

Te Kaunihera-ā-Rohe Ruapehu
Ruapehu District Council



Wastewater Asset Management Plan

2024-2034



Quality Information

Document	Wastewater Asset Management Plan 2024-34
Date	June 2024
Prepared by	Stuart Watson, Acting Environmental Manager Environmental Services, Ruapehu District Council Darren Tiddy, Senior Consultant, Morrison Low Cushla Anich, Director, Morrison Low Veolia team
Reviewed by	Vini Dutra, Group Manager Infrastructure, Ruapehu District Council
Approved by	Clive Manley, Chief Executive, Ruapehu District Council

Revision History

Version 1 (Draft for Audit)						
Prepared by:		Group Manager/Reviewed by:		Chief Executive/Approved		
Name	Stuart Watson	Name	Vini Dutra	Name	Clive Manly	
Signature		Signature		Signature		

Version 2 (Draft for LTP Consultation)						
Prepared by:		Group Manager/Reviewed by:		Chief Executive/Approved		
Name	Stuart Watson	Name	Vini Dutra	Name	Clive Manly	
Signature		Signature		Signature		

Version 3 (Final for Adoption)						
Prepared by:		Group Manager/Reviewed by:		Chief Executive/Approved		
Name	Stuart Watson	Name	Vini Dutra	Name	Clive Manly	
Signature		Signature		Signature		

Contents

Executive Summary	5
Activity overview	5
Strategic challenges	5
Current state	6
Future direction	7
Financial summary.....	7
Key improvement actions	8
1 Introduction	9
1.1 Activity overview	9
1.2 Purpose of this Plan	9
1.3 Assets at a glance	10
1.4 Strategic context.....	10
1.6 Key issues	12
1.7 Potential effects	13
2 The Services We Provide	15
2.2 Customers and stakeholders.....	15
2.3 Legislative framework.....	17
2.4 Policies, standards and guidelines	19
2.5 LOS linkages to well beings	19
2.6 Community engagement	20
2.7 Service level summary	22
2.8 Service gaps.....	25
2.9 What does this tell us?	25
3 Managing Growth and Demand	26
3.1 Growth and demand overview.....	26
3.2 District growth at a glance	26
3.3 Changes in demographics.....	26
3.4 Current wastewater demand	27
3.5 Future wastewater capacity.....	28
3.6 Demand management programme	30
3.7 Growth and demand assumptions.....	30
4 Lifecycle Management	32
4.1 Lifecycle management overview	32
4.2 Asset summary	32

4.3	Critical assets	39
4.4	Asset performance	40
4.5	Asset condition	47
4.6	Lifecycle Management Decision Making	48
4.7	Service delivery arrangements	49
4.8	Operations and maintenance plan	50
4.9	Asset renewals plan	51
4.10	Asset creation plan	53
4.11	Asset disposal plan.....	55
5	Risk Management	56
5.1	Risk management approach	56
5.2	Main wastewater activity risks	57
5.3	Emergency risk planning	58
5.4	Climate change and resilience	58
6	Financial Summary.....	61
6.1	Financial overview	61
6.2	Expenditure categories.....	62
6.3	Operational expenditure summary	62
6.4	Capital expenditure summary.....	63
6.5	Asset valuation summary	65
6.6	Financial performance	66
6.7	Funding strategy	67
6.8	Key financial forecast assumptions	67
7	Asset Management Practices.....	69
7.1	Overview.....	69
7.2	AM Policy.....	69
7.3	AM maturity	69
7.4	AM Practices	70
7.6	Improvement monitoring.....	72
7.7	Acronyms.....	74
7.8	Full levels of service summary	75
7.9	Three Year Improvement Programme.....	78

Executive Summary

Activity overview

Ruapehu District Council (RDC / Council) is responsible for providing infrastructure services to the district which includes the wastewater activity. The purpose of the wastewater activity is to provide efficient and safe wastewater collection and disposal in an effective and environmentally acceptable manner. A safe and efficient wastewater network is essential as the basis for maintaining public health in the communities and protecting the environment.

Council owns treatment plants at Taumarunui, National Park Village, Ohakune, Pipiriki, Raetihi and Rangataua. In addition, Council co-operates with the New Zealand Defence Force in Waiouru to provide wastewater services for the town.

The wastewater assets had a depreciated replacement cost of \$30.3 million (as at 1 July 2022). The wastewater network includes six wastewater treatment plants, 21 pump stations, 110 km of pipes and 1,448 manholes.

All wastewater treatment plants currently discharge treated wastewater to surface water. It is important for Council to consider all treaty settlements regarding those surface waters.

Strategic challenges

Key issues were identified for the 2024 Asset Management Plan development through Council's knowledge and asset planning. The key issues Council is managing as part of the wastewater activity are summarised in the table below.

Table 1 Summary of key issues – wastewater

Focus area	Key issues
Governance model	Uncertainty with changes to legislation resulting from new Government policies and initiatives and how this impacts service delivery.
Funding constraints	Increasing cost challenges with expenditure and associated debt required to bring the districts three waters systems in-line with Government legislation and debt allowance standards. Ruapehu District has a small rating base to share the costs of providing water services to meet the minimum standards.
Resource constraints	Delivering water services is constrained by supply chain issues and staffing levels.
Regulatory standards	Upgrading wastewater treatment plants to meet higher environmental standards and future growth pose significant and complex challenges. Four of the six wastewater plants are under the resource consent renewal process during this Asset Management Plan period. Council recognises and is managing increasing stakeholder expectations, localised areas of increased demand and provincial commercial limitations.
Cultural expectations	The future consent conditions for the wastewater treatment plants and discharge is the main driver for the wastewater activity and a significant challenge. There are cultural expectations for suitable treatment processes required to meet mana whenua values before discharging to streams or rivers.
People: skills and capacity	Inadequate internal resourcing for the wastewater activity. It is costly for a small rural district council to have sufficient staffing for managing the three water assets.
Resilience	Increasing extreme weather patterns with storms of increasing intensity and frequency will impact the wastewater network capacity resulting in overflows.

Current state

The current state of the wastewater assets is assessed in terms of asset condition and performance. A summary of the asset condition is illustrated in Figure 1 below. This shows that no underground wastewater assets have been assessed in poor condition.

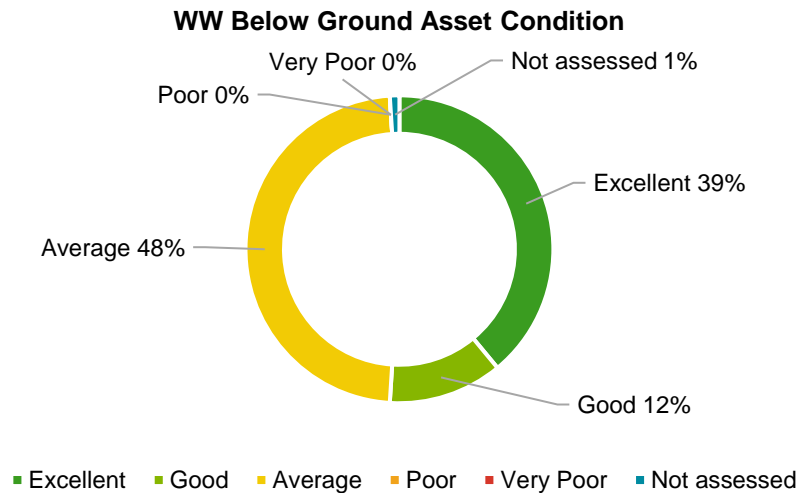


Figure 1 Wastewater asset condition.

Source: Veolia (August 2020).

Asset condition is usually assessed during asset valuation audits. Council’s three waters contractor updated the three waters asset valuation in July 2022, however this did not include assessment of the asset condition, which was last updated in August 2020 (listed as a key improvement action). Three yearly condition assessments of these assets are recommended to gain a better understanding of current state, ideally sequenced with the Long Term Plan cycle. This would help identify trends and ensure the poor performing assets are scheduled for renewal.

- Wastewater pump stations - Overall, pump stations condition is good.
- Manholes - Overall, the integrity of the manholes in the Ruapehu District is good with manhole chambers and benching in good condition.
- Wastewater treatment plant – Overall the plant condition is good.

Asset performance is summarised below for:

- Resource consents - Renewing the resource consents for four of the six wastewater plants is main driver for the wastewater activity and a significant challenge.
- Dry weather overflows - A dry weather overflow is an uncontrolled wastewater discharge that is not associated with a rain event. All pump stations are connected to a monitoring system so we can monitor and report failures. This helps us to effectively mitigate dry weather overflows from entering the environment and for reporting to the Regional Council. We have achieved the mandatory performance measure for the number of dry weather wastewater overflows from Council’s system for the last two financial years.
- Inflow and infiltration - We know operationally that some of our catchments are leaky. This is the term used to describe groundwater and stormwater entering into dedicated wastewater system resulting in the system becoming overloaded and overflows occurring. The stormwater inflows also add load onto our wastewater treatment plants.

Future direction

The future direction for the wastewater activity is:

- **Compliance** – We will continue to work through the resource consent processes for upgrading our wastewater treatment plants as consents expire. It is recognised that this is a lengthy and difficult process to navigate with changing legislation, policy and regulations.
- **Asset performance:**
 - We intend to develop a cost effective inflow and infiltration programme with a focus on the highest leaky sub catchments. This will help us to mitigate the impacts of wastewater overflows to an acceptable level.
 - We will develop a long term vision for our wastewater treatment plant sites in partnership with iwi.
- **Network resilience** – Work towards our larger wastewater pump stations having backup generators to ensure service continuity during power outages and minimise environmental risk.
- **Financial sustainability** – It is an ongoing challenge to ensure that the level of investment in renewing the wastewater assets and meeting legislative obligations is sustainable long term. There is pressure to minimise rate increases so they are affordable for our community.

Financial summary

The total amount of expenditure for operations, maintenance, and capital for the wastewater activity over the next ten years is \$62.2 million, as shown below. The annual wastewater activity cost is \$5.6 to \$6.6 million per year. In the ten-year forecast, 65% is operating costs, with capital expenditure on renewals at 26%, and levels of service at 8%. There is small capital expenditure on growth forecast as these are expected in pockets.

Table 2 Summary of wastewater ten year expenditure forecast (uninflated)

Description	Projected Expenditure				
	Year 1	Year 2	Year 3	Year 4-10	Ten-year
	2024/25	2025/26	2026/27	2027-34	Total
Operational expenditure	3,434,745	3,551,770	3,641,210	29,235,414	39,863,139
Capital expenditure	2,100,000	2,300,000	1,050,000	16,850,000	22,300,000
Renewals	1,650,000	1,600,000	800,000	12,300,000	16,350,000
Levels of Service	150,000	350,000	150,000	4,500,000	5,150,000
Growth	300,000	350,000	100,000	50,000	800,000
Total	5,534,745	5,851,770	4,691,210	46,085,414	62,163,139

Source: Council's LTP budget (uninflated as at June 2024).

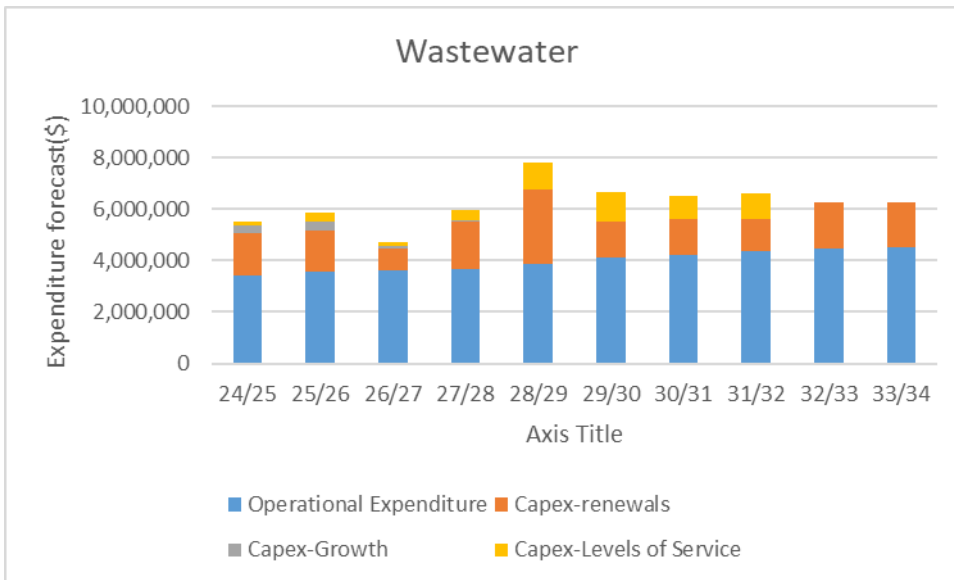


Figure 2 Financial summary for the wastewater activity.

Source: Council's LTP budget (uninflated as at June 2024).

Capital expenditure (renewals and new works) across the ten-year expenditure period is forecast at \$22.3 million, with renewals representing 73%, levels of service 23%, and growth 4%.

The major wastewater projects are mainly for wastewater asset renewals across the district, for levels of service projects at the wastewater treatment plants, maintenance of treatment ponds and wetlands, and pump station renewals which include:

- District-wide wastewater network assets renewals at \$8.0 million.
- Hikumutu Wastewater Treatment Plant (Taumarunui) levels of service upgrades at \$4.0 million.
- District-wide pump station asset renewals at \$2.2 million.
- Desludging Hikumutu Wetland and Ohakune Pond at \$1.2 million each.
- Desludging National Park WWTP at \$1.0 million.

Key improvement actions

The key high priority actions for improving the asset management practices in the next three years are summarised in the following table.

Table 3 High priority actions – wastewater

AM element	Proposed actions
Asset performance	Develop and implement a cost effective inflow and infiltration rolling programme to target the highest leaky sub catchments.
	Continue to work with iwi to understand the long term vision for the wastewater treatment plant sites. The objective is to use technology to treat wastewater to a high level.
Asset condition	Undertake 3 yearly condition assessment of the above and below wastewater assets.
Strengthening resilience	Improving the resilience of the network in relation to climate change impact.
Financial planning	Continue to review the level of investment in wastewater assets to ensure the network is being renewed sustainably long term, and legislative compliance is being met balanced against community affordability and asset risk.

1 Introduction

1.1 Activity overview

Ruapehu District Council (RDC / Council) is responsible for providing infrastructure services to the district which includes the wastewater activity. The purpose of the wastewater activity is to provide efficient and safe wastewater collection and disposal in an effective and environmentally acceptable manner. A safe and efficient wastewater network is essential as the basis for maintaining public health in the communities and protecting the environment.

Council owns treatment plants at Taumarunui, National Park Village, Ohakune, Pipiriki, Raetihi and Rangataua. In addition, Council co-operates with the New Zealand Defence Force in Waiouru to provide wastewater services for the town.

The wastewater assets had a depreciated replacement cost of \$30.3 million (as at 1 July 2022). The wastewater network includes six wastewater treatment plants, 21 pump stations, 110 km of pipes and 1,448 manholes. The wastewater network is made up of a mix of assets:

- Network of pipes including manholes and service connections.
- Pump stations.
- Treatment plants including screens, lagoons, disinfection units, aeration equipment, rock filters and wetlands.

Townships such as Ohura, Ōwhango, and Raurimu do not have Council owned and operated wastewater systems. These townships are serviced by septic tanks and effluent beds.

All wastewater treatment plants currently discharge treated wastewater to surface water. It is important for Council to consider all treaty settlements regarding those surface waters. The discharge quality needs to improve to meet higher environmental standards and specific treaty settlements.

1.2 Purpose of this Plan

The Wastewater Asset Management Plan (AMP) details how Council will manage these assets now and into the future. The AMP is a tactical, infrastructural plan that gives effect to a range of other Council strategies and tactical planning documents. It provides a means through which Council can demonstrate responsible management of its wastewater assets.

The key objective of asset management (AM) is to provide levels of service (LOS) in a cost-effective manner while also demonstrating responsible stewardship of resources for present and future customers. AMPs are a significant component of the strategic planning and management of Council, with links to the LTP, 30 Year Infrastructure Strategy and service delivery plans including service contracts.

The plan covers a period from 1 July 2024 to 30 June 2034, with a particular focus on the work programmes planned for the next three to five years. It reflects Council's focus on achieving an optimal balance between the key elements of AM, which are service levels, cost, and risk.

This AMP covers the financial and technical aspects of providing and managing the assets. This AMP also covers the risks of ownership and how these might be addressed through removal or mitigation of risk.

This AMP is written in accordance with good AM planning and practice as set out in:

- Āpōpō / International Infrastructure Management Manual (IIMM).
- ISO 55000 (international standard covering management of physical assets).
- Office of the Auditor General industry notes and reports.
- LGA 2002 Schedule 10 and amendments.

The new Government is implementing its Local Water Done Well policies. This will be achieved through legislative amendments in a staged approach. A framework and transitional arrangements for the new water services system will be established. Alternative models include regional / sub regional Council Controlled

Organisations. This AMP will be updated as required as the Government implements its repeals of the legislation and preferred model for three waters.

1.3 Assets at a glance

A summary of wastewater assets is presented in the table below by township (refer to Section 4.2 Asset Summary for detail). This shows that Taumarunui and Ohakune are the main serviced townships.

Table 4 Summary of wastewater assets

Township	Rateable properties connected*	Wastewater pipeline length (km)	Manholes	Lampholes	Wastewater Pump Stations	Wastewater Treatment Plants
National Park	315	6.38	90	0	0	1
Ohakune	1,615	28.60	432	0	1	1
Pipiriki	22	2.07	16	9	1	1
Raetihi	514	13.17	148	0	4	1
Rangataua	205	4.59	34	0	1	1
Taumarunui	2,096	52.66	705	33	12	1
Waiōuru	80	2.54	23	0	2	NA [#]
Total	4,847	110.01	1,448	42	21	6

Source: Veolia Infrastructure Asset Valuation (July 2022).

* Rateable properties served are the total number of connections including all residential dwellings, commercial pans and properties charged for wastewater (provided by Council as at February 2024 as recorded in the financial system).

[#] Waiōuru wastewater system assets owned by Council consist of network assets only as New Zealand Defence Force (Waiōuru Military Camp) owns and operates the wastewater treatment plant.

Customer / Council ownership

Council is responsible for maintenance of the wastewater system from the property boundary. All pipes and drains beyond the property boundary are owned by, and are entirely the responsibility of, the property owner.

1.4 Strategic context

1.4.1 Strategic overview

The wastewater activity supports Council's vision and four Community Outcomes as set out in parts 1 and 2 of this AMP. The Community Outcomes are Council's true north for planning and decision making. The wastewater activity contributes to the following two Community Outcomes:

- Our infrastructure assets and services are resilient and fit for purpose.
- Our natural and built environment is healthy strong, and safe.

1.4.2 Contribution to well beings

Council has developed a Wellbeing Framework to guide its decision making. It aligns Council's values, purpose, vision, Community Outcomes (external facing) with its organisational outcomes, goals and roles (internal facing). Te Tiriti o Waitangi is the pou in the framework and is at the heart of everything Council does, as shown conceptually below.

The wastewater activity influences the wellbeing by:

- Social:
 - Quality regulation, regulatory services, and infrastructure.
 - Core infrastructure endeavours to keep pace with changing demand.
 - Excellent standards of safety and welfare are promoted and respected.
- Cultural - Working together with tangata whenua to achieve common goals.
- Environmental - Our environment is accessible, clean and safe and our water, soil and air meets required standards.
- Economic - Regulatory services and reliable infrastructure help the economy prosper.

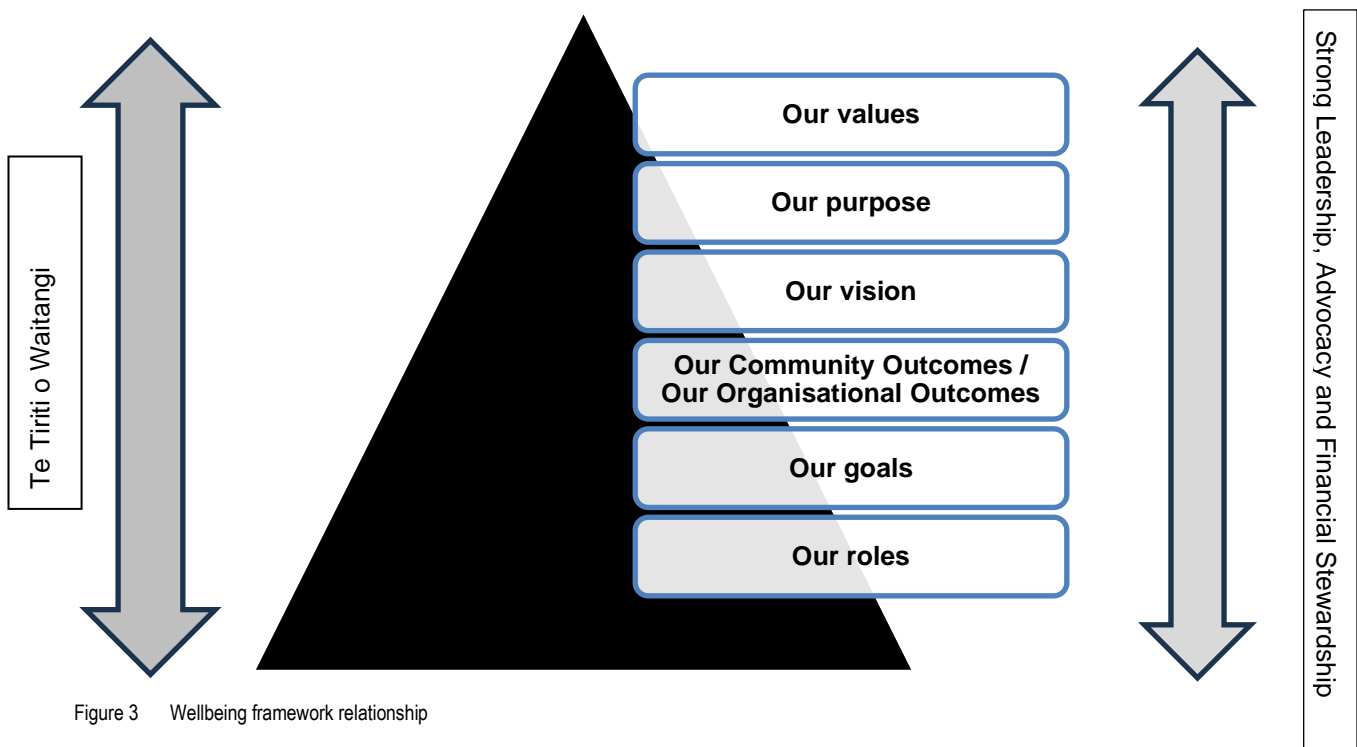


Figure 3 Wellbeing framework relationship

1.4.3 Wastewater activity objectives

Council’s objectives for the wastewater activity are:

- To operate and maintain the wastewater assets efficiently to keep pace with changing demand.
- To maintain continuity of the wastewater networks and provide treatment to protect public health and the natural environment.
- Enhance the sustainability of environment, social, cultural and economic wellbeing of the communities.

1.5 Key achievements

There have been a number of key achievements for the wastewater activity since the 2021 LTP. These are summarised in the table below.

Table 5 Summary of key achievements

Asset class / AM element	Key achievements since 2021
Network	<ul style="list-style-type: none"> North Street wastewater main relining, Taumarunui. Ongarue Bridge / Kururau Road wastewater main relining, Taumarunui Ruanui Street wastewater rising main replacement, Waiouru Ohakune wastewater main critical upgrades, Ohakune
Pump stations	<ul style="list-style-type: none"> Various component upgrades, overhauls and installations including at Highway Campground Raetihi, Matai Street, Tuku Street, Golf Road, Victory Bridge, and Sunshine Road. Bullians WWPS Pump 1 Pipework Upgrade, Taumarunui. Pumps discharge and piping improvement work at Pipiriki
Wastewater Treatment Plants	<ul style="list-style-type: none"> A directional aerator was installed at Ohakune Wastewater Treatment Plant. The Aerator was trialled for 6 months prior to purchase and has shown improvement to pond Dissolved Oxygen levels.
Relationship building	<ul style="list-style-type: none"> Since the previous AMP, iwi / hapū partnerships have strengthened through improved dialogue / korero, facilitated through Council's internal staff and through HRC.
Long term planning	<ul style="list-style-type: none"> Hydraulic Wastewater Model was developed for Ohakune.

1.6 Key issues

Key issues were identified for the 2024 AMP development through Council's knowledge and asset planning. The key issues Council is managing as part of the wastewater activity are summarised in the table below.

Table 6 Summary of key issues – wastewater

Focus area	Key issues	Implications / management response	Refer to AMP section
Governance model	Uncertainty with changes to legislation resulting from new Government policies and initiatives and how this impacts service delivery.	Maintain a watching brief on the changes of Government's Local Water Done Well policies and evaluate other options as information becomes available.	Section 2.3 Legislative framework
Funding constraints	Increasing cost challenges with expenditure and associated debt required to bring the districts three waters systems in-line with Government legislation and debt allowance standards. Ruapehu District has a small rating base to share the costs of providing water services to meet the minimum standards.	The proposed 10 year capital works programme has been prioritised as part of the LTP process. Many important projects have been discounted through this process. The Wastewater AMP shows the important but unfunded projects for completeness. Council will continue to seek external funding where appropriate to reduce the impact on Ruapehu's ratepayers.	Section 4.10 Asset Creation Plan; Section 6.4 Capital Expenditure Summary
Resource constraints	Delivering water services is constrained by supply chain issues and staffing levels.	Sourcing plant and equipment can be challenging particularly from overseas with ongoing geopolitical issues, less locally now. Work programme certainty	Section 4.10 Asset Creation Plan

Focus area	Key issues	Implications / management response	Refer to AMP section
		allows adequate lead in times Council's service provider Veolia NZ and capital works contractors.	
Regulatory standards	Upgrading wastewater treatment plants to meet higher environmental standards and future growth pose significant and complex challenges. Four of the six wastewater plants are under the resource consent renewal process during this AMP period. Council recognises and is managing increasing stakeholder expectations, localised areas of increased demand and provincial commercial limitations.	Council continues to strengthen the partnerships with iwi / hapū and HRC to reach pragmatic and environmentally appropriate solutions.	Section 2.3 Legislative framework; Section 3.5 Future wastewater capacity
Cultural expectations	The future consent conditions for the wastewater treatment plants and discharge are the main drivers for the wastewater activity and a significant challenge. There are cultural expectations for suitable treatment processes required to meet mana whenua values before discharging to streams or rivers.	Council is exploring technology solutions so treated wastewater is to a high standard. Continue to develop our long term vision for our wastewater treatment plant sites in partnership with iwi.	Section 4.4 Asset performance
People: skills and capacity	Inadequate internal resourcing for the wastewater activity. It is costly for a small rural district council to have sufficient staffing for managing the three water assets.	AM planning is not undertaken or ad hoc resulting in assets being managed reactively.	Section 7.4 AM Practices; Section 7.5 Improvement Plan
Resilience	Increasing extreme weather patterns with storms of increasing intensity and frequency will impact the wastewater network capacity resulting in overflows.	Continue to look for opportunities to strengthening infrastructure resilience at scoping design stage for renewals and new works projects.	Section 5.4 Climate change and resilience

1.7 Potential effects

There is recognition of the potential effects both positive and negative resulting from the wastewater activity which Council manages as outlined in the table below. These negative effects are managed through a variety of processes, summarised in the table below and in Section 4 Lifecycle Management Plan and Section 5 Risk Management.

Table 7 Summary of effects – wastewater

Wellbeing	Positive	Negative	Mitigation
Social	Provides safe environment for the community. The public wastewater service reduces the risk of waterborne diseases spreading through the community.	Failures in the collection or treatment system, can result in untreated or partially treated wastewater discharges. This wastewater may contain pathogens and nutrients that can be harmful to humans and the environment.	The development of the AMP to plan for replacement and upgrades in a timely manner. Council's facilities maintenance contractor responds to asset failures in reasonable time.
Economic	Infrastructure allows business to operate in the urban areas.	There is high capital cost of investment in the wastewater infrastructure.	Council is committed to implementing cost-effective solutions as part of its asset management approach
		Significant costs and time to implement the upgrade and overflow reduction improvement projects.	Council is committed to improving the natural environment but acknowledges that it takes time to make significant improvements.
Cultural	Continue to develop our long term vision for our wastewater treatment plant sites in partnership with iwi.	Te Mana o te Wai. Contamination of the rivers is unacceptable to iwi.	Council is committed to improving the receiving environment through partnerships with iwi and HRC, and capital works programmes to reduce overflows.
Environmental	Centralised public wastewater services collect and discharges wastewater limiting the environmental impact.	New more intensive treatment technologies will be required to deliver to higher environmental standards.	Council is committed to improving the receiving environment through partnerships with iwi and HRC, and capital works programmes to reduce overflows.
		Potential environmental damage during construction of new works.	Environmental damage is mitigated through resource consent conditions which are specified in the contract document and monitored closely during the implementation of physical works.
		Environmental degradation of receiving water from wastewater overflows.	Council mitigates discharge effects by treating wastewater to an agreed level that meets resource consent conditions.

2 The Services We Provide

2.1 Introduction

Council aims to provide safe and affordable water services to deliver the levels of service (LOS) in a sustainable manner over the long term. This section defines the LOS or the qualities of the service that the Council intends to deliver, and the measures used for monitoring. The adopted LOS supports the Council's strategic goals and is based on user expectations and statutory requirements as well as integration with national and regional strategies. Council's LTP is the primary document for determining and agreeing LOS and costs with the community and stakeholders.

2.2 Customers and stakeholders

There is a wide range of customers and stakeholders with an interest in how the Council recognises there is a wide range of customers and stakeholders with an interest in how the wastewater activity and wider three waters activities are managed, including landowners, the resident community, visitors, specific interest groups within the community, iwi/hapū, and other regional and central government agencies.

Good knowledge of stakeholder values and drivers is essential for providing effective, efficient, and safe assets and services. The key customers and the main stakeholders involved in the wastewater activity and their specific areas of interest are summarised in the table below.

Table 8 Customers and stakeholders

Segment	Area of interest
Customers	
The community – ratepayers, residents and tourists	Safe, effective, reliable, and affordable wastewater services.
Local industrial and business users	
Institutional customers such as health and education institutions, and emergency services	
Trade waste customers	Wastewater collected, treated, and discharged in accordance with trade waste conditions.
	Large customers such as Petpal Pet Food Factory in Taumarunui.
External stakeholders	
Local iwi / hapū	New governance models and participating in decision making process.
	Public land settlement with cultural redress.
	Te Mana o te Wai – all water to be respected and mauri of water to be protected and enhanced. Iwi & Hapū cultural heritage.
	Mana whenua to be involved in management of water supply, used water and stormwater issues.
Post-settlement Governance Entities (PSGEs) i.e., Ngā Tāngata Tiaki o Whanganui	New governance models and participating in decision making process.
	Mana whenua to be involved in management of water supply, used water and stormwater issues.

Segment	Area of interest
	Public land settlement with cultural redress.
Horizons Regional Council	Environmental protection and regulation: Quality of receiving environments and compliance with consents for abstraction and discharge.
Government agencies including Office of the Auditor General, Audit New Zealand, Te Whatu Ora, Fire and Emergency New Zealand, Ministry of Local Government, Department of Internal Affairs, National Emergency Management Agency, Taumata Arowai Climate Change Commission.	Interested in the prudent management of the wastewater activity and compliance.
Department of Conservation, Ministry of Agriculture and Fisheries	Interested in providing a sustainable service that does not negatively impact on the environment, promotes good practices, and meets legislative requirements.
	Environmental protection – Prevention of harm to flora and fauna which may be negatively impacted by the operation of three waters services
Government service providers / customers: e.g. New Zealand Defence Force, Department of Conservation (DOC)	Council provides services on behalf of DOC and pays the Defence Force for the provision of services. There are contractual relationships established which are linked to performance and obligations.
Ministry of Business Innovation and Employment (MBIE) and other funding partners	External funding partners for capital upgrade works.
Other external stakeholders including environmental groups	Interested in improvement to the natural environment and efficiency initiatives.
Internal stakeholders	
Elected members: Mayor and Councillors	Interested in strategic outcomes, rates impact and customer satisfaction. Working with iwi and community groups.
Executive team	Accountable for strategic outcomes and user satisfaction.
Management, Corporate, Finance and Planning Teams	Ensuring the assets are meeting the expectations and the agreed levels of service. Activities are managed financially sustainably.
Land Transport and Recreation and Community Facilities Teams	Strong coordination with work programmes, planning and budgets. Managing water services assets along roads and public parks and reserves.

2.3 Legislative framework

Statutory requirements have an impact on how Council operates to meet its stakeholder obligations. Key legislation affecting the wastewater activity are summarised in the table below.

Table 9 Main legislation influencing wastewater activity

Legislation	Requirement
The Treaty of Waitangi / Te Tiriti o Waitangi	The Treaty of Waitangi / Te Tiriti o Waitangi is New Zealand's foundational document. It outlines the relationship between the New Zealand government and Māori and influences how local government engages with and manage assets that are significant to Māori.
Local Government Act (LGA) 2002	<p>This Act requires local authorities to:</p> <ul style="list-style-type: none"> describe the activities of the local authority provide a long-term focus for the decisions and activities prepare an LTP, at least every three years. <p>A key purpose of the LGA is the role of local authorities in meeting the current and future needs of communities for good-quality local infrastructure, local public services and performance of regulatory functions in a way that is most cost-effective for households and businesses. AMPs are the main method of demonstrating Schedule 10 requirements.</p>
Health and Safety at Work Act 2015	The Health and Safety at Work Act 2015 (HSWA) is New Zealand's workplace health and safety law. The Act sets out the principles, duties and rights in relation to workplace health and safety.
Resource Management Act (RMA) 1991	<p>The RMA is an established planning framework covering land designation processes and resource consents for activities that affect the environment. Horizons is responsible for monitoring compliance with the environmental provisions of this Act that relate to earthworks, sediment control, work within watercourses etc. This Act ensures compliance with Resource Consents issued for water taken from natural water resources.</p> <p>The new Government intends to repeal the Resource management system reforms - Spatial Planning and Natural and Built Environment Acts. The Natural and Built Environment Act 2023 is being repealed and the Government is now working on fast-track consenting.</p>
	There are new requirements with the National Policy Statement (NPS) for Freshwater Management 2020 including giving effect to Te Mana o to Wai, improving degraded water bodies, and maintaining or improving all others using bottom lines, and an expanded national objectives framework.
Te Awa Tupua (Whanganui River Claims Settlement) Act 2017	<p>The Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 imposes certain requirements on local government bodies in relation to the Whanganui River. Specifically:</p> <ul style="list-style-type: none"> Recognising the Whanganui River as a Legal Entity: RDC must acknowledge the Whanganui River as Te Awa Tupua, a legal entity with its own rights and interests. Guardianship Responsibilities: RDC shares guardianship responsibilities with Whanganui iwi over the river's health and wellbeing. This includes actively participating in the river's environmental, cultural, and spiritual stewardship. Collaboration and Cooperation: RDC is required to work collaboratively with Whanganui iwi, other stakeholders, and government agencies to manage the river sustainably and in accordance with the principles outlined in the Act. Implementing Management Plans: RDC may bestakeholders involved in developing and implementing management plans for the Whanganui River, ensuring that these plans align with the Act's provisions and uphold the river's status as a legal person. <p>These requirements reflect a unique legal and cultural approach to environmental management, emphasising partnership, stewardship, and indigenous rights within the framework of New Zealand legislation.</p>
Ngāti Rangī Claims	The Whangaehu River is subject to the Ngāti Rangī Claims Settlement Act 2019, which has

Legislation	Requirement
Settlement Act 2019	established the Te Waiū-o-Te-Ika framework for the catchment.
Taumata Arowai Water Services Regulator Act (2020)	<p>Taumata Arowai administers the Water Services Act 2021 for ensuring safe drinking water. The standalone Crown entity Taumata Arowai has been created to regulate drinking water. The objectives of Taumata Arowai are to:</p> <ul style="list-style-type: none"> • Protect and promote drinking water safety and related public health outcomes • Effectively administer the drinking water regulatory system • Build and maintain capability among drinking water suppliers and across the wider industry • Give effect to Te Mana o te Wai, to the extent that Te Mana o te Wai applies to the functions and duties of Taumata Arowai • Provide oversight of, and advice on, the regulation, management, and environmental performance of wastewater and storm water networks • Promote public understanding of the environmental performance of wastewater and stormwater networks.
Water Services Act (2021)	<p>The Water Services Act 2021 is as part of the Three Waters Reforms. It established the drinking water standards and regulates all persons and organisations that supply drinking water. The main purpose of this Act is to ensure that drinking water suppliers provide safe drinking water to consumers by:</p> <ul style="list-style-type: none"> • Providing a drinking water regulatory framework that is consistent with internationally accepted best practice. • Providing a source water risk management framework that, together with the Natural and Built Environment Act 2023, regulations made under that Act, and the relevant part of the national planning framework under that Act, enables risks to source water to be properly identified, managed, and monitored. • Providing mechanisms that enable the regulation of drinking water to be proportionate to the scale, complexity, and risk profile of each drinking water supply. <p>The new Government is implementing its Local Water Done Well policies. This will be achieved through legislative amendments in a staged approach. A framework and transitional arrangements for the new water services system will be established.</p>
Climate Change Response (Zero Carbon) Amendment Act	<p>Climate Change Response (Zero Carbon) Amendment Act includes a target of reducing methane emissions by 24 to 74% below 2017 levels by 2050, and an interim target of 10% by 2030. It also has a target of reducing net emissions of all other greenhouse gases to zero by 2050. This will impact our asset portfolios including wastewater.</p> <p>The Government's first National Adaptation Plan to build resilient infrastructure was released in 2022 and focuses on getting the foundations right.</p>
Civil Defence Emergency Management Act 2002 (CDEM)	<p>The CDEM requires lifeline utilities to function at their fullest possible extent during and after an emergency and to have plans for such functioning (business continuity plans).</p> <p>This is being reformed as part of the Government's Emergency Management Trifecta Programme. This will impact how National Emergency Management Agency and Local Civil Defence Emergency Management Groups interact during emergencies.</p>
Hazardous Substances and New Organisms Act 1996 (HSNO)	<p>The purpose of the HSNO Act is to protect the environment and health and safety of people and communities by preventing or managing the adverse effects of hazardous substances and new organisms.</p> <p>The HSNO legislation takes a life-cycle approach to the management of hazardous substances, including their disposal, when such substances are no longer wanted and become waste. The disposal of waste hazardous substances is controlled through the Hazardous Substances (Disposal) Regulations 2001. These regulations provide for the treatment of the different classes of hazardous waste substances before disposal so that the substances are no longer hazardous.</p>

Legislation	Requirement
Utilities Access Act 2010	The Utilities Access Act 2010 requires utility operators and corridor managers to comply with a national code of practice that regulates access to transport corridors. This impacts the wastewater network as these assets are normally located in the road corridor.

2.4 Policies, standards and guidelines

The primary documents that link and guide the wastewater activity are summarised in the table below.

Table 10 Key wastewater policies, standards and guidelines

Standard / Guideline	Description
Asset Management Policy (2020)	This policy defines the principles and responsibilities that Council applies when managing the infrastructure assets that Council is responsible for. It sets the strategic objectives for the management of assets and outlines the Council's commitment to continually improve the way it manages its infrastructure assets. The policy covers land transport, three waters, community facilities, community property, and solid waste. The 2020 AM Policy is overdue for update with normal review cycle.
Trade Waste and Stormwater Bylaw 2019	Regulates the discharge of trade waste to sewerage system and discharges to the stormwater system in Ruapehu District. While this bylaw is enacted, it is not currently proactively enforced through compliance action or supported by a dedicated trade water policy.
District wide WWTP Review	Preliminary analysis of WWTP performance and potential upgrade strategies including high level costs.
Water New Zealand Best Practice Guidelines and Technical Documents	Water New Zealand is a national not-for-profit sector organisation that provides best practice guidelines in the provision of water services. The guidelines include (but are not limited to) modelling, standards for treatment plants and water loss calculations, guides for occupational health and safety and underground utilities-seismic assessment and design guidelines.
Standards Association of New Zealand	The Standards Association of New Zealand provides a range of standards covering required or recommended practice and which may impact directly on assets or management of contracts, e.g. NZS4404 Code of Practice for Urban Subdivision provides a range of water standards. Council has produced Subdivisions Policy (2014) on the standards required for subdivisions to further clarify information.

2.5 LOS linkages to well beings

The iterative process to set service levels, engage with the community and linkages to the Wellbeing Framework is shown below. The Living Ruapehu Portal Pūwhenua ki Ruapehu is a powerful new online portal designed to help local government lift community wellbeing. It brings together hard data with unique insights into people's actual lived experience through narrative.

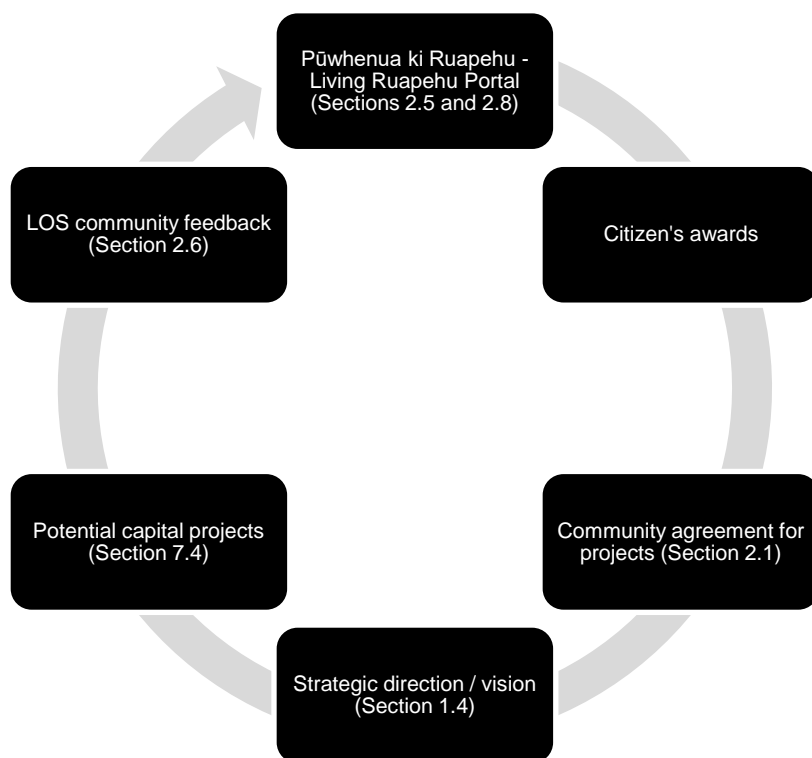


Figure 4 LOS linkages to well beings.

2.6 Community engagement

2.6.1 Engagement approach

Community and key stakeholder engagement on developing levels of service for water services used the following main consultation initiatives:

- Consultation with community groups for Annual Plan and LTP.
- Service request response levels (refer below).
- Treaty settlement co-governance groups Te Awa Tupua (Wanganui River).

Ongoing community engagement is outlined in Part 1, 2024 LTP. Extensive consultation is undertaken as part of the LTP process including localised community meetings, iwi, youth engagement, and Facebook. This covers levels of service as well as understanding local issues.

2.6.2 Customer service data

Over the previous four years there have been 640 requests for services relating to wastewater, representing 13% of total water services calls, averaging 13 per month, and a range of 4 to 25 requests per month. The service requests consisted of:

- 41% Council to investigate a wastewater network-related matter.
- 26% for blocked sewers.
- 23% for assistance with information related to wastewater.
- 8% for new connections.
- 2% for odour-related matters.

The following figure illustrates the number of wastewater service calls over this period.

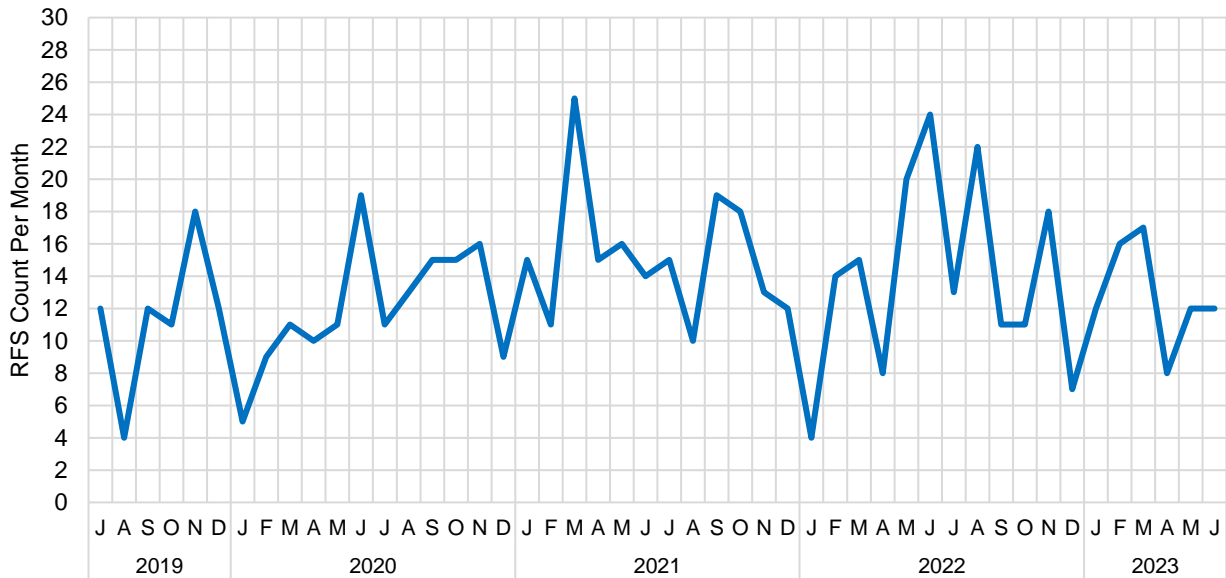


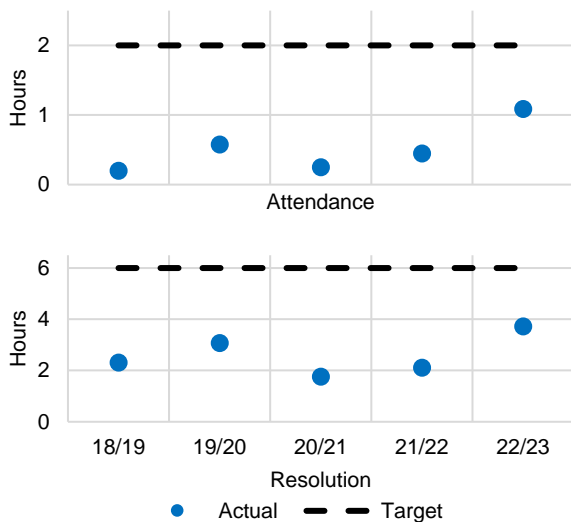
Figure 5 Number of wastewater service calls per month.

Source: Council data up to end 2022/23 financial year (as at February 2024).

Fault response times and customer satisfaction are two performance metrics that apply directly to the community (as mandatory performance measures). Performance against these metrics over recent years is illustrated in the figures below.

Fault Response Times

Median response times to attend to sewerage overflows resulting from a blockage or other fault in the territorial authority’s sewerage system, (a) attendance time and (b) resolution time



Customer Satisfaction

The total number of complaints received by the territorial authority about any of the following: (a) sewage odour (b) sewerage system faults (c) sewerage system blockages, and (d) the territorial authority’s response to issues with its sewerage system, expressed per 1000 connections to the territorial authority’s sewerage system.

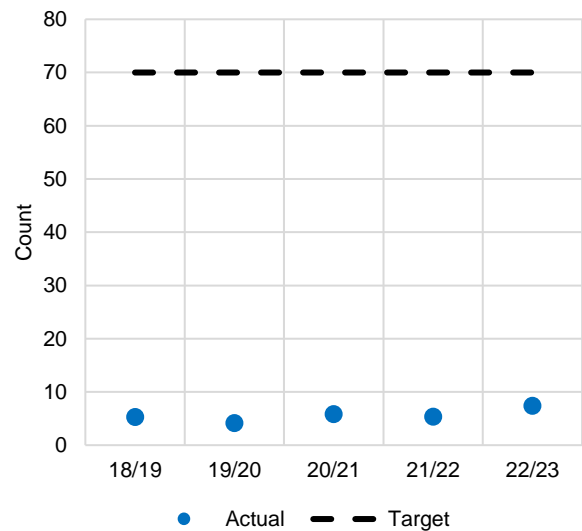


Figure 6 Asset performance against responsiveness to infrastructure issues levels of service.

2.6.3 Customer and resident surveys

Council conducted a customer satisfaction survey conducted in 2022 of resident and non-resident ratepayers. A summary of the findings for wastewater is provided below:

A further 63% of respondents are connected to the sewerage system, 82% of these users are satisfied (24%) or very satisfied (58%) with this service. Overflows (30%) and oxidation ponds not coping (30%) are primary reasons for dissatisfaction with the sewerage system overall. Sixty-two percent of respondents are connected to the wastewater system, with 70% of wastewater users satisfied (24%) or very satisfied (46%) with this service. Poor drainage (68%) is the primary reason for dissatisfaction with wastewater in the district. Twenty-eight percent of respondents mention they are not connected to any Council provided water, sewerage, or wastewater facilities.

2.7 Service level summary



This section defines the levels of service that Council intends to deliver and the measures used for monitoring its performance. The LOS and performance measures for the wastewater activity are summarised in the table below.



The LOS statements are aligned to the Community Outcomes and categorised by Customer Outcomes. The performance measures are reported in the LTP and AMP. The full LOS table including future year targets are detailed in Appendix 8.2.

Key:

No data, new measure	Improvement/Achieved	Needs attention	Not achieved
----------------------	----------------------	-----------------	--------------

Table 11 Service level summary – wastewater.

Community Well Being Outcomes	Key service attribute	Levels of Service Statement	How we will measure our performance	Reported in	Current performance 2022/23	Current Year 2023/24 Target	2024/25 Target (year 1)
<p>Our infrastructure assets and services are resilient and fit for purpose</p> 	Safety	Public safety continuity of wastewater collection system	Number of dry weather wastewater overflows from Council's system, (expressed per 1,000 connections to that system).	LTP / mandatory	0.9	<7	<7
<p>Our infrastructure assets and services are resilient and fit for purpose</p> 	Quality – reliability	To provide reliable wastewater networks	Total number of complaints received by Council about any of the following (expressed by 1,000 connections to the territorial authority's wastewater system):	LTP / mandatory			
			a) Wastewater odour		0.31	a) <15	a) <15
			b) Wastewater system faults		0	(b) <5	(b) <5
			c) Wastewater system blockages		7.09	(c) < 25	(c) < 25
			d) Council's response to issues with its wastewater system	0	(d) <25 per 1,000 connections	(d) <25 per 1,000 connections	
			Number of reported wastewater pipeline blockages per 100km of pipeline per year	AMP	0.36	<30 per 100km	<30 per 100km

Community Well Being Outcomes	Key service attribute	Levels of Service Statement	How we will measure our performance	Reported in	Current performance 2022/23	Current Year 2023/24 Target	2024/25 Target (year 1)
			Percentage of wastewater assets in satisfactory condition (condition grades 1,2, 3 or 4)	AMP	Not measured for 2022/23	85%	85%
<p>Our infrastructure assets and services are resilient and fit for purpose</p> 	Responsiveness	To provide prompt responses for service	Where Council attends to wastewater (sewerage) overflows resulting from a blockage or other fault in the Council wastewater system, the following median response times measured:	LTP / mandatory			
			a) Attendance in hours from the time that Council receives notification to the time that service personnel reach the site; and		1.09	≤2hours	≤2hours
			b) Resolution in hours from the time that the Council receives notification to the time that service personnel confirm resolution of the blockage or other fault.”		3.72	≤6 hours	≤6 hours
<p>Our natural and built environment is healthy strong and safe</p> 	Environmental sustainability	Environmental sustainability	Compliance with Council’s resource consents for discharges from the wastewater system as measured by number of:	LTP / mandatory			
			(a) Abatement Notices.		1	≤2	≤2
			(b) Infringement Notices received.		0	≤2	≤2
			(c) Enforcement Orders received.		0	≤1	≤1
			(d) Convictions received by Council in relation to those resource consents.		0	-	-

2.8 Service gaps

Most LTP performance measures were achieved for 2022/23 with no service gaps identified. There is new monitoring and stringent enforcement of the existing resource consents. This means Council will expect an increase in the number of non-compliances issued by HRC until new / upgraded plants are completed. Refer to Section 4.4 Asset performance on upgrade programme to meet consent requirements.

2.9 What does this tell us?

Measuring the level of service performance against the well beings for informing our community is described in the table below.

Table 12 Describing service and well beings – wastewater.

Levels of Service Statement	Link between the service and wellbeing
Environmental sustainability - number of dry weather wastewater overflows	The number of wastewater overflows that occur during dry weather.
Environmental sustainability – compliance	Our environment is accessible, clean, and safe and meets the required compliance standards.
Responsiveness to infrastructure issues	The time it takes for service personnel to attend a wastewater overflow.
	The time it takes for service personnel to resolve a wastewater overflow.
Public safety – continuity of wastewater collection system.	The total number of complaints received expressed per 1,000 connections to the network reticulation system.

3 Managing Growth and Demand

3.1 Growth and demand overview

This section describes how the Ruapehu district is developing, and the approach Council will take to manage the effects of demand and growth for the wastewater activity and the impacts on wastewater assets. This section also presents the demand factors that impact on the wastewater activity and how we will plan for changes in demand.

3.2 District growth at a glance

A snapshot of Ruapehu's current population and demographics is shown below.

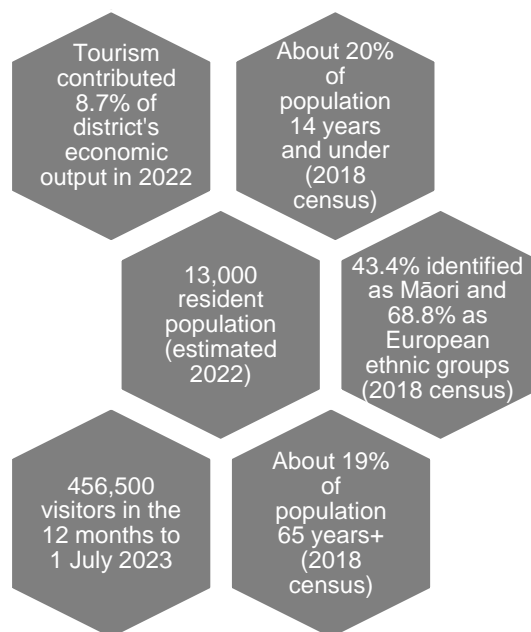


Figure 7 Snapshot of Ruapehu's population profile

3.3 Changes in demographics

The two main drivers for Ruapehu District's growth that impacts the wastewater activity are usually resident and peak populations as described as follows:

- **Peak population patterns:** Ruapehu is a popular tourist destination, the peak population seen in the district, particularly in National Park, Ohakune, and Taumarunui causes significant seasonal peaks. An influx of workers required to meet tourist demand adds to the seasonal peaks. There is higher demand from the domestic than international visitors as shown in the figure below.
- **General population growth:** Ruapehu District's resident population has been relatively constant at about 13,000 people. It is only projected to increase to 13,800 by 2048 (based on 2018 census) under the high growth scenario and decline under the medium and low scenarios. This impacts the wastewater assets as there is a limited ratepayer base to share the financial load to contribute to this activity.

Council's growth planning analysis for the 2024 LTP has assumed that all identified communities within the district will experience an increase in usually resident population over the next 10 years, experiencing a mixture of low, medium, and high growth levels. The total district usually resident population is expected to increase by up to 3.5% between 2024 to 2034.

Ohakune is experiencing significant population growth based on large number of building consents received for new subdivisions.

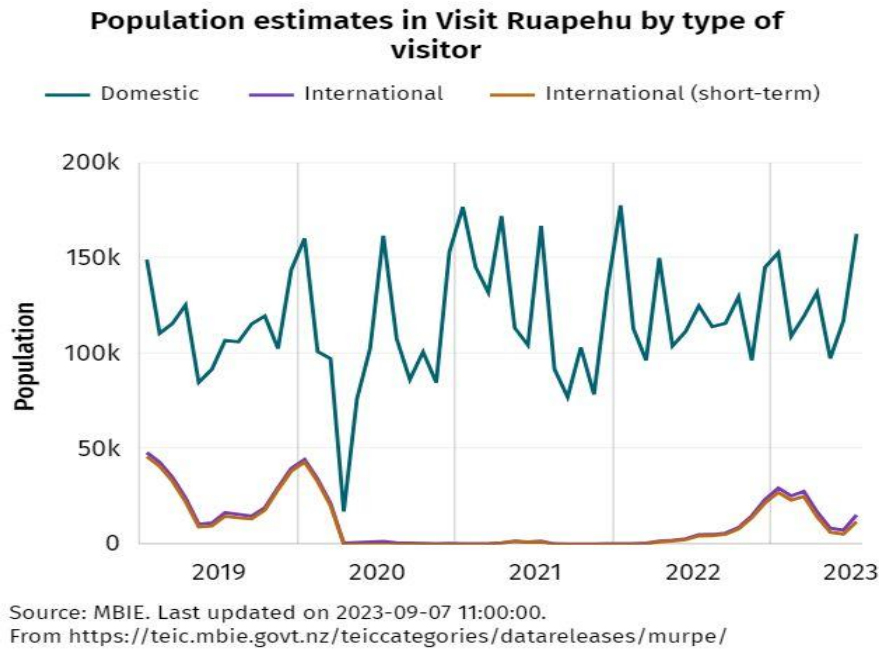


Figure 8 Visitor numbers to Ruapehu District by type.

Source: Monthly unique local and visitor populations, MBIE (September 2023).

Peak population is the key tool to plan for core infrastructure including wastewater. Peak population is used to plan for the absolute peak population the district might experience on any given day. It is calculated by combining usually resident population, holiday home visitor numbers, commercial accommodation visitor numbers and day visitor numbers. There is also commercial growth in the district with new industry and the Turoa gondola.

3.4 Current wastewater demand

3.4.1 Current demand at township level

The current demand for each scheme and comparison against design capacity is detailed in Appendix C, Part 4 at township level based on SCADA monitoring and operational knowledge. Treated effluent demand is monitored with outflow meters. The plant performance is reported on against the consent limits to HRC through the Statement of Performance.

The daily effluent discharge for the Raetihi WWTP and the consent limit for 2022/23 are shown below. This shows that the daily discharge volume regularly exceeds the consent limit for this reporting period which is due to rainfall events.

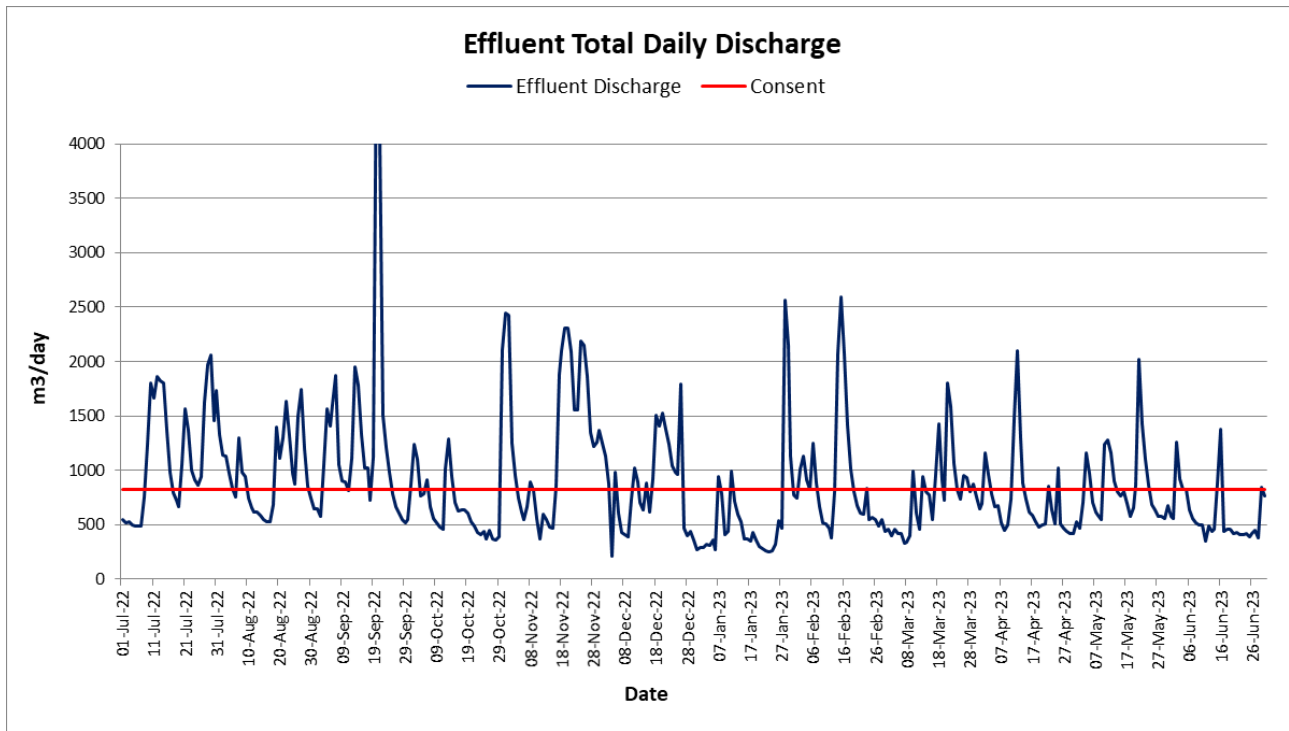


Figure 9 Raetihi WWTP - effluent daily discharge volumes.

Source: Veolia, Statement of Performance (2022/23).

Some of the inflow and outflow meters at WWTPs are not functional which means the monitoring data is not accurate or complete. New inflow / outflow meters are being installed to be completed in 2023/24.

Demand on wastewater infrastructure, particularly in the Waimarino region (inclusive of Ohakune and Raetihi) is expected to be moderate to high. The number of households remains relatively static but the actual occupation of homes is moving from usual residents to holiday homes, which tends to drive peak water usages, and influences wastewater disposal. Further details are provided in Section 4.4 Asset performance.

3.4.2 Current trade waste demand

Council does not have any significant industrial discharges which drive wastewater treatment processes, with the exception of septage treatment facilities in the North (Taumarunui) and South (Ohakune) which support the surrounding district onsite disposal systems. The Waiōuru WWTP also accepts septage material into their treatment plant for processing. The only significant industrial process discharging into the wastewater network in the north is stock truck wash supernatant and the Petpal pet food factory in Taumarunui.

Council currently does not receive significant industrial wastewater streams. Any new industry effects are assessed on a case-by-case basis and managed under the Trade Waste and Stormwater Bylaw 2019 to manage impacts on the treatment systems. Council does not currently have a trade waste monitoring programme as the demand is not significant and is managed on a case by case basis. At this point in time, this is appropriate for Council’s size.

3.5 Future wastewater capacity

3.5.1 Wastewater plant capacity

All treatment plants have adequate hydraulic capacity for the dry weather flows received. However, most are impacted during major rainfall events. All treatment plants are connected to SCADA providing real time monitoring, alarming, and remote operational management. Refer to Section 4.4 Asset performance for details at plant level and Part 4 at township level.

The existing plants are constrained by final effluent quality rather than capacity except for Ohakune due to population growth driven by new land developments. Five of the six plants have been assessed as part of the reconstituting process to identify the most cost-effective upgrade option considering the catchment water quality and ecological health and cultural values of tangata whenua.

A summary of the assessment is shown below with further discussion on the WWTP upgrade strategy using new technology such as MBR (Membrane Bioreactor) plants and reconstituting prioritisation in Section 4.4 Asset performance.

Table 13 Future plant capacity and performance.

Wastewater Treatment Plants	Current effluent quality	Current effluent quality	Required performance SIN	Required performance DRP	Future plant capacity
	SIN (mg/l)	DRP (mg/l)	(mg/l)	(mg/l)	Average flows (m ³ / day)
National Park	11.2	1.52	4.6	0.7	670
Ohakune	14.5	2.6	3.8	0.9	1,179
Raetihi	7.3	0.42	2.7	0.3	1,871
Rangataua	14.0	2.47	13.6	0.4	70
Taumarunui (Hikumutu)	17.1	1.2	8.1	0.5	2,300

Source: District wide WWTP Review, Traverse Environmental (February 2024)

Notes:

- SIN - Soluble Inorganic Nitrogen.
- DRP – Dissolved Reactive Phosphorus.

3.5.2 Future demand – township level

Key planning documents and tools for addressing future wastewater demand at township level are summarised in the table below. There has been a focus on understanding the existing performance network issues as well as planning for the future in the last three years. Specific known capacity constraints are detailed in Section 4.4 Asset Performance.

Table 14 Summary of key planning documents and models – wastewater

Township	Planning documents / models	Description
District wide	District wide WWTP Review (Travis Environmental, date)	Preliminary analysis of WWTP performance and potential upgrade strategies including high level costs. Key findings are shown in table above.
Raetihi and Ohakune	Raetihi-Ohakune Wastewater Feasibility Study Report (2021, GHD)	A desktop feasibility study to investigate the development of a combined wastewater scheme for Ohakune and Raetihi. It was driven by: <ul style="list-style-type: none"> • New WWTP designed to a modern standard where water quality targets are more easily achieved. • Design for the projected population and tourism growth in the area • Treated effluent to be discharged to land according to methods supported by Mana Whenua. • Ensure that risk of WWTP flooding is minimised.
Ohakune	Ohakune Wastewater Network Modelling, Static Capacity	The static model assessment found: <ul style="list-style-type: none"> • The Ohakune wastewater system is predicted to have sufficient capacity to convey the peak dry

Township	Planning documents / models	Description
	Assessment (2022, Mott MacDonald)	<p>weather design flows. No overflows are expected, and only a few areas appear to be surcharged.</p> <ul style="list-style-type: none"> The Ohakune wastewater system is predicted to show insufficient capacity to convey the peak wet weather design flows, with multiple pipes surcharged, as well as a few uncontrolled overflows. The situation will worsen with the additional flows from the future (2026 and 2031) peak population.

3.6 Demand management programme

Managing Council's wastewater demand is not only about managing increasing future needs and expectations but is also about changes in behaviours and philosophy. Through this multifaceted approach, we can reduce environmental impacts. Council's current wastewater demand management programme is summarised in the following table.

Table 15 Current wastewater demand management plan.

Programme	Description
I&I	<p>Inflow and infiltration (I&I) contribute to demand on the network and Council's operating expenses. Reduction of I&I through regular maintenance is part of Council's on-going operational programme. Illegal connections and damaged connections coupled with rain events result in overflows of wastewater into the environment is an existing challenge.</p> <p>A cost effective and targeted I&I programme needs to be developed in conjunction with Veolia.</p>
Public education and awareness	<p>Education and awareness encourage wastewater reduction and compliance behaviour. Council's web site provides information on the district's wastewater treatment facilities. It also contains the following information so that users can help make the wastewater network safe and not adversely impact the environment:</p> <ul style="list-style-type: none"> Ongoing campaign to reduce phosphorus detergents in our townships. Responsible disposal of wet wipes Property owner responsibilities for gully traps.
Planning activities	<p>Various planning activities are undertaken to understand the changes in demand as well as growth forecasts. Current initiatives include:</p> <ul style="list-style-type: none"> District Plan limits the density of rural development into sustainable clusters. This should see fewer rural blocks and infilling driving the demand to extend infrastructure. Ongoing condition assessments of the wastewater assets through condition surveys and investigations into problematic materials where required, with the appropriate solution. Renewal of poor condition assets identified through condition surveys or routine maintenance activities. Capacity analysis of the wastewater networks, treatment plants and pump stations to determine available hydraulic capacity and ability to meet future needs.
Climate change planning	<p>Our response to climate change includes building our knowledge based on latest thinking nationally and participating in forums where appropriate. We are developing our own adaptation approach to climate change in collaboration with Regional Council. Operational decisions around building wastewater pump stations above flood levels and increasing pipe sizes during replacement all work towards achieving climate resilience. Refer to Section 6.2 Climate Change, Resilience and Zero Carbon for further details.</p>

3.7 Growth and demand assumptions

The key growth and demand assumptions are as follows:

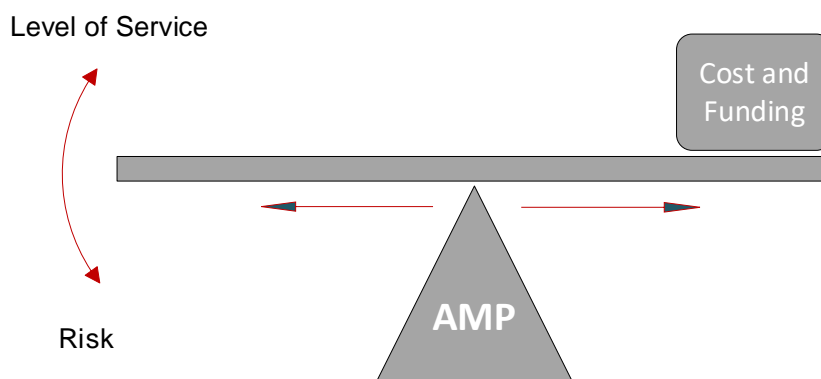
- Population forecasts based on Statistics New Zealand 2018 census data.

- Council's growth planning analysis for the 2024 LTP has assumed that:
 - The total district peak population is set to decrease by up to -2.66% between 2024 to 2034.
 - The total District usually resident population is expected to increase by up to 3.5% between 2024 to 2034.
- Future wastewater consent conditions will be more restrictive, drive alternative solutions and may cost more to comply with, implement and monitor.
- Food production and tourist demand will continue in the district.
- Ohakune will continue to experience significant population growth driven by new land developments.

4 Lifecycle Management

4.1 Lifecycle management overview

The objective of lifecycle management is the management of assets from conception to disposal whilst meeting levels of service, minimising risk and whole of life costs. Council delivers water services to deliver the LOS defined in Section 2.7 in the most cost-effective way over the life of the asset. Council's AM approach is the appropriate balance between LOS, risk and cost as shown below.



Council's lifecycle management strategy is to maximise the useful and economic lives of its assets in order to reduce the cost of the wastewater service to the community. The primary factors considered in managing the district's assets to maximise their service lives are:

- The consequential risks of an asset failing.
- The extent, duration and frequency of interruption to the wastewater service due to repair or replacement of an asset.

4.2 Asset summary

Council provides wastewater reticulation services to approximately 4,847 rateable properties with 6,488 rateable service connections across the Ruapehu District via the following Council owned wastewater systems:

- National Park
- Ohakune
- Pipiriki
- Raetihi
- Rangataua
- Taumarunui
- Waiōuru (network only).

Each of these wastewater networks comprises an integrated series of wastewater connections, pipelines, manholes and lampholes, pump stations, and treatment plant assets except for Waiōuru. The Waiōuru wastewater system assets owned by Council consist of network assets only, with wastewater treatment being undertaken by the New Zealand Defence Force (NZDF Waiōuru Military Camp).

District-wide overview information on Council's wastewater systems and assets is provided in Table 16, with township specific information provided in Part 4. Additional detailed information on each individual asset with respect to type, location, size, material, installation year, is stored in Council's GIS and AssetFinda (Universus asset management system).

The wastewater assets had a gross replacement cost of \$61.1 million and depreciated replacement cost of \$30.3 million (as at 1 July 2022). The value by the major asset class is summarised in Section 6.5 with the full valuation in Appendix E, Part 4.

Table 16 Summary of wastewater assets

Township	Rateable properties connected*	Wastewater pipeline length (km)	Manholes	Lampholes	Wastewater Pump Stations	Wastewater Treatment Plants
National Park	315	6.38	90	0	0	1
Ohakune	1,615	28.60	432	0	1	1
Pipiriki	22	2.07	16	9	1	1
Raetihi	514	13.17	148	0	4	1
Rangataua	205	4.59	34	0	1	1
Taumarunui	2,096	52.66	705	33	12	1
Waiōuru	80	2.54	23	0	2	0 [#]
Total	4,847	110.01	1,448	42	21	6

Source: Veolia Infrastructure Asset Valuation (July 2022).

* Rateable properties served are the total number of connections including all residential dwellings, commercial pans and properties charged for wastewater (provided by Council as at February 2024 as recorded in the financial system).

Waiōuru wastewater system assets owned by Council consist of network assets only, the wastewater treatment plant is owned and operated by the New Zealand Defence Force (Waiōuru Military Camp) and is not included in Ruapehu District Council's assets.

4.2.1 Private supplies

There are several small towns in the Ruapehu District that are currently not serviced with a public wastewater system. A summary of these townships is listed in the table below. These townships are currently serviced by onsite wastewater treatment facilities (private septic tanks and effluent beds). As they grow pressure will increase for a reticulated wastewater system. Council must balance the ability of the district to fund such a reticulated scheme with the social good and environmental benefits which arise from a public reticulated scheme. Council, however, does accept septage at Taumarunui and Ohakune WWTPs for private septic wastewater treatment disposal.

Table 17 Unserviced townships

Township	Comments
Horopito	Ongoing development of Horopito occurring, on larger sections. Plan development was for self-sufficient buildings.
Kakahi	Ground is largely pumice with large sections. Onsite disposal is seen as sustainable with no significant growth forecasted.
Mahoe	May be reticulated in future to Taumarunui (potentially through the old meat works effluent line).
Ohura	No significant growth is forecasted.
Ongarue	No significant growth is forecasted.
Ōwhango	Development is occurring now which may trigger the need for a public wastewater collection and treatment system but currently unaffordable.
Pipiriki	Investigation underway for providing public water supply and wastewater services
Piriaka	No significant growth is forecasted.
Raurimu	Development is occurring now which may trigger the need for a public wastewater collection and treatment system.

4.2.2 Wastewater network

Wastewater is collected from customers with the district via a network of pipes of various sizes and materials. The wastewater pipeline is designated as the public system. The customers' (private pipework) responsibility is from the house wastewater connection pipework up to the point of connection to the public wastewater main.

Plans of each of the reticulation networks for Council's wastewater networks are contained within Part 4 Appendix B.

4.2.3 Wastewater pipelines

Network:

Wastewater collected from customers via 110 km of network pipes of various sizes and materials. The wastewater network (pipelines and manholes) represents 68% of the wastewater assets by gross replacement cost and 60% by depreciated replacement cost.

A summary of the wastewater network assets is provided in Table 18, and the following figures. Three quarters of the district's wastewater network is 150mm diameter (67%). PVC is the most common pipeline material (43%) followed by asbestos cement (AC, 38.7%) and glazed earthenware (GEW, 11.8%). The GEW pipes are the oldest, mostly laid pre-1950, followed by AC which peaked in the 1970's, and PVC from the 1980's thereafter. Most of the network (70%) was laid after 1970, with 15% constructed during the 1960's, 6% during the 1950's and 9% pre-1950's.

Table 18 Summary of wastewater network assets

Diameter (mm)	Length (km)	%
≤ 100mm	12.4	11.3%
110-160mm	74.8	68.0%
200-225mm	14.3	13.0%
250-300mm	7.0	6.4%
≥300mm	1.5	1.4%
Unknown	0	0.0%
Total	110.0	100.0%

Material	Length (km)	%
AC	42.6	38.7%
mPVC/uPVC	46.9	42.6%
GEW	13.0	11.8%
HDPE/MDPE/PE	2.6	2.4%
GI/DICL/CLS/Steel	0.4	0.4%
CONC	3.5	3.2%
Unknown	1.0	0.9%
Total	110.0	100.0%

Date Laid	Length (km)	%
Pre-1950	9.4	8.5%
1950-59	6.4	5.8%

Date Laid	Length (km)	%
1960-69	16.6	14.9%
1970-79	27.3	24.8%
1980-89	27.8	25.3%
1990-99	6.4	5.8%
2000-09	10.7	9.7%
2010-19	4.3	3.9%
2020 onwards	1.3	1.2%
Total	103.5	100.0%

Source: Veolia Infrastructure Asset Valuation (July 2022)

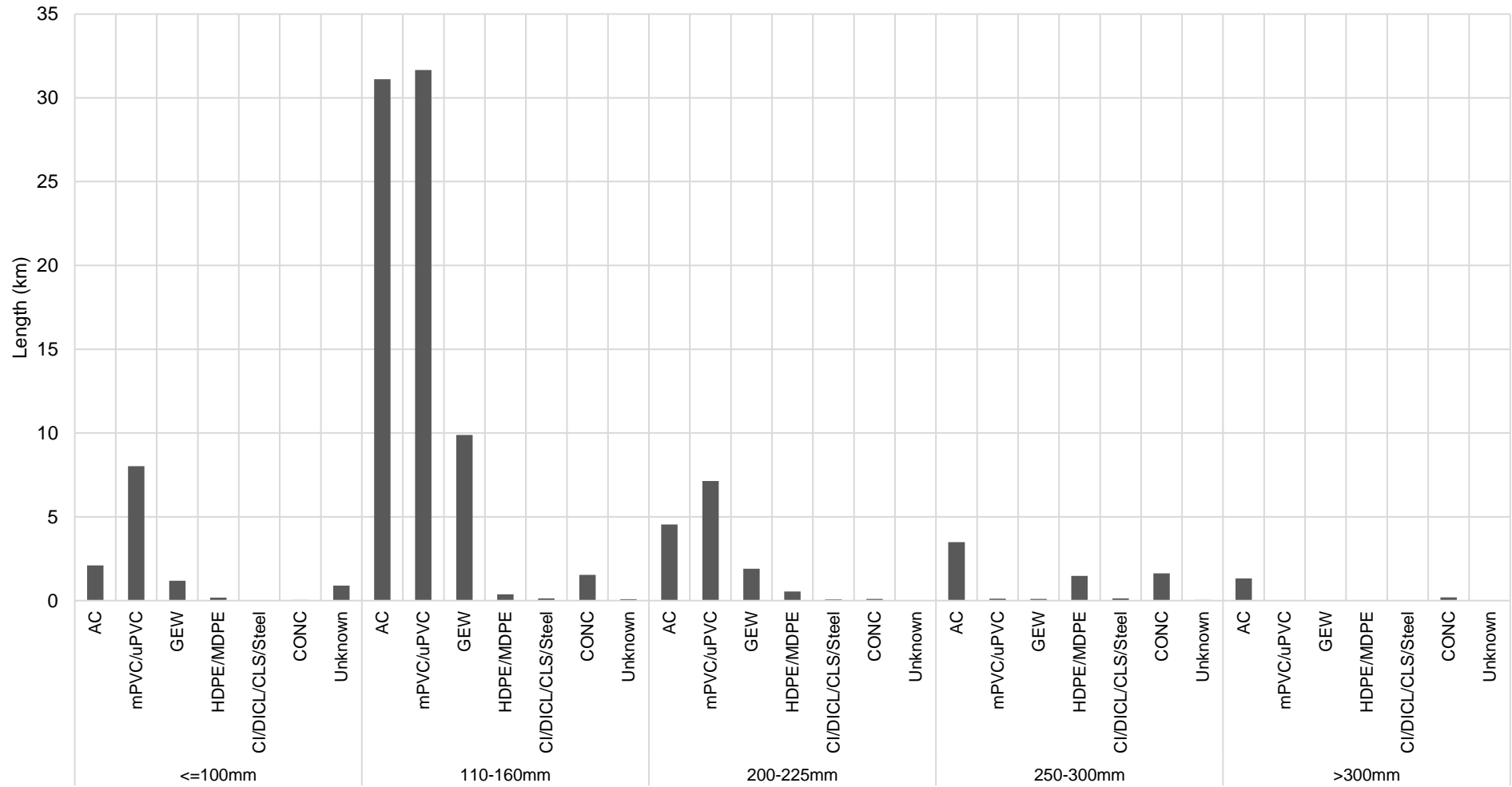


Figure 10 Wastewater pipeline material and diameter.

Source: Veolia Infrastructure Asset Valuation (July 2022).

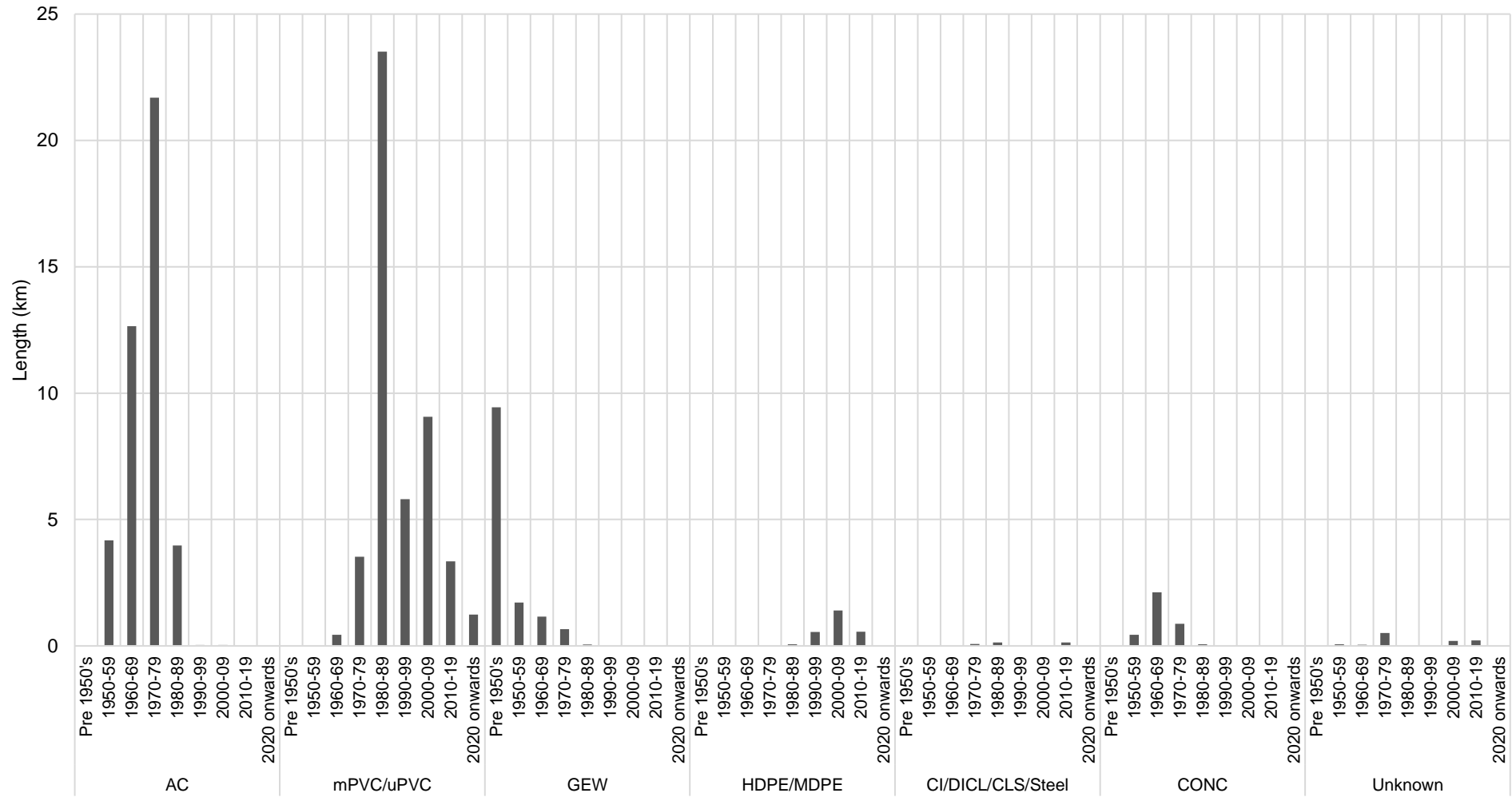


Figure 11 Wastewater pipeline material and decade installed

Source: Veolia Infrastructure Asset Valuation (July 2022)

Manholes:

The 1,448 manholes across the wastewater network provide access for inspection and maintenance. Manholes which receive external wastewater from camper vans (known as dump stations) are restricted to designated areas.

Lampholes:

There are 42 lampholes for ventilation purposes in the wastewater network. Taumarunui has five historic lampholes registered with Heritage New Zealand Pouhere Taonga.

4.2.4 Wastewater pump stations

Wastewater pump stations:

Pump stations provide for the transfer of wastewater to elevated points within the collection networks or to the WWTP. Description of these at township level is:

- Raetihi has four network pump stations which provide elevation before wastewater is gravity feed to the treatment plant.
- Taumarunui has twelve network pump stations, with eight stations conveying waste to the main station at Victory Bridge which then pumps to the treatment plant.
- Rangataua has one pump station which collects the gravity waste and pumps it to the treatment plant.
- Ohakune has one pump station which transfers wastewater from a developed catchment to the Ohakune gravity network.
- Pipiriki has one pump station which collects the liquid from the septic tanks and pumps it to the sand filter for treatment, then across the bridge to the land disposal as subservice irrigation.
- Waiōuru has two pump stations which are part of Council's network assets, separate from the wastewater treatment plant.

The pump stations consist of mechanical assets (pumps, sumps, valves, pipework), electrical assets (switchboards and controls), and civil assets (buildings). SCADA at wastewater pump station switch boards, providing monitoring data of pump station performance: operational hours, number pumps, alarms. All pump stations are connected to the SCADA network.



Figure 12 Pump station examples

4.2.5 Wastewater treatment

Council operates six consented WWTPs. Wastewater treatment facilities consists of civil (buildings, filters, oxidation lagoons, pipework), mechanical (intake step and drum screens, aerators, UV disinfection units) and electrical (switchboards, controls, instrumentation) assets. Wastewater treatment facilities are connected via SCADA enabling real time monitoring and alarming and providing remote operation management capabilities.

A summary of Council owned and operated WWTPs is provided in the table below.

Table 19 Wastewater treatment plant summary

Township	Plant components
National Park	Primary treatment oxidation lagoon + Secondary treatment oxidation lagoon + Tertiary treatment wetlands
Ohakune	Inlet screen + grit removal + primary oxidation lagoon + secondary oxidation lagoon + tertiary stone media lagoon + UV disinfection (+ septage disposal unit)
Pipiriki	2 x sand filters in parallel (rotation) + land treatment
Raetihi	Primary lagoon + secondary lagoon + tertiary stone media lagoon
Rangataua	Primary lagoon + secondary lagoon + tertiary wetlands
Taumarunui	Inlet screens + primary oxidation pond + secondary oxidation pond + tertiary wetland treatment + UV disinfection

A summary of Council WWTP disposal methods, volumes and receiving environment is provided in the table below.

Table 20 Wastewater treatment plant disposal method

Township	Consented discharge m ³ /day	Consent No.	Discharge method	Discharge Stream/River
National Park	700	103403	Gravity	Makaretu Stream
Ohakune	3,900	101701	Gravity	Mangawhero Stream
Pipiriki	15	106225	Pumped	Sub-surface Irrigation
Raetihi	820	102379	Gravity	Makotuku River
Rangataua	29	4926	Gravity	Mangahuehue Stream
Taumarunui	3,300	102426	Gravity	Whanganui River



Figure 13 Treatment plant examples

4.3 Critical assets

The criticality of the asset is an indicator of the consequence of asset failure with respect to how its failure will impact overall operational performance, operator and customer safety, and the environment. The criticality of assets is assessed using the criteria in the table below.

Table 21 Asset criticality assessment criteria

Criticality Index	Criticality	Criteria
1	Non-critical	Failure will not have an adverse impact on safety, performance or the environment, e.g., sample valve.
2	Low criticality	Failure would have an adverse impact, but protection such as redundancy protects against it, e.g., pumps in duty-standby.
3	Critical	Failure will have an adverse impact on safety, performance or the environment, e.g., pump with no standby.

Critical asset identification is currently used in decision making with renewals, condition assessments and operational activities. The categorisation of critical above ground wastewater assets at component level has been completed as part of the condition assessments. The critical wastewater asset classes are summarised in the following table.

Table 22 Critical assets by township

Township	Asset class	Asset name
Taumarunui	Treatment and disposal	Victory Bridge rising main to the WWTP
	Pump station	Huia WWPS switch board
	Pump station	Matai Street WWPS
	Pump station	Tubby Woods WWPS
District-wide	Treatment and disposal	All WWTPs are consider critical
	All wastewater pump stations	Council has 21 wastewater pump stations, almost all of which are considered critical assets (except Matai #2 as only serves a few houses).

A critical spares list has been developed across the assets. Most spares are now standardised, and one spare is of the items on the critical spares list is now held in stock at Veolia's yard.

4.4 Asset performance

4.4.1 Performance by asset class

The overall performance of the wastewater assets is summarised in **Error! Reference source not found.** Specific information on asset capacity / performance for each of the individual wastewater systems is provided in Appendix C, Part 4.

Table 23 Capacity performance results.

Asset class	Asset Capacity/ Performance Grading	Confidence Grade	Comment/Substantiation
Network			
Wastewater Pipelines	2	B	<p>Wastewater mains for all wastewater schemes are of sufficient capacity to accommodate dry weather flows. The wastewater mains provide overall good performance with generally low instances of chokes and overflows.</p> <p>Odour complaints associated with the wastewater network are low.</p> <p>The Raetihi wastewater network previously suffered from wet weather overflows as a result of significant inflow and infiltration and</p>

Asset class	Asset Capacity/ Performance Grading	Confidence Grade	Comment/Substantiation
			<p>insufficient capacity to convey peak wet weather flows. Replacing chokepoints in reticulation network Ohakune.</p> <p>Ohakune, Raetihi and Taumarunui contain significant quantities of AC and GEW pipework installed prior to 1970. This pipework is progressively deteriorating and contributes to infiltration and wet weather flows. A CCTV programme has been implemented across the district.</p>
Manholes	2	B	<p>Manholes in the Ruapehu district are typically free from foreign rubbish. Wastewater blockages and overflows as a result of manholes or content within them are rare.</p> <p>Manholes are generally locatable without undue difficulty.</p> <p>System information (lid levels and invert levels) is still being gathered for many townships, Ohakune, Raetihi and Rangataua networks have comprehensive information. Key asset data was collected for the model build process.</p>
Pump Stations			
Wastewater Pump Stations	3	B	<p>WWPS are typically operationally reliable and of sufficient hydraulic capacity.</p> <p>The pumps at the WWPS's are inspected and serviced on an annual basis, and any improvement works are identified for future action.</p> <p>Odour complaints associated with wastewater pumping stations are rare.</p> <p>The majority of WWPS have duty and standby pumps and SCADA.</p> <p>All WWPS connected to SCADA and provide real time monitoring, alarming and operational management.</p> <p>Victory Bridge WWPS and Huia Street WWPS have on-site automated generators providing continuity of operation in the event of a mains power outage.</p> <p>Bridge Street WWPS (Raetihi) and Matai Street #2 WWPS (Taumarunui) do not have standby pumps and hence have no redundancy in the event of pump failure.</p>
Treatment and Disposal			
Wastewater Treatment Plant	3	B	<p>Resource consents exist for the discharge of wastewater from each of the six Council operated WWTPs. All treatment plants have adequate hydraulic capacity for the dry weather flows received.</p> <p>All treatment plants are connected to SCADA providing real time monitoring, alarming, and remote operational management.</p> <p>The resource consent for National Park, Ohakune and Raetihi expired on the 17 November 2015. New consent applications for these plants were lodged on the 15 August 2015 and discussions with HRC and iwi are ongoing.</p> <p>Rangataua expired on 20 December 2005. While an application has been lodged for a replacement consent, a new consent has not yet been obtained.</p> <p>Ohakune is repeatedly non-compliant with the discharge quality limits for suspended solids specified within the resource consents (refer to Section 3.5 for further discussion).</p> <p>National Park, Raetihi and Rangataua WWTP have no screening prior to discharge of raw wastewater into the primary oxidation lagoon.</p>

Asset class	Asset Capacity/ Performance Grading	Confidence Grade	Comment/Substantiation
			<p>All WWTPs (excluding Ohakune) have exceeded their consented daily discharge limits. Investigation into the discharge exceedances at National Park are believed to be due to ground water infiltrating the lagoons. At Raetihi wet weather flows are considered responsible for exceeding the 820m³/day discharge limit. Relining of poor condition mains at Raetihi has reduced the wet weather flows.</p> <p>Effluent flow meters have been replaced at Taumarunui and Raetihi and connected to the SCADA system to provide an accurate record of daily effluent volume.</p> <p>Sludge depth surveys were completed at the Ohakune and Raetihi WWTP ponds in 2019. The survey determined that sludge occupies less than 25% of the volume of each pond. Sludge depth surveys have also been completed for Rangataua and National Park WWTP ponds in the past.</p>

Performance Grading Scale: 1 = Very Good; 2 = Good; 3= Moderate; 4= Poor; 5 = Very Poor.

Refer to Section 7.4.1 Data for confidence grading key

This AMP provides for the ongoing formal collection, review and update of asset capacity / performance information. Primary deficiencies with respect to asset capacity / performance for Council's wastewater systems are in relation to:

- Discharge (resource consent) compliance.
- Wet weather performance (I & I).

Resource consent discharge compliance:

The five wastewater treatment facilities have a range of consent conditions and a range in compliance against those conditions. WWTP performance against these conditions are summarised in the table below for 2022/23.

Only Ohakune was compliant with flow discharge, which is primarily breached by inflow rates, and then excessively breached during moderate or high rainfall events. Biological oxygen demand (BOD5), total and ammoniacal nitrogen, and total phosphorus have good compliance recently, while suspended solids and e. coli have poor compliance.

Table 24 Resource Consent Compliance for parameters measured 2022/23

Township WWTP	Flow	BOD5	Total Suspended Solids	Total Nitrogen	Total Phosphorus	Ammonia	E.coli
National Park	NC	N/A	N/A	N/A	N/A	C	NC
Ohakune	C	C	C	N/A	N/A	NC	C
Pipiriki	NC	NC	NC	C	C	N/A	N/A
Raetihi	NC	C	C	N/A	N/A	C	C
Taumarunui	NC	C	N/A	N/A	N/A	C	NC

Source: Veolia (2023): Statement of Performance Reports: Wastewater Treatment Plants 2022/23.

C – compliant with resource consent conditions over the monitoring period.

NC – non-compliant with resource consent conditions over the monitoring period.

N/A – not applicable to the resource consent conditions.

Note the Statement of Performance Report for Rangataua WWTP is due September 2024,.

Wet weather performance (I&I):

In an ideal world, a wastewater network would collect and convey all wastewater flows to a treatment facility for processing before discharging an effluent of suitable quality to the environment. In practice, intermittent discharge of dilute, untreated wastewater to waterways or onto private properties will occur due to wet weather capacity constraints. A completely leak free system where no rainfall enters a wastewater network is not a practical outcome given the age of the pipes and human activity.

These increases occur in Raetihi, some Ohakune wastewater networks, and discrete catchments within the Taumarunui wastewater network. The ageing and progressive deterioration of AC and GEW pipework also presents the potential for increases in wet weather flows. Significant wet weather flow increases at Raetihi WWTP result in regular wet weather flow discharge exceedance. CCTV survey of the wastewater network and subsequent relining of poor condition mains has been completed in the last few years throughout the township wastewater network.

No overflows were recorded during the previous five years due to the network capacity being exceeded. This reduction in overflows indicates that the relining of the poor condition mains has been effective in reducing infiltration in the network. Veolia will undertake I&I investigation, including CCTV and smoke testing as part of the condition assessment programme-

Wastewater blockages:

The figure below shows the wastewater main breaks and provides an indication of the performance of assets over time. This shows that the network performance is still within an acceptable industry level (about <70 per 100km) and the target for the technical performance measure (<30 per 100km). The 2022/23 result of 0.36 reported wastewater blockages per 100km is still within the target.

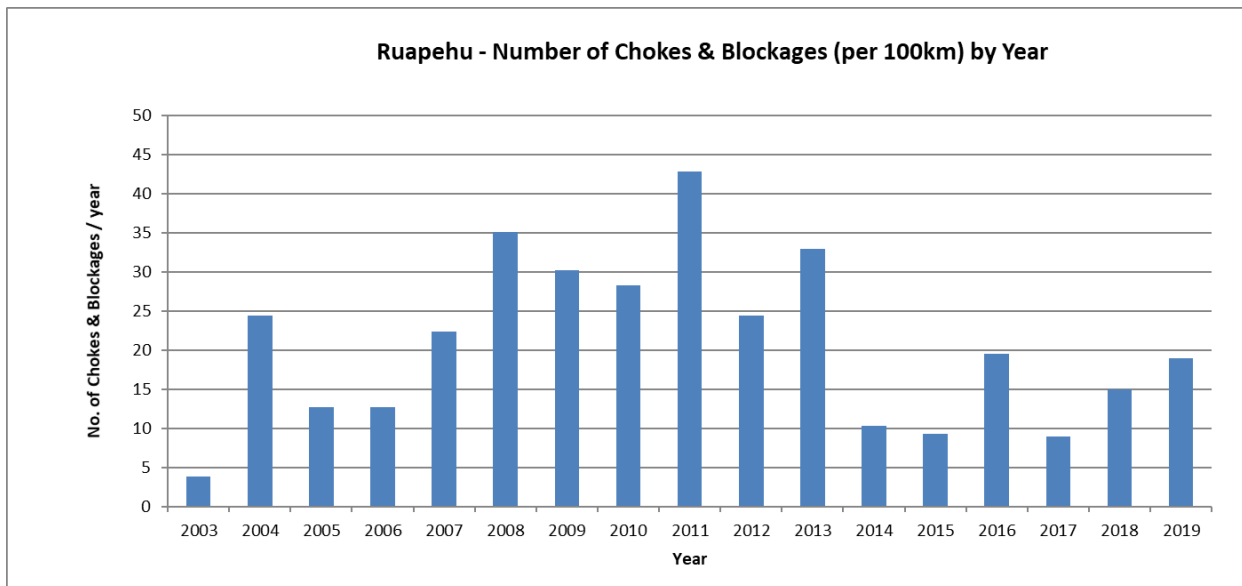


Figure 14 Wastewater main chokes and blockages (2003 to 2019)

Source: Veolia (as at September 2020)

4.4.2 Performance by township

Overall performance grades by township are provided in the table below. Specific information on asset capacity / performance with respect to individual schemes is provided in Part 4, Appendix C.

Table 25 Wastewater performance summary

Wastewater system	Asset Capacity/Performance Grading
National Park	2

Wastewater system	Asset Capacity/Performance Grading
Ohakune	3
Pipiriki	2
Raetihi	3
Rangataua	3
Taumarunui	2
Waiōuru	3

Source: Veolia (as at September 2020)

4.4.3 Consent conditions

The future consent conditions for the WWTPs remains the primary driver for the wastewater activity and is an ongoing challenge. Most of the WWTPs discharge to streams or rivers via submerged or surface wetlands and rock filters, except Pipiriki which discharges to land. They all have specific consent conditions which set the quality of discharge allowed. These conditions include discharge limits and some nutrient levels.

The resource consent discharge limits for each scheme are summarised in the table and figure below. Five of the six wastewater treatment plants resource consents have expired. New applications for Rangataua, Ohakune, Raetihi and National Park were lodged in August 2015. A new application for Taumarunui has not yet been lodged and is being progressed in partnership with iwi. HRC require this consent to be lodged by June 2024. Currently, all five facilities continue to legally operate under provision of Section 124 of the RMA (1991). This means the previous consents remain current until new consents have been granted.

Discussions with both HRC and iwi have continued with a variety of reasons for the consents to have been on hold while more information has been gathered. This includes information around ammonia effects on periphyton growth, what land passage is culturally acceptable. Moving to load based conditions rather than absolute values to provide more environmental certainty and allows for growth and system changes.

Another consideration for resource consenting is that where wastewater pipes span waterways, either utilising a land transport bridge or a waterpipe specific bridge. This requires a resource consent with HRC where it is over waterways. Council is assessing the pipe bridges over waterways as a high priority.

Table 26 Status of resource consents for discharge of treated wastewater

Township WWTP	Receiving environment	Expiry date	Consent status	Application lodgement date	Notes
National Park	Makaretu Stream	17 Nov 2015	Operate under existing consent	15 August 2015	Application lodged with HRC 17 August 2015. This consent has been on hold with HRC as final attempts to obtain iwi formal sign off. In this time there has been a variation to seek load conditions rather than maximum volumes. HRC requested section 92 responses submitted in Aug-23.
Ohakune	Mangawhero River	17 Nov 2015	Operate under existing consent	15 August 2015	Application lodged with HRC 17 August 2015. Council has requested that this consent be put on hold to allow for an outcome of a request to the Government Tourism Infrastructure Funding. Council achieved funding for a study of what would be acceptable "land passage" for iwi.

Township WWTP	Receiving environment	Expiry date	Consent status	Application lodgement date	Notes
Pipiriki	Sub-surface irrigation to land	1 July 2035	Current	Current consent	This consent may need to be varied and plant upgraded depending on the outcome of a new water supply being established for the community.
Raetihi	Makotuku River	17 Nov 2015	Operate under existing consent	15 August 2015	Application lodged with HRC 17 August 2015. Council has requested that this consent be put on hold to allow for an outcome of a request to the Government Tourism Infrastructure Fund to be notified. A successful application for funding will potentially affect the upgrades undertaken at the Raetihi WWTP.
Rangataua	Wetland by the Mangahuehue Stream	20 Dec 2005	Operate under existing consent	30 June 2014	Application lodged with HRC 30 June 2014. Council has responded to a s92 request for further information from HRC. In addition, iwi consultation has been taken further in assessing this system against their goals of land passage treatment as expressed in Ohakune and Raetihi resource consents.
Taumarunui	Whanganui River	1 July 2023	No current consent	Set for June 2024	HRC requested application lodgement by mid-2024. This consent renewal process is being led by local iwi/hapu.
Waiōuru					Consent held by NZDF Waiōuru Army Camp.

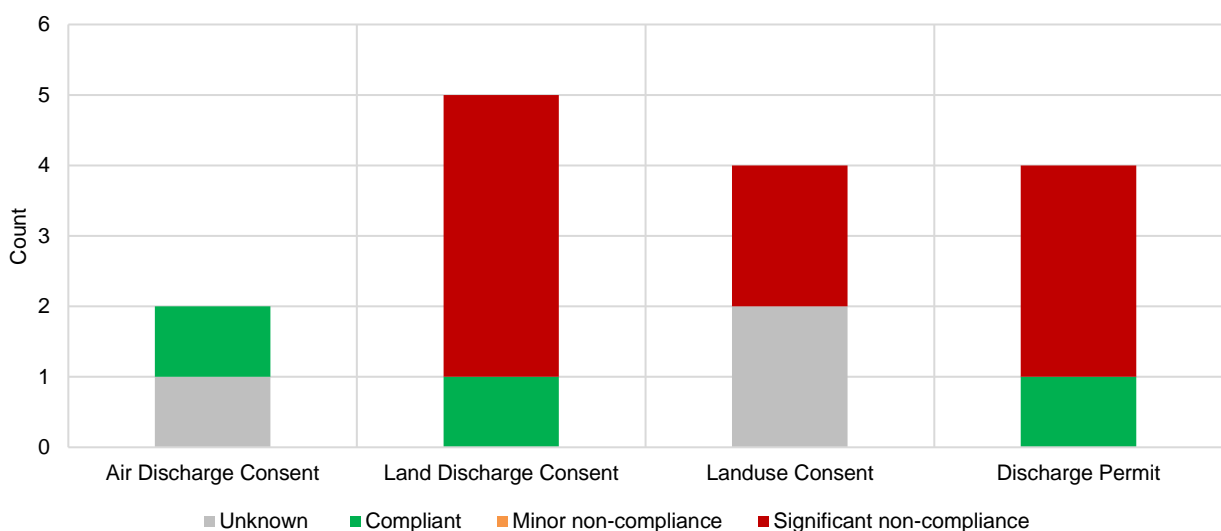


Figure 15 Summary of resource consent compliance status for the wastewater activity

There is increasing pressure on the catchments from competing uses of water from the rivers. There is heightened focus from the community around protection of the freshwater resource. The NPS for Freshwater Management 2020 (clean rivers) and Horizons One Plan will see higher standards of treatment required to obtain consents.

Iwi consultation has also been given more emphasis and more are choosing to engage in the process. Council's challenge is to provide information in a manner which is informative to allow all iwi to participate in the process while managing potential conflicting desires when offering up resource consents. Council needs to consider the NPS for Freshwater Management 2020 in addition to the One Plan in its consultation.

Assessments are made on worse possible scenario, that is the ecological impacts of each parameter are assessed on the maximum volume possible to discharge and the receiving environment being in low flows. This scenario false represents receiving environment need to achieve elevated treatment levels. Council's new consent will be using load concentrations, while much tighter, it will allow for more certainty around discharge affects in the river. This should allow some flexibility around the length a resource consent can be granted for and growth impacts triggering changes to treatment plants. It also removes the risk of breaching volume conditions during high flows or having to build an over-sized plant which would not perform optimal during low flows.

An additional demand driver is from cultural expectation of treatment processes and the levels of land passage required to meet mana whenua values. The fundamental position is that the direct discharge of wastewater to surface water is culturally unacceptable. A challenge is finding the balance between treatment provision, movement through Papatuanuku and discharge. All water is connected and even with discharge into Papatuanuku it will enter underground water sources.

However, land is not always available in the district for discharge treated wastewater to land. Council is exploring technology to treat to a higher level through MBR plant upgrades (refer to Section 3.5 Future wastewater capacity).

4.4.4 Current service performance

A summary of wastewater performance for dry weather overflow and consent compliance is shown in the figures below (refer to Section 2.7 Service level summary for full table). This shows that Council is current meeting these performance measures.

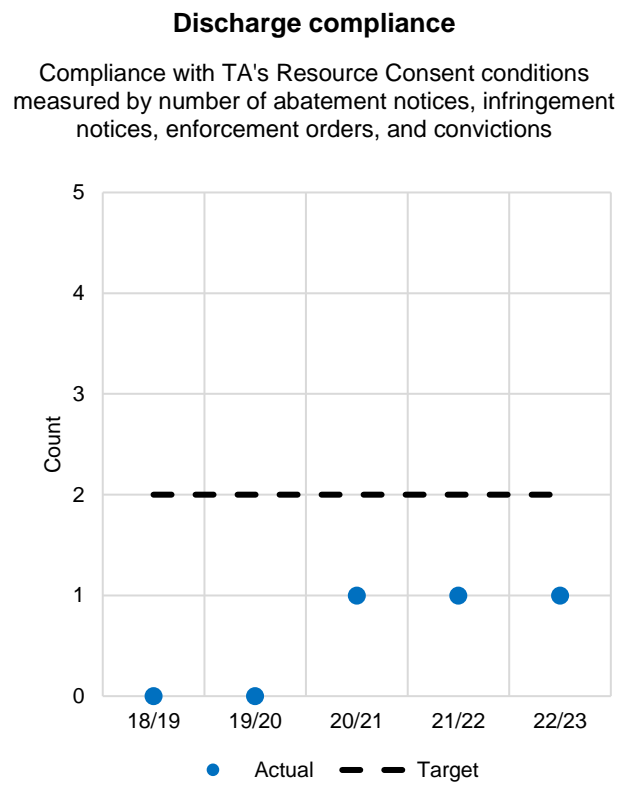
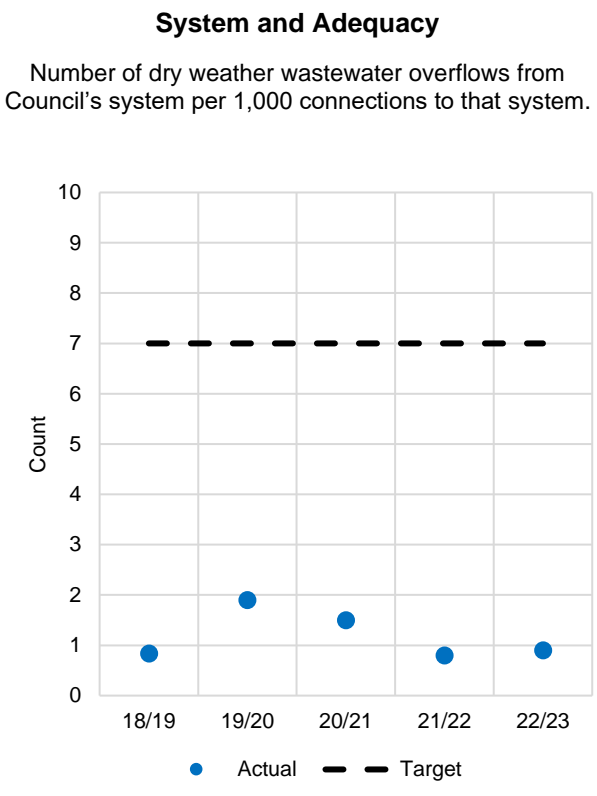


Figure 16 Asset performance against environmental sustainability levels of service

4.5 Asset condition

4.5.1 Condition by asset class

The overall asset condition of Council's wastewater asset classes is summarised below by major asset class. This shows that all asset classes are considered in good condition. Specific information on asset condition for each of the individual wastewater networks is provided in Part 4, Appendix D.

Table 27 Asset condition results at asset class level.

Asset classes	Asset Condition Grading	Confidence Grade	Comment/Substantiation
Wastewater mains	2	B	<p>Most of the reticulation mains (71 %) were laid after 1970.</p> <p>43% of the wastewater mains are of mPVC/uPVC material.</p> <p>National Park, Pipiriki and Rangataua wastewater networks were all installed no later than the 1980's and are all in good condition.</p> <p>Overall, operators report the wastewater mains to be in good condition.</p> <p>39% of the total wastewater network mains are of AC material.</p> <p>High failure rates for the Raetihi wastewater network are indicative of a generally poor condition of mains, noting that relining works has been effective in reducing influent flows to the WWTP.</p> <p>Ohakune and Taumarunui wastewater networks also contain significant AC main which is progressively deteriorating.</p>
Manholes	2	B	<p>Overall, the integrity of the manholes is good with manhole chambers and benching in good condition. Occasional manholes require re-haunching.</p> <p>The average age of manholes is 50+ years.</p>
Wastewater pump stations	2	B	<p>Overall, WWPS condition is good.</p> <p>New switchboards have been installed at 6 WWPS in recent years.</p> <p>At Pipiriki WWPS and Bridge St WWPS (Raetihi), reflux valves and isolating valves are located within the pump sump. Corrosion of the valves is commencing because of their direct exposure to the corrosive WWPS environment.</p>
Wastewater treatment plant	2	B	<p>WWTP condition is generally good. Except for Ohakune and Taumarunui, the remaining WWTP are primarily civil structures with long useful lives.</p> <p>A new Rotating Drum Screen and Grit Trap were installed at Ohakune in 2016 to replace the previously existing step screen.</p> <p>A major overhaul of the inlet step screen at Hikumutu WWTP was completed in 2018. New effluent flow meters were installed at Raetihi and Hikumutu WWTPs in 2019.</p>

Source: Veolia (as at September 2020)

Condition Grading Scale: 1 = Very Good; 2 = Good; 3= Moderate; 4= Poor; 5 = Very Poor.

Refer to Section 7.4.1 Data for confidence grading key

4.5.2 Individual township wastewater system condition

Overall asset condition grades by township are provided in the table below. This shows that all townships are in reasonable condition. Specific information on asset condition with respect to individual schemes is provided in Part 4, Appendix B.

Table 28 Wastewater condition grading summary by township

Wastewater system	Condition grading
National Park	2
Ohakune	2
Pipiriki	2
Raetihi	2
Rangataua	2
Taumarunui	2
Waiōuru	2

Source: Veolia (as at September 2020)

Condition Grading Scale: 1 = Very Good; 2 = Good; 3= Moderate; 4= Poor; 5 = Very Poor.

4.5.3 Condition assessments

Asset condition and performance monitoring is undertaken to identify under-performing assets and those about to fail on a day to day basis. The formal asset condition monitoring utilises asset capacity/performance information and asset condition information collected during routine system operation and maintenance. This includes:

- Physical condition inspection assessments.
- Resource consent discharge compliance.
- Request for service numbers.
- Customer interruptions – blockage and overflow numbers.
- Customer satisfaction.
- Asset failure work order records.

The assessments of capacity / performance and condition is undertaken on a rolling basis. It is intended to re start the condition assessment of wastewater assets in 2024/25.

4.6 Lifecycle Management Decision Making

Lifecycle management activities are categorised based on expenditure category, lifecycle management plan categories and activity categories as shown in the table below. The decision-making process for the determination between maintenance, renewals and creation is shown in the figure below. This decision-making tree is used by Veolia in their daily operation activities.

Table 29 Lifecycle management activities.

Expenditure category	Related AMP lifecycle management plan	Activity category	Description
Operations	Routine maintenance plan	Operations	Operations incorporate all expenditure necessary for day-to-day operation and also includes for asset management planning activities.
		Maintenance	Maintenance incorporates all expenditure necessary to ensure ongoing operability of the asset, but which does not extend the overall asset life. Includes planned maintenance (preventative and corrective) and unplanned maintenance (breakdown).
Capital	Renewals / replacement plan	Renewals	Renewals incorporates all expenditure necessary to overhaul / rehabilitate an asset where this expenditure

Expenditure category	Related AMP lifecycle management plan	Activity category	Description
			extends the overall asset life or completely renew / replace the overall asset.
	Creation / acquisition / augmentation plan	Growth	Growth incorporates all expenditure to add infrastructure / infrastructure capacity in order to expand services (provide service to future customers).
		LOS	LOS incorporates all expenditure to improve performance/achieve (existing customer) LOS.

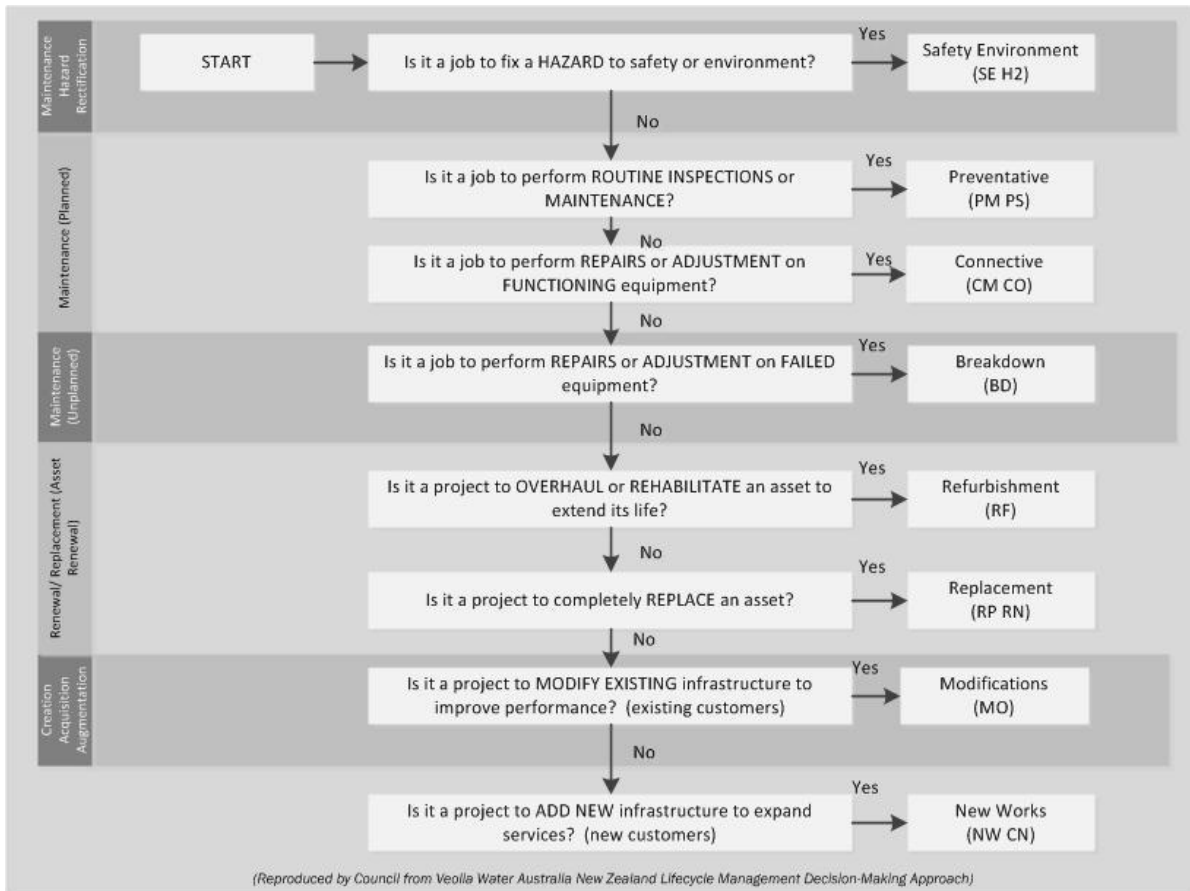


Figure 17 Asset maintenance, renewals and creation decision making

4.7 Service delivery arrangements

Council has engaged a Facilities Management Contractor (Veolia) to undertake day to day operation and maintenance works and, in a partnering arrangement, assists Council with asset renewals, upgrades and improvements and long-term asset management planning activities.

Planned maintenance is scheduled by Veolia according to contract specified requirements and maintenance schedules. Planned maintenance schedules are driven by factors such as legislative requirements and historical failure frequencies (preventative maintenance) and SCADA trends (corrective maintenance).

Unplanned maintenance relating to the wastewater networks within the district is typically generated by customer notification to the Council customer service centre. The work request is entered into the Council RFS system and forwarded to the facilities management contractor for action within the KPI timeframes existing under the Facilities Management Contract.

The current contract has been in place for approximately 25 years and is generally seen as successful arrangement for a small Council with remote communities. Rolling the contract over, rather than developing

new contracts and going to the market, has been the preferred approach as the Government's approach was to form regional water entities (subsequently abandoned). A Section 17A service delivery review was completed in November 2020, with the outcome to continue to outsource the service delivery.

External specialist consultants are required to deliver the proposed capital programme, particularly the upfront planning and bedding in programme management disciplines. Our discussions with potential suppliers have indicated that there is sufficient market capacity to respond to our current and future delivery programme.

4.8 Operations and maintenance plan

Asset operations and maintenance tasks relate to the day to day running and upkeep of assets and their associated costs. The objective of the operation and maintenance activities is to maintain and operate the system such that the performance and reliability targets within the wastewater LOS are met. Council keeps the wastewater facilities suitable, accessible, safe, and well maintained by carrying out planned and reactive maintenance.

Council aims to optimise its maintenance activities to minimise the total maintenance cost. The optimal maintenance mix is a balance of planned and reactive maintenance. Maintenance includes minor repairs that cannot be capitalised, consistent with Council's capitalisation process.

A breakdown of Council's operation and maintenance activities is included in the following table.

Table 30 Operation and maintenance activities.

Plan Component	Description	Specific items
Operations	<p>Operations objectives are to operate the three waters systems such that the performance and reliability targets within the LOS are met.</p> <p>Work conducted for the operation of Council wastewater systems to ensure optimal performance and quality control to meet regulatory and level of service requirements. Includes for Council corporate overhead costs, day to day operational costs and long term planning and asset management costs.</p>	<p>Council labour, corporate systems and overhead costs providing for the following services required to deliver efficient and effective wastewater services to the district:</p> <ul style="list-style-type: none"> – Operations services. – Customer service and billing. – Operations (facilities management contractor): Treatment plant operation and reticulation operation. – Operator labour for WWTP operation and reticulation operation. – Chemicals. – Facilities management contractor depot, vehicle and overhead costs. – Insurance. – Electric power to operate the WWTPs and water pump stations. – Consultants/testing/software/other services. – Water quality analysis for discharge compliance. – Depot, vehicle and overhead costs. – Electric power to operate the treatment plants and pump stations. – Customer service and billing. – Replacement of manholes and switchboards. – Appropriate disposal of asbestos pipes.
Hazard management (Safety or environmental)	Work undertaken by Veolia to fix a hazard which is affecting safety or the environment.	<ul style="list-style-type: none"> • Replacement of manholes and switch boards. • Appropriate disposal of asbestos pipes.

Plan Component	Description	Specific items
Preventative Maintenance (Planned)	<p>Our maintenance objectives are for three waters facilities to be suitable, accessible, safe, and well maintained by carrying out planned and reactive maintenance.</p> <p>Another objective is to optimise maintenance activities to minimise total maintenance cost.</p> <p>Periodically scheduled inspections and maintenance scheduled by Veolia according to established maintenance schedules within the contractor's CMMS.</p>	<p>Facilities management contractor costs associated with undertaking ongoing planned maintenance items including:</p> <ul style="list-style-type: none"> • Inspections of all WWTPs. • Wastewater pump station routine inspections. • Electrical planned maintenance on WWTP and WWPS. • Inspections of treatment plants. • Pump station routine inspections. • Six monthly inspections of discharge infrastructure. • Electrical planned maintenance on treatment plants and pump stations. • Pump repairs on treatment plants and pump stations. • Repair of burst / leaking network assets. • Manhole inspections. • Haunching of manhole lids. • Relining pipes. • Cleaning blockages in pipes. • Repair collapsed gravity mains. • Repair manholes. • Replacement of stolen manhole lids. • Inspection and problem remedy in response to flooding complaints.
Corrective Maintenance (Planned)	Planned maintenance, typically identified from preventative maintenance tasks, scheduled by Veolia, to return an asset to its required level of service.	<p>Facilities management contractor costs associated with:</p> <ul style="list-style-type: none"> • Pump repair of WWTP and WWPS pumps.
Breakdowns Maintenance (Unplanned)	Reactive maintenance, typically as a result of a RFS call to Council's call centre, required to be undertaken by Veolia to return a failed asset to its required level of service.	<p>Facilities management contractor costs associated with undertaking reactive maintenance items including:</p> <ul style="list-style-type: none"> • Repair of burst main/leaking mains. • Repair/replacement of broken laterals/leaking laterals. • Wastewater main flushing to remove chokes and blockages.

4.9 Asset renewals plan

Asset renewals do not increase the asset's design capacity but restore, rehabilitate, replace or renew existing assets to their original capacity. Council's strategy with respect to asset renewal is that they will rehabilitate or replace assets when justified by the factors in the table below.

Table 31 Asset renewal factors.

Factor	Description
Risk	The risk of failure and associated financial and social impact justifies action (eg, probable extent of damage, safety risk, community disruption).
Asset performance	Renewal of an asset when it fails to meet the required level of service. Non-performing assets are identified by the monitoring of asset reliability, efficiency and quality during routine inspections and operational activity and through performance and condition assessments. Indicators of non-performing assets include repeated and/or premature asset failure, inefficient energy consumption, and inappropriate or obsolete components.
Economics	When it is no longer economic to continue repairing the asset (ie, the annual cost of repairs exceeds the annualised cost of renewal).
Efficiency	New technology and management practices relating to increased efficiencies and savings will be actively researched, evaluated and where practical, implemented.

Renewals are prioritised and programmed in accordance with the following criteria, or in urgent cases undertaken with shortened timeframes:

- Public safety risk.
- Environmental risk.
- Criticality of asset to operation.
- Criticality of asset to achievement of service standards and outcomes.
- Financial risk of deferring work.
- Intensity of usage.

Renewal identification process:

The renewals programme is planned for the assets nearing the end of their useful life. This plan is then validated against the actual pipeline condition / performance before it is renewed. Comparison with annual depreciation, historical and forecast expenditure at major asset class level is shown below. This shows that historical expenditure has been more than annual depreciation for all asset classes.

Table 32 Renewal expenditure versus annual depreciation comparison

Asset class	Annual depreciation (2020)	Actual renewals (2020/21)	Actual renewals (2021/22)	Actual renewals (2022/23)	Ten-year renewals forecast (average per year)
Network	500,965	40,000	1,107,000	1,560,072	825,000
Pump stations	158,598	253,000	858,000	180,258	220,000
Treatment and disposal	279,372	709,000	2,175,000	994,121	590,000
Total	938,935	1,002,000	4,140,000	2,734,451	1,635,000

Source: Veolia Infrastructure Asset Valuation (July 2022) and Council LTP Budgets (uninflated as at February 2024)

Key renewal projects:

Key wastewater network renewal expenditure projects for the Ruapehu District are indicated below. These include capital projects that target growth or levels of service and are primarily funded through new debt. This list excludes renewals projects which are detailed in the next section.

Table 33 Key wastewater renewal projects

Township	Renewal project	Justification
District-wide	Asset renewals	Wastewater network pipeline renewals are based on modelling and condition assessments (estimated at \$8 million over the ten-year period).
	Pumping station minor upgrades	Several pump station assets require renewals, with Huia Street Pump Station nearing end of useful life which was budgeted at an additional \$2 million, with these upgrades based on annual inspections (estimated at \$2,200,000 over the ten-year period).
	Upgrade SCADA PLC and Communications	District-wide upgrades required to bring the SCADA systems up to modern standards and communication protocols (estimated at \$800,000 over the ten-year period).
National Park	National Park WWTP Desludge	Desludging in reparation for consent renewal (estimated at \$1,000,000 over the ten-year period).
Ohakune	Ohakune WWTP Desludge	Desludging in reparation for consent renewal (estimated at \$1,200,000 over the ten-year period).
	Ohakune WWTP renewals	Equipment renewals (estimated at \$750,000 over the ten-year period).
Rangataua	Rangataua Consultant and Consent renewal	Consent renewal balanced against merging Rangataua with Ohakune (estimated at \$150,000 over the ten-year period).
Pipiriki	Pipiriki Catchment	This small catchment is primary service through septic tanks, with discharge to a sand filter which requires upgrading (estimated at \$250,000 over the ten-year period).
Raetihi	Raetihi WWTP Desludge	Desludging in reparation for consent renewal (estimated at \$800,000 over the ten-year period).
Taumarunui	Hikumutu Wetlands Desludge	Desludging in reparation for consent renewal due to start 2024/25 (estimated at \$1,200,000 over the ten-year period).

Source: RDC's LTP budget (uninflated as at February 2024)

4.10 Asset creation plan

Asset creation is the process driven by consumer growth or LOS. This involves the design and construction of new assets which increase the capacity or performance of the system. Asset creation is necessary to accommodate growth, changes in LOS or customer demand.

There have been various master plans / model builds completed (refer to Section 3.5 Future wastewater capacity). These master plans / model builds have informed the identification of capital works projects with a focus on WWTP upgrades to date. The long term planning programme for the wastewater networks and treatment plants needs strengthening so there is a 30 year view.

Council will continue to invest in wastewater infrastructure with the main drivers being:

- To meet legislative compliance including resource consent conditions and NPS for Freshwater Management 2020.
- To meet the levels of service with respect to safe wastewater discharge in every town where applicable (i.e. environmental improvements).
- To strengthen resilience and prepare for climate change impacts.
- To meet the demands of growth by providing wastewater infrastructure to Council's customers.

Council growth and LOS activity categories are shown in in the table below.

Table 34 Asset creation sub-activities

Creation Plan Activity category	Creation Plan Sub-Activity Category	Description
Growth	Network	Growth expenditure on wastewater network (pipework) assets.
	Pump station/storage	Growth expenditure on wastewater pump station/storage assets.
	Headworks and treatment	Growth expenditure on wastewater treatment and disposal assets.
	Vested assets	Accounting related category for vested wastewater assets from new developments.
Levels of Service	Compliance	Replacement, upgrading or installation of new wastewater assets to achieve compliance with statutory obligations including those related to resource consent compliance and H&S compliance.
	Customer	Replacement, upgrading or installation expenditure to achieve (existing) customer Levels of Service (LoS). Also includes expenditure to improve asset operability and reliability so as to seek to ensure LoS are achieved.
	Service extensions	Expenditure on new assets to provide wastewater servicing to existing ratepayers who do not receive reticulated services.
	System information	Expenditure on activities acquiring system information to enable informed investment decisions and support asset operations and the provision of wastewater services.

Key wastewater creation (growth and LOS) projects are listed in Table 35 table below. The asset creation plan focuses on wastewater treatment plant upgrades with a view to reducing nutrient discharge and ensuring compliance with discharge consent requirements. The upgrade projects are dependent on securing resource consents and agreeing suitable treatment processes and disposal methods with iwi and agreement with HRC. Iwi time has been invested in land passage assessments.

Table 35 Key wastewater asset creation projects

Township	Work and Expenditure Item	Justification
Ohakune	Ohakune WWTP Desludge	Desludging in preparation for consent renewal (estimated at \$300,000 funded by loans over the ten-year period).
Raetihi	Raetihi WWTP Desludge	Desludging in reparation for consent renewal (estimated at \$200,000 funded by loans over the ten-year period).
Rangataua	Rangataua WWTP Wetlands Upgrade	Wetland upgrades in reparation for consent renewal (estimated at \$400,000 funded by loans over the ten-year period).
Pipiriki	Pipiriki WWTP	Equipment upgrades for compliance (estimated at \$750,000 funded by loans over the ten-year period).
Taumarunui	Hikumutu Wetlands Desludge	Desludging in reparation for consent renewal (estimated at \$300,000 funded by loans over the ten-year period).
	Hikumutu WWTP	Equipment upgrades for compliance (estimated at \$4,000,000 funded by loans over the ten-year period).

Source: RDC's LTP budget (uninflated as at February 2024)

An assessment of WWTP upgrades and the compliance outcomes for nutrient discharge was recently developed (refer to Section 3.5 Future wastewater capacity). An optimisation process is underway to identify the preferred option, with the three scenarios summarised in the table below.

Table 36 WWTP upgrade scenarios

Scenario	MBR ¹ Upgrade at Ohakune* IDEA ² Upgrade at Hikumutu	MBR ¹ Upgrades at Ohakune* & Hikumutu	MBR ¹ Upgrades at All Sites
Total cost	\$33,900,000	\$50,800,000	\$77,600,000

Source: Traverse Environmental (as at February 2024).

* Includes connecting Rangataua to Ohakune and eliminating discharge at Rangataua.

1 Membrane Bioreactor.

2 Intermittent Decanted Extended Aeration.

4.11 Asset disposal plan

Asset disposal occurs when an asset is no longer required or becomes uneconomical to maintain or rehabilitate. Asset disposal involves activities associated with disposal of decommissioned wastewater assets, including their sale, demolition or relocation.

Assets may become surplus to requirements for reasons such as:

- Under-utilisation.
- Obsolescence.
- Provision exceeds required LOS.
- Asset no longer provides the service or fulfils the purpose for which it was intended.
- Uneconomic to upgrade or operate.
- Policy change.
- Service provided by other means.

For assets such as wastewater mains, where asset renewal involves installation of a new asset, the existing asset is typically decommissioned and abandoned in place. There are no identified wastewater assets of significant value that have been identified for decommission.

5 Risk Management

5.1 Risk management approach

5.1.1 Risk management framework

This section covers the risk management implemented by Council and how it applies to current and future wastewater activities. Council's corporate risks are covered in Part 1 of the AMP and this section looks at activity specific risks. Our approach to risk management is defined in our Risk Management Policy (2017). The objective of this policy is to ensure that Council effectively and systematically manages risk.

RDC has a risk management framework simplified from the AS/NZS ISO 31000:2009. Risk evaluation involves evaluation the consequence and likelihood scores for each of the identified risks. Based on the results, Council has adopted the following broad treatment strategy for the levels of risk:

- Extreme risk – treat risk. Risk Manager keeps Management Team informed.
- High risk – treat risk. Risk Manager keeps Chief Executive informed.
- Medium risk – Risk Manager monitors with annual review.
- Low risk – Risk Manager monitors with review every two years.

Risks are recorded in the risk register and include analysis of the treated risk. Risk Action Plans record additional management options. Main risks are listed in order of severity as assigned in consultation with key Council officers.

Council's Risk Management System relies on input from its many contractors and service providers which is appropriate for a small rural district council. Further to Council's Risk management framework, Veolia is required to manage risk and produce their own risk management procedures to describe the responsibilities, authorities and processes across their international business. Their system uses slightly different descriptors to assess risk but overall the assessment method obtains similar outcomes. Their assessment method is utilised as part of their daily services to deliver their operations, maintenance and capital works programmes. It is utilised in the production of Water Safety Plans, method statements for new works or high-risk situations.

5.1.2 Risk register

The Ruapehu risk context has been developed from Council examining each of the elements that define the context for risk management applicable to the wastewater activity. The activity has been examined and full results are summarised in Part 4, Appendix H. The wastewater activity risk register is due for updating and is scheduled for 2024/25.

Risks associated with the wastewater activity have been identified, described, classified, analysed, evaluated and rated. The resulting risk matrix below shows three risks identified as high treated risk and no extreme risks.

Table 37 Risk matrix – wastewater.

Likelihood	Consequence
------------	-------------

	Insignificant (1)	Minor (2)	Significant (3)	Major (4)	Catastrophic (5)
Almost Certain (5)	0	0	0	0	0
Likely (4)	0	0	0	0	0
Possible (3)	0	0	3	0	0
Unlikely (2)	0	0	7	0	0
Rare (1)	0	0	0	0	0

Low
 Medium
 High
 Extreme

5.1.3 Risk action plan

Additional management options have been identified for specific risks rated as Medium, High or Extreme to treat the present risk. These are recorded in the Risk Action Plan (Part 4, Schedule 3, Appendix H). The main risks are listed in order of severity as assigned in consultation with key Council officers.

Actions that are required to achieve the desired improvements are indicated along with how progress on these actions will be monitored and reported. Where applicable, action tasks will detail timeframes for achievement, and responsibility for these actions.

5.2 Main wastewater activity risks

The main wastewater activity risks identified through the 2023 AMP process for transitioning to the new Entity (now abandoned) are summarised in table below.

Table 38 Main wastewater risks.

High level risk / issue title	Caused by	Impacts	Current controls and mitigation	Proposed further response
Failure of a critical pipeline	Failure, third party damage, natural disaster, sabotage.	Environmental concerns, loss of services, health concerns, consent compliance issues.	Condition monitoring, maintenance history analysis, targeted renewal programmes, response plans.	Hydraulic modelling, pressure monitoring, leak detection, metering rural connections and extraordinary users.
WW overflows into the SW network	Failure of critical WW pipeline.	Environmental concerns, health concerns.	Condition monitoring, targeted renewal programmes, response planning, system redundancy options, I&I works to remove SW from WW network.	CCTV survey of critical WW pipes, system redundancy options.
Overflows from a critical WW pipeline	Failure of critical pipeline, blockage, third	Environmental concerns, health concerns, breach of discharge consent	Condition monitoring, targeted renewal programmes, response plans, routine inspections and maintenance, emergency contamination	CCTV review of pipes, system redundancies, signage, plan for maintenance of lines

High level risk / issue title	Caused by	Impacts	Current controls and mitigation	Proposed further response
	party damage, operator error.	conditions, loss of WW service.	plans, environmental decontamination plans, critical methods statements.	outside jet rodders capacity.

Source: Ruapehu Addendum (October 2023).

5.3 Emergency risk planning

Business Continuity Plans (BCP) are developed to coordinate efforts for keeping Council business operating through high risk events such as pandemics, staff death, terrorism and natural hazards. At a corporate level, RDC has a BCP for response processes to be implemented for any major interruption to business operations and service delivery. This was tested with the recent global pandemic event with people working at home (except for essential workers).

Wastewater emergency risk events occur when they escalate from a routine event affecting an isolated network and before it is declared needing Civil Defence control. Veolia's Emergency Response Plan (ERP) is used as the key guiding operational plan for these events.

5.4 Climate change and resilience

5.4.1 Climate change impacts

Climate change is a major management issue facing all infrastructure providers and the built environment. Ruapehu District is tested further as it has physical constraints / natural hazards including the Mountain and is subject to intense weather events that need to be considered in the context of climate change impacts. It is also exposed to a variety of natural hazards including earthquakes and volcanic eruptions.

Changes in climate such as rainfall, temperature and wind are already occurring and impacting regions differently. Climate change predictions for the western lower North Island include:

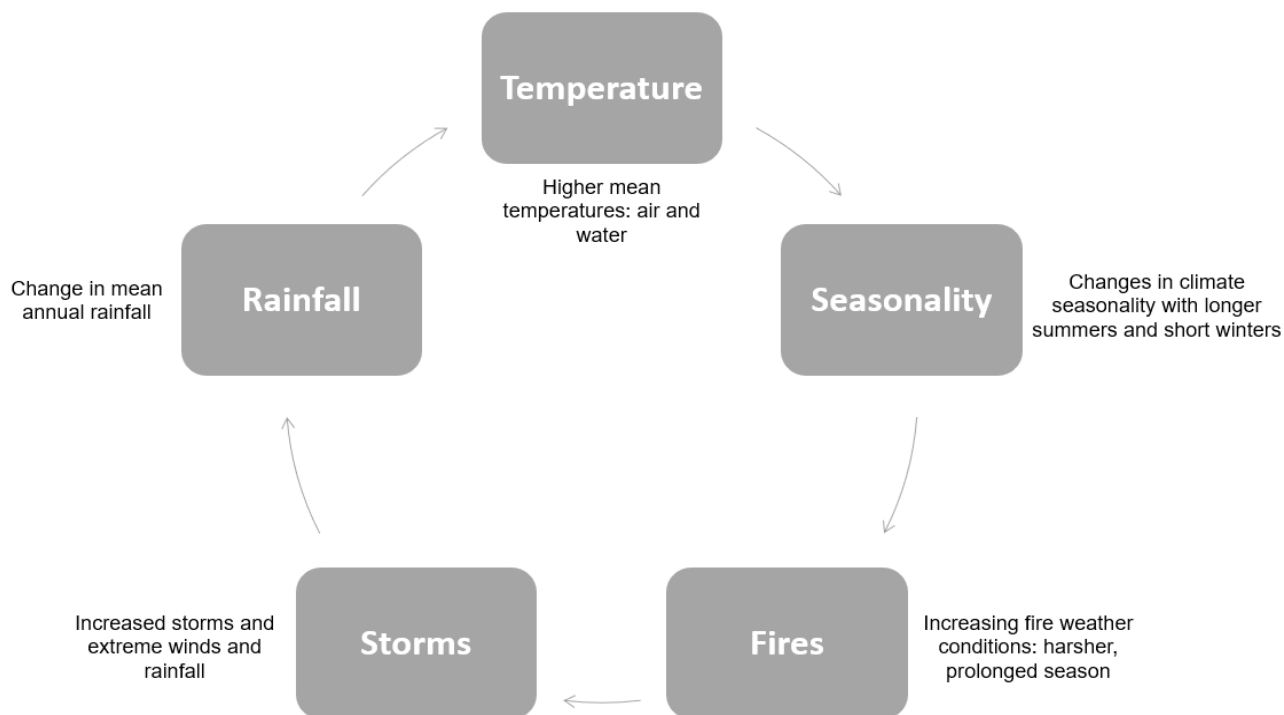


Figure 18 Climate change predictions for western lower North Island.

Source: NIWA's snapshot for Zone 2.

5.4.2 Where we are at

Council has adopted a sustainable management approach in the way it manages its wastewater activity. Current sustainable practices to reduce our carbon emissions are:

- Baseline reporting – Horizon Regional Council has provided the regional impact of climate change, see Part 1, and are partnering with district councils in community engagement. They have developed a greenhouse gas footprint for the region and each territorial authority in the Region.
- Strategic planning:
 - The Manawatū Whanganui Climate Action Plan (June 2023) was developed by the region's eight councils and iwi. This action plan draws on both Māori and Western worldviews to work together in response to climate change.
 - RDC has developed a draft Climate Action Strategy.
- Policy – Council's Procurement Policy (2020) includes social procurement, sustainability and whole of life.
- Asset management planning:
 - We will continue to seek new technology and opportunities to reduce our carbon footprint where appropriate for our district size, learning from other water utilities in New Zealand and internationally.
 - Improve the efficiency of pumps as this will reduce power consumption costs as well as prolonging the asset component lives.
 - Replace pumps with low energy models as the wastewater treatment plants and pump stations are upgraded based on annual assessment reports.
 - Continue to measure carbon footprint as part of the Climate Change Regional Group.

- PLC plant replacement programme provides an opportunity to assess equipment efficiency, resilience and carbon footprint.
- Council currently utilises the lowest cost technology to treat wastewater, largely using gravity to collect the wastewater from the community and delivering it to the treatment plant. The existing treatment plants have also utilised low carbon treatment technologies with enhanced oxidation lagoons systems. The step change to treat nutrients will involve high carbon technology. Council will consider the carbon footprint with any new / upgraded treatment plants in its decision making.

5.4.3 Management response to climate uncertainty

The likely effect on the wastewater activity due to climate change and Council's proposed actions are outlined in the table below.

Table 39 Likely climate change impacts – wastewater

Most likely effect due to climate change	Proposed actions
<ul style="list-style-type: none"> • Inflow and infiltration increases and therefore reduces pipeline capacity during events resulting in more overflow events. • Increased electricity costs to pump highly diluted wastewater due to higher volume of inflow and infiltration. • Pump station vulnerability due to flooding inundation. 	<ul style="list-style-type: none"> • Identify wastewater pump stations at risk due to flooding inundation. • Development of cost effective inflow and infiltration programme. • Assessment of critical underground wastewater pipelines. • Engaged water services contractor Veolia to have appropriate resources for keeping the wastewater network resilient.

5.4.4 Building resilience and adaptation

Resilience refers to the capacity to recover quickly from difficulty; the concept applies to major disruption events including those associated with climate change. The concept applies to major disruption events including those associated with climate change. Resilience is important for all water operators and is essential for remote communities like Ruapehu. Infrastructure resilience is tested further in Ruapehu as it is influenced by the Mountain and subject to intense weather events. It is also exposed to a variety of natural hazards including earthquakes and volcanic eruptions.

We are undertaking adaptation planning for our infrastructure assets aligned with the Government's objectives to build resilient infrastructure as set out in the National Adaptation Plan (2022). Strengthening our infrastructure resilience is a key focus. Specific actions include:

- Specify more resilient design and materials for replacement programmes, particularly for critical assets. Factors that are considered include location and consequences. We undertake a pragmatic evaluation at the renewal planning stage on a case by case basis.
- Enhanced collaboration with Veolia to have robust communication protocols and procedures for keeping the network resilient.
- Many of our wastewater treatment plants have back up generators to ensure service continuity during power outages.
- We have used an integrated approach with our wastewater master planning / model build process to consider growth, consenting requirements as well as reducing risk.
- Strengthening our infrastructure resilience in our townships with more built infrastructure such as Raetihi, Ohakune and Taumarunui. Specifically, investigating a combined wastewater scheme for Ohakune and Raetihi to strengthen resilience long term.

6 Financial Summary

6.1 Financial overview

This section summarises the financial requirements in order to achieve the defined levels of service and provide for future demand needs. The financial forecasts within this section are for the ten-year forecast period from 2024/25 to 2033/34 (subject to adoption of the LTP by Council). The financial forecasts are considered draft and will be finalised as part of the LTP process. Summary financial forecasts are provided in graphical format and provide a breakdown of overall wastewater expenditure.

Detailed financial tables are also provided which indicate by township the forecast expenditure within each category and subcategory for each year in the ten-year forecast period. Detailed tables linking individual projects with associated financials are shown in Part 4, Appendix F.

The total amount of expenditure for operations, maintenance, and capital for the wastewater activity over the next ten years is \$62.2 million, as shown below. The annual wastewater activity cost is \$5.6 to \$6.6 million per year. In the ten-year forecast, 65% is operating costs, with capital expenditure on renewals at 26%, and levels of service at 8%. There is small capital expenditure on growth forecast as these are expected in pockets.

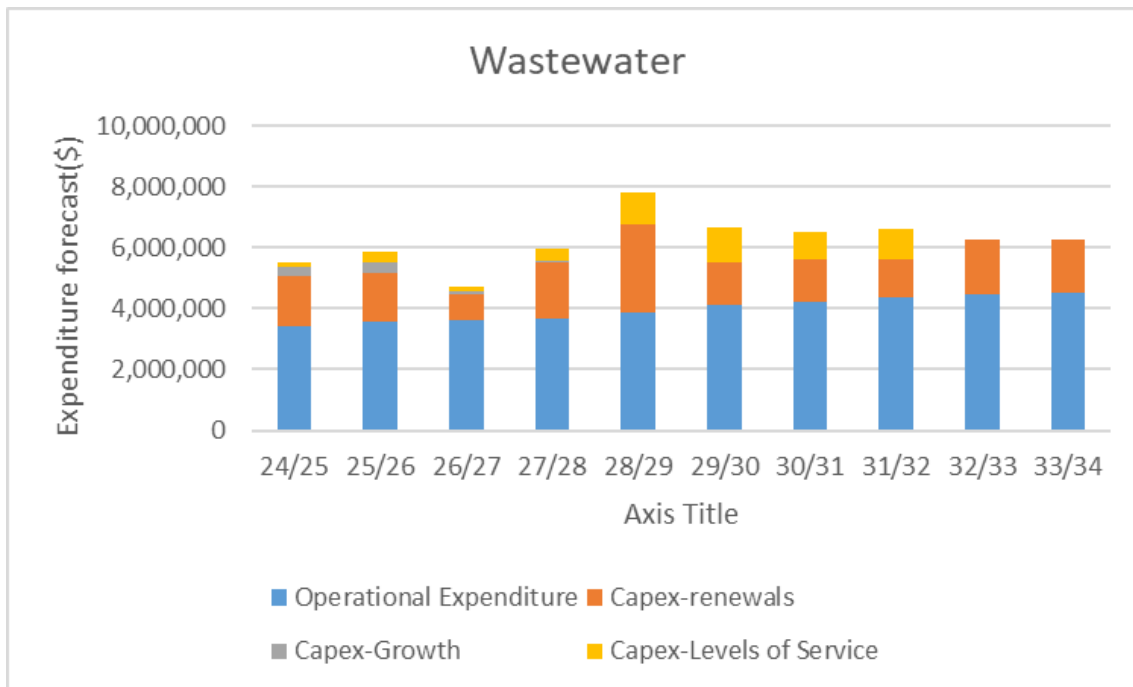


Figure 19 Summary of wastewater activity ten-year expenditure forecast
 Source: Council's LTP budget (uninflated as at June 2024)

Table 40 Summary of wastewater ten-year expenditure forecast.

Description	Projected Expenditure				
	Year 1	Year 2	Year 3	Year 4-10	Ten-year
	2024/25	2025/26	2026/27	2027-34	Total
Operational expenditure	3,434,745	3,551,770	3,641,210	29,235,414	39,863,139
Capital expenditure	2,100,000	2,300,000	1,050,000	16,850,000	22,300,000
Renewals	1,650,000	1,600,000	800,000	12,300,000	16,350,000
Levels of Service	150,000	350,000	150,000	4,500,000	5,150,000
Growth	300,000	350,000	100,000	50,000	800,000
Total	5,534,745	5,851,770	4,691,210	46,085,414	62,163,139

Source: Council's LTP budget (uninflated as at February 2024)

6.2 Expenditure categories

Expenditure types are defined and reported as follows:

- Operating expenditure is used to fund the ongoing day to day activities and services of the Council. It is expensed (not capitalised) work that continues the provision of services and services provided by assets.
- Capital expenditure is used to replace existing deteriorated assets or components of assets to restore their remaining life and service potential.

The Council has three categories of capital expenditure spread across its activities:

- Renewals – Defined as capital expenditure that increases the life of an existing asset with no increase in service level. It replaces existing deteriorated assets or components of assets to restore their remaining life and service potential.
- Level of Service – Defined as capital expenditure that increases the service level delivered by the asset.
- Growth – Defined as capital expenditure that is required to provide additional capacity in whole or part.

For operating expenditure, the following definitions apply:

- Direct costs include administration expenses, finance costs, maintenance and operations expenses, staff costs and utilities.
- Indirect costs include depreciation, interest costs and overheads.

6.3 Operational expenditure summary

The table below outlines the ten-year operations and maintenance expenditure for the wastewater activity. The annual operational expenditure is about \$3.4-4.7 million per annum. Indirect costs make up 68% of the ten-year total, with depreciation the largest operational cost at 32%, followed by funding costs at 27% and internal overheads at 9%. Direct costs make up the remaining 32% made up mainly by maintenance costs, resource consents and utilities.

Table 41 Summary of wastewater operation and maintenance expenditure.

Description	Projected Operational Expenditure
-------------	-----------------------------------

	Year 1	Year 2	Year 3	Years 4-10	Ten-year
	2024/25	2025/26	2026/27	2027-34	Total
Direct costs	1,335,952	1,335,952	1,321,952	9,073,664	13,067,520
Indirect costs	2,098,793	2,215,818	2,319,258	20,161,750	26,795,619
Total	3,434,745	3,551,770	3,641,210	29,235,414	39,863,139

Source: RDC's LTP budget (uninflated as at June 2024)

6.4 Capital expenditure summary

6.4.1 Ten year capital forecast

The table below outlines the ten-year capital expenditure for the wastewater activity. Capital expenditure (renewals and new works) across the ten-year expenditure period is forecast at \$22.3 million, with renewals representing 73%, levels of service at 23%, and growth at 4%.

Table 42 Summary of wastewater capital expenditure.

Description	Projected Capital Expenditure				
	Year 1	Year 2	Year 3	Years 4-10	Ten-year
	2024/25	2025/26	2026/27	2027-34	Total
Renewals	1,650,000	1,600,000	800,000	12,300,000	16,350,000
Levels of Service	150,000	350,000	150,000	4,500,000	5,150,000
Growth	300,000	350,000	100,000	50,000	800,000
Total	2,100,000	2,300,000	1,050,000	16,850,000	22,300,000

Source: RDC's LTP budget (uninflated as at February 2024).

A detailed list of capital expenditure for wastewater assets are provided in the Lifecycle Management section, asset renewals are covered in Section 4.9 and asset creation (growth and LOS) are covered in Section 4.10.

6.4.2 Unfunded capital projects

Capital projects were identified through the LTP and National Transition Unit (NTU) processes are shown for completeness as follows. These projects have a high priority but are currently not included in the ten-year plan because of budget constraints.

LTP process - During the development of the capital expenditure budgets for the 2024 LTP, projects were prioritised with eleven wastewater projects removed. These unfunded eleven capital projects total \$8.4 million and include:

1. Upgrades to the UV system at the Hikumutu WWTP estimated at \$1,000,000 from 2026/27 to 2027/28.
2. Installation and power supply for operators at Rangataua WWTP estimated at \$350,000 in 2026/27.
3. Two projects at the Raetihi WWTP for installation of aerators and increasing power supply to the site estimated at \$1,000,000 and new UV system estimated at \$750,000 from 2026/27 to 2027/28.
4. Five projects at the National Park WWTP with estimated costs of \$500,000 for new aprons around the ponds, \$300,000 to upgrade power supply to the site, \$500,000 to install aerators, \$500,000 for developing new wetlands, and \$750,000 for a new UV system all between 2023/24 and 2028/29.
5. Renewal of the Huia Street wastewater pump station at the end of its service life, estimated at \$2,000,000 from 2028/29 to 2031/32.

6. Installation of generators at critical wastewater pump stations across the district, estimated at \$750,000 from 2028/29 to 2031/32.

NTU process - Further projects were identified by the NTU in 2023 as shown in the following table. Some of these projects will be included in the current capital works budgets, particularly those at the execution stage, but the majority are unfunded.

Table 43 Key wastewater projects identified in the Entity E 3W Addendum

Project	Primary Driver	Year/s	Costs (\$M)	Financial Data Confidence	Description and Objectives of the project	Project Stage
Wastewater Treatment Plant (new)	Level of service	2027-2054	\$52.55	Engineers estimate	Design and construct a new WWTP and discharge to land instead for Ohakune, Taumarunui, National Park, Raetihi.	Initiation
New reticulation system	Level of service	2027-2037	\$18.50	Staff cost / Engineers estimate	Feasibility study, design, install new wastewater reticulation systems, and replace septic tanks for Pipiriki, Raurimu, Ōwhango, Waimiha, Kakahi, Horopito, Ohura, Rangataua, Matiere, and Ongarue.	Initiation
Taumarunui renewals programme	End of service life	2024-2030	\$5.73	Contract unit rates	Upgrade to meet resource consent issues.	Execution
Asset renewals	End of service life	2024-2054	\$3.19	Engineers estimate	Provision for asset renewals, balance of annual depreciation versus existing LTP budget.	Initiation
Wastewater network upgrade	Level of service	2026-2028	\$3	Engineers estimate	Critical upgrades of wastewater pipelines as a result of recent network modelling work for Ohakune.	Initiation
Ohakune renewals programme	End of service life	2024-2030	\$2.09	Contract unit rates	Upgrade to meet resource consent issues.	Execution
Ohakune LOS programme	Level of service	2024-2030	\$1.86	Contract unit rates	Improve network quality issues.	Execution
National Park LOS programme	Level of service	2024-2030	\$1.17	Contract unit rates	Improve network quality issues.	Execution
Ohakune growth programme	Growth	2024-2030	\$1.07	Contract unit rates	Upgrades to meet project growth and new subdivisions.	Execution

Project	Primary Driver	Year/s	Costs (\$M)	Financial Data Confidence	Description and Objectives of the project	Project Stage
Raetihi LOS programme	Level of service	2024-2030	\$0.958	Contract unit rates	Improve network quality issues	Execution
Total			\$90.12			

6.5 Asset valuation summary

Replacement cost, depreciated replacement cost and annual depreciation figures from Council's 2022 asset valuation are shown below. This is based on Council's asset lives and current equivalent asset replacement, calculated as per the asset data in Section 4. A full breakdown of replacement cost, depreciated replacement cost and annual depreciation for each of Council's wastewater schemes is contained within Part 4, Appendix E.

Audit New Zealand has recommended that Council's asset valuations should be sufficiently external from its main contractor. Therefore, the next valuation will be undertaken by Beca from 1 July 2024.

Table 44 Asset valuation by asset type

Wastewater Asset Group	Replacement Cost (\$)	Depreciated Replacement Cost (\$)	Accumulated Depreciation (\$)	Annual Depreciation (\$)
Network	41,629,725	18,275,267	23,354,458	500,965
Pump stations	4,216,782	1,993,452	2,223,330	158,598
Treatment and disposal	15,268,656	10,012,101	5,256,555	279,372
Total	61,115,163	30,280,820	30,834,343	938,935

Source: Veolia Infrastructure Asset Valuation (July 2022)

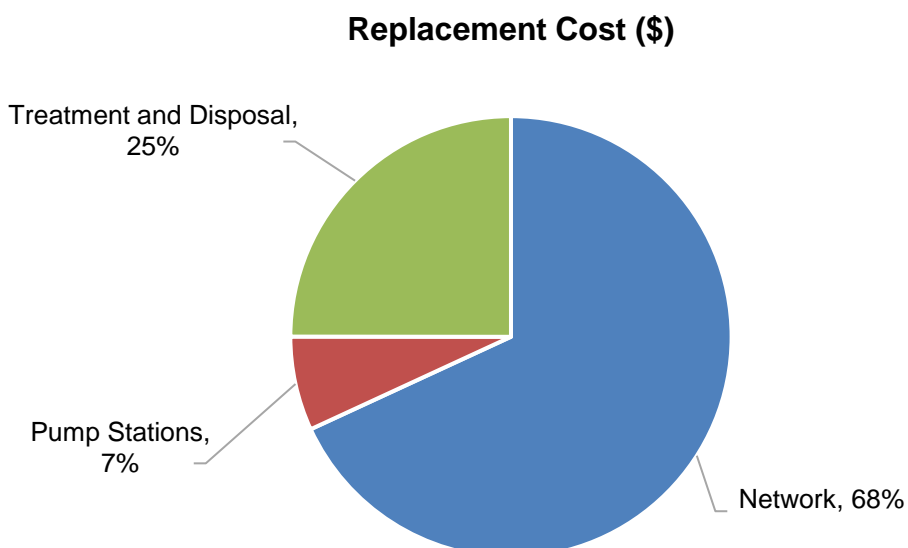


Figure 20 Valuation breakdown by major asset class
 Source: Veolia Infrastructure Asset Valuation (July 2022).

6.6 Financial performance

The actual achievements against the 2021 LTP budgets for the wastewater capital programme for 2020/21 to 2022/23 are detailed in the table and figure below. Over recent financial years, capital expenditure has been 56% to 75% of budget. The shortfall is due mainly to the expired resource consents taking focus and causing delays to project works.

Table 45 Capital expenditure performance.

Project Type	2020/21		2021/22		2022/23	
	Budget (\$)	Actuals (\$)	Budget (\$)	Actuals (\$)	Budget (\$)	Actuals (\$)
Renewals	657,000	277,000	2,564,000	1,566,000	1,513,218	1,035,545
Levels of Service	692,000	725,000	4,848,000	2,574,000	2,121,352	1,698,907
Growth	20,000	-	20,000	-	20,256	-
Total	1,369,000	1,002,000	7,432,000	4,140,000	3,654,826	2,734,451

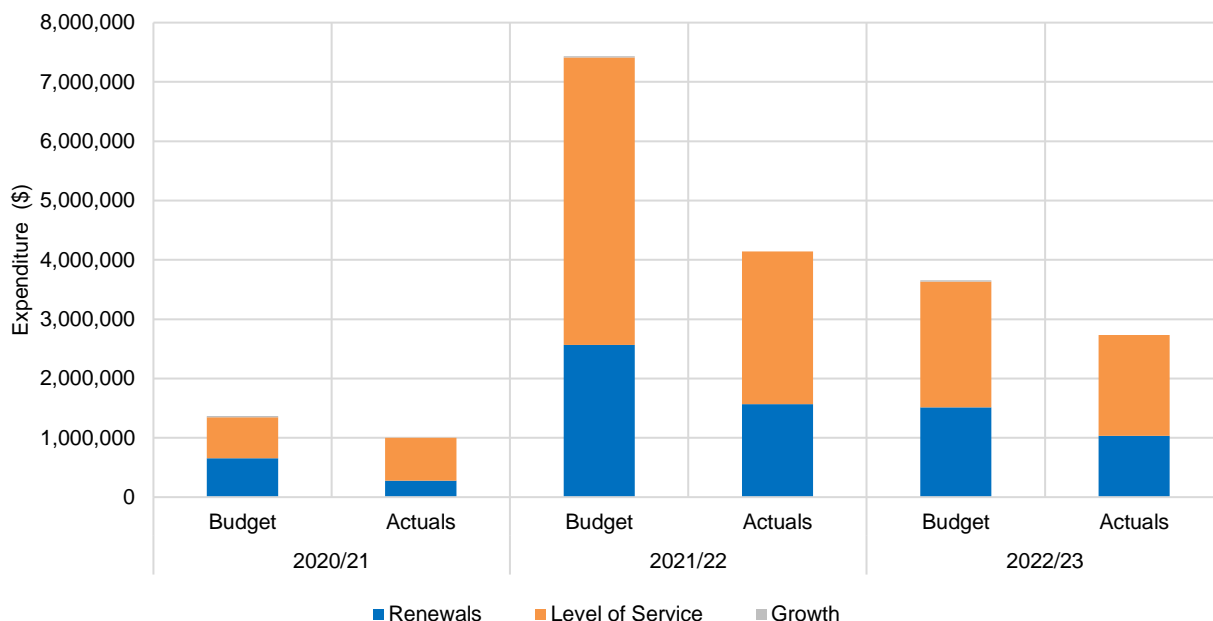


Figure 21 Capital expenditure performance
Source: Council's Annual Reports

6.7 Funding strategy

The wastewater activity will be funded in accordance with Council’s financial policies as indicated below.

Table 46 Funding strategy for wastewater activity

Programme	Funding mechanism
Operational	Funded through general and targeted rates, and fees and charges
Renewal	Provided through rates
LOS	Loan funded
Growth	Loan funding and development and financial contributions

6.8 Key financial forecast assumptions

6.8.1 Financial assumptions

The assumptions upon which the financial needs are based on the following:

- Forecasts are uninflated.
- Based on draft LTP budget as at February 2024.
- Based on existing information available.
- Based on existing legislation and service levels.
- The order of priority or call on funds by Council is generally:
 - operations and maintenance
 - renewals
 - new works for increased service level improvement

- new works for growth
- The application and level of user charges are all determined by the Council's Revenue and Financing Policy.

6.8.2 Confidence levels

Considering the assumptions made in deriving the future financial needs of the service, asset needs and the historical levels of expenditure for the wastewater activity, the reliability of the financial forecast to deliver the current level of service is assessed as follows:

Table 47 Confidence in financial forecasts

Information type	Degree of confidence	Comments
Expenditure projections	Medium	<ul style="list-style-type: none"> • The operational projections are largely based on historical operational budgets and asset condition surveys where this is available. • Renewals are based on preliminary analysis, but further asset analysis is required to develop a risk based renewal programme as identified in the Improvement Programme. • There is a degree of confidence that the projections are based on appropriate budgeting and approval processes and represents the best available information.
Asset values	High	<ul style="list-style-type: none"> • Asset values are based on the asset valuation as at 30 June 2022. These are revalued every three years.
Depreciation	Medium	<ul style="list-style-type: none"> • The assessment of useful lives and the calculation of depreciation expense are undertaken every three years with the valuation.
Funding sources	High	<ul style="list-style-type: none"> • Capital expenditure will be funded by loans.

7 Asset Management Practices

7.1 Overview

Council is committed to continue with good practice AM as a sustainable standard for its community activities. A key feature in Council’s AM framework is to continue to improve practices, processes, and tools. This is essential to ensure the asset system and services are effectively managed. Through the initiatives presented in this section, Council is committed to appropriate AM practices. This practice is being developed in keeping with IIMM / Āpōpō. Council is committed to delivering the most appropriate levels of service balanced with affordability and good industry practice.

7.2 AM Policy

Council’s AM Policy (2024) formalises its commitment to delivering the most appropriate levels of service balanced with affordability and good industry practice. The objectives of the AM Policy are to ensure adequate provision is made for the long-term management of Council’s assets.

The policy covers land transport, three waters, community facilities, community property, and solid waste.

7.3 AM maturity

Council’s Three Waters Asset Management Team completed a self-assessment using the IIMM framework in 2022 to determine current and aspirational level of maturity across the three activities. The results are shown in the figure below for the sixteen areas for water supply, wastewater, and stormwater totalling to 45. The average result for wastewater and water supply was 46, and 42 for stormwater.

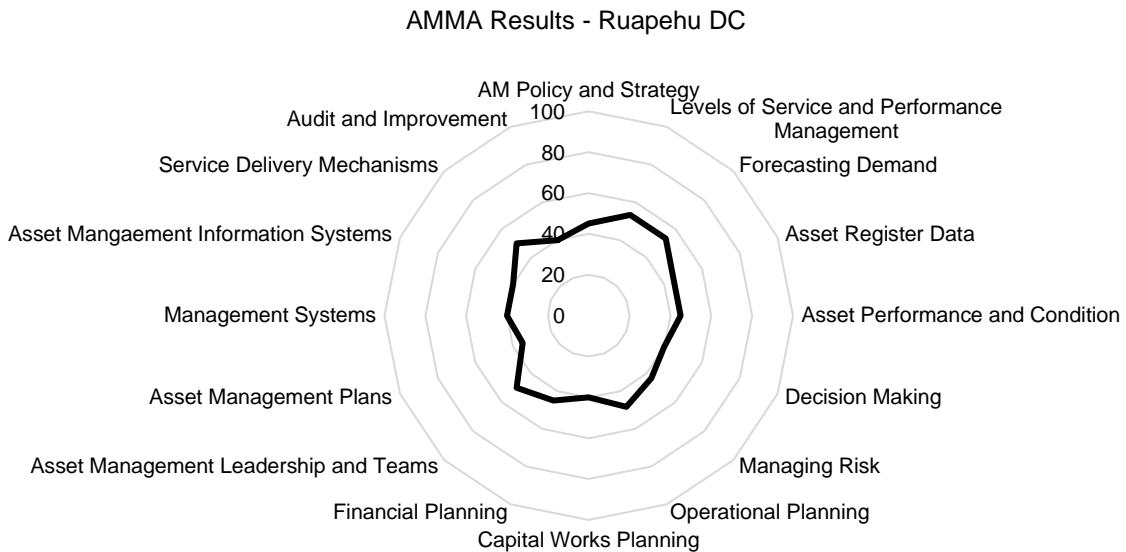
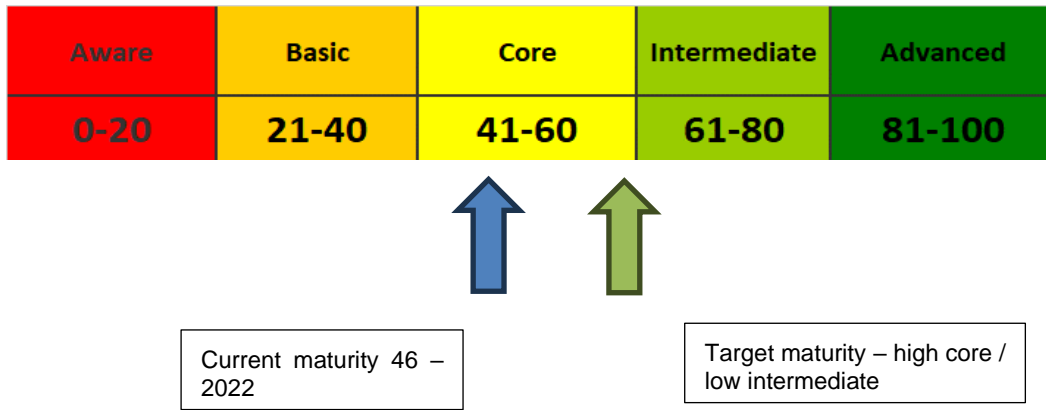


Figure 22 Asset Management Maturity Assessment (2022).

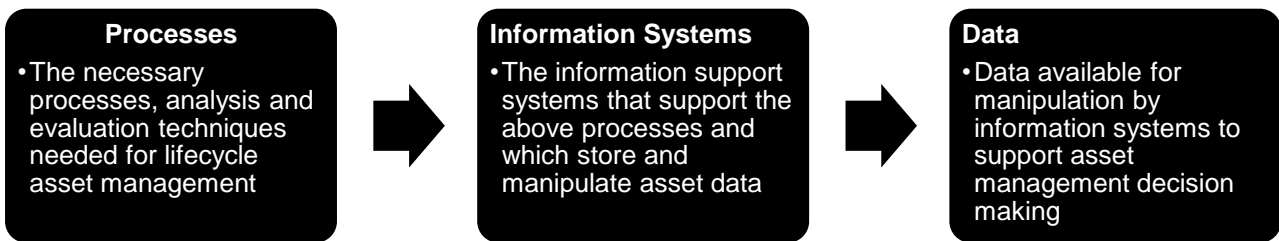
The current score of 46 for the wastewater activity represents core maturity level. A maturity target of high level of core / low intermediate is appropriate reflecting the scale, value and risk for this activity, as shown below in the figure below.

Figure 23 AM maturity – wastewater



7.4 AM Practices

This section discusses the status of Council’s current AM practices and identifies practices Council wishes to use. The key AM practices can be grouped into the following three broad areas.



Providing adequate capability and capacity is a challenge for Ruapehu District Council as a remote community. The approach taken to ensure adequate resources for managing the critical wastewater activity is a mixture of in-house resources, long term service provider Veolia and external specialists as required.

7.4.1 Data

Data quality is important for end users so that they can have confidence in making an analysis using that data. Ongoing data collection and validation, in terms of the physical attribute accuracy and spatial data, are part of Council’s ongoing improvement programme. The overall data confidence has been assessed as reliable for the wastewater activity as shown in the table below.

Table 48 Data confidence summary

Activity	Asset register	Asset condition	Overall
Wastewater	B	B	B

Source: RDC Addendum (2023)

Key:

- A: the data is accurate ($\pm 5\%$) and based on reliable documentation
- B: data is based on some supporting documentation but is less certain ($\pm 15\%$)
- C: uncertain data, fair amount of assumptions and local knowledge used to reach the conclusions ($\pm 30\%$)
- D: very uncertain data where there is no formal documentation to base an assessment on ($\pm 40\%$)
- E: Unknown.

7.4.2 Processes

The key AM processes for the wastewater activity are summarised in the table below.

Table 49 Asset management processes

AM Process Area	Purpose	Status/enhancements
Risk management framework	Enterprise wide approach to ensure a comprehensive review of all potential risks across the whole Council.	Council uses its own system described in Part 1 for corporate risks but uses Veolia for the operation and maintenance items. The activity risk register for three waters is overdue for review.
Project Management Framework	All projects must follow the guidance in the Project Management Framework. A project brief is prepared for all projects and a business case dependent on the level of complexity and risk. Projects are reported on a monthly basis.	None identified at this stage.
Asset data collection (including condition)	Asset data including inventory measure, material type and condition is collected to ensure the asset inventory is complete and accurate for AM decision making.	Assessment of the asset condition, which was last updated in August 2020. Three yearly condition assessments of these assets are recommended to gain a better understanding of current state, ideally sequenced with the Long Term Plan cycle.
Asset valuations	Asset valuations are coordinated by Council Finance Department.	Future asset valuations should be sufficiently external from Council's main contractor, with initial plans for Beca to provide the next valuation from 1 July 2024.
Mandatory performance data and reporting	Providing data and reporting to meet the requirements of the Department of Internal Affairs mandatory performance measures for three waters. Reports are generally a summary of performance against conditions and spreadsheet data	None identified at this stage.
Compliance and quality management requirements	Requirements for meeting the resource consent compliance reporting for HRC.	Horizons abstraction flow data is automatic telemeter via SCADA for sites as Horizons specified times.
Standard Operating Procedures	Water SOPs provide guidance on the requirements for the management and monitoring of the water assets, in particular treatment plants and pump stations.	RDC's Facilities Management Contractor (Veolia) operate and maintain the water assets under there SOPs in accordance with their ISO 9001 certified Quality Management System.

7.4.3 Systems

Information systems are essential for storing and analysing asset information to make good asset management decisions. The main asset management information systems for three waters are summarised in the table below.

Table 50 Asset management systems

System	Purpose	Status / enhancements
Intramaps	GIS system for Council to access information using network's maps and aerial photographs.	No changes proposed at this stage.
Datacom Ozone	The financial system used throughout Council.	No changes proposed at this stage.
Ozone – Contact Centre module	This module allows for the recording of RFS from internal and external customers. This is the channel for	This system is proposed for upgrading.

System	Purpose	Status / enhancements
	customer queries and complaints which require remedy. The system enables a RFS to be categorised depending on the response required and is either automatically emailed through to the appropriate contractor on confirmation of the call. The system has built in timeframes for escalation which ensures that the call is followed up in a timely manner, or a series of notifications are sent through Council's management. Resolution of the RFS enables notes to be entered on what actions were completed and the date on which the call was resolved.	
AssetFinda (Universus) VAMS	AssetFinda is Council's asset management system. VAMS is Veolia's asset management system.	No changes proposed at this stage.
SCADA (link provided by Veolia) Software licensed to Council	SCADA allows monitoring and control of WPSs, WWPSs and reservoir assets. The backup digital storage of SCADA information is owned by Council but held in the Veolia Computer Stack.	None identified at this stage.
Consent information collated in spreadsheets and folders	Stores the resource consent data and provide for compliance monitoring with Horizons Resource Consents. Also holds consent compliance and abstraction reports. Veolia provides consent compliance information to Council for issue to HRC.	Determine the appropriate system for holding or sharing intellectual property (IP) for assets.

7.5 Improvement Plan

Key improvement programmes and associated projects have been developed through a review of the gaps in developing this AMP and issues identified. These have been prioritised for action over the next three years to support the increased maturation of the AM practices.

The key high priority actions for improving the AM practices in the next three years are summarised in the following table with the full three-year AM Improvement Programme detailed in the Appendix, Part 4 of this AMP.

Table 51 High priority improvement actions

AM element	Proposed actions
Asset performance	Develop and implement a cost effective the inflow and infiltration rolling programme to target the highest leaky sub catchments.
	Continue to work with iwi to understand the long term vision for the wastewater treatment plant sites. The objective is to investigate the practicality / viability to discharge the treated wastewater to land.
Asset condition	Undertake 3 yearly condition assessment of the above and below wastewater assets.
Strengthening resilience	Improving the resilience of the network in relation to climate change impact.
Financial planning	Continue to review the level of investment in wastewater assets to ensure the network is being renewed sustainably long term and legislative compliance is being met balanced against community affordability and asset risk.

7.6 Improvement monitoring

The AMP is a living document and needs to be kept current and relevant. It is recognised that priorities will change which makes review activities even more important to ensure this plan is a live document. The following review activities will be undertaken:

Table 52 Improvement monitoring activities

Frequency	Review Task	Action	KPI	Report Name	Audience
Three yearly	AMP Development	Formal adoption of the plan by Council.	100% Achievement	Council AMP Report	Council and Audit New Zealand
Annually	AMP Review (internal)	Revise plan annually to incorporate new knowledge from the AM improvement programme.	100% Achievement	Internal Report	Three Waters Management
Three Yearly	AMP Peer Review	The plan will be formally reviewed three yearly to assess adequacy and effectiveness.	100% Achievement	External Consultant Report	Three Waters I Management, LTP team, and Audit New Zealand
Annually	Monitoring and Reporting	The KPIs identified in this table will be monitored and reported on annually through Business Plans.	100% Achievement	Business Plan Report	Three Waters I Management and LTP team
Annual	Implementation of the Improvement Programme	Tracking the progress of implementing the improvement programme annually particularly of projects in the short-term improvement programme.	100% Achievement	Quarterly Reports	Three Waters Management and LTP team

Appendices




7.7 Acronyms

Table 53 Summary of acronyms

Acronym	Description
AM	Asset Management
AMP	Asset Management Plan
BCP	Business Continuity Plan
CDEM	Civil Defence Emergency Management
DoC	Department of Conservation
DRP	Dissolved Reactive Phosphorus
EOC	Emergency Operations Centre
ERP	Emergency Response Plan
LGA	Local Government Act 2002
LTP	Long Term Plan
HSWA	Health and Safety at Work Act
HRC	Horizons Regional Council
I&I	Inflow and infiltration
ILI	Infrastructure Leak Index
IP	Intellectual Property
IIMM	International Infrastructure Management Manual
LOS	Level of Service
MBIE	Ministry of Business Innovation and Employment
NTU	National Transition Unit
NZDF	New Zealand Defence Force
RFS	Request for Service
RDC	Ruapehu District Council
SIN	Soluble Inorganic Nitrogen
SCADA	Supervisory Control and Data Acquisition
WWTP	Wastewater Treatment Plant
WOL	Whole of Life

7.8 Full levels of service summary

Table 54 Full LOS summary – wastewater

Community Well Being Outcomes	Key service attribute	Levels of Service Statement	How we will measure our performance	Reported in	Current performance 2022/23	Current Year 2023/24 Target	2024/25 Target (year 1)	2025/26 Target (year 2)	2026/27 Target (year 3)	2027/28 to 2033/24 Target (years 4 to 10)
Our infrastructure assets and services are resilient and fit for purpose 	Safety	Public safety continuity of wastewater collection system	Number of dry weather wastewater overflows from Council's system, (expressed per 1,000 connections to that system).	LTP / mandatory	0.9	<7	<7	<7	<7	<7
Our infrastructure assets and services are resilient and fit for purpose 	Quality – reliability	To provide reliable wastewater networks	Total number of complaints received by Council about any of the following (expressed by 1,000 connections to the territorial authority's wastewater system):	LTP / mandatory						
			a) Wastewater odour		0.31	a) <15	a) <15	a) <15	a) <15	a) <15
			b) Wastewater system faults		0	(b) <5	(b) <5	(b) <5	(b) <5	(b) <5
			c) Wastewater system blockages		7.09	(c) < 25	(c) < 25	(c) < 25	(c) < 25	(c) < 25
			d) Council's response to issues with its wastewater system	0	(d) <25 per 1,000 connections	(d) <25 per 1,000 connections	(d) <25 per 1,000 connections	(d) <25 per 1,000 connections	(d) <25 per 1,000 connections	
			Number of reported wastewater pipeline blockages per 100km of pipeline per year	AMP	0.36	<30 per 100km	<30 per 100km	<30 per 100km	<30 per 100km	<30 per 100km
			Percentage of wastewater assets in satisfactory condition (condition grades 1,2, 3 or 4)	AMP	Not measured for 2022/23	85%	85%	85%	85%	90%
Our infrastructure assets and services are resilient and fit for purpose	Responsiveness	To provide prompt responses for service	Where Council attends to wastewater (sewerage) overflows resulting from a blockage or other fault in the Council wastewater system, the following median response times measured:	LTP / mandatory						
			a) Attendance in hours from the time that Council receives notification to the time that service personnel reach the site; and		1.09	≤2hours	≤2hours	≤2hours	≤2hours	≤2hours
			b) Resolution in hours from the time that the Council receives notification to the time that service personnel confirm resolution of the blockage or other fault."		3.72	≤6 hours	≤6 hours	≤6 hours	≤6 hours	≤6 hours
Our natural and built environment is healthy strong and safe 	Environmental sustainability	Environmental sustainability	Compliance with Council's resource consents for discharges from the wastewater system as measured by number of:	LTP / mandatory						
			(a) Abatement Notices.		1	≤2	≤2	≤2	≤2	≤2
			(b) Infringement Notices received.		0	≤2	≤2	≤2	≤2	≤2
			(c) Enforcement Orders received.		0	≤1	≤1	≤1	≤1	≤1
			(d) Convictions received by Council in relation to those resource consents.		0	-	-	-	-	-

Detailed financial tables

Table 55 Wastewater operational expenditure ten-year budget.

Description	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	Ten year total	%
Disposal of Assets	-	-	-	-	-	-	-	-	-	-	-	0.0%
Impairments	-	-	-	-	-	-	-	-	-	-	-	0.0%
Cost of Funds	647,998	709,677	762,693	826,365	991,888	1,148,051	1,293,018	1,415,584	1,498,732	1,603,185	10,897,191	26.9%
Depreciation	1,099,929	1,146,426	1,185,026	1,222,077	1,264,017	1,311,146	1,357,924	1,399,514	1,443,103	1,476,294	12,905,456	31.8%
Direct Cost	1,335,952	1,335,952	1,321,952	1,285,952	1,285,952	1,321,952	1,285,952	1,285,952	1,321,952	1,285,952	13,067,520	32.2%
Internal Costs	350,539	359,491	375,020	364,802	365,579	381,399	360,922	360,540	376,295	359,566	3,654,153	9.0%
Non Cash Items	-	-	-	-	-	-	-	-	-	-	-	0.0%
Remissions	-	-	-	-	-	-	-	-	-	-	-	0.0%
Total	3,434,418	3,551,546	3,644,691	3,699,196	3,907,436	4,162,548	4,297,816	4,461,590	4,640,082	4,724,997	40,524,320	100.0%

Source: RDC's LTP budget (uninflated as at February 2024).

Table 56 Wastewater capital expenditure forecast ten-year budget.

Project Description	Asset Category	Expenditure Category	Funding Source	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2032	2033	2034	Total	%
Raetihi WWTP Desludge	Treatment and disposal	Growth	Loans	-	50,000	100,000	50,000	-	-	-	-	-	-	200,000	0.9%
Hikumutu Wetlands Desludge	Treatment and disposal	Growth	Loans	200,000	100,000	-	-	-	-	-	-	-	-	300,000	1.3%
Ohakune WWTP Desludge	Treatment and disposal	Growth	Loans	100,000	200,000	-	-	-	-	-	-	-	-	300,000	1.3%
Pipiriki WWTP	Treatment and disposal	LOS	Loans	-	-	-	250,000	250,000	250,000	-	-	-	-	750,000	3.4%
Hikumutu WWTP	Treatment and disposal	LOS	Loans	50,000	50,000	150,000	150,000	800,000	900,000	900,000	1,000,000	-	-	4,000,000	17.9%
Rangataua WWTP Wetlands Upgrade	Treatment and disposal	LOS	Loans	100,000	300,000	-	-	-	-	-	-	-	-	400,000	1.8%
Upgrade SCADA PLC and Comms	Treatment and disposal	Renewal	Reserves-Depreciation	-	-	200,000	150,000	150,000	150,000	150,000	-	-	-	800,000	3.6%
Rangataua Consultant and Consent Renewal	Treatment and disposal	Renewal	Reserves-Depreciation	50,000	50,000	50,000	-	-	-	-	-	-	-	150,000	0.7%
Raetihi WWTP Desludge	Treatment and disposal	Renewal	Reserves-Depreciation	-	200,000	400,000	200,000	-	-	-	-	-	-	800,000	3.6%
Pipiriki Catchment	Network	Renewal	Reserves-Depreciation	250,000	-	-	-	-	-	-	-	-	-	250,000	1.1%
Hikumutu Wetlands Desludge	Treatment and disposal	Renewal	Reserves-Depreciation	800,000	400,000	-	-	-	-	-	-	-	-	1,200,000	5.4%
National Park WWTP Desludge	Treatment and disposal	Renewal	Reserves-Depreciation	-	-	-	250,000	750,000	-	-	-	-	-	1,000,000	4.5%

Project Description	Asset Category	Expenditure Category	Funding Source	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2032	2033	2034	Total	%
Wastewater Asset Renewals	Network	Renewal	Reserves-Depreciation	-	-	-	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,500,000	1,500,000	8,000,000	35.9%
Wastewater Pumping Station minor upgrades	Pump stations	Renewal	Reserves-Depreciation	150,000	150,000	150,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,200,000	9.9%
Ohakune WWTP Desludge	Treatment and disposal	Renewal	Reserves-Depreciation	400,000	800,000	-	-	-	-	-	-	-	-	1,200,000	5.4%
Ohakune WWTP renewals	Treatment and disposal	Renewal	Reserves-Depreciation	-	-	-	-	750,000	-	-	-	-	-	750,000	3.4%
Total				2,100,000	2,300,000	1,050,000	2,300,000	3,950,000	2,550,000	2,300,000	2,250,000	1,750,000	1,750,000	22,300,000	100.0%

Source: RDC's LTP budget (uninflated as at February 2024).

7.9 Three Year Improvement Programme

Table 57 Three year improvement programme activities.

No.	AM Improvement Area	Project no	Action	Responsibility	Priority (High / Medium / Low)	Status	Indicative Timeframe			
							2024/25	2025/26	2026/27	2027/28
1	Levels of Service and Performance Management		None identified at this stage.							
2	Forecasting Demand	2.1	Strengthen the planning process so there is a long term programme for the wastewater networks and treatment plants needs strengthening with a 30 year view. This will be achieved through developing master plan and then identification of capital works over the three decades.	Three Waters Manager / Manager Policy and Strategy	High	To start				
3	Asset Register Data		None identified at this stage.							
4	Asset Performance and Condition	4.1	Develop and implement a cost effective the inflow and infiltration rolling programme to target the highest leaky sub catchments.	Three Waters Manager / Veolia	High	To start				
		4.2	Undertake 3 yearly condition assessment of the above and below wastewater assets. Align with asset management plan cycles going forward.	Three Waters Manager / Veolia	High	To start				
		4.3	Continue to work with iwi to understand the long term vision for the wastewater treatment plant sites. The objective is to investigate the practicality / viability to discharge the treated wastewater to land.	Three Waters Manager / Veolia	High	Underway				
		4.4	Assess the pipe bridges over waterways for gaining resource consents with HRC as a high priority.	Three Waters Manager / Veolia	High	To start				
5	Decision Making	5.1	Investigate and develop sludge management and disposal systems with the decision making of future wastewater upgrades, considering the carbon footprint.	Three Waters Manager / Veolia	Medium	Underway				
		5.2	Undertake annual capital works planning together with Veolia.	Three Waters Manager / Veolia	High	To start				
6	Managing Risk	6.1	Update the wastewater activity risk register in collaboration with Veolia before the 2024 AMP is finalised.	Three Waters Manager / Veolia	Medium	To start				
		6.2	Improving the resilience of the wastewater network in relation to climate change impacts.	Three Waters Manager / Veolia	High	To start				
7	Operational Planning	7.1	Replace pumps with low energy models as the wastewater treatment plants and pump stations are upgraded.	Three Waters Manager / Veolia	Medium	Underway				
		7.2	On-going assessment of changes in legislation and what impacts those will likely have on operational costs.	Three Waters Manager	High	To start				
8	Capital Works Planning		None identified at this stage.							
9	Financial Planning	9.1	Continue to review the level of investment in wastewater assets to ensure the network is being renewed prudently long term and legislative compliance is being met balanced against community affordability and asset risk. Ensure investment decisions made are affordable for the community and does not burden future generations.	Finance Team and Strategic Planning	High	Underway				
		9.2	Undertake the next asset valuation sufficiently external from Council's main contractor. The next valuation will be undertaken by Beca from 1 July 2024.	Three Waters Manager	Medium	To start				

No.	AM Improvement Area	Project no	Action	Responsibility	Priority (High / Medium / Low)	Status	Indicative Timeframe			
							2024/25	2025/26	2026/27	2027/28
10	Asset Management Leadership and Teams		None identified at this stage.							
11	Asset Management Plans		None identified at this stage.							
12	Management Systems	12.1	Start to proactively enforce the Trade Waste and Stormwater Bylaw 2019 through compliance action or supported by a detailed Trade Water Policy.	Three Waters Manager	Medium	To start				
13	Asset Management Information Systems	13.1	Undertake planned upgrades to the Ozone system.	Information Management Team	Medium	To start				
		13.2	Determine the appropriate system for holding or sharing intellectual property (IP) for assets, including resource consents between Council and its contractor(s).	Three Waters Manager	High	To start				
14	Service Delivery Mechanisms		None identified at this stage.							
15	Audit and Improvement		None identified at this stage.							