-sludging of the main lagoons. Neither has had a lasting impact on treated discharge quality.

There is a very clear National trend towards more stringent compliance criteria and increasing need for the cultural rehabilitation of treated water and these outstrip the current performance of the WWTP by a very substantial margin.

Volumes are forecast to increase by a factor of 1.6 to 2.2 and organic load by a factor of 2.0 to 2.4. this means that the WWTP processes will need to accommodate an additional 3-6,000 m^3 ADWF volume and an additional 2-3T BOD_5 by year 2070.

The system is struggling to meet current treatment requirements and will be wholly inadequate to meet future demands of increasing volumes, organic load, and more stringent compliance criteria.

Trade Waste customers contribute around half of all organic load and are projected to contribute closer to two thirds by 2070. Opportunities to address Trade Waste load may yield significant value in improving current WWTP performance but would not be sufficient to address forecast future load on their own. Septage is thought to be a relatively minor contributor to total BOD_5 load.

The WWTP is sited close to the Pacific Ocean in an area of coastal erosion. By year 2070 erosion is forecast to have caused sufficient retreat as to compromise, or near compromise, the eastern-most wetland and place the Maturation ponds uncomfortably close to the ocean cliff. Some 11 ha of the currently designated WWTP area is expected to be lost along with some 2 ha of the WWTP site owned by Council but not designated for wastewater purposes.

Significant upgrading of the WWTP will be required to address increased wastewater volume and organic load, increasingly stringent environmental and cultural performance.

8.6 Renewal and replacement

Renewal is defined as the group of activities which renew, restore, rehabilitate or replace an existing asset to extend its economic life or service potential, and which does not increase the design capacity of the asset. Work which increases the design capacity of the asset is upgrade/development work.

Renewal strategy

In the past Council's renewal approach for water mains has been performance based, not condition based, with a priority weighting for critical assets. Typically, this resulted in an asset only considered for renewal after failure, especially low criticality assets.

A more sophisticated Renewal Planning Process is now undertaken. This identifies the core drivers and key challenges while considering likelihood of failure and the consequence of failure to determine the risk of failure. This guides the intervention strategy of 'when to':

- Renew
- Assess condition
- Validate data

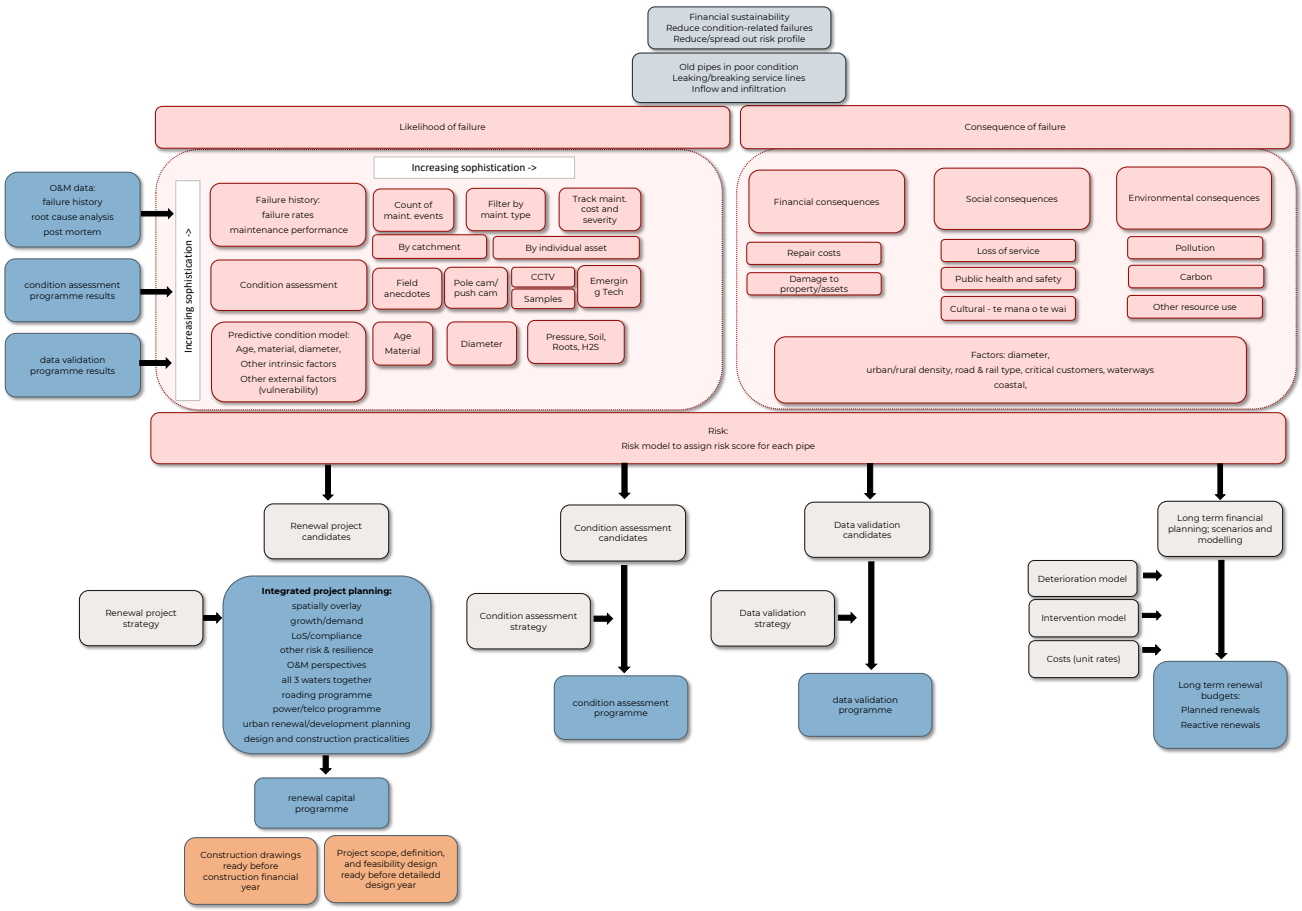
Refer to Section 7.6 for the renewal risk assessment.

Mains identified for renewal will be assessed against:

- A spatial overlay of Three Waters assets
- Growth and demand
- Levels of service, risk and resilience
- Operation and maintenance perspectives
- Roading programme of works
- Utilities programme (Power/Telco)
- Land development planning
- Design and construction practicalities

This process enables the prioritisation and finalisation of the renewal programme. The Renewal Planning Process is graphically represented below.

Figure 8.6-1: Renewal planning process



8.7 Capital project scoping and prioritisation

Budget for new assets and upgrading existing wastewater asset is included in the capital works programme, but only to the extent that there is available funding. Compliance with legislative and other requirements, and enabling growth, is a priority for Council – while also considering affordability for the community. This will be considered in detail when considering the outcomes of current and planned capacity studies.

New assets require consideration of factors such as risk, changing policy direction and legislative requirements, and to how to fund future operations, maintenance and renewal costs. Future depreciation costs must also be factored in when reviewing long term sustainability.

To ensure we can reduce overflows, comply with resource consent conditions and new environmental standards, several capital and renewal projects are planned for Oamaru and other wastewater networks over the life of the 2025-34 Long Term Plan (LTP). Interim improvements are budgeted for the Oamaru Treatment Plant for the first two years of the LTP, with a broader upgrade anticipated in advance of the consent renewal in 2038. The scope of this is yet to be understood until the Capacity Study for the plant is completed in 2025/26 **(IBIS# 2482)**.

Project identification and prioritisation

Projects are identified through various processes including but not limited to:

- Legislative compliance
- Levels of service
- Growth
- Renewal
- Operation and maintenance

Projects are then assigned to the individual staff to complete depending on their association or main project criteria. Most projects sit within multiple categories and responsibility is assigned based on the primary category and individual workloads.

While projects in year one of the updated LTP are highly relevant, over the following two years some become less or totally inappropriate. This is generally due to:

- Changes in legislation which remove the need for the work
- Better understanding of methods, costs and timing to deliver the project outcomes. This may be via other council business units, external agencies or through other projects.
- The community and council no longer supporting the work

It is vital that the projects database is updated periodically reflecting the changes for that period. Through this update process, the impact on working towards sustainable development may be followed.

Each capital project is subject to an 'Issues and Options' report. Development of new or updating existing tools and systems are included as improvement items in the AMP.

All projects including asset management projects are the responsibility of the associated team leader.

8.8 Asset disposal

All pipeline renewals have a corresponding disposal either through the pipes being removed and disposed of at the landfill, or being left in the ground if the water services are renewed using 'no-dig' techniques or the asset is replaced in a new location. A work order report records each disposal, and the details put in the IPS database. Similarly, replacement of components at treatment plants and pumping stations usually involves disposal of those items being renewed/upgraded.

Buried assets remain in the ground unless economic to remove or they pose a potential hazard. Council adopted a policy specifically for Asbestos Cement Pipe in 2023, which can be viewed here.

In all cases, asset disposal processes must comply with Council's legal obligations under the Local Government Act 2002, which covers:

- Public notification procedures required prior to sale
- Restrictions on the minimum value recovered
- Use of revenue received from asset disposal

Under the Water Activity no assets for disposal are eligible for sale.

When considering disposal options, all relevant costs of disposal will be considered, including:

- Evaluation of options
- Consultation/advertising
- Obtaining resource consents
- Professional service, including engineering, planning and legal survey
- Demolition/making safe
- Site clearing, decontamination, and beautification

Actual disposals 2019/20-2023/24

The following table lists the wastewater assets abandoned between 2019 to 2024 and shows the detail for 2024.

Figure 8.8-1: Disposals since 2019/20

Disposal	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Wastewater assets	$ 63,475	$ 149,628	$ 331,930	$ 34,435	$ 272,836

Asset	2023/2024($)	% of Total
Consent	$ 24,229	62
Equipment	$ 789,461	2
Sewer main	$ 376,204	30
Manhole	$ 43,673	3
Sewer node	$ 12,024	1
Service line	$ 27,591	2
Total	**$ 1,273,182**	**100%**

The above assets are actual disposals as a result of renewals/replacements and not due to changes within the GIS or valuation data. This information was extracted from the IPS AMIS database.

9 Financial summary

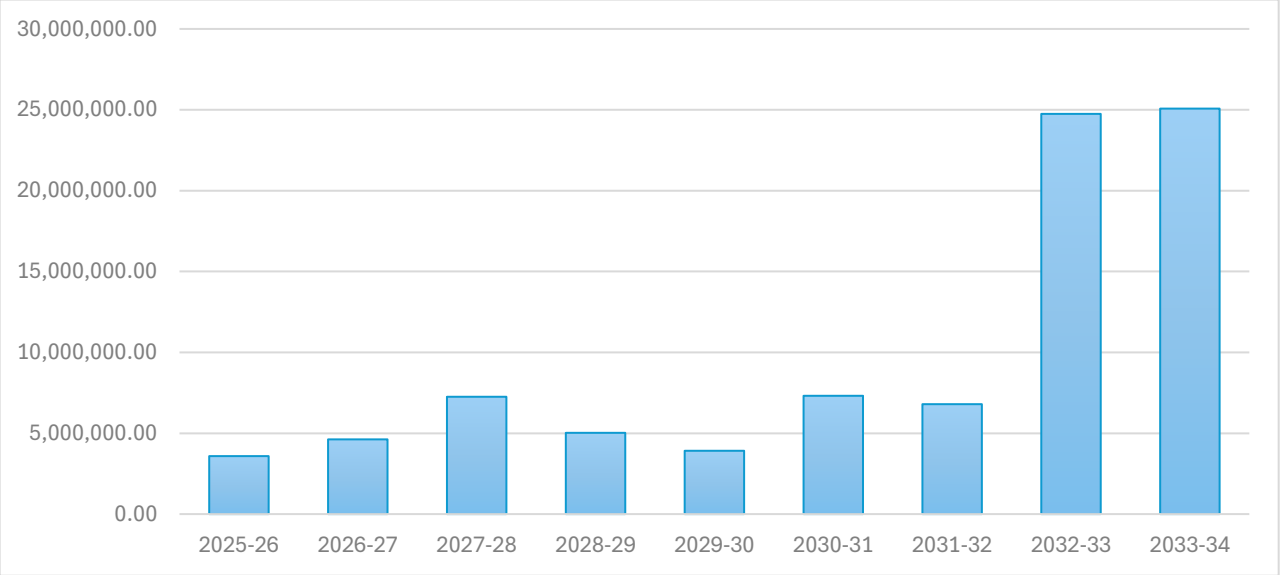
Council has planned a prudent financial approach to managing its assets and services. This section provides a summary of the total value of the activity and the investment that the Council has planned to make over the next 10 years.

Note that budgets for Operations and Maintenance will remain as for 2024/25 and are only included to 2027 when Council expects to confirm and implement its plan for the future delivery of Water Services as part of the Government's *Local Water Done Well.*

9.1 Summary of CAPEX and renewals

A full outline of Council's capital, operational and renewals projects for Wastewater is included as Appendix 2.

Figure 9.2-1: Total wastewater capital and renewal projects 2025-34



9.2 Statement of operational and maintenance budgets

Operational budget	LTP Budget (000's)	
	2025/26	2026/27
Payments to staff and suppliers	3,491	5,451
Finance costs	347	546
Internal charges and overheads applied	39	49
	3,876	**6,045**

9.3 Summary of projected revenue and funding sources

Sources of operating funding	LTP Budget (000's)	
	2025/26	2026/27
General rates, uniform annual general charges, rates penalties	15	25
Targeted rates	2,468	2,603
Fees and charges and other revenue	460	460
Local authorities fuel tax, fines, infringement fees, and other receipts	407	406
	3,349	**3,495**

Sources of capital funding	LTP Budget (000's)	
	2025/26	2026/27
Development and financial contributions	244	276
Increase (decrease) in debt	3,868	7,045
	4,112	**7,321**

9.4 Funding details

Financial Strategy

Council drafted its new Financial Strategy in September 2024, which was adopted by Council in December 2024.

Overall, within the Strategy, Council's focus is on delivering good quality service that meets the changing needs of the community, while at the same time ensuring rates affordability and financial flexibility, by focusing on efficiency and effectiveness to maximise value for money and limit the use of debt.

This will be achieved by a variety of measures with the heart of the financial strategy being:

- Reviewing what is required to deliver Council's existing services, with the aim of achieving better value for money.
- Using Council's assets for their maximum possible life, but also appreciating that community needs, safety, and legal requirements are not compromised.
- Deciding on any new initiatives or increased levels of service in a very selective way, with a focus on delivering core services and infrastructure.

This is a continuation of the key features of the previous strategy. However, there is now a much greater need to achieve these to ensure affordability and sustainability over the life of the Long Term Plan and beyond.

Funding Impact Statement

The Council's Funding Impact Statement (FIS) for this activity is included in the executive summary of this AMP. It summarises in one place how this activity will be funded and how those funds will be applied over the next 10 years. The Funding Impact Statement is included in Appendix 1.

Project Drivers

All expenditure must be allocated against at least one of the following project drivers:

- Operation and Maintenance: operational activities that do not involve the renewal or upgrade of assets, or work that is necessary to provide on-going services at the agreed levels.
- Renewals: significant work that restores or replaces an existing asset towards its original size, condition or capacity.
- Increase Level of Service: works to create a new asset, or to upgrade or improve an existing asset, beyond its original capacity or performance.
- Growth: works to create a new asset, or to upgrade or improve an existing asset, beyond its original capacity or performance to provide for the anticipated demands of future growth.

This is necessary for two reasons as follows:

1. Schedule 13(1) (a) and section 106 of the Local Government Act require the Council to identify the total costs it expects to have to meet relating to increased demand resulting from growth when intending to introduce a Development Contributions Policy.
2. Schedule 10(2)(1)(d)(l)-(iv) of the Local Government Act requires the Council to identify the estimated costs of the provision of additional capacity and the division of these costs between changes to demand for, or consumption of, the service, and changes to service provision levels and standards.

All new works have been assessed against these project drivers. Some projects may be driven by a combination of these factors and an assessment has been made of the proportion attributed to each driver.

Rating

The general approach to funding of the annual costs of Council's wastewater supplies starts from the premise that those who benefit (either directly or indirectly) should pay – termed 'targeted rating'.

The current approach is that costs for the service are recovered directly from the households served by the individual schemes. Council will use several different rating tools to charge the targeted rates for wastewater. These tools are:

- A targeted rate for wastewater that will be charged based on the number of connections the rating unit has to the system.
- A targeted rate for treatment of wastewater to an appropriate standard, based on the number of connections the rating unit has to the system.
- A targeted rate to fund the cost of the reticulation network. This will be charged to each connected rating unit.

Table 9.5-1: Wastewater rates, fees and charges 2025/26

Zone	Sewage rates (per pan, incl GST)
Duntroon - Closed to new applications	375.00
Kurow	398.00
Lake Ohau	340.00
Moeraki - if paying availability rate 50% off DC applies	1345.00
Oamaru - includes Kakanui and Weston	305.00
Omarama	503.00
Otematata	359.00
Palmerston	678.00

Trade Waste

Activity	Basis for charge	2024/25 charges (incl GST)
Annual minimum charge		$1060.00
Collection	Per litre/second	$2,960.00
Treatment	Per kg BOD per day	$230.00
Monitoring	Per year	$2,550.00
Tankered Trade Waste	Per year (for each access key)	$10,880.00

Harmonisation

Council is aware that upgrading and maintaining the infrastructure assets will come at a significant cost. There are concerns that people relying on fixed incomes, such as a pension, might not be able to afford the spikes in rates that may happen in future, especially those serviced by smaller systems. One way of addressing this is to spread the cost of each utility across all the systems so that all users pay the same for each utility service. Thus, every town will have the same level of service and rate for that service. This will spread the costs smoothly over time and insulate the towns from sudden costly rate increases when capital work is needed. It also ensures the sustainability of the district in the future.

Price level changes & Forecast Financial Statements

Accounting rules require that Council adjust its forecast financial information to take account of the impact of inflation. This should more fairly indicate rates movements, particularly in the first three years of the Plan. Council has used forecast price level changes for key categories of expenditure as they affect local government.

These price level adjustments have been applied to all core budgets and projects. To take account of the impact of revaluation movements, these have also been applied to depreciation expenses.

The forecast financial statements have been prepared in accordance with the Local Government Act 2002. In accordance with the Act the first 3 years have been prepared in detail and the following 6 years in outline.

Accounting rules require that Council adjust its forecast financial information to take account of the impact of inflation. This should more fairly indicate rates movements, particularly in the first three years of the Plan. These price level adjustments have been applied to all core budgets and projects. To take account of the impact of revaluation movements these have also been applied to depreciation expenses.

The LTP is based on current Council policies. The forecast financial statements are prospective information. Actual results are likely to vary from the information presented, and the variations may be material.

Lifecycle funding

It is critical that equity of funding for renewals between current and future (intergenerational) users occurs. While it is possible that some original supply members will stay for 20 or more years, having contributed to both the original capital costs and 20 years renewals, this will only account for the lower cost, and high wear-and-tear items renewals. Pipes, reservoirs, wells and the like have comparatively higher costs and would be renewal funded intergenerational e.g. 50-100 years away.

The closer a supply gets to large infrastructure renewals, the more it should focus on confirming the remaining useful life. Criticality (renewal strategy) assessment is the cornerstone of this programme. The renewal value charged is reviewed on a 3-yearly basis at the time of asset revaluation.

9.5 Financial Forecasting

Council holds actual and budget figures for a number of years. These historical figures provide a robust basis for calculation and estimating future costs.

Renewals

Renewal costs are funded through targeted rates (depreciation component), which provides for the upkeep of the asset.

Capital Projects

Capital projects are funded from:

- Loans (internal or external)
- Depreciation
- Financial contributions (development)
- Government subsidies (where appropriate)

Sensitivity

A sensitivity analysis is done with every capital project by the Finance unit to determine the rates impact. The sensitivity analysis tests the robustness of the results while considering the uncertainties. This provides improved understanding of the inputs and outputs while identifying potential errors.

Internal analysis is performed by Council during facility equipment renewals e.g. pumps, etc. Pipe renewals are depreciation funded and therefore have no direct rates impact.

Development Contributions

Development Contributions are collected by Council to ensure roads, water supply and wastewater disposal infrastructure can continue to support the needs of the community as it grows, and that it is paid for by those that generate the additional demand.

Development contributions are used to fund new or additional infrastructure, or to increase the capacity of existing infrastructure.

The current policy was adopted on 15 June 2021 and is included with Council's Funding and Financial Policies and can be viewed here.

Development Contributions are reviewed regularly and subject to change on 1 July each year. The current policy allows Council to require contributions of money when applicants are granted resource consents or building consents, or when service connections are approved.

Table 9.6-1: Development Contribution rates for wastewater 2024-35

Wastewater		
Connections (including GST)		
Standard new 110mm connection	$860.00	
New 150mm connection	Quoted	
Disconnection	Quoted	
Development Contributions (incl GST)	**Rates (incl GST)**	
Urban (Town)	Per HEU	Sewerage Rates (per Pan)
Duntroon - Closed to new applications	-	$375.00
Kurow	$414.00	$398.00
Lake Ohau	NIL	$340.00
Moeraki - if paying availability rate 50% off DC applies	$9,264.40	$1345.00
Oamaru - includes Kakanui & Weston	$2,775.00	$305.00
Omarama	$6,591.80	$503.00
Otematata	$1,301.80	$359.00
Palmerston	$3,067.00	$678.00

Notes:

Development Contributions are contributions defined by the provisions of Part 8 Subpart 5 and Schedule 13 of LGA 2002. Contributions are assessed based on the fiscal implications of growth.

As the sequence of development is not always consistent, development contributions shall be required at the first available opportunity. At each and every subsequent opportunity the development will be reviewed and additional contributions required if the units of demand assessed for the development exceed those previously paid for.

Development contributions are triggered on the granting of:

- A resource consent
- A building consent
- An authorisation for a service connection for sewer or stormwater
- An authorisation for a service connection for water, including additional units of water by volume supplied to existing consumers
- An application for a Certificate of Acceptance

The development contributions for the amalgamated water schemes are based on a weighted average approach, and on the premise that 1 HEU is equivalent to 1 Unit (1 point), except where otherwise stated

Council applies a differential system to ensure that different types of development, such as rural residential, commercial, accommodation, primary industry/dairy contribute fairly to capital expenditure for growth.

Connection costs and annual rates charges also apply. Remissions apply in some cases.

Note that Development Contributions differ from Financial Contributions. Financial Contributions can be charged as a condition of a resource consent under Section 108 of the Resource Management Act 1991. They contribute towards the expansion of the District's reserves, community facilities and other infrastructure where additional demand is created and Development Contributions don't apply.

Financial Contributions		
Water Supply	**Wastewater**	**Stormwater**
Financial contributions where appropriate. Environmental effects – Chapter 14 District Plan. Environmental Considerations	Financial contributions where appropriate. Environmental effects – Chapter 14 District Plan. Environmental Considerations	Financial contributions where appropriate. Environmental effects – Chapter 14 District Plan. Environmental Considerations
Notes:		
Financial Contributions are defined by Section 108 of the Resource Management Act (RMA) 1991 and collected using the provisions of the District Plan. Contributions are assessed based on the environmental effects of growth. These are defined in Chapter 14 of the Waitaki District Plan. Chapter 14 of the District Plan is particularly relevant for contributions of a non-fiscal nature. These will generally be of an environmental nature, including public access, provision of parking and protection of environmentally sensitive sites		

9.6 Vested assets

The Council receives assets that are vested in it, but there has been no direct exchange of funds. In the case of infrastructural assets, the value of exchange is deemed to be at the current valuation at time of issue of the 224 Certificate. For all donated and subsidised assets, the initial value recorded is the current valuation at the date of acquisition.

9.7 Asset valuations

Councils are required to value and depreciate their assets regularly. The most recent full valuation of the treatment facilities and reticulation systems for the Three Waters was carried out for 30 June 2024.

This revaluation was undertaken by Waitaki District Council and Peer Reviewed by WSP.
We certify that the valuations summarised below have been completed in accordance with the following:

- NZ Infrastructure Asset Valuation and Depreciation Guidelines Second Edition
- Public Benefit Entity International Public Sector Accounting Standard 17 Property, Plant and Equipment (PBE IPSAS17) (Replacement for NZ IAS 16) and,
- The Local Government Act 2002

Table 9.8-1: Summary asset valuation results for 2024

	Replacement Cost ($)	Depreciated Replacement Cost ($)	Annual Depreciation ($)
Wastewater	282,749,279	183,289,906	2,720,268
Stormwater	57,550,017	29,871,276	493,445
Water	272,042,498	164,007,210	4,424,119
Total Utilities	**612,341,795**	**377,168,392**	**7,637,832**

The valuation is based on an accurate and substantially complete asset register with appropriate replacement unit rates and effective lives.

The lives are generally based on NZ Infrastructure Asset Valuation and Depreciation Guidelines, or where appropriate, a new life is adopted.

The component level of the assets is appropriate to calculate depreciation separately for those assets that have different useful lives and the unit rates for these reflect the current market value for the district conditions.

Valuation comparison

The following are tables detailing the movement in valuation from 2021 to 2024. The following table is the overall summary of the Total Utilities, as well as the individual Utilities.

Table 9.8-1: Overall valuation comparison

	2024			2021			Movement		
Asset type	Replacement cost	Depreciated replacement cost	Annual Depreciation	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation	Replacement Cost	Depreciated Replacement Cost	Annual depreciation
Sewer	282,749,279	183,289,906	2,720,268	189,226,962	129,341,036	1,693,194	49%	42%	61%
Storm	57,550,017	29,871,276	493,445	38,535,147	20,719,505	327,745	49%	44%	51%
Water	272,042,498	164,007,210	4,424,119	176,556,717	104,065,115	2,698,500	54%	58%	64%
Total	612,341,795	377,168,392	7,637,832	404,318,826	254,125,656	4,719,439	**51%**	**48%**	**62%**

Asset lives and assumptions

The base life of an asset is set during the valuation process to identify what is believed to be the average length of time that the asset will be capable of providing the required level of service. The setting of the base life is the factor in the valuation process that directly affects the annual depreciation requirement for the asset.

The expected base lives in the reticulation for water, sewer and stormwater are reviewed as part of each valuation to align the expected lives, and the method of setting these, with the renewal decision making practice.

The review process and assumptions are detailed within the 2024 Asset Valuation.

Table 9.8-2: Asset base life for wastewater

Pipe material	Base life	Assumptions
PVC pipe	100	
PE pipe	100	
AC pipe	120	100mm and greater AC pipe is proving to perform well in the Waitaki environment where there is low ground water and nonaggressive water
Concrete pipe	120	
Earthenware pipe	100	

Pipe material	Base life	Assumptions
Manhole	100-120	Manholes take the life of the main they are attached to as they are managed as part of the main for renewal
Rodding eye	100-120	Rodding Eyes take the life of the main they are attached to as they are managed as part of the main for renewal
Sewer Service Lines	100-120	Sewer Service Lines (the Y connection only) take the life of the main they are attached to as they are managed as part of the main for renewal
Flush Tank	100	
Slip Joint	100-120	Slip Joints take the life of the main they are attached to as they are managed as part of the main for renewal
Sewer valve	50	

Asset valuation

The following table reflects the adopted General Ledger Component hierarchy that is utilised for managing the assets. Historically it was split to a reticulation and network/facilities level.

Table 9.8-3: Asset valuation by network 2024

Scheme	Asset Type	Count of Assets	Length (m)	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Duntroon Sewer Scheme	Sewer - Duntroon Septic Tank	1	1	42,002	2,940	**840**
Duntroon Sewer Scheme	Resource Consent	1	1	31,992	22,394	**6,398**
Duntroon Sewer Scheme	Sewer Main	10	348	197,769	98,719	**1,978**
Duntroon Sewer Scheme	Sewer Manhole	9	9	80,680	40,273	**807**
Duntroon Sewer Scheme	Sewer Service Line	3	3	2,025	1,011	**20**
Duntroon Sewer Scheme Total		**24**	**362**	**354,469**	**165,337**	**10,043**
Kurow Sewer Scheme	Sewer - Kurow Treatment Plant	15	9876	7,467,535	7,277,773	**10,786**
Kurow Sewer Scheme	Resource Consent	1	1	110,502	48,240	**4,420**
Kurow Sewer Scheme	Sewer Main	102	8083	5,278,390	3,299,120	**52,784**
Kurow Sewer Scheme	Sewer Manhole	42	42	464,608	291,353	**4,620**
Kurow Sewer Scheme	Sewer Node	60	60	135,002	84,379	**1,350**
Kurow Sewer Scheme	Sewer Service Line	231	231	155,927	101,086	**1,615**
Kurow Sewer Scheme Total		**451**	**18293**	**13,611,964**	**11,101,951**	**75,576**
Lake Ohau Sewer Scheme	Sewer - Lake Ohau Treatment	6	6649	6,777,315	6,477,995	**7,457**
Lake Ohau Sewer Scheme	Resource Consent	1	1	110,502	15,470	**4,420**
Lake Ohau Sewer Scheme	Sewer Main	50	2906	1,679,865	992,114	**16,799**
Lake Ohau Sewer Scheme	Sewer Manhole	35	35	339,894	196,466	**3,381**

Scheme	Asset Type	Count of Assets	Length (m)	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Lake Ohau Sewer Scheme	Sewer Node	12	12	31,350	19,914	**314**
Lake Ohau Sewer Scheme	Sewer Service Line	136	136	91,801	57,026	**918**
Lake Ohau Sewer Scheme	Water Backflow	1	1	999	370	**40**
Lake Ohau Sewer Scheme Total		**241**	**9740**	**9,031,727**	**7,759,355**	**33,328**
Moeraki Sewer Scheme	Moeraki Wastewater Land Disposal Area	70	282	865,740	774,129	**23,000**
Moeraki Sewer Scheme	Sewer - Moeraki Beach Ps	17	21	282,600	198,394	**13,493**
Moeraki Sewer Scheme	Sewer - Moeraki Camping Grd Ps	16	83	300,059	212,692	**12,735**
Moeraki Sewer Scheme	Sewer - Moeraki Coronation Ps	4	6	130,784	24,526	**5,075**
Moeraki Sewer Scheme	Sewer - Moeraki David St Ps	18	117	333,568	230,102	**14,629**
Moeraki Sewer Scheme	Sewer - Moeraki Hall Ps	15	82	270,943	70,555	**10,242**
Moeraki Sewer Scheme	Sewer - Moeraki Lighthouse Ps	15	73	217,585	65,110	**8,769**
Moeraki Sewer Scheme	Sewer - Moeraki Motel Ps	16	76	249,145	93,095	**10,096**
Moeraki Sewer Scheme	Sewer - Moeraki Treatment Plant	89	6824	3,006,401	2,597,641	**28,685**
Moeraki Sewer Scheme	Sewer - Moeraki Wharf Ps	17	77	250,145	84,123	**10,116**
Moeraki Sewer Scheme	Resource Consent	2	2	161,689	125,753	**5,883**
Moeraki Sewer Scheme	Sewer Main	161	14554	6,360,757	4,978,131	**63,608**
Moeraki Sewer Scheme	Sewer Manhole	49	49	469,085	352,108	**4,677**
Moeraki Sewer Scheme	Sewer Node	103	103	239,403	187,611	**2,852**
Moeraki Sewer Scheme	Sewer Service Line	167	167	112,727	86,027	**1,146**
Moeraki Sewer Scheme	Water Backflow	8	8	7,992	2,954	**320**
Moeraki Sewer Scheme Total		**767**	**22523**	**13,258,621**	**10,082,950**	**215,325**
Oamaru Sewer Supply	Sewer - Bluestone Heights Ps	12	28	201,903	113,569	**8,698**
Oamaru Sewer Supply	Sewer - Kakanui Gees Road Ps	11	32	199,703	135,234	**8,606**
Oamaru Sewer Supply	Sewer - Kakanui Harbour Ps1	12	109	269,237	90,609	**11,108**
Oamaru Sewer Supply	Sewer - Kakanui Ps3	11	115	445,308	143,504	**18,457**
Oamaru Sewer Supply	Sewer - Kakanui Psv Site	1	1	11,025	7,717	**368**
Oamaru Sewer Supply	Sewer - Kakanui River Ps2	9	106	253,100	66,912	**10,169**
Oamaru Sewer Supply	Sewer - Kakanui Treatment Plan	2	7400	7,600,000	7,308,014	**8,000**
Oamaru Sewer Supply	Sewer - Kakanui Water Hammer	2	21	13,000	3,424	**260**
Oamaru Sewer Supply	Sewer - Oamaru (Potable Water)	4	69	134,507	32,999	**4,507**
Oamaru Sewer Supply	Sewer - Oamaru Beach Rd Ps	26	258	956,865	496,116	**34,518**
Oamaru Sewer Supply	Sewer - Oamaru Harbour Ps	12	121	328,422	218,714	**13,247**
Oamaru Sewer Supply	Sewer - Oamaru Humber St Ps	15	124	459,095	255,290	**17,163**

Scheme	Asset Type	Count of Assets	Length (m)	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Oamaru Sewer Supply	Sewer - Oamaru Kelk Rd Ps	10	80	315,186	246,327	**12,337**
Oamaru Sewer Supply	Sewer - Oamaru Maudes Rd Ps	9	79	258,288	74,853	**9,528**
Oamaru Sewer Supply	Sewer - Oamaru Memorial Ps	10	119	283,391	97,963	**10,382**
Oamaru Sewer Supply	Sewer - Oamaru Orwell St Ps	36	1753	3,574,052	1,406,717	**99,469**
Oamaru Sewer Supply	Sewer - Oamaru Regina Ln Ps	23	347	723,644	418,539	**25,283**
Oamaru Sewer Supply	Sewer - Oamaru Spivey Place Ps	17	31	345,433	243,144	**12,452**
Oamaru Sewer Supply	Sewer - Oamaru Treatment Plant	224	477964	57,053,489	49,067,982	**406,253**
Oamaru Sewer Supply	Sewer - Oamaru Waireka Ps	12	89	316,778	203,943	**11,983**
Oamaru Sewer Supply	Sewer - Oamaru Weston Pond&Ps	17	8092	2,733,023	1,959,328	**24,057**
Oamaru Sewer Supply	Sewer - Oamaru Weston Rd Ps	8	68	206,818	62,772	**8,209**
Oamaru Sewer Supply	Sewer - Pukeuri Stock Truck Effluent Site	2	2	19,058	9,534	**1,271**
Oamaru Sewer Supply	Spare Assets Sewer	2	2	29,505	28,588	**1,475**
Oamaru Sewer Supply	Resource Consent	4	4	315,716	128,225	**9,020**
Oamaru Sewer Supply	Sewer Main	2177	142644	92,199,797	42,780,141	**858,693**
Oamaru Sewer Supply	Sewer Manhole	1574	1574	15,969,669	6,858,301	**152,535**
Oamaru Sewer Supply	Sewer Node	491	491	1,094,864	390,665	**12,290**
Oamaru Sewer Supply	Sewer Service Line	5891	5891	4,549,366	1,667,147	**50,400**
Oamaru Sewer Supply	Water Backflow	21	21	26,936	9,194	**1,077**
Oamaru Sewer Supply Total		**10645**	**647635**	**190,887,176**	**114,525,463**	**1,841,816**
Omarama Sewer Scheme	Sewer - Omarama Ahuriri Dr Ps	13	27	377,670	195,254	**15,668**
Omarama Sewer Scheme	Sewer - Omarama Camp Ps	11	44	250,369	74,212	**9,870**
Omarama Sewer Scheme	Sewer - Omarama Treatment Pl	67	12313	8,594,496	8,083,929	**52,858**
Omarama Sewer Scheme	Omarama Wastewater Land Disposal Area	9	2432	1,504,000	1,384,160	**30,080**
Omarama Sewer Scheme	Resource Consent	1	1	110,502	92,821	**4,420**
Omarama Sewer Scheme	Sewer Main	122	7304	4,583,866	2,960,673	**40,246**
Omarama Sewer Scheme	Sewer Manhole	93	93	944,972	619,699	**8,368**
Omarama Sewer Scheme	Sewer Node	28	28	58,501	37,684	**539**
Omarama Sewer Scheme	Sewer Service Line	255	255	173,118	114,309	**1,583**
Omarama Sewer Scheme	Water Backflow	2	2	3,102	1,136	**124**
Omarama Sewer Scheme Total		**601**	**22499**	**16,600,596**	**13,563,877**	**163,756**
Otematata Sewer Scheme	Sewer - Otematata Ps And Treat	85	4161	4,220,717	2,332,922	**61,135**
Otematata Sewer Scheme	Resource Consent	2	2	110,501	42,198	**3,946**

Scheme	Asset Type	Count of Assets	Length (m)	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Otematata Sewer Scheme	Sewer Main	198	10717	6,454,149	3,097,739	**54,868**
Otematata Sewer Scheme	Sewer Manhole	169	169	1,630,930	808,313	**13,998**
Otematata Sewer Scheme	Sewer Node	29	29	65,251	31,494	**582**
Otematata Sewer Scheme	Sewer Service Line	454	454	309,425	156,961	**2,754**
Otematata Sewer Scheme Total		**937**	**15532**	**12,790,972**	**6,469,627**	**137,284**
Palmerston Sewer Scheme	Sewer - Palmerston Ps (Eds)	5	114	248,335	35,674	**8,261**
Palmerston Sewer Scheme	Sewer - Palmerston Stour St Ps	12	192	711,210	284,750	**23,544**
Palmerston Sewer Scheme	Sewer - Palmerston Treatment P	48	19100	10,200,875	9,286,317	**46,740**
Palmerston Sewer Scheme	Palmerston Ww Land Disposal Area	184	21061	2,638,635	2,417,710	**54,678**
Palmerston Sewer Scheme	Resource Consent	1	1	110,502	51,967	**4,420**
Palmerston Sewer Scheme	Sewer Main	245	16779	10,043,400	6,135,451	**85,905**
Palmerston Sewer Scheme	Sewer Manhole	180	180	1,810,693	1,130,567	**15,446**
Palmerston Sewer Scheme	Sewer Node	58	58	130,502	76,067	**1,114**
Palmerston Sewer Scheme	Sewer Service Line	446	446	315,454	200,276	**2,866**
Palmerston Sewer Scheme	Water Backflow	4	4	4,149	2,567	**166**
Palmerston Sewer Scheme Total		**1183**	**57935**	**26,213,754**	**19,621,346**	**243,141**
Wastewater Total		**14849**	**794520**	**282,749,279**	**183,289,906**	**2,720,268**

Depreciation

Background

Section 100 subsection 1 of the LGA 2002 states: "A local authority must ensure that each year's projected operating revenues are set at a level sufficient to meet that year's projected operating expenses."

This requirement to set operating revenues at a level sufficient to meet operating expenses includes depreciation, as Section 111 obliges councils to follow generally accepted accounting practice (GAAP) which includes a definition of "operating expenses." As depreciation is defined as an operational expense it must be included with other operational costs, including interest, when a council sets its operating revenue.

GAAP defines depreciation as follows:

Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.

Therefore, deprecation measures the annual consumption of an asset so that the reduction in its value is accounted for as it is consumed. The purpose of depreciation is not to provide for the replacement of the asset, although this is a consequence of depreciation. Deprecation

ensures that each year's ratepayers pay their way for the consumption of the assets. For example, if an asset will last for 10 years, the annual depreciation charge is 1/10th of the value of the asset.

The basic value of an asset reduces in accordance with the wearing out or consumption of benefits over the asset's life arising from use, the passage of time, or obsolescence. This reduced value is called the depreciated value. It is accounted for by the allocation of the cost (or revalue amount) of the asset less its residual value over its useful life.

The decline in service potential is thus provided on a straight-line basis on all fixed assets. Therefore, Council complies with the requirements of FRS3 and NZIAS 16 and calculates depreciation for assets.

Asset lives

Asset expected lives are tabled in the Asset Valuation. Assets are installed and maintained to Council standards and specifications. These standards are the relevant New Zealand and Australian Standards and are included in Construction, Operation and Maintenance Contracts e.g. NZS4404 Land Development and Subdivision Infrastructure. This ensures the relevance of industry standard expected lives. Depending on the criticality of the asset, when an asset is nearing its expected useful life, the asset is assessed and its remaining useful life determined. A run to failure strategy is applied to low criticality assets as the consequence of failure is not major and the costs of ongoing condition monitoring may outweigh the costs of failure. A risk and condition-based strategy is applied where there is a significant implication due to failure, such as a major health and safety risk, significant reliability of supply consequence or significant expense in repair. This risk and condition-based strategy will be refined upon completion of the Criticality project currently under development and will guide the future.

Council engineers know the consequences of their decisions and acknowledge that there is a potential for decline in service, although it is not permanent or significant. Where an asset needs replacement, it is done to the appropriate Council standards and specifications, prioritised on criticality and funding available from depreciation funds. In years of high depreciation renewals with insufficient depreciation reserves loan funding may be used.

In 2015 it was identified that adding 10% onto short life assets (typically Plant Equipment), did not always achieve a remaining useful life of greater than 3 years. And therefore, the asset would depreciate to zero value before the next revaluation even though it was still in service. Therefore, the policy was altered for assets past their base life, and these now have an additional 3.5 years added onto their current age to ensure they do not depreciate to zero. This also gets the extended life asset to the next triannual valuation where it will have another 3.5 years added to the current age if it is still in service. If such an extended life asset is no longer fit for service prior to the next revaluation it is disposed of like any other disposal with the replacement asset depreciation taking other from the disposed asset.

In the 3.5 years extended life scenario; the calculation would now be:

Replacement Cost / (Current Age +3.5) = Annual Depreciation

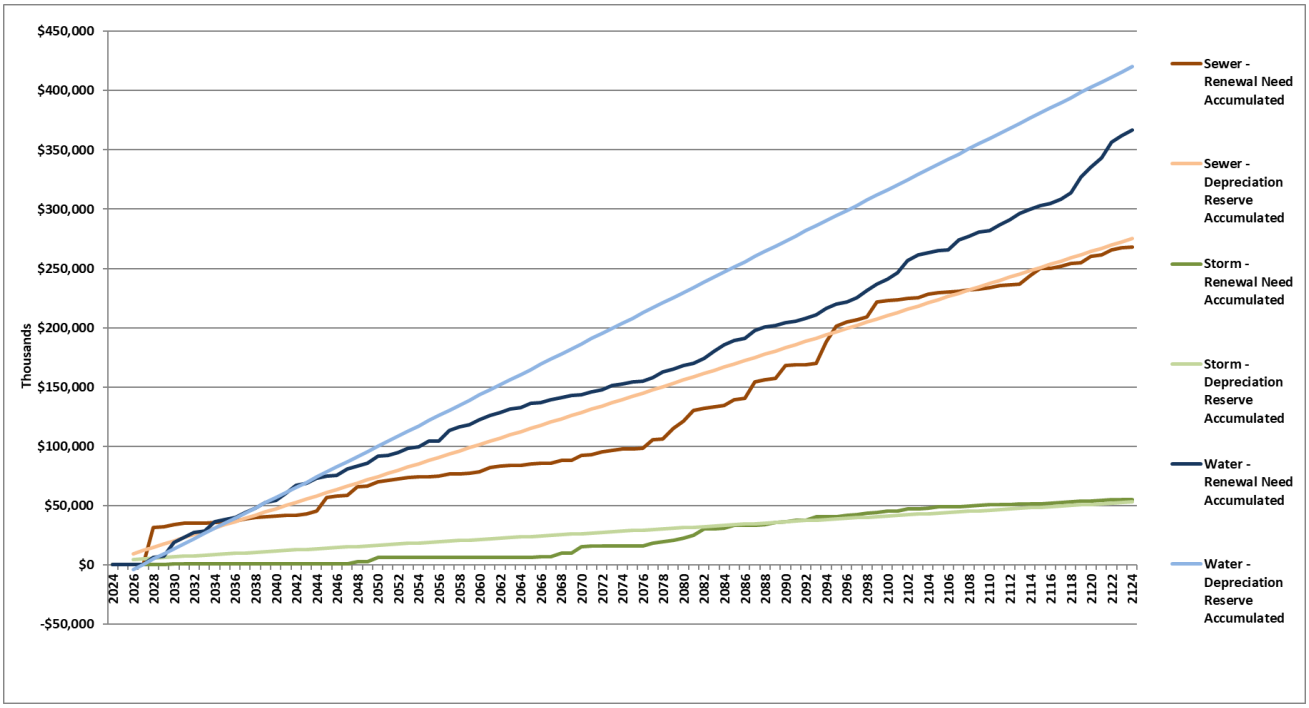
Annual Depreciation = 10,000 / (55 +3.5) = $170.94

The total annual depreciation figure for all Water asset components amount to $2.7m. The valuation schedules itemised the water assets to such a level that the calculated depreciation is unlikely to materially differ from actual loss of value.

Depreciation Projections

The intention of depreciation is to maintain the water infrastructural assets in a serviceable condition for the future and to achieve this, individual components need to be replaced from time to time.

Figure 9.9-1: Depreciation versus renewals 2024-2124

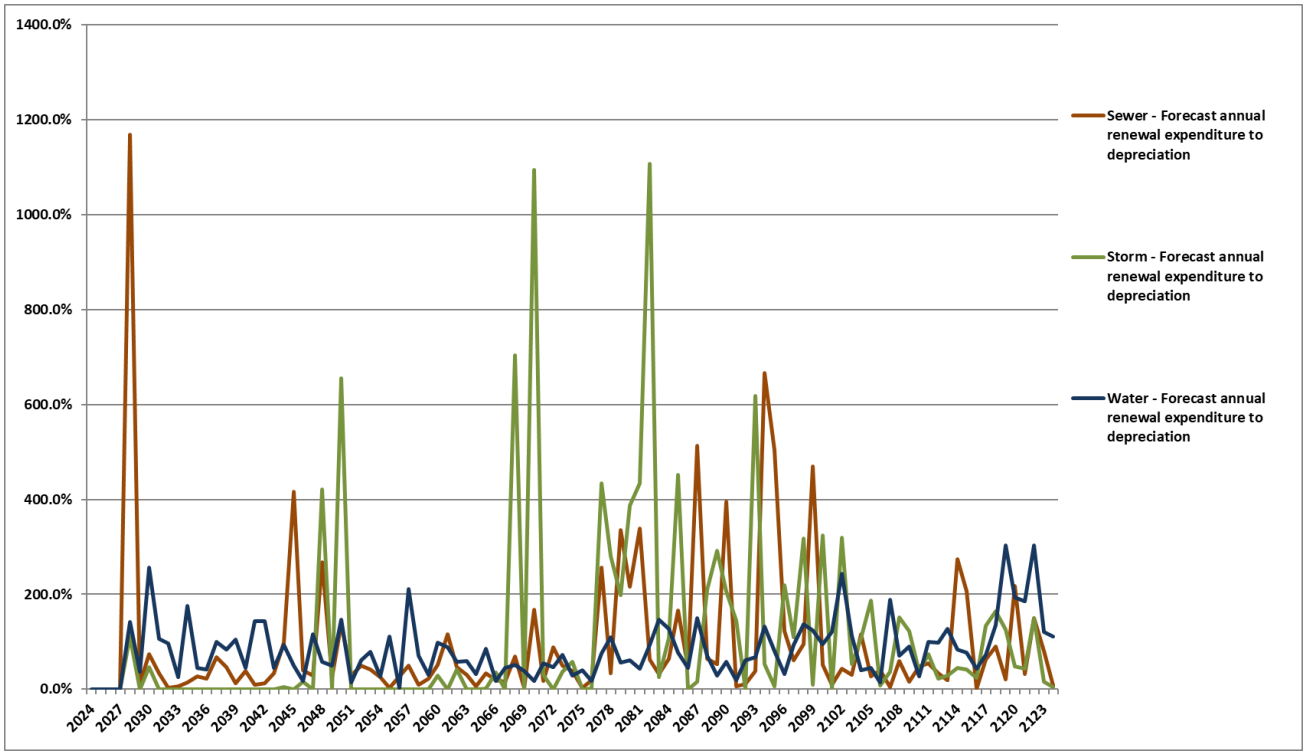


The chart above compares the projected accumulated renewal need versus the accumulated depreciation reserves. This represents:

- The projected renewal need based on the replacement value required as assets reach the end of their expected lives over the next 100 years.
- The current available depreciation reserves plus the current annual depreciation charge accumulating over the next 100 years

It shows that depreciation funds are generally consistent with, or greater than, the current renewal need over the next 40 years. Depreciation for Water Supply assets exceeds renewals significantly after 40 years. This will be reviewed over time as more assets reach the end of their expected lives to ensure available depreciation funds match the renewal needs.

Figure 9.9-2: Three Waters depreciation versus renewals



The lines in the graph above represent the percentage of forecast annual renewal expenditure related to the annual depreciation.

There are numerous spikes (for example, in 2027-30 for Wastewater the forecasted renewal requirement is nearly 1200% of the annual depreciation and for Stormwater in 2069-72 the forecasted renewal requirement is around 1100% of the annual depreciation). Annual accumulation of depreciation will smooth these spikes to achieve affordable funding over extended periods.

The significant Wastewater renewals spike across the years to 2029 represents a backlog of work required for our ageing network. This work will focus initially on the oldest pipes that are lower risk in terms of capacity and location until broader network capacity requirements and the impact of coastal are better understood and addressed.

Summary

The focus for the Three Waters activity is to ***Protect Public Health and the Environment***. For water supply this includes an increased focus on compliance with the Health Act and new drinking water regulatory framework.

Over time, the focus will shift from 'new capital projects' to maintaining the existing asset set from available depreciation funds. This will build on the existing asset base by provision of focussed renewal and development plans ensuring the needs of the community are well catered for into the future with ongoing affordability in mind.

Council will continually review the information that supports this graph through regular asset valuations, auditing of asset registers and prudent asset management.

9.8 Key assumptions

In developing its Significant Forecasting Assumptions for the draft Long Term Plan 2024-25, the Council has identified several key assumptions relevant to water supply. Key relevant assumptions include:

Capital delivery				
Key assumption Council's capital programme will be delivered on time and within budget. Capital project projections Timing of capital expenditure	**How sure are we about this assumption?** Low	**What are the potential effects of this uncertainty on our financial estimates?** The deliverability of the works programmes could be affected by the availability from the contractor market as well as the Council's ability to deliver the higher programme of works. Actual costs may vary from estimates resulting in budget shortfall. Projects may be carried forward if not completed as planned, and if the work is still considered to be needed. Any consistent backlog of work will have an impact on levels of service. This may result in increased costs due to inflation, possible reduction in levels of service, possible additional reactive operational expenditure.	**If this assumption turned out to be incorrect, what level of impact would the potential effects have on Council and the district?** High	**What measures do we have in place to mitigate the level of uncertainty associated with this assumption?** Projects may be carried forward if not completed as planned, and if the work is still considered to be needed. Any consistent backlog of work will have an impact on levels of service. This may result in increased costs due to inflation, possible reduction in levels of service, possible additional reactive operational expenditure.

Water infrastructure & services				
Key assumption Council will continue to deliver Water Supply, Stormwater, and Wastewater infrastructure and services over the lifetime of the 2025-34 LTP and has budgeted accordingly.	**How sure are we about this assumption?** Medium	**What are the potential effects of this uncertainty on our financial estimates?**	**If this assumption turned out to be incorrect, what level of impact would the potential effects have on Council and the district?** High	**What measures do we have in place to mitigate the level of uncertainty associated with this assumption?**

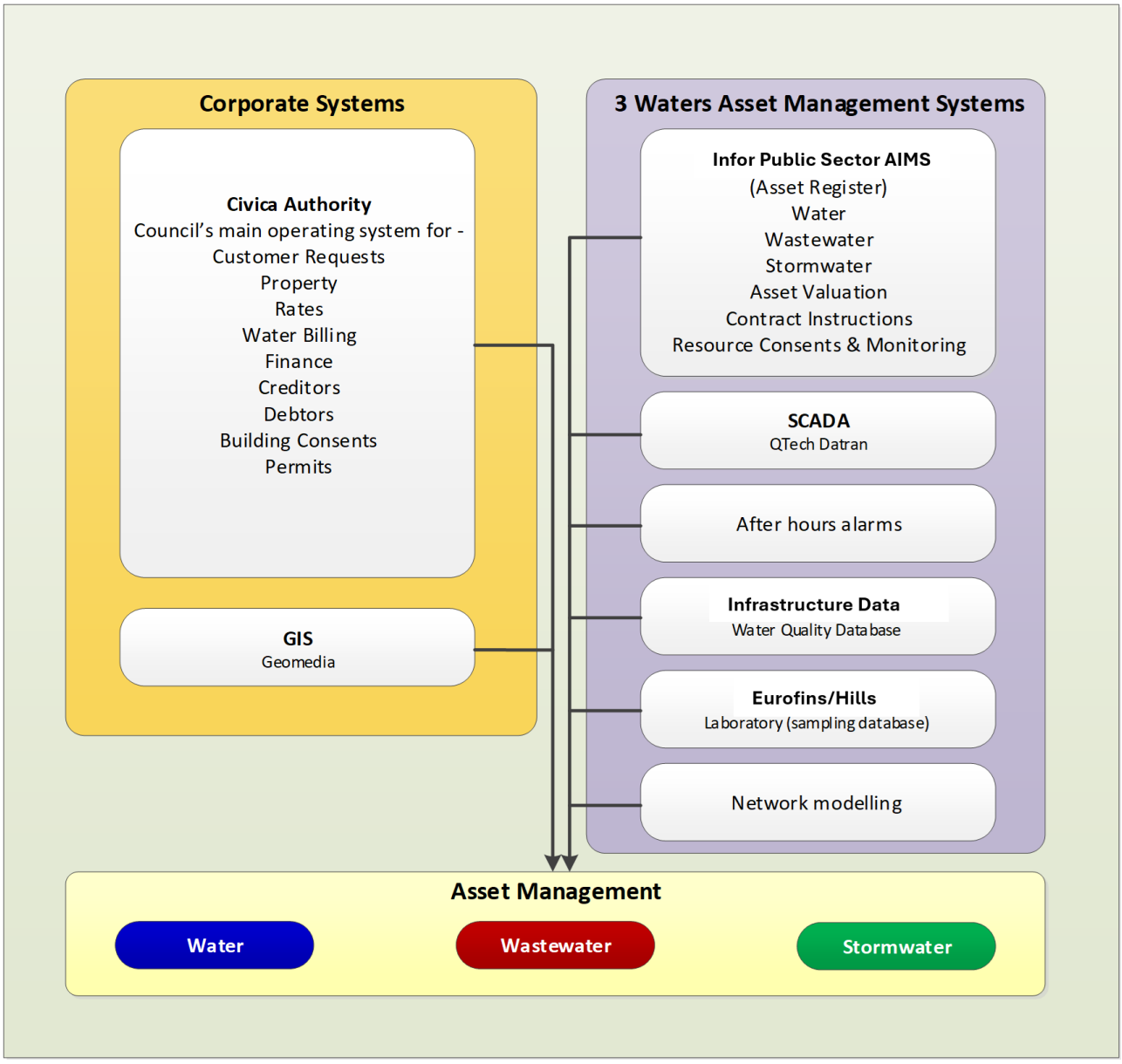
10 Asset management practices

This section covers the available asset information, information systems used, and processes used to manage the asset, and an overview of our organisational structure and people.

10.1 Information and data systems

Information and Data Systems provide Council staff with the ability to obtain, store, analyse and report on the significant quantities of data that is associated with the Three Waters. The information and data systems available to WDC staff are shown below and discussed within this section.

Figure 10.1-1: Existing information and data systems



Asset Management Information System

The Council uses IPS (Infor Public Sector) as its asset management information system. IPS includes modules for wastewater, stormwater, water, plant, customer service, parks and work management.

The system records:

- Maintenance records
- Service failures, type of failure
- Cost to repair
- Operating data
- Rehabilitation & renewal works
- Condition data
- Performance data
- CCTV data
- Resource Consents and their supporting compliance information and results
- Asset valuation and depreciation
- Hierarchy of assets - parent/child configuration (where necessary)

All maintenance data is recorded within the AMIS. This includes systematic collection of asset attributes, location, etc., through completing all relevant information on the appropriate work orders and then capturing this into IPS.
IPS allows manipulation of historical and current maintenance data, recording and analysis of information including pipe size, material, and grading of faults. The system produces work orders i.e. fault repair, routine work, programmed and cyclic work and can confirm work completed (time and cost). Maintenance and operational activities can be reviewed and compared with the associated costs.
Council has componentised the assets within IPS. Work orders are applied at an asset component level but aggregated for Asset Management reporting.
IPS is integrated with the GIS system to allow for spatial analysis of assets and their performance such as condition and failures.

Geographic Information System

The Geographic Information System (GIS) holds and displays the water, wastewater and stormwater asset information in relation to each other and referenced to earth. Council replaced Geomedia with ESRI ArcGIS in February 2025 as its GIS system. The GIS supports IPS by providing spatial representation of the water, wastewater and stormwater assets. The GIS system is available to all Council Staff (at all Service Centres) and used extensively through all Councils activities.

Civica Authority

Council uses Civica Authority as its corporate operating system for:

- Customer requests
- Property
- Rates
- Water Billing

- Finance
- Creditors/Debtors
- Consents/Permits

This system is available to all Council Staff (at all Service Centres) and used extensively through all Councils activities.

Ibis

Council uses Ibis Information Systems (designed for local government and water authorities) to enhance revenue management, improve their operational productivity and reduce their planning risk.

GoGet

Council uses GoGet software for processing and inspecting building consents.

Network Modelling

Network modelling software aids Council staff in effectively managing the wastewater network through simulation of the existing and future networks.

There are different models developed and used based on the requirements at the time i.e. operational model and design upgrade model.

Council uses the Infoworks ICM network model simulation programme for managing the network and identifying network inefficiencies.

There are network models for each of the following systems:

Table 10.1-2: Hydraulic Models

Wastewater
Ōamaru
Lake Ōhau
Moeraki
Ōmārama
Ōtematatā
Palmerston

The wastewater models are all based on dry weather flows.

SCADA and Telemetry

Council uses SCADA (supervisory control and data acquisition) to control the functions of plant items and pump stations. Council uses QTech Datran as its SCADA system. All of Council's wastewater facilities (apart from Lake Ohau and Duntroon) have SCADA systems to monitor conveyance of wastewater from consumers to the treatment plants, with demand scaling for wet weather peaking.

10.2 Data management

Key information comes into Council through work reports, as-builts, SCADA, consumers, and contractors. Other information comes into the Unit via emails, journals, Government publications and the media.

Upgrades, such as the wastewater treatment plant upgrades, are followed up with site visits capturing all new asset information and configurations. From this the asset register is updated (new assets added and old assets retired) and schematics developed. Schematics document the asset id's and at facilities, this ensures any maintenance performed is recorded against the correct asset.

Decisions on activity management, renewals and acquisitions are made in consultation with staff, council and the public as appropriate. Staff meetings are held regularly to discuss current and future, plans and decisions.

Asset data integrity audits are an ongoing process, and data is checked on a continual basis by various stakeholder groups within Council and the contractor. As work orders are completed and submitted to be captured within the asset register, the data recorded on site is compared with the asset register data. This is an ongoing process of ensuring a high level of data integrity. Monthly auditing of work orders against as-built data is performed by the GIS Analyst.

Main repair/waypoint validation

The 'main repair/waypoint validation' tool was developed by Council's GIS unit to check wastewater mains against waypoint data and main repair data that has been collected over the last 10 years. This compares:

- Waypoint data (GPS location) from the work order with the location of the main in GIS in consideration of the GIS data confidence
- Work order data (asset id/material/diameter) against GIS data
- Date of work order against main installation date (GIS)
- Asset in service or abandoned

This forms part of a systematic collection of asset attributes, location, etc., through completing all relevant information on the appropriate work orders and then capturing this into IPS. Asset data integrity audits is an ongoing process, and data is checked on a continual basis. This is a process of ensuring a high level of data integrity and increasing data reliability. This provides appropriate information for evidence-based decision making.

Data confidence and accuracy (quality)

Data confidence grades are held against each individual asset within the IPS asset register. These grades indicate the type of data source and the confidence in the specific data source.

The confidence in data is greater for high criticality assets. The 2011/12 criticality assessment identified High and Medium criticality assets for further analysis and the criticality was recorded against the asset within the IPS AMIS.

This process was repeated in 2023, and the results are being used to ensure the criticality assessment is considered in prioritising inspections, investigations, maintenance and renewal strategies.

Clear, defined documented procedures exist for as-builts and associated data transfer into information systems.

A Capital work order request is issued upon approval of a capital project. The capital work order request records:

- Utility type
- Initiated date and due date
- Project type (new contract, operation and maintenance contract, quoted works, etc.)
- Description
- Budget number
- Contractor name
- Estimated costs

The status of capital work orders is tracked during monthly meetings. Upon completion of the project and the capital work order request the data is captured into IPS. IPS contains additional fields to be completed i.e. as-built and GIS. This requires acknowledgement as to whether the as-built information has been received and entered into IPS and GIS.

Contract 613 (*Section 5.4 Knowledge Creation*) acknowledges the importance of each party, i.e. the Principal, the Engineer, and the Contractor in asset data (knowledge creation). How each party's role compliments and increases the value of the other party's efforts is tabled below:

System	What	Who	How
Records	AMIS & GIS records, hard copy records, files and report forms of accumulated knowledge	Principal	Owns current and learnt knowledge
		Engineer	Collects, stores, maintains and reference
		Contractor	Collects and reference
Planning documents	Annual & Long Term Plans AMPs Infrastructure Strategy	Principal	Sets service provision requirements in consultation with the community
		Engineer	Develop & maintain
		Contractor	Implement
Operational documents	O&M Manuals Codes of Practice	Principal	Owns current and learnt knowledge
		Engineer	Develop & maintain
		Contractor	Implement & reference
CRM	Customer Request Management system (CRM) records service performance	Principal	Monitors and reports to on performance achievement to elected members and Audit
		Engineer	Analyses compliance with performance objectives
		Contractor	Completes and updates CRM to capture the action undertaken to provide the service
AMIS (IPS)		Principal	Owns current and learnt knowledge

System	What	Who	How
	Holds asset data and maintenance records (work orders)	Engineer	Undertakes quality auditing of provided information
			Undertakes assessment and reporting on quality of completed works and reporting
			Determines and approves work completed, performance achieved and certified payment due
		Contractor	Completes Work Order (WO) information collection forms to record executed works and build and confirm asset knowledge
Audit	Provides independent verification that actions are consistent and appropriate for the sought outcome	Engineer	Engineer initiated and undertaken audits of works, processes, documentation, actions and the like undertaken by the Contractor
	Provides confidence that actions are consistent and appropriate for the sought outcome	Contractor	Contractor initiated and undertaken audits of technical and management performance

Major capital works have an as-built process specification within the formal contract documents. Operation and maintenance works, small asset renewals and quoted works need a formal documented process and specification. This needs to include closing the loop from design to final GIS record i.e. auditing of GIS data capture.

Upon completion and receipt of as-built data the assets are captured within the IPS AMIS. This process needs to be reviewed, and improvement implemented to ensure consistency in naming convention, level of detail and assigned maintenance frequencies.

10.3 Information Technology (IT)

The responsibility for asset information security rests with the IT department administrators. The data is backed up daily and backup files are stored in a secure place. Data manuals are available that explain the various procedures.

10.4 AMP preparation

A process has been established over several LTP periods whereby a review of the AMPs is conducted. Reviews focus on improvements to existing AMPs without attempting to acknowledge good features or accentuate any positives.

Following the review Council engineers consider review recommendations and use these as guidance where appropriate. The AMPs are then updated through a process of regular meetings between Council engineers and consultants to identify:

- Status and changes, including but not limited to:
  - Legislation
  - Levels of Service
  - Assets
  - Processes & Systems
  - Population
  - Demand

- Organisation
- Asset Values
- Projects
- Council direction
- Self-assessment of the current AMP

This information is then used to ensure the AMP demonstrates:

- All asset-based activities of Council are supported through the AMP
- Three Waters AMPs are easy to read, and follow the same agreed format
- The underlying activity management planning processes occurring for each activity, including improvements, are made because of the review
- Levels of service, and show linkages to other Council planning documents
- A robust reflection of the future intentions of Council with respect to Three Waters activities
- The financials arising from the plans reliably forecast the lowest lifecycle cost to deliver agreed levels of service for a period of no less than 10 years

10.5 Delivering water services – our people

Organisational structure

Through Q4 2024 and Q1 2025 Council underwent a Transformation Process whereby management of 3 Waters Assets was shifted from a stand-alone Water Services Team to a cross-Council delivery model whereby water is delivered across multiple teams. Those teams most involved in the various aspects of water delivery are shown below:

Strategy, Performance & Design

- Asset Planning

Community Engagement & Experience

- Customer Experience
- Customer Services
- Strategic Communications & Engagement

Support Services

- Finance
- Project Management Office
- People and Capability
- Digital Services

Natural & Built Environment

- Regulatory and Compliance
- Infrastructure

Contractors

Council's wastewater services are currently operated and maintained by two different groups:

- Major contractor
- Minor contractors

Group	Association
Major contractor	Council contracts the operation and maintenance of reticulation (Contract 613) and facilities (Contract (669) to SouthRoads Ltd for wastewater systems
Minor contractors	Council use minor contractors for electrical work and telemetry equipment at facilities

Council staff undertake all management of the wastewater systems. This includes:

- Receiving customer enquiries and requests for servicing
- Issuing instructions to Contractors

- Contract management and supervision
- Asset management
- Management of new capital projects and renewal programmes
- Engagement and management of Consultants

Following an open tender process, Council awarded the Three Waters Reticulation Operations and Maintenance contract (Contract 613) to SouthRoads, commencing 1 July 2016. In 2023, Council extended contract 613 with SouthRoads to July 2027.

Contract 669 for the operation and maintenance of Council's wastewater facilities was added to Contract 613 as a variation in February 2017 following negotiation with SouthRoads. Contract 669 is managed by direct engagement (Council officers carry out the management of the wastewater facility operators) on a time and materials basis.

The contract follows a collaborative approach with high value placed on quality over price. Council engineers and the contractor are working together towards a common goal of keeping the community safe and healthy. There is an on-going performance measurement process with the operation and maintenance contractor with monthly focus areas identified by the claim process and annual focus areas identified by a formal review. The contract centralised operations with work performed from a single depot in Ōamaru. As performance is managed through collaboration between Council and Contractor, with quality of work of high importance, there has been noticeable improvement in materials and workmanship.

Construction contracts are let on a project basis for new construction and renewal projects. Typically, consultants are engaged to provide design, documentation and contract supervision for these projects.

Specialised assistance and additional resources are provided by a variety of consultants. There is currently no professional services contract in place, but Council engages consultants on a case-by-case basis as required. Consultants are sourced locally (Ōamaru and Timaru) as well as from Dunedin and Christchurch.

Suitably qualified and trained persons

An important measure of this Plan's quality is the ability, experience and qualifications of the individuals and companies involved in its preparation. The Council employs staff appropriately qualified to carry out the asset management function. Formal qualifications range from New Zealand Certificate in Engineering to Registered Engineer. Specialised external support is available as the need arises.

On-going training is available for staff involved in infrastructure asset management and includes attendance of:

- IPWEA sponsored workshops on Asset Management
- NAMS seminars
- Annual Water NZ conference
- Asset Management conferences

- Water Managers (NZ wide) quarterly meeting

Council staff have a reasonable record of attendance at these seminars, conferences and workshops.

10.6 Sustainability

Sustainability can be defined as meeting the needs of the current generation without compromising the ability of future generations to meet their own needs.

Sustainability and lifecycle

Asset management is designed to improve decision-making about assets to enable the better management of existing and future assets. Effective asset management ensures that agreed levels of service are met and risks, including public health, financial and environmental, are minimised, while costs are optimised. Improved decision-making is crucial to achieve asset management and sustainability goals. Therefore, having the correct asset information available is important to support the decision-making process. It is thus clear that lifecycle costs are part of, and supports, asset management and sustainability.

Asset management practices include action that recognise the need for environmental, economic, social and cultural sustainability.

Activity response to sustainability

Council will continue to:

- Protect the environment
  - Water takes are consented
  - Discharges are consented
  - Improving effluent quality and/or improved disposal methods
- Provide reliable and safe drinking water to the community
  - Compliant with the legislation and appropriate standards
  - Optimal decisions based on least capital and lifecycle cost solution satisfying the requirements of the Drinking Water Standards
  - Managing risks in accordance with approved Water Safety Plans
  - Pipe size and materials – appropriate for now and the future
- Increase efficiency at facilities
  - Use of VFDs
  - Night pumping to take advantage of lower electricity rates
  - Duty/assist pump arrangements
  - More efficient aeration
  - Pump selection
- Within Council:
  - Staffing levels
  - Skills
  - Training
  - Succession planning
- Collaborate with other Councils

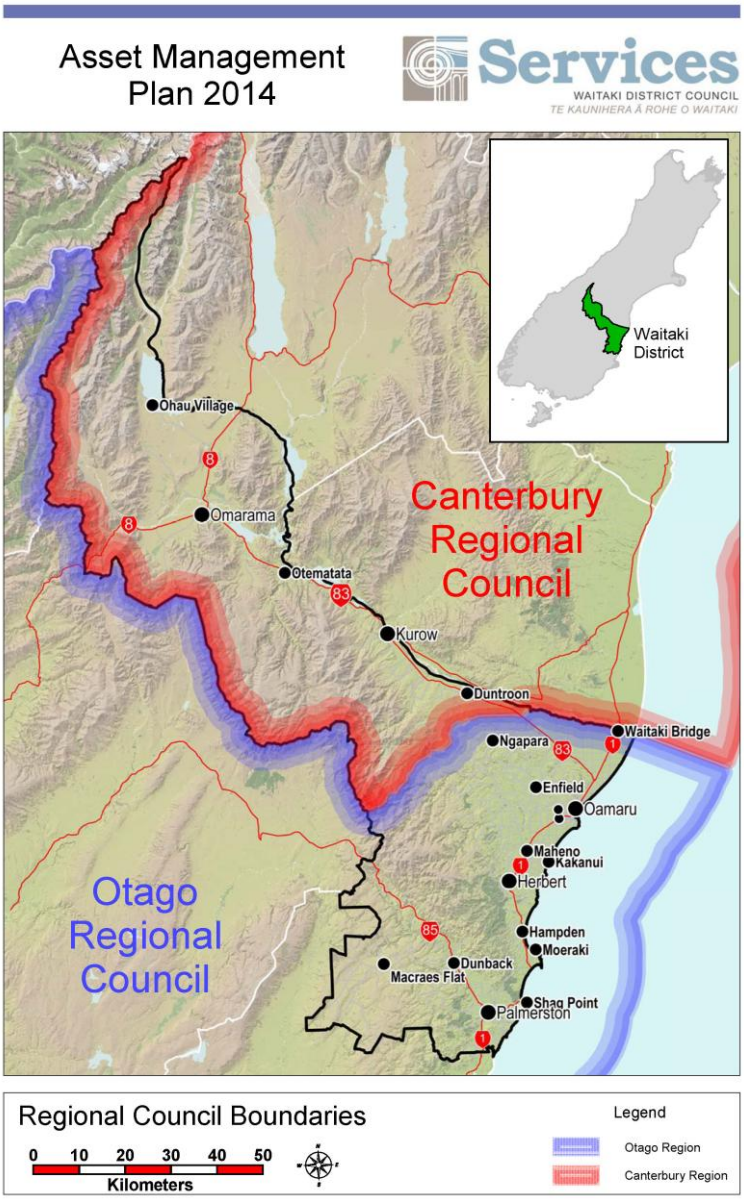
10.7 Environmental management

A very important aspect of the wastewater activity is to ensure the District's natural water sources are managed responsibly. Resource consents are held for various activities relating to the wastewater activity, such as treatment (including odour) and the disposal of treated wastewater at the wastewater treatment plants.

There are two Regional Councils that have authorisation within the Waitaki District. The northwest of the district (including all of the Waitaki River) is under the authorisation of Environment Canterbury, with all of the area to the south under the authorisation of the Otago Regional Council. This mixture of Regional Authorities results in two different rules and multitude of plans which impacts on staff time.

The boundaries of the two Regional Councils are graphically represented in the figure below.

Figure 10.7-1: Regional Council Boundaries



Schedule of Resource Consents

Region	Location	Consent No.	Expiry Date	Allowable Discharge	Comments
Canterbury	**Ohau**	CRC 000426	1-Nov-2034	160m3/day	Discharge 160m3/day of oxidation pond effluent to ground via soakage trench
	Ōmārama	CRC200183	4 Dec 2044		To discharge contaminants into land.
	Otematata	CRC 012181	19-Dec-2038	22 l/s	Discharge contaminants into water during extreme rainfall events
		CRC 094041	1 June 2038		Discharge contaminants to land
	Kurow	CRC 062249	31 May 2030	15 l/s maximum	Discharge contaminants to land
	Duntroon	CRC213039	24 Feb 2026	Septic tank	To use land for a community wastewater treatment system
		CRC201709	24 Feb 2026	8,800 Litres per day	To discharge domestic wastewater to land from a community wastewater treatment system
Otago	**Ōamaru**	ORC 2002.656	30-Apr-2038	Not applicable	Discharge to air, odours and aerosols from the Ōamaru Treatment Plant
		ORC 2002.655	30-Apr-2038	7500m3/day	Discharge of 7500m3/day of treated effluent to Landon Creek
		ORC 2002.704	30-Apr-2038	7500m3/day	Discharge of 7500m3/day of treated effluent to Land
		ORC 2004.163	1 Apr 2028	Not applicable	Discharge to air odours resulting from the removal of sludge
	Moeraki	RM 16.008.01	20 Jan 2053		To discharge contaminants to air
		RM 16.008.02	20 Jan 2053	25 l/s 225 m³/day	To discharge contaminants to land
	Palmerston	RM11.096.01.V2	23 March 2046	350 m³/day	Discharge treated wastewater to land from the Palmerston wastewater treatment plant
	Otago Region	ORC 98255	1-June-2018	Not applicable	Discharge chemically inert, non-toxic, non-radioactive tracer dye to natural water

Discharge permits are required for the discharge of treated effluent to land or water, and the discharge of gas and odours associated with wastewater treatment plants.

During 2022 the Otago Regional Council approved a change in conditions for the Palmerston Wastewater Treatment Plant. This allowed increasing the irrigation area from 6.57ha (excluding the border dyke area) to 12ha. Replacement of pumps and installation of a PLC system to control irrigation timing and area sequencing were required as part of this.

These changes are aligned with desludging of the ponds and network upgrades to reduce inflow/infiltration which will result in increased pond performance, reduced nitrogen loading in the land treatment area and decreased discharge volumes through reduced network upgrades.

Resource consents expired and being renewed

The following consents for Ōamaru, Kurow and Lake Ōhau will expire within the term of this Plan. The table below list the consents about to expire and the preliminary plans for the consents:

Location	Consent No.	Expiry Date	Preliminary plans
Ōamaru	ORC 2004.163	1-Apr-2028	Renew
Kurow	CRC 062249	31 May 2030	Renew
Lake Ōhau	CRC 000426	1-Nov-2034	Renew
Duntroon	CRC213039	24 Feb 2026	Options under consideration and consultation
	CRC201709	24 Feb 2026	

The Kurow resource consent expires during 2030. The consent renewal will include an assessment of the system's ability to meet future regulatory (and growth) requirements following discussions with the Regional Council. The existing system is not expected to meet increased environmental standards. Council will work with ECan and local iwi to find appropriate long-term solutions for wastewater discharge that meet National Freshwater Policy and Te Mana o te Wai principles. A capacity study for the system is planned for 2026/27 **(IBIS# 1075).** The resource consent renewal application is programmed for 2027/28 **(IBIS# 4581)** and the upgrade is programmed for 2027/28 **(IBIS# 4580)**.

The resource consent for the removal of sludge at the Ōamaru wastewater treatment plant expires during 2028. Planning for resource consent renewal is programmed for 2026/27 **(IBIS# 4594)**.

Sludge management

In recent years, Council has performed significant desludging of wastewater ponds across the district. At each treatment plant sludge was taken from the ponds and pumped to an onsite dewatering tube/geobag. The bags contain the sludge while allowing water to flow out through the porous geotextile fabric while filtering the solids, which are contained within the bag.

Further desludging is programmed for the wetlands in 2026/28 **(IBIS# 4576)** and ponds 2 & 3 **(IBIS# 1199)** at the Ōamaru wastewater treatment plant during 2030/31.

Disposal of the dried biomass from the Palmerston and Ōmārama wastewater treatment plants at the Palmerston landfill are programmed for 2024/25.

Upgrading the septage facility at the Ōamaru wastewater treatment plant is programmed for 2025-26 (**IBIS# 4546**).

Trade Waste

During 2021 Council reviewed the Trade Waste Bylaw 2009 and found that:

- BOD limits are mainly exceeded by fast food/takeaway businesses, and this should be a focus area for consideration of future potential customers.
- Future reviews of the Bylaw may need to include extensive sampling at current and future potential customer premises to ascertain the extent of contaminants discharged to the wastewater system and address exceedances.
- Comparison with other councils found that a significant number of bylaws are based on the NZS9201 template. More recent reviews have introduced some deviation from NZS9201 and in some instances a move to a consolidated bylaw.
- There are a number of properties which have similar water demand to the existing trade waste customers. This may provide useful guidance in identifying potential future trade waste customers.

Recent media reports raised concerns around the discharge of contaminants into wastewater systems and breaching consent conditions without adequate enforcement and prosecution from local authorities. It is expected that Taumata Arowai, the new Water Regulator, will move focus to wastewater issues as drinking water supply compliance is progressed.

It is evident from the list of potential customers and water demand patterns that there is significant scope to expand the list of trade waste customers to ensure fair allocation of collection, treatment, disposal and monitoring costs.

A Bylaw review is scheduled for 2025/26 **(IBIS# 4555)**. It is envisaged that the reviewed Bylaw will:

- Clarify and simplify the provisions of the Bylaw
- Consider inclusion of more information on pre-treatment
- Consider a trade waste consent for disposal of tankered waste
- Ensure all trade premises are captured to ensure a fair and comprehensive management approach
- Encourage increased monitoring, trending and analysis while communicating with trade waste customers

Consent monitoring and reporting

Consent monitoring and reporting within Council for Wastewater is the responsibility of the Compliance Lead. Information for wastewater consent compliance is drawn from various databases (SCADA, IPS and Hills), which is recorded in a spreadsheet and then forwarded to

Environment Canterbury and the Otago Regional Council. There are plans to have this data collection and reporting undertaken through the Infrastructure Data system in the future.

Water, wastewater and stormwater resource consents, and associated monitoring and records are now held in an electronic database. The data contains all consents, conditions, associated information and includes triggers for renewal, monitoring and associated maintenance. This provides:

- The ability to demonstrate environmental compliance with confidence
- Ease of reporting to Regional Councils
- Transparency in actions required to achieve compliance

However, due to the various consents, associated conditions and number of information sources, reporting is a lengthy and confusing process and needs streamlining to improve reporting compliance. It is also important to bring operational performance issues front of mind through dashboard display. This will eliminate delayed response and increase system performance. There are numerous proprietary systems that can be procured or an inhouse system can be developed. Further investigation is required to confirm the requirements of a compliance tool or hub which displays compliance information from multiple sources and development of an RFP for consideration of existing market products (**IP 3W8 & IP 3W15**).

The resource consent compliance for wastewater was good under the 2021 AMP, however, recent non-compliances reflect the challenges associated with ageing infrastructure and network capacity issues (Oamaru) and changes to consent conditions (Palmerston).

Council has identified areas for improvement and is planning further investigative work over the next nine years, to ensure facilities are managed in an appropriate manner and comply with regional rules and environmental standards.

Regional Plans

Under Section 30 of the Resource Management Act of 1991 Regional Councils are required to provide policies and methods to achieve integrated and sustainable management of the regions natural and physical resources. The Regional Plans of Otago and Canterbury provide a framework for the sustainable management of the regions water resources. These resources include groundwater, rivers, lakes and wetlands.

Catchment Management Plans are expected to be a requirement under increased Regional Council rules and will be prepared once the regional rules come into effect.

Otago Regional Plan – Water

Otago Regional Council has a Regional Plan - Water, which provides a framework for the integrated and sustainable management of Otago's water resources including lakes, rivers groundwater and wetlands. It sets out the issues relating to protection and enhancement of the region's water resources. The Otago Water Plan is under review to align with the NPSFM.

Otago Regional Council – Urban Water Quality Strategy

The Urban Water Quality Strategy sets out the management approach and principles for dealing with the specifically urban water quality issues, especially the management of

stormwater and wastewater, to achieve the vision for water quality in Otago. It is consistent with what has been put into place for rural areas. The Urban Water Strategy identifies nine key issues and the strategy and methods to address the key issues.

Environment Canterbury – Land and Water Regional Plan

The Canterbury Land and Water Regional Plan (LWRP) identifies the resource management objectives for managing land and water resources in Canterbury to achieve the purpose of the Resource Management Act 1991. It identifies the policies and rules needed to achieve the objectives and provides direction in terms of the processing of resource consent applications.

Rules 5.7 to 5.9 address on-site wastewater. The existing discharges for Kurow, Lake Ōhau, Ōmārama and Otematata are discretionary activities and operated under current consents. The Duntroon system was a permitted activity, but because of increased environmental standards under the Canterbury LWRP it is no longer a permitted activity. Council was granted a five-year resource consent extension in 2021 to allow for appropriate investigation of options and consultation. Discussions with ECan have identified groundwater level monitoring and ceasing subsurface discharge, if the groundwater level rise above a specified level, as likely interim consent conditions. Long term resolution will potentially require upgrade of the existing system.

The Ōmārama disposal was upgraded during 2019 from disposal to water to disposal to land.

The Kurow wastewater treatment plant resource consent expires in 2030. Expected regulatory changes and stronger obligations on local authorities to manage risks from wastewater; strengthened compliance, monitoring and enforcement of wastewater treatment and disposal regulation will require improved treatment and disposal methods. This presents the opportunity to meet future projected demand and regulatory and environmental standards. Council will perform an assessment of the system's ability to meet future regulatory (and growth) requirements following discussions with the Regional Council, then develop conceptual solutions prior to constructing confirmed solutions.

Energy

The three water activities are energy intensive, accounting for a significant portion of Council's total electricity consumption. The major power demands are from water and wastewater pumping stations and treatment facilities. The direct use of fossil fuels is generally limited to emergency power generation equipment, but the indirect use of transportation fuels for operation and maintenance activities should also be considered when planning changes to energy management. Energy, in varying forms, is used during the construction and renewal of assets and the manufacture of materials used in construction, operation and maintenance of assets. Carbon emissions for many current energy sources contribute to climate change.

Energy prices have increased significantly over recent years, impacting on operational costs for the water service. This trend is expected to continue.

Alternative Energy Sources

No formal study has been conducted, but solar energy is used to power telemetry at remote rural reservoir sites.

Small solar/wind energy systems are not suitable for higher power demand sites such as UV water treatment plants and water/wastewater pumping stations.

The Waitaki District Council is committed to implementing environmental best practices. This includes being more energy efficient. Where technologies exist that allows Council to operate in a more energy efficient manner it will be investigated and if there is a significant cost and environmental benefit it will be considered for implementation.

Remote Monitoring

The Council operates a SCADA system that allows remote monitoring of the facilities (WWTP and majority of wastewater pump stations) increasing efficiency and reducing the frequency of site visits, which reduces the facility's carbon footprint. Refer to Section 10.1 SCADA and Telemetry.

Greenhouse gas emissions

The Waitaki District Council Greenhouse Gas emissions report for 2018/19 shows Council at significantly negative net emissions, with the Council removing more greenhouse gases than it emits. The report found the total gross carbon dioxide equivalents for Waitaki District Council are 2,876 tonnes. The report found wastewater treatment (36% of all emissions), electricity consumption (30%), and the Palmerston landfill emissions (13%) as the main contributors to the council's carbon footprint.

Waitaki District Council has a total of 165 hectares of forest. Emissions under the Land Use and Land use Forestry sector total -4,902 tonnes. Considering Waitaki District Council's gross emissions of 2,876 tonnes and removals of -4,902 tonnes, results in a net emissions of -2,026 tonnes. This means that the Council is making a positive contribution overall towards climate change

Report recommendations include:

- Encourage staff to use alternative, low carbon, transport options for travelling to work and for work journeys, where appropriate. This may include cycling, walking and public transport, pool cars, installation of bike racks, route optimisation, teleconferencing, and wherever possible moving away from single occupancy vehicle journeys.
- Develop a strategy for transitioning the fleet to small engine vehicles, electric cars and hybrids.
- Introduce electric bikes/scooters for staff members to use for appropriate local journeys.
- Undertake energy audits across different parts of the Council's operations.
- Determine which energy providers have the least Green House Gas intensive sources of electricity.
- Develop awareness raising initiatives to make staff and the public more energy aware, including training, communication and general encouragement.
- Supporting energy efficiency in community housing, including the installation of insulation and ensuring that boilers are energy efficient, and raising awareness amongst tenants.

- Develop a strategy for lowering energy requirements from buildings, street lighting, and other facilities that are within the Council's control/ownership.
- Use video conferencing as an alternative to face-to-face meetings whenever possible.
- Evaluate and where possible reduce the number of staff that need to travel to meetings in other parts of the country.
- Ensure that staff members coordinate travel and share taxis whenever possible.

10.8 Managing potential significant negative effects

Potential negative effects

Schedule 10 of the Local Government Act 2002 requires an outline of any significant negative effects that an activity may have on the local community.

Table 10.8-1: Potential negative effects of wastewater activities

Effect	Description	Mitigation measure
Flooding	Social/ cultural: Localised overflows may occur in residential areas due to under capacity of the wastewater network system and affect the well-being of the community. Economic: Localised flooding can have significant immediate and ongoing economic consequences on local business.	Catchment management planning Capital works to increase network capacity and detention
Wastewater overflows	Environmental: overflows to public spaces and to freshwater and the coastal marine areas. Social / Cultural: Discharges have adverse effect on the quality of receiving environments and how these areas are used by the community.	Resource consenting and compliance monitoring Capital works Reducing inflow and infiltration
Impact to historic/heritage sites	May damage sites	Record of known heritage sites. Undertake work to minimise and prevent discharge of wastewater to sites
Impact for iwi in terms of wastewater discharges to water, mahinga kai, and wahi tapu sites on land	Cultural: Physical works may have an adverse effect on sites. Contamination of water, (fresh and coastal), mahinga kai, wahi tapu areas is offensive to iwi.	Working with iwi on improvements for wastewater management and discharges Record of known cultural sites

Potential positive effects

Table 10.8-2: Potential positive effects of wastewater

Effect	Description
Economic Development	To enable commercial, business, and residential development activities have access to the wastewater network
Environmental Protection	Council maintains wastewater networks and treatment collection to minimise the potential for overflows to public spaces, to prevent and minimise overflows of untreated wastewater to freshwater and coastal marine area.
Safety and Personal Security	Council maintains wastewater collection and treatment to minimise disruption to normal community activities and risk to life.

11 Improvement plan

11.1 Quality assurance

Audits

To establish and ensure the ongoing improvement of the quality of this Plan a series of audits are planned and includes Financial, Systems, Technician and Performance Audits.

Financial audits - the Local Government Act requires that independent annual financial audits be undertaken on the operations of Council; such audits may include all significant activities such as activity management planning. The auditor's opinions will be included in the Annual Report.

System audits - are continuous and ongoing and incorporated in operational practices. However, as part of the LTP process, systems are discussed and reviewed every 3 years. This audit identifies the status of asset management processes, systems and data and produces targets for Asset Management practices to be achieved in following years. A programme of recommended actions will be developed for Asset Management processes, systems and data. Future regular system audits will measure progress against targets and the development programme.

Technical audits - peer reviews will be undertaken at regular intervals to assess and identify compliance with statutory accounting requirements:

- The quality of the Plan in terms of completeness, objectivity, logic, technical content and presentation
- Perceived strengths and weaknesses for Plan improvement
- Recommended specific areas for Plan improvement
- Technical audits may be undertaken using external or internal reviewers

Performance audits - will establish whether the stated objectives for the operation of the asset have been achieved. Measurement of the success of the operation of the asset will be assessed using the results of:

- Customer satisfaction surveys
- Key Service Criteria objectives compliance (e.g. NFPM)
- Benchmarking surveys.

These measurements will determine the public view of how well the levels of service have been achieved, an objective measure against stated Key Service Criteria and national measures of relative performance. The performance audits will also be used in ongoing customer consultation regarding future standards and requirements of the customers in the provision of the service.

AMP reviews

The following table lists the past AMP Reviews:

Table 11-1: AMP Reviews

Date	LTP	Description
2008	2009 - 19	Review 2006 AMPs including GAP analysis based on the Core and Advanced Asset Management criteria used by the Office of the Auditor General
2011	2012 - 22	Review 2009 AMPs including a formal review for "Selecting the Appropriate AM Level" which is fundamentally based on the IIMM Section 2.2.4. and built on the previous review and the OAG AMP criteria for core and advanced Asset Management. The outcome of this was that Water and Wastewater section of Council has been assessed as Core Plus.
2013	2015 - 25	To reflect on the recommendations from the Office of the Auditor General, previous AMP review items and developing a 30-year Infrastructure Strategy a new direction was implemented for the 2015-25 Utilities Activity management plans. This included a change to the document structure used since 2006. The new template incorporates the seven areas of asset management i.e. Description of Assets, Levels of Service, Growth/Demand, Sustainability, Lifecycle, Risk, and Financials
2017	2018-28	Formal documented assessment of the Water and Wastewater AMPs undertaken.
2020	2021-31	No formal review was undertaken and AMP development built on previous AMP reviews. The 2017 AMP Assessment provided valuable guidance for continuous improvement to achieve appropriate practice. It is expected that the remaining gaps identified will be closed during subsequent reviews and updates. A consistent and project-based approach has been evidenced in the approach taken to develop the AMPs.
2024	2025-34	A review of the AMPs structure using the Āpōpō Guide has been undertaken to achieve a more logical structure and flow. Data and other information have also been reviewed and updated to reflect changes since the previous AMP. This work will be ongoing by the Asset Planning team to ensure the AMP is relevant and always fit for purpose.

Asset management development

The objective of the Councils Asset Management Policy is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and levels of service, manage related risks, and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets as required.

The Asset Management (AM) Policy requires that the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets. Delivery of service is required to be sustainable in the long term and deliver on Council's economic, environmental, social, and cultural objectives.

The AM Policy sets the appropriate level of asset management practice for Council's Water, Wastewater, Roading, Rubbish and Recycling, Aquatic Centre, Gardens, Recreation and Community services.

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Water services. This structured assessment follows the guidance provided in Section 2.2.4 of the 2006 International Infrastructure Management Manual (IIMM).

The 2010 AM Policy sets the appropriate level of asset management practice for Council's Water and Wastewater Activity as 'Core Plus' practice (now also referred to as 'Intermediate).

Definition: 'Core Plus' asset management practice is undertaken at a level between 'Core' and 'Comprehensive' practice. The focus is to build on the basic technical activity management planning of 'Core' practice by introducing improved maintenance management and more advanced asset management techniques (as appropriate). Further use is made of risk management, asset lifecycle management, and service standard optimisation techniques.

Current appropriate practice levels have been expanded and as a proxy 'Core Plus' is linked with Intermediate level. To ensure the appropriate practice level aligns with the latest appropriate practice asset management levels the AM Policy will be reviewed (**IP 3W1**).

Council's AM Policy is programmed for review and the need for an AM Strategy is identified to provide the road map between the AM Policy setting the appropriate level of asset management and the AMP demonstrating the current level of asset management.

Improvement Plan Focus

The Council Water Services Asset Management Improvement Plan will be focused on the following key areas:

- Water treatment improvements
- Supply knowledge update
- Renewals
- Human resources/customer services
- Enhanced maintenance
- Asset management

The full Improvement Plan is included as Appendix 3.

11.2 Reporting on improvement plan progress

Currently all projects in the Long Term Plan 2021-31 and Annual Plan are recorded in Authority and reported quarterly. It is proposed that this frequency of reporting continue. It is acknowledged that the management and completion of improvement items will contribute to the achievement of Community Outcomes, and regular reporting on activity items will assist to ensure that achievement towards each outcome.

11.3 AMP review and monitoring

This AMP will continue to be developed over time to incorporate further advanced asset management techniques, make use of improved data collection and management systems, respond to legislative and policy changes, and address evolving issues. It is anticipated that the sustainability themes introduced in this Plan will be further tested and developed with ongoing focus on legislative compliance, planning for climate change, environmental management, and improving efficiency. A future review of charging mechanisms may be warranted to ensure inter- and intra-generational equity.

This AMP is the responsibility of the Asset Planning Manager.

As a result of impending changes resulting from the Government's Local water Done Well reforms, Council will likely continue to be responsible for delivering and funding water services during the first two years of the 2025-34 Long Term Plan until the a decision is made on water

service delivery. This AMP captures the operational budget detail for the first two years but also includes the programme of works for 9 years.

Appendices

Appendix 1: Funding Impact Statement – Wastewater

Waitaki District Council : Funding Impact Statement for 2026 - 2035 for Sewerage

	2024/25 Annual Plan (000's)	2025/26 LTP (000's)	2026/27 LTP (000's)	2027/28 LTP (000's)	2028/29 LTP (000's)	2029/30 LTP (000's)	2030/31 LTP (000's)	2031/32 LTP (000's)	2032/33 LTP (000's)	2033/34 LTP (000's)	2034/35 LTP (000's)
Sources of operating funding											
General rates, uniform annual general charges, rates penalties		15	25								
Targeted rates		2,468	2,603								
Subsidies and grants for operating purposes		-	-								
Fees and charges and other revenue		460	460								
Local authorities fuel tax, fines, infringement fees, and other receipts		407	406								
TOTAL OPERATING FUNDING (A)		3,349	3,495								
Applications of operating funding											
Payments to staff and suppliers		3,491	5,451								
Finance costs		347	546								
Internal charges and overheads applied		39	49								
TOTAL APPLICATIONS OF OPERATING FUNDING (B)		3,876	6,045								
SURPLUS (DEFICIT) OF OPERATING FUNDING (A - B)		(527)	(2,551)								
Sources of capital funding											
Development and financial contributions		244	276								
Increase (decrease) in debt		3,868	7,045								
TOTAL SOURCES OF CAPITAL FUNDING (C)		4,112	7,321								
Application of capital funding											
- to improve the level of service		1,420	2,105								
- to replace existing assets		2,165	2,665								
Increase (decrease) in reserves		-	-								
TOTAL APPLICATIONS OF CAPITAL FUNDING (D)		3,585	4,770								
SURPLUS (DEFICIT) OF CAPITAL FUNDING (C - D)		527	2,551								
FUNDING IMPACT STATEMENT		0	0								

Appendix 2: Wastewater projects (capital, operational, renewal)

Project Number	Project Name	Type	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34
1075	Kurow Wastewater Treatment Plant Capacity Study	Capital	-	65,000	-	-	-	-	-	-	-
1077	Moeraki Wastewater Mains Renewals/Upgrades	Capital	-	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000
1080	LTP Adjusted 2025: Oamaru Wastewater Main Renewals	Capital	2,100,000	2,035,000	1,775,000	1,775,000	1,775,000	1,775,000	2,150,000	2,150,000	2,150,000
1084	Duntroon Wastewater Treatment Plant Upgrade	Capital		200,000	2,400,000	-	-	-	-	-	-
1085	Duntroon Wastewater Resource Consent Application	Capital	65,000	-	-	-	-	-	-	-	-
1199	Oxidation Pond Desludging Programme	Operational	-	-	-	-	-	2,600,000	-	-	-
1201	Wastewater Inflow & Infiltration Reduction Programme	Operational	50,000	50,000	500,000	500,000	250,000	250,000	250,000	250,000	250,000
1202	Urban Wastewater Mains Renewals/Upgrades	Capital	-	-	260,000	260,000	260,000	260,000	260,000	260,000	260,000
1204	Risk Management Plan - Oamaru	Capital	-	-	30,000	-	-	-	-	12,000	-

1205	Risk Management Plan - Lake Ohau	Capital	-	-	25,000	-	-	-	-	9,000	-
1206	Risk Management Plan - Omarama	Capital	-	-	25,000	-	-	-	-	9,000	-
1207	Risk Management Plan - Otematata	Capital	-	-	25,000	-	-	-	-	9,000	-
1208	Risk Management Plan - Kurow	Capital	-	-	25,000	-	-	-	-	9,000	-
1209	Risk Management Plan - Duntroon	Capital	-	15,000	20,000	-	-	-	7,000	7,000	-
1210	Risk Management Plan - Moeraki	Capital	-	-	25,000	-	-	-	-	9,000	-
1211	Risk Management Plan - Palmerston	Capital	-	-	25,000	-	-	-	-	9,000	-
1212	Oamaru Wastewater - New Monitoring Equipment	Capital	-	50,000	-	-	-	-	-	-	-
1442	Wastewater Bylaw (AM)	Operational	-	60,000	-	-	-	-	-	-	-
2459	LTP Adjusted 2025: Oamaru Wastewater Overflow Mitigation	Capital	-	-	-	-	500,000	1,000,000	1,000,000	-	-

2463	Palmerston Wastewater Overflow Mitigation	Capital	-	150,000	150,000	150,000	-	-	-	-	-
2464	SCADA Renewals (Wastewater)	Capital	-	500,000	650,000	325,000	65,000	65,000	65,000	-	-
2481	Oamaru Wastewater Treatment Plant Capacity Study	Capital	150,000	-	-	-	-	-	-	-	-
4459	LTP Adjusted 2025: Condition Assessment of Wastewater Infrastructure (Excluding Mains)	Operational	-	-	150,000	150,000	150,000	150,000	150,000	150,000	150,000
4461	LTP Adjusted 2025: Disposal of Desludging Biomass	Operational	700,000	700,000	-	-	-	-	-	-	-
4462	Effluent Dispersal Field Property Agreements	Capital	20,000	40,000	40,000	-	-	-	-	-	-
4474	Oamaru Wastewater Treatment Plant Interim Improvements	Capital	1,000,000	1,000,000	-	-	-	-	-	-	-
4546	Oamaru Wastewater Treatment Plant Septage Treatment Upgrade	Capital	200,000	-	-	-	-	-	-	-	-
4552	Sewer Main Inspection & Cleaning Programme	Operational	150,000	200,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
4555	Tradewaste Bylaw Review	Operational	30,000	-	-	-	-	30,000	-	-	-

4558	LTP Adjusted 2025: Site-Specific Wastewater Screen Installs	Capital	50,000	200,000	200,000	-	-	-	-	-	-
4566	Palmerston Wastewater Main Renewals	Capital	-	-	750,000	750,000	500,000	500,000	500,000	500,000	500,000
4572	LTP Adjusted 2025: Additional Wastewater Monitoring	Operational	-	-	150,000	-	-	-	-	-	-
4574	LTP Adjusted 2025: Beach Road Catchment Upgrade	Capital	-	-	-	-	-	3,000,000	-	-	-
4575	Condition Assessment Manholes	Operational	-	-	100,000	100,000	100,000	100,000	100,000	-	-
4576	Desludging Wetland	Operational	-	500,000	-	-	-	-	-	-	-
4580	LTP Adjusted 2025: Kurow Wastewater Treatment Plant Upgrade	Capital	-	-	-	1,000,000	-	-	-	-	-
4581	Kurow Wastewater Treatment Plant Resource Consent Application	Capital	-	-	65,000	-	-	-	-	-	-
4582	Lake Ohau Wastewater Treatment Plant Resource Consent Renewal	Capital	-	-	-	-	-	-	50,000	-	-
4585	LTP Adjusted 2025: Oamaru Additional Wastewater Pump Station	Capital	-	-	-	-	-	-	-	1,000,000	-

4586	LTP Adjusted 2025: Oamaru Creek - Wastewater Syphon Capacity Upgrade	Capital	-	-	-	-	-	-	2,000,000	-	-
4587	LTP Adjusted 2025: Oamaru Duplicate Wastewater Rising Main	Capital	-	-	-	-	-	-	-	10,000,000	10,000,000
4591	Oamaru Wastewater Pumpstation Renewals	Capital	-	-	200,000	200,000	200,000	200,000	200,000	200,000	200,000
4592	Oamaru Wastewater Treatment Plant Pond Desludging	Operational	-	1,500,000	-	-	-	-	-	-	-
4594	Oamaru Wastewater Treatment Plant Resource Consent Renewal	Capital	-	50,000	-	-	-	-	-	-	-
4598	LTP Adjusted 2025: Oamaru Wastewater Relocation/Renewal - Orwell St	Capital	-	-	-	-	-	-	-	10,000,000	10,000,000
4602	Omarama Wastewater Treatment Plant Resource Consent Renewal	Capital	-	-	-	-	-	50,000	-	-	-
4603	LTP Adjusted 2025: Sanitary Assessment	Operational	-	-	100,000	-	-	-	-	-	-
4604	Sludge Management Issues & Options	Operational	-	100,000	-	-	-	-	-	-	-
4606	Tradewaste	Capital	-	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000

4608	Wastewater Facilities Renewals	Capital	-	-	-	-	-	-	100,000	100,000	1,500,000
4609	Wastewater Overflow Capacity - Waitaki Valley	Capital	-	-	100,000	100,000	-	-	-	-	-

Appendix 3: Asset management improvement plan

The following table lists the improvement items over the LTP period (X denotes year of activity).

#	Description	Funding	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
IP WW1	Wastewater Bylaw (New) Development of a new Wastewater Bylaw.	AM				X					
IP WW2	Trade waste Policy (New) Development of a new Trade waste Policy to feed into the Trade waste Bylaw. Requires information relating to Ōamaru WWTP's future treatment capacity.	AM	X								
IP WW3	Trade waste Bylaw (Review) Review of the existing Trade waste Bylaw. This will include new processes for billing of trade waste customers to ensure it is fair and fit for purpose.	AM		X							
IP WW4	Sewer Lateral Ownership Policy (New) Development of a new Sewer Lateral Ownership Policy to resolve the long-standing issues regarding private ownership of sewer laterals in public roads.	AM		X							
IP WW5	Hampden Septic Tank Cleaning and Inspection Interim on-going cyclic cleaning and inspection of septic tanks in Hampden until long-term solution confirmed.	Operational	X	X	X	X	X	X	X	X	X
IP WW6	Facility O and M manuals Development of facility specific Operations and Management manuals.	AM	X								
IP 3W1	Asset Management Policy (Review)	AM	X								

#	Description	Funding	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
	Review of the existing Asset Management Policy. The current policy sets the asset management maturity level we should be aiming for.										
IP 3W2	Critical Asset Criteria Review existing criteria for classification of critical assets.	AM		X			X			X	
IP 3W3	Activity management plan Reviews 3 yearly review of the Water, Wastewater and Stormwater Activity management plans including adoption by Council.	AM		X			X			X	
IP 3W4	Asset Revaluation 3 yearly revaluation of assets including peer review.	AM		X			X			X	
IP 3W5	Service Level Review and Community Engagement Review of existing service level statements and engagement with the community to determine new and amended service levels.	AM		X			X			X	
IP 3W6	Renewal Planning Tools and Systems Development Develop new or update existing tools and systems used for forward renewal planning.	AM	X	X	X	X	X	X	X	X	X
IP 3W7	Condition Assessment Tools and Systems Development Develop new or update existing tools and systems used for asset condition assessment.	AM	X	X							
IP 3W8	Strategic Planning Tools and Systems Development Develop new or update existing tools and systems used for strategic planning such as business cases and project prioritisation.	AM	X	X							
IP 3W9	Field Equipment Renewal	Depreciation	X	X	X	X	X	X	X	X	X

#	Description	Funding	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
	Replacement of field equipment used by Three Waters Officers such as dataloggers, drones and other monitoring equipment).										
IP 3W10	Visibility of facility assets in GIS Develop greater visibility of linear and point assets within facilities in our GIS	AM	X	X							

Appendix 4: Critical wastewater mains

The criticality ranking of facilities and the high criticality mains are listed below

Ōamaru

Pump station		Condition	Performance	Criticality
Major	Beach Road	1	1	Medium
	Orwell Street	1	1	High
	Regina Lane	3	2	High
Minor	Bluestone Drive	1	1	Low
	Humber Street	1	1	Medium
	Kelk Road	2	2	Low
	Korora	1	1	Low
	Maudes Road	2	2	Medium
	Memorial Gardens	1	1	Medium
	North Otago Vets	2	2	Low
	Ōamaru Harbour	1	1	Medium
	Waireka Industries	2	2	Medium
	Weston Pond	1	2	Medium
	Gees Road (Kakanui balancing pond)	1	1	Medium
	Kakanui 1	3	3	Medium
	Kakanui 2	3	3	Medium
	Kakanui 3	1	2	High

Facility (main components)	Condition	Performance	Criticality
Main Building	2	1	High
Screen	2	2	
Ponds	1	2	
Aerators	2	2	
Overland & Wetland	3	2	
Outfall	1	1	

Duntroon

Facility (main components)	Condition	Performance	Criticality
Septic tank	3	3	High
Dispersal field	3	3	Medium

Kurow

Facility & Description (main components)	Condition	Performance	Criticality
Pond	2	2	High
Wetlands	2	2	High

Lake Ōhau

Facility (main components)	Condition	Performance	Criticality
Pond	2	2	High

Moeraki

Pump station	Condition	Performance	Criticality
Beach Road	2	3	Medium
Camping Ground	2	2	Medium
Coronation Street	2	2	Low
David Street	2	3	Medium
Hall	2	2	Low
Lighthouse	2	2	Low
Motel	2	2	Medium
Wharf	2	3	Medium

Facility (main components)	Condition	Performance	Criticality
Pond	2	2	High
Wetlands	2	2	
Aerators	2	2	
Pumps	2	2	
Ultra Violet	3	3	

Ōmārama

Pump station	Condition	Performance	Criticality	ADWF (m^3/day)	PWWF (l/s)
Ahuriri Drive	3	3	Medium		
Camp	3	3	Medium		

Facility & Description (main components)	Condition	Performance	Criticality
Pond	3	3	High
Wetlands	2	2	
Aerator	1	2	
Magflow meter & structure	2	2	
Dispersal field	1	1	

Otematata

Facility & Description (main components)	Condition	Performance	Criticality
Building	3	2	High
Pumps & pump well	3	3	
Sedimentation tank	3	3	
Sludge digester	4	4	
Trickling filter 1 & 2	3	3	
Outfall	2	2	
Sludge drying beds	3	2	
Pond	1	2	
Screen	1	2	
Disposal field	1	1	

Palmerston

Pump Station & description	Condition	Performance	Criticality
Stour Street	4	4	High

Pump Station & description	Condition	Performance	Criticality
EDS	3	3	Low
WWTP to Irrigation field	1	1	High

Facility & Description (main components)	Condition	Performance	Criticality
Pond	2	3	High
Aerators	2	2	
Magflow meter	1	1	
Pumps and chamber	3	3	
Border dyke area	3	3	
Irrigation fields	1	1	

Critical Mains

System	Location	Dia.	Material	Length (m)	Gravity/Rising	Condition	Performance
Ōamaru	Orwell Pump Station to TY Duncan TP	450	CC Steel	5,472	Rising		
	Thames Highway	450	EW	129.8	Gravity		
	Itchen Street	375	CC	115.5	Gravity		
	Severn Street	300	EW	122.4	Gravity		
	Thames Street	225	EW	508.2	Gravity		
	Severn Street	225	EW	46.9	Gravity		
	Eden Street	225	EW	113.4	Gravity		
	Meek Street	150	EW	154.9	Gravity		

System	Location	Dia.	Material	Length (m)	Gravity/Rising	Condition	Performance
	Kakanui River	125	PVC	619.1	Rising		
Moeraki	Haven Street	150	PVC	200	Gravity		
	Haven Street	100	PE	247.3	Rising		
	Haven Street	100	PE	270.9	Gravity		
Palmerston	Ronaldsay Street	150	AC	59.1	Gravity		
Ōmārama	SH8	100	AC	64.6	Rising		

Appendix 5: Legislative context for wastewater

Key Legislation	Relationship to Wastewater Activity
The Health Act 1956	The Council have the responsibilities under the Health Act 1956 to improve, promote, and protect public health within the district. Some Councils uses provisions in the Health Act as legal bases to issue I/I defect notices to property owners. I/I problems lead to sewer overflows which in turn poses a risk to public health. The Health Act includes some specific and some implied references to wastewater services including: Section 23 grants powers to local authorities to protect public health. Section 25 gives powers to the Ministry of Health to order local authorities to provide sanitary works for the benefit of the district. Section 39 requires all dwelling houses and commercial businesses to provide sanitation facilities. Section 60 makes it an offence to cause the pollution of a water supply. This may be invoked if wastewater is allowed to get into a source of water used as a water supply.
Local Government Act 2002	The Local Government Act requires local authorities to prepare a ten-year Long-Term Plan and 30-year Infrastructure Strategy, which are to be reviewed every three years. The Act requires local authorities to be rigorous in their decision- making by identifying all practicable options and assessing those options by considering the benefits and costs in terms of the present and future well-being of the community. This activity management plan provides information to support the decisions considered in the Long-Term Plan. The Local Government Act includes some specific and some implied references to wastewater services including: Section 11A states local authorities are required to provide 'core services. Network services are listed as a core service. Section 125 requires the local authority to undertake an assessment of the water and sanitary services within its area. Section 126 states the purpose of an assessment is to assess the "adequacy of water and other sanitary services available to communities…" in terms of the quality of the service currently available; the potential health risks from the absence or deficiency of the service; the current and estimated future demand; and the potential consequences of discharges of sewage and stormwater.

Key Legislation	Relationship to Wastewater Activity
	Section 146 and 148 give powers to territorial authorities to make bylaws for the control of waste, on-site wastewater systems and trade waste.
Taumata Arowai—the Water Services Regulator Act 2020	The bill establishes Taumata Arowai - the Water Services Regulator as a new Crown Agent and provides for its objective's general functions operating principles, and governance arrangements. Taumata Arowai is responsible for a small number of complementary functions relating to improving the environmental performance of wastewater networks.
Infrastructure Funding and Financing Act 2020	Provides a new legislative tool to enable private capital to support the provision of new infrastructure for housing and urban development. The Act provides opportunities for local councils, Māori and iwi, and developers to partner and deliver infrastructure, free of the council's debt limits or from charging high upfront costs to developers.
Covid-19 Recovery (Fast-track Consenting) Act 2020	This Act shortcuts the current resource consent process under the RMA to support New Zealand's recovery from the impacts of Covid-19. The Act's purpose is to urgently promote employment to support New Zealand's recovery and the certainty of ongoing investment across New Zealand, while continuing to promote the sustainable management of natural and physical resources.
Resource Management Act 1991	The Resource Management Act 1991 (RMA) is the principal legislation that sets out how we manage our environment sustainably. As well as managing air, soil, freshwater and the coastal marine area (and the effects of human activity on these resources), the RMA regulates land use and the provision of infrastructure, which are integral components of New Zealand's planning system. Many sections of the Act are relevant to the control of wastewater discharges and the process for seeking consent to undertake the activity. Specific sections include: Section 13 places restrictions on certain uses of the beds of lakes and rivers, which can affect maintenance of wastewater reticulation located near watercourses.

Key Legislation	Relationship to Wastewater Activity
	Section 15 does not allow the discharge of any contaminant into water or allow a contaminant to enter water unless the discharge is expressly allowed for by a national environmental standard or other regulations, a rule in a regional plan or a resource consent. Part 6 (sections 87A–165) describes the requirements for applying for resource consents and implementing resource consent processes.
Civil Defence Emergency Management Act 2002	Sets an expectation that the Council's lifeline utilities (which includes wastewater service) to prepare to function at the fullest possible extent during and after an emergency, even though this may be at a reduced level of service.
Health and Safety in Employment Act 1992 and 2015	Health and Safety legislation requires that staff and contractors are kept safe at work. New legislative changes to the act will mean improved health and safety measures will be required.
Utilities Access Act 2010	The processes and rules for coordinating work done in transport corridors by utility operators, or that affects utility operators' assets.
Te Tiriti o Waitangi – Treaty of Waitangi	The Treaty of Waitangi is an agreement between Māori and the Crown. Under Section 4 of the Local Government Act 2002, local authorities are required to 'recognise and respect the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and to maintain and improve opportunities for Māori to contribute to local government decision-making processes. Sections 77 and 81 detail the scale of requirement for local authorities to seek contributions and involvement from Māori in consultation and decision-making processes.
Climate Change Response Act 2002	The Climate Change Response Act 2002 puts in place a legal framework to support New Zealand to respond to climate change and meet its international obligations. It also establishes the New Zealand Emissions Trading Scheme.