Te Kaunihera-ā-Rohe Ruapehu
Ruapehu District Council

Water Supply Asset Management Plan

2024-2034

Quality Information

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Revision History

Version 1 (Draft for Audit)						
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EXECUTIVE SUMMARY

ACTIVITY OVERVIEW

Ruapehu District Council (RDC / Council) is responsible for providing infrastructure services to the district which includes the water supply activity. The first principal of water use is Te Mana O Te Wai. Council ensures that they take this into consideration for all their water supplies across the district.

The purpose of the water supply activity is to supply safe drinking water to the communities of the district. Water supply is essential to run households, maintain public health and sustain Economic Development. Council is committed to providing a water supply service that meets the needs of the community. Council is responsible for the provision and management of six water supply schemes at National Park, Ohakune, Ōhura, Ōwhango, Raetihi and Taumarunui, supplying drinking water to approximately 5,615 rateable properties in the district. Council acknowledges that the balance of ratepayers obtain their drinking water outside of Council water supply schemes.

The water supply assets had a depreciated replacement cost of $40.0 million (as at 1 July 2022). The water supply network includes 6 water treatment plants, 13 treated water storage reservoirs, 4 pump stations, 210 km of water reticulation mains and associated hydrants (831), valves (1,148) and meters (459).

Council also purchases potable drinking water for the Waiōuru township from the New Zealand Defence Force. The New Zealand Defence Force supplies the bulk water to Waiōuru and Council distributes it to the end customers.

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 water supply activity are summarised in the table below.

Table 1 Summary of key issues – water supply

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	There are multiple regulatory and compliance requirements to meet including the new Drinking Water Assurance Rules and duty to supply sufficient quantity of drinking water as defined in the Water Services Act.
People: skills and capacity	Inadequate internal resourcing for the water supply 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 also increase the challenges of making potable water from high turbid waters.

CURRENT STATE

The current state of the water supply assets is assessed in terms of asset condition and performance. A summary of the condition for the below ground assets is shown in Figure 1 below. This shows that only 1% has been assessed in poor condition.

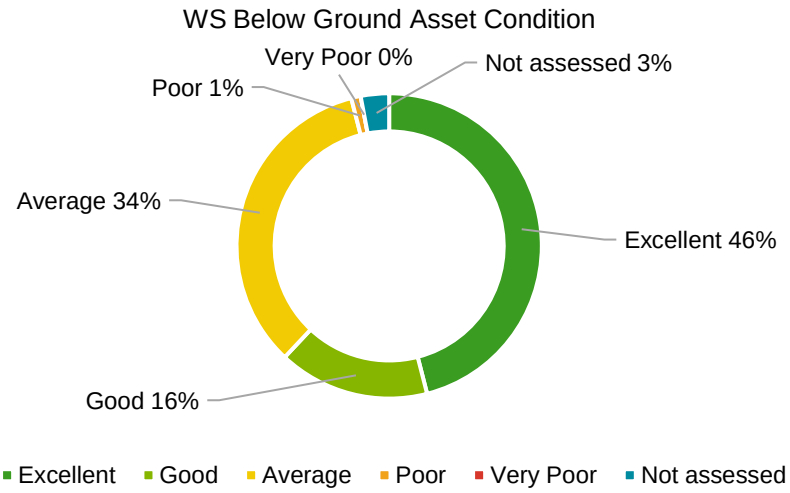


Figure 1 Water supply asset condition
Source: Veolia (August 2020)

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.

- Intakes, headworks and treatment assets – intake assets and water treatment plants are in good condition.
- Storage and pump station assets – pump stations assets are in average condition, while treated water storage assets are generally in good condition.
- Network assets – water supply network assets are generally in good condition, particularly the hydrants, valves and meters. The watermains overall are in average to poor condition, depending on their age and remaining useful life.

Asset performance is summarised below for:

- Headworks and treatment assets – treatment performance is generally good as compliance with Taumata Arowai regulations for drinking water are working towards fully being met. A key performance area is renewal of resource consents for intakes.
- Storage and pump stations – performance of pump stations has been poor, however with increased connection to the SCADA network performance is expected to increase when next assessed.
- Network – the water supply network performance has generally been average over recent assessments. However, water loss has been above the 40% target for some townships so performance is considered poor.

FUTURE DIRECTION

The future direction for the water supply activity is:

- **Compliance** – We intend to fully meet the Drinking Water Assurance Rules (2022) for bacteria and protozoa compliance for all water supply schemes in the next two years. This will be achieved through strengthening our quality assurance processes.
- **Asset performance** – It is important that the water supply network is managed sustainably so that wastage is minimised. We intend to strengthen our water demand management programme, so leakage is reduced to acceptable industry level (our 40% target for water losses is considered too high). We will explore the feasibility of universal metering which will help with identifying leaks on the private systems and also defer the need for additional water sources.
- **Network resilience** – Work towards investigating technical solutions to make potable water from high turbid waters. Explore alternative / supplementary water sources to increase security and future quantities of supply.

- **Financial sustainability** – It is an ongoing challenge to ensure that the level of investment in renewing the water supply assets and meeting legislative obligations is sustainable long term. There is pressure to minimise water rates increases so they are affordable for our community.

FINANCIAL SUMMARY

The total amount of expenditure for operations, maintenance, and capital for the water supply activity over the next ten years is $97.6 million. The total operational annual costs are around $7.5 million per year. Of the ten-year forecast, operating costs make up 77%, and capital expenditure on renewals at 17%, and levels of service at 6%. There is also no capital expenditure forecast for growth as it is predicted to occur in pockets and in existing areas. Table 2 lists a summary of the ten year forecast, which is then illustrated in Figure 2.

Table 2 Summary of water supply 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	6,772,662	6,941,286	7,055,727	52,733,473	73,503,148
Capital expenditure	4,150,000	150,000	1,600,000	16,950,000	22,850,000
Renewals	150,000	150,000	1,600,000	15,200,000	17,100,000
Levels of Service	4,000,000	0	0	1,750,000	5,750,000
Growth	0	0	0	0	0
Total	**10,922,662**	**7,091,286**	**8,655,727**	**69,683,473**	**96,353,148**

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

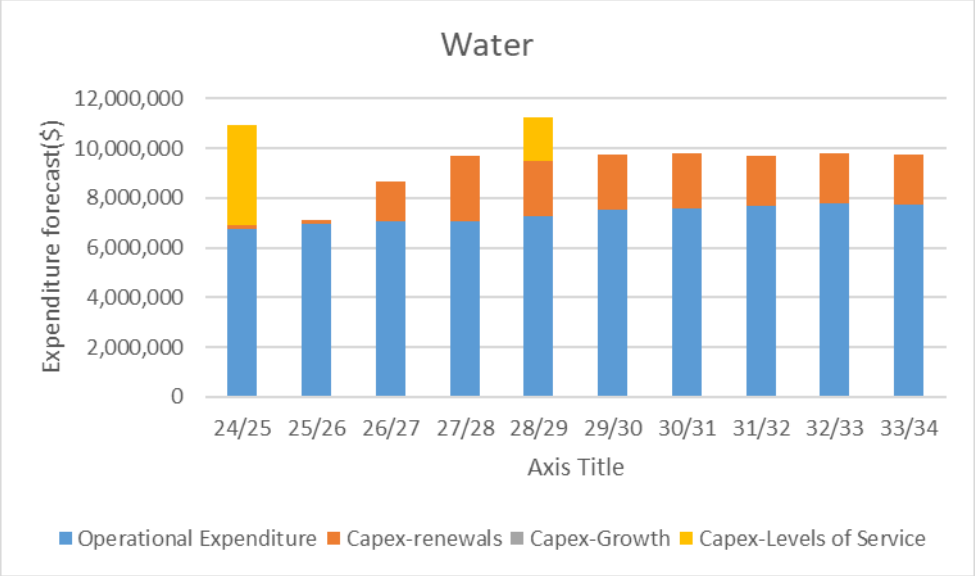


Figure 2: Summary of water supply ten year expenditure forecast.
Source: Council's LTP budget (uninflated as at June 2024).

Capital expenditure (renewals and new works) across the ten year expenditure period is forecast at $23 million. Renewals makes up three quarters of this forecast, followed by levels of service with the remaining quarter. The major water supply capital projects are mainly for watermain renewals across the district, and for treatment plant upgrades to meet drinking water requirements and include:

- District-wide watermain renewals at $15.0 million.
- Ōwhango Water Treatment Plant upgrades at $2.5 million.
- National Park Water Treatment Plant upgrades at $1.8 million.
- Ōhura Water Treatment Plant upgrades at $1.5 million.
- Water universal metering at Taumarunui 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 – water supply

AM element	Proposed actions
Forecasting demand	Develop a water supply demand management roadmap including the feasibility of universal metering.
Asset condition	Undertake 3 yearly condition assessment of the above and below water supply assets.
Strengthening resilience	Improving the resilience of the network in relation to climate change impacts including exploring alternative water sources to increase security and future quantities, and challenges of making potable water from high turbid waters.
Financial planning	Continue to review the level of investment in water supply assets to ensure that 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 water supply activity. The first principal of water use is Te Mana o te Wai. Council ensures that they take this into consideration for all their water supplies across the district.

The purpose of the water supply activity is to supply safe drinking water to the communities of the district. Water supply is essential to run households, maintain public health and sustain Economic Development. Council is committed to providing a water supply service that meets the needs of the community. Council is responsible for the provision and management of six water supply schemes at National Park, Ohakune, Ōhura, Ōwhango, Raetihi and Taumarunui, supplying drinking water to approximately 5,615 rateable properties in the district. Council acknowledges that the balance of ratepayers obtain their drinking water outside of Council water supply schemes.

The water supply assets had a depreciated replacement cost of $40.0 million (as at 1 July 2022). The water supply network includes six water treatment plants, 13 water storage reservoirs, four pumping stations, 210km of water reticulation mains and associated hydrants and valves. The water supply network is made up of a mix of asset classes:

- Head works, surface water sources, intake weirs and pipelines to treatment plants.
- Treatment Plant including raw water pumps, clarifier, filters, main pumps and chemical dosing pumps.
- Water storage including reservoirs and pipelines.
- A piped network including pipelines, valves, hydrants, water meters, service connections and pump stations.

Council also purchases potable drinking water for the Waiōuru township from the New Zealand Defence Force (NZDF). The NZDF supplies the bulk water to Waiōuru and Council distributes it to the end customers.

1.2 PURPOSE OF THIS PLAN

The Water Supply 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 water supply 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 asset management (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 GLANCE

A summary of water supply assets is presented in the table below by township (refer to Section 4.2 Asset Summary for detail). Taumarunui and Ohakune are the main reticulated townships.

Table 4 Summary of water supply assets

Township	Rateable properties supplied*	Water Treatment Plants	Reservoir storages	Water supply pump stations	Watermain length (km)	Hydrants	Valves
National Park	316	1	1	-	16.6	43	66
Ohakune	1,742	1	2	-	44.1	217	295
Ohura	176	1	1	-	10.6	27	49
Ōwhango	214	1	3	-	32.8	18	86
Raetihi	647	1	1	-	27.2	117	132
Taumarunui	2,428	1	5	4	76.4	394	507
Waiōuru	92	-	-	-	2.6	15	13
Total	**5,615**	**6**	**13**	**4**	**210.3**	**831**	**1,148**

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 water supply (provided by Council as at February 2024 as recorded in the financial system).

Customer / Council ownership

The water reticulation point of supply is defined in the Ruapehu District Water Supply Bylaw 2019, usually as at the toby or manifold on the boundary of each property. Council owns and maintains all water supply pipelines and other parts of the water supply system up to and including the toby/manifold. All pipes, plumbing, and fittings beyond the point of supply are owned by, and are entirely the responsibility of, the property owner.

1.4 STRATEGIC CONTEXT

1.4.1 Strategic overview

The water supply 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 water supply 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 water supply 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.

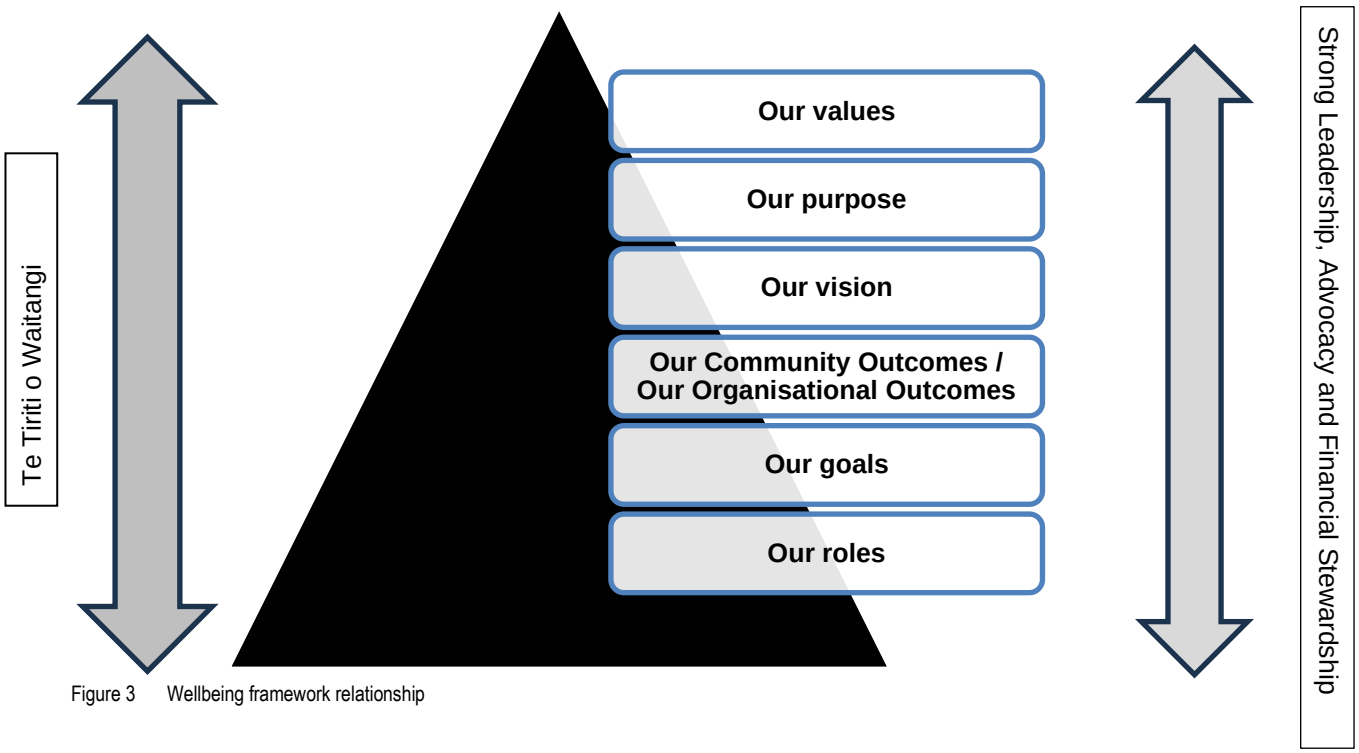


Figure 3 Wellbeing framework relationship

1.4.3 Water activity objectives

Council's objectives for the water supply activity are:

- To operate and maintain the water supply assets efficiently to keep pace with changing demand.
- To maintain public health by ensuring safe and secure drinking water.
- 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 water supply 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
Headworks and treatment	• Ohakune Water Treatment Plant (WTP) upgrade: Progress on the New Ohakune Water Treatment Plant is underway (refer to Figure 4). • Polymer Makeup Tank at Matapuna WTP, Taumarunui: A new higher capacity Polymer Tank was installed replacing the existing tank. • ChemGuard Automatic Chlorine Gas Shutdown Systems, district wide: ChemGuard chlorine shutdown systems and battery backed chlorine gas detectors were installed at National Park, Ōwhango, Raetihi and Ohakune WTPs. These are designed to automatically shut down the chlorine gas supply in the event of a gas leak. It will ensure an immediate secure shutdown protecting personnel, equipment and the environment from toxic gases.
Water supply network	• Taumarunui Railway Crossing Watermain Renewal: New watermain has been installed along Bell Road and connected with Golf Road at Short Street intersection (refer to Figure 5). • Hakiaha Street Watermain Renewal, Taumarunui: Progress is well under way with Hakiaha Street installation commencing July 2023. The new pipe will be connected to the newly installed main on Bell Road (Figure 6). • Water network sampling point upgrade: New water sampling and collection boxes were installed at 21 locations (refer to Figure 7).
Long term planning	• Waiouru hydraulic water modelling: Modelling of the Waiouru Water Network was conducted to provide future planning / operational information. It was also used to assess any impacts of a second NZDF connection to the RDC network.

Asset class / AM element	Key achievements since 2021
Relationship building	• Since the previous AMP, iwi / hapū partnerships have strengthened through improved dialogue / korero, facilitated through Council's internal staff and through HRC.
Risk management	• Safety gates and barriers, Taumarunui: Manunui Reservoir and Matapuna Water Treatment Plant had new safety gates and barriers installed.
Sustainability	• National Park wind powered generator: A wind powered generator was installed at the National Park Reservoir to complement the existing solar powered unit.

Figure 4 Progress at Ohakune Water Treatment Plant

Figure 5 New watermain pipes

Figure 6 Installation and connection works at Bell Rd, Golf Rd and Short Str intersection

Figure 7 New water sampling points

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 water supply activity are summarised in table below.

Table 6 Summary of key issues – water supply

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 prgramme has been prioritised as part of the LTP process. Many important projects have been discounted through this process. The Water Supply 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. Works prgramme certainty allows adequate lead in times Council's service provider Veolia NZ and capital works contractors.	Section 4.10 Asset Creation Plan
Regulatory standards	There are multiple regulatory and compliance requirements to meet including the new Drinking Water Assurance Rules and duty to supply sufficient quantity of drinking water as defined in the Water Services Act.	Council continues to develop Water Safety Plans, Source Water Risk Management Plans and Annual Compliance Reports in accordance with Taumata Arowai's requirements.	Section 2.3 Legislative framework Section 5.4 Water safety assurance
People: skills and capacity	Inadequate internal resourcing for the water supply 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 7.7 AM Practices; Section 7.5 Improvement Plan
Resilience	Increasing extreme weather patterns with storms of increasing intensity and frequency will also increase the challenges of making potable water from high turbid waters.	Continue to look for opportunities to strengthening infrastructure resilience at scoping design stage for renewals and new works projects.	Section 5.5 Climate change and resilience

1.7 POTENTIAL EFFECTS

There is recognition of the potential effects both positive and negative resulting from the water supply 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 – water supply

Wellbeing	Positive	Negative	Mitigation
Social	Safe and continuous supply of water to contribute to the health and wellbeing of the community.	Disruption to individual property owners during new works construction.	Construction is undertaken in such a way as to minimise effects to property owners and to keep them fully informed of the proposed work.
	Well maintained water network reduces the risk of property damage	Property damage resulting from mains failure or sustained leakage overtime.	The development of the AMP to plan for replacement and upgrades in a timely manner. Council's facilities maintenance contractor responds to asset failure in reasonable time.
	Sufficient, safe water available for domestic, commercial and industrial use by the community.	There is always a risk that properties may receive poor quality drinking water.	There are Water Safety Plans developed and regularly updated for the urban water systems. These guide Council on mitigation and future improvements to improve the drinking water quality.
	The public water supply systems reduce the risk of waterborne diseases spreading through the community.	The potential effect on public health should the water supply not meet water quality standards.	Council has a programme of upgrading water treatment systems to meet drinking water requirements set up by Taumata Arowai.
Economic	Sufficient potable water available for commercial operation and businesses.	There is high capital cost of investment in the water infrastructure.	Council is committed to implementing cost-effective solutions as part of its asset management approach.
Cultural	Joint governance on decision making of waterways group for shared values related to water.	Reduction in water levels in waterways unacceptable to iwi. The development of Te Mana O Te Wai as the leading principle of waterway management.	Council has regular communication with iwi and closely monitors its abstraction from waterways. Education in the scarcity and importance of efficient water use and actions individuals can take.
Environmental	Council promoted sustainable water use with meters installed mainly for commercial and industrial users.	Reduction in water levels in waterways used as source for drinking water.	Council consults with the community including farmers and businesses on any proposed water level reduction.
		Potential environmental damage from leaking pipes.	Council's facilities maintenance contractor responds to leaks in reasonable time to reduce any potential environmental damage.
		Impact on aquatic life from water intake.	Intakes are equipped with fish screens.
		Discharge of water treatment plant backwash by-products into environment.	Management of discharge to treatment facilities before entering the environment or to the wastewater system.

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 KEY 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 water supply 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 water activity and their specific areas of interest are summarised in the table below.

Table 8 Key customers and stakeholders

Segment	Area of interest
Customers	
The community – ratepayers, residents and tourists	Safe, wholesome, reliable, and affordable water supply services.
Local industrial and business users	
Institutional customers such as health and education institutions, and emergency services	
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.
	Public land settlement with cultural redress.
Taumata Arowai	Mana whenua to be involved in management of water supply, used water and stormwater issues.
Horizons Regional Council	Public land settlement with cultural redress.
Government agencies including Office of the Auditor General, Audit New Zealand, Te Whatu Ora, Fire and Emergency New Zealand (FENZ), Ministry of Local Government, Department of Internal Affairs,	Interested in the prudent management of the water supply activity and compliance.

Segment	Area of interest
National Emergency Management Agency, Climate Change Commission.	
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 water supply activity are summarised in the table below.

Table 9 Main legislation influencing water supply 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	This Act requires local authorities to: - 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. 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.
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	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. 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.

Legislation	Requirement
	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	The Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 imposes certain requirements on local government bodies in relation to the Whanganui River. Specifically: • 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 be 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. 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.
Ngāti Rangi Claims Settlement Act 2019	The Whangaehu River is subject to the Ngāti Rangi Claims Settlement Act 2019, which has established the Te Waiū-o-Te-Ika framework for the catchment.
Taumata Arowai Water Services Regulator Act (2020)	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: • 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. Regional councils will continue to regulate wastewater and stormwater systems under the Resource Management Act – Taumata Arowai will be the watchdog.
Water Services Act (2021)	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: • 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. 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.
Climate Change Response (Zero Carbon) Amendment Act	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 water supply.

Legislation	Requirement
	The Government's first National Adaptation Plan to build resilient infrastructure was released in 2022 and focuses on getting the foundations right.
Civil Defence Emergency Management Act 2002 (CDEM)	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). 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.
Hazardous Substances and New Organisms Act 1996 (HSNO)	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. 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.
Fire and Emergency New Zealand Act 2017	This act replaces the Fire Service Act 1975 and its purpose is to reform the law relating to fire services, provide for local advisory committees to influence and advise Fire and Emergency New Zealand (FENZ), improve support for volunteers and enable them to communicate directly with FENZ, and provide new offences and penalties to improve fire safety. The two relevant sections for the public water supplies are: • Section 73 - Duty to develop, consult on, recommend the approval of, and publish and notify code of practice for firefighting water supplies. • Section 74 - Powers in relation to checks as to adequacy of firefighting water supplies.
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 water supply 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 water supply activity are summarised in the table below.

Table 10 Key water policies, standards and guidelines

Policy / standard / guideline	Description
Asset Management Policy (2024)	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.
Water Supply Bylaw (2019)	The purpose of the bylaw is to allow Council to provide and manage the supply of water to its customers and/or to protect its water supply against damage, misuse and/or interference from any *unauthorised* persons. The bylaw covers fees and charges, offences and penalties, protection of water supply, and conditions of supply.
Boundary Backflow Prevention Policy 2023	Council is responsible for the management and prevention of backflow at the property boundary to protect the water supply network. Council is required by the Waters Services Act 2021 to assess the need for and provide water services and has a duty to improve, promote and protect public health. To minimise the risk that the water supply becomes contaminated, Council's policy is that there is an appropriate level of backflow prevention provided on all water connections. Backflow prevention devices should be installed dependent on the hazard level.
Taumarunui Water Supply Master Plan and Model Build (2020)	This is the key document that outlines the planning work that has been undertaken for the water supply infrastructure in Taumarunui. It provides options for improving the water supply network.
Drinking Water Assurance Rules (2023)	Taumata Arowai administers the Water Services Act 2021 for ensuring safe drinking water and introduced new rules including the Drinking Water Quality Assurance Rules. The new Drinking Water Quality Assurance Rules define attributes that a supplier must meet relative to the network size and risks to ensure providing safe drinking water for the connected customers. Development of Source Water Risk Management Plans is also a new requirement.

Policy / standard / guideline	Description
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 supply. 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.
Fire Fighting Standards (SNZ PAS 4509:2008)	This Code of Practice was developed to provide direction on what constitutes a sufficient supply of water for firefighting in urban fire districts.
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.

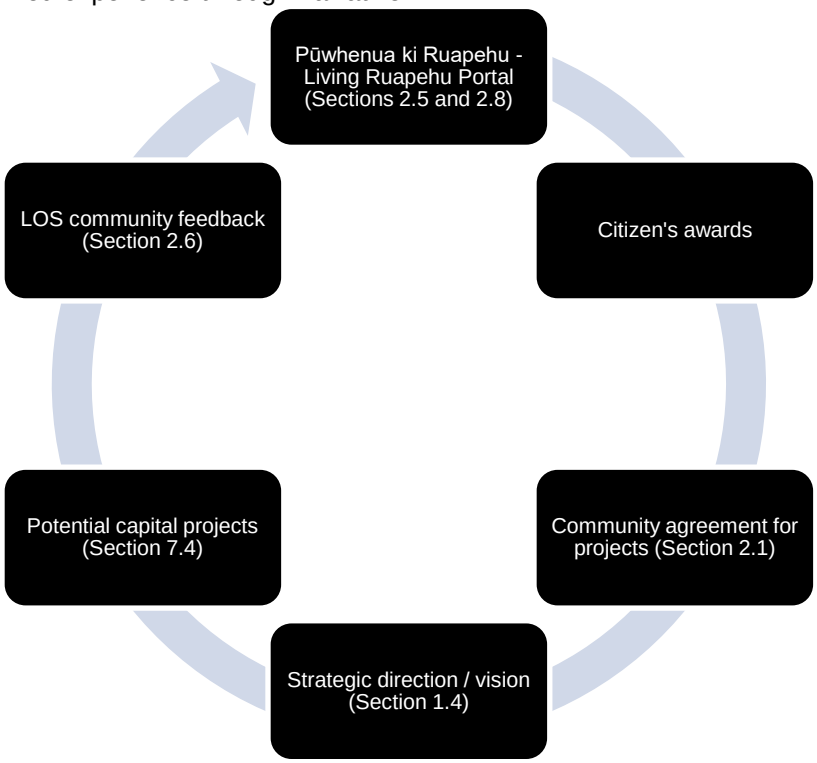


Figure 8 LOS linkages to well beings

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 3,804 requests for services relating to water supply, representing 74% of total water services calls, averaging 79 per month, and a range of 39 to 123 requests per month. The RFS consist of:

- 36% for Council to investigate minor leaks.
- 23% for assistance with information related to water supply matters.
- 20% to investigate a water supply network-related matter.
- 6% related to water supply pressure issues.
- 5% for investigating major leaks.
- 3% for new connection requests.
- 3% were requests for locating a toby (stopcock or isolation valve).
- 2% related to water clarity queries.
- 1% related to meter readings, and 1% for the Ohakune plumbing offer.

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

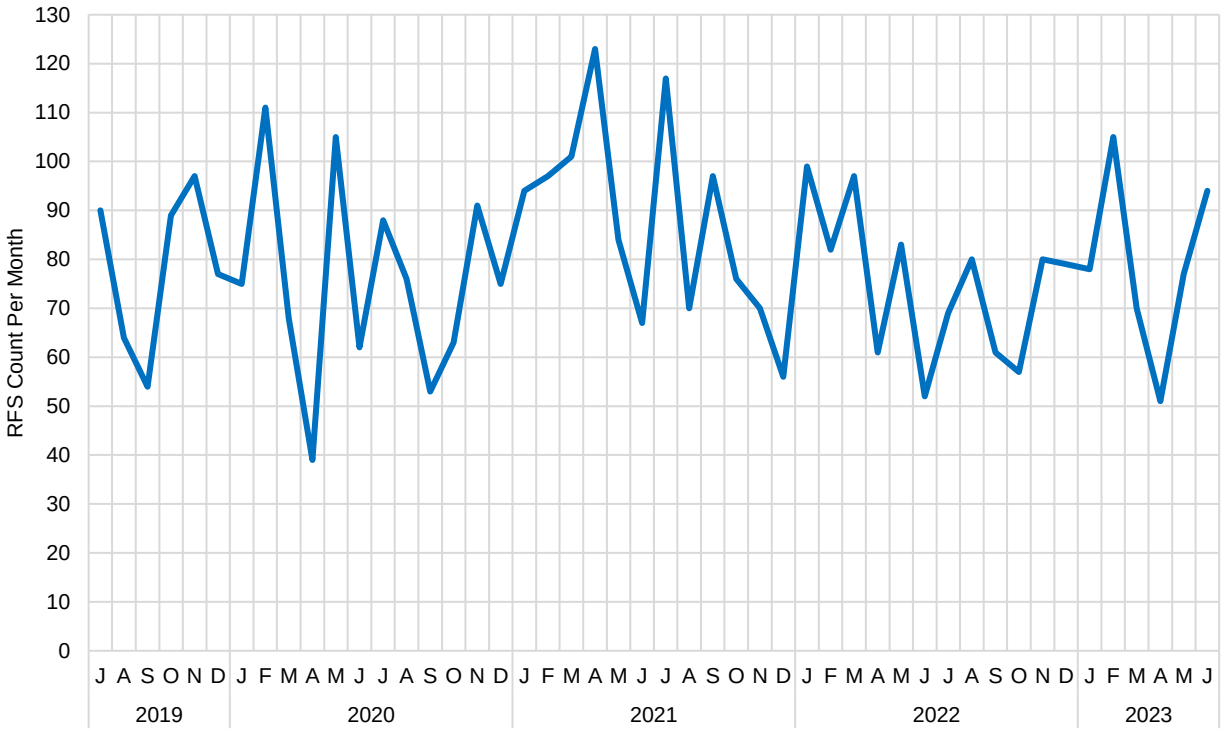


Figure 9 Number of water service calls per month

Source: Council's RFS (February 2024)

Additional to the request for service calls above, Council tracks and reports on fault response times in the water supply levels of service. Figure 10 to Figure 13 illustrates recent performance for fault response and resolution times. These are the median times to attend and resolve call-out in response to a fault or unplanned interruption to its networked reticulation system (as mandatory performance measures).

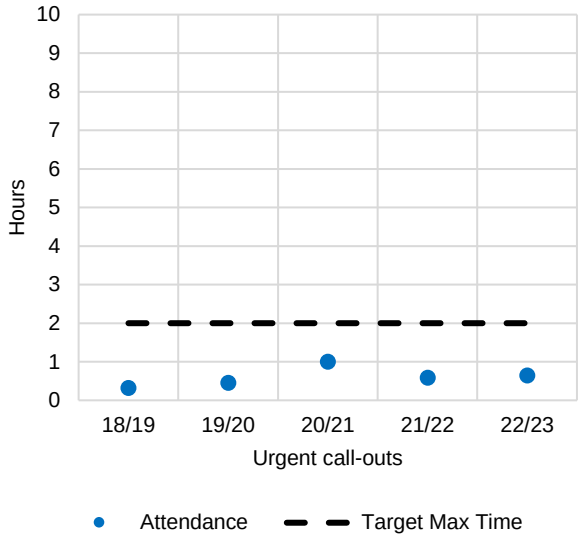


Figure 10 Urgent call-out fault response times

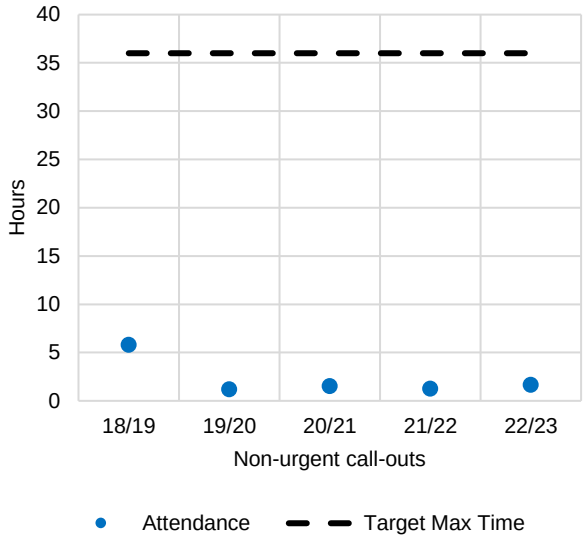


Figure 11 Non-urgent call-out fault response times

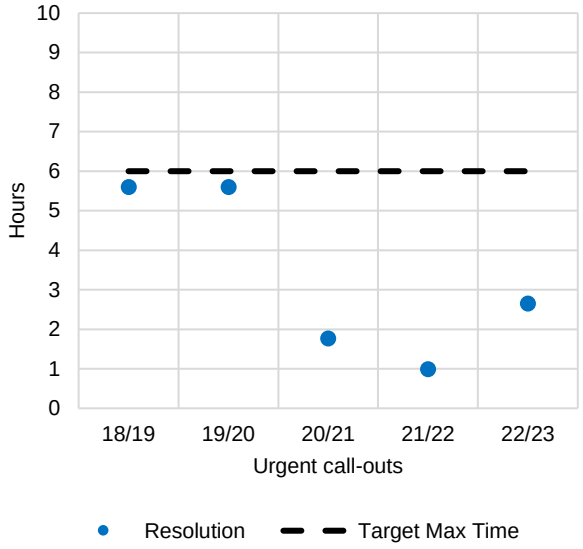


Figure 12 Urgent call-out fault resolution times

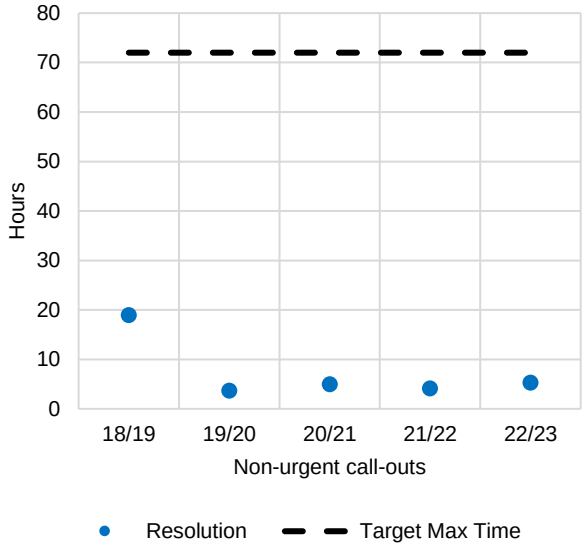


Figure 13 Non-urgent call-out fault resolution times

Another level of service reported on regularly relates to customer satisfaction. The figure below illustrates the total number of complaints received by Council about drinking water clarity, taste, odour, pressure or flow, continuity of supply, and the local authority's response to any of these issues (as a mandatory performance measure).

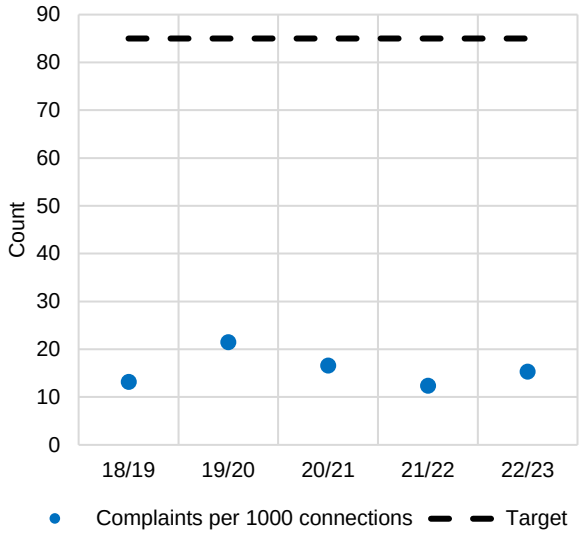


Figure 14 non-urgent call-out fault resolution times

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 water supply is provided below.

Almost three quarters (73%) of respondents are connected to Council water supply, with 62% of these users satisfied (25%) or very satisfied (37%) with the water services Council provides. Almost half (49%) of dissatisfied water users mention their dissatisfaction pertains to colour, smell, and taste of the water.

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 water supply 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.

Notes on compliance with drinking water requirements:

- Taumata Arowai introduced the Drinking Water Quality Assurance Rules that came into effect on 14 November 2022 and reporting was required from 1 January 2023.
- From 1 July to 31 December 2022, compliance was measured against Part 4 and Part 5 of the Drinking Water Standards 2005 (revised 2018).
- From 1 January 2023, compliance was measured against Drinking Water Quality Assurance Rules (2022) with a target of 100% bacteria and protozoa compliance.

Key:

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

Table 11 Service level summary – water supply

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	Year 1 2024/25 target
Our infrastructure assets and services are resilient and fit for purpose 	Safety	Quality of Drinking Water - continuity of potable water supply to applicable community areas.	Extent to which Council's drinking water supplies comply with Part 4 (bacteria compliance criteria) of the Drinking Water Standards. (Future increases reflect changing statutory requirements).	Ōhura	LTP / mandatory	Jul-Dec 2022 DWSNZ **Achieved**	100% compliance	100% compliance
				Taumarunui			100% compliance	100% compliance
				Ōwhango			100% compliance	100% compliance
				National Park			100% compliance	100% compliance
				Raetihi			100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance
			Extent to which Council's drinking water supplies comply with Part 5 (protozoal compliance criteria) of the Drinking Water Standards.	Ōhura	LTP / mandatory	Jul-Dec 2022 DWSNZ 2018 **Not achieved**	Not compliant	Not compliant
				Taumarunui			100% compliance	100% compliance
				Ōwhango			Not compliant	Not compliant
				National Park			Not compliant	Not compliant
				Raetihi			100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance
			Full compliance with Drinking Water Quality Assurance Rules (2022) for bacteria compliance	Ōhura	LTP / mandatory	Jan-June 2023 DWQAR **Not achieved** *(see note 1)*	Not compliant *(see note 2)*	Not compliant
				Taumarunui			100% compliance	100% compliance
				Ōwhango			Not compliant *(see note 2)*	Not compliant
				National Park			Not compliant *(see note 2)*	Not compliant

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	Year 1 2024/25 target
				Raetihi			100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance
			Full compliance with Drinking Water Quality Assurance Rules (2022) for protozoal compliance	Ōhura	LTP / mandatory	Jan-June 2023 DWQAR **Not achieved** *(see note 1)*	Not compliant *(see note 2)*	Not compliant
				Taumarunui			100% compliance	100% compliance
				Ōwhango			Not compliant *(see note 2)*	Not compliant
				National Park			Not compliant *(see note 2)*	Not compliant
				Raetihi			100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance
		Public safety pressures and flow.	Total number of complaints received by Council about any of the following (expressed per 1,000 connections to the network reticulation systems.	(a) Drinking water clarity.	LTP / mandatory	3.3	<15 per 1,000 connections	<15 per 1,000 connections
				(b) Taste.		1.0	<10 per 1,000 connections	<10 per 1,000 connections
				(c) Odour.		0.5	<5 per 1,000 connections	<5 per 1,000 connections
				(d) Pressure and flow.		5.5	<25 per 1,000 connections	<25 per 1,000 connections
				(e) Continuity of supply and		3.3	<5 per 1,000 connections	<5 per 1,000 connections
				(f) Council response times.		0.0	<25 per 1,000 connections	<25 per 1,000 connections

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	Year 1 2024/25 target
Our infrastructure assets and services are resilient and fit for purpose 	Quality - reliability	To provide reliable water networks	Number of reported watermain breaks per 100km of watermain per year	AMP	*Cleansed data not available*	<30 per 100km	<30 per 100km
			Percentage of water supply assets in satisfactory condition (condition grades 1,2 or 3)	AMP	Not measured for 2022/23	85%	85%
			Days of treated water stored in reservoirs on average (with the exception of Ōwhango)	AMP	Achieved	>1 day	>1 day
Our natural and built environment is healthy, strong and safe	Responsiveness	To provide prompt responses for service	Where the Council attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following **median response** times are measured:	LTP / mandatory			
			Attendance for urgent callouts: from the time that the Council receives notification to the time that service personnel reach the site (i.e., loss of water supply)		38.5 mins	Median response times <2 hours	Median response times <2 hours
			Resolution of urgent call outs from the time the Council receives notification to the time that service personnel confirm resolution of the fault or interruption site (i.e., loss of water supply) (Notes 2 and 6).		159 mins	Median response times < 6 hours	Median response times < 6 hours
			Attendance to non-urgent callouts from the time that the Council receives notification to the time that service personnel reach the site (i.e., no loss of water supply) (Notes 2, 5 and 7).		101 mins	Median response times < 36 hours	Median response times < 36 hours
			Resolution of nonurgent callouts from the time that the Council receives notification to the time that service personnel confirm resolution of the fault or interruption (i.e., no loss of water supply) (Notes 2 and 7).		318 mins	Median response times < 72 hours	Median response times < 72 hours
Our natural and	Sustainable -	To promote the efficient	Percentage of real water loss Taumarunui	LTP /	40%	<40% all	<40% all

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	Year 1 2024/25 target
built environment is healthy, strong and safe 	Environmental performance	and sustainable use of water	from the networked reticulation system, using minimum night flow (MNF) analysis	National Park	mandatory	25%	supplies	supplies
				Ohakune		59%		
				Ōhura		15%		
				Ōwhango		56%		
				Raetihi		64%		
			The average consumption of drinking water per day, per resident within the territorial authority district (litres per person per day).		LTP / mandatory	448	< 500 litres per resident per day (see note 3)	< 500 litres per resident per day (see note 3)
			Peak demand using peak population (litres per person per day).		LTP	254	< 300 litres per resident per day	< 300 litres per resident per day
			Full compliance with resource consent conditions for operating water supply network *(new measure)*		AMP	Achieved – for 6 plants	100% compliance	100% compliance

Notes:

1. For 2022/23 and under the new Drinking Water Quality Assurance Rules (2022):
   - Taumarunui achieved bacterial criteria for zone however did not achieve bacterial criteria for water treatment plant.
   - Raetihi achieved bacterial criteria for water treatment plant but did not achieve bacterial criteria for zone.
2. Full compliance with the Drinking Water Quality Assurance Rules is dependent on investment in treatment plant upgrades. These dates for these three plants are:
   - Ōhura and Ōwhango – 2025/26 (one year after upgrades in 2024/25).
   - National Park – 2029/30 (one year after upgrade in 2028/29).
3. The target for average consumption of drinking water per day, per resident is much higher than industry target (ie 350 to 350).

2.8 SERVICE GAPS

Our achievements for LTP and mandatory performance measures for 2022/23 are:

- Drinking water quality - Overall we did not achieve the mandatory performance measures covering drinking water quality for bacteria and protozoal compliance. This was due to the introduction of the Drinking Water Quality Assurance Rules (2022) as well as three plants still requiring major upgrades (see notes 2 and 3 above).
- Responsiveness and leakage – We did achieve the mandatory performance measures covering real water loss, responsiveness to urgent and non-urgent faults, customer complaints for service quality and water pressure / flow issues, and average water consumption. The target for average water consumption is too high (refer to note 3 above).

Planned expenditure to close the service gaps over the next ten years are summarised in Section 6.4.

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 – water supply

Levels of Service Statement	Link between the service and wellbeing
Quality of drinking water – bacteria compliance criteria	The Safety of Drinking Water for our communities' health.
Quality of drinking water – protozoa compliance criteria	
Our infrastructure assets and services are resilient and fit for purpose	The amount of water not available to drink due to water loss.
Responsiveness – attend urgent calls	The time it takes for service personnel to attend an urgent call out.
Responsive – attend non-urgent calls	The time it takes for service personnel to attend a non-urgent call out.
Responsiveness – resolve non-urgent calls	The time it takes for service personnel to resolve a non-urgent call out.
Public safety – quality of drinking water, pressure and flow (complaints)	Complaints made about the quality of water, pressure and flow and council response times.
Public safety – water consumption	How much water is consumed per day per person (usual resident population).
	How much water is consumed per day per person (peak population).

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 water supply activity and the impacts on water supply assets. This section also presents the demand factors that impact on the water supply 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.

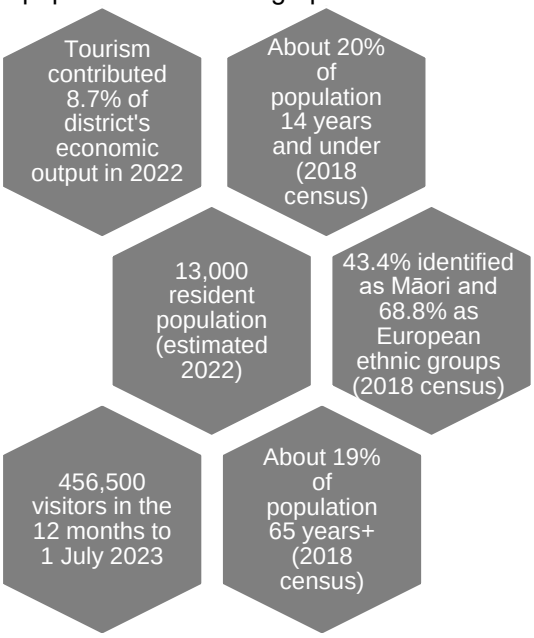


Figure 15 Snapshot of Ruapehu's population profile

3.3 CHANGES IN DEMOGRAPHICS

The two main drivers for Ruapehu District's growth that impacts the water supply 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. Upgrades may be required at the treatment plants including additional storage to meet peak demand requirements.
- **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 water supply 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.

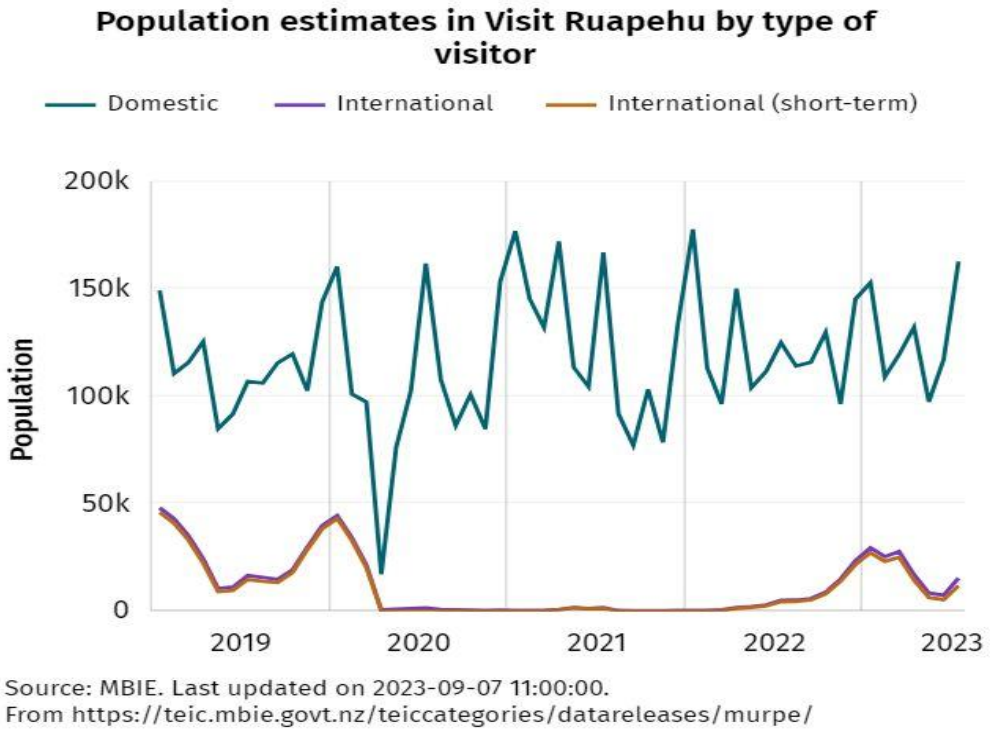


Figure 16 Visitor numbers to Ruapehu District by type

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

Peak population is the key metric to plan for core infrastructure including water supply. 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 WATER DEMAND

3.4.1 Water demand at district level

The total abstraction and average daily water supply consumption at district level for the last three years is shown in Table 13.

Table 13 Summary of District-wide abstraction and demand

FY	Population	Total demand / abstraction (m^3)	Average Daily Demand (2022/23)	Demand per day per resident (m^3)
2022/23	13,115	2,146,480	5,881	0.448
2021/22	13,024	2,202,702	6,035	0.463
2020/21	12,309	1,999,798	5,479	0.445

Source: Council data based on Veolia reports – Water Abstraction Resource Consent Reports (for 2020/21, 2021/22, and 2022/23)

3.4.2 Water consumption at township level

Ruapehu is a popular holiday destination with an influx in visitors and non-resident holiday house owners. This causes an increase in demand greater than that by the usually resident population. The seasonal peaks in demand can impact on water supply services. Increasing water supply service networks over a large land area to cater for this peak demand would be costly and potentially may be redundant infrastructural capacity in non-peak periods.

Taumarunui is most at risk, not due to a limitation in the water abstraction volume, but the maximum abstraction rate currently operates near the consent limit of 300m³/hr. Ohakune would have a similar issue, however there is no consent limit for abstraction flow rate, but the abstraction volume tends to near its limit, particularly during the latter summer months.

Figure 17 shows the daily abstraction to Matapuna (Taumarunui) WTP with some seasonal variation but generally well below the abstraction consent limit. This shows that Taumarunui has the highest consumption, typically 2,700m³ per day, followed by Ohakune at 1,500m³ per day.

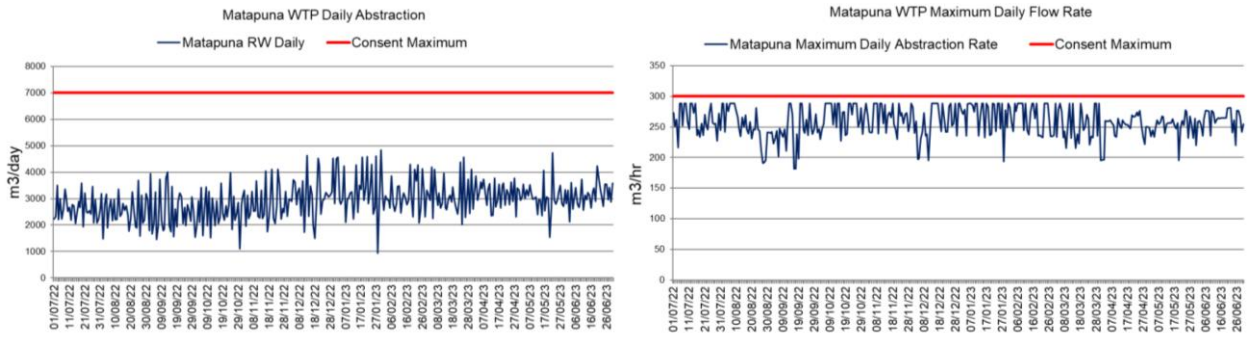


Figure 17 Daily abstraction and maximum daily flow at Matapuna (Taumarunui) water treatment plant 2022/23.
Source: Veolia (2023) Ruapehu District Council Water Abstraction Resource Consent Report 2022/23.

3.4.3 Average water consumption

The average water consumption per resident district wide was 448 litres / person / day for 2022/23. Water New Zealand's National Performance Review assesses consumption on a per connection basis, with an average of 667 litres/connection/day for 2021/22 (across all peer groups)[1]. Ruapehu has 4,211 water supply connections, and an average daily abstraction rate of around 5,500 to 6,000m³, which equates to a 1,300 to 1,430 m³/connections/day, substantially higher than the National Performance Review average.

Council's average water consumption results are skewed by the large number of visitor numbers as the peak demand is 254 litres / person / day (using peak population) for 2022/23. The high water consumption is also due to mixed use of potable water and the limited ability to distinguish residential, commercial, industrial and rural use, coupled with limited metered connections. The district has urban and rural connections particularly on the Waimarino region (inclusive of Ohakune, Raetihi and Rangataua). National Park Village is the only township without rural connections.

Ōwhango has the largest number of rural connections, mainly for dairy farms, which are all metered. The demand has been reducing with farmers installing bores.

The water supply per capita consumption for each township is summarised in the following tables.

Table 14 Water consumption by township.

Township	Annual Abstraction (m³)		
	2020/21	2021/22	2022/23
Ohura	55,875	72,607	59,429
Taumarunui	1,014,179	1,094,015	992,411
Ōwhango	148,752	149,792	132,838
National Park	62,931	69,567	98,472
Raetihi	261,488	308,880	317,966
Ohakune	456,573	507,841	545,364
Total	**1,999,798**	**2,202,702**	**2,146,480**

Township	Average Daily Demand (m^3)		
	2020/21	2021/22	2022/23
Ohura	153	199	163
Taumarunui	2,779	2,997	2,719
Ōwhango	408	410	364
National Park	172	191	270
Raetihi	716	846	871
Ohakune	1,251	1,391	1,494
Total	**5,479**	**6,035**	**5,881**

Township	Demand per person per day (litres)		
	2020/21	2021/22	2022/23
Demand per person per day (litres)			
Ohura	957	1,243	1,018
Taumarunui	571	615	558
Ōwhango	2,038	2,052	1,820
National Park	718	794	1,124
Raetihi	956	1,130	1,163
Ohakune	834	928	996
Demand per person supplied per day (litres)			
Total	**710**	**782**	**762**
Demand per person district total per day (litres)			
Total	**445**	**463**	**448**
Demand per connection per day (litres)			
Total	**1,301**	**1,433**	**1,397**

Source: Council data (as at February 2024).

Water New Zealand: Resource Efficiency 2021/22, available from: https://www.waternz.org.nz/resourceuseefficiency

3.5 FUTURE DEMAND AND CAPACITY

3.5.1 Future demand – plant level

Ōwhango Water Treatment Plant is nearing capacity. Ohakune is being upgraded with full commissioning expected by 2026/27. The Ohakune WTP upgrade will address drinking water compliance issues as well as providing for additional capacity for new houses being built. Other scheduled WTP upgrades include Ōhura and Owhango (both in 2024/25), and National Park (in 2028/29) but mostly driven by drinking water compliance rather than population growth.

3.5.2 Future demand – network level

Key planning documents and tools for addressing future water demand at network 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.

The modelling reports are used for the identification of capital works to address network deficiencies. These capital projects are put forward as part of the LTP process. Any unfunded but important projects due to budget prioritisation are detailed in Section 6.4 Capital Expenditure.

Table 15 Summary of key planning documents and models – water supply

Township	Planning documents / models	Description
Taumarunui	Taumarunui Water Supply Master Plan and Model Build (2020 Mott MacDonald)	The Taumarunui Water Supply Master Plan and Model Build (2020) is a key planning document and tool for addressing future demand in the Taumarunui

Township	Planning documents / models	Description
		water supply network. System performance was assessed for current and future (2026) peak day conditions. Performance issues for the Taumarunui water network were identified including firefighting capacity and low-pressure areas.
Raetihi	Raetihi Township Water Supply Network Model and Master Plan (2022, Mott MacDonald)	The Raetihi, Waiōuru, Ōwhango and National Park Water Supply Master Plans and Model Builds were all developed with the same methodology as Taumarunui including outputs.
Waiōuru	Waiōuru Township Water Supply Network Model and Master Plan (2022, Mott MacDonald)	
Ōwhango	Ōwhango Township Water Supply Network Model and Master Plan (2022, Mott MacDonald)	
National Park	National Park Township Water Supply Network Model and Master Plan (2022, Mott MacDonald)	

3.6 DEMAND MANAGEMENT PROGRAMME

Managing Council's water supply 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 and reduce water wastage. Council's current water demand management programme is summarised in Table 16.

Table 16 Current water demand management programme.

Programme	Description
Water leakage	Unaccounted for water is a significant issue that is impacting Council's operational expenditure. Council's current actions to address leakage and therefore reduce loss revenue include: • Metering of all high water use businesses. Some metered properties are charged and other are not. • Installation of water use meters for extraordinary users in National Park. • Metering of rural properties that are connected to the public water supply networks. • Leakage detection surveys in townships with major leakage problems as required. • Metering of abstraction from water sources to monitor the actual demand and to meet resource consent conditions. • Ongoing condition assessments of the water supply assets through 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.
Public education and awareness	Education and awareness encourage water use reduction and compliance behaviour. Council's web page provides public education and information on reducing water use.
Pricing	Water rates are structured to promote users to minimise water wastage by paying for the water they use where these are metered.
Planning activities	Various planning activities are undertaken to understand the changes in demand as well as growth forecasts. This includes Water Supply Master Plan and Model Build development for Taumarunui, Raetihi, Waiōuru, Ōwhango and National Park (refer to table above).

The future demand management planning includes the activities summarised above with the following additional initiatives:

- Strengthening the leakage programme so it is more proactive.
- Metering of all rural properties in the Ohakune and Raetihi area and other parts of the district.
- Metering of all water connections in Ohakune township (condition of MBIE funding for WTP upgrade) in next 3 to 5 years.

- Validate the metering of businesses in Taumarunui to ensure all high users are metered.
- Metering of high business users in Raetihi, particularly the buildings with urinals that are running continuously.
- Improve the process so all metered connections are billed for water consumed.
- Further refining / investigating water user types.
- Consider the benefits and costs of universal metering for the urban reticulated systems.

3.7 GROWTH AND DEMAND ASSUMPTIONS

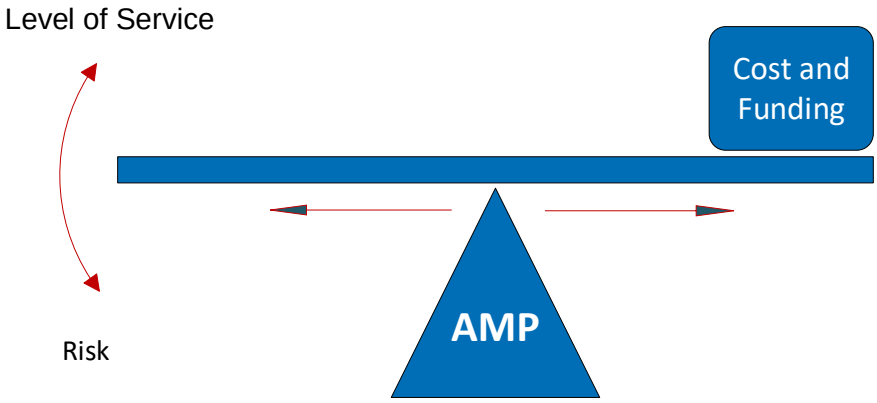
The key growth and demand assumptions are as follows:

- 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 water supply consent conditions will be more restrictive 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 INTRODUCTION

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 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 water supply 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 water supply due to repair or replacement of an asset.

4.2 ASSET SUMMARY

Council provides water supply services to approximately 5,615 rateable properties in the district via the following Council-owned water supply systems:

- National Park
- Ohakune
- Ohura
- Ōwhango
- Raetihi
- Taumarunui
- Waiōuru (network only).

Except for Waiōuru, each of these water supply systems comprises intake and treatment assets and an integrated series of water mains, valves, hydrants, reservoirs, water pump stations and water connections. Waiōuru water supply assets owned by Council consist of network assets only, with treated water being purchased from the New Zealand Defence Force (NZDF Waiōuru Military Camp).

District-wide overview information on Council water supply systems and assets is provided in Table 17, with township specific water supply system information provided in Part 4. Additional detailed information on each individual asset with respect to type, location, size, material, installation year, etc. is stored in Council's GIS and AssetFinda (Universus asset management system).

Table 17 Summary of water supply assets

Township	Rateable properties supplied*	Water Treatment Plants	Reservoir storages	Water supply pump stations	Watermain length (km)	Hydrants	Valves	Meters
National Park	316	1	1	-	16.6	43	66	28
Ohakune	1,742	1	2	-	44.1	217	295	88
Ohura	176	1	1	-	10.6	27	49	0
Ōwhango	214	1	3	-	32.8	18	86	106
Raetihi	647	1	1	-	27.2	117	132	30
Taumarunui	2,428	1	5	4	76.4	394	507	186
Waiōuru	92	-	-	-	2.6	15	13	21
Total	**5,615**	**6**	**13**	**4**	**210.3**	**831**	**1,148**	**459**

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 water supply (provided by Council as at February 2024 as recorded in the financial system).

The water supply assets had a gross replacement cost of $84.3 million and depreciated replacement cost of $40.0 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.

4.2.1 Private supplies

There are several small towns in the district that are currently not serviced with a public water supply system, including those in Table 18. As these townships grow, pressure will likely grow for a Council reticulated water supply system. Council must balance the ability of the district to fund such a reticulated scheme with the social good, supply security and public health benefits which arise from a public reticulated scheme.

Table 18 Unserviced small towns

Township	Water Service Status	Comments
Horopito	Separate private systems	Rainwater catchment, ongoing development of Horopito occurring.
Raurimu	Private water supply scheme	Spring-fed system.
Kakahi	Private water supply scheme	Spring-fed system.
Ongarue	Separate private systems	Spring-fed system.
Pipiriki	Private water supply scheme	Operated by DOC / Māori Trust. Used for public toilets. Investigation underway for providing public water supply and wastewater services. Surface water abstraction and rainwater catchment.
Piriaka	Private water supply scheme	Spring-fed system.
Rangataua	Separate private systems	Rainwater catchment.

4.2.2 Headworks and treatment

Intake:

Source water for each of the Council water supplies is derived from surface water sources. Abstraction from these water sources is consented under resource consents issued by HRC. Water sources consist of a variety of protected and unprotected catchments. Abstraction of water is via both pumped systems and gravity intake systems. Gravity intakes consist of weirs or similar abstraction means while pumped systems consist of civil intake galleries and mechanical and electrical pump and switchboard componentry.

A summary of Council's water supply intakes is provided in Table 19 and shown in Figure 18.

Table 19 Water supply intake summary

Scheme	Source	Source Code	Consented Abstraction (m^3/day)	Consent No	Abstraction Method
National Park	Mangahuia Stream	S00101	500	6888	Gravity intake
Ohakune	Serpentine Stream	S00033	2,500	101266	Gravity intake
Ōhura	Mangaparare Stream	S00380	360	101866	Pumped intake
Ōwhango	Deep Creek	S00102	1,500	101514	Gravity intake
Raetihi	Makotuku River	S00034	1,685 / 820	2001009610.01	Gravity intake
Taumarunui	Whanganui River	S00042	7,000	7196	Pumped intake

Ohakune Raw Water Intake

Raetihi WTP Intake Weir

Matapuna Intake

Figure 18 Water intake examples

Water treatment plants:

Council own and operate six water treatment plants (WTP) with varying types of assets and treatment capability. These facilities vary from coarse screening / settling and chlorination only (Ōwhango) to full conventional treatment consisting of coagulation, clarification, filtration, chlorination and pH correction (Taumarunui and Raetihi).

The plants consist of civil assets (buildings, filters, tanks, pipework), mechanical assets (pumps, meters) and electrical assets (e.g. switchboards, controls, instrumentation). All water treatment facilities are connected via SCADA enabling real time monitoring and alarming and providing remote operational management capabilities.

Table 20 provides a summary of Council WTPs with photographs of typical plant components in Figure 19 and the larger civil and electrical supply assets in Figure 20.

Table 20 Water treatment plant summary.

Scheme	Plant Code	Plant Components
National Park	TP00171	Rapid sand filtration + UV disinfection + chlorination
Ohakune	TP00054	Coagulation (unused) + Depth filtration + Diatomaceous earth filtration (bypassed) + UV disinfection + pH correction + Chlorination
Ohura	TP00622	Coagulation + Clarification + Filtration + pH correction + Chlorination + Treated water pumping
Ōwhango	TP00172	Screening + Chlorination (includes fixed generator)
Raetihi	TP00055	Coagulation + Flocculation + Sedimentation + Filtration + UV disinfection + carbon dosing + pH correction + Chlorination (includes fixed generator)
Taumarunui	TP00067	Coagulation + Clarification + Filtration + UV disinfection + Chlorination + pH correction + carbon dosing + Treated water pumping

Matapuna WTP UV units

National Park UV unit

Raetihi WTP UV units

Figure 19 Water treatment plant examples

Figure 20 Water treatment plant examples in Taumarunui

4.2.3 Storage and pump stations

Treated water storage:
Treated water is stored in reservoirs, with a total capacity of approximately 14,022m^3 as summarised below. The treated water storage reservoirs range in size from 25m^3 (nominal) reservoirs serving small, elevated areas within Taumarunui to 4,600m^3 (nominal) reservoirs (Matapuna reservoir). Storage reservoirs include concrete, timber with internal lining along with plastic reservoirs.

Table 21 Treated water storage

Township	Reservoir capacity (m^3 approx.)	Maximum Monthly average daily demand (m^3/day)	Days storage at Max Monthly Average daily demand	Peak daily consumption (m^3/day)
National Park	500	243	2.1	360
Ohakune	3,000	1,499	2.0	1,917
Ohura	225	209	1.1	370
Ōwhango	345	582	0.6	703
Raetihi	900	967	0.9	1,143
Taumarunui	9,052	3,292	2.7	4,964
Waiōuru	3,785	N/A	N/A	N/A
Total	**14,022**			

Source: Veolia (October 2020)

Rangaroa Reservoirs

Ohakune Timber Reservoir

Owhango Reservoir

Figure 21 Treated water reservoir examples.

Water pump stations:

There are six water pump stations owned by Council that provide for the transfer of treated water to elevated points within the distribution network. The Ohura and Taumarunui water supplies have treated water pumps as part of the WTP assets. Taumarunui has four network (reticulation) pump stations which either transfer water to elevated reservoirs within the supply system or boost pressures in the elevated network regions. These pump stations consist of mechanical assets (pumps), electrical assets (switchboards and controls) and civil assets (buildings).

Sunshine Road Booster WPS, Taumarunui (for future dosing if required)

Te Peka Booster WPS, Taumarunui

Manunui Booster WPS, Taumarunui

Figure 22 Water pump station examples

4.2.4 Water supply network

Council's water supply system consists of seven Taumata Arowai registered Water Supply zones. Six of these are in Ruapehu District's control, including National Park, Ohakune, Ohura, Ōwhango, Raetihi, and Taumarunui. The supply at Waiōuru is managed by NZDF. Treated water is distributed to customers within the district via a reticulation network of pipes of various sizes and materials.

Provision of water supply to consumers is a mix of metered and unmetered supply. For unmetered consumers, the toby (gate valve) is defined as the point of supply and indicates the end of the public water supply system and the transition to the individual customer private pipework. For metered consumers, the meter represents the end of the public water supply system and the transition to the individual customer private pipework. Plans of each of the distribution networks for Council's water supply systems are contained in Appendix B, Part 4.

4.2.5 Watermains

Pipelines:

Water is distributed to customers via 210km of water supply pipelines of various sizes and materials. The watermains represent over 71% of the water supply system assets by value. Consolidated details of these watermains are provided in Table 22 and illustrated in Figure 24 and Figure 25.

Most of the district's water supply network is 100mm diameter or less (72.1%); and mPVC/uPVC and AC/ACS materials are the most common (79.4%). Most of the network (65.2%) was constructed after 1980, with a further 27.2% constructed during the 1960-69 period.

Table 22 Summary of water supply network assets

Diameter (mm)	Length (km)	%
<=63mm	66.2	31.5%
63-100mm	85.4	40.6%
125-180mm	29.7	14.1%
200-300mm	26.5	12.6%
>300mm	2.5	1.2%
Unknown	0.0	0.0%
Total	**210.3**	**100.0%**

Material	Length (km)	%
AC/ACS	60.3	28.7%
mPVC/uPVC	106.7	50.7%
HDPE/MDPE	30.5	14.5%
CI/DICL/CLS/Steel	4.0	1.9%
GALV	4.9	2.4%
ALK	2.1	1.0%
Copper	0.3	0.1%
Unknown	1.5	0.7%
Total	**210.3**	**100.0%**

Date Laid	Length (km)	%
Pre-1950	1.0	0.5%
1950-59	6.9	3.3%
1960-69	57.4	27.3%
1970-79	7.9	3.8%
1980-89	55.4	26.4%
1990-99	32.1	15.3%
2000-09	24.9	11.8%
2010-19	18.9	9.0%
2020 onwards	5.7	2.7%
Total	**210.3**	**100.0%**

Source: Veolia Infrastructure Asset Valuation (July 2022)

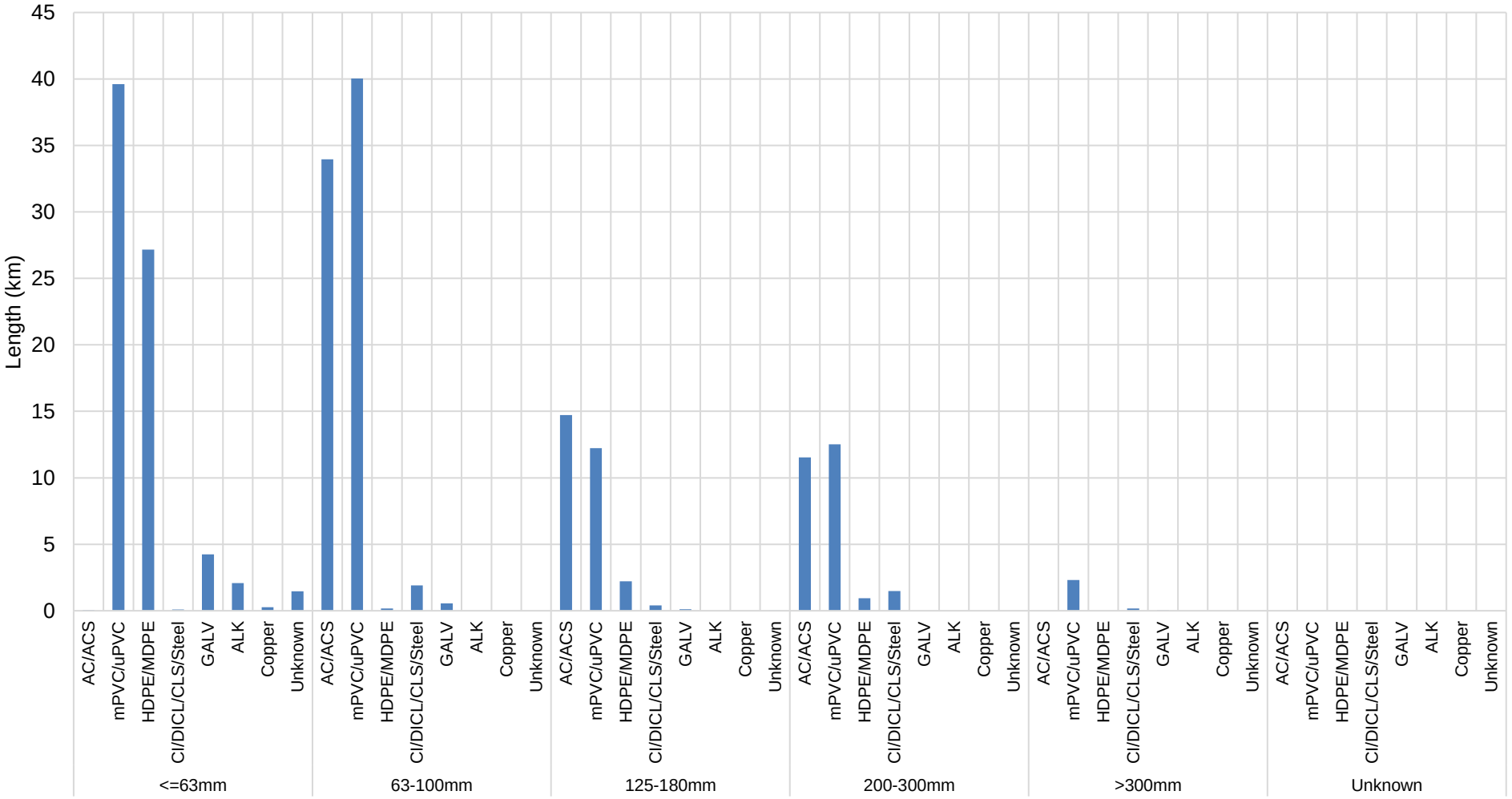


Figure 23 Summary of watermain assets

Source: Veolia Infrastructure Asset Valuation (July 2022)

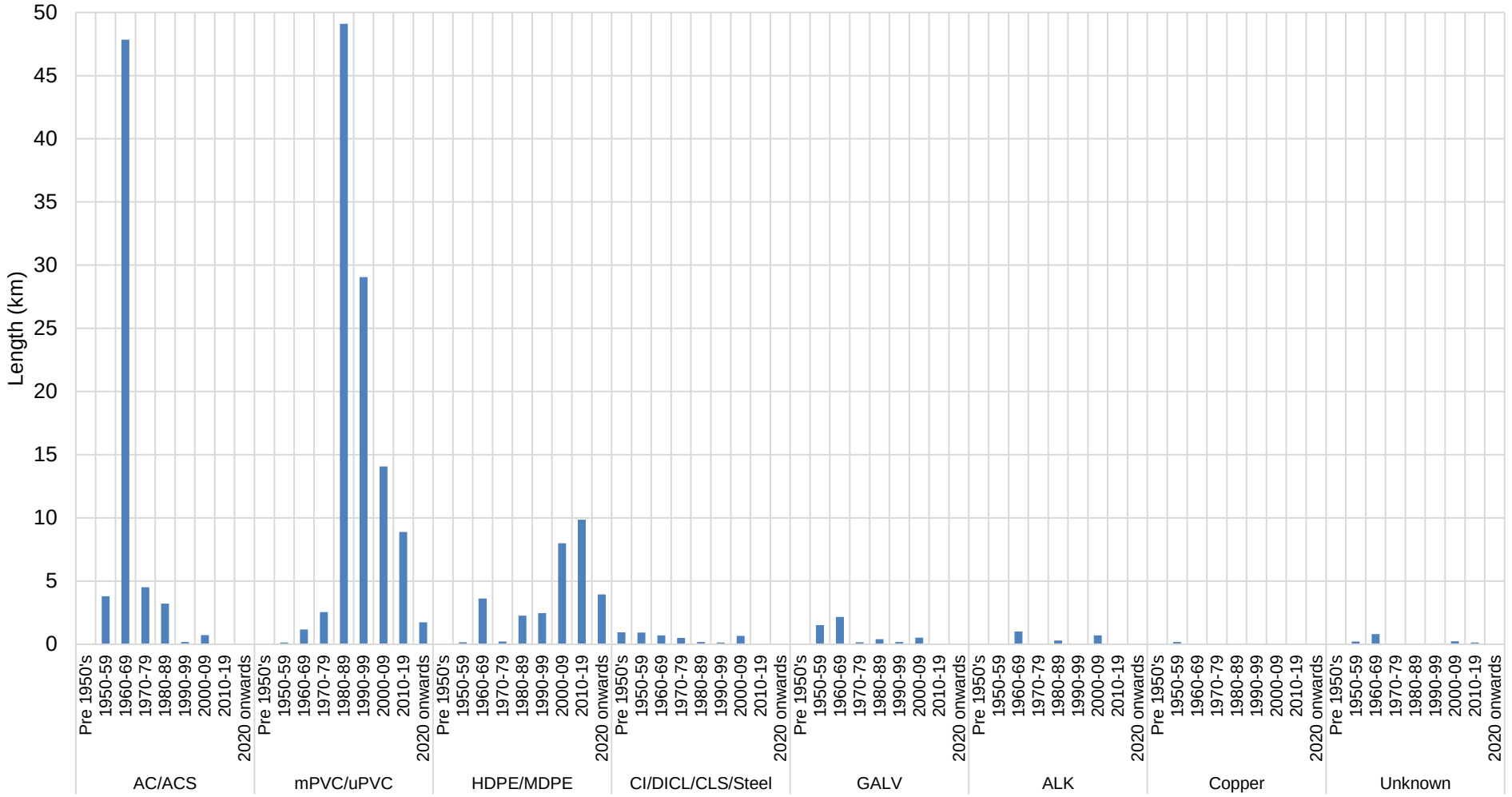


Figure 24 Water supply pipeline materials and decade installed

Source: Veolia Infrastructure Asset Valuation (July 2022)

Hydrants:

The 831 hydrants within the water supply system are provided for firefighting and operational flushing. Hydrants are also (under strictly controlled and monitored conditions) permitted to be used for water supply purposes for roading and associated works.

Valves:

The 1,148 valves within the water supply system consist of air, gate, scour, sluice valves and float valves and provide for the controlled shutdown and isolations of areas of the water supply network.

Meters:

There are currently 459 meters within the water supply network. Most meters are installed in Taumarunui (186) and Ōwhango (106). Of the 5,615 rateable properties in 2023/24, 4,211 are connected to water supply meaning that currently 10.9% of connections are metered. The meters as a percentage of connections are high in Ōwhango and Waiōuru, 51% and 81% respectively, but is less than 10% in the remaining reticulated townships. A summary of the connection and meter data are provided in the table below.

Table 23 Summary of connections and meters by township

Township	Connections (count)	Meters (Count)	Metered connections (%)
National Park	280	28	10.0%
Ohakune	932	88	9.4%
Ohura	152	0	0.0%
Ōwhango	207	106	51.2%
Raetihi	342	30	8.8%
Taumarunui	2,272	186	8.2%
Waiōuru*	26	21	80.8%
Total	**4,211**	**459**	**10.9%**

Source: Veolia Infrastructure Asset Valuation (July 2022)

* Note not all domestic connections are metered in Waiōuru.

4.3 CRITICIAL 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. Council officers, along with engineers and operators from the Facilities Management Contractor, are aware of the critical assets within the water supply system. These include items such as raw water pipelines, trunk mains and control equipment.

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

Table 24 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 used in decision making with renewals, condition assessments and operational activities. The categorisation of critical water supply assets by township is listed in Table 25. A critical spares list has been developed across the assets. Most spares are now standardised, and one critical spare is now held in stock at Veolia's yard.

Table 25 Critical assets by township

Township	Asset category	Description
District-wide	Storage and pump stations	Treated water storage for all water takes other than Ōwhango
	Networks	Distribution in townships for larger pipe sizes (i.e. larger than 200mm in diameter)
National Park	Headworks and treatment plant	National Park water take and treatment plant
Ohakune	Headworks and treatment plant	Ohakune water take and treatment plant
Ohura	Headworks and treatment plant	Ohura water take and treatment plant
Ōwhango	Headworks and treatment plant	Ōwhango water take and treatment plant
Raetihi	Headworks and treatment plant	Raetihi water take and treatment plant
Taumarunui	Headworks and treatment plant	Taumarunui water take and treatment plant
	Water supply network	Main supply to the Taumarunui hospital

4.4 ASSET PERFORMANCE

This section details the performance of the water supply network in relation to the quality of water delivered to customers as well as firefighting capability, meeting compliance requirements, and leakage. Asset performance is summarised below for:

- Headworks and treatment assets – Treatment performance is generally good as compliance with Taumata Arowai regulations for drinking water are working towards fully being met. A key performance area is renewal of resource consents for intakes.
- Storage and pump stations – Performance of pump stations has been poor, however with increased connection to the SCADA network performance is expected to increase when next assessed.
- Network – the water supply network performance has generally been average over recent assessments. However, water loss has been above the 40% target for some townships so performance is considered poor.

4.4.1 Performance by asset class

The overall performance of the water supply assets is summarised in Table 26. Specific information on asset capacity/performance for each of the individual water supply systems is provided in Appendix C, Part 4.

Table 26 Asset performance summary by asset class

Asset Class	Asset performance grading	Comments
Headworks and Treatment		
Intake	3	Current abstraction permits are held for all water intakes (or for expired consent are legally operated under S124 of the RMA). Significant improvement has been made to the abstraction limit non-compliances. New abstraction meters were installed at Ōwhango and National Park in 2018 and Matapuna (Taumarunui) in 2019. Improvements to raw water quality monitoring include: • The addition of the on-line hydrocarbon detection system to the Raetihi water intake pipe has improved raw water quality monitoring. • The raw water turbidity meter at the Taumarunui intake was replaced and is in excellent condition and rock media was added around the intake pipe to provide continuity of asset protection. However: • Fixed screens which may become obscured, and siltation occurs occasionally at some sites. The accumulation of silt upstream of the Ohakune Intake is believed to contribute to the raw water high turbidity experienced during heavy rainfall. • Vehicle access for maintenance purposes is limited to some intake sites.
Water Treatment Plant	3	Ōhura and Ōwhango and National Park WTPs do fully comply with the drinking water requirements (refer to Section 2.7 Service level summary). Plant upgrades have been scheduled. However: • All treatment plants have online instrumentation and are connected to SCADA providing real time monitoring and alarming and remote operational management.

Asset Class	Asset performance grading	Comments
		• Chlorination at all WTP provides for e. coli protection and ensures a network disinfection residual. Council is making use of the Government provided funding for upgrades at Ohakune WTP.
Pump Station and Storage		
Treated Water Storage	3	One day or greater of treated water storage at maximum monthly average daily demand is provided for all water supplies other than Ōwhango (refer to Section 2.7 Service level summary).
Water Pump Stations	4	All water pump stations are connected to SCADA to provide advance notification of failure. Network pump stations at Sunshine Road and Te Peka have no installed standby pumps and hence restricted redundancy in the event of failure. There is a critical spare held for these two small sites. Manunui Pump Station is currently being upgraded to include a standby pump. However, historical outages have been rare with service interruptions in the supply of water rare. Generally, meets the design hydraulic requirements.
Network		
Watermains	3	The network provides overall good performance with low instances of mains breaks. Supply pressures typically meet or exceed the recommended 200 kPa minimum pressure. Flows typically exceed minimum requirements at the customer point of supply. Rolling watermain renewal programme targets mains where condition is poor. However, backflow prevention protection management and enforcement are currently limited but has been slowly improving. Council currently has a programme of replacing gate valves at the property boundary with a backflow prevention device assembly.

Source: Veolia (September 2020)

Performance grading scale: 1 = very good; 2 = good; 3= moderate; 4= poor; 5 = very poor; NA = not assessed.

Primary deficiencies with respect to asset capacity/performance for Council's water supply systems are in relation to:

- Drinking water standards compliance.
- Capacity of Ohakune WTP to satisfy water demand.

Abstraction (resource consent) compliance:

All water sources are currently consented to enable raw water abstraction. Council has lodged resource consent renewals with HRC for Ōwhango and Taumarunui. Council has undertaken significant improvements improving control of abstraction at Ōwhango and Raetihi and recently replaced the raw water meter at Ōwhango, National Park and Taumarunui in resulting in improved accuracy in respect to compliance with daily abstraction volume limits.

Backflow:

Backflow prevention devices are used to protect the public water supply system from contamination. Backflow containment devices at the property boundary are not stringently enforced for high and medium hazard risk properties. This creates the potential for contamination of the water supply from backflow.

To address this, Council have included customer responsibility and unmanaged risk with regards to backflow prevention in the Water Supply Bylaw adopted in 2019 and updated the Boundary Backflow Prevention Policy in 2023. Council also maintains a register of installed backflow prevention devices for some commercial units and recognises the need for ongoing improvement in backflow prevention.

Backflow prevention upgrades have been installed during replacement of end-of-life or leaking gate valves during inspections which are actively replaced with backflow devices. Additionally, high volume commercial users are required to install backflow devices, with a key improvement task for Council and Veolia to start active monitoring of these upgrades. These developments target backflow prevention at high-risk locations.

The development of a backflow prevention installation and proactive inspection programme has been identified as an improvement project. Residential customers are being upgraded over timer or receive an accuflow on connection which includes a backflow check. Backflow devices are being installed for larger and high-risk connections with the Taumarunui main street upgrade as appropriate.

Leakage:

Leakage within the Raetihi water supply pipe network is believed to have been improved through targeted renewal of problematic watermains. Water loss surveys were completed in Ohakune and Raetihi in 2019 using a night usage survey. Nighttime flow monitoring was undertaken at Taumarunui in 2019 as part of the Taumarunui Water Supply Network Modelling project. Areas of high usage were identified and targeted for further investigation.

The Infrastructure Leak Index (ILI) results from these surveys are:

- Taumarunui District Metered Area (largest part of town): ILI of 1.2 which is very low and indicates further loss reduction may be uneconomic unless there are shortages, careful analysis needed to identify cost-effective improvement.
- Mahoe Settlement District Metered Area (small settlement): ILI of 5.7 which is moderate and indicates being poor leakage record, tolerable only if water is plentiful and cheap and water loss is significant and further investigation is required.
- SH4 Piriaka District Metered Area (small settlement): ILI of 81.5 which is very high and indicates being very inefficient use of resources, leakage reduction programmes imperative and high priority, and that water loss is significant and further investigation is required.

The assessment of watermain breaks is currently not undertaken on a regular basis. This break analysis would inform the planned renewal programme based on customer outages.

Maintenance of the reticulation network:

The percentage of real water loss from the local authority's networked reticulation system is illustrated in Figure 25 over the previous five years and provides an indication of the performance of watermain assets over time. This reflects aging pipes reaching the end of their life and failing, but also of improved data collection from the contractor over time.

Customer service data analysis found that the number of major breaks has been reducing but the number of minor leaks has increased. Council intends to move to using Infrastructure Leakage Index (ILI) as a water loss performance indicator. This will help prioritise zones for leakage management and aligned to industry best practice. A proactive leakage management programme appropriate for Council's water networks needs to developed and implemented. Currently, the leakage management programme is executed on an ad hoc basis, with no planned schedule for inspections. The next asset condition assessment will have a focus on water supply leakage.

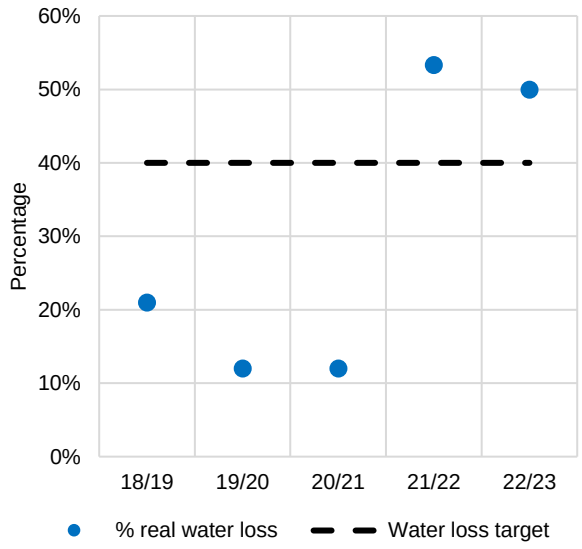


Figure 25 Maintenance of the reticulation network 2018/19 to 2022/23

Source: Ruapehu District Council Annual Reports

4.4.2 Performance by township

Overall performance grades by township are provided in Table 27. Specific information on asset capacity / performance with respect to individual schemes is provided in Appendix C, Part 4.

Current asset capacity / performance is similar to that reported in the 2018 and 2021 AMPs, primarily due to the sequencing of asset condition and performance assessments not aligning with the AMP and LTP cycles.

with a reduction in performance at Ohakune, primarily due to the performance issues associated with the Ohakune WTP. Council have implemented a capacity upgrade at the Ohakune WTP, to address the performance issues.

Table 27 Water supply system performance summary

Water supply system	Asset capacity/performance grading
National Park	2
Ohakune	3
Ohura	3
Owhango	3
Raetihi	3
Taumarunui	3
Waiouru	2

Source: Veolia (August 2020)

Performance grading scale: 1 = very good; 2 = good; 3= moderate; 4= poor; 5 = very poor

4.4.3 Consent conditions

The water supply schemes in the district extract from streams and have specific consent conditions which can affect the water availability for the township. These conditions include extraction limits such the daily maximum volume allowed, the maximum volume in litres per second, and the minimum stream flow requirements. In addition, consideration needs to be given for strengthening resilience such as alternative supplies in periods of stream flooding or in natural hazard events such as ash falls. This may trigger new consents.

Recent performance against resource consent conditions for daily abstraction volumes and limits are provided in Table 28, and abstraction flow rates and limits in Table 29. There daily abstraction volume exceedances were recorded at any of the intakes during 2022/23. Two exceedances for maximum abstraction rates were recorded at Ohura. Abstraction flow rates at Ohura, Matapuna (Taumarunui), Ohakune and Raetihi are required to operate at or just below consent limits to maintain town supply.

There is increasing pressure on the water supply catchments from competing uses. Councils are required to justify their abstraction volumes and show efficient and effective use of the water.

Table 28 Daily water abstraction volume

Township	Daily Abstraction Volume Range (m^3/day)	Consented Daily Limit (m^3/day)	Exceedances (2022/23)
Ohura	100-300	360	0
Taumarunui	1,800-4,200	7,000	0
Ōwhango	350-600	1,500	0
National Park Village	100-500	500	0
Ohakune	1,000-2,300	2,500	0
Raetihi *	800-1,400	1,685 / 1,038	0

Source: Veolia (2023): Ruapehu District Council – Water Abstraction Resource Consent Report for 2022-2023.

* Daily abstraction volume is based on the flow rate of the Makotuku River at the State Highway 49 recording site, when flow is above 115 litres per second the abstraction limit is 1685 m^3/day, when flows is below 115 litres per second the abstraction limit is 1,038 m^3/day. During 2022/23 the Makotuku River flow rate did not go below the 115 litres per second threshold.

Table 29 Daily water abstraction rate

Township	Daily Abstraction Rate Range (m^3/hr)	Consented Maximum Flow Rate (m^3/hr)	Exceedances (2022/23)
Ohura	10-15	15	2
Taumarunui	200-280	300	0
Ōwhango	15-40	63	0
National Park Village	15-30	43.2	0
Ohakune	60-100	N/A	N/A

Township	Daily Abstraction Rate Range (m^3/hr)	Consented Maximum Flow Rate (m^3/hr)	Exceedances (2022/23)
Raetihi *	36-72	72 / 43.2	0

Source: Veolia (2023): Ruapehu District Council – Water Abstraction Resource Consent Report for 2022-2023.

* Daily abstraction flow rate is based on the flow rate of the Makotuku River at the State Highway 49 recording site, when flow is above 115 litres per second the abstraction limit is 20 l/sec (72 m^3/hr), when flows is below 115 litres per second the abstraction limit is 12 l/sec (43.2 m^3/hr). During 2022/23 the Makotuku River flow rate did not go below the 115 litres per second threshold.

The status of the consents for providing water supply are summarised in Table 30. This shows that there are five consents currently lodged with HRC. It is likely that future water consent conditions will be more restrictive and may cost more to comply with, implement and monitor.

Table 30 Water take consent status

Township WTP	Receiving Environment	Expiry Date	Status	Notes
National Park	Mangahuia Stream	12 December 2026	Current	The current resource consent remains valid until 2026, a renewal should be submitted prior to expiry.
Ohakune	Serpentine Stream	11 September 2025	Current	The current resource consent remains valid until 2025, a renewal should be submitted prior to expiry.
Ōhura	Mangaparare Stream	14 November 2021	To be lodged (operating under current consent)	Consent remains active under the Resource Management Act. This consent expired in November 2021. A combined application between Iwi (Ngāti Haua, Nga Tangata Tiaki) and RDC is in progress, and was publicly notified by HRC in March 2023.
Ōwhango	Deep Creek	20 March 2016	Lodged (operating under current consent)	Renewal application lodged December 2015. A water loss report was requested by Regional Council and provided in October 2019 by Veolia. Draft revised conditions and section 92 response prepared to be lodged but have been awaiting decision on Raetihi consent and to allow Council to consider catchment water allocation in conjunction with the Taumarunui consent. Abstraction continues under the old consent until the lodged consent is processed.
Raetihi	Makotuku River	1 July 2039	Current	The current resource consent was granted in May 2020 and remains valis until 2039.
Taumarunui	Whanganui River	20 June 2017	Lodged (operating under current consent)	New application lodged in March 2017. Abstraction continues under the old consent until the lodged consent is processed. A new joint application is being planned, led by Ngāti Hāua with support from RDC.

Water supply for the Waiōuru township is procured by Council from the NZDF who are responsible for obtaining resource consent. HRC's One Plan has set common catchment expiry dates which enables the whole of catchment to allow for assessment across various applications. This enables the whole receiving environment to be looked at holistically, and also allows the communities to look at their environmental desires against the affordability costs.

Resource consent compliance at the water supply intakes is summarised in Figure 26 below. This shows that there are no unknown or serious non-compliances, with three consents in compliance, and three minor non-compliances.

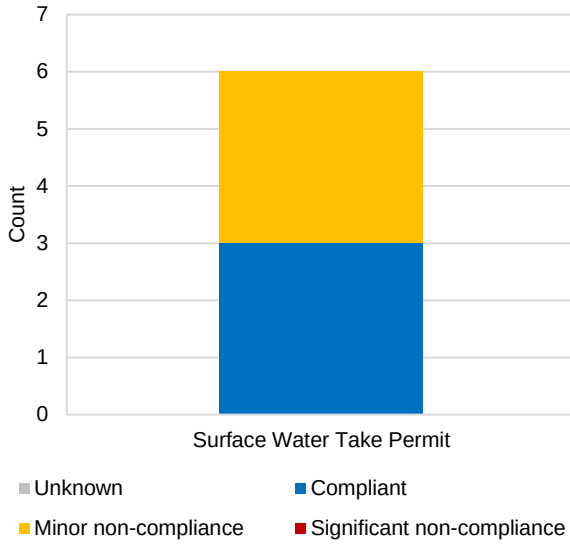


Figure 26 Resource consent compliance (Nov 2023).

4.4.4 Firefighting

The water supply activity also provides firefighting capability to assist public safety where the water supply was designed to deliver this volume of water. For those unable to deliver firefighting flows, they have been declared as rural fire areas and FENZ has resource differently for these towns such as Ohura and Ōwhango. With any public water supply network, there are pockets known to not be fully meeting the Firefighting Code.
Firefighting capability is assessed as part of the master plan / model build process (refer to Section 3.5 Future demand and capacity).

4.4.5 Water conservation measures

Regional water conservation requires are set by HRC through the One Plan mo te iti mo te rahi. One Plan includes the Regional Policy Statement and Regional Plan, with the most recent Plan Amendment 2 taking effect from December 2022. These amendments will take effect on Ruapehu District Council through renewal of resource consents, with an increasing focus on water quality outcomes, volume allocations, and tea o Māori values through iwi / hapū inputs. Through our use of water, we must also give effect to Te Mana o te Wai, through HRC's implementation of the National Policy Statement on Freshwater Management.

Water conservation measures are put in place for townships in response to lower water volumes in the rivers. As the river volumes decrease from dry weather, resource consent conditions come into effect to ensure water is used efficiently. Water restrictions are used to reduce urban consumer demand and may ban activities that are not essential uses during extreme conditions. The restriction levels are communicated on Council's website when required. Whanganui and Makotuku River levels recorded marginally above minimum flow levels under the current resource consent conditions in December 2017. Water restrictions are notified to the northern communities (Ōwhango, Taumarunui and National Park) and southern communities (Ohakune and Raetihi) by Council when the river flows at set locations approach the minimum flow thresholds.

Water restrictions are a function of resource consent conditions to maintain the health of the river and does not imply that Council is depleting the river. For example, Council abstraction volume of 7,000 m^3/day for Taumarunui creates a decrease in the river level of 2mm during low flows.

Council needs to undertake more education of water conservation, empowering users and impacts on the environment. Te Mana o Te Wai and One Plan place emphasis on water abstraction consent holders demonstrating their need and efficient water use. Restrictions in use are subject to river flows and during low flows only essential users are able to utilise water. Non-essential users will be required to have their own alternative source of water during low flows.

Another key consideration is that water abstraction from the Whanganui River catchment should always consider the legal status which is the same as a person. Therefore, compliance with Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 should always be maintained.

4.5 ASSET CONDITION

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 the water assets are recommended to gain a better understanding of current state, ideally sequenced with the LTP cycle. This would help identify trends and ensure the poor performing assets are scheduled for renewal.

The current state of above ground water assets is (based on the 2020 assessment):

- Intakes, headworks and treatment assets – intake assets and water treatment plants are in good condition.
- Storage and pump station assets – pump stations assets are in average condition, while treated water storage assets are generally in good condition.
- Network assets – water supply network assets are generally in good condition, particularly the hydrants, valves and meters. The watermains overall are in average to poor condition, depending on their age and remaining useful life.

The condition of below ground water supply assets is shown in Figure 28. This shows that only 1% has been assessed in poor condition. Asset condition has not been assessed between the development of the 2021 and 2024 AMPs. During the establishment of the regional Entity E (subsequently abandoned), the terminology of condition has changed slightly, with condition reporting taking the categories excellent, good, average, poor and very poor. It is assumed that this aligns to the condition terminology used in the previous grading scale used; very good; good, moderate, poor, and very poor.

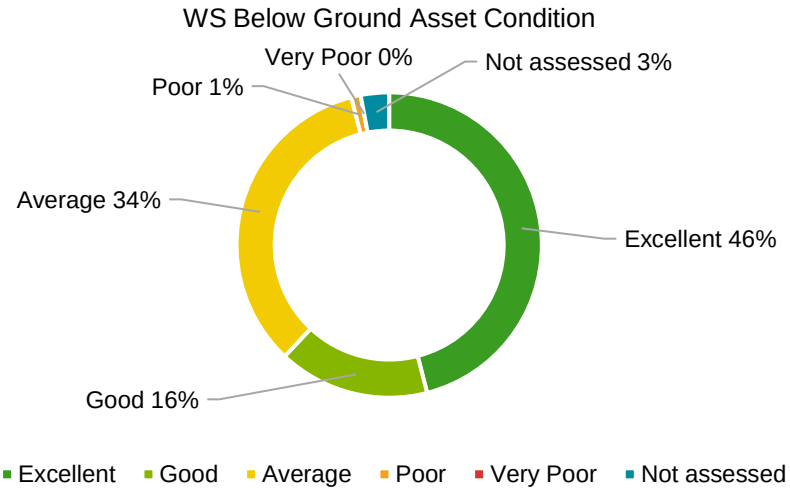


Figure 27 Water supply asset condition.
Source: Veolia (August 2020)

4.5.1 Condition by asset class

The overall condition of the water supply assets is summarised in the following table. This shows that most asset classes are in good grade 3 (or average) or better. Specific information on asset condition for each of the individual water supply systems is provided in Appendix D, Part 4.

Table 31 Asset condition summary by asset class

Asset Class	Asset condition grading	Comments
Headworks and Treatment		
Intake	3	Intakes are generally in average condition.
Water Treatment Plant	2	The overall condition of the majority of the WTP assets is good. Many mechanical and electrical assets are in good condition having been installed or upgraded as part of WTP upgrades. SCADA components are in good condition due to SCADA being predominantly installed as part of the 2008 to 2018 WTP upgrades.

Asset Class	Asset condition grading	Comments
		However, civil assets (e.g., clarifiers, filters, tanks, buildings) are older and a number of these are exhibiting evidence of corrosion/deterioration. Chemical tanks at Taumarunui, Raetihi and Ohura were renewed between 2010 to 2019.
Pump Station and Storage		
Treated Water Storage	2	Treated water storage asset condition varies between good and very good. The Raetihi concrete treated water storage reservoir shows some sign of leakage but is in generally good condition. The roof shows some sign of corrosion.
Water Pump Stations	3	No major condition issues and an overall average condition. However, deterioration is evident at Manunui WPS.
Network		
Watermains	3	Network condition varies between good and poor. Water reticulation networks installed during the 1980s in PVC material (National Park and Ōwhango) are in good condition. AC material mains, typically installed in the 1960s or earlier, are approaching the end of their useful life and their condition subsequently is deteriorating. Refer to Section 4.2.4 Watermains for age, size and material breakdowns.
Hydrants	2	No major condition issues identified.
Valves	2	No major condition issues identified.

Source: Veolia (August 2020).

Condition grading scale: 1 = very good; 2 = good; 3= moderate; 4= poor; 5 = very poor; NA = not assessed.

The key deteriorating assets in the water supply activity are the AC watermains in Ohakune, Ohura, Raetihi, Taumarunui and Waiōuru, of which 51.7km was installed during the 1950-60s. Since the 2021 water supply AMP was written, 2.8km of the AC watermains of this age has been replaced. The remaining AC watermains continue to deteriorate. RFS records indicate specific AC watermains have a high failure frequency. Using a useful life of 65 years for AC material watermains, this means that much of the remaining 51.7km of AC watermains of this age will require replacement and renewal during the period coved by this AMP.

The 2021 AMP detailed issues with water supply pipelines along State Highway 4 and in the Golf Road area around Taumarunui. Since then, all the pipeline along this section have been replaced.

Raetihi exhibits significant continual nighttime consumption. This is shown by SCADA instantaneous and cumulative demand information. Investigations revealed significant leakage from the watermains, 43% of which is AC material. This AMP provides for investment to continue the replacement of the Raetihi AC pipe network.

4.5.2 Condition by township

Overall asset condition grades by township are provided in Table 32. Specific information on asset condition with respect to individual schemes is provided in Appendix D, Part 4.

Table 32 Asset condition grade by townships

Water supply system	Condition grading
National Park	2
Ohakune	2
Ohura	3
Owhango	3
Raetihi	2
Taumarunui	3
Waiouru	2

Source: Veolia (August 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.
- Request for service numbers.
- Customer interruptions – outages.
- 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 water supply 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 33 Lifecycle management activities.

Expenditure Category	Lifecycle Management Plan	Activity Category	Description
Operations	Routine Maintenance Plan	Operations	Operations incorporates all expenditure necessary for day-to-day operation and 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 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 to expand services (provide service to future customers).
		Levels of service	Incorporates all expenditure to improve performance/achieve (existing customer) LoS.

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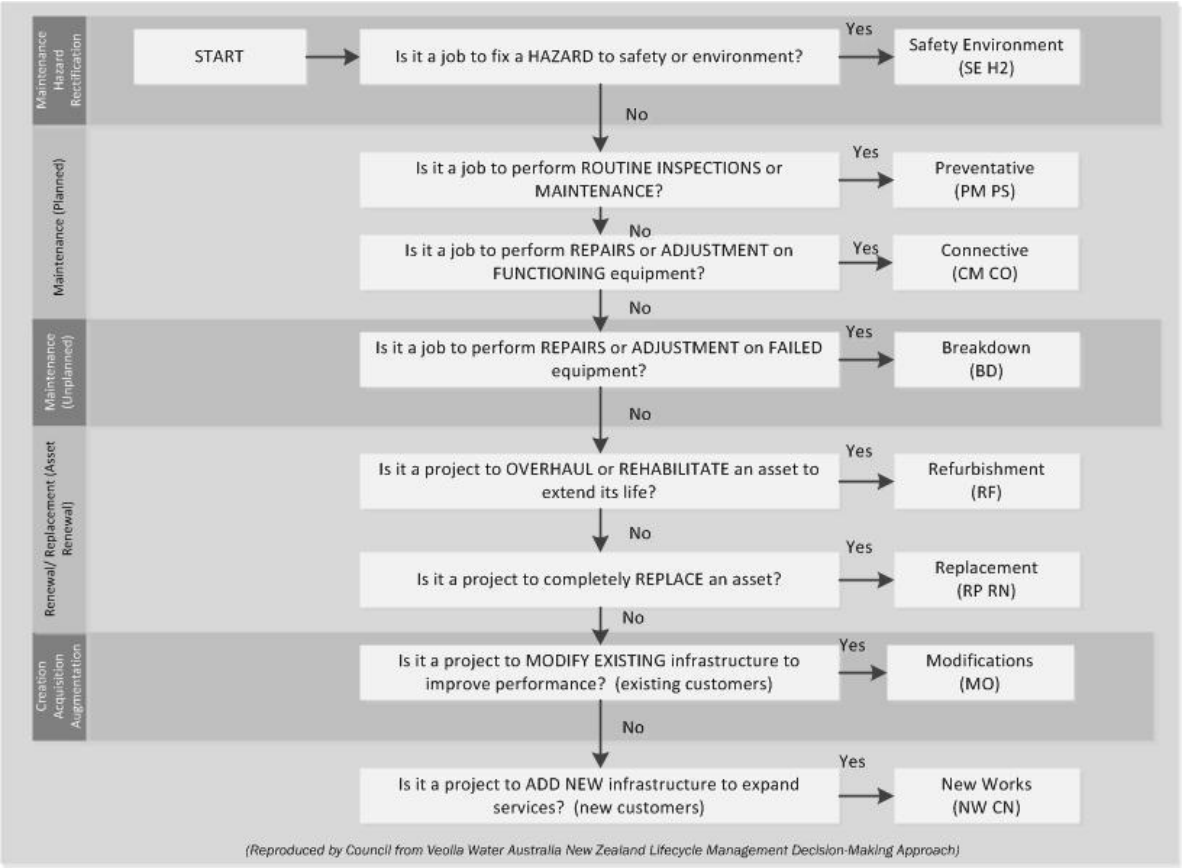

Figure 28 Asset maintenance decision making tree

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 water supply 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 water supply LOS are met. Council keeps

the water supply 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 34 Operation and maintenance activities

Activity	Description	Specific items
Operations	Work conducted for the operation of the water supply systems to ensure optimal performance and quality control to meet regulatory and level of service requirements. Includes for Council's corporate overhead costs, day to day operational costs and long-term planning and asset management costs.	Council labour, corporate systems and overhead costs providing for the following services required to deliver efficient and effective water services to the district: • Operations services. • Customer service and billing. • Operations (facilities management contractor). • Operator labour for WTP operation and reticulation operation. • Chemicals. • Water quality analysis for drinking water compliance. • Facilities management contractor depot, vehicle and overhead costs. • Insurance. • Electric power to operate the WTPs and water pump stations. • Supply (purchase) from NZDF of treated water (or supply to Council's Waiōuru customers (Waiōuru only). • Consultants/testing/software/other services. • Replacement of valve box lids, hydrant box lids, meter box lids.
Hazard Management *(Safety or environmental)*	Work undertaken by the Facilities Management Contractor to fix a hazard which is affecting safety or the environment.	• Appropriate disposal of asbestos pipes.
Preventive Maintenance *(Planned)*	Periodically scheduled inspections and maintenance scheduled by the Facilities Management Contractor according to established maintenance schedules within the contractor's CMMS.	Facilities management contractor costs associated with undertaking ongoing planned maintenance items including: • Inspections of WTPs. • Water pump station routine inspections. • Six monthly inspections of raw water mains and intakes. • Hydrant and valve marking. • Electrical planned maintenance on WTP and WPS. • Reservoir inspection and cleaning (where required). • Hydrant flushing (where required).
Corrective Maintenance *(Planned)*	Planned maintenance, typically identified from preventative maintenance tasks, scheduled by the Facilities Management Contractor, to return an asset to its required LoS.	Facilities management contractor costs associated with: • Pump repair of WTP and WPS pumps.
Breakdowns Maintenance *(Unplanned)*	Reactive maintenance, typically as a result of RFS call to Council's call centre, required to be undertaken by the Facilities Management Contractor to return a failed asset to its required LOS.	Facilities management contractor costs associated with undertaking reactive maintenance items including: • Repair of burst main/leaking mains. • Repair/replacement of broken laterals/leaking laterals. • Repair/replacement of broken valves and hydrants. • Watermain flushing and response to dirty water complaints.

4.9 ASSET RENEWAL 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 following table with focus on critical assets.

Table 35 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 immediately:

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

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 for the last two financial years. This reflects Council investing in three water assets after a period of relatively low level of renewals. The ten-year renewal forecast of $2.0 million on average will address this.

Table 36 Renewal expenditure versus annual depreciation comparison.

Asset class	Annual depreciation (2022)	Actual renewals (2020/21)	Actual renewals (2021/22)	Actual renewals (2022/23)	Ten-year renewals forecast (average per year)
Headworks & Treatment	667,205	470,000	4,002,000	4,888,296	65,400
Pump Station / Storage	164,235	72,000	1,103,000	326,289	0
Network	758,811	240,000	1,951,000	2,833,523	2,009,985
Total	**1,590,251**	**782,000**	**7,056,000**	**8,048,107**	**2,075,385**

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

Key renewal projects:

Key water renewal projects proposed for the 2024 LTP are indicated in the table below and exclude rolling renewal programmes.

Table 37 Key water supply renewal projects

Township	Renewal project	Justification
District-wide	Upgrade SCADA PLC and Comms	The SCADA systems across the district are aging. This project aims to bring the system up to modern standards and

Township	Renewal project	Justification
		communication protocols (estimated at $600,000 over the first four years of this LTP period).
District-wide	Watermain renewals	Renewals of watermains is primarily based on modelling and master plans. These are used to prioritise chock point removals by increasing pipe size and addressing breakages (estimated at $15,000,000 over years three to ten of this LTP period).
Raetihi	Secure water supply for Ruatiti public toilets	This private water supply is for Council's community facilities group (estimated at $500,000 in years three and four of this LTP period).
Taumarunui	Universal metering	Continued rollout of universal metering focused in Taumarunui (estimated at $1,000,000 in years three to seven of this LTP period).

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 demand and capacity). These master plans / model builds have informed the identification of capital works projects with a focus on WTP upgrades to date. The long term planning programme for the water supply networks and treatment plants needs strengthening so there is a 30 year view.

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

- To meet legislative compliance.
- To meet the LOS with respect to safe and effective supply of water in main townships where applicable.
- To meet the demands of growth by supplying water to Council's customers through efficient utilisation of natural resources.
- To strengthen resilience and prepare for climate change impacts.

Council's water supply growth and LOS activity categories are shown in the table below.

Table 38 Asset creation sub-activities

Creation Plan Activity Category	Creation Plan Sub-Activity Category	Description
Growth	Headworks and treatment	Growth expenditure on headworks and treatment assets.
	Pump station/storage	Growth expenditure on pump station/storage assets.
	Network	Growth expenditure on network (pipework) assets.
	Vested assets	Accounting related category for vested assets from new developments.
LOS	Compliance	Replacement, upgrading or installation of new assets to achieve compliance with statutory obligations including those related to drinking water, resource consent and health and safety 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 ensure LoS are achieved.
	Service extensions	Expenditure on new assets to provide water 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 water services.

Key asset creation projects proposed for the 2024 LTP is budgeted at $5.75 million, a summary is listed in the table below.

Table 39 Key asset creation projects

Township	Work and Expenditure Item	Justification
National Park	National Park Water Treatment Plant Upgrades (LOS)	Required to improve water quality assurance outcomes (estimated at $1.75 million in year five of the LTP period).
Ohura	Ohura Water Treatment Plant Upgrades (LOS)	Required to improve water quality assurance outcomes (estimated at $1.5 million in year one of the LTP period).
Ōwhango	Ōwhango Water Treatment Plant Upgrades (LOS)	Required to improve water quality assurance outcomes ($2.5 million in year one of the LTP period).

Source: Council LTP budget (as at February 2024).

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 water 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.

There are no water supply assets of significant value that have been identified for decommission in the next ten year period.

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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 water supply 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 water supply activity. The activity has been examined and full results are summarised in Part 4, Appendix H. The water supply activity risk register is due for updating And is scheduled for 2024/25.

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

Table 40: Risk matrix – water supply

Likelihood	Consequence				
	Insignificant (1)	Minor (2)	Significant (3)	Major (4)	Catastrophic (5)
Almost Certain (5)	0	0	0	0	0
Likely (4)	0	1	0	0	0
Possible (3)	0	4	6	0	0
Unlikely (2)	0	0	3	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 WATER SUPPLY ACTIVITY RISKS

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

Table 41 Main water supply 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.
Contaminated water affecting supply to a community	Major accidents, spills and leaks, contamination of source water, poor quality bulk water.	Complaints, health concerns, need to find alternative sources of water, additional cost, non-compliance with drinking water standards.	Condition monitoring, targeted renewals programme, response plan, emergency response plans and capability, regional lifelines plan, preventative maintenance, water quality monitoring, periodic inspections.	Raw water monitoring, improved SCADA, more bulk storage, hatches on reservoirs, rolling programme.

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).

Water 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 coupled with the Water Safety Plans for these events.

5.4 WATER SAFETY ASSURANCE

Taumata Arowai is the regulatory administrator of the Water Services Act 2021, with the primary purpose of ensuring safe drinking water. The following new rules and standards for drinking water suppliers came into effect on 14 November 2022:

- Drinking Water Standards – The new standards se the Maximum Acceptable Values for a range of contaminants which can affect the safety and quality of drinking water.
- Drinking Water Quality Assurance Rules – This sets out what drinking water suppliers need to do to comply with key parts of the Drinking Water Standards and the Water Services Act 2021.
- New Drinking Water Aesthetic Values - Drinking water not only needs to be safe, but it also needs to taste and smell acceptable too.

Suppliers must prepare and implement a drinking Water Safety Plan and continuously review it. Taumata Arowai has a responsibility to review plans according to their scale, complexity, and risk profile. They will not be approved as under the current framework. Suppliers will also need a Source Water Risk Management Plan (SWRMP). Regional councils must contribute to the plan and share information about risks.

Taumata Arowai will review the Water Safety Plans and monitor compliance. Implementation of the plan will be considered during audits. All of Council's water supplies have a WSP. Source Water Risk Management Plans are incorporated into the WSP on an area basis.

5.5 CLIMATE CHANGE AND RESILIENCE

5.5.1 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:

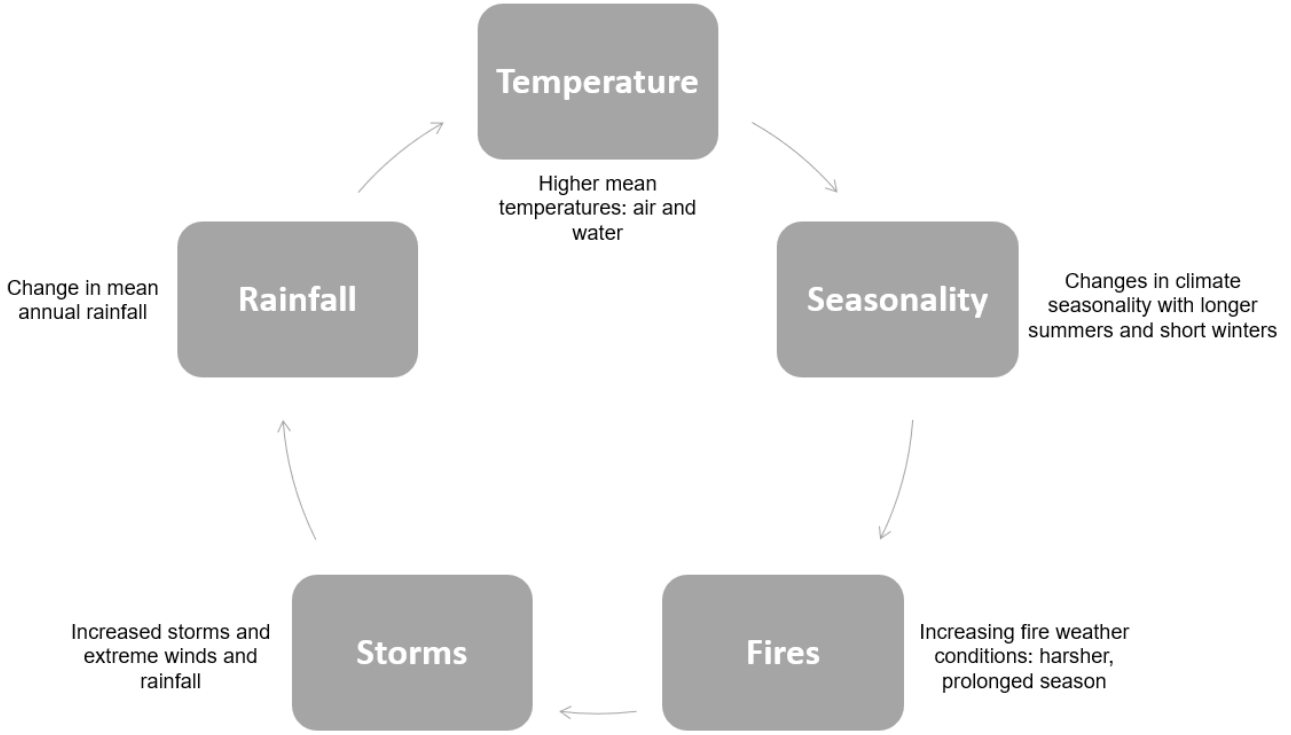

Figure 29 Climate change predictions for western lower North Island
Source: NIWA's snapshot for Zone 2

5.5.2 Where we are at

Council has adopted a sustainable management approach in the way it manages its water supply 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.
    - 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.

5.5.3 Management response to climate uncertainty

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

Table 42 Likely climate change impacts – water supply

Most likely effect due to climate change	Proposed actions
• Increasing extreme weather patterns with storms of increasing intensity and frequency will also increase the challenges of making potable water from highly turbid waters. • Increasing dry periods (droughts) are reducing the recharge zones in the river so they have less flow which can extend for longer periods of time. • Vulnerability of critical pipelines to land slips.	• Chlorination at all WTPs provides for E.coli protection and ensures network disinfection residual. • Continue to monitor intakes so meeting consent conditions. Initiate the demand management programme including response to reported leaks. • Review the Water Safety Plans including investigate mitigation measures. • Continue to use seismically resistant materials for critical assets. • Engaged water services contractor Veolia to have appropriate resources for keeping the water supply network resilient.

5.5.4 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 water treatment plants have back up generators to ensure service continuity during power outages.
- Provide treated water storage in reservoirs (at 3 days which is above the national average of 1.4 days as assessed in Water New Zealand's National Performance Review).
- We have used an integrated approach with our water supply 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.

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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 10 year forecast period from 2024/25 to 2033/34 (subject to adoption of the LTP by Council). All amendments will be provided in Part 4, Appendix A which will be updated with the Exceptions Annual Plan each year.

Detailed financial tables are also provided which indicate by township the forecast expenditure within each category and subcategory for each year in the 10 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 water supply activity over the next ten years is $97.6 million. The total operational annual costs are around $7.5 million per year. Of the ten-year forecast, operating costs make up 77%, and capital expenditure on renewals at 17%, and levels of service at 6%. There is also no capital expenditure forecast for growth as it is predicted to occur in pockets and in existing areas.

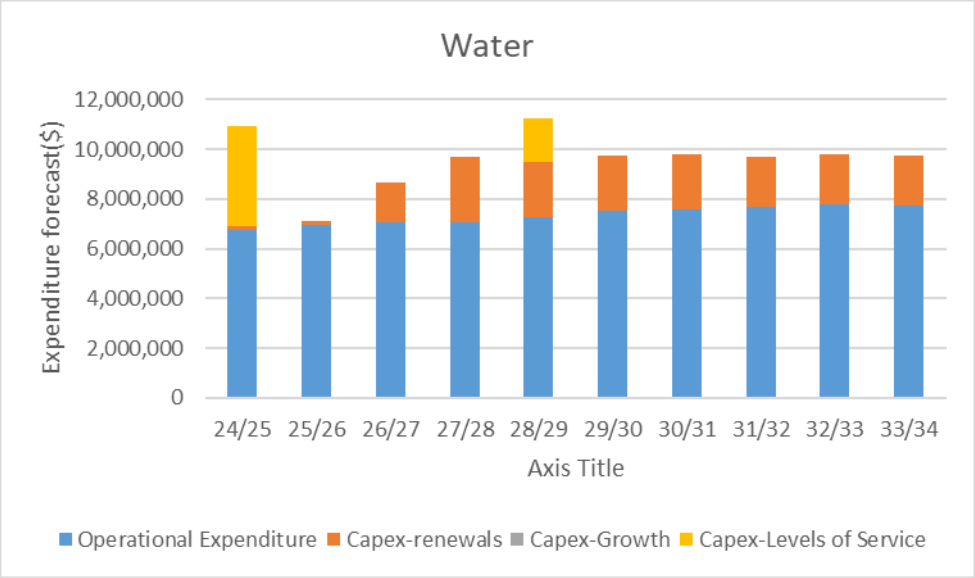


Figure 30: Summary of water supply ten year expenditure forecast
Source: Council's LTP budget (uninflated as at June 2024)

Table 43 Summary of water supply 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	6,772,662	6,941,286	7,055,727	52,733,473	73,503,148
Capital expenditure	4,150,000	150,000	1,600,000	16,950,000	22,850,000
Renewals	150,000	150,000	1,600,000	15,200,000	17,100,000
Levels of Service	4,000,000	0	0	1,750,000	5,750,000
Growth	0	0	0	0	0
Total	**10,922,662**	**7,091,286**	**8,655,727**	**69,683,473**	**96,353,148**

Source: Council's LTP budget (uninflated as at June 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 water supply activity. The annual operational expenditure is between $6.8 million and $8.2 million per annum. Indirect costs account for 64% of the operating expenditure, with 36% direct costs across the ten-year budget. In terms of indirect costs, depreciation accounts for 33%, costs of funds 24% and internal costs 6%, making up the 64% of total operating costs.

Table 44 Summary of water supply 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	2,692,757	2,692,757	2,762,757	18,989,299	27,137,570
Indirect costs	4,079,905	4,248,529	4,292,970	33,744,174	46,365,578
Total	**6,772,662**	**6,941,286**	**7,055,727**	**52,733,473**	**73,503,148**

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

6.4 CAPITAL EXPENDITURE SUMMARY

6.4.1 Ten year capital forecast

The table below outlines the ten-year capital expenditure for the water supply activity. Capex (renewals and new works) expenditure across the ten-year expenditure period is forecast at $22.85 million. Renewals makes up 75% of the ten-year capex expenditure followed by levels of service at 25%. There are no budgeted growth projects for the water supply activity as it is predicted to occur in pockets and in existing areas.

Table 45 Summary of water supply 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	150,000	150,000	1,600,000	15,200,000	17,100,000
Levels of Service	4,000,000	0	0	1,750,000	5,750,000
Growth	0	0	0	0	0
Total	**4,150,000**	**150,000**	**1,600,000**	**16,950,000**	**22,850,000**

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

A detailed list of capital expenditure for water supply 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.

6.4.1 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 three water supply projects removed. The remaining costs were optimised to reduce the overall budget by around 10% over the ten-year period (including inflation). The three capital projects currently not budgeted for total $1.4 million and are:

- Backflow boundary devices estimated at $300,000 from 2023/24 to 2026/27.
- New Water Takes for Tankered Water estimated at $600,000 from 2025/26 to 2027/28.
- Matapuna WTP Generator estimated at $500,000 in 2024/25.

NTU process - Further projects identified by the NTU in 2023 include projects identified 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 46 Key water supply 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
Water Treatment Plant (new)	Growth	2024 -2054	$23.6	Engineers estimate	Design and construct new Water Treatment Plants at Taumarunui ($7M), Ōwhango ($8M), and National Park ($8M).	Initiation
Alternative water sources	Level of Service	2025-2031	$10.3	Engineers estimate	Investigate and develop alternative water sources at Ōwhango ($2M), Ohakune ($2M), National Park ($2M), Taumarunui ($2M), and Ohura ($2M).	Initiation
Raw watermain renewal	End of service life	2026-2027	$10.0	Engineers estimate	Renew raw watermain (AC) at Raetihi. Reaching end of life. Approximately 7km. Critical asset.	Initiation

Project	Primary Driver	Year(s)	Costs ($m)	Financial Data Confidence	Description and Objectives of the project	Project Stage
Taumarunui renewals programme	End of service life	2024-2030	$9.4	Contract unit rates	Replace aged infrastructure	Execution
Scheme ownership transfer	Legislative changes	2025-2030	$9.0	Engineers estimate	Take over ownership of private schemes and upgrade assets for Raurimu ($3M), Waimiha ($2M), Pipiriki ($2M), and Kakahi ($2M)	Initiation
Asset renewals	End of service life	2025-2054	$4.6	Engineers estimate	Provisions for asset renewals based on current annual depreciation.	Initiation
New reticulation system	Legislative changes/Level of service	2030-2038	$4.3	Staff cost / Engineers estimate	Design and install new water reticulation systems, replace water tanks for Matiere ($500K), Horopito ($5M), and Rangataua ($5M).	Initiation
Ōwhango LOS programme	Level of Service	2024-2030	$3.6	Contract unit rates	Ensure public health requirements are met.	Execution
Raetihi renewals programme	End of service life	2024-2030	$3.5	Contract unit rates	Replace aged infrastructure	2021 LTP project
Total			**$78.1**			

Source: Key water supply projects, RDC Addendum (2023).

6.5 ASSET VALUATION SUMMARY

Replacement cost, depreciated replacement cost and annual depreciation figures from Council's 2022 asset valuation are shown below. A full breakdown of replacement cost, depreciated replacement cost and annual depreciation for each of Council's water 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 47: Asset valuation by asset type

Water Supply Asset Group	Replacement Cost ($)	Depreciated Replacement Cost ($)	Accumulated Depreciation ($)	Annual Depreciation ($)
Headworks and Treatment	14,430,821	7,159,476	7,271,345	667,205
Storage and pump stations	10,380,748	3,187,868	7,192,880	164,235
Network	59,508,734	29,671,239	29,837,495	758,811
Total	**84,320,303**	**40,018,583**	**44,301,720**	**1,590,251**

Source: Veolia Infrastructure Asset Valuation (July 2022)

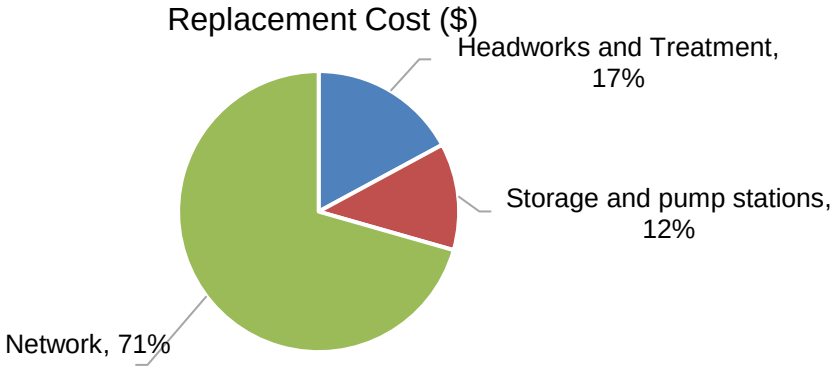


Figure 31: Valuation breakdown by major asset class.
Source: Veolia Infrastructure Asset Valuation (July 2022).

6.6 FINANCIAL PERFORMANCE

The actual achievements against the LTP budgets for the water supply capital programme for 2020/21 to 2022/23 are presented in the table and figure below. This shows that over the previous three years the capital programme achieved between 31% and 57% of its budget. The shortfall is due mainly to a large carry over of funding from previous budgets for the Ohakune WTP upgrades which are not yet complete.

Table 48 Capital expenditure performance.

Project Type	2020/21		2021/22		2022/23	
	Budget ($)	Actuals ($)	Budget ($)	Actuals ($)	Budget ($)	Actuals ($)
Renewals	1,104,000	782,000	5,309,000	2,198,000	2,031,066	519,855
Levels of Service	8,095,000	2,046,000	10,306,000	4,858,000	12,183,473	7,528,252
Growth	-	-	-	-	992	-
Total	**9,199,000**	**2,828,000**	**15,615,000**	**$7,056,000**	**14,215,531**	**8,048,107**

Source: Council's Annual Reports 2020/21, 2021/22, and 2022/23.

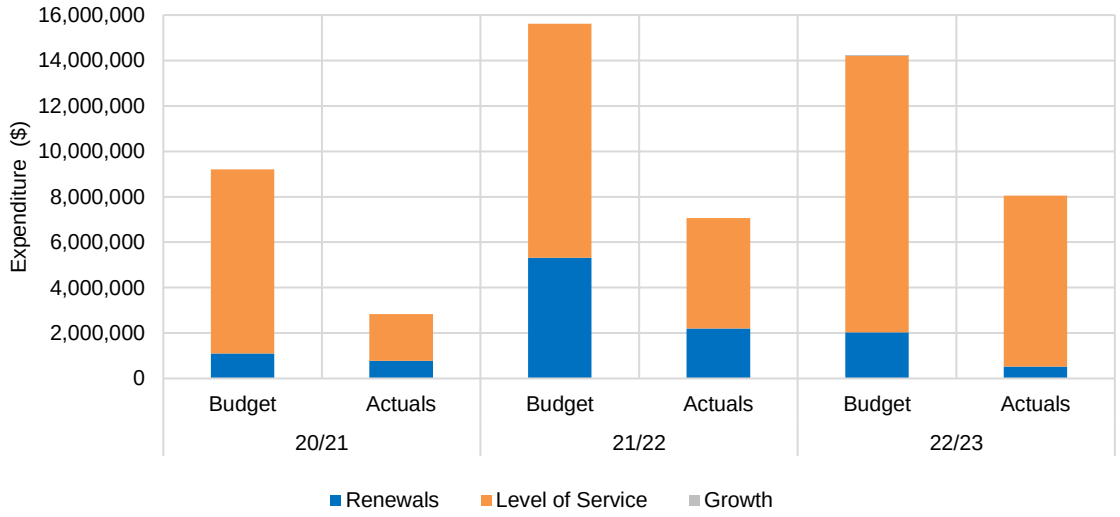


Figure 32: Capital expenditure performance.
Source: Council's Annual Reports 2020/21, 2021/22, and 2022/23.

6.7 FUNDING STRATEGY

The water supply activity will be funded in accordance with Council's financial policies as indicated below.

Table 49 Funding strategy for water supply activity

Programme	Funding mechanism
Operational	Targeted water rates and billing of metered water connections, fees and charges
Renewal	Provided through rates
LOS	Loan funded and external Government funding
Growth	Loan funding, development and financial contributions, and external Government funding

Council has been successful in gaining external Government funding for upgrading water services infrastructure. This is important for a rural district council with a small rating base. Future external funding from central government is not expected.

6.8 FINANCIAL 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 water supply activity, the reliability of the financial forecast to deliver the current level of service is assessed as follows:

Table 50 Confidence in financial forecasts

Information type	Degree of confidence	Comments
Expenditure projections	Medium	• 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	• Asset values are based on the asset valuation as at 30 June 2022. These are revalued every three years.
Depreciation	Medium	• The assessment of useful lives and the calculation of depreciation expense are undertaken every three years with the valuation.
Funding sources	High	• 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.

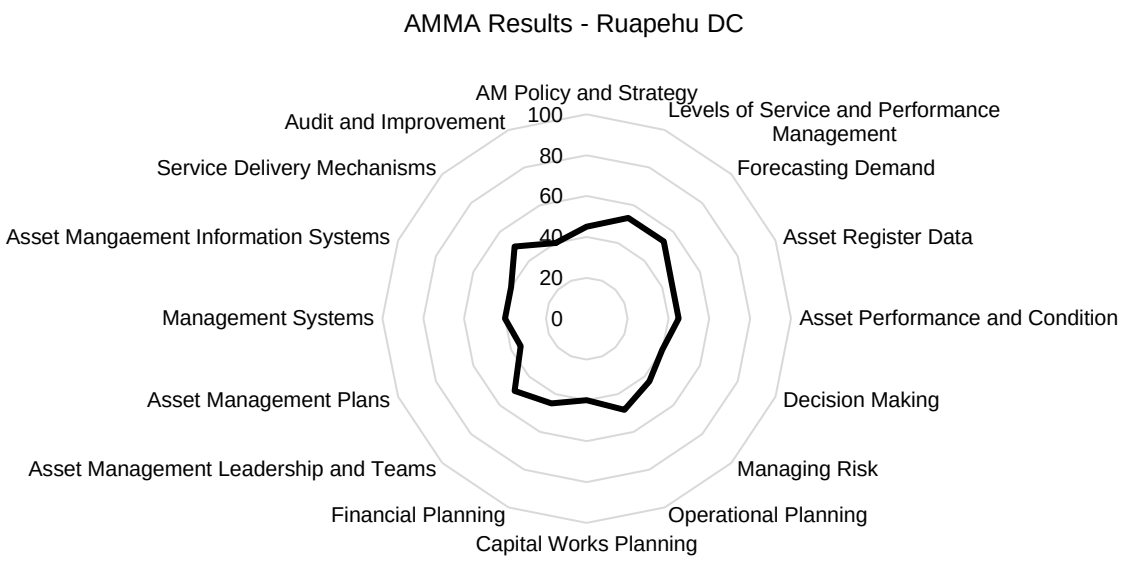
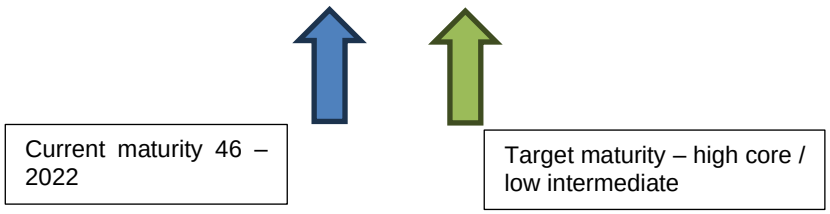


Figure 33 AM Maturity Assessment (2022).

The current score of 46 for the water supply 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.

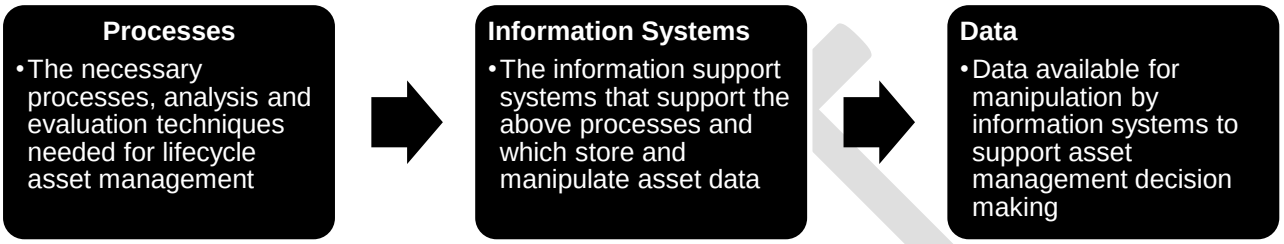
Figure 34 AM maturity – water supply

Aware	Basic	Core	Intermediate	Advanced
0-20	21-40	41-60	61-80	81-100



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: processes, information systems, and data.



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 water supply 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 water supply activity as shown in the table below.

Table 51 Data confidence summary

Activity	Asset register	Asset condition	Overall
Water supply	B	B	B

Source: RDC Addendum (2023).

Key:

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

7.4.2 Processes

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

Table 52 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.

AM Process Area	Purpose	Status/enhancements
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	Implement any improvements identified by Taumata Arowai as part of the Drinking Water Quality Assurance Rules (2022).
Compliance and quality management requirements	Requirements for meeting the drinking water requirements and 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.
Decision making process on capital works	Annual review of scheduled capital works with Veolia.	Continue to review project costs and any impacts on timeframes and scope. Review unfunded projects so ready to go if budget becomes available.

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 53 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 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.	This system is proposed for upgrading.
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	None identified at this stage.

System	Purpose	Status / enhancements
	held in the Veolia Computer Stack.	
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.	Review the need for a dedicated consent system for holding consent compliance information. Determine the appropriate system for holding or sharing intellectual property (IP) for assets, including consents.

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 Appendix 8.4.

Table 54 High priority improvement actions

AM element	Proposed actions
Forecasting demand	Develop a water supply demand management roadmap including the feasibility of universal metering.
Asset condition	Undertake 3 yearly condition assessment of the above and below water supply assets.
Strengthening resilience	Improving the resilience of the network in relation to climate change impacts including exploring alternative water sources to increase security and future quantities, and challenges of making potable water from high turbid waters.
Financial planning	Continue to review the level of investment in water supply assets to ensure the network is being renewed prudently 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 55 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 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 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

8 APPENDICES

8.1 ACRONYMS

Table 56 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
EOC	Emergency Operations Centre
ERP	Emergency Response Plan
FENZ	Fire and Emergency New Zealand
LGA	Local Government Act 2002
LTP	Long Term Plan
HSWA	Health and Safety at Work Act
HRC	Horizons Regional Council
ILI	Infrastructure Leak Index
IIMM	International Infrastructure Management Manual
IP	Intellectual Property
LOS	Level of Service
MBIE	Ministry of Business Innovation and Employment
NZDF	New Zealand Defence Force
RFS	Request for Service
RDC	Ruapehu District Council
SCADA	Supervisory Control and Data Acquisition
SWRMP	Source Water Risk Management Plan
WPS	Water Pump Station
WTP	Water Treatment Plant
WOL	Whole of Life
WSP	Water Safety Plan

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8.2 FULL LEVELS OF SERVICE SUMMARY

Table 57 Full LOS summary – water supply

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	Quality of Drinking Water - continuity of potable water supply to applicable community areas.	Extent to which Council's drinking water supplies comply with Part 4 (bacteria compliance criteria) of the Drinking Water Standards. (Future increases reflect changing statutory requirements).	Ōhura	LTP / mandatory	Jul-Dec 2022 DWSNZ **Achieved**	100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Taumarunui			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ōwhango			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				National Park			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Raetihi			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
			Extent to which Council's drinking water supplies comply with Part 5 (protozoal compliance criteria) of the Drinking Water Standards.	Ōhura	LTP / mandatory	Jul-Dec 2022 DWSNZ 2018 **Not achieved**	Not compliant *(see note 2)*	Not compliant	Not compliant	Not compliant	Not compliant
				Taumarunui			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ōwhango			Not compliant *(see note 2)*	Not compliant	Not compliant	Not compliant	Not compliant
				National Park			Not compliant *(see note 2)*	Not compliant	Not compliant	Not compliant	Not compliant
				Raetihi			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
			Full compliance with Drinking Water Quality Assurance Rules (2022) for bacteria compliance	Ōhura	LTP / mandatory	Jan-June 2023 DWQAR **Not achieved** *(see note 1)*	Not compliant *(see note 2)*	Not compliant	100% compliance	100% compliance	100% compliance
				Taumarunui			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ōwhango			Not compliant *(see note 2)*	Not compliant	100% compliance	100% compliance	100% compliance
				National Park			Not compliant *(see note 2)*	Not compliant	Not compliant	Not compliant	100% compliance
				Raetihi			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
			Full compliance with Drinking Water Quality Assurance Rules (2022) for protozoal compliance	Ōhura	LTP / mandatory	Jan-June 2023 DWQAR **Not achieved** *(see note 1)*	Not compliant *(see note 2)*	Not compliant	100% compliance	100% compliance	100% compliance
				Taumarunui			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ōwhango			Not compliant *(see note 2)*	Not compliant	100% compliance	100% compliance	100% compliance
				National Park			Not compliant *(see note 2)*	Not compliant	Not compliant	Not compliant	100% compliance
				Raetihi			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
				Ohakune			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance
		Public safety pressures and flow.	Total number of complaints received by Council about any of the following (expressed per 1,000 connections to the network reticulation systems.	(a) Drinking water clarity.	LTP / mandatory	3.2	<15 per 1,000 connections	<15 per 1,000 connections	<15 per 1,000 connections	<15 per 1,000 connections	<15 per 1,000 connections
				(b) Taste.		1.0	<10 per 1,000 connections	<10 per 1,000 connections	<10 per 1,000 connections	<10 per 1,000 connections	<10 per 1,000 connections
				(c) Odour.		0.5	<5 per 1,000 connections	<5 per 1,000 connections	<5 per 1,000 connections	<5 per 1,000 connections	<5 per 1,000 connections
				(d) Pressure and flow.		7.1	<25 per 1,000 connections	<25 per 1,000 connections	<25 per 1,000 connections	<25 per 1,000 connections	<25 per 1,000 connections

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)
				(e) Continuity of supply and		3.5	<5 per 1,000 connections	<5 per 1,000 connections	<5 per 1,000 connections	<5 per 1,000 connections	<5 per 1,000 connections
				(f) Council response times.		0.0	<25 per 1,000 connections	<25 per 1,000 connections	<25 per 1,000 connections	<25 per 1,000 connections	<25 per 1,000 connections
Our infrastructure assets and services are resilient and fit for purpose	Quality - reliability	To provide reliable water networks	Number of reported watermain breaks per 100km of watermain per year		AMP	24.75	<30 per 100km	<30 per 100km	<30 per 100km	<30 per 100km	<30 per 100km
			Percentage of water supply assets in satisfactory condition (condition grades 1,2 or 3)		AMP	Not measured for 2022/23	85%	85%	85%	85%	90%
			Days of treated water stored in reservoirs on average (with the exception of Ōwhango)		AMP	Achieved	>1 day	>1 day	>1 day	>1 day	>1 day
Our infrastructure assets and services are resilient and fit for purpose	Responsiveness	To provide prompt responses for service	Where the Council attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following **median response** times are measured:		LTP / mandatory						
			Attendance for urgent callouts: from the time that the Council receives notification to the time that service personnel reach the site (i.e., loss of water supply)			38.5 mins	Median response times <2 hours	<2 hours	<2 hours	<2 hours	<2 hours
			Resolution of urgent call outs from the time the Council receives notification to the time that service personnel confirm resolution of the fault or interruption site (i.e., loss of water supply) (Notes 2 and 6).			159 mins	Median response times < 6 hours	< 6 hours	< 6 hours	< 6 hours	< 6 hours
			Attendance to non-urgent callouts from the time that the Council receives notification to the time that service personnel reach the site (i.e., no loss of water supply) (Notes 2, 5 and 7).			101 mins	Median response times < 36 hours	< 36 hours	< 36 hours	< 36 hours	< 36 hours
			Resolution of nonurgent callouts from the time that the Council receives notification to the time that service personnel confirm resolution of the fault or interruption (i.e., no loss of water supply) (Notes 2 and 7).			318 mins	Median response times < 72 hours	< 72 hours	< 72 hours	< 72 hours	< 72 hours
Our natural and built environment is healthy, strong and safe	Sustainable - Environmental performance	To promote the efficient and sustainable use of water	Percentage of real water loss from the networked reticulation system, using minimum night flow (MNF) analysis	Taumarunui	LTP / mandatory	40%	<40% all supplies	<40% all supplies	<40% all supplies	<40% all supplies	<40% all supplies
				National Park		25%					
				Ohakune		59%					
				Ōhura		15%					
				Ōwhango		56%					
				Raetihi		64%					
			The average consumption of drinking water per day, per resident within the territorial authority district (litres per person per day).		LTP / mandatory	448	< 500 litres per resident per day (see note 3)	< 500 litres per resident per day	< 500 litres per resident per day	< 400 litres per resident per day	< 350litres per resident per day
			Peak demand using peak population (litres per person per day).		LTP	254	< 300 litres per resident per day	< 300 litres per resident per day	< 300 litres per resident per day	< 250 litres per resident per day	< 250 litres per resident per day
			Full compliance with resource consent conditions for operating water supply network *(new measure)*		AMP	Achieved – for 6 plants	100% compliance	100% compliance	100% compliance	100% compliance	100% compliance

8.3 DETAILED FINANCIAL TABLES

Table 58 Water supply o*perational 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	1,516,303	1,509,304	1,484,108	1,549,323	1,717,524	1,842,740	1,971,697	2,069,796	2,126,932	2,234,389	**18,022,116**	**24.1%**
Depreciation	2,106,949	2,271,227	2,330,279	2,395,527	2,457,811	2,551,798	2,610,489	2,665,310	2,721,281	2,775,707	**24,886,378**	**33.3%**
Direct Cost	2,692,757	2,692,757	2,762,757	2,692,757	2,692,757	2,762,757	2,692,757	2,692,757	2,762,757	2,692,757	**27,137,570**	**36.3%**
Internal Costs	455,995	467,661	485,955	474,815	475,846	494,421	469,665	469,159	487,647	467,865	**4,749,029**	**6.3%**
Non Cash Items	-	-	-	-	-	-	-	-	-	-	**-**	**0.0%**
Remissions	-	-	-	-	-	-	-	-	-	-	**-**	**0.0%**
Total	**6,772,004**	**6,940,949**	**7,063,099**	**7,112,422**	**7,343,938**	**7,651,716**	**7,744,608**	**7,897,022**	**8,098,617**	**8,170,718**	**74,795,093**	**100.0%**

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

Table 59 Water supply 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	%
Ohura Water Treatment Plant	Headworks and treatment	LOS	Loans	1,500,000	-	-	-	-	-	-	-	-	-	**1,500,000**	**6.6%**
Ōwhango WTP Upgrade	Headworks and treatment	LOS	Loans	2,500,000	-	-	-	-	-	-	-	-	-	**2,500,000**	**10.9%**
National Park WTP Upgrade	Headworks and treatment	LOS	Loans	-	-	-	-	1,750,000	-	-	-	-	-	**1,750,000**	**7.7%**
Upgrade SCADA PLC and Comms	Headworks and treatment	Renewal	Reserves-Depreciation	150,000	150,000	150,000	150,000	-	-	-	-	-	-	**600,000**	**2.6%**
Secure water supply for Ruatiti public toilets	Network	Renewal	Reserves-Depreciation	-	-	250,000	250,000	-	-	-	-	-	-	**500,000**	**2.2%**
Universal metering - Taumarunui	Network	Renewal	Reserves-Depreciation	-	-	200,000	200,000	200,000	200,000	200,000	-	-	-	**1,000,000**	**4.4%**
Watermain Renewals	Network	Renewal	Reserves-Depreciation	-	-	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	**15,000,000**	**65.6%**
Total				**4,150,000**	**150,000**	**1,600,000**	**2,600,000**	**3,950,000**	**2,200,000**	**2,200,000**	**2,000,000**	**2,000,000**	**2,000,000**	**22,850,000**	**100.0%**

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

8.4 THREE YEAR IMPROVEMENT PROGRAMME

Table 60 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	1.1	Review the target for average water consumption performance measure so aligned with industry best practice.	Three Waters Manager	Medium	To start				
2	Forecasting Demand	2.1	Develop a water supply demand management roadmap including the feasibility of universal metering.	Three Waters Manager	High	To start				
		2.2	Strengthen the planning process so there is a long term programme for the water supply networks and treatment plants needs strengthening with a 30 year view. This will be achieved through dveleoping 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	3.1	Investigate options to improve the meter end to end process from registration, read, bill.	Three Waters Manager / Veolia	Medium	To start				
		3.2	Reconcile the rateable properties in Council's finance database with the quantity of connections in the GIS database.	Three Waters Manager / Veolia	Medium	To start				
4	Asset Performance and Condition	4.1	Implement a proactive leakage management programme for Council's water networks. Assess the Infrastructure Leakage Index (ILI) with future leakage management analysis.	Three Waters Manager / Veolia	High	Underway				
		4.2	Development a proactive backflow prevention installation and inspection programme. Noting the Water Supply Bylaw adopted in 2019 details customer responsibility and unmanaged risk with regards to backflow prevention, and the Boundary Backflow Prevention Policy updated in 2023 is contributing towards this important action for residential properties.	Three Waters Manager / Veolia	High	To start				
		4.3	Undertake 3 yearly condition assessment of the above and below water supply assets. Align with asset management plan cycles going forward.	Three Waters Manager / Veolia	High	To start				
		4.4	Undertake watermain break analysis on regular basis (at least six monthly). This break analysis would inform the planned renewal programme based on customer outages.	Three Waters Manager / Veolia	High	To start				
5	Decision Making	5.1	Undertake annual capital works planning together with Veolia.	Three Waters Manager / Veolia	High	Underway				
6	Managing Risk	6.1	Update the water supply activity risk register in collaboration with Veolia.	Three Waters Manager / Veolia	Medium	To start				
		6.2	Improving the resilience of the network in relation to climate change impacts including exploring alternative water sources to increase security and future quantities, and challenges of making potable water from high turbid waters.	Three Waters Manager / Veolia	High	To start				
7	Operational Planning	7.1	On-going assessment of changes in legislation and what impacts those will likely have on operational costs and resourcing	Three Waters Manager / Veolia	High	Underway				
8	Capital Works Planning	8.1	Undertake upgrades of water treatment plants to meet drinking water requirements for protozoal compliance (Ohura, National Park and Owhango). Note that it takes one year of commissioning before can achieve compliance.	Three Waters Manager	High	Underway		Ohakune, Ohura and Owhango		National Park (28/29)
9	Financial Planning	9.1	Continue to review the level of investment in water supply 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 / Three Waters Manager	Medium	To start				
10	Asset Management Leadership and Teams		None identified at this stage.							
11	Asset Management Plans		None identified at this stage.							
12	Management Systems		None identified at this stage.							
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	Three Waters	High	Underway				

No.	AM Improvement Area	Project no	Action	Responsibility	Priority (High / Medium / Low)	Status	Indicative Timeframe			
							2024/25	2025/26	2026/27	2027/28
			assets, including resource consents between Council and its contractor(s).	Manager						
14	Service Delivery Mechanisms		None identified at this stage.							
15	Audit and Improvement		None identified at this stage.							