

DRAFT

Water Supply

Activity Management Plan

2024-2034



Quality Assurance Statement		
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1 Executive Summary

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

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

1.1 What We Do

Safe and reliable water is a fundamental community need. The Council provides potable and non-potable water to about 13,600 properties (approximately 30,000 people) throughout Tasman District. About 55% of our population is serviced by one of our managed community water supplies.

Our water supply services include:

- On demand-metered supply – no restriction is placed on the supply and the urban property has a water meter;
- Restricted supply – a set amount of water per day is made available to the property, this typically occurs on our rural schemes);
- Firefighting capability – to FW2 standard is provided in the urban-metered supply areas;
- The capture, storage, and release of water from the Wai-iti Community Dam (provides supplementary flow to Wai-iti River); and
- An investment, in conjunction with Waimea Irrigators Limited, in the Waimea Community Dam (WCD) to capture, store and release water into the Waimea Plains.

The Council own and operate 19 water schemes and manage the associated infrastructure. Water supplies include Brightwater, Collingwood, Dovedale, Eighty –Eight Valley, Hamama, Kaiteriteri/Riwaka, Māpua/Ruby Bay, Motueka, Murchison, Pōhara, Redwood Valley 1, Redwood Valley 2, Richmond, Tākaka, Tapawera, Upper Tākaka, Wai-iti Community Dam', with 51% of WCD and Wakefield.

In addition to water supply schemes, we manage the Wai-iti storage dam to provide supplementary water into the Lower Wai-iti River and associated aquifer. This enables sustained water extraction for land irrigation at times of low river flows.

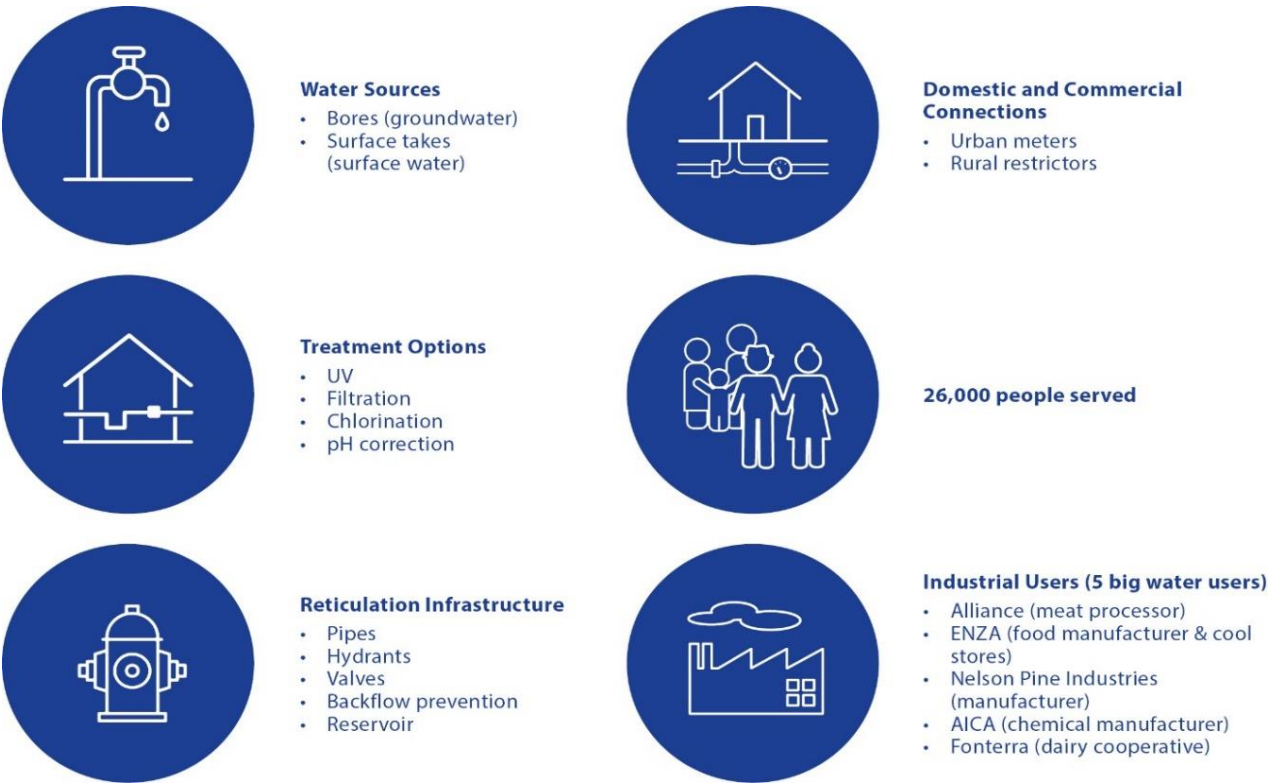
We are a majority shareholder in the WCD. The WCD is currently under construction and is anticipated to be completed in 2024. Once operational, the WCD will deliver a secure water source into the Waimea River (and related aquifers) and will ensure a sustainable source of water for our communities water supplies in the long term.

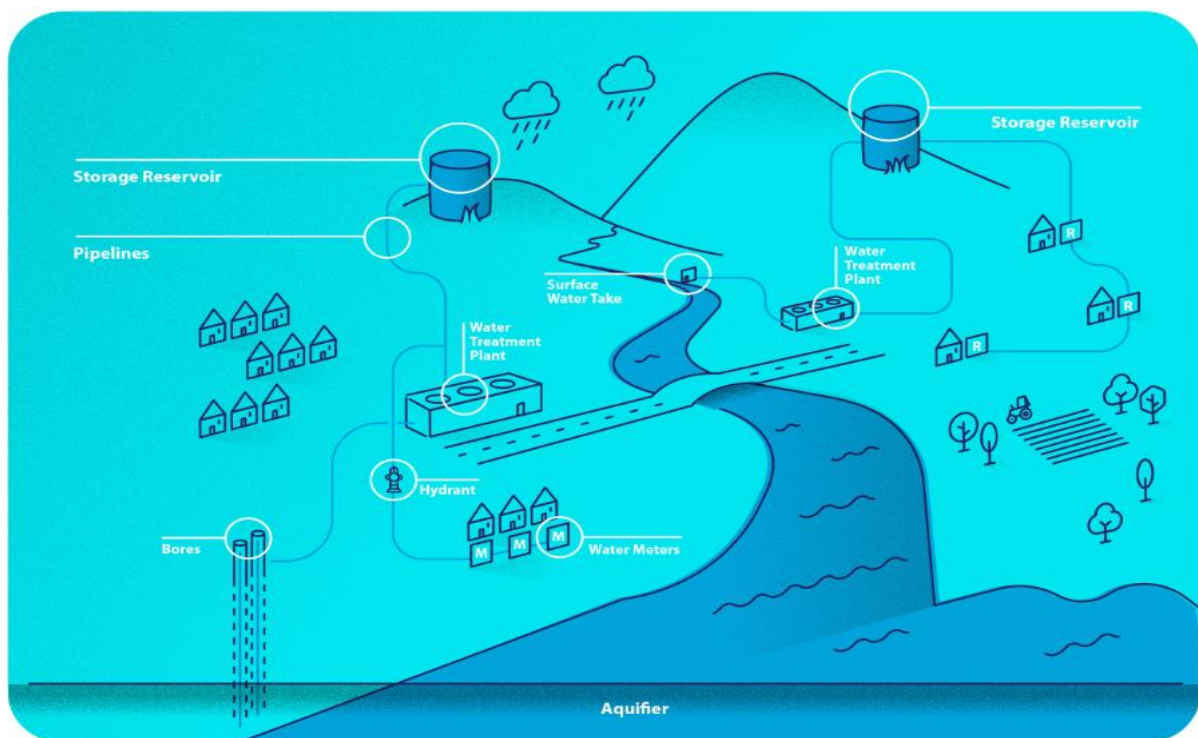
The 19 water schemes include:

- 10 metered schemes including rural extensions (known as the Urban Water Club)
- Motueka metered scheme
- Five rural restricted schemes (Dovedale, Eighty-Eight Valley, Hamama, Redwood Valley 1 and Redwood Valley 2)
- Tākaka fire-fighting supply
- Wai-iti Dam; and
- Waimea Community Dam (under construction).

The Council’s water supply infrastructure, currently valued at approximately \$250 million(June 2022) is extensive and continuing to grow. At present, key assets include 15 water treatment plants, 28 pump stations, 802 km of reticulation pipeline, 88 reservoirs, 42 bores, 12,924 metered connections, 1,620 rural restrictors, 430 backflow preventers, and 1,659 hydrants.

The key components of the water supply activity:





1.2 Why We Do It

Activity Goal

We aim to provide secure water supply systems that deliver safe water to our communities.

The provision of a safe, secure and reliable water supply is a fundamental community requirement and one of our core activities. We aim to provide ready access to high quality drinking water in our urban schemes and fit-for-purpose water supply in our rural schemes to enhance the health and well-being of our residents.

Safe, secure and reliable water supply also facilitates economic growth and enables the protection of property through the provision of firefighting needs. The service provides many public benefits and we consider it necessary and beneficial to the community to plan, implement and maintain our water supply services in the District. Territorial authorities have numerous legislative responsibilities relating to the supply of water, including the duty to improve, promote, and protect public health within the District.

1.3 Our Levels of Service

The allocation in the planned budget is largely sufficient to continue providing existing services primarily at current levels of service for the planning period.

The Council aims to provide the following levels of service for the Water Supply activity:

"Our water supply activities are managed at a level that the community is satisfied with."	"Our use of the water resource is efficient." "Our water takes are sustainable."	"Our water is safe to drink."
"Our water supply systems are built, operated and maintained so failures can be managed and responded to quickly."	"Our water supply systems are designed and operated to be resilient."	"Our water supply systems provide fire protection to a level that is consistent with the national standard."

Providing safe and secure water infrastructure services is a priority for Council. We have planned to invest significantly in new infrastructure to support areas for future growth and to continue to invest in improved water treatment to meet our performance requirements and our agreed levels of service.

1.4 Key Issues

The most important issues for this activity and how the Council is planning to respond are summarized below:

Key Issue	Response
<p>Government Reform and Legislation Changes</p> <p>Government has carried out the Three Waters Reforms programme of regulatory and service delivery reform, intended to address a range of issues and opportunities, including infrastructure investment requirements, funding, affordability, capability and capacity challenges, and water security.</p> <p>In August 2020, The Water Services Regulators Act established Taumata Arowai (Water Services Regulator) to oversee, administer and enforce a new drinking water regulatory system.</p>	<ul style="list-style-type: none"> Directed Government stimulus funding into priority water infrastructure; Council lodged submissions on the new legislation highlighting specific issues in Tasman; Council is committed to complying with the new regulations.
<p>Of the 15 water treatment plants that the Council operates, two supplies – Richmond and Tapawera achieved full compliance. The main reason for non-compliance of the other schemes is a lack of protozoa treatment.</p> <p>In order to comply with the Drinking Water Quality Assurance Rules, Council needs to upgrade existing or build new Water Treatment Plants (WTP).</p> <p>Upgrades to existing Brightwater, Collingwood, Dovedale, Motueka, Murchison, Pōhara, Tapawera, Waimea, and Wakefield WTPs are already complete or underway.</p> <p>The next priority upgrades include, Redwood Valley, and Dovedale. New and upgraded WTPs will mean that the cost of providing water will increase in the future.</p> <p>The Water Safety Plans are required to specifically identify and</p>	<ul style="list-style-type: none"> Capital works programme to build new or upgrade existing Water Treatment Plants (WTPs) Focus on Water Safety Plans Development and implementation of a Water Safety Policy based on Water Safety framework Established internal and external working groups to focus on water safety.

Key Issue	Response
address the risk for each water supply scheme.	
<p>Rural Water Supplies</p> <p>Council currently manages rural water supplies in Dovedale, Eight-Eight Valley, and Redwood Valley (1 and 2). Each supply has its own unique challenges.</p> <p>Each rural water supply operates a closed financial account, so scheme users pay for operational and capital expenditure costs for their scheme only. Other urban water schemes operate a consolidated financial account (referred to as 'Urban Water Club').</p> <p>Aging infrastructure, deferred maintenance and high compliance costs mean some schemes are becoming increasingly costly to run and are financially unsustainable for the users. Some users have already left the schemes, compounding the financial burden on those that remain. This is a particular challenge for Dovedale and Eighty-Eight Valley schemes. In response the Council has agreed to continue to apply an affordability adjustment in the form of a general rate subsidy for these two schemes.</p> <p>None of the rural water supplies are approved Rural Agricultural Drinking Water Supplies (RADWS) and all require significant infrastructure upgrades to address source and treatment challenges.</p> <p>The majority of water supplied from Eighty-Eight Valley and Redwood Valley schemes is used for domestic purposes and would not meet the criteria for Rural Agricultural Drinking Water Scheme (RADWS) approval. Council has included the Dovedale source and treatment plant upgrade project in its' Long Term Plan.</p> <p>To address allocation and drought challenges, the Council is proposing to reconfigure the Eighty-Eight Valley scheme to supply domestic and lifestyle block customers with water from the Wakefield supply.</p> <p>The few large farms near the existing intake are expected to remain on the Eighty-Eight Valley supply and would more likely meet the criteria to be approved as a RADWS. To reconfigure the scheme, a series of infrastructure upgrades are planned, including new reticulation and pump station upgrades.</p> <p>To address treatment challenges on the Redwood Valley schemes, Council is proposing to progress a new source and centralized treatment facility within years 1-3 of its 10-year plan.</p>	<ul style="list-style-type: none"> • Planned solutions for Eight-Eight Valley • Planned solutions for Redwood Valley • General rate subsidy applied to Dovedale and Eight-Eight Valley users in the interim.
<p>Growth</p> <p>Tasman's population is expected to continue to grow at a similar rate over the next 10 years. Essential water infrastructure needs to be planned for new houses and business expansion.</p>	<p>Various growth-related projects have been completed, underway or planned for:</p> <p>Richmond</p>

Key Issue	Response
<p>The Council has adopted the 2023 Nelson Tasman Future Development Strategy. The strategy sets out where future housing and business needs are intended to develop. Enabling Tasman's communities to grow is a priority for the Council. However the uncertainty of where actual developments may differ from the plans in regard to location, timing, type, scale and rate of development, is a difficult challenge to plan for.</p> <p>The key areas of development in Richmond, Motueka, Māpua, Brightwater and Wakefield require significant investment in water infrastructure to meet growth demand, which can be accommodated through:</p> <p>using existing infrastructure where there is capacity (infill);</p> <p>upgrading existing infrastructure; and</p> <p>providing new infrastructure where required.</p> <p>Council is also planning a new WTP and source bores near Brightwater to utilise it's allocation from the Waimea Community Dam and install new trunk mains from Brightwater to Wakefield, to ensure security of supply and good quality water for Wakefield. Eighty-Eight Valley will be also reconfigured and most domestic users will be supplied from the Wakefield supply.</p> <p>Council is continuing to complete a multi-year project for the development of new trunk mains in Richmond and a large reservoir in Richmond South in 2023/24 to meet growth demand.</p>	<ul style="list-style-type: none"> • New Richmond South Reservoir • Completion of new trunk main <p>Motueka</p> <ul style="list-style-type: none"> • New Water Treatment Plant at Parker Street and main pipelines <p>Māpua</p> <ul style="list-style-type: none"> • Upgrades to pipelines • Completion of Aranui/Stafford trunk main • Completion Rabbit Island and Best Island trunk main <p>Brightwater/Wakefield</p> <ul style="list-style-type: none"> • Upgrades to trunk mains • New Clover Rd Water Treatment Plant and bore field.
<p>Climate Change and Resilience</p> <p>The investment required to ensure our water supply infrastructure can withstand the effects of climate change and natural hazard events presents a significant challenge for Council.</p> <p>Further discussion about the changes Council expects as a result of changes to Tasman's climate can be found in Section 9: Climate Change, Natural Hazards and Environment of this plan and it describes how Council is intending to plan for the potential impacts to Water supply services from Climate Change and Natural Hazards including impacts including:</p> <ul style="list-style-type: none"> • Changing temperatures and seasonality. • Changing rainfall patterns and intensity; and • Changes to sea level and coastal hazards. 	<p>The Council is investing in water security through projects including</p> <ul style="list-style-type: none"> • Waimea Community Dam; • Supplementary source for Wai-iti Dam; • New bores at Clover Road; • New storage reservoirs at Richmond South; • Kaiteriteri Reservoir Improvements; • New Motueka Reservoir at Recreation Centre; and • Filtration systems at Water Treatment Plants (WTPs); • New Dovedale source and WTP upgrade. <p>In addition to investing in infrastructure, the Council has other tools and levers available to manage demand. These measures include a water restrictions strategy, promoting sustainable water-use behaviours, education</p>

Key Issue	Response
	<p>programmes, leak detection and network modelling.</p> <p>Initiatives for improved resilience</p> <ul style="list-style-type: none"> • Energy initiatives (solar power, ongoing investigation into battery and fuel cell technology); • Seismic strengthening of WTPs.
<p>In September 2020, the National Policy Statement for Freshwater Management (NPS-FM) and the National Environmental Standards for Freshwater came into force, providing direction and requirements for the Councils to improve freshwater management under the Resource Management Act 1991.</p> <p>Both the NPS-FM and new water legislation requires the Council to give effect to Te Mana o te Wai which sets out the hierarchy of obligations we have in relation to water.</p> <p>It is important to iwi/Māori and the community to preserve the health of our water systems.</p>	<p>Council plans to work more closely with the community and iwi/Māori to:</p> <ul style="list-style-type: none"> • Seek guidance on how to give effect to Te Mana o te Wai (TMOTW); • Understand, seek advice and support the exercise of mātauranga Māori and tikanga Māori and kaitiakitanga.

1.5 Financial summary

1.5.1 Operational Programme

The operations and maintenance programme covers all day-to-day activities that are required to manage the water supply activity. The major activities in this programme and the forecast inflated budgets over 30 years are summarised below.

Routine and Reactive Maintenance	Operations	General Operating Costs	Professional Fees
Bores, reticulations, treatment and reservoirs	SCADA / Telemetry, meter reading, backflow and hydrant tests	Electricity, rates	Consultants, legal fees, strategic studies
\$148million	\$17million	\$36million	\$9.3million

Operational costs for the water supply activity are forecast to increase by an average of 2.8% per year for the first 10 years, and an average of 0.9% per year over 30 years. The most notable increases within the next 10 years occur between Year 1 and Year 5. At this time, direct operating costs are increasing in part due to the expected upgrades to Redwoods and Dovedale rural water supplies and the major infrastructure installations planned within the Waimea Plains Water Strategy. Overall, the increased level of requirements in complying with the Water Quality Assurance Rules, and inflation, will result in an increased operational cost.

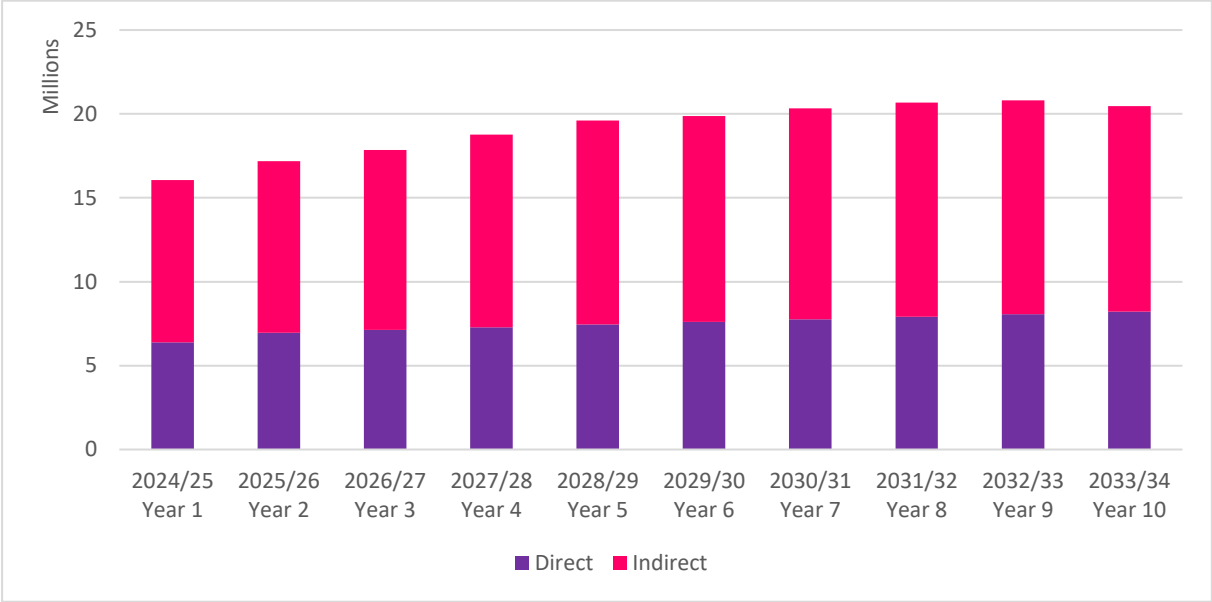


Figure 1: Annual Operating Expenditure for Years 1-10 for Water Supply

1.5.2 Capital Programme

We plan to spend \$143.4 million on capital improvements over the next 10 years. Of this, 27% is attributable to growth, 40% for level of service improvements, and 33% for asset renewal. We will invest most in level of service improvements for the first five years. This is due to the planned water treatment plant upgrades that are required to meet the NZ Drinking Water Standards.

Over the next 30 years, the total funded capital programme is \$276.7 million.

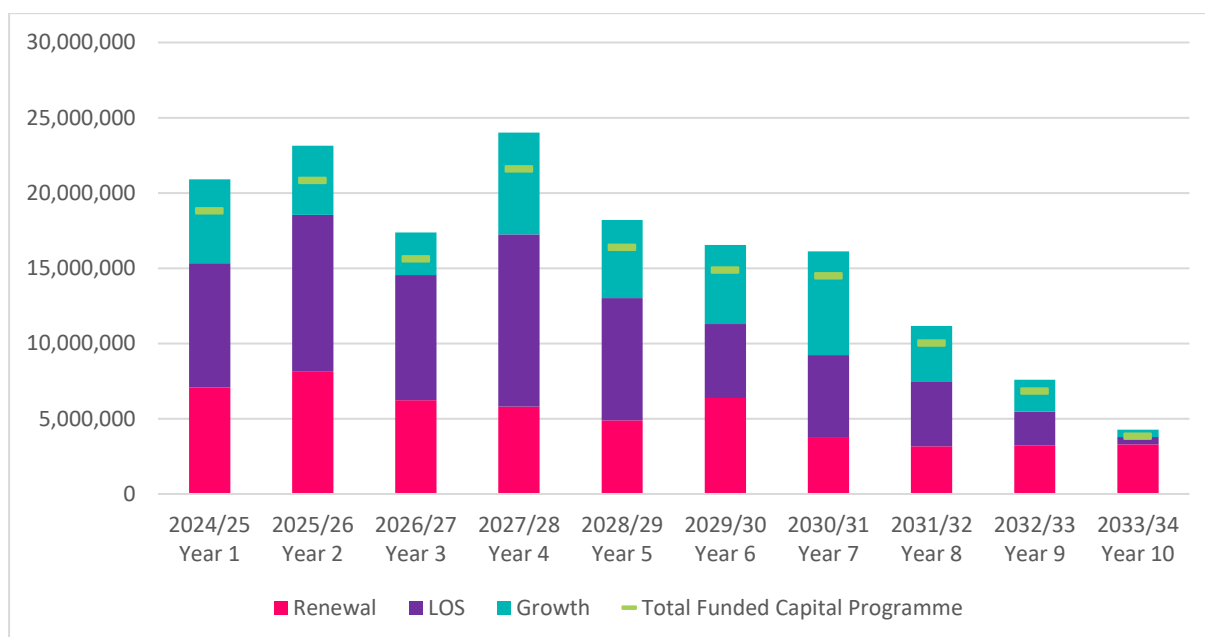


Figure 2: Annual Capital Expenditure for Years 1-10 for Water Supply

1.5.3 What we cannot do

There are some operations and maintenance activities, and capital projects that are required but lower in priority and unable to be undertaken within the next 10 years due to affordability.

The Council has been through an extensive process of ranking the most critical aspects of the programme against a range of parameters, and only the highest scoring work that is most essential has been included.

The remainder of work has either been deferred, reduced in scope or removed from the programme.

1.5.4 Funding Impact Statement

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

1.5.5 Managing the Risks

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

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

1.5.6 Assumptions and Uncertainties

The following uncertainties and key assumptions are identified and specific to the water supply activity:

- As part of ongoing Waters Reforms, the Government is considering repealing the current water legislation and water service entity delivery models potentially into a Te Taihupo (Top of the South Island) shared water services delivery provider. The nature of service delivery upon implementation and timing of these changes is uncertain. For the development of this plan, we have assumed no change in service delivery model for the water supply activity.
- Network residual disinfection has become mandatory as a result. Where not already implemented, we are planning to continue to incorporate the ability to apply chlorination treatment in new and upgraded water treatment plants where required under the Water Quality Assurance Rules.
- We cannot be certain about the quantity of water that industrial users will require into the future. We have assumed that future use by existing industries will be in line with historic use. We have not planned for additional wet industries. If consumption of water is significantly different to what we have assumed, it may have an impact on our future programme and budgets.
- Some uncertainty remains over the decision and direction on the fluoridation of local government drinking water supplies. For this Strategy, we have assumed that our drinking water supplies will not be fluoridated. If the direction to fluoridate is mandated for us and we are directed to fluoridate our supplies, this will create additional capital expenditure and operating costs.
- Due to the uncertainty of how long each asset will last, to assist with renewal planning an average expected life is assigned for types of assets. Some assets will fail before reaching the end of their expected useful life, and some will last longer. We have assumed we will be able to manage this variance within set budgets by prioritising renewals annually.

2 Introduction

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

2.1 Rationale for Council Involvement

The provision of water supply services is a core function of local government and is something that the Council has always provided. The service provides many public benefits and it is considered necessary and beneficial to the community, that Council undertakes the planning, implementation and maintenance of water supply services in the district.


Territorial authorities have numerous responsibilities relating to the supply of water. A key responsibility under the water regulations are the obligations to improve, promote, and protect public health within the District.






This document outlines and summarises the Council's strategic and long-term management approach for the provision and maintenance of water supplies to properties connected to its networks throughout the District. It should be noted that a large number of properties throughout the district have their own supply or are connected to a scheme not owned or operated by Council, and this plan does not cover water supply to these properties.

2.2 Description of Assets and Services

The table below provides an overview of the key water supply groups of assets that are owned and operated by the Council throughout the Tasman District.

Table 1: Key Water Supply Assets

Water Supply		*Replacement Value	*Depreciated Value
	15 Water Treatment Plants	\$17.0M	\$10.2M

Water Supply		*Replacement Value	*Depreciated Value
	28 Pump Stations	\$4.1M	\$1.6M
	802 km of reticulation pipe	\$130M	\$105.9M
	5029 Valves	\$10.5M	\$4.8M
	1659 Hydrants	\$5.3M	\$3.2M
	450 Backflow prevention devices	\$0.5M	\$0.3M

Water Supply		*Replacement Value	*Depreciated Value
	88 Reservoirs	\$27.9M	\$12.1M
	12,924 Meters	\$8.5M	\$4.1M
	1620 Rural Restrictors	\$0.5M	\$0.1M
	42 Bores	\$5.8M	\$2.3M
TOTAL VALUE OF OTHER ASSETS		\$12.6 M	\$7.3M
Investment in the Waimea Community Dam (extractive capacity)		\$27.3M	\$27.3M
TOTAL VALUE OF WATER SUPPLY ASSETS and Investments		\$250.1M	\$179.2M

*Note that these assets are currently undergoing a revaluation, and data will be updated when new valuation data is available.

2.2.1 System overview

There are 19 Council Water Supplies within the Tasman District. The table below provides a summary of the supplies, a classification of the type of supply and the way the service is rated/charged. Detailed technical information about each scheme about specific assets information, along with operational plans, is available in 'Active Manuals'.

Schematic diagrams of the features of each scheme are included in Appendix E of this plan.

Table 2: Summary of Water Supplies

Water Supply	Source	Type of Supply (number of connections)	Types of Water Supply Rates
Brightwater/Hope	Groundwater	Metered (1122)	Urban Water Supply Metered connections service charge
			Volumetric charge
		Restricted (325)	Rural Water Extension to Urban Water scheme
Collingwood	Groundwater	Metered (218)	Urban Water Supply Metered connections service charge
		Restricted (1)	Volumetric charge
Dovedale	Surface take	Restricted (305)	Dovedale Rural Water Supply – differential A
			Dovedale Rural Water Supply – differential B
Eighty-Eight Valley	Surface take	Restricted (180)	Eight-Eight Valley Rural Water Supply Service charge
			Variable charge (based on restrictor volume)
Hamama	Surface take	Restricted (24)	Hamama Rural Water Supply Service Charge
			Variable Charge
			Fixed Charge based on set land value
Kaiteriteri/Riwaka	Groundwater	Metered (627)	Urban Water Supply Metered connections service charge
			Volumetric charge
Māpua /Ruby Bay	Groundwater	Metered (953)	Urban Water Supply Metered connections service charge

Water Supply	Source	Type of Supply (number of connections)	Types of Water Supply Rates
			Volumetric charge
		Restricted (239)	Rural Water Extension to Urban Water scheme
Motueka	Groundwater	Metered (1358)	Motueka Water Supply metered connection service charge
			Volumetric charge
			Motueka firefighting rate
Murchison	Groundwater	Metered (305)	Urban Water Supply Metered connections service charge
			Volumetric charge
Pōhara	Surface take	Metered (53)	Urban Water Supply Metered connections service charge
			Volumetric charge
Redwood Valley 1	Groundwater	Restricted (405)	Redwood Valley Rural Water Supply (based on restrictor volume)
Redwood Valley 2	Groundwater	Restricted	Redwood Valley Rural Water Supply (based on restrictor volume)
Richmond	Groundwater	Metered (6325) Incl. with Hope/Brightwater	Urban Water Supply Metered connections service charge
			Volumetric charge
			Rural Water Extension to Urban Water scheme
Tākaka	Groundwater	Fire-fighting Supply	Tākaka Firefighting Operating
			Tākaka Fighting Capital – with differentials based on location
Tapawera	Groundwater	Metered (166)	Urban Water Supply Metered connections service charge
			Volumetric charge
Upper Tākaka		Metered (18)	Urban Water Supply Metered connections service charge

Water Supply	Source	Type of Supply (number of connections)	Types of Water Supply Rates
			Volumetric charges
Wai-iti Valley Community Dam	Surface take	Water source supply only	Wai-iti Valley Community Dam Rate
Waimea Community Dam	Surface take	Water source supply only	Urban Water Supply Metered connections service charge
			Volumetric charge
			District-wide General Rates
			Environmental and Community Benefits District-wide Rate
Wakefield	Groundwater	Metered (804)	Environmental and Community Benefits Zone of Benefit Rate
			Urban Water Supply Metered connections service charge
		Restricted (66)	Volumetric charge
			Rural Water Extension to Urban Water scheme

The water supply networks typically consist of three asset categories water source, treatment; and distribution infrastructure.

The water *source* is the origin of where the raw water is taken from, either collected from creeks, rivers, lakes, dams via intake galleries or from groundwater aquifers via bores and wells.

Water *treatment* is the process of removing sediment, contaminant particles and harmful micro-organisms and dosing before the water supplied reaches the customer. Treatment generally consists of three steps; clarification and balancing, filtration and disinfection. Examples of treatment infrastructure includes, aeration towers, cartridge filters, monitoring, pH adjustment, UV and Chlorine disinfection equipment.

Water supply *reticulation* includes all the component structures of a water distribution network. Examples of reticulation infrastructure includes pipes, valves, hydrants, reservoirs, meters and restrictors.

2.2.2 Water Supply Schemes

2.2.2.1 Brightwater/Hope

The Brightwater/Hope supply serves an estimated population of around 2100 people in a mix of urban and rural lifestyle/agricultural properties and some commercial properties in the Brightwater urban area, the Main Road Hope area and the following rural extensions areas:

- Mt Heslington Road, to River Terrace Road;
- Teapot Valley;
- Jeffries Road;
- Hope, including Paton Road and Pugh Road.

The scheme takes water from three bores located close to the Wairoa River, near the Brightwater Bridge (SH6). Bore water is pumped to a water treatment plant, chlorinated and pumped via the network to the reservoirs located at Katania Heights. Adjacent to the main reservoir, an on-demand booster pump station maintains supply pressure to Katania Heights properties located at higher elevations.

In emergency events, water can be diverted from either the Richmond Water Supply or the Wakefield Water Supply to supply Brightwater/Hope for a limited period.

During periods of heavy rain the increased turbidity in the Wairoa River affects the bore water quality. The higher turbidity water reduces the effectiveness of the chlorination. In the past (April 2017) this has led to the Council to issue a Boil Water Notice.

This scheme is subject to Tasman Resource Management Plan rationing rules associated with the Waimea Community Dam (WCD). Users of this scheme are likely to experience rationing restrictions until the WCD is operational.

The installation of a new borefield and Water Treatment Plant in Clover Road is planned in Council's current Long Term Plan(LTP) to utilise Council's water allocation from the WCD scheme and provide secure drinking water for both Brightwater and Wakefield into the future.

2.2.2.2 Collingwood

The Collingwood water scheme services approximately 244 permanent residents and was commissioned in January 2004. Shallow bores situated off Swamp Road beside the Aorere River, supply water to the treatment plant and water is then pumped to the network and to the in-ground reservoir at Swiftsure Street . The groundwater source is considered unsecure because the bore is less than 10m deep and the bore head is subject to flooding from the Aorere River. the pump controls are elevated above the 50-year flood plain.

2.2.2.3 Dovedale

The Dovedale water supply is sourced via a surface take from Humphries Creek, a tributary to the Dove River. The Dovedale water supply covers a large rural area, supplying properties in the Dovedale, Rosedale and Upper Moutere areas. The scheme includes approximately 160km of pipelines, with a large proportion of small diameter pipe. The area has steep terrain and relies on a significant amount of pumping and on-pumping to reservoirs at a range of elevations and break-pressure tanks to manage the pressure of water delivered to customers. The majority of reticulation is on private land and access to some sites is difficult, particularly during winter periods.

The scheme was constructed in 1977 as a stock water/farming supply with a 1:1 Government subsidy. Since this time, the scheme has expanded.

The two reservoirs at Thorn's and Silcocks are the two main storage facilities for the scheme. Between the Water Treatment Plant (WTP) and Thorns, three pump stations boost water up to smaller high-level reservoirs. From Silcocks Reservoir the Upper Moutere and Rosedale area are fed by gravity with the water passing through numerous break-pressure tanks.

The WTP is located on Dovedale Road near the confluence of the Humphries Creek and Dove River. Treatment consists of inline chlorination. There has been a permanent boil water notice in place since 1989. This is due to the poor quality of the source water (high turbidity), especially during heavy rain. There are 305 restricted rural connections (December 2020) and no metered connections. The estimated population of Dovedale is approximately 450-500 people. Dovedale water supply has been nearly fully allocated however recently more units are becoming available as the unit cost increases.

Logging operations on the private land surrounding the intake are planned to commence in 2024/25 and may effect water quality and availability. Council is currently upgrading the lower intake and has completed upgrades to the Water Treatment Plant to improve water quality. Early feasibility planning is underway for a new source in the Motueka River Valley, pumping and pipelines to provide a more sustainable, secure and high-quality water supply for the current Dovedale scheme.

2.2.2.4 Eighty Eight Valley

The Eighty-Eight Valley rural water scheme source is a stream locally known as Parkes Stream which is a tributary of the Eighty-Eight Valley Stream. Water flows from this source by gravity to reservoirs (30m³ plastic tanks) at Totara View Road. The scheme was constructed in 1981 primarily as a stock water scheme and since then the scheme has expanded to include a number of residential and lifestyle properties.

Treatment includes chlorination only. In periods of heavy rain, the increase in turbidity of the source water reduces the effectiveness of the chlorination.

There are two closed valves that link the scheme with the Brightwater and Wakefield schemes.

There are 180 restricted rural connections and no metered connections. The population served by the Eighty-Eight Valley is estimated to around 450 people. Some of the restrictors are to rural farm tanks only and do not supply water to domestic premises. The Eighty-Eight Valley water supply is fully allocated and there is a waiting list for units and connections.

In the future, Council proposes to supply the majority of customers (residential and lifestyle properties) from the Wakefield water supply, and divest the remainder of the 88 Valley scheme to the few remaining farm properties south of Totara View, with larger unit allocations.

2.2.2.5 Hamama

The Hamama water supply system was installed during the late 1950s. The water is not treated and has been classed as a non-potable supply, intended mainly for stock use. Many residential dwellings are fed off the 24 restricted connections and are supplied water that is used for drinking.

The stream catchment is an 80 hectare area of land owned by the Council and designated as a water supply reserve area. A user committee operates the supply under a Golden Bay County Council bylaw. The Council rates the supply area to provide maintenance and operations funding for the management committee but has no direct involvement in maintaining the scheme.

The scheme was originally designed for 10 farms, but demand has grown considerably with rural subdivision and now it is reported that the system operates at its maximum capacity in the dry summer periods. The population served by the Hamama scheme is estimated to be approximately 60 people.

In the future the Council is planning to divest this scheme to the User Committee and customers connected to this network.

2.2.2.6 Kaiteriteri/Riwaka

The Kaiteriteri water supply was constructed in 1998 and the water is sourced from bores at River Road in Riwaka, which have been recently upgraded.

The system has three supply zones:

1. From River Road bore to the No. 1 booster pumpstation (prior to the main reservoir). This zone includes Riwaka and Riwaka-Kaiteriteri Road as far as the No. 1 booster pump station;
2. From No. 1 booster pump to the main reservoir. This zone includes Tapu Bay, Stephens Bay, Lower Kaiteriteri, Breaker Bay and Honeymoon Bay;
3. From No. 2 booster to the high-level reservoir. This zone includes all the high-level areas of Kaiteriteri above Honeymoon Bay.

There are 627 metered connections in use and no rural extensions off the Kaiteriteri scheme. While all properties at Tapu Bay, Stephens Bay, Little Kaiteriteri, Breaker Bay and Honeymoon Bay are connected to the scheme, not all of these properties use the water as some prefer to use their original rainwater storage supply.

The estimated permanent population of Kaiteriteri is approximately 420 people, however over peak summer holiday periods, when holiday homes are used, and the two campgrounds are at capacity, the population served exceeds 2,000 people.

2.2.2.7 Māpua /Ruby Bay

Māpua and Ruby Bay zones are part of the Waimea water supply.

Water is sourced from five bores along the Waimea River stop bank. These deliver water to a balance tank at the WTP in Lower Queen Street. The water is chlorinated inline before the contact tanks and dosed with lime (for pH correction) before being pumped across Rabbit Island to Māpua.

The Māpua/Ruby Bay zone serves a mix of urban and rural properties with some commercial use connections. There are 953 metered connections and 239 restricted rural connections and a total estimated population of approximately 2,238.

The Māpua /Ruby Bay zone starts on Lower Queen Street and covers the golf course and houses on Best Island, Bell Island wastewater treatment plant, public facilities at Rabbit Island and the urban areas of Māpua and Ruby Bay. The main reservoirs are located at Pomona Road. A pump station at the Pomona Road Reservoirs delivers water to a high-level reservoir site at Stagecoach Road. This reservoir supplies the rural extension areas of Old Coach Road, Marriages Road, Seaton Valley Road, Ruby Bay Bluff and Permin Road.

A small pump station on Brabant Drive boosts water up to a reservoir site and pump station at Pine Hill Heights. This supplies water by both gravity and pressure system to the Brabant Pine Hills Heights area.

There is also a booster pump at the Māpua Wharf that can be used to increase flow when required.

Recent infrastructure upgrades are complete including:

- Upgrading the trunk main along Aranui Road and Strafford Drive;
- Installing a new main along Rabbit Island;
- Upgrading the Pomona Road and Stagecoach Road Reservoirs.

2.2.2.8 Motueka

The Motueka township does not have a fully reticulated urban water supply. Where there is no reticulated water supply shallow private bores are generally used. There are no rural residential extensions off the scheme. There are 1,358 metered connections and no restricted rural connections. The population of Motueka is approximately 7,200.

A new Water Treatment Plant (WTP) and source water bores in Parker Street, is now fully operational and includes UV, filtration, and chlorine treatment.

2.2.2.9 Murchison

The Murchison water supply takes water from two bores situated in farmland between the water treatment plant and main pump station and the Matakita River. The bores are less than 10m in depth and deemed unsecure.

The Murchison water supply services the Murchison urban area, with an rural extension to Longford. There are 305 metered connections and one restricted connection to the Tasman District Council Stock Effluent Facility. The population of Murchison is approximately 430 people.

2.2.2.10 Pōhara

The Pōhara Valley water supply is sourced from a surface intake at Winter Creek. The scheme supplies water to residents in the Pōhara Valley and the Pōhara Campground.

There are 53 metered connections and no rural extensions or restricted connections.

Approximately 70% of the permanent homes in the area are holiday homes.

The Pōhara camping ground can increase to more than one thousand water users during the summer months. The campground is the largest user of the scheme and has installed 90m³ of storage as a buffer for emergencies.

Most of the year the scheme is considered a small supply but during months of summer when the campground is busy and the baches are full (mid-December to mid-February) the scheme is considered minor. This means extra monitoring needs to be carried out.

The Water Treatment Plant (WTP) has UV, membrane filtration and chlorine disinfection.

Water storage reservoirs located in Haile Lane provide sufficient storage capacity for up to five days supply if an emergency shutdown of the water treatment facility is required.

2.2.2.11 Redwood Valley 1 and 2

The Redwood Valley Rural Water Supply scheme consists of two schemes (1 and 2) linked via closed valves in the reticulation. Redwood Valley 1 services the inland Redwood Valley area between Eves Valley and Moutere Highway. Redwood Valley 2 services the coastal area between Moutere Highway and the coast to Bronte Road. Most of the reticulation is on private property.

Redwood Valley 1 takes water from a well at Golden Hills Road near the WTP where water is aerated, and chlorinated. Redwood Valley 2 takes water from two bores close to O'Connor Creek on the Coastal Highway, where a second treatment plant is located. A supplementary bore was installed at River Road in 1997. This bore supplies water to both Golden Hills Road and O'Connor Creek treatment plants where it is mixed with the on-site source waters during treatment. The bores/wells are considered unsecure because they are less than 10m in depth.

There are no metered connections on either scheme; Redwood Valley 1 has 97 restricted connections and Redwood Valley 2 has 265. Several connections are to vacant lots yet to be developed and many are to business /commercial /agricultural premises. The registered populations are 370 on Redwood Valley 2 and 180 on Redwood Valley 1. The Redwood 1 and 2 schemes are fully allocated and there is a waiting list to connect to them.

The Council's long-term plan includes budgetting for a centralised treatment plant located near the River Road area that can potentially benefit from the WCD allocation.

2.2.2.12 Richmond

Richmond water supply is taken from two separate sources, five bores at the bottom of Lower Queen Street by the Waimea River and four bores adjacent to Lower Queen Street opposite Nelson Pine Industries. There are also two emergency bores located near the Waimea River. The two water sources are mixed at the Richmond WTP, disinfected using chlorine and UV, and pH corrected using caustic soda. A portion of the Richmond source water has elevated nitrate levels, and the Waimea source water is slightly corrosive; however, mixing the two sources provides a low cost to solution to these issues.

The Richmond scheme services two separate zones Richmond (township) and Waimea Industrial (Wakatu Industrial Estate, houses on either side of Champion Road).

The four main reservoirs that provide storage capacity are Champion Road and Queen Street (at the same elevation) and Richmond East High Level and Richmond Upper on Valhalla Lane. There are also smaller reservoirs at Valhalla Drive, Cropp Place and Faraday Rise. On Hart Road there is a system with a reservoir and pump station that boost pressure to water supplied from the main reticulation system at night to supply new housing development in the area.

Richmond supply serves approximately 14,000 people in Richmond. There are 6,325 metered connections and 48 restricted rural connections on a rural extension in the Haycock Road area. The scheme also provides water to residential areas around Champion Road, and commercial and industrial properties in the Wakatu Industrial area within the Nelson City Council rating area.

The Richmond water scheme typically supplies approximately 8,000 m³ - 9,000 m³ of water per day. The area has experienced significant growth rates, both in residential and commercial development over recent years. This in part has led to an issue with available water quantity and summertime restrictions. This issue is expected to be eliminated with the commissioning and uptake of water allocation from the Waimea Community Dam.

In the event of an emergency, some water can be supplied from the Nelson City Council water supply. There is also a closed valve connection to the Brightwater scheme at Three Brothers Corner where water can be supplied either way.

2.2.2.13 Tākaka

Currently there is no drinking water supply in Tākaka, however a firefighting loop main was installed in the Tākaka CBD in 2011 which is intended to provide for a firefighting service level of FW2. The water is sourced from groundwater and infrastructure includes two bores and pumps with an emergency back-up generator.

2.2.2.14 Tapawera

Tapawera is supplied water from two bores on Tadmor Valley Road. The bores are at a depth of less than 10m and the supply is deemed unsecure. Water is treated with chlorine and UV disinfection; and pH corrected using lime dosing. The Water Treatment Plant (WTP) pumps water to a concrete reservoir on the hill above Totara Street and supplies the township by gravity. Two new exterior bores and a new WTP with filtration, UV and chlorination are planned for construction in 2024/2025.

The population of Tapawera is approximately 300 and there are 166 metered connections to the scheme. One customer is supplied water through a low flow restrictor close to the reservoir. There are no rural extensions to the scheme.

2.2.2.15 Upper Tākaka

The Upper Tākaka water supply takes water from Whiskey Creek. The catchment for the creek is largely an area of steep bush on the northern side of Tākaka Hill. The system supplies untreated water to farmland that the pipeline is laid through and treated water to the Upper Tākaka Township. The Water Treatment Plant (WTP) and reservoir were recently upgraded. Treatment consists of filtration and UV.

There are 19 metered connections and no rural extensions off the Upper Tākaka scheme. The estimated population of Upper Tākaka is approximately 45 people.

2.2.2.16 Wakefield

The Wakefield water supply was constructed in 1973 and in addition to the Wakefield urban area, the scheme also supplies the following rural extensions areas:

- Higgins Road
- Pigeon Valley
- Spring Grove
- Treeton Place
- Wakefield South.

Source water for the Wakefield scheme is extracted from a well with an infiltration gallery close to the Wai-iti River behind the Wakefield fire station. The infiltration gallery is at a depth of approximately 4m. Water treatment includes aeration (for pH correction), UV and chlorination.

The Wakefield water scheme supplies a population of approximately 2,100. All 776 urban connections are metered with an additional 66 restricted connections on rural extensions.

The two main reservoirs are located above Edward Street. Treeton Place has a small reservoir and pump station to supply an area at elevations above the level of the main reservoirs.

A closed valve in Higgins Road links the Wakefield scheme to the Eight-Eight Valley scheme. A trunk main and booster pump in Bird Road interconnects the scheme to the Brightwater scheme. This connection can be used for emergency supply to either township.

2.2.2.17 Wai-iti Dam

The Council manages the Wai-iti water storage dam (also known as the Kainui Dam) which provides supplementary water into the Lower Wai-iti River and aquifer. This enables sustained water extraction for land irrigation at times of low river flows.

2.2.2.18 Waimea Community Dam

Waimea Water Ltd owns and operates the Waimea Community Dam which is near to final commissioning. The Dam provides supplementary water into the Waimea and Wairoa rivers and maintains the recharge the aquifers north of Brightwater. This enables sustained water extraction for land irrigation and urban use along with providing environmental and community benefits.

3 Strategic Direction

Strategic direction provides overall guidance to the decision-making of Council and involves specifying the organisation's objectives, developing policies and plans designed to achieve these objectives, and the allocation of resources to implement these plans.

3.1 Our Goal

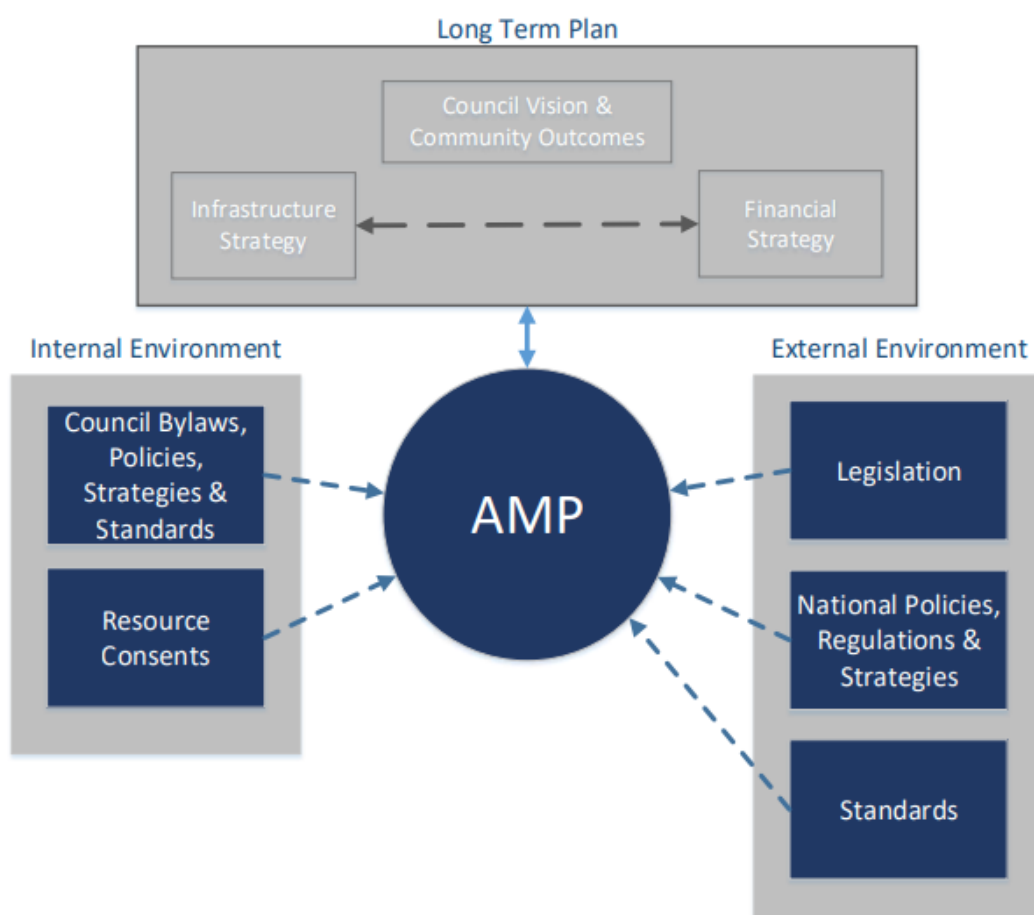
Activity Goal

We aim to provide cost effective and sustainable Water Supply services to our communities, through supplies that meet the required regulatory requirements, and achieve the appropriate levels of service.

3.2 Strategic Alignment

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

The constraints that influence how the Council manages it's activities can be internal or external and include legislation, policies, strategies and standards:



Appendix C in this plan describes the key Council plans and policies with linkages to the Water Supply Activity.

3.2.1 Community Outcomes

The Council operates, maintains and improves the water supply infrastructure assets on behalf of its ratepayers. The water supply activity contributes to the community outcomes as detailed below.

Table 3: How this activity contributes to achievement of the Council's community outcomes

Community Outcomes	Does Our Activity Contribute to the Community Outcome	How Our Activity Contributes to the Community Outcomes
Our unique natural environment is healthy, protected and sustainably managed.	Yes	All of our water schemes take water from the environment (via surface or groundwater) and require a resource consent. We aim to manage water takes so the impact does not prove detrimental to the surrounding environment.
Our urban and rural environments are people-friendly, well-planned, accessible and sustainably managed.	Yes	We consider water supply to be an essential service to the community and our schemes are designed to be efficiently managed to meet current and future needs. Our networks also provide a means for firefighting in alignment with the national firefighting standards.
Our infrastructure is efficient, cost effective and meets current and future needs.	Yes	We aim to efficiently provide water to meet the demands of existing and future customers in a cost-effective manner.
Our communities are healthy, safe, inclusive and resilient.	Yes	We aim to provide water that is safe to drink, and available for firefighting purposes, and delivered and supported by resilient infrastructure.
Our communities have access to a range of social, cultural, educational and recreational facilities and activities.	Yes	Water is an essential service that underpins other facilities and activities.
Our Council provides leadership and fosters partnerships, a regional perspective, and community engagement.	Yes	We take opportunities to partner with Nelson City Council where possible, including agreements to supply some of their customers with water.
Our region is supported by an innovative and sustainable economy.	Yes	Water underpins the economy by providing for our communities enabling them to function. We aim to provide sustainable supplies that are built to cater for the future.

3.2.2 Financial Strategy

The Financial Strategy outlines the Council's financial vision for the next 10 to 20 years and outlines the impacts on rates, debt, levels of service and investments. It guides the Council's future funding decisions and, along with the Infrastructure Strategy, informs the capital and operational spending for the Long Term Plan 2024-2034.

Three key financial limits are established in the Financial Strategy that set the Council's overall financial boundaries for its activities. These include limits include rates income, rates increases and net debt.

Infrastructure expenditure forms a large proportion of the Council's operational expenditure and capital expenditure over the next 10 years, and forecast rate income increases and debt levels are projected to be higher than predicted particularly in years 1-3.

Council has worked hard to prioritise and plan a work programme which addresses the most pressing key issues, while remaining within a acceptable levels of rate increase and debt. This means that some work that was in the programme will be delayed, put on hold or removed from the programme to retain levels of affordability.

3.2.3 Infrastructure Strategy

The purpose of the Infrastructure Strategy is to identify the significant infrastructure issues for Tasman into the future and identify the principal options for managing those issues and implications of those options.

The key priorities in the strategy include:

- Providing services that meet the needs of our changing population
- Planning, developing and maintaining resilient communities
- Providing safe and secure infrastructure
- Prudent management of existing assets and environment.

3.3 Key Legislation and Regulations

This activity is guided by Council Bylaws, Policy Statements and national legislation. Council Bylaws, Legislated Acts and the key National Policies and Standards that apply to the Water Supply Activity are listed in Appendix C of this plan, and they include any subsequent Amendments Acts.

There remains a significant level of uncertainty for Council around the direction and impact of any Government amendments or repeals of the current Water Reforms legislation, and uncertainty when these further changes might occur. This plan is based on complying with the current water legislation.

Legislation is continually being amended and replaced, so for the details of current legislation, refer to <https://www.legislation.govt.nz/>

3.3.1 Te Mana o te Wai

Through the National Policy Statement for Freshwater Management (NPS-FM) the Government has issued local authorities with new direction on how to manage freshwater under the Resource Management Act 1991. Central to this new direction is the concept of Te Mana o te Wai (TMOTW).

Te Mana o te Wai is a concept and framework which is derived out of Te Ao Māori (the Māori world view that acknowledges the interconnectedness and interrelationship of all living and non-living things) and reflects the recognition of freshwater as a natural resource whose health is integral to the social, cultural, economic and environmental wellbeing of communities.

The framework of Te Mana o te Wai is rooted in the development of the NPS-FM by the Iwi Leaders Group and has been a key part of the current NPS-FM since 2014. It establishes a set of guiding principles and a hierarchy of obligations, and refers to the essential value of water, and the importance of sustaining the health and wellbeing of water, before providing for human health needs, and then to other uses.

It expresses the special connection all New Zealanders have with freshwater. By protecting the health and well-being of our freshwater we protect the health and well-being of our people and environments.

There is a hierarchy of obligations in Te Mana o te Wai that prioritises (in order) the:

- Health and well-being of water bodies and freshwater ecosystems
- Health needs of people (such as drinking water); and
- Ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

Te Mana o te Wai



Figure 3: Illustrates the interconnected principles of Te Mana o te Wai

Section 3.2(2) National Policy Statement for Freshwater Management 2020 states every regional Council must give effect to Te Mana o te Wai. This will have implications on how the Water Supply Activity is managed and will likely impact water takes and discharges in the future.

There is a lot of uncertainty around how and when Te Mana o te Wai will be implemented across New Zealand and the Council will work with the Government and our iwi partners to better understand and implement Te Mana o te Wai.

3.4 Our Partners and Stakeholders

3.4.1 Partnerships with Te Taihū iwi

The Council is committed to strengthening partnerships with iwi and Māori of Te Taihū and providing opportunities for Māori involvement in Council decision-making processes in a meaningful way. There are eight iwi that whakapapa and have Statutory Acknowledgements to places within Te Tau Ihu (Top of the South Island) and Te tai o Aorere (Tasman District). They include representation by the following entities:

- Ngāti Apa ki te Rā Tō
- Ngāti Koata Trust
- Ngāti Tama ki te Waipounamu Trust
- Te Ātiawa o te Waka-a-Māui
- Te Rūnanga a Rangitāne O Wairau

- Te Rūnanga o Ngāti Kuia Trust
- Te Rūnanga o Ngāti Rārua
- Te Rūnanga o Toa Rangatira

Tasman District also covers the northern-western part of the Ngāi Tahu takiwā (tribal area/territory). Murchison is within the Ngāi Tahu takiwā and Ngāti Waewae iwi also have interests in this area.

The NPS FM (2020) and Te Mana o te Wai principles connect Ngāti Waewae iwi interests in the catchment area from Lake Rotoiti and the Buller River to the West Coast.

Iwi Management Plans are lodged by iwi authorities and received by Council under the Resource Management Act 1991. Once lodged with Council, they are planning documents that Council is required to take into account when preparing or changing Resource Management Act Plans.

Iwi Management Plans document iwi worldview and aspirations for the management of resources, and help Council and staff to better understand those factors.

The Te Tauihu Intergenerational Strategy is also a key strategic document that is influential in determining our community outcomes.

3.5 Stakeholder engagement

There are many individuals and organisations that have an interest in the management and operation of the Council's assets and services. The Council has a Significance and Engagement Policy which is designed to guide the expectations of the relationship between Council and the communities of the Tasman district.

Stakeholders that the Council consults with about this activity include:

- Elected members (Council and Community Board members)
- Regulatory (consent compliance, national regulatory bodies)
- Fisheries organisations
- Public Health Service (Nelson-Marlborough District Health Board)
- Heritage New Zealand
- Civil Contractors New Zealand (Nelson - Marlborough)
- Utility service providers (Electricity and Telecommunications)
- Affected or interested parties (when applying for resource consents)
- Other territorial and unitary authorities
- Members of our communities.

3.6 Key Linkages

This Plan is to be read with consideration of other Tasman District Council planning documents, including the Activity Management Policy and Infrastructure Strategy, along with the following key planning documents:

- Tasman District Council Long Term Financial Plan 2024-34
- Tasman District Council Annual Plan 2023/24
- Tasman District Council Risk Management Policy
- Tasman District Council Infrastructure Strategy
- Nelson Tasman Future Development Strategy 2023.

4 Key Issues and Responses

4.1 Key issues

The Council has identified key issues specific to the Water Supply activity, which are summarised below.

Table 4: Each of these issues relate to Council's infrastructure priorities

Key Issue	Response
<p>Government Reform and Legislation Changes</p> <p>Government has carried out the Three Waters Reforms programme of regulatory and service delivery reform, intended to address a range of issues and opportunities, including infrastructure investment requirements, funding, affordability, capability and capacity challenges, and water security.</p> <p>In August 2020, The Water Services Regulators Act established Taumata Arowai (Water Services Regulator) to oversee, administer and enforce a new drinking water regulatory system.</p>	<ul style="list-style-type: none"> Directed Government stimulus funding into priority water infrastructure; Council lodged submissions on the new legislation highlighting specific issues in Tasman; Council is committed to complying with the new regulations.
<p>Of the 15 water treatment plants that the Council operates, two supplies – Richmond and Tapawera achieved full compliance. The main reason for non-compliance of the other schemes is a lack of protozoa treatment.</p> <p>In order to comply with the Drinking Water Quality Assurance Rules, Council needs to upgrade existing or build new Water Treatment Plants (WTP).</p> <p>Upgrades to existing Brightwater, Collingwood, Dovedale, Motueka, Murchison, Pōhara, Tapawera, Waimea, and Wakefield WTPs are already complete or underway.</p> <p>The next priority upgrades include, Redwood Valley, and Dovedale. New and upgraded WTPs will mean that the cost of providing water will increase in the future.</p> <p>The Water Safety Plans are required to specifically identify and address the risk for each water supply scheme.</p>	<ul style="list-style-type: none"> Capital works programme to build new or upgrade existing Water Treatment Plants (WTPs); Focus on Water Safety Plans; Development and implementation of a Water Safety Policy based on Water Safety framework; Established internal and external working groups to focus on water safety.

Key Issue	Response
<p>Rural Water Supplies</p> <p>Council currently manages rural water supplies in Dovedale, Eight-Eight Valley, and Redwood Valley (1 and 2). Each supply has its own unique challenges.</p> <p>Each rural water supply operates a closed financial account, so scheme users pay for operational and capital expenditure costs for their scheme only. Other urban water schemes operate a consolidated financial account (referred to as 'Urban Water Club').</p> <p>Aging infrastructure, deferred maintenance and high compliance costs mean some schemes are becoming increasingly costly to run and are financially unsustainable for the users. Some users have already left the schemes, compounding the financial burden on those that remain. This is a particular challenge for Dovedale and Eighty-Eight Valley schemes. In response the Council has agreed to continue to apply an affordability adjustment in the form of a general rate subsidy for these two schemes.</p> <p>None of the rural water supplies are approved Rural Agricultural Drinking Water Supplies (RADWS) and all require significant infrastructure upgrades to address source and treatment challenges.</p> <p>The majority of water supplied from Eighty-Eight Valley and Redwood Valley schemes is used for domestic purposes and would not meet the criteria for Rural Agricultural Drinking Water Scheme (RADWS) approval. Council has included the Dovedale source and treatment plant upgrade project in its' Long Term Plan.</p> <p>To address allocation and drought challenges, the Council is proposing to reconfigure the Eighty-Eight Valley scheme to supply domestic and lifestyle block customers with water from the Wakefield supply.</p> <p>The few large farms near the existing intake are expected to remain on the Eighty-Eight Valley supply and would more likely meet the criteria to be approved as a RADWS. To reconfigure the scheme, a series of infrastructure upgrades are planned, including new reticulation and pump station upgrades.</p> <p>To address treatment challenges on the Redwood Valley schemes, Council is proposing to progress a new source and centralized treatment facility within years 1-3 of its 10-year plan.</p>	<ul style="list-style-type: none"> Planned solutions for Eight-Eight Valley; Planned solutions for Redwood Valley General rate subsidy applied to Dovedale and Eight-Eight Valley users in the interim.
<p>Growth</p> <p>Tasman's population is expected to continue to grow at a similar rate over the next 10 years. Essential water infrastructure needs to be planned for new houses and business expansion.</p> <p>Council has adopted the 2023 Nelson Tasman Future</p>	<p>Various growth-related projects are complete, underway or planned for:</p> <p>Richmond</p> <ul style="list-style-type: none"> New Richmond South Reservoir Completion of new trunk main

Key Issue	Response
<p>Development Strategy. The strategy sets out where future housing and business needs are intended to develop. Enabling Tasman's communities to grow is a priority for the Council. However, the uncertainty of where actual developments may differ from the plans in regards to location, timing, type, scale and rate of development, is a difficult challenge to plan for.</p> <p>The key areas of development in Richmond, Motueka, Māpua, Brightwater and Wakefield require significant investment in water infrastructure to meet growth demand, which can be accommodated through:</p> <ul style="list-style-type: none"> • using existing infrastructure where there is capacity (infill); • upgrading existing infrastructure; and • providing new infrastructure where required. <p>Council is also planning a new WTP and source bores near Brightwater to utilise it's allocation from the Waimea Community Dam and install new trunk mains from Brightwater to Wakefield, to ensure security of supply and good quality water for Wakefield. Eighty-Eight Valley will be also reconfigured and most domestic users will be supplied from the Wakefield supply.</p> <p>Council is continuing to complete a multi-year project for the development of new trunk mains in Richmond and a large reservoir in Richmond South in 2023/24 to meet growth demand.</p>	<p>Motueka</p> <ul style="list-style-type: none"> • New Water Treatment Plant at Parker Street and trunk water mains <p>Māpua</p> <ul style="list-style-type: none"> • Upgrades to pipelines • Completion of Aranui/Stafford trunk main • Completion Rabbit Island and Best Island trunk main. <p>Brightwater/Wakefield</p> <ul style="list-style-type: none"> • Upgrades to trunk mains • New Water Treatment Plant • Upgrades to Bird Road Pump Station.
<p>Climate Change and Resilience</p> <p>The investment required to ensure our water supply infrastructure can withstand the effects of climate change and natural hazard events presents a significant challenge for Council.</p> <p>The detail Council expects changes to Tasman's climate is described in <u>Section 9: Climate Change, Natural Hazards</u> and <u>Environment</u> of this plan describes in greater detail how Council is intending to plan for the potential impacts to Water supply services from Climate Change and Natural Hazards including impacts including:</p> <ul style="list-style-type: none"> • Changing temperatures and seasonality; • Changing rainfall patterns and intensity; and • Changes to sea level and coastal hazards. <p>The Council is investing in water security projects</p>	<p>The Council has and will be continuing to invest in water security through projects including:</p> <ul style="list-style-type: none"> • Waimea Community Dam; • Supplementary source for Wai-iti Dam; • New bores at Clover Road; • New storage reservoirs at Richmond South; • Upgrades to Pomona Road and Stagecoach Reservoirs; • Kaiteriteri Reservoir Improvements; and • New Motueka Reservoir at Recreation Centre; and • Filtration systems at Water Treatment Plants (WTPs);

Key Issue	Response
<p>including the regionally significant Waimea Community Dam, a supplementary water source for the Wai-iti Dam, new bores at Clover Road, upgrading the existing intake at Dovedale.</p> <p>At the other end of the climate spectrum is intense or prolonged rainfall events. Often during these events, river become turbid and surface takes in creeks and rivers and bores located adjacent to rivers can be affected making it unsafe to drink.</p> <p>The Council is investing in filtration systems at some treatment plants to remove sediment so we can provide safe and reliable and safe supply.</p> <p>Network Redundancy</p> <p>The Council also considers and plans for network redundancy- when there are service outages from either power cuts or asset failure. This means we are able to provide service continuity or resume service quickly.</p> <p>The Council is planning to invest in providing in interconnected loops mains for our major piped networks and emergency backup generation at critical infrastructure such as Water Treatment Plants (WTPs) and pump stations.</p> <p>In 2019, the Council adopted the Climate Change Action Plan. The plan sets out goals, targets and actions relating to three key themes:</p> <ul style="list-style-type: none"> • Mitigation - how we can reduce greenhouse gas emissions from the Council's activities; • Adaption - ways we can respond to our changing environment, including positive opportunities; and • Leadership – how we can lead by example, advocate; • and encourage others to take action. <p>Sea level Rise (SLR)</p> <p>SLR means that some coastal infrastructure will become more vulnerable to inundation. The Council needs to consider and strategically plan if, how and when to move critical infrastructure inland. This is a major conversation to be had with the community and will take some time.</p> <p>In the shorter term, the Council have identified that the existing Richmond bores located on the coastal margin and have historically experienced salt-water intrusion in times of extreme drought when the aquifer level is low. There are plans to more these</p>	<ul style="list-style-type: none"> • Dovedale new source and upgraded WTP to remove sediment. <p>In addition to investing in infrastructure, the Council has other tools and levers available to manage demand. These measures include a Water Restrictions Protocol, promoting sustainable water use behaviours, education programmes, leak detection and network modelling.</p> <p>Initiatives for improved resilience</p> <ul style="list-style-type: none"> • Energy initiatives (solar power, ongoing investigation into battery and fuel cell technology); • Seismic strengthening of WTPs.

Key Issue	Response
bores further inland.	

4.2 Priority of Investments

There are multiple factors that affect the priority of individual water supply projects or work streams. These include:

- The need to protect public health and safety;
- The need to conserve and enhance the natural environment;
- Statutory compliance;
- Meeting growth and the needs of future demand;
- Readiness to implement works
- Benefits and risks
- District distribution

The Council has applied the following principles when developing its programme of works in order to present a programme that is achievable and affordable:

- To continue to meet its fiscal prudence, sustainability and environmental sustainability obligations.
- To keep the medium to long term in focus
- To capitalise on the economic environment (i.e. enhanced borrowing terms, and increased labour and skills availability).
- To make the most of the enhanced opportunities of Government funding, subsidies and other incentives to advance the community outcomes.
- To appropriately size the Council staffing and operational expenditure.

In general, mandatory requirements such as statutory compliance take priority, and discretionary activities have been assigned a lower priority.

A list of the highest priority investments to meet the new legislative water quality requirements, we are planning to build new and upgrade existing water treatment plants to address long term problems of non-compliance with the Water Quality Assurance Rules. Council takes a risk-based approach to prioritise investment.

Table 5: List of Priority Investments, new and upgrading existing Water Treatment Plants (WTPs)

Water Supply	AMP ID	Timing	Comment
Brightwater	86123	2024 - 2034+	A new Clover Road WTP in medium to long term to meet growth needs.
Wakefield			
Dovedale	86018	2024-2027	Dovedale - new source and treatment upgrades.
Redwoods	86037 86039 86146	2024- 2027	Replace O'Connor's Creek and Golden Hills WTPs to with new combined WTP near River Road.
Tapawera	86059	2024-2026	Install two new bores; construct new WTP building with filtration and UV; reuse of existing pH and Chlorination equipment to improve water quality assurance and resilience.
Murchison	86033	2024-2026	WTP upgrade including electrical, UV, filters, UVT meter and valves to improve water quality assurance and resilience.

5 Levels of Service

Activity Management Plans set out the levels of service Council seeks to provide the community. Stakeholder groups can often have different and sometimes conflicting expectations of these levels of service and these expectations need to be managed to achieve the best value overall outcomes for communities.

The levels of service set the standards Council aims to meet when providing a service in support of community outcomes. They are the measurable effect or result of a Council service, and can be described in terms of quality, quantity, reliability, timelines, cost or other variables.

The Council aims to achieve these goals while being aware of the cost implications of any changes. This section defines the levels of service provision for the Water Supply activity, the current performance, and the measures and targets by which these will be assessed. Performance measures that are included in the Long-Term Plan are assessed annually, and reported through the Annual Report.

Levels of service can be strategic, tactical or operational. They should reflect the current industry standards and be based on:

- Customer Research and Expectations: Information is obtained from customers and stakeholders on the expected types and quality of service provided.

- **Statutory Requirements:** Includes the relevant legislation, regulations, environmental standards and Council bylaws that impact the way assets are managed (resource consents, building regulations, health and safety legislation). These requirements set the minimum level of service to be provided.
- **Strategic and Corporate Goals:** Provide guidelines for the scope of current and future services offered and the manner of service delivery, and define the specific levels of service the organisation aims to achieve.
- **Best Practice and Standards:** Specify the design and construction requirements to meet the levels of service and needs of customers.

5.1 Our Levels of Service

The table below summarises the levels of service and performance measures for the Water Supply activity.

Table 6: Levels of Service and Performance Measures

Levels of Service	Performance Measure (we will know we are meeting the level of service if...)	Current Performance	Future Performance Targets			
		2022/2023	Year 1	Year 2	Year 3	By Year 10
			2024/2025	2025/2026	2026/2027	2027 -2034
Our water takes are sustainable.	<p>Compliance with resource consent is achieved, as measured by the number of:</p> <ul style="list-style-type: none"> • abatement notices • infringement notices • enforcement orders • convictions • received in relation to those resource consents. <p>All resource consents are held in DORIS.</p>	<p>Achieved.</p> <p>In 2022/2023 compliance was achieved with all consents.</p> <p>(Target: 0).</p>	0	0	0	0
Our water takes are sustainable.	<p>The volume and percentage of real water loss from the network is less than the target.</p> <p>Total real loss= total water provided - water metered - non-revenue water. % = L real loss divided by average L usage per connection as yearly average.</p> <p>Mandatory measure 2.</p>	<p>Achieved</p> <p>2022/2023: weighted district average of 25% total network water loss</p> <p>(Target: ≤25%)</p>	≤25%	≤25%	≤25%	≤25%
Our use of the water resource is efficient.	<p>Water loss does not exceed 4.00 as measured by the Infrastructure Leakage Index (ILI).</p>	<p>Measure was introduced 2018 and for the 2022/23 period a weighted District wide 3.3 ILI.</p>	<4.00	<4.00	<4.00	<4.00

Levels of Service	Performance Measure (we will know we are meeting the level of service if...)	Current Performance		Future Performance Targets			
		2022/2023	Year 1	Year 2	Year 3	By Year 10	
			2024/2025	2025/2026	2026/2027	2027 -2034	
Our water takes are sustainable.	The average urban consumption of drinking water per person per day is less than the target. Mandatory measure 5.	Achieved. We achieved a total urban average of 220L per person per day in 2022/23.	<250L per person/day	<250L per person/day	<250L per person/day	<250L per person/day	
Our water is safe to drink.	Minimise the number of temporary advisory notices issued to customers to boil water.	Achieved. (Target 0).	0	0	0	0	

Levels of Service	Performance Measure (we will know we are meeting the level of service if...)	Current Performance					Future Performance Targets			
		2022/2023	Year 1		Year 2	Year 3	By Year 10			
			2024/2025		2025/2026	2026/2027	2027 -2034			
Our water is safe to drink.	<p>We comply with Part 4 (bacterial compliance criteria) of the Drinking Water Standards.</p> <p>As measured by the number of schemes with:</p> <ul style="list-style-type: none"> plant compliance, and zone compliance. <p>As determined by the Ministry of Health - Annual Drinking Water Survey:</p> <p>Mandatory measure 1.</p>	<p>Not Achieved.</p> <p>2022/2023:</p> <p>For the last compliance year (ending June 30, 2023), four plants did not comply (Collingwood, Dovedale, Eight-Eight Valley and Pōhara); and one distribution zone (Dovedale) did not comply.</p> <p>The reason for plant non-compliance:</p> <p>Collingwood: E coli detected.</p> <p>Dovedale: High turbidity and chlorine levels <0.2mg/l.</p> <p>Eighty-Eight Valley: High turbidity.</p> <p>Pōhara: E.coli transgression at the plant.</p> <p>The reason for zone non-compliance:</p> <p>Dovedale: E.coli detected. There is a permanent boil water notice on the Dovedale supply. See table 20 below.</p> <p>Refer to table below.</p>	Plant compliance	Plant compliance	Plant compliance	Plant compliance	Plant compliance			
			100% compliance	100% compliance	100% compliance	100% compliance	100% compliance			

Levels of Service	Performance Measure (we will know we are meeting the level of service if...)	Current Performance		Future Performance Targets			
		2022/2023	Year 1	Year 2	Year 3	By Year 10	
			2024/2025	2025/2026	2026/2027	2027 -2034	
Our water is safe to drink.	<p>*We comply with Part 5 (protozoal compliance criteria) of the Drinking Water Standards.</p> <p>As measured by a number of schemes with compliant protozoa treatment determined by the Drinking Water Assessor.</p> <p>Mandatory measure 1.</p> <p>*Note that WTP upgrades are included in this plan to achieve compliance in this mandatory measure. The target remains 100%, given that the upgrades will be implemented during this AMP timeframe.</p>	<p>Not Achieved</p> <p>2022/2023: 12 zones failed compliance.</p>	*100% compliance	*100% compliance	*100% compliance	100% compliance	
Our water supply systems provide fire protection to a level that is consistent with the national standard.	<p>Annually test, and achieve at least 95% compliance with FW2 standards, for 15 randomly selected fire hydrants in Richmond, and not less than five randomly selected fire hydrants in each of the other urban supplies in our District.</p>	<p>2022/2023: 95% in the random sampling were compliant.</p>	95%	95%	95%	95%	
Our water supply systems are built, operated and maintained so that failures can be managed and responded to quickly.	<p>Planned service interruptions do not exceed eight hours as required under section 69S (3) of the Health Act 1956.</p> <p>As measured through the maintenance contract reporting.</p>	<p>Achieved.</p> <p>In 2022/23 there were no planned service interruptions that exceeded 8 hours.</p> <p>(Target <8 hours).</p>	<8 hours	<8 hours	<8 hours	<8 hours	

Levels of Service	Performance Measure (we will know we are meeting the level of service if...)	Current Performance 2022/2023	Future Performance Targets			
			Year 1	Year 2	Year 3	By Year 10
			2024/2025	2025/2026	2026/2027	2027 -2034
Our water supply activities are managed at a level that the community is satisfied with.	Percentage of customers (who receive a service) are satisfied with the water supply. Measured through the annual residents' survey.	Achieved. 80% of customers (who receive a service) were satisfied or very satisfied. (Target: 80%).	≥80%	≥80%	≥80%	≥80%
Our water supply activities are managed at a level that the community is satisfied with.	Complaints per 1000 connections are less than the target - relates to clarity, taste, odour, pressure or flow, continuity of supply and the Council's response to these issues. Justified complaint defined as a notification of a drop in LOS. Measured Confirm database and NSC system. Mandatory measure 4.	Not Achieved. 33 complaints per 1000 connections. (Target: <20).	<20	<20	<20	<20
Our water supply activities are managed at a level that the community is satisfied.	Median response times are within targets for urgent callouts (<2 hours). Median response times are within targets for non-urgent callouts (<48 hours). Mandatory measure 3.	Achieved 2022/2023: response times of 1.5 hours for urgent callouts, and 3.5 hours for non-urgent callouts.	<2 hours <48 hours	<2 hours <48 hours	<2 hours <48 hours	<2 hours < 48 hours

Levels of Service	Performance Measure (we will know we are meeting the level of service if...)	Current Performance		Future Performance Targets			
		2022/2023	Year 1	Year 2	Year 3	By Year 10	
			2024/2025	2025/2026	2026/2027	2027 -2034	
Our water supply activities are managed at a level that the community is satisfied with.	Median resolution times are within targets for urgent callouts (<24 hours). Median resolution times are within targets for non-urgent callouts (<8 working days). Mandatory measure 3	2022/2023: resolution times of 6.5 hours for urgent callouts, and 30 hours for non-urgent callouts.	<24 hours	<24 hours	<24 hours	<24 hours	
			<3 working days	<3 working days	<3 working days	<3 working days	

5.2 Level of Service Changes

The Council reviews its levels of service every three years, as part of the Long Term Plan process. The Levels of Service from the previous Long Term Plan have been retained with some minor amendments.

The new water services regulator Taumata Arowai and the Water Quality Assurance Rules have generally increased the level of compliance and requirements relating to reporting of performance measures. Taumata Arowai has introduced the requirement for Protozoa treatment.

These additional requirements will be integrated into existing levels of service and will result in increased operational cost, and additional capital expenditure to implement the required treatment upgrades, for example, to meet the protozoa treatment mandate.

5.3 Level of Service Performance and Analysis

5.3.1 Compliance with Resource Consent

During the drought in January-March 2019, the Wakefield water supply exceeded the allowable take on 2 occasions and was issued two separate infringements notices. In the period following, the Wakefield supply extraction volumes have declined as one of the gallery intakes has degraded and struggled to maintain consistent yields. The supply has remained within its consented limits as have all other supplies.

The performance target will remain at 100% compliance in the future.

5.3.2 Volume and Percentage of Water Loss

Water loss is a critical factor in managing all water supply schemes and is an indicator of network efficiency. At any given time, there will be losses occurring in the operation of our networks and measurements are used to identify trends or significant leaks. There are various tools available to monitor losses. The Council use the Benchloss NZ tool to calculate water loss. Identifying changes in water use is an important part of the ongoing network maintenance. Water loss can occur due to several factors including:

- Authorised unbilled use (Fire Service, flushing);
- Apparent Losses (meter inaccuracy or theft);
- Real losses (leakage).

We compare the loss as a percentage of water input making an allowance for unbilled consumption and meter inaccuracies. Currently, the Council do not report on water loss in the rural networks, as these systems are not metered. Measures are taken to monitor flows and help identify anomalies and any significant changes in use volumes. The tools currently used to monitor losses include:

- Changes in daily water production which is graphed and reported on each week;

- Night flow monitoring through our SCADA system by looking at flow into the system during the period from approximately 1am to 5am when normal usage should be at a minimum.

The 2021 AMP set the target of under 25%, which has been achieved and this weighted District average of $\leq 25\%$ actual water loss remains the performance target for the future.

The LTP includes an ongoing budget of approximately \$155,000 per annum for leak detection and day/ night flow monitoring and network modelling to help identify and address the water losses. We intend to continue to target poor performing urban water schemes to reduce water loss.

We endeavour to fix all leaks when reported but prioritise fixing largest leaks first.

Demand Management is measured by Average Urban Consumption ensures demand does not outstrip capacity. Demand for water tends to be highest between December and March. There are seasonal variations in settlement such as Kaiteriteri, Pōhara and Collingwood that experience an influx of visitor's particularly in the summer months. The performance measure target is at <250L per person per day.

5.3.3 Temporary Advisories (Boil Water Notices)

A performance measure related to the number of temporary advisories gives an indication about the safety record of this performance measure. The target is to issue no temporary boil water advisories. There is a permanent boil water notice in place at Dovedale, which is not covered in the targets as it is permanently in place.

5.3.4 Water Safety Plans

The performance measure related to Water Safety Plans (WSPs) indicates that the Council ensures practicable steps are taken to ensure public safety in relation to drinking water. The World Health Organization (WHO) defines water safety plans as the 'use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer', and promotes them as 'the most effective means of consistently ensuring the safety of a drinking-water supply'.

These plans provide the benefit of reducing the likelihood and consequence of contaminants entering into water supplies. The table below illustrates the status of WSPs that are required.

Table 7: Summary of water safety plans including status and expiry date

Supply Scheme/Area	Water Safety Plan Status			Last Updated	Update Due
	In place	Expired	Approved		
Brightwater/Hope	√		√	2017	2024
Collingwood	√		√	2019	2024
Dovedale	√				

Supply Scheme/Area	Water Safety Plan Status			Last Updated	Update Due
	In place	Expired	Approved		
Eighty-Eight Valley	√				
Kaiteriteri/Riwaka	√			2020	2025
Māpua /Ruby Bay	√		√	2017	2024
Motueka	√		√	2017	2024
Murchison	√			2020	2025
Pōhara	√		√		2024
Redwood Valley 1	√		√		2024
Redwood Valley 2	√		√		2025
Richmond	√		√	2021	2025
Tapawera	√		√	2022	2026
Wakefield	√		√	2017	2024
Upper Tākaka	√		√	2016	2024

5.3.5 Compliance with Fire Fighting Pressure

The performance measure introduced in 2018 is applicable to metered supplies only. Rural and smaller community water supplies do not currently provide sufficient firefighting capability and are therefore not covered by this measure. Tākaka has a reticulated firefighting scheme in the town centre only and in addition to reticulated streets Motueka has a network of fire wells which provide a limited level of service.

Of the fire hydrants tested, all achieved the minimum flow of 12.5l/sec with residual pressure level meeting the compliance target.

New Zealand Fire Service Firefighting Water Supplies Code of Practice outlines water requirements including flow rate and pressure for firefighting purposes and recommends appropriately located pressured connections and water volume from fire hydrants which are regulated and in the building standard. As a minimum, firefighting supplies need to comply with the code. Firefighting infrastructure such as hydrants need to be maintained and tested to ensure suitability and compliance.

5.3.6 Planned Service Interruptions

This performance target reflects the maximum interruption timeframe guidelines that are recommended in the water services legislation.

Since 2018, the operations and maintenance contractor has started collecting and maintaining records on all planned service interruptions. In 2022/23 there were no planned service interruptions that exceeded the timeframe.

5.4 Customer satisfaction

The most recent residents' survey was undertaken in May 2023. This asked whether residents were satisfied with the water supply activity and included residents that had a Council service and some that were not on a Council service. The results from this survey are summarised below.

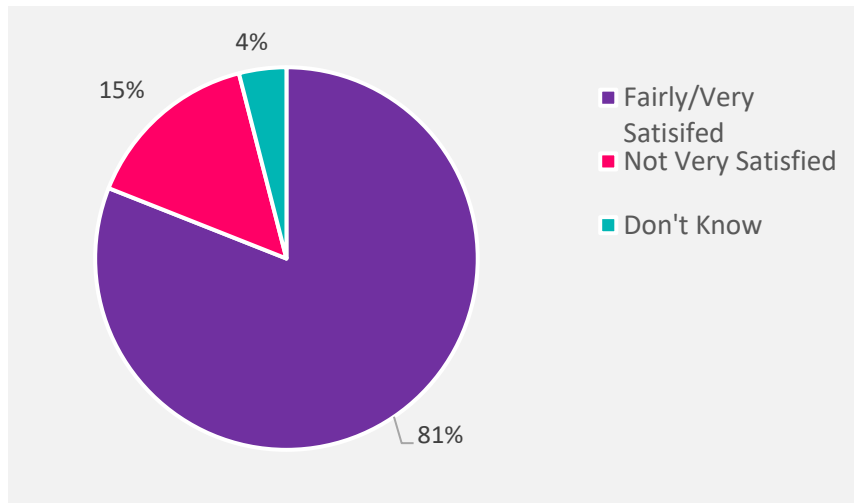


Figure 4: Customer satisfaction (service provided)

The Council undertakes regular surveys to obtain feedback on a range of aspects related to water supply. Information in the survey results inform Council when considering performance measures targets and determining when improved or new infrastructure is required.

There is a range of reasons why some residents were not satisfied with the water supply, these are grouped into broad categories and include:

- Costs of water
- Reticulation network upgrades
- Standard of water quality
- Inadequate supply
- Water chlorination
- Poor water pressure
- Lack of public water supply network.

5.5 Risks to achieving Levels of Service

5.5.1 Water Storage

Storage reservoirs provide water supply in times of network outages or for firefighting purposes. Currently, there are no storage reservoirs in the Motueka supply scheme. There is a backup generator at the new Water Treatment Plant. This generator can power one of the two bores in a power outage.

5.5.2 Other Factors

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

5.6 Risk Management and Assumptions

This Plan and the financial forecasts within it have been developed from information that has varying degrees of completeness and accuracy, creating some inherent uncertainties and assumptions with the potential to impact on the achievement of the Council's objectives.

5.7 Our Approach to Risk Management

The potential impact of a risk is measured by a combination of the likelihood it will occur, and the magnitude of its consequences on a Council objective. Significant risks for Council are managed through Council's risk management strategy, policy and registers.

The Council's Risk Management Framework is under ongoing development and spans the following areas of activity:

- service delivery
- financial
- governance and leadership
- strategic
- reputation
- legal
- regulatory
- health and safety
- security
- business continuity

Some features of the strategy include:

- table of consequences to help determine the Risk Appetite

- Enterprise Risk Register
- identifying risks
- assessing likelihood and consequence
- documenting controls, actions and escalation
- monitoring and reporting

The Council has adopted an approach to risk management that generally follows the Australian/New Zealand Standard ISO 31000:2009 Risk Management – Principles and Guidelines.

5.7.1 Activity Risks and Mitigation Measures

Our present budget levels are generally sufficient to continue to manage risks in the medium term. However, if there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, there will be consequences to the levels of service for users.

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

6 Current and Future Demand

The ability to predict future demand for services enables the Council to plan ahead and identify the best way of meeting that demand. That may be through a combination of demand management and investing in improvements.

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

6.1 Demand Drivers

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

- population growth
- changes in demographics
- climate change
- local economic factors including industrial and commercial demand
- seasonal factors (tourism)
- land use change
- changing technologies
- changing legislative requirements
- changing regional and District planning requirements
- environmental awareness.

6.1.1 Population Growth

There is an increasing demand for water in some urban settlements due to population growth. Rural schemes are fully allocated and any new developments in these areas must be self-serviced.

Population growth is assessed through the Council's growth modelling to provide predictive information (demand and supply) for future development, to inform the programming of a range of services, such as network infrastructure and facilities, and district plan reviews.

The key demographic assumptions affecting future growth are:

- Ongoing population growth over the next 30 years with the rate of growth slowing over time. The overall population of Tasman is expected to increase by 7,400 residents between 2024 and 2034, to reach 67,900.
- An ageing population, with population increases in residents aged 65 years and over. The proportion of the population aged 65 years and over is expected to increase from 23% in 2023 to 28% by 2033.
- A decline in average household size, mainly due to the ageing population with an increasing number of people at older ages who are more likely to live in one or two person households.

6.1.2 Industrial/Commercial Use

The district is growing and with it comes an increasing demand for water from industrial and commercial users. Generally, the industry type and process use will determine the amount of the water these users will consume.

Table 8: Industrial and Commercial Users

Large Industrial Users	Large Commercial Users
Nelson Pine Industries (manufacturer)	Retirement villages
Alliance (meat processor)	Schools (swimming pools)
AICA (chemical manufacturer)	Richmond Aquatic Centre (swimming pool)
Fonterra (dairy cooperative)	Cool stores (refrigerated warehousing)
	Seafood, fruit and food processing plants

Although the industrial/commercial sector is small in proportion to the other users, it is growing and particularly in aquaculture and food processing sectors.

Large industrial users are billed on a volumetric rate and their pricing structures provide incentive to use water efficiently. Nelson Pine Industries is the largest water user. Water efficiency improvements and re-use measures are described on their website that illustrate their approach to water savings.

6.1.3 Tourism

Tasman is a popular tourist destination and there is an increased seasonal demand for water due to an influx of visitors during peak summer periods. Pōhara, Kaiteriteri and Māpua in particular, experience significant increases in demand because of the number of visitors to holiday homes and camping grounds during the summer months.

6.1.4 Climatic Influences and Weather Patterns

Climatic factors including rainfall, temperature and evaporation will affect water supply and demand. The implications of climate change will likely increase the uncertainty in security of supply.

Increases in evaporation have implications for water resources: the amount of freshwater available for abstraction diminishes (in rivers and aquifers) and the amount of water that needs to be abstracted to irrigate a given area of land or to produce a given crop yield increases. Higher rates of evaporation also contribute to more frequent, more intense, or longer droughts. Further discussion on the impact of climate change is included in section 9 of this plan.

6.1.5 Environmental Awareness

There is a growing awareness that water resources are increasingly precious. Consumers are becoming more aware of water efficiency methods and technology such as water-saving/low flow devices, rainwater harvesting, grey water and stormwater re-use. These changes in attitudes and behaviours are likely to have a gradual effect on water demand and help to reduce average water consumption.

6.1.6 Council's Controls/Regulation Tools

The Council has several tools that influence demand including metering and pricing, consent conditions, restrictions, and conservation education programmes. The Council monitors and manages the District's water resource and when conditions are dry, the Council considers restrictions. Water rationing, and restrictions can be placed on both domestic users and users drawing water as part of a resource consent. Rationing and restriction can lower demand in summer months. All urban water supplies have universal metering and the user pays for the volume consumed. Water use can be monitored through metering and charging is a method which generally results in water consumption decreases.

6.2 Assessing demand

The key demographic assumptions affecting future demand include that:

- There will be ongoing population growth over the next 30 years with the rate of growth slowing over time;
- We have an ageing population, with population increases in residents aged 65 years and over; and
- We expect a decline in average household size, mainly due to an ageing population with an increasing number of people who are more likely to live in one or two person household.

The following are used to assess and analyse demand:

- Bulk water abstraction and production – abstraction volumes are derived from bore field data (flowmeters) and production flow is derived from meters at Water Treatment Plants.
- Customer consumption data – based on the six-monthly metering records for urban customers and the monthly records for the larger industrial customers.

An assessment using the standard water balance method estimates network leakage to determine an Infrastructure Leakage Index (ILI). Calculations are conducted to estimate unbilled revenue loss, treatment and energy cost.

6.3 Demand Management

Demand management includes both asset and non-asset strategies to manage demand across the Water Supply activity. The objective of demand management is to actively seek to modify customer demands for services in order to:

- optimise utilisation/performance of existing assets;
- reduce or defer the need for new assets;
- meet the Council's strategic objectives;
- deliver a more resilient and sustainable service; and
- respond to customer needs.

Examples of asset strategies include response times, renewals programmes, codes of practice, technical standards, use of approved standards materials and quality assurance measures.

Non-asset strategies include education materials/campaigns, promotion of new technologies and efficiencies, leak detection and property inspection.

Prudent management includes managing water demand by best using the water that is available. Water demand management involves the adoption of policies to control consumer demand or investment to achieve efficient water use by all members of the community.

6.3.1 Demand Management Measures

Water demand management options can be categorised into two key areas: measures and instruments.

- Measures describe 'what to do' to achieve a reduction in water-use.
- Instruments describe how to ensure that the chosen measures are put into place or taken up.

The table below provides a summary of demand management measures and potential or future measures that could be considered for adoption.

Table 9: Summary of Demand Management Measures

Demand Management Measures and Instruments	Currently Used	Potential to be used in the Future
Measures		
Active leakage control programme	√	
Reactive leakage repair	√	
Bulk metering of rural-restricted areas to improve understanding of demands	√	√
Bulk metering on parts of the rural schemes fitted with advanced technologies connected to a low power wide area network to transmit data		√
Bulk metering of reservoir outlets to improve night flow monitoring.	√	
Customer meter testing and replacement programme	√	
Investigating new sources of water (bores and dam)	√	
Ongoing capital upgrades and renewals programme	√	
Building new drinking water supply infrastructure	√	
Asset renewal planning programme to prioritise infrastructure replacement	√	

Demand Management Measures and Instruments	Currently Used	Potential to be used in the Future
Network Efficiencies		
Water modelling to improve system performance and reduce leakage	√	
Pressure management	√	
Measures - Community Engagement		
Passive education programme with information on the Council website	√	
Community education programmes		√
Targeted education programmes for specific users (rural properties)		√
Advice for residential water efficiency methods		√
Water advisory service		√
Instruments - Regulatory Control		
Restricted connections (trickle feed) to rural properties	√	
Water restrictions during peak summer periods including developing water restriction protocols to guide the Council decision making and to provide customers with information	√	
Active enforcement of water restrictions during peak summer periods		√
Proposing district plan changes or resource consents to require mandatory water efficient fixtures in new construction (mandatory dual-flush toilets in all new toilet installations, grey water, rainwater tanks etc.)		√
Requirement for large customers to prepare demand management plans		√
Water Bylaw (review 2024)	√	√
Preparing a general water conservation policy or demand management policy		√
Mix of Measures and Instruments - Water Efficient Technologies		
Retrofit of water-efficient technologies into the Council properties		√
Assessing non potable sources of supply (grey water)		√
Metering, Pricing and Other Financial Initiatives		
Metering and charging (volumetric pricing) for urban supplies	√	
Increasing volumetric charges for metered customers		√

Demand Management Measures and Instruments	Currently Used	Potential to be used in the Future
Introducing seasonal volumetric charges for metered customers		√
Measures - Water Capture, Reuse and Recycling		
Rainwater tank rebate or subsidy programme		√

7 Lifecycle Management

Lifecycle cost is the total cost to the Council of an asset throughout its life including, creation, operations and maintenance, renewal, and disposal. The Council aims to manage its assets in a way that optimises the balance of these costs. This section summarises how the Council plans to manage each part of the lifecycle for this activity.

7.1 Asset Condition and Performance

The Council needs to understand the condition of its assets as this helps inform asset management decision making. Condition monitoring programmes consider how critical an asset is, how quickly it is likely to deteriorate and the cost of data collection.

Where condition rating is completed, a 1-5 scale is used, in line with the NZQQA Infrastructure Asset Grading Guidelines, as shown in the Table below:

Table 10: Asset Condition Rating:

Condition Grade and Meaning	General Meaning	
1 Very Good	Life:	10+ years.
	Physical:	Fit for purpose. Robust and modern design.
	Access:	Easy; easy lift manhole lids, clear access roads.
	Security:	Sound structure with modern locks.
	Exposure:	Fully protected from elements or providing full protection.
2 Good	Life:	Review in 5 – 10 years.
	Physical:	Fit for purpose. Early signs of corrosion/wear. Robust, but not latest design.
	Access:	Awkward; heavy/corroded lids, overgrown with vegetation.
	Security:	Sound structure with locks.
	Exposure:	Adequate protection from elements or providing adequate protection.
3 Moderate	Life:	Review in five years.
	Physical:	Potentially impaired by corrosion/wear, old design or poor implementation.
	Access:	Difficult: requires special tools or more than one person.
	Secure:	Locked but structure not secure, or secure structure with no locks.
	Exposure:	Showing signs of wear that could lead to exposure.
4 Poor	Life:	Almost at failure, needs immediate expert review.
	Physical:	Heavy corrosion impairing use. Obvious signs of potential failure.
	Access:	Restricted, potentially dangerous.
	Secure:	Locks and/or structure easily breached.
	Exposure:	Exposure to elements evident e.g. leaks, overheating.

Condition Grade and Meaning	General Meaning	
5 Very Poor	Life:	0 years – broken.
	Physical:	Obvious impairments to use. Heavy wear/corrosion. Outdated/flawed design-build
	Access:	Severely limited or dangerous.
	Security:	No locks or easily breeched.
	Exposure:	Exposed to elements when not specifically designed to be.

From the last asset condition surveys completed on above ground assets the overall asset condition of the Three Waters systems has been assessed as reasonable with most assets in condition grade 3 or better.

The Council's maintenance contractor undertakes asset condition assessments in accordance with their Three-Waters Operation and Maintenance contract, including:

- Condition of all above ground assets is assessed every three years to confirm or otherwise determine their appropriate condition grading and update asset management systems as required.
- Assessing the condition of below ground assets is difficult due to the cost of excavating and the risk of introducing a contamination risk. Condition data will be progressively captured as part of the contractor's day to day operation and maintenance when excavation of buried assets occurs.
- All new assets (less than six months old) and all assets with a condition grading of one or two are managed and maintained to at least condition grade 2 or better.
- All other existing assets are managed and maintained to at least condition grade 3 or better.

The Council undertakes periodic sample audits of the condition assessments data provided by the contractor.

The following sections provide a high-level overview of the condition and performance of the water supply networks. Further details about specific assets is captured in Confirm and ActiveManuals™.

7.1.1 Brightwater

Assets in the Brightwater scheme are generally in good condition. Some of the assets in the treatment plant have been recently upgraded and the bore heads were upgraded in 2010. A new reservoir was constructed and commissioned in 2009 to address the lack of storage. Most pipe repairs are on old polyethylene (PE rider mains and service laterals)) and AC pipes. Many of the original PE rider mains have been renewed. A new water source borefield and treatment plant is planned to supply Brightwater and Wakefield.

7.1.2 Collingwood

The Collingwood water supply was commissioned in 2003, and the assets are in relatively good condition.

7.1.3 Dovedale

The original purpose of the Dovedale scheme was to be a stock water scheme. There are regular failures of polythene pipes and Polyvinyl chloride pipe joints, with fewer breaks in the larger diameter AC pipes AC. Pipe failures often relate to low quality materials that were poorly installed, and high operating pressures.

7.1.4 Eighty-Eight Valley

The scheme assets are in mixed condition. The intake and pipe are vulnerable to storm damage and have failed on several occasions. Many of the pipes are at shallow depths with minimal cover and subject to damage from agricultural activities, such as ploughing and installing fencing. In the future as the number of rural residential properties increase, the Council plans to connect these to the Wakefield scheme and allow the Eighty-Eight Valley scheme to revert back to a stock scheme to continue to only supply the few remaining farming properties.

7.1.5 Kaiteriteri/Riwaka

The condition of most of the pipework in the system is good. Most of the infrastructure is of an age where condition problems are not expected. One of the two wooden reservoirs that provide storage for the scheme has recently been relined. These assets have a shorter life than concrete reservoirs.

7.1.6 Māpua/Ruby Bay

The reticulation is mostly in average condition but there are a number of sections of pipeline in Māpua , in particular, Aranui Road, Stafford Drive, Pomona Road, Rabbit Island and Best Island Road, which have recently been replaced. A section of trunk main from the treatment plant to the Pomona Road Reservoir is slow-grade and has burst a number of times since its construction. The first kilometre section of this main has been replaced. A new concrete storage reservoir has been installed at Pomona Road, replacing the previous wooden reservoir.

7.1.7 Motueka

The majority of pipelines in the Motueka supply are considered to be in average condition. There are some areas with pipes in poor condition that suffer from frequent mains failures namely High Street South, Fearon Street, Old Wharf Road and central High Street. The reticulation in Thorp Street has been replaced. Historically there have been several problems relating to pipe breakages which are believed to be caused by low grade (Class B) pipe and the high surge pressures. The programmed operation of the new WTP network pumps at Parker Street, aims to minimise pressure surge in the reticulation and reduce incidences of pressure-spike related pipe breakages.

7.1.8 Murchison

The assets are generally in good condition and the reservoirs are in good structural condition. The majority of the reticulation is AC with PE for the smaller rider mains. Repairs following regular leak detection surveys succeeded in reducing daily water demand and many rider mains have been replaced. Two new bores were installed in July 2011.

7.1.9 Pōhara

The condition of the pipework in the system is variable. Some pipework was installed during subdivision construction in the 1990s, but a large part of the system is older and of poorer quality. There are minimal pipe breaks reported. After the 2011 flood, damaged pipes were replaced and improved the average system condition.

7.1.10 Redwood Valley 1 and 2

Some of the reticulation in the Redwood Valley (1 and 2) scheme is unreliable. The Redwoods 1 reservoir was replaced with twin 30,000L plastic tanks. The associated booster pump station has been renewed. Most of the assets are of an age where condition problems are occasionally expected. As breaks occur pipelines are repaired, and short sections replaced. Some of the pipelines in the poorest condition have been renewed or upgraded as part of an ongoing programme. A 3km section of pipeline along the ridge was replaced following the Pigeon Valley fire.

7.1.11 Richmond

The condition of most of the pipework in the system ranges from a good to moderate condition. There have been many breaks in AC mains over the last few years, and as such recent AC pipe renewals have been completed in Fauchelle Avenue, Darcy, Florence, Herbert and Elizabeth Streets.

Some other old mains and rider mains require renewal. Most pipe repairs are on old PE pipes (rider mains and service laterals) and larger AC pipes from the 1960s. Most sections of AC pipelines have been replaced. Many of the original PE rider mains have been renewed through the process of breakage and repair. Most cast iron mains have been replaced, most recently Salisbury Road.

The assets from what was the Waimea Industrial water scheme are generally in good condition. The Richmond Water Treatment Plant blends both the Waimea and Richmond water sources and treats with caustic soda to balance pH and the mixing of water sources dilutes the moderately high nitrate levels in one of the Richmond source bores.

An electrical upgrade and a digital telemetry upgrade were completed in 2010, all of the water quality monitoring equipment and some of the pump variable speed drives (VSDs) were replaced in the second half of 2010.

7.1.12 Tākaka

Takaka does not have a public drinking water supply. An FW2 standard firefighting reticulation was installed in Tākaka CBD in 2011. It consists of two bores and pumps with an emergency generator.

7.1.13 Tapawera

The majority of the reticulation is AC and PE for the smaller rider mains. Some PE rider mains have been replaced as part of the renewals programme and copper laterals were replaced as part of the meter renewals programme. Regular leak detection inspections and repairs have resulted in improved daily water consumption volumes, however private water leaks have been known to cause disproportional daily usage for the township. The bore head works, reservoir power supply and telemetry system were upgraded just prior to 2010.

UV was installed in 2013 for protozoa treatment to meet the Drinking Water Standards New Zealand and a new contact tank and lime dosing facility was installed in 2016/2017.

7.1.14 Upper Tākaka

The majority of the reticulation is of poor quality. Most of the reticulation system is low-grade PE or galvanised iron pipe and is reported to be in poor condition.

7.1.15 Wakefield

The scheme assets are in average condition. High leakage and unaccounted water have been ongoing issues. The majority of the reticulation is AC and is scheduled for replacement. Frequent repairing and replacement of copper and PE rider mains prone to leakage and breaks, has helped reduce water losses.

Several line meters now exist to better identify water use and identify locations to target for repair.

The Council plans to supply Wakefield in the longer term from the new borefield and water treatment plant near Brightwater.

7.2 Asset Criticality

Council developed an asset criticality assessment framework for water supply, wastewater and stormwater and assessed vulnerability of critical assets to natural hazards and climate change effects. The framework is defined by:

- A 'Criticality Score' from one (very low criticality asset) to five (very high criticality asset).
- A set of 'Criteria' against which each asset will be assessed and assigned a Criticality Score
- A set of straightforward, logical rules, and measures under each criteria that can be assessed for each asset and enable a criticality score to be assigned in a spatial context.

For each asset, the criticality has been assessed against the following five criteria:

4. Number of people that would be affected if the asset failed;
5. Asset failure would prevent/impair use of a critical facility;

6. Ease of access/complexity of repair;
7. Asset failure has potential for environmental/health/cultural impacts;
8. Asset failure has potential to initiate cascading failures and/or asset has interdependencies with other assets.

Based on the above, asset criticality has been assessed for all assets across the district and mapped spatially in a GIS viewer. The vulnerability of critical assets to natural hazards has been identified through the overlay of natural hazards information such as coastal inundation and sea level rise, stormwater and river flooding, fault lines, tsunami risk and liquefiable soils.

7.3 Operations and Maintenance

Operations include regular activities to provide services. Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating to an appropriate level.

7.3.1 Three Waters Reform

The outcomes of Government's Three Waters reforms have resulted in a significant increase to the requirements of how Council operates water supply schemes. Changes include:

- New legislative requirements
- Water Quality Assurance Rules and managing risk (water safety plans)
- Source and catchment protection
- The principles of Te Mana o te Wai.

7.3.2 Rural Reticulation

The costs to operate and maintain the rural water supplies is increasing. New requirements include the mandate to treat for Protozoa. This creates significant and unaffordable cost for users of some schemes and is considered an unrealistic way to manage our rural supplies.

Some sections of the reticulation are in poor condition due the original pipe materials used and installation techniques. Where it costs less to renew rather than maintain, the Council will prematurely renew the pipes instead of continuing to incur the increasing cost to repair defective pipes.

7.3.3 Water Loss

An ongoing leak detection programme is in place to identify sources of water loss and prioritise repairs to any major leaks found. Information collated from the detection surveys can assist with informing the pipe renewals programme.

7.3.4 Operation and Maintenance Contract

The operation and maintenance of the water supply systems has been incorporated into a collaborative/partnering approach.

The key outcomes required of the contract include:

- A high degree of reliability of all provided services, systems, networks and supplies;
- Routine maintenance programmes leading to less reactive maintenance;
- Best value to the ratepayer;
- Consistently meeting regulatory requirements;
- High levels of customer satisfaction;
- Assets sustainably maintained to meet asset condition ratings;
- Innovations introduced that add value;
- Accurate and timely reporting to meet statutory requirements and contract targets; and
- Up-to-date and accurate asset information.

7.3.5 Maintenance Strategies

7.3.5.1 Routine and Reactive Programme

The main maintenance strategies and approaches for the water supply activity include routine and reactive work. Typically, reactive work includes responding to day-to-day asset failures. Examples of this type of work include pipeline breaks, valve and meter replacements etc. Generally, routine work is more proactive and include activities listed in table below:

Table 11: Summary of Routine Maintenance Activities

Maintenance activity	Description
Water Treatment Plant (WTP)	Regular maintenance and inspections of WTP facilities including equipment. Routine testing of water quality.
Rural storage	Staff conduct pro-active maintenance activities by cleaning and flushing rural reservoirs and break pressure tanks twice yearly, typically in early summer and late autumn.
Reticulation flushing	Operators maintain a water reticulation flushing programme to remove sediment and inappropriate material from the network. Low-level rural areas in Dovedale and Eighty-Eight Valley are flushed and dead-end mains in the urban areas are regularly flushed.
Rural restrictor checks	On a 2-year cycle, rural restrictors have a maintenance inspection to check for tampering of restrictor units/flow rates and flush blockages if required.
Shut valve checks	Twice yearly all shut valves are checked to ensure good working order. On a 3-year cycle, all large valves (100mm+) are exercised to ensure they can open and shut correctly.
Surface intake inspections	Monthly inspections of all surface water intakes are undertaken including: Eighty-Eight Valley, Upper Tākaka, Pōhara and Dovedale.

7.3.6 Forecast Operations and Maintenance Expenditure

The 10-year forecasts for operations and maintenance costs are shown below. For a detailed breakdown forecast of operations and maintenance expenditure, see Appendix A.

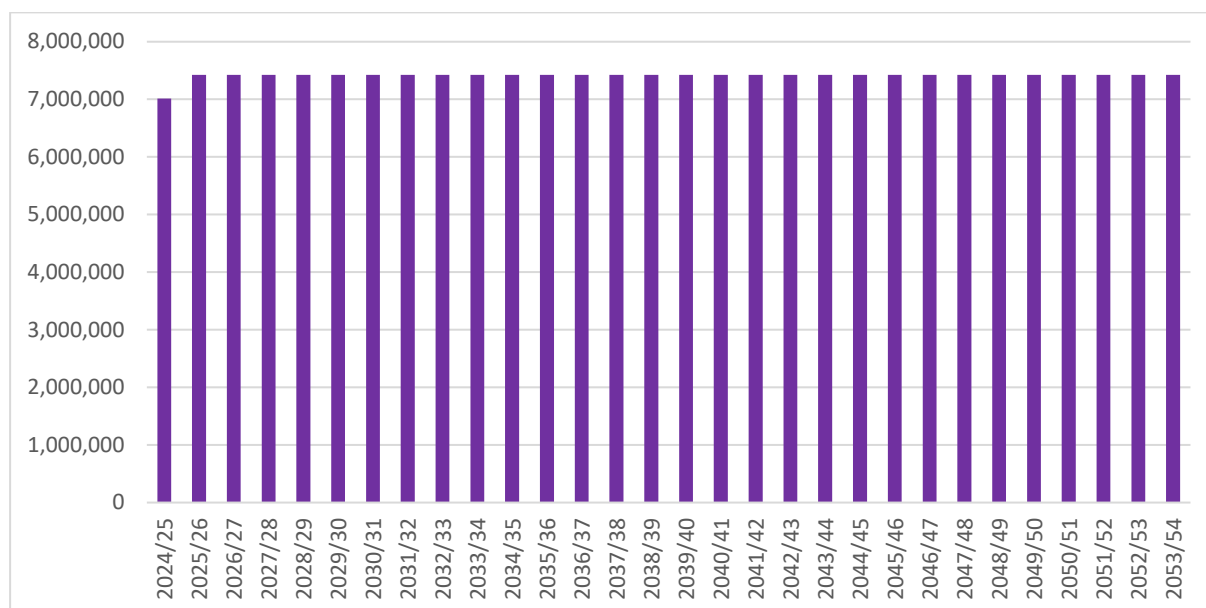


Figure 5: Direct Operations and Maintenance Expenditure Excluding Inflation

7.4 Asset Renewal/Replacement

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to an original service potential, is considered to be an acquisition, resulting in additional future operations and maintenance costs.

The typical useful lives of assets are used to develop projected asset renewal forecasts.

The Asset renewal programme is reviewed and planned annually and is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate, or
- to ensure the infrastructure is of sufficient quality to meet the service requirements.

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure, for example Critical Assets
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs that becomes uneconomical, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.

7.4.1 Delivery of Renewals

Renewal projects are carried out by the operations and maintenance contractor, or contracts are tendered in accordance with the Procurement Strategy.

A water meter renewal programme is ongoing and is based on age. Generally, this occurs on a 15-year cycle.

7.4.2 Deferred Renewals

Deferred renewal is the shortfall in renewals required to maintain the service potential of the assets. This can include renewal work that is scheduled but not performed when it should have been, and which has been deferred to a future date often be due to cost and affordability reasons.

The figure below compares the Council's cumulative renewal expenditure and cumulative depreciation for this activity. If the renewals expenditure starts falling behind the accumulative depreciation, it can indicate that the assets may not be being replaced or renewed at the rate at which they are being consumed. If this continues unchecked it may result in a run-down asset, high maintenance costs and high capital costs to renew failing infrastructure.

For the first 10 years, the Council's planned investment in renewals is relatively high and exceeds depreciation in years 1-5. It includes a number of Asbestos pipe replacements. After Year 5, the Council's investment in renewal starts to fall behind depreciation more significantly. This divergence is due primarily to the long useful life and age profile of the Council's current assets, and the lack of affordability to maintain the rate of renewal needed. The majority of the Council's water assets are not due for replacement within the next 30 years. When new assets are constructed, this contributes to the divergence between renewals and depreciation. The new assets contribute to higher depreciation even though most will not need replacing within the next 30 years.

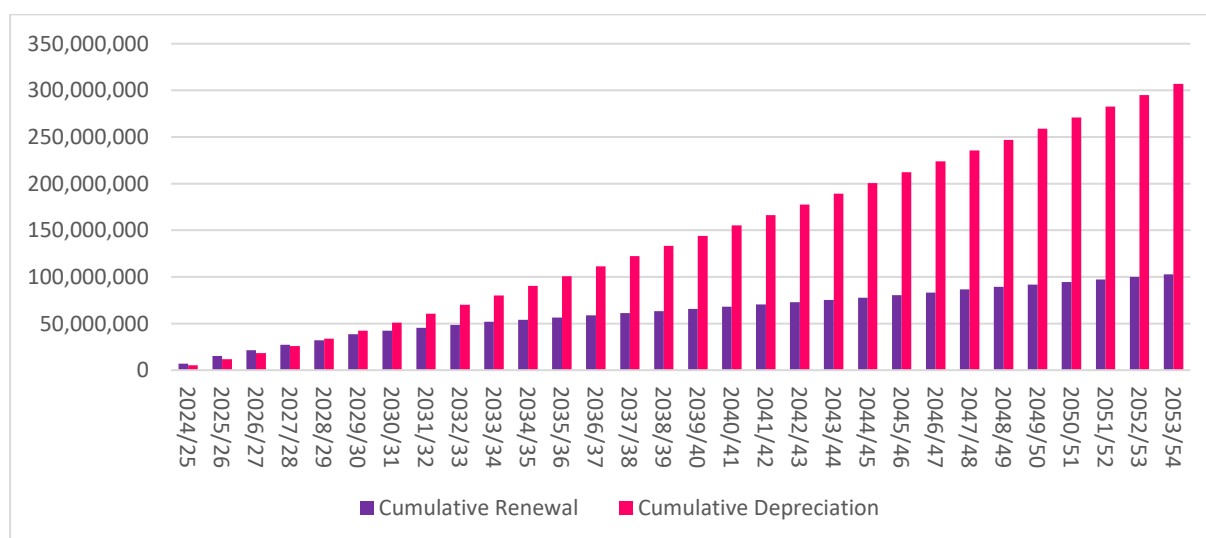


Figure 6: Cumulative Depreciation and Renewal Expenditure Comparison Including Inflation

7.4.3 Forecast Renewal Expenditure

The figure below provides a summary of forecast renewal expenditure for the next 30 years.

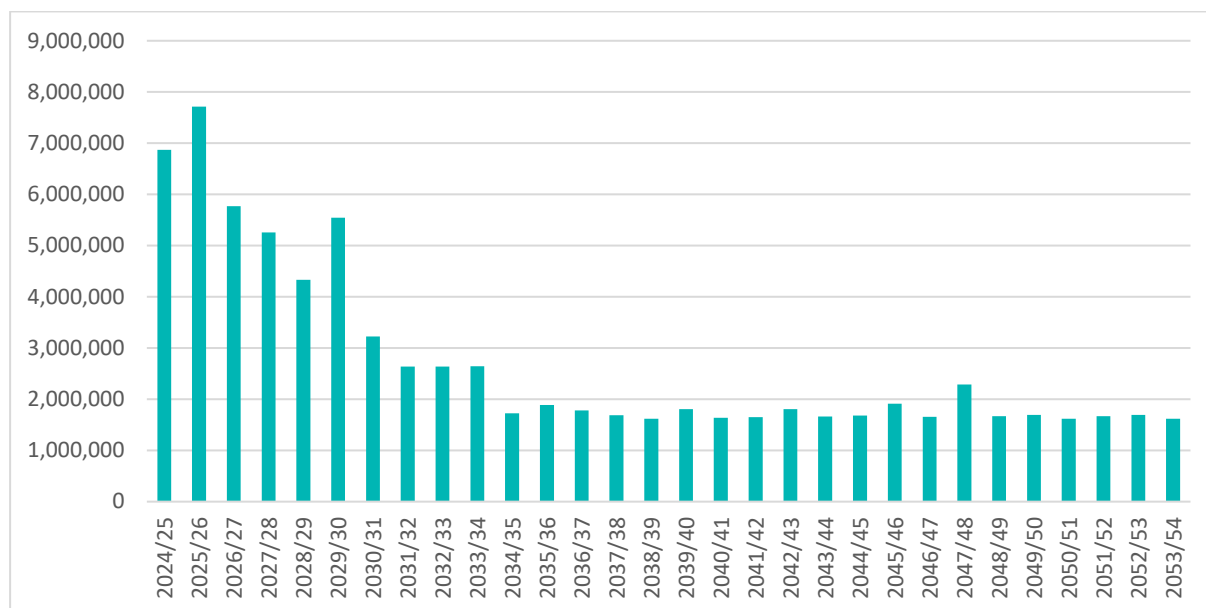


Figure 7: Direct Renewals Expenditure Excluding Inflation

7.5 Asset Development

Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding. New assets require consideration of how to fund future operations, maintenance and renewal costs, and consideration also needs to be taken into account for future depreciation when reviewing long term sustainability.

In order to comply with the Water Quality Assurance rules, new WTPs or upgrades are required to existing WTP. Upgrades are planned for Dovedale and Redwoods.

Enabling growth is a priority for the Council. The plan includes new urban water infrastructure in Richmond, Brightwater, Wakefield and Motueka.

The Council is planning projects to support growth including the Richmond South Low Level Reservoir and Richmond South Low Level Water Main and Brightwater to Wakefield trunk main reticulation.

7.5.1 Forecast New Capital Expenditure

The Council's forecast for new capital expenditure for this activity is shown below.

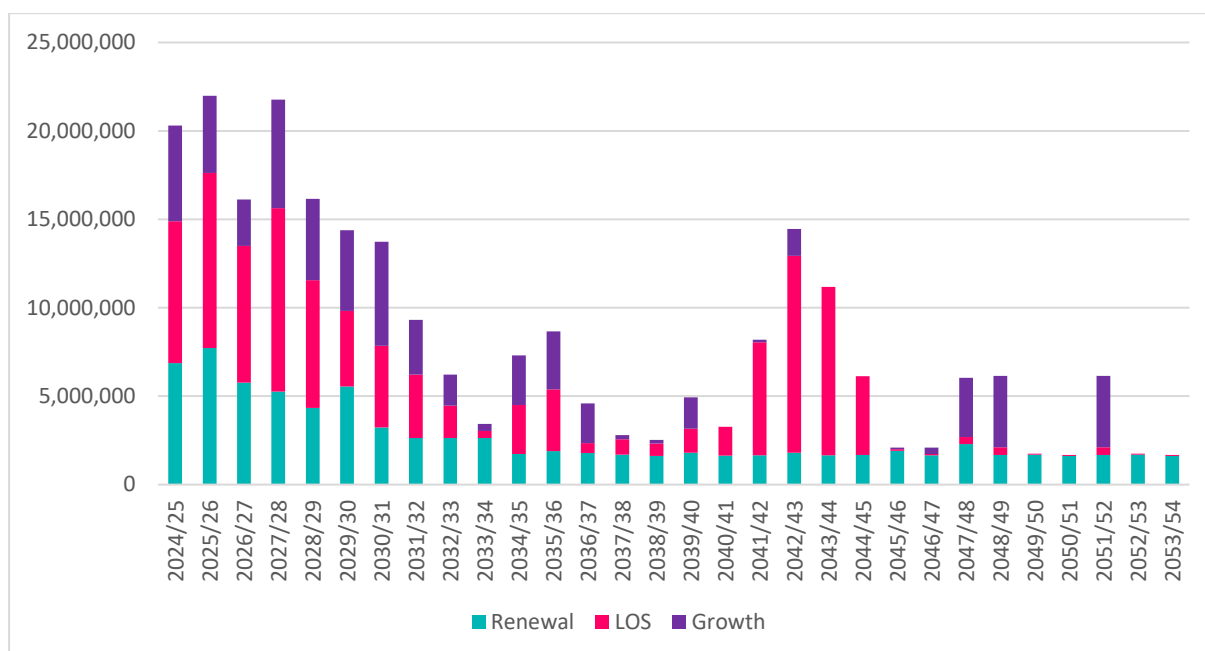


Figure 8: Direct New Capital Expenditure Excluding Inflation

7.6 Asset Disposal

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation, and for Council asset disposal is generally a by-product of renewal or upgrade decisions that involve the replacement of assets.

Asset disposal is generally a by-product of renewal or upgrade decisions that involve the replacement of assets.

Mostly, assets are replaced at the end of their useful lives and are generally in poor physical condition with no residual useful value. In some situations, redundant pipes and associated infrastructure is abandoned and left in place. These pipes are decommissioned and capped at each end, and in some cases filled with grout or mortar.

Occasionally the opportunity arises when abandoned pipes can be used as conduit or relined for other purposes.

In some situations, an asset may require removal or replacement prior to the end of its useful life. In these cases, Council may hold the asset in stock for reuse elsewhere on the network.

Known water assets that are programmed for decommissioning and disposal, with costs budgeted in Council's Long Term Plan include:

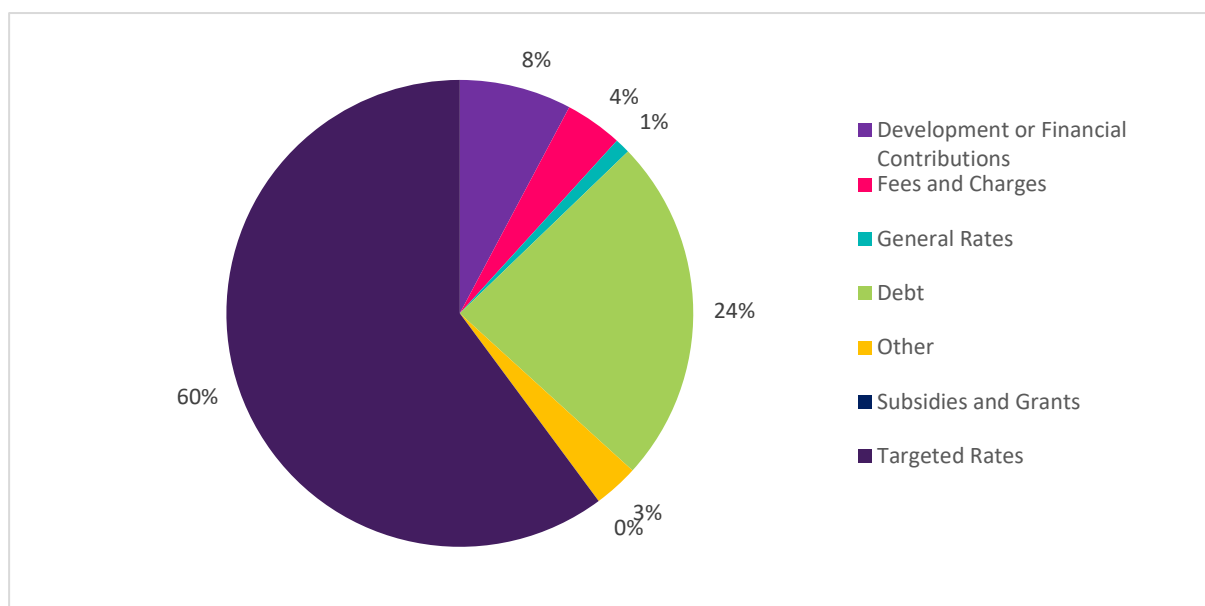
- Decommission Fearons Bush Water Treatment Plant (WTP) - planned for 2023/2024
- Brightwater and Wakefield WTP once Clover Road WTP is operational (2026/2027).

8 Financials

The Council has planned a prudent financial approach to managing its assets and services. This section provides a summary of the total value of the activity and the investment that the Council has planned to make over the next 30 years.

8.1 Funding Sources

The Water Supply activity is funded through a mixture of the following sources. These include development contributions, fees and charges, General rates, Debt, subsidies and targeted rates.



Nature	10 Years
Development or Financial Contributions	32,435,802
Fees and Charges	16,601,753
General Rates	4,417,878
Debt	99,964,496
Other	13,000,146
Subsidies and Grants	0
Targeted Rates	251,074,038

8.1.1 Development Contributions

The Council's Development and Financial Contributions Policy can be found on its website:

www.tasman.govt.nz/policy/policies/development-contributions-policy

The Policy sets out the development contributions payable by developers, how and when they are to be calculated and paid, and a summary of the methodology and rationale used in calculating the level of contributions.

The key purpose of the Policy is to ensure that growth, and the cost of infrastructure to meet that growth, is funded by those who cause the need for and the benefit from the new or additional infrastructure capacity.

There are three water supply development contributions in place. Which charge is applicable depends on what catchment the development is located in.

Table 12: Water Supply Development Contribution Charges: (*undergoing review)

Catchment	Development Contribution per HUD \$ (incl GST) *
Waimea	\$11,652
Motueka	\$41,05
Golden Bay	Nil
Rest of District	Nil

HUD = Household Unit of Demand

* The value of the Development Contribution shall be adjusted on 1 July each calendar year using the annual change in the Construction Cost Index. These values are currently under review.

8.2 Asset Valuation and Depreciation

The Local Government Act 1974 and subsequent amendments contain a general requirement for local authorities to comply with Generally Accepted Accounting Practice ("GAAP").

The Council requires its infrastructure asset register and valuation to be updated in accordance with Financial Reporting Standards and the AMP improvement plan.

The valuations summarised below have been completed in accordance with the following standards and are suitable for inclusion in the financial statements for the year ending June 2023.

- NAMS Group Infrastructure Asset Valuation Guidelines
- New Zealand International Public Sector Accounting Standard 17; Property, Plant and Equipment (PBE IPSAS 17) and PBE IPSAS 21 (Impairment of Non-Cash Generating Assets).

8.2.1 Latest Asset Valuation

Assets are valued every three years. The water supply assets were last revalued prior to 30 June 2022. Key assumptions in assessing the asset valuations are described in detail in the valuation report.

Most of the information for valuing the assets was obtained from the Council's Confirm database. The data confidence is detailed below.

Table 13: Data Confidence

Asset Description	Confidence	Comments
Water Supply Assets	B – Good	The asset registers provide all the physical assets that make up each scheme. However, attribute information could be more detailed such as surface types etc.

Based on NZ Infrastructure Asset Valuation and Depreciation Guidelines (NZIAVDG) – Edition 2, Table 4.3.1: Data confidence grading system.

The Base Useful Lives for each asset type as published in the NZIAVDG Manual were used as a guideline for the lives of the assets in the valuation. Generally, lives are taken as from the mid-range of the typical lives indicated in the Valuation Manual where no better information is available. Lives used in the valuation are presented as below.

Table 14: Asset Lives

Item	Life (years)	Minimum Remaining Life (years)
Pipelines		
Polyvinyl chloride (PVC) critical pipes	50	5
AC critical pipes	55	5
AC, unknown pipe	60	5
AC non-critical pipes	65	5
DI, CI, PVC (non-critical), PE, Steel pipe	80	5
Miscellaneous pipe works and fitting associated with treatment plants and pump stations	15	2
Valves, hydrants	50	5
Water meters, restrictors	15	2
Non-Pipeline Assets		
Bore/ wells, tanks	50	5
Pump chambers, reservoirs	80	5
Buildings	50	5
Backflow preventer	25	2

Item	Life (years)	Minimum Remaining Life (years)
Small plant – pumps, chlorinating/UV equipment, generators	20	2
Electrical, control cabinets, telemetry, flow meters	15	2
Variable speed drives	10	2

8.2.2 Depreciation

Depreciation of assets must be charged over their useful life. Council calculates depreciation on a straight line basis on most infrastructural assets at rates which will reduce the value of the assets to their estimated residual values, over their useful lives.

The optimised replacement value, optimised depreciated replacement value, total depreciation to date, and the annual depreciation of the water supply assets are summarised below.

*Note that a review of asset valuation is currently underway and this data will be updated when the new data becomes available.

Table 15: Water Asset Valuation Summary:

Asset Type	*Optimised Replacement Value (\$000)	*Optimised Depreciated Replacement Value (\$000)	*Annual Depreciation (\$000/yr)
Water Pipes	138,742	87,354	2,040
Water Non-Pipe Assets	81,483	48,079	2,704
Total	220,225	135,433	4,744

Table 16: 2020/2023 Water Valuation Comparison:

Year	*Optimised Replacement Value (\$000)	*Optimised Depreciated Replacement Value (\$000)	*Annual Depreciation (\$000/yr)
2020	196,633	120,922	3,826
2023	220,225	135,433	4,744
% Increase	12%	12%	24%

Overall the water assets have increased in optimised replacement value by 12% since the 2020 valuations.

The increase in the replacement values is due to the following reasons:

- increases in the unit rates of assets over the period;
- the addition of new assets to the utilities since 2020.

The percentage increase in annual depreciation is higher due to higher unit rate increases for lower life assets, e.g. supply meters, valves and control cabinets.

8.3 Financial Summary

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

Funding Impact Statement is unavailable and to be provided in due course – prior to release of Draft for consultation.

8.3.1 Project Drivers

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

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

This is necessary for two reasons as follows.

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

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

These projects have been ranked in priority and only the most important projects of the highest level of priority have been selected for the programme. There are many projects that have not made the final selection, however including these in the programme would be considered unaffordable for our communities.

8.3.2 Scope Risk and Funded Capital Programme

When developing this work programme, the Council needs to estimate how much to budget for each project. Often, the Council cannot be certain what the actual costs or scope of the project will be because the design is yet to be completed. Typically, the Council has more confidence in the cost and scope of projects that are planned within the first three years. Beyond this, estimates contain a greater percentage of cost uncertainty and associated increase in scope risk cost.

The amount of scope risk included is 10% of the project estimate, which is typically expected to be utilised, depending on the complexity of the individual project.

8.3.3 Total Expenditure

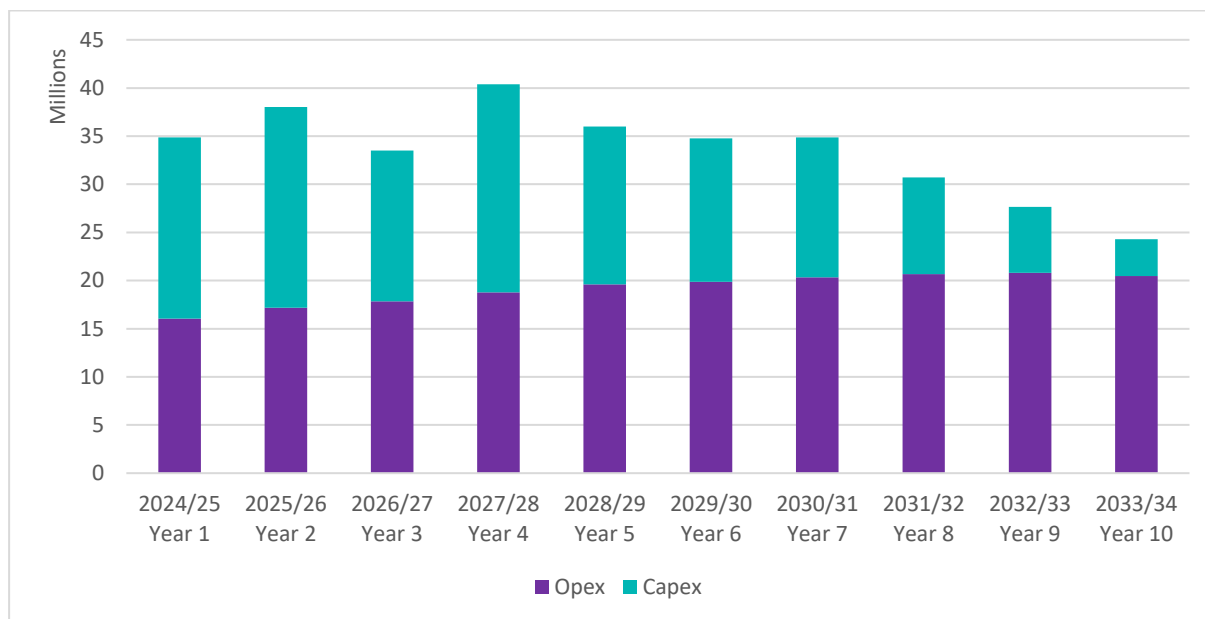


Figure 9: Total Annual Expenditure Years 1 to 10 Including Inflation

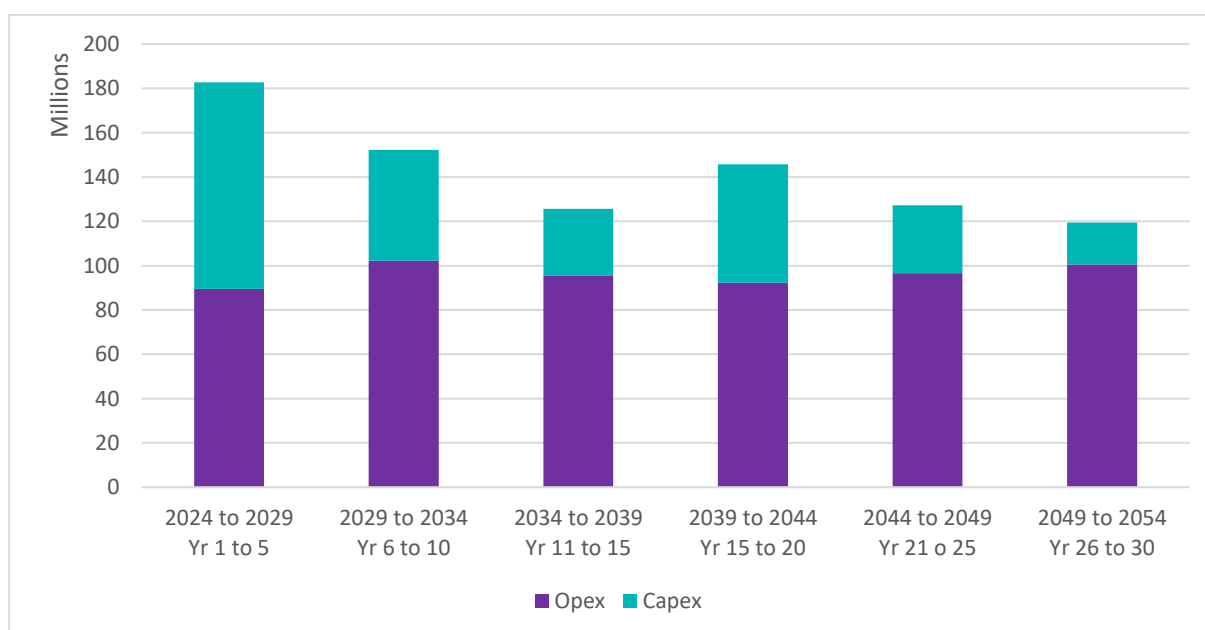


Figure 10: Five Yearly Total Expenditure Years 1 to 30 Including Inflation

8.3.4 Total Income

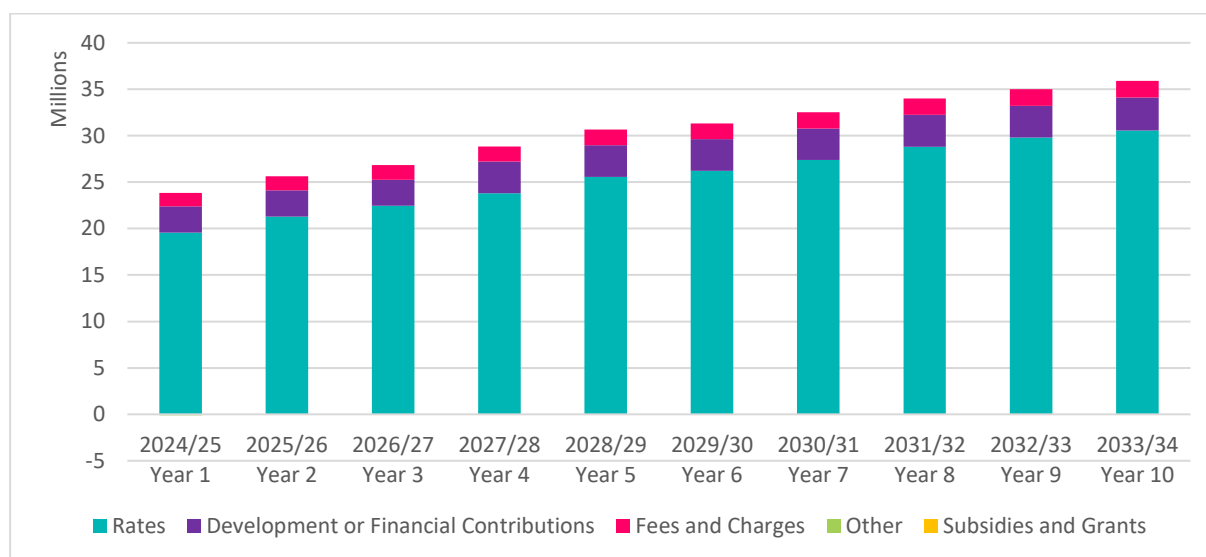


Figure 11: Total Annual income years 1-10

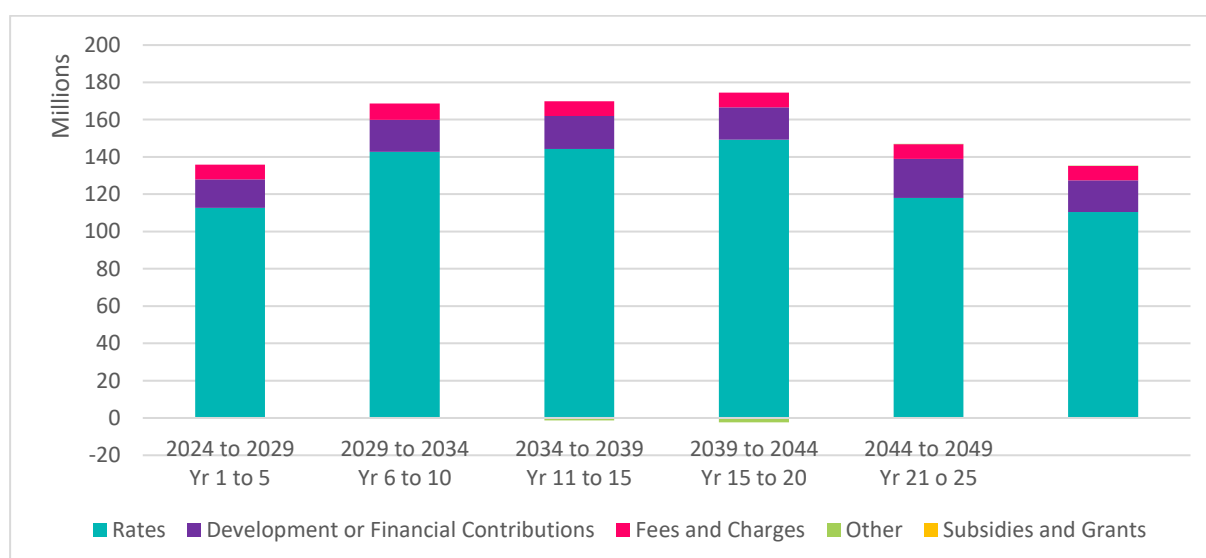


Figure 12: Five Yearly Total Income Years 1 to 30 Including Inflation

8.3.5 Operational Costs.

Operational costs for the water supply activity are forecast to increase by an average of 2.8% per year for the first 10 years, and an average of 0.9% per year over 30 years. The most notable increases within the next 10 years occur between Year 1 and Year 5. At this time, direct operating costs are increasing due to the additional compliance and planned water treatment plant upgrades that are required to meet the Drinking Water Quality Assurance Rules, and expected completion and operation of the Waimea Community Dam. Indirect costs increase primarily due to increasing loan interest costs associated with the capital programme for this activity. On top of this, both direct and indirect expenditure increase due to inflation.

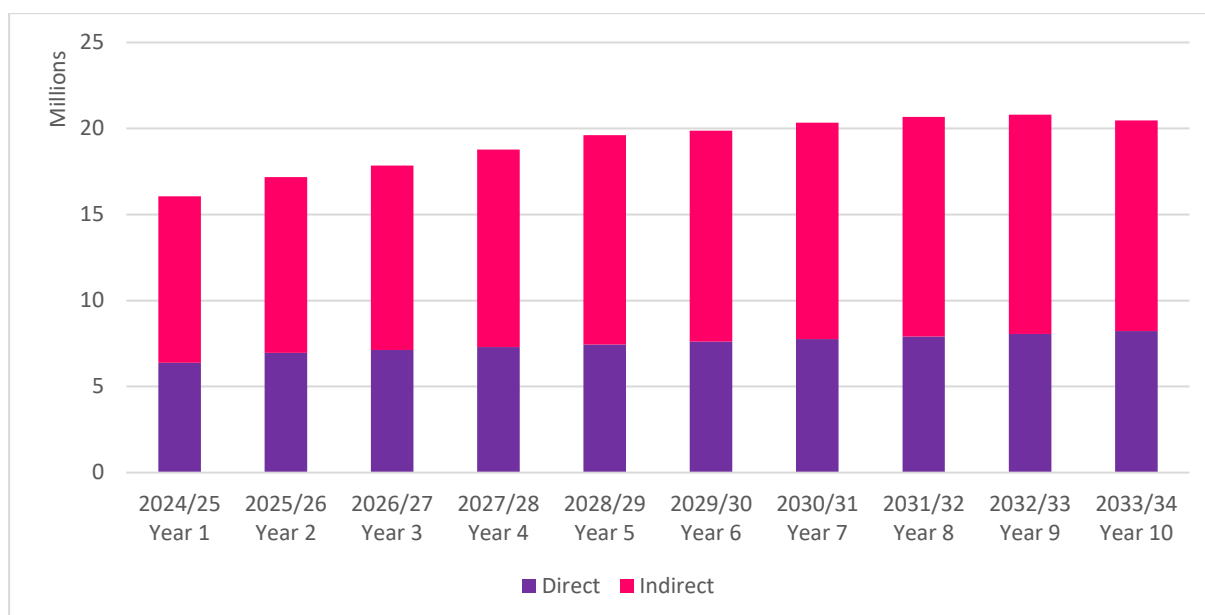


Figure 13: Direct and Indirect Annual Operating Costs Years 1 to 10 Including Inflation

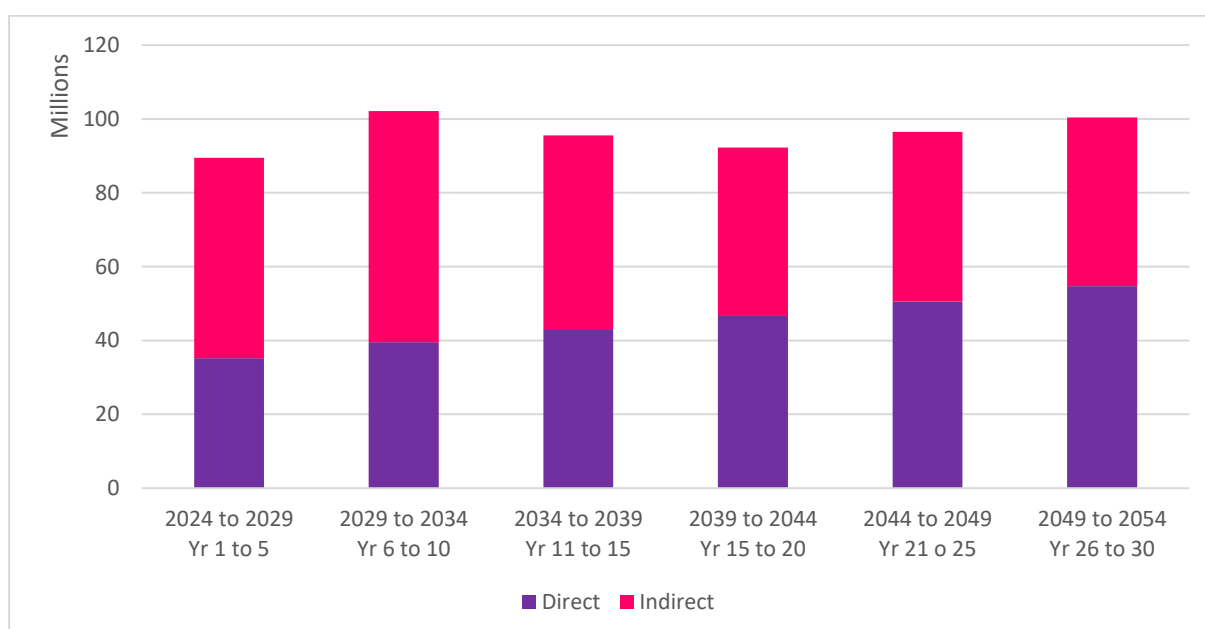


Figure 14: Direct and Indirect Five Yearly Operating Cost Years 1 to 30 Including Inflation

8.3.6 Capital Expenditure

The Council has planned to spend \$143.4 million on capital improvements over the next 10 years. Of this, 27% is attributable to growth, 40% for level of service improvements, and 33% for asset renewal. They will invest most in level of service improvements for the first five years. This is due to the planned water treatment plant upgrades that are required to meet the Drinking Water Quality Assurance Rules.

Over the next 30 years, the total funded capital programme is \$276.7 million.

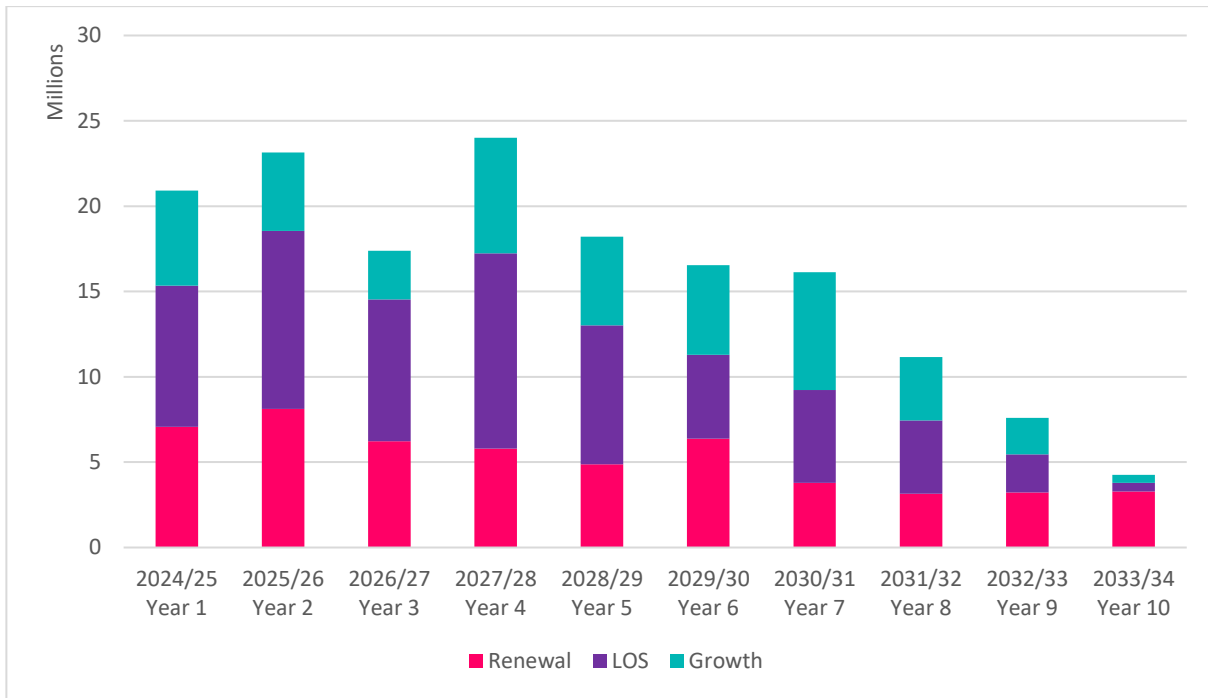


Figure 15: Annual Capital Expenditure Years 1 to 10 Including Inflation

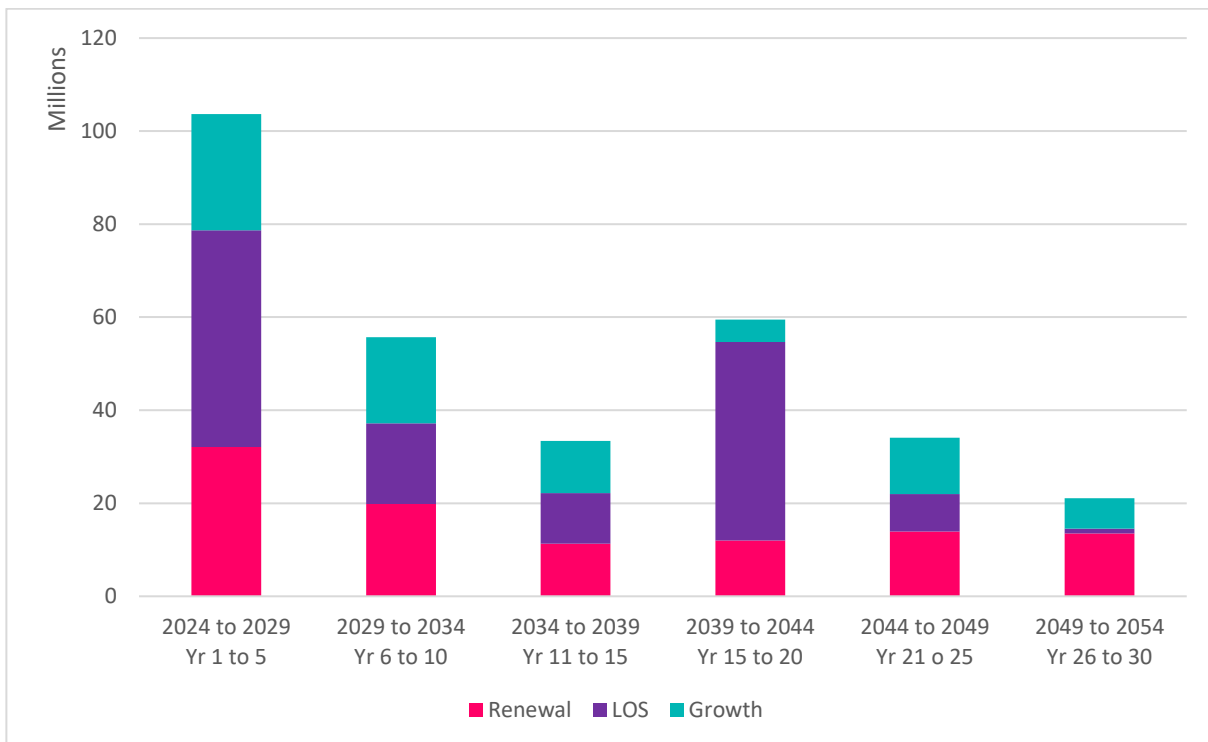


Figure 16: Five Yearly Capital Expenditure Years 1 to 30 Including Inflation

9 Climate Change, Natural Hazards and Environment

The Tasman region is susceptible to a wide range of natural hazards, some exacerbated by climate change, and the Council needs to plan for these hazards and determine whether adaptation, mitigation, or retreat is appropriate.

The Council needs to ensure it has robust planning in place and provides infrastructure that is resilient. The Council is taking a long-term strategic approach by undertaking risk, resilience and recovery planning to provide better information on infrastructure resilience requirements.

The Council will also continue to focus on planning and managing its critical assets and lifelines networks to ensure that the appropriate level of effort is being made to better manage, maintain and renew critical assets.

As well as ensuring its assets are resilient, the Council has a range of financial provisions to assist with response to and recovery from major damaging events. These include:

- Ability to reprioritise the Council's capital programme;
- Insurance cover for recovery of a portion of costs of a catastrophic disaster event;
- Central Government support of up to 60% through the Local Authority Protection Programme; and
- NZ Transport Agency subsidy of at least 51% for subsidies transportation asset reinstatement.

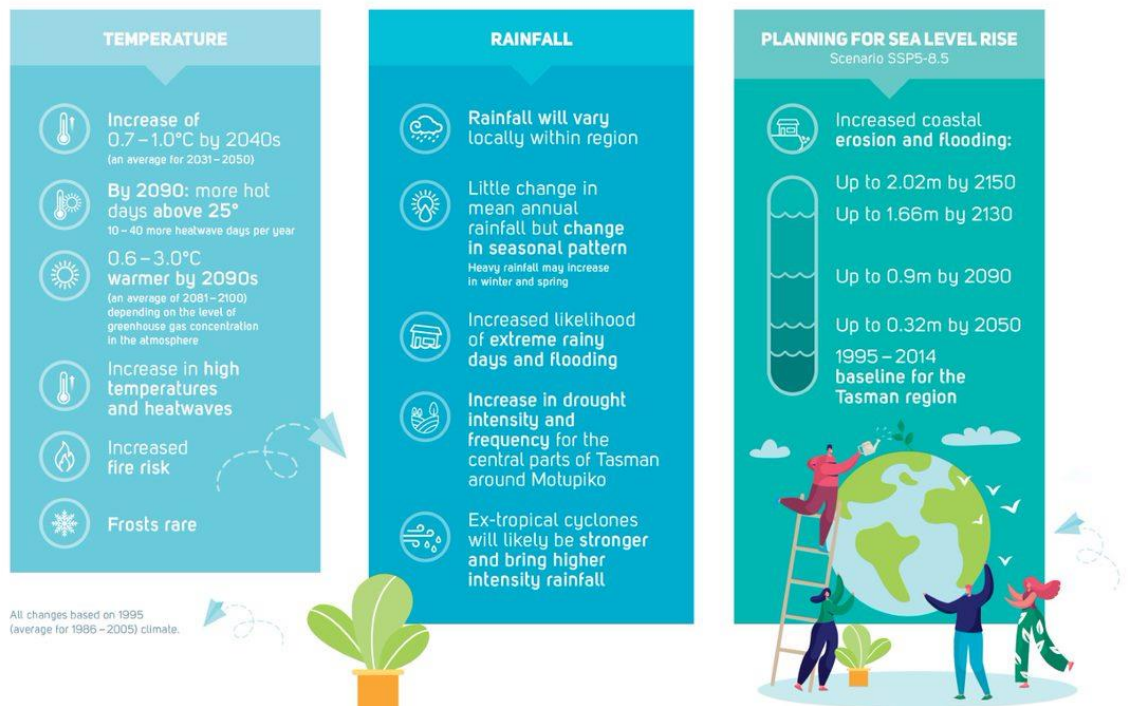
9.1 Climate Change

Embedding climate change, natural hazards and building risk analysis and resilience into core business is an important focus across Council infrastructural activities.

Council has a key role to play in reducing its own corporate emissions, supporting and providing leadership on mitigation actions across the community, including understanding and accounting for risks and resilience-building associated with climate change and natural hazards, including in the following areas:

- **Sea level rise:** sea level rise is a significant climate challenge for Tasman as a large proportion of its urban infrastructure is coastal or low lying. These areas are likely to become more vulnerable to coastal erosion and inundation over time.
- **Heavy rainfall and flooding events:** higher intensity rainfall events mean Tasman is likely to experience more regular and extensive flooding from streams, rivers and stormwater overflows, with an associated increase in land instability.
- **Droughts and high temperatures:** with a warmer climate, the temperature of the water within our rivers and streams is likely to increase and affect habitats. More frequent and sustained periods of drought will result in a greater risk of fires.

CLIMATE CHANGE IMPACTS FOR THE TASMAN DISTRICT



9.1.1 Responding to Climate Change

9.1.1.1 Tasman Climate Response Strategy and Action Plan

In 2019, the Council adopted the 'Tasman Climate Action Plan' (Action Plan). The Action Plan is Council's initial response to the urgent need to take action on climate change, to build climate resilience and reduce greenhouse gas emissions. This document is under review and is expected to be replaced with the 'Tasman Climate Response Strategy and Action Plan' in mid-2024.

Council's Tasman Climate Response Strategy and Action Plan will guide our transition to a low-carbon, resilient, and innovative Tasman District. It outlines the key areas of focus for our efforts, including reducing greenhouse gas emissions, building climate resilience, leading by example and empowering communities to act. The updated Climate Action Plan provides more detailed actions and initiatives to achieve these goals. It includes strategies for reducing emissions in the transport, energy, and waste sectors, as well as measures to enhance the resilience of our communities and ecosystems.

9.1.1.2 Mitigation

Mitigation includes reducing greenhouse gas (GHG) emissions and enhancing carbon sinks and Council is committed to emissions reduction targets for its own activities in line with government targets.

9.1.1.3 Adaptation

Adaptation is the process of responding to current and future climate related impacts and risks. To manage these impacts and risks, Council is following the Ministry for the Environment guidance and is using the Dynamic Adaptive Pathways Planning (DAPP) approach. This means managing our assets in a way that makes them more resilient, or in some instances, it may mean relocating or abandoning those assets.

How Council delivers its services will play a key role in meeting emissions reduction targets and building community resilience.

Council is working with Nelson City Council on a regional climate change risk assessment, which will build a comprehensive picture of how climate change will impact the region.

How climate change impacts our assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts. As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

The way in which we construct new assets should recognise that there are opportunities to build in resilience to climate change impacts. Building resilience can have the following benefits:

- assets will withstand the impacts of climate change;
- services can be sustained; and
- assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint.

The impact of climate change on assets is complex and further opportunities will be developed in future revisions of this AM Plan to assess the vulnerability of water supply assets to natural hazards and taking into account the impacts of climate change. Note that some work has been undertaken to assess the vulnerability of critical utility lifelines to natural hazards through the Nelson Tasman Engineering Lifelines group. The need to continue and build on this work will be noted in the table of improvements in section 11 of this plan.

Table 17: Building and Managing Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
New Borefield and WTP Clover Road Brightwater, adjacent to Wairoa River	Increased flood risk may impact site of new Borefield and WTP	Ensure new WTP and Borefield are designed and constructed so they are protected from potential flood hazard risk
New Dovedale Source and trunk main in Motueka River Valley	Increased flood risk may impact site of new source bores	Ensure new source bores are designed and constructed to ensure protection from potential flood hazard risk
New combined Redwoods WTP and source bores	Increased flood risk may impact site of new source bores	Ensure new source bores are designed and constructed to ensure protection from potential flood hazard risk

9.2 Potential Negative Effects

Schedule 10 of the Local Government Act 2002 requires an outline of any significant negative effects that an activity may have on the local community. Potential negative effects associated with the water activity are outlined below:

Effect	Description	Mitigation Measures
Construction of Future Schemes	<p>Social - Installation of water schemes do cause a disruption to the local community. Shutdowns may result in residence not receiving water during the day.</p> <p>Economic - Shutdowns may result in businesses not receiving water during the day.</p> <p>Environmental - Construction of water contracts typically create environmental impacts. The Tasman Resource Management Plan and specific resource consents must be followed. Projects can involve de-watering, which requires water to be discharged with the potential for risk to the environment.</p>	<p>Public consultation.</p> <p>Notifying the public of the works through various forms of the media.</p> <p>Specific construction environmental controls for the duration of construction and operation</p>
Water Restrictions	<p>Social - This can frustrate the local community.</p> <p>Economic - This can have a larger impact on businesses that rely on using water for production. This can cause a negative effect on these businesses.</p>	<p>Council is investing in the Waimea Community Dam project and has made allowances in the Activity Management Plan for new water sources (such as the upgrades to the Dovedale intake, and a new Borefield for Redwoods and at Clover Road for</p>

Effect	Description	Mitigation Measures
		Brightwater/Wakefield). Allowances for improving demand management will assist with making water usage more sustainable. In 2019, the Council adopted an amended Water Supply Bylaw that includes a new water restrictions protocol.
Spillage of Chemicals Stored at Water Treatment Plants	<p>Social - Customers expect Council to handle all chemicals in a safe manner.</p> <p>Economic - Businesses may not be able to operate until the chemical spill is resolved.</p> <p>Environmental - Tasman region is an environmentally sensitive area, any chemical spill will have a notable effect on the environment.</p>	<p>Appropriately trained staff and contractors.</p> <p>All chemicals are stored in the correct manner.</p>
Water Abstraction	<p>All of our water schemes take water from our environment (via surface or groundwater) and require a resource consent. We aim to manage water takes so the impact is not detrimental to the surrounding environment.</p> <p>. Water extraction, especially during times of drought, has an impact on our natural water body. Through compliance with our resource consent conditions, we ensure this impact is only minor.</p> <p>Social - The removal of water from the natural environment results in the water being unavailable for other uses such as irrigation or recreational.</p> <p>Economic- water allocation limit and constrain the extraction from the natural environment results in the water being limited for other uses such as irrigation or production based on water usage.</p> <p>Environmental- extraction may add strain on river systems at low flows during peak summer periods and can impact ecosystems.</p>	<p>Council introduces water rationing during times of drought.</p> <p>Demand Management will assist with reducing the volume of water abstracted from the water source.</p> <p>Investigating new water sources and educating the public on water usage.</p> <p>Resource consents are in place, so the Council operates within a certain limit.</p>
Impact for ngā iwi in terms of water treatment discharges to water, mahinga kai, and wahi tapu sites	<p>Cultural: Physical works may have an adverse effect on sites.</p> <p>Contamination of water, (fresh and coastal), mahinga kai, wahi tapu areas is offensive to ngā iwi.</p>	<p>Working with Te tauihu ngā iwi on improvements to water management.</p> <p>Record of known heritage sites.</p>

Effect	Description	Mitigation Measures
Costs to meet the Drinking Water Quality Assurance Rules	Requiring significant capital investment and ongoing increased monitoring and operational consequential costs	Consult and Budget for additional funding through LTP consultation

9.2.1 Potential Positive Effects

Table 18: Potential positive effects are listed below

Effect	Description
Economic Development	<p>Provision and maintenance of water supplies allows for the development of commercial businesses, industry and residential use, therefore, contributing to economic growth and prosperity in the district.</p> <p>The Council's management of the water supply activities uses best practice and competitive tendering to provide best value for money for ratepayers and provides fair value compensation for service delivery from contractors.</p>
Public Health	Safe drinking water supplies provide critical public health benefits related to health and safety and sanitation.
Amenity and recreation	The Council's policies promote the enhancement of recreational and environmental amenity value when developing new assets through water sensitive design.
Safety and Personal Security	The majority of the Council's urban water supply network is built to accommodate firefighting requirements and supports protection of life and property.

9.3 Environmental Management

9.3.1 Resource Consents

The statutory framework defining what activities require resource consent is the Resource Management Act (RMA) 1991 and subsequent amendments. The RMA is administered locally by the Council, as a unitary authority, through the Tasman Resource Management Plan.

9.3.2 Resource Consent Reporting and Monitoring

An ongoing programme is required of “consent renewals” for those components of the Council’s activities, as well as a monitoring programme for compliance with the conditions of permitted activities or resource consents. Consent renewals have been programmed in the Capital programme. Use of the Council’s monitoring databases allows the programming for consent renewal including renewal prior to expiry.

9.3.3 Auditing

Regular inspections of key sites are completed and recorded to ensure the Council’s maintenance contractor is operating in accordance with a number of key performance indicators including performance measures required under any consent conditions or other legislative requirements.

9.3.4 Environmental Reporting and Monitoring

In addition to audit assessments, non-compliance incidents are recorded, notified to the Council’s Compliance Monitoring team and mitigation measures put in place to minimise any potential impacts.

9.3.5 Council’s Annual Report

The extent to which the Council has been able to meet all of the conditions of each permit is reported in its Annual Report.

9.3.6 Property Designations

Designations are a way provided by the RMA of identifying and protecting land for future public works. The Council has designated three areas in the Richmond urban area to ensure that improvements can be made to existing stormwater systems.

10 Asset Management Processes and Practices

Good quality data and asset management processes are the heart of effective planning. This section outlines our approach to asset management, our processes, and provides an overview of our data management systems and strategies that underpins the stormwater activity.

10.1 Appropriate Practice Levels

The Office of the Auditor General (OAG) uses the International Infrastructure Management Manual (IIMM) as the benchmark against which New Zealand councils measure their activity management practices. There are five maturity levels in the IIMM; Aware, Basic, Core, Intermediate and Advanced. The IIMM sets out what the requirements are for each level against each area of the activity management system.

In 2020, the Council reviewed its Activity Management Policy and adopted an updated version. The Policy sets out the Council's activity management objectives and appropriate levels of practice. For the Water Supply activity the Council has determined that the appropriate level of practice is an 'intermediate level' with 'advanced level' level of practice for demand forecasting, asset register data and asset condition

10.2 Service Delivery Reviews

10.2.1 Activity and asset management teams

The Council has an organisational structure and capability that supports effective asset management planning. Multiple teams across the Council have responsibility for the different aspects of activity and asset management. The focus of the teams ranges from a strategic focus at a Long-Term Plan/Infrastructure Strategy level, which involves a cross-Council team, through to the focussed delivery of the capital projects programme and a detailed, operational focus at the Operational team level.

The activity management planning function is managed by the Infrastructure Activity Planning team, Operations are the responsibility of the Utilities and Transportation teams, while Projects and Contracts are managed by the Programme Delivery team.

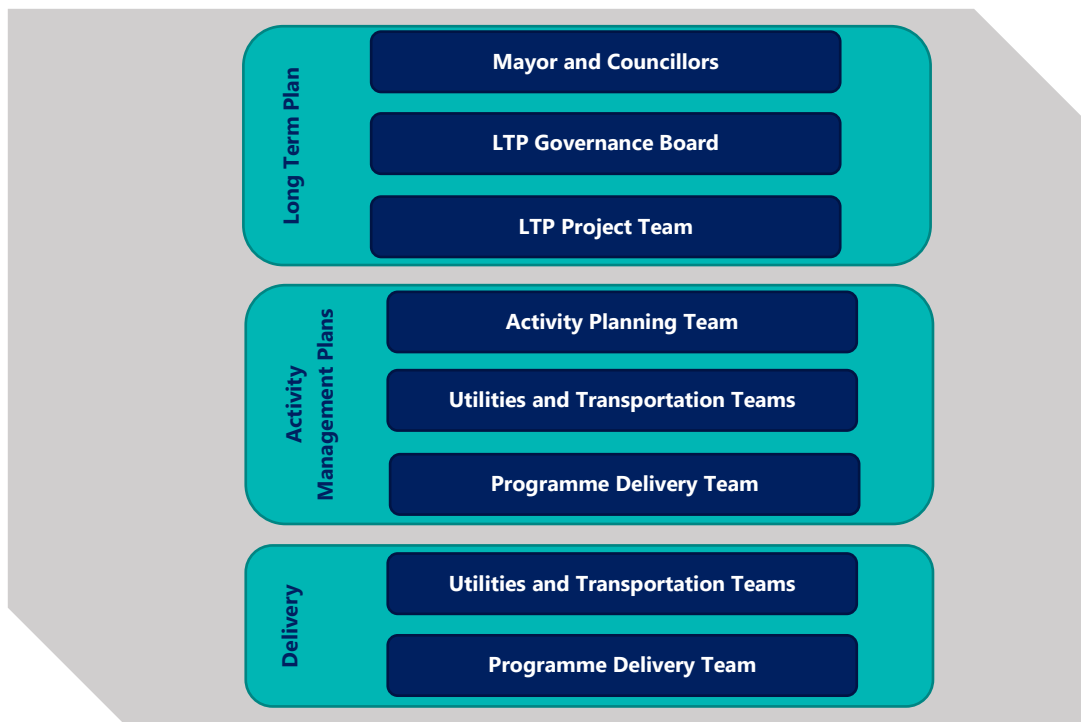


Figure 17: Teams Involved in Activity and Asset Management

The Infrastructure Planning team prepares the update of the activity management plans and oversees implementation of the improvement plan. The draft plans are reviewed internally and released for consultation, then amended as required and adopted by Council for implementation.

10.2.2 Professional Support

The Council has a need to access a broad range of professional service capabilities to undertake investigation, design and procurement management in support of its significant capital works programme, as well as support with activity management practice. There is also a necessity on a as-needed basis to access specialist skills for design, planning and policy to support the in-house management of the Council's networks, operations and maintenance.

10.2.3 Procurement Strategy

The Council has a formal Procurement Strategy that it follows when engaging contractors and consultants. This strategy has been prepared in part to meet Waka Kotahi NZ Transport Agency's requirements for expenditure from the National Land Transport Fund, and it considers the procurement environment that exists within the Tasman District. It is due for review to remain aligned with the Council's strategies. It principally focuses on procurement of infrastructure but is framed in the Waka Kotahi NZ Transport Agency procurement plan format, which is consistent with whole-of-government procurement initiatives.

10.2.4 Service Delivery Reviews

Section 17A of the Local Government Act requires the Council to review the cost effectiveness of its current arrangements for providing local infrastructure, services, and regulatory functions at regular intervals. Reviews must be undertaken when service levels are significantly changed, before current contracts expire, and in any case not more than six years after the last review.

The table below summarises the reviews that have been completed to date and when the next review is required for this activity.

Table 19: Summary of Reviews:

Scope of Review	Summary of Review	Review Date	Next Review
Three Waters Operations and Maintenance Contract	A review found that current operations and maintenance contract arrangements were appropriate, and that contract extensions or new contracts would be procured on a similar basis.	2022	2027

In addition to the Section 17A reviews, the Council is reviewing its current capability and capacity against the requirements of the future programmes of work set out in its activity management plans. To enhance the delivery of the capital and operational works programme the following actions are to be undertaken:

- A review of the capital programme for the next five years to better understand project complexities and delivery requirements;
- Investigate a new project management system to track and report project delivery progress;
- Increase the number of Project Managers to ensure the project programme is able to be delivered.

10.3 Asset Management Systems and Data

10.3.1 Information Systems and Tools

The Council has a variety of systems and tools that support effective operation and maintenance, record asset data, and enable that data to be analysed to support optimised life-cycle management. These are detailed below. There is a continual effort to incorporate all asset data into the core asset management systems where possible; where not possible, attempts are made to integrate or link systems so that they can be easily accessed.

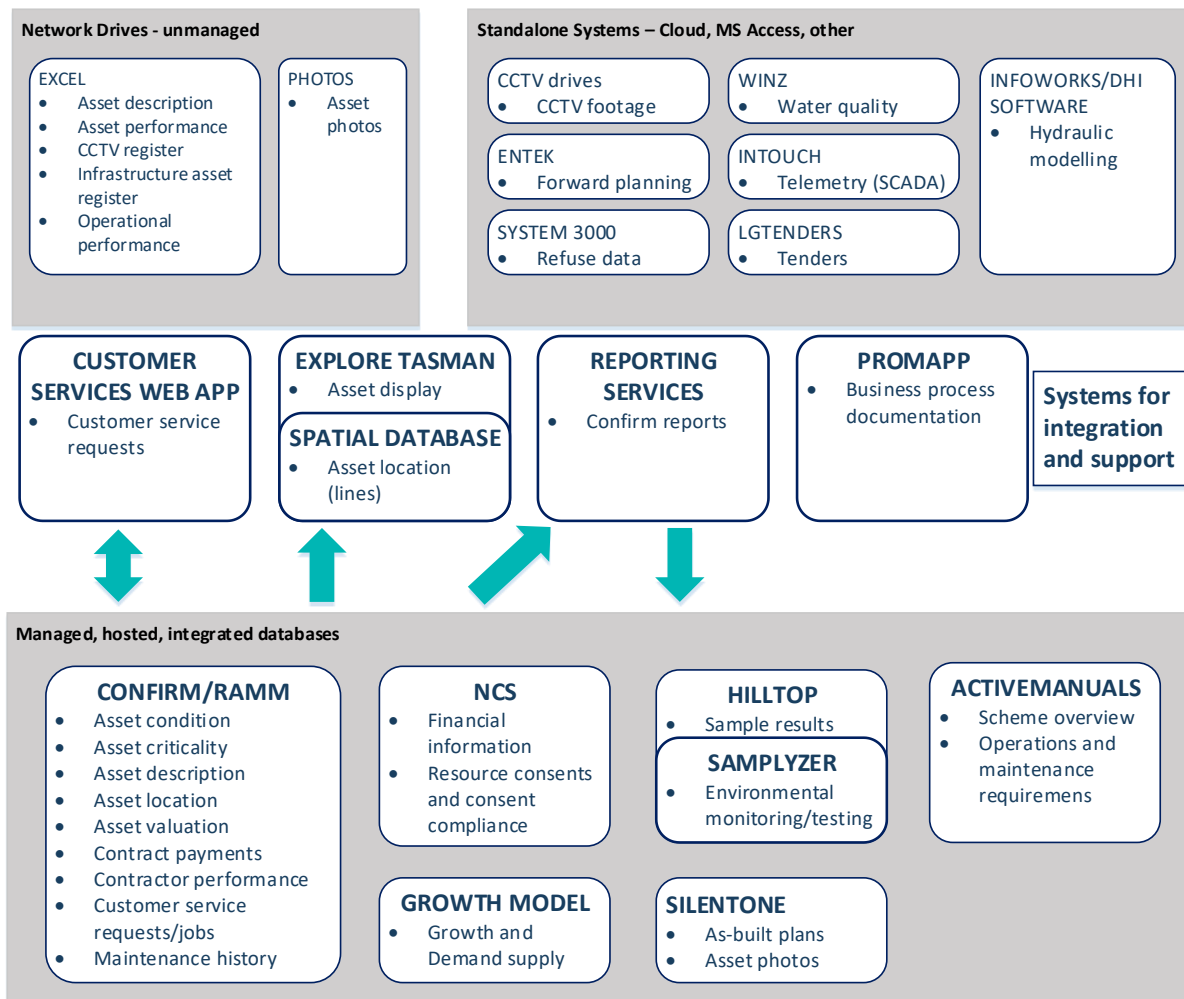


Figure 18: Council's Information Systems and Tools

10.3.2 Asset Data

Appendix D summarises the various data types, data source and how they are managed within the Council. It also provides a grading on data accuracy and completeness where appropriate. The Council is implementing a staged alignment to the NZ Asset Metadata Standards.

10.3.2.1 How do we maintaining/updating asset data

Asset data is constantly being collected, updated and checked. Sources of new or updated information include:

- As-builts drawing supplied when asset was constructed;
- DURFs (repairs and maintenance records);
- Field Surveys (for modelling);
- Applications for new connections.

10.3.3 Improvement programme

We are constantly aiming to improve the quality and reliability of the data we collect to help inform the scale and timing of investment.

10.3.4 Asset Data Quality

Consistent quality data is vital for reliable evidence-based decision-making.

The Council holds asset inventories for three waters related infrastructure assets. Three waters asset data is managed in our Confirm Asset Management System. Asset data quality is a measurement of how well the data satisfies the business needs across the Council's infrastructure operations, including:

- Day to day service delivery and operations
- Reactive and planned maintenance activities
- Upgrade and renewal planning (including modelling)
- Financial forecasting, management and valuation; and
- Contract performance management.

Overall, our three waters asset data is considered to be of sufficient quality to support day to day operations, but there are gaps around network modelling, asset risk profile and timeliness of capture of new assets for valuation purposes. Improvement across the completeness, accuracy and timeliness data quality dimensions would provide benefits across all aspects of asset management.

10.4 Critical Assets

Understanding the criticality of assets is fundamental to managing risk and enables Council to prioritise and target investment appropriately. This help to avoid over-investing in assets that have a lower consequence of failure, and will ensure assets that have a high consequence of failure are well managed and maintained Tasman's critical assets typically include:

- arterial road links including bridges;
- water and wastewater treatment plants;
- trunk mains;
- main pump stations;
- key water reservoirs;
- stopbanks; and
- detention dams.

The Council has developed an asset criticality assessment framework for water supply, wastewater and stormwater. The frameworks is defined by:

- a 'Criticality Score' from one (very low criticality asset) to five (very high criticality asset);
- a set of 'Criteria' against which each asset will be assessed and assigned a Criticality Score (see one above); and
- a logical set of rules and measures under each criteria that can be assessed for each asset, enable a criticality score to be assigned in a spatial GIS context.

For each asset, the criticality has been assessed against the following five criteria:

1. Number of people that would be affected if the asset failed.
2. Scale of how asset failure would prevent or restrict the use of a critical facility.
3. Ease of access and complexity of repair.
4. Potential impact asset failure has for environmental/health/cultural values.
5. Extent to which the asset failure has potential to initiate cascading failures and/or asset has interdependencies with other assets.

Based on the above, asset criticality has been assessed for all assets across the district and mapped spatially in a GIS viewer. The vulnerability of critical assets to natural hazards has been identified through the overlay of natural hazards information such as coastal inundation and sea level rise, stormwater and river flooding, fault lines, tsunami risk and liquefiable soils.

The asset criticality framework will help to ensure that the appropriate level of effort is being made to manage, maintain and renew them, and will extend to ensuring that the Council has adequate asset data to enable robust decisions to be made regarding the management of those assets.

10.5 Quality Management

The Council has not implemented a formal Quality Management system across the organisation. Quality is ensured by audits, checks and reviews that are managed on a case-by-case basis. The table below outlines the quality management approaches that support Council's asset management processes and systems.

Table 20: Quality Management Approaches:

Activity	Description
Process documentation	Council uses Promapp software to document and store process descriptions. Over time, staff are capturing organisational knowledge in an area accessible to all, to ensure business continuity and consistency. Detailed documentation, forms and templates can be linked to each activity in a process. Processes are shown in flowchart or swim lane format, and can be shared with external parties
Planning	The Long-Term Plan (LTP) and associated planning process are formalised across Council. There is a LTP project team, LTP governance team, and Asset Management Plan (AMP) project team that undertakes internal reviews prior to the Council approval stages. Following completion of the AMPs, a peer review is done, and the outcomes used to update the AMP improvement plans.

Activity	Description
Programme Delivery	This strictly follows a gateway system with inbuilt checks and balances at every stage. Projects cannot proceed until all criteria of a certain stage have been completely met and formally signed off.
Subdivision Works	Subdivision sites are audited for accuracy of data against the plans submitted. CCTV is performed on all subdivision stormwater and wastewater assets at completion of works and again before the assets are vested in the Council. If defects are found, the Council requires that they are repaired before it accepts the assets.
Asset Creation	As-built plans are reviewed on receipt for completeness and adherence to the Engineering Standards and Policies. If anomalies are discovered during data entry, these are investigated and corrected. As-built information and accompanying documentation is required to accompany maintenance contract claims.
Asset Data Integrity	Monthly reports are run to ensure data accuracy and completeness. Stormwater, water, wastewater, coastal structures, solid waste and streetlight assets are shown on the corporate GIS browser, Explore Tasman, and viewers are encouraged to report anomalies to the Activity Planning Data Management team.
Operations	Audits of a percentage of contract maintenance works are done every month to ensure that performance standards are maintained. Failure to comply with standards is often linked to financial penalties for the contractor.
Levels of Service	Key performance indicators are reported annually via the Council's Annual Report. This is audited by the Office of the Auditor General.
Reports to the Council	All reports that are presented to the Council by staff are reviewed and approved by the Senior Management Team prior to release.

11 Improvement Planning

The activity management plans have been developed to help Council decision-making around the management of their assets, deliver on agreed levels of service and identify the expenditure and funding requirements of the activity. Continuous improvements are necessary to ensure the Council continues to achieve the appropriate level of activity management practice along with delivering services in the most sustainable way while meeting the community's needs.

Establishment of a robust, continuous improvement process ensures that the Council is making the most effective use of resources to achieve an appropriate level of asset management practice. Assessment of our Activity Management Practices

11.1 Assessment of our Activity Management Practices

In 2021 the Council undertook an asset management maturity review and targets were developed.

The maturity levels were based on the International Infrastructure Management Manual descriptions to maturity.

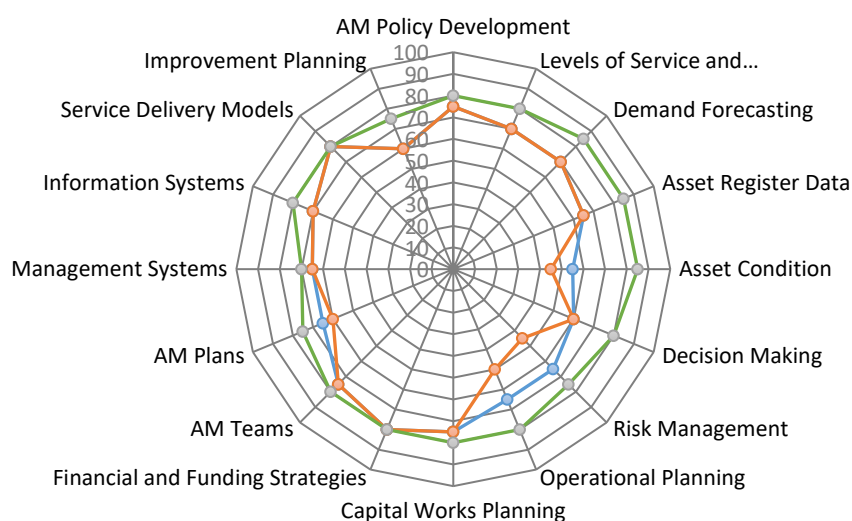


Figure 19: Water Activity Maturity Levels

The figure above indicates that focus areas for improvements were Asset Register Data, Asset Condition, Decision Making, Risk Management, and Operational Planning. Improvements have been incorporated and previously identified gaps have been addressed. Further improvements will be needed to be implemented over the next couple of years to meet the target and actions have been included in the Improvement Plan.

11.2 Peer Reviews

The Council staff reviews and prioritises the feedback received in the peer review reports and incorporates improvements in the activity management plan where possible.

11.2.1 Utility NZ 2021 review

The Council engaged Utility NZ to review the 2021 consultation versions of the Three Waters and Transportation Activity Management Plans (AMPs). The review focussed on the strategic purpose of activity planning and its application within the AMPs. The following four recommendations were made:

1. Purpose and value: Clearly define the organisational benefits that an AMP creates and monitor the asset management improvement plan against these benefits.
2. AMP structure that enables good planning: Clearly define the AMPs purpose and audience, then structure it accordingly.
3. Prioritise the planning process towards risk mitigation: Focus asset management improvements on the areas of greatest risk to levels of service and costs. The AMPs are light on what the demand for services is and linkages to renewals and maintenance intervention strategies.
4. Activity risks and mitigation: Use risk management as a tool to reduce organisational impact.

For each recommendation examples and guidance are provided in the appendices of the review document. The Council intends to implement the recommendations into its asset planning processes and its 2024 AMPs.

11.3 Improvement Plan

Establishment of a robust, continuous improvement process ensures that the Council is making the most effective use of resources to achieve the appropriate level of asset management practice. The continuous improvement process includes:

- identification of improvements;
- prioritisation of improvements;
- establishment of an improvement programme;
- delivery of improvements; and
- ongoing review and monitoring of the programme.

All improvements identified are included in a single improvement programme encompassing all activities. In this way opportunities to identify and deliver cross-activity or generic improvements can be managed more efficiently, and overall delivery of the improvement programme can be monitored easily.

11.3.1 Summary of Recent Improvements

Based on the peer review and internal evaluations and reviews, the Council has made improvements to its activity management plan and specific asset management processes.

Some of the Council's key achievements in the asset management processes over the previous three years include:

- asset criticality framework has been implemented for critical infrastructure;
- developers and Council officers are operating in accordance with the Nelson Tasman Land Development Manual.

Since the 2021 AMP review, staff have focused on the following improvements:

- Hydraulic modelling for Brightwater, Richmond, and Wakefield networks;
- Updating the Water Supply Bylaw;
- Developing and implementing Drinking Water Quality Policy in accordance with Water Quality Assurance Rules;
- Update of Rural Water Supply Public information brochure;
- Ongoing programme of new and upgraded Water Treatment Plants to meet the Water Quality Assurance Rules;
- Ongoing Leak detection and backflow protection.

11.3.2 Summary of Planned Improvements

A summary of the planned activity specific improvement items is shown below.

Table 21: Specific Improvement Items

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Cost/Resource Type	Comments
Improve asset condition data	Operations and maintenance contract includes more responsibility to contractor to collect and populate condition data	Some asset condition data is incomplete. Improved understanding of condition data will help Council with the renewals programme	High	Ongoing	Ongoing	Maintenance Contractor and Engineering Services (Activity Planning)	Maintenance Contract and Staff time
Improve data, processes and systems	The Council is planning to develop as built standards, and asset data and metadata standards	Improved data standards will enhance data reliability and accuracy.	Medium	Started	Ongoing	Asset Information Team	Staff time
Impact of climate change	Development of opportunities to assess impact of climate change on assets	Impact of climate change on assets is complex and relatively unknown	High	Started*	Ongoing	Activity Planning and Asset Management teams	*Work underway includes vulnerability assessment of Engineering Lifelines assets to natural hazards

Table 22: Generic Improvement Items

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Cost/Resource Type
Provide data confidence ratings for groups of assets within the valuation for each activity.		In the valuation reports data confidence is only assessed across the activity and not for the different types of asset groups. It is likely that data confidence varies considerably between buried assets and above ground assets and this is not reflected in the reports.	Medium	Not started	June 2024	Consultants and staff time
Consider how levels of service options are presented to the community	Consider how to better engage the community in agreeing appropriate levels of service through specific work streams (e.g. Risk, Resilience, and Recovery Planning).	Engagement is required to determine an appropriate level of service	Medium	Not started	2025	Staff time
Capture and track maintenance data	Historical costs should be analysed to calculate forward budgets	Improve the consistency and confidence when planning operations and maintenance budgets	Medium	Not started	Ongoing	Staff Time

Appendix A: Detailed Operating Budgets

	Name	Description	Total Budget	Financial Year Budget (\$)											Total Budget	
			2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2028/29	2029/30	3030/31	2034-44	2044-54	
0804240405	88 Valley Contract Routine	Routine Works under 3 Waters Contract	1,954,050	65,135	65,135	65,135	65,135	65,135	65,135	65,135	65,135	65,135	65,135	651,350	651,350	
0804241205	88 Valley Contract Reactive	Reactive works under 3 Waters Contract	3,110,340	103,678	103,678	103,678	103,678	103,678	103,678	103,678	103,678	103,678	103,678	1,036,780	1,036,780	
08042505	88 Valley Electricity	Electricity costs of council infrastructure in the 88 Valley water scheme	144,570	4,819	4,819	4,819	4,819	4,819	4,819	4,819	4,819	4,819	4,819	48,190	48,190	
0805240105	Dovedale Other O&M	Other non-contract miscellaneous works	62,310	2,077	2,077	2,077	2,077	2,077	2,077	2,077	2,077	2,077	2,077	20,770	20,770	
0805240405	Dovedale Contract Routine	Routine Works under 3 Waters Contract	4,767,840	158,928	158,928	158,928	158,928	158,928	158,928	158,928	158,928	158,928	158,928	1,589,280	1,589,280	
0805241205	Dovedale Contract Reactive	Reactive works under 3 Waters Contract	7,506,000	250,200	250,200	250,200	250,200	250,200	250,200	250,200	250,200	250,200	250,200	2,502,000	2,502,000	
08052505	Dovedale Electricity	Electricity costs of council infrastructure in the Dovedale water scheme	1,170,030	39,001	39,001	39,001	39,001	39,001	39,001	39,001	39,001	39,001	39,001	390,010	390,010	
08052508	Dovedale Rates	Rates and water usage for Council owned properties in the Dovedale scheme	24,300	810	810	810	810	810	810	810	810	810	810	8,100	8,100	
0806240105	Redwoods Other O&M	Other non contract miscellaneous works	60,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000	20,000	
0806240405	Redwoods Contract Routine	Routine Works under 3 Waters Contract	3,715,200	123,840	123,840	123,840	123,840	123,840	123,840	123,840	123,840	123,840	123,840	1,238,400	1,238,400	
0806241205	Redwoods Contract Reactive	Reactive works under 3 Waters Contract	4,511,640	150,388	150,388	150,388	150,388	150,388	150,388	150,388	150,388	150,388	150,388	1,503,880	1,503,880	
08062505	Redwoods Electricity	Electricity costs of council infrastructure on the Redwood Valley supply	1,425,060	47,502	47,502	47,502	47,502	47,502	47,502	47,502	47,502	47,502	47,502	475,020	475,020	
08062508	Redwood Rates	Rates and water usage for Council owned properties connected to the Redwood Valley supply	48,660	1,622	1,622	1,622	1,622	1,622	1,622	1,622	1,622	1,622	1,622	16,220	16,220	
0807240105	Hamama Maintenance	All Maintenance work for Hamama scheme	451,590	15,053	15,053	15,053	15,053	15,053	15,053	15,053	15,053	15,053	15,053	150,530	150,530	
08072508	Hamama Rates	Rates and water usage for Council owned properties connected to the Hamama supply	28,410	947	947	947	947	947	947	947	947	947	947	9,470	9,470	
08092203	Wai-iti Dam consultants	Professional service support	629,070	20,969	20,969	20,969	20,969	20,969	20,969	20,969	20,969	20,969	20,969	209,690	209,690	
0809240405	Wai-iti Dam Contract Routine	Routine Works under 3 Waters Contract	69,510	2,317	2,317	2,317	2,317	2,317	2,317	2,317	2,317	2,317	2,317	23,170	23,170	
0809241205	Wai-iti Dam Contract Reactive	Reactive works under 3 Waters Contract	70,830	2,361	2,361	2,361	2,361	2,361	2,361	2,361	2,361	2,361	2,361	23,610	23,610	
08092508	Wai-iti Dam Rates	Rates and water usage for Council owned properties in the Wai-iti supply	389,190	12,973	12,973	12,973	12,973	12,973	12,973	12,973	12,973	12,973	12,973	129,730	129,730	
0826240405	Takaka Contract Routine	Routine Works under 3 Waters Contract	309,600	10,320	10,320	10,320	10,320	10,320	10,320	10,320	10,320	10,320	10,320	103,200	103,200	
0826241205	Takaka Contract Reactive	Reactive works under 3 Waters Contract	467,310	15,577	15,577	15,577	15,577	15,577	15,577	15,577	15,577	15,577	15,577	155,770	155,770	
08262505	Takaka electricity	Electricity costs of Council's infrastructure	123,090	4,103	4,103	4,103	4,103	4,103	4,103	4,103	4,103	4,103	4,103	41,030	41,030	
08512401	Waimea Dam Operations	Operating Costs Waimea Dam - consolidation of all operating costs.	59,589,210	1,589,210	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	20,000,000	20,000,000	
0861240101	Reticulation Other O&M	Other non contract miscellaneous works	1,270,890	42,363	42,363	42,363	42,363	42,363	42,363	42,363	42,363	42,363	42,363	423,630	423,630	
0861240105	Treatment Plant Other O&M	Other non contract miscellaneous works	183,600	6,120	6,120	6,120	6,120	6,120	6,120	6,120	6,120	6,120	6,120	61,200	61,200	
0861240401	Reticulation Contract Routine	Routine Works under 3 Waters Contract	2,432,430	81,081	81,081	81,081	81,081	81,081	81,081	81,081	81,081	81,081	81,081	810,810	810,810	
0861240405	Treatment Plant Contract Routine	Routine Works under 3 Waters Contract	21,362,400	712,080	712,080	712,080	712,080	712,080	712,080	712,080	712,080	712,080	712,080	7,120,800	7,120,800	
0861240406	Pump Stations Contract Routine	Routine Works under 3 Waters Contract	1,228,620	40,954	40,954	40,954	40,954	40,954	40,954	40,954	40,954	40,954	40,954	409,540	409,540	
0861240407	Reservoirs Contract Routine	Routine Works under 3 Waters Contract	2,279,880	75,996	75,996	75,996	75,996	75,996	75,996	75,996	75,996	75,996	75,996	759,960	759,960	
0861240408	Bores Contract Routine	Routine Works under 3 Waters Contract	1,874,430	62,481	62,481	62,481	62,481	62,481	62,481	62,481	62,481	62,481	62,481	624,810	624,810	
0861241201	Reticulation Contract Reactive	Reactive works under 3 Waters Contract	33,436,800	1,114,560	1,114,560	1,114,560	1,114,560	1,114,560	1,114,560	1,114,560	1,114,560	1,114,560	1,114,560	11,145,600	11,145,600	
0861241205	Treatment Plant Contract Reactive	Reactive works under 3 Waters Contract	3,715,200	123,840	123,840	123,840	123,840	123,840	123,840	123,840	123,840	123,840	123,840	1,238,400	1,238,400	

	Name	Description	Total Budget	Financial Year Budget (\$)										Total Budget	
			2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2028/29	2029/30	3030/31	2034-44	2044-54
0861241206	Pump Stations Contract Reactive	Reactive works under 3 Waters Contract	1,393,200	46,440	46,440	46,440	46,440	46,440	46,440	46,440	46,440	46,440	46,440	464,400	464,400
0861241207	Reservoirs Contract Reactive	Reactive works under 3 Waters Contract	960,180	32,006	32,006	32,006	32,006	32,006	32,006	32,006	32,006	32,006	32,006	320,060	320,060
0861241208	Bores Contract Reactive	Reactive works under 3 Waters Contract	495,120	16,504	16,504	16,504	16,504	16,504	16,504	16,504	16,504	16,504	16,504	165,040	165,040
08612505	Club Schemes Electricity	Electricity costs of Council's infrastructure that covers Urban Water Club schemes	15,274,560	509,152	509,152	509,152	509,152	509,152	509,152	509,152	509,152	509,152	509,152	5,091,520	5,091,520
08612508	Rates and Water	Rates and water usage for Council owned properties in Urban Water Club schemes	6,340,620	211,354	211,354	211,354	211,354	211,354	211,354	211,354	211,354	211,354	211,354	2,113,540	2,113,540
0862240402	Motueka Reticulation Routine	Routine works under 3 Waters Contract	113,820	3,794	3,794	3,794	3,794	3,794	3,794	3,794	3,794	3,794	3,794	37,940	37,940
0862240403	Motueka Bores and Treatment Routine	Routine works under 3 Waters Contract	1,956,570	65,219	65,219	65,219	65,219	65,219	65,219	65,219	65,219	65,219	65,219	652,190	652,190
0862241202	Motueka Reticulation Reactive	Reactive works under 3 Waters Contract	792,960	26,432	26,432	26,432	26,432	26,432	26,432	26,432	26,432	26,432	26,432	264,320	264,320
0862241203	Motueka Bores and Treatment Reactive	Reactive works under 3 Waters Contract	1,801,440	60,048	60,048	60,048	60,048	60,048	60,048	60,048	60,048	60,048	60,048	600,480	600,480
08622505	Motueka Electricity	Electricity costs of Council's infrastructure in the Motueka scheme	951,090	31,703	31,703	31,703	31,703	31,703	31,703	31,703	31,703	31,703	31,703	317,030	317,030
08622508	Rates and Water	Rates and water usage for Council owned properties in Motueka scheme	64,860	2,162	2,162	2,162	2,162	2,162	2,162	2,162	2,162	2,162	2,162	21,620	21,620
08632202	Legal Costs	Procurement of legal advice	114,120	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	38,040	38,040
08632203	Consultants	Professional service support	318,096	10,603	10,603	10,603	10,603	10,603	10,603	10,603	10,603	10,603	10,603	106,032	106,032
0863220310	Water Safety Plans	Professional services to assist with preparing and reviewing Water Safety Plans	1,621,620	54,054	54,054	54,054	54,054	54,054	54,054	54,054	54,054	54,054	54,054	540,540	540,540
08632207	Resource Consents	Application and renewal of Urban Water Club & Motueka schemes resource consents	648,630	21,621	21,621	21,621	21,621	21,621	21,621	21,621	21,621	21,621	21,621	216,210	216,210
0863256002	SCADA/Telemetry	Maintenance of telemetry and SCADA components	809,430	26,981	26,981	26,981	26,981	26,981	26,981	26,981	26,981	26,981	26,981	269,810	269,810
0863256005	Backflow Prevention Testing	Testing of key sites to prevent potential backflow into water supply	1,135,140	37,838	37,838	37,838	37,838	37,838	37,838	37,838	37,838	37,838	37,838	378,380	378,380
0863256006	Demand, Flow, Leakage Modelling	Leak detection, day/night flow monitoring and network modelling	4,644,510	154,817	154,817	154,817	154,817	154,817	154,817	154,817	154,817	154,817	154,817	1,548,170	1,548,170
0863256008	Fire Hydrant audit and flow tests	Flow and pressure testing of hydrants	144,510	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	48,170	48,170
08632605	Consent Monitoring	Resource Consent Monitoring for Urban Water Club & Motueka schemes	323,970	10,799	10,799	10,799	10,799	10,799	10,799	10,799	10,799	10,799	10,799	107,990	107,990

Appendix B: Detailed Capital Budgets

ID	Name	Description	Total Budget	Financial Year Budget (\$)										Total Budget	
			2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2028/29	2029/30	3030/31	2034-44	2044-54
86001	88 Valley Reticulation Renewal Programme	Renewal of reticulation within the 88 Valley scheme	273,221	0	0	0	0	0	0	0	0	0	0	218,166	55,055
86005	88 Valley Reticulation Upgrades	Upgrade Treeton Pump Station, new main from Treeton to Totara, extra storage capacity	1,478,000	1,478,000	0	0	0	0	0	0	0	0	0	0	0
86008	Brightwater Reticulation - SH6 Main Renewal	Replacement of AC main from Ranzau Road to 3 Brothers Corner	3,688,000	1,938,000	1,750,000	0	0	0	0	0	0	0	0	0	0
86013	Dovedale Retic - Break Pressure Tank & Reservoir Renewal	Replacing break pressure tank and reservoirs	198,199	0	0	0	0	0	0	0	0	0	0	110,111	88,088
86016	Dovedale Reticulation Renewal Programme	Renewal of reticulation within the Dovedale scheme	3,129,212	200,000	100,000	100,000	53,000	53,000	53,000	53,000	105,000	105,000	105,000	1,101,106	1,101,106
86019	New water infratructure to service Jefferies Road Growth Are	New source, treatment, storage and reticulation	10,295,342	0	0	0	0	0	0	0	0	0	0	0	10,295,342
86021	Hamama Reticulation - Reservoir Renewal	Renewal of strainer and settlement tank	33,033	0	0	0	0	0	33,033	0	0	0	0	0	0
86022	Hamama Treatment - Install Household Treatment Units	Install household treatment units in each house on scheme	225,727	0	0	0	0	0	225,727	0	0	0	0	0	0
86023	Hamama Reticulation - Pipe Renewals	Pipeline renewals programme	677,180	0	0	0	0	0	236,738	440,442	0	0	0	0	0
86024	Hamama Reticulation - Valve Renewals	Valve renewals	16,517	0	0	0	0	0	16,517	0	0	0	0	0	0
86027	Mapua Reticulation - Channel Crossing	Install additional water main capacity under Mapua estuary to Rabbit Island	1,112,117	0	0	0	0	0	0	0	0	0	0	1,112,117	0
86033	Murchison WTP & PS - Treatment Renewals	Upgrade the Water Treatment Plant to meet Drinking Water Standards New Zealand and increase resilience.	1,890,000	290,000	1,600,000	0	0	0	0	0	0	0	0	0	0
86037	Redwood Valley WTP & PS - Treatment Upgrades Golden Hills	Replace all old components at site and building to meet Drinking Water Standerds New Zealand	7,805,000	2,550,000	3,205,000	2,050,000	0	0	0	0	0	0	0	0	0
86038	Redwood Reticulation Renewal Programme	Renewal of reticulation within the Redwoods scheme	1,233,498	53,000	53,000	53,000	105,000	105,000	105,000	105,000	53,000	53,000	53,000	330,332	165,166
86039	Redwood Valley WTP & PS - O'Connor's Creek Treatment Upgrade	Upgrade to meet Drinking Water Standards New Zealand	531,160	531,160	0	0	0	0	0	0	0	0	0	0	0
86047	Richmond WTP - Capacity Upgrade	Increase capacity of current WTP including new plant pipe work, pressure cylinder & controls.	740,000	0	0	110,000	630,000	0	0	0	0	0	0	0	0
86049	Backflow Prevention Programme	Installation of backflow preventions at key sites	1,706,000	300,000	300,000	300,000	200,000	200,000	100,000	100,000	100,000	53,000	53,000	0	0
86050	Old Upper Richmond Pipe renewal x6 street	Replacement of cast iron pipes on Edward, Roeske, Wilkes, George, William, Gilbert Streets	5,109,000	0	0	393,000	1,572,000	1,572,000	1,572,000	0	0	0	0	0	0

86051	Richmond Reticulation - Lower Queen Street Trunkmain Upgrade	Trunk water main replacement to provide increased capacity.	4,553,000	658,000	658,000	1,467,000	1,770,000	0	0	0	0	0	0	0	0
86056	Richmond South Reticulation - Low Level Reservoir Stage 2	Staged development of a third concrete tank to provide storage for Richmond West development and low level areas of Richmond South	2,422,433	0	0	0	0	0	0	0	0	0	0	2,422,433	0
86059	Tapawera WTP Upgrades	Install two new exterior bores, construct a new building with additional filtration, UV & electrical upgrades. Reuse existing pH & Chlorination equipment to meet Drinking Water Standards New Zealand and increase resilience.	2,595,000	620,000	1,975,000	0	0	0	0	0	0	0	0	0	0
86063	Motueka Reticulation - new water reticulation in unservices	New reticulation to supply water to unserved areas	18,718,803	0	0	0	0	0	0	0	0	0	0	18,718,803	0
86067	Motueka Reticulation Renewal Programme	Renewal of reticulation within the Motueka scheme	660,664	0	0	0	0	0	0	0	0	0	0	66,066	594,597
86071	Occupational Health & Safety	Initiatives to improve health and safety (anchor points, railings and chlorine storage)	1,125,042	105,000	87,500	105,000	87,500	105,000	52,500	52,500	52,500	18,550	18,550	220,221	220,221
86072	Richmond South Reticulation - Low Level Water Main	New 350mm trunk main from Richmond WTP to Low Level Reservoir	1,500,000	1,500,000	0	0	0	0	0	0	0	0	0	0	0
86073	Urban Water Club - Telemetry Upgrade	Scada/Telemetry software upgrades every 5 years	165,166	0	0	0	0	0	0	0	0	0	0	82,583	82,583
86074	Motueka Telemetry Upgrade	Scada/telemetry software upgrades every 5 years	16,517	0	0	0	0	0	0	0	0	0	0	11,011	5,506
86075	88 Valley Telemetry Upgrade	Scada/telemetry software upgrades every 5 years	11,561	0	0	0	2,312	0	0	0	0	2,312	0	4,625	2,312
86076	Dovedale Telemetry Upgrade	Scada/telemetry software upgrades every 5 years	81,937	25,000	25,000	25,000	0	0	0	0	0	0	0	4,625	2,312
86077	Redwood Telemetry Upgrade	Scada/Telemetry software upgrades every 5 years	6,937	0	0	0	0	0	0	0	0	0	0	4,625	2,312
86078	Urban Water Club - Telemetry Renewal	Renewal of telemetry within the Urban Club schemes	1,101,106	0	0	0	0	0	0	0	0	0	0	550,553	550,553
86079	Motueka Telemetry Renewal	Renewal of telemetry within the Motueka scheme	152,583	0	0	0	35,000	0	0	0	0	35,000	0	55,055	27,528
86080	88 Valley Telemetry Renewal	Renewal of telemetry within the 88 Valley scheme	55,055	0	0	0	0	0	0	0	0	0	0	55,055	0
86081	Dovedale Telemetry Renewal	Renewal of telemetry within the Dovedale scheme	542,332	53,000	0	0	53,000	0	0	53,000	0	0	53,000	165,166	165,166
86082	Redwood Telemetry Renewal	Renewal of telemetry within the Redwoods scheme	163,583	0	27,000	0	0	27,000	0	0	27,000	0	0	55,055	27,528
86090	Urban Water Club Scheme Monitoring Equipment	Routine replacement of monitoring equipment	950,000	53,000	21,000	21,000	53,000	21,000	21,000	53,000	21,000	21,000	53,000	306,000	306,000
86091	Motueka Monitoring Equipment	Renewal of monitoring equipment in Motueka Scheme	251,166	0	32,000	0	11,000	0	0	32,000	0	11,000	0	66,066	99,100

86093	Dovedale Monitoring Equipment	2 deplox units need replacing and turbidity unit old and no longer supported by 2022	33,000	0	11,000	0	0	11,000	0	0	11,000	0	0	0	0
86094	Urban Water Club Reticulation - Valve Renewal	Renewal of valves within the Urban Water Club schemes	5,520,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	1,840,000	1,840,000
86097	Urban Water Club Reticulation - Meter Renewal	Renewal of water meters within the Urban Water Club schemes	10,324,826	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	115,616	209,210
86099	Motueka Retic - Flowmeters, Hydrants, Pumps, VSD & Valves	Renewal of flowmeters, hydrants, pumps, variable speed drives, & valve in the Motueka Scheme	366,000	20,000	11,000	20,000	11,000	20,000	11,000	20,000	11,000	11,000	11,000	110,000	110,000
86100	88 Valley Flowmeters, Hydrants, Pumps, VSD & Valves Renewals	Renewal of Flowmeters, Hydrants, Pumps, VSD & Valves in 88 Valley Scheme	170,000	2,000	2,000	13,000	2,000	2,000	13,000	2,000	2,000	13,000	2,000	53,000	64,000
86101	Dovedale Retic - Flowmeters, Hydrants, Pumps, VSD & Valves	Renewal of meters, hydrants, pumps, VSD and valves within the Dovedale scheme	636,000	50,000	18,000	50,000	18,000	50,000	18,000	18,000	18,000	18,000	18,000	180,000	180,000
86102	Kaiteriteri Reticulation - Reservoir Improvements	Existing reservoir roof and liners require upgrading	650,000	400,000	250,000	0	0	0	0	0	0	0	0	0	0
86103	Redwood Retic - Flowmeters, Hydrants, Pumps & Valves	Renewal of meters, hydrants, pumps, VSD and valves within the Redwoods scheme	468,000	14,000	14,000	30,000	14,000	14,000	30,000	14,000	30,000	14,000	14,000	140,000	140,000
86111	Urban Water Club Reticulation - Renewal	Renewal of reticulation within the Urban Water Club schemes	31,500,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	10,500,000	10,500,000
86112	Richmond Reticulation - Gladstone Rd Upgrade	New water main from Queen Street to Three Brothers Corner Roundabout.	3,578,595	82,583	192,694	1,651,659	1,651,659	0	0	0	0	0	0	0	0
86113	Richmond South Reticulation - High Level Water Main	New rising main and pump station from Low Level Reservoir to High Level Reservoir	2,643,444	0	0	0	0	0	0	0	0	0	210,000	2,433,444	0
86114	Marahau Reticulation - New Town Supply	Allowance for possible future water supply in Marahau	13,763,826	0	0	0	0	0	0	0	0	0	0	9,359,401	4,404,424
86115	Richmond South Reticulation - Heights Water Main	New rising main and pump station from High Level Reservoir to Heights Reservoir	275,277	0	0	0	0	0	0	0	0	0	0	0	275,277
86116	Richmond South Reticulation - High Level Reservoir Link	Upsize of 50mm to 150mm along Hill Street between Hart Rd and White Rd	842,346	0	0	0	0	0	0	0	0	0	0	842,346	0
86118	Richmond South Reticulation - Bateup Rd/White Rd Connection	Install new pipe between Bateup Road and White Road.	729,000	0	0	0	0	121,000	608,000	0	0	0	0	0	0
86119	Richmond South Reticulation - Heights Reservoir	New reservoir and connecting pipe to High Level Reservoir	2,422,433	0	0	0	0	0	0	0	0	0	0	0	2,422,433
86120	Richmond South Reticulation - High Level Reservoir	New storage reservoir for high level zone and decommission (& re-use) Arizona Tank	2,697,710	0	0	0	0	0	0	0	0	0	0	2,697,710	0
86121	Richmond South Reticulation - Low Level Reservoir Stage 1	Development of two concrete tanks to provide storage for Richmond West development and low level areas of Richmond South	5,973,000	2,973,000	3,000,000	0	0	0	0	0	0	0	0	0	0

86123	Waimea Water Strategy - Brightwater & Wakefield Water Retic,	New and upgraded infrastructure including source, treatment and reticulation to improve level of service and growth capacity to Wakefield and Brightwater	38,350,000	2,000,000	2,650,000	3,700,000	9,300,000	7,900,000	200,000	1,400,000	1,500,000	0	500,000	9,200,000	0
86127	Urban Water Club Reticulation - Hydrant Renewal	Renewal of hydrants within Urban Water Club	1,500,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	500,000
86128	Urban Water Club Reticulation - Pump & VSD Renewals	Renewal of pumps and VSDs within Urban Water Club	1,750,000	50,000	50,000	75,000	50,000	50,000	75,000	50,000	50,000	75,000	50,000	575,000	600,000
86133	New reservoir and high lift pumps at Motueka Recreation Cent		500,000	500,000	0	0	0	0	0	0	0	0	0	0	0
86136	Motueka Reticulation - Motueka West Water Main Stage 2	New water reticulation from Grey Street to King Edward Street.	1,600,000	0	0	0	0	0	150,000	1,450,000	0	0	0	0	0
86142	Redwood Reticulation - Pipe Re-location	Relocation due to farming/forestry operations or development	110,111	0	0	0	0	0	0	0	0	0	0	55,055	55,055
86143	88 Valley Pipe Re-location	Relocation due to farming/forestry operations or development	110,111	0	0	0	0	0	0	0	0	0	0	55,055	55,055
86144	Dovedale Reticulation - Pipe Re-location	Relocation due to farming/forestry operations or development	110,111	0	0	0	0	0	0	0	0	0	0	55,055	55,055
86147	Climate Change Action Plan (Capital)	Energy Savings Initiatives	550,553	0	0	0	0	0	0	0	0	0	0	275,277	275,277
86153	Dovedale - New source & raw water line from Motueka River Va		6,050,000	0	1,950,000	2,050,000	2,050,000	0	0	0	0	0	0	0	0
86154	Dovedale - WTP - Filtration & UV		1,000,000	100,000	0	900,000	0	0	0	0	0	0	0	0	0
86157	SCADA technology future-proofing		600,000	100,000	0	0	0	50,000	200,000	200,000	50,000	0	0	0	0
86159	Wakefield source - new leg to infiltration gallery		300,000	300,000	0	0	0	0	0	0	0	0	0	0	0
86162	To meet obligations under Water Services Act for security of		1,150,000	0	0	0	0	0	0	0	0	0	0	1,150,000	0
86166	Collingwood - WTP - install filtration & pH adjustment		600,000	100,000	500,000	0	0	0	0	0	0	0	0	0	0
86168	Richmond - Programme of seismic valve assessments and improv		300,000	100,000	100,000	50,000	50,000	0	0	0	0	0	0	0	0
86169	Kaiteriteri - WTP - contact tank, WTP - filtration, flush to		875,000	75,000	800,000	0	0	0	0	0	0	0	0	0	0
86172	Mapua - Reticulation Upgrades to service Growth		4,950,000	0	0	0	0	150,000	2,400,000	2,400,000	0	0	0	0	0
86173	Mapua - Korepo Road Renewal		500,000	0	50,000	450,000	0	0	0	0	0	0	0	0	0

86174	Mapua - Brabant Drive Pipe Renewal		1,075,000	0	0	0	0	100,000	975,000	0	0	0	0	0	0
86175	Murchison Reticulation Upgrades to service growth		1,400,000	0	0	0	150,000	750,000	500,000	0	0	0	0	0	0
86176	Pohara WTP Upgrade		300,000	300,000	0	0	0	0	0	0	0	0	0	0	0
86177	Richmond Cropp Place PS Upgrade		150,000	150,000	0	0	0	0	0	0	0	0	0	0	0
86178	Richmond Reticulation Upgrades to service growth		20,000,000	0	0	0	500,000	1,500,000	4,500,000	5,000,000	5,000,000	3,500,000	0	0	0
86179	Upper Takaka WTP Upgrade		100,000	100,000	0	0	0	0	0	0	0	0	0	0	0
86181	Wakefield WTP Upgrade		200,000	200,000	0	0	0	0	0	0	0	0	0	0	0
86184	Brightwater Reticulation Upgrades		2,300,000	0	0	150,000	1,075,000	1,075,000	0	0	0	0	0	0	0
86185	Mapua Wharf Booster Pump Station		75,000	0	0	75,000	0	0	0	0	0	0	0	0	0
86186	Mapua Ruby Bay Treatment Plant Pump Upgrades		325,000	50,000	275,000	0	0	0	0	0	0	0	0	0	0
86194	Motueka WTP Upgrade - A		50,000	0	0	0	50,000	0	0	0	0	0	0	0	0
86204	Richmond Reticulation - Richmond West Loop Main	New 200mm loop main to service Richmond West North of Borck Creek	2,100,000	0	0	0	0	0	0	0	0	0	0	2,100,000	0
	Capital Programme Scope Risk Adjustment	Capital Programme Scope Risk Adjustment	- 24,678,843	- 2,030,474	- 2,199,119	- 1,612,266	- 2,177,747	- 1,616,000	- 1,437,952	- 1,372,694	-931,450	-621,386	-342,455	-6,789,673	-3,547,626

Appendix C: Legislation, Policies, Strategies, Standards, Strategic, Planned Activity Studies

Table 23: Key Legislation

Key Legislation	How it relates to this Activity
The Health Act 1956	<p>The Council have the responsibilities under the Health Act 1956 to improve, promote, and protect public health within the District.</p> <p>The Health Act includes some specific and some implied references to water services including:</p> <p>Section 23 grants powers to local authorities to protect public health.</p> <p>Section 60 makes it an offence to cause the pollution of a water supply. This may be invoked if wastewater is allowed to get into a source of water used as a water supply.</p>
Local Government Act 2002	<p>The Local Government Act requires local authorities to prepare a ten-year Long Term Plan and 30-year Infrastructure Strategy, which are to be reviewed every three years. The Act requires local authorities to be rigorous in their decision-making by identifying all practicable options and assessing those options by considering the benefits and costs in terms of the present and future well-being of the community. This activity management plan provides information to support the decisions considered in the Long Term Plan.</p> <p>The Local Government Act includes some specific and some implied references to water services including:</p> <p>Section 11A states local authorities are required to provide 'core services'. Network services are listed as a core service.</p> <p>Section 125 requires the local authority to undertake an assessment of the water and sanitary services within its area.</p> <p>Section 126 states the purpose of an assessment is to assess the "adequacy of water and other sanitary services available to communities..." in terms of the quality of the service currently available; the potential health risks from the absence or deficiency of the service; the current and estimated future demand.</p>
Taumata Arowai—the Water Services Regulator Act 2020	<p>The bill establishes Taumata Arowai - the Water Services Regulator as a new Crown Agency and provides for its objectives general functions operating principles, and governance arrangements. Taumata Arowai is responsible for a number of complementary functions relating to improving the quality of drinking water and environmental performance of water networks.</p>
Water Services Act (202	<p>Established drinking water standards and regulates all persons and organisations that supply drinking water.</p>
The WSE Act (2022) and as amended by the Water Services Entities Amendment Act 2023:	<p>The WSE Act was amended by the Water Services Entities Amendment Act 2023 to establish the 10 water services entities based on existing regional boundaries and introduces a staggered timeframe for their establishment.</p>
Infrastructure Funding and Financing Act 2020	<p>Provides a new legislative tool to enable private capital to support the provision of new infrastructure for housing and urban development.</p> <p>The Act provides opportunities for local councils, Māori and iwi, and developers to partner and deliver infrastructure, free of the council's debt limits or from charging high</p>

Key Legislation	How it relates to this Activity
	upfront costs to developers.
Covid-19 Recovery (Fast-track Consenting) Act 2020	This Act shortcuts the current resource consent process under the RMA to support New Zealand's recovery from the impacts of Covid-19. The Act's purpose is to urgently promote employment to support New Zealand's recovery and the certainty of ongoing investment across New Zealand, while continuing to promote the sustainable management of natural and physical resources.
Resource Management Act 1991	<p>The Resource Management Act 1991 (RMA) is the principal legislation that sets out how we manage our environment sustainably. As well as managing air, soil, freshwater and the coastal marine area (and the effects of human activity on these resources), the RMA regulates land use and the provision of infrastructure, which are integral components of New Zealand's planning system.</p> <p>Many sections of the Act are relevant to the control of wastewater discharges and the process for seeking consent to undertake the activity. Specific sections include:</p> <p>Section 13 places restrictions on certain uses of the beds of lakes and rivers, which can affect maintenance of wastewater reticulation located near watercourses.</p> <p>Section 15 does not allow the discharge of any contaminant into water or allow a contaminant to enter water unless the discharge is expressly allowed for by a national environmental standard or other regulations, a rule in a regional plan or a resource consent.</p> <p>Part 6 (sections 87A–165) describes the requirements for applying for resource consents and implementing resource consent processes.</p>
Civil Defence Emergency Management Act 2002	Sets an expectation that the Council's lifeline utilities (which includes wastewater service) to prepare to function at the fullest possible extent during and after an emergency, even though this may be at a reduced level of service.
Health and Safety in Employment Act 1992 and 2015	Health and Safety legislation requires that staff and contractors are kept safe at work. New legislative changes to the act will mean improved health and safety measures will be required.
Utilities Access Act 2010	The processes and rules for coordinating work done in transport corridors by utility operators, or that affects utility operators' assets
Te Tiriti o Waitangi – Treaty of Waitangi	<p>The Treaty of Waitangi is an agreement between Māori and the Crown. Under Section 4 of the Local Government Act 2002, local authorities are required to 'recognise and respect the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and to maintain and improve opportunities for Māori to contribute to local government decision-making processes'.</p> <p>Sections 77 and 81 detail the scale of requirement for local authorities to seek contributions and involvement from Māori in consultation and decision-making processes.</p>
Climate Change Response Act 2002	The Climate Change Response Act 2002 puts in place a legal framework to support New Zealand to respond to climate change and meet its international obligations. It also establishes the New Zealand Emissions Trading Scheme.

Table 24: Key National Policies and Strategies that relate to this activity

Documentation	Affect on the Activity
National Policy Statement on Urban Development Capacity 2016	Sets out the objectives and policies for providing development capacity under the Resource Management Act 1991 and came into effect on 1 December 2016.
National Policy Statements for Freshwater Management (NPS-FM)	<p>The NPS-FM requires the Councils to set water quality limits for water bodies which (at least) meet the national objectives related to ecosystem health and human health for recreation.</p> <p>All regional (and unitary) Councils need to fully implement the objectives and policies in the NPSFM as promptly as is reasonable, and no later than December 2025. That means water quality objectives will be set for freshwater management units within the region which must reflect Tangata whenua roles and interests.</p> <p>Under Policy A2, every Regional Council is:</p> <ul style="list-style-type: none"> to specify targets and implement methods (either or both regulatory and non-regulatory) in a way that considers the sources of relevant contaminants recorded under Policy CC1 (accounting for freshwater takes and contaminants), to assist the improvement of water quality in the freshwater management units, and to meet those targets within a defined timeframe. <p>This requirement is particularly relevant for the Council's discharges of water treatment process water to freshwater bodies.</p>
National Environmental Standard Sources of Human Drinking Water	Guidelines intended to reduce the risk of contaminating drinking water sources by requiring regional councils to consider the effects of activities on drinking water sources in their decision making. Regulations 6, 7 and 8 apply to applications for discharge permits issued by regional councils.
The Local Government (Financial Reporting) Regulations 2011	Sets out the content of local authorities' annual reports and financial reporting framework and standards.
Sustainable Development for New Zealand - Programme of Action (Ministry of Social Development)	Sets out the Government's approach to achieving sustainable development and specifies an improved provision of infrastructure and services (including water supply, wastewater treatment transport, energy and housing).

Table 25: NZ Standards

Standard	Affect on the Activity
AS/NZS 3917:2013	Fixed Term Contract Management
NZS 9201.23:2004	Model general bylaws - Trade waste (Water use minimisation)
Ministry for the Environment: Coastal Hazards and Climate Change -Guidance	A major review of the 2008 edition, updating scientific understanding and the legal framework. Introduces new material on hazard, risk and vulnerability assessments and collaborative approaches to engaging with communities. Also explains adaptive approaches to planning for climate change in coastal communities.

Standard	Affect on the Activity
for local government	
Office of the Auditor General publications: Local government: Examples of better practice in setting local authorities performance measures. Getting the right information to effectively manage public assets: Lessons from local authorities	Paper that promotes discussion about improvement of performance measures for various activities. Discussion paper examining how local authorities approach identifying and gathering the asset information.
Sustainable Development for New Zealand - Programme of Action (Ministry of Social Development)	Sets out the Government's approach to achieving sustainable development and specifies an improved provision of infrastructure and services (including water, wastewater treatment, transport, energy and housing).

Table 26: Strategic Studies related to the Activity

Network/Area	Strategic Studies	Date
Wakefield, Brightwater, Richmond/Hope and Māpua/Ruby Bay	Wakefield to Brightwater Water Strategy	2020
	Hydraulic trunk main model for Richmond, Hope, Brightwater, Wakefield	2022- currently in development
	Programme Business Case – Māpua Water and Wastewater, Stantec New Zealand Ltd	2017
District Wide	Water and Sanitary Services Assessment (WSSA): is a Council/community review of how the Council provides water, wastewater, stormwater, solid waste (refuse), public toilets and cemetery services and explores options for managing them more sustainably.	Ongoing

Table 27: Summary of planned activity studies

Study Name	Brief Description	Planned
Waimea Long Term Water Strategy	Strategic studies to consider the long term impact of climate change.	2022/2024
Health and Safety Assessments and Review	The Council is currently focusing on health and safety risks at existing facilities. Each site will be assessed, and it is anticipated that modifications may be needed to mitigate or remove those risks. Changes to the way assets are maintained may also be needed. Hazard registers for each facility will be developed and reviewed every five years.	5 yearly commencing 2021/2022

Appendix D: Asset Data and Information Systems

Data Types:

Table 28: Summary of the various data types, data source and how they are managed within the Council

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
As-built plans	DORIS (Council's Digital Office and Record Information System)	As-built plans are uploaded to DORIS, allowing digital retrieval. Each plan is audited on receipt to ensure a consistent standard and quality.	2	2
Asset condition	Confirm	Assets are inspected by a consultant or staff and the inspection information is entered directly into Confirm using the Connect mobile application.	N/A	N/A
Asset criticality	Confirm	When a new asset is created, the activity planner and engineer will make an assessment on criticality. Criticality of asset can be modified by authorized users should circumstances change.	N/A	N/A
Asset description	Confirm / spreadsheets	All assets are captured in Confirms Site and Asset modules, from as-built plans and maintenance notes. Hierarchy is defined by Site and three levels of Asset ID (whole site, whole asset or asset). Assets are not broken down to component level except where required for valuation purposes. It is also possible to set up asset connectivity, but this hasn't been prioritised for the future yet. Detail on some datasets held in spreadsheets relating to Utilities Maintenance Contract; work is in progress to transfer this detail to Confirm as resourcing allows.	2	2
Asset location	Confirm (point data) / GIS (line data)	Co-ordinates for point data completely (NZTM) describe spatial location. Line data links to GIS layers that describe the shape.	2	2
Asset valuation	Confirm	Valuation of assets done based on data in Confirm and valuation figures stored in Confirm.	2	2
Contract payments	Confirm	All maintenance and capital works contract payments are done through Confirm. Data on expenditure is extracted and uploaded to NCS.	N/A	N/A
Contractor performance	Confirm	Time to complete jobs is measured against contract KPIs through Confirms Maintenance Management module.	N/A	N/A
Corporate GIS browser	Explore Tasman	Selected datasets are made available to all the Council staff through this internal GIS browser via individual layers and associated reports.	N/A	N/A
Customer service requests	Customer Services Application / Confirm	Customer calls relating to asset maintenance are captured in the custom-made Customer Services Application and passed to Confirms Enquiry module or as a RAMM Contractor Dispatch.	N/A	N/A
Environmental monitoring / testing	Hilltop / spreadsheet	Laboratory test results performed on monitoring and testing samples (from treatment plants and RRCs) are logged direct into Hilltop via an electronic upload from the laboratories. Due to historical difficulties in working with Hilltop data, it is duplicated in spreadsheets.	2	2
Financial information	NCS	The Council's corporate financial system is NCS, a specialist supplier of integrated financial, regulatory and administration systems for Local Government. Contract payment summaries are reported from Confirm and imported into NCS for financial tracking of budgets. NCS also holds Water billing information, while asset details and spatial component are recorded in Confirm and cross-referenced.	N/A	N/A
Infrastructure Asset Register	Spreadsheet	High level financial tracking spreadsheet for monitoring asset addition, disposals and depreciation. High level data is checked against detail data in the AM system and reconciled when a valuation is performed.	2	2
Forward planning	Spreadsheets GIS Mapping	Forward programmes for the Council's activities are compiled in excel, These are loaded onto GIS based maps for information and in order to identify clashes and opportunities.	N/A	N/A

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
Growth and Demand Supply	Growth Model	A series of linked processes that underpin the Council's long term planning, by predicting expected development areas, revenues and costs, and estimating income for the long term.	2	2
Hydraulic modelling	Infoworks/ DHI Software	Models have been developed for a number of schemes and catchments. Copies of the models are held on the Council's network drives.	2	4
Maintenance history	Confirm	Contractor work is issued via Confirms Maintenance Management module. History of maintenance is stored against individual assets. Prior to 2007 it was logged at a scheme level.	2	2
Photos	Network drives/ DORIS (Council's Digital Office and Record Information System)	Electronic photos of assets are mainly stored on the Council's network drives. Coastal Structures and Streetlight photos have been uploaded to DORIS and linked to the assets displayed via Explore Tasman.	N/A	N/A
Processes and documentation	Promapp	Promapp is process management software that provides a central online repository where the Council's process diagrams and documentation is stored. It was implemented in 2014 and there is a phased uptake by business units.	2	5
Resource consents and consent compliance	NCS	Detail on Resource Consents and their compliance of conditions (e.g. sample testing) are recorded in the NCS Resource Consents module.	2	2
Reports	Confirm Reports	Many SQL based reports from Confirm and a few from RAMM are delivered through Confirm Reports. Explore Tasman also links to this reported information to show asset information and links (to data in DORIS and NCS).	N/A	N/A
Tenders	GETS (New Zealand Government Electronic Tenders Service)	Almost all New Zealand councils use this system to advertise their tenders and to conduct the complete tendering process electronically.	N/A	N/A
Operations and Maintenance Information	ActiveManuals™	ActiveManuals™ is a repository of operations and maintenance manuals, manufacturer manuals, technical documents, drawings and photographs. The system enables shared access for the Council staff and its partners responsible for operating and maintaining the Council assets.	N/A	Ongoing

Table 29: Data Accuracy and Completeness Grades:

Grade	Description	% Accurate
1	Accurate	100
2	Minor Inaccuracies	+/- 5
3	50 % Estimated	+/- 20
4	Significant Data Estimated	+/- 30
5	All Data Estimated	+/- 40

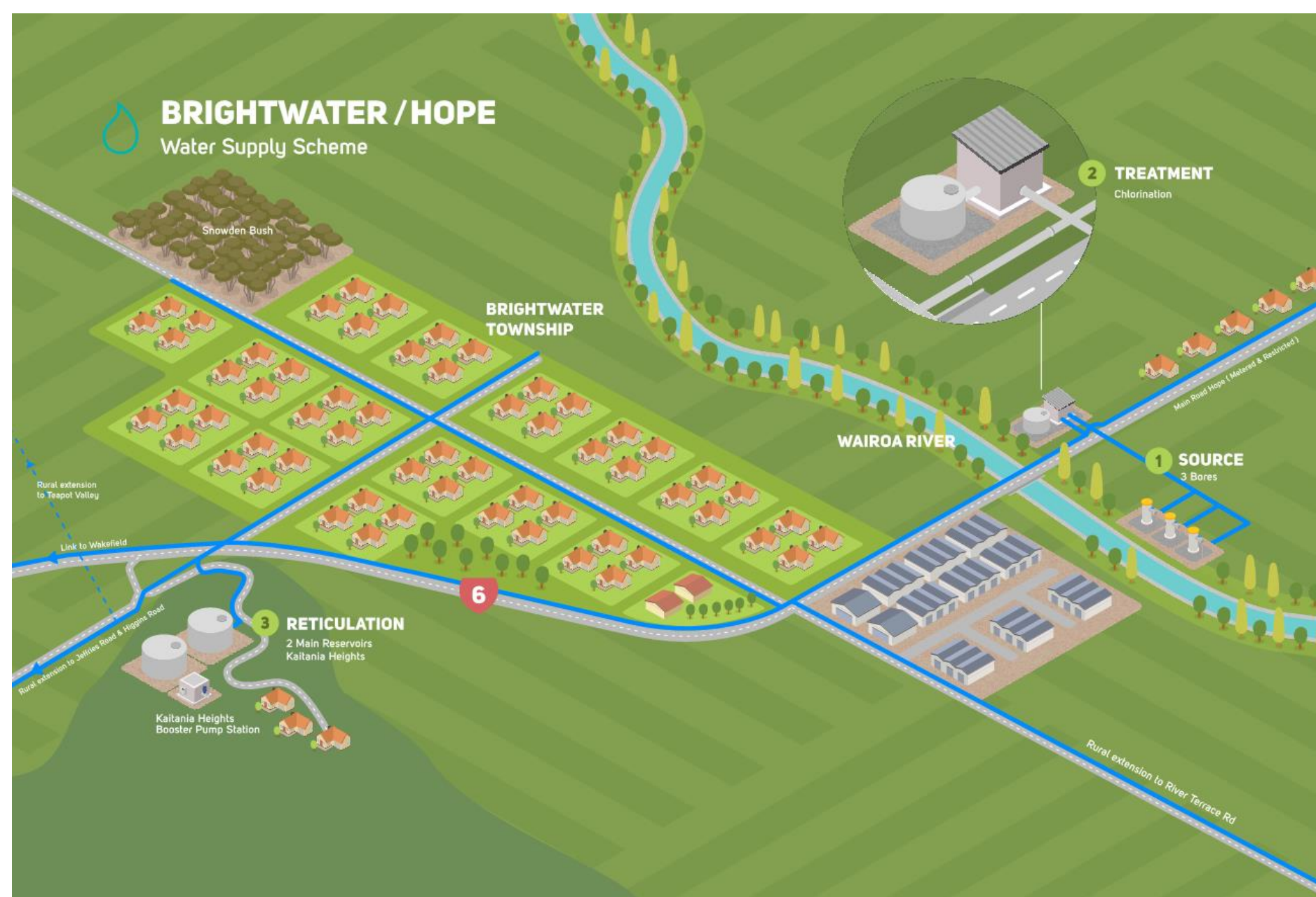
Grade	Description	% Complete
1	Complete	100
2	Minor Gaps	90 – 99
3	Major Gaps	60 – 90
4	Significant Gaps	20 – 60
5	Limited Data Available	0 – 20

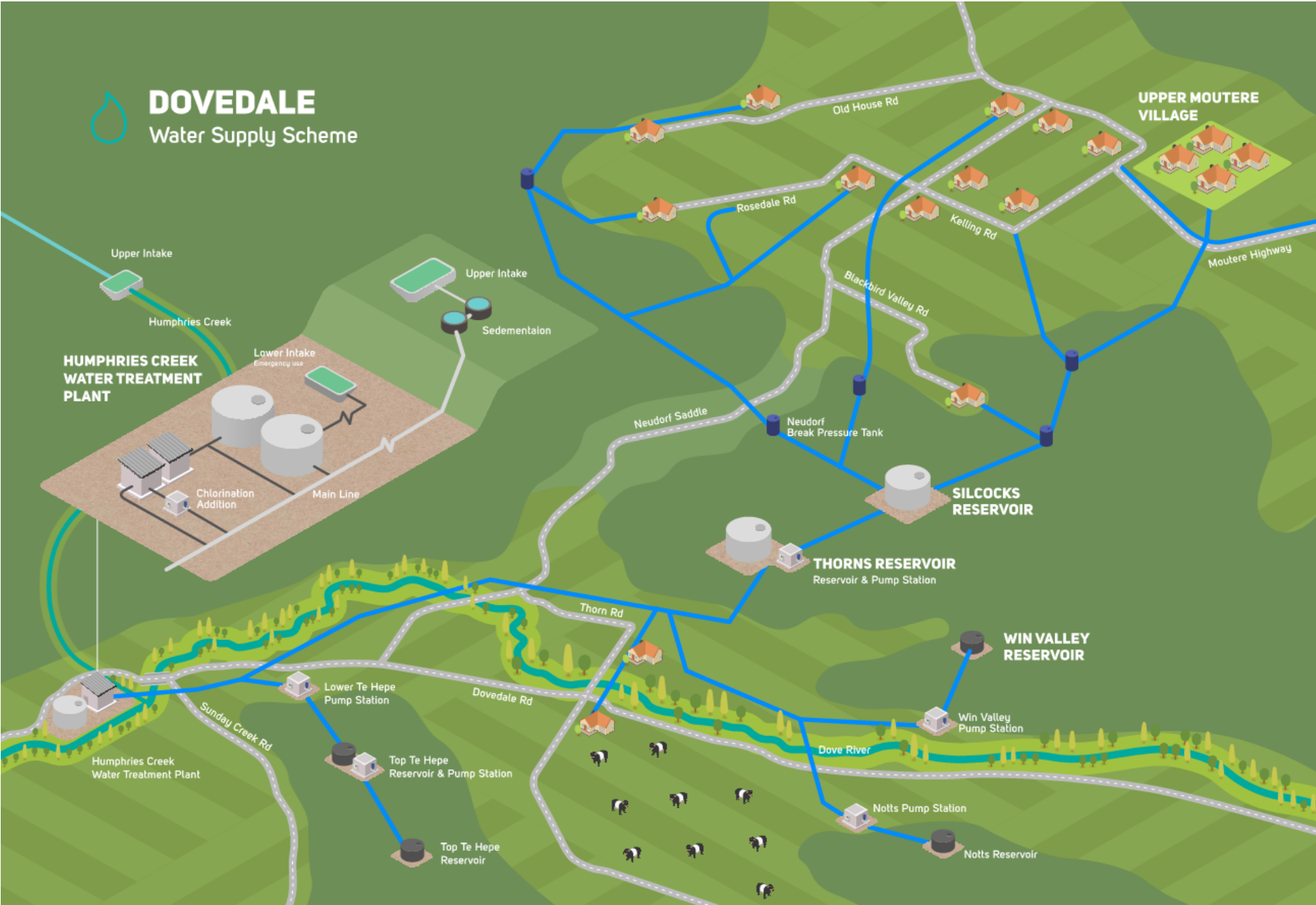
Appendix E: Water Supply Network Schematics

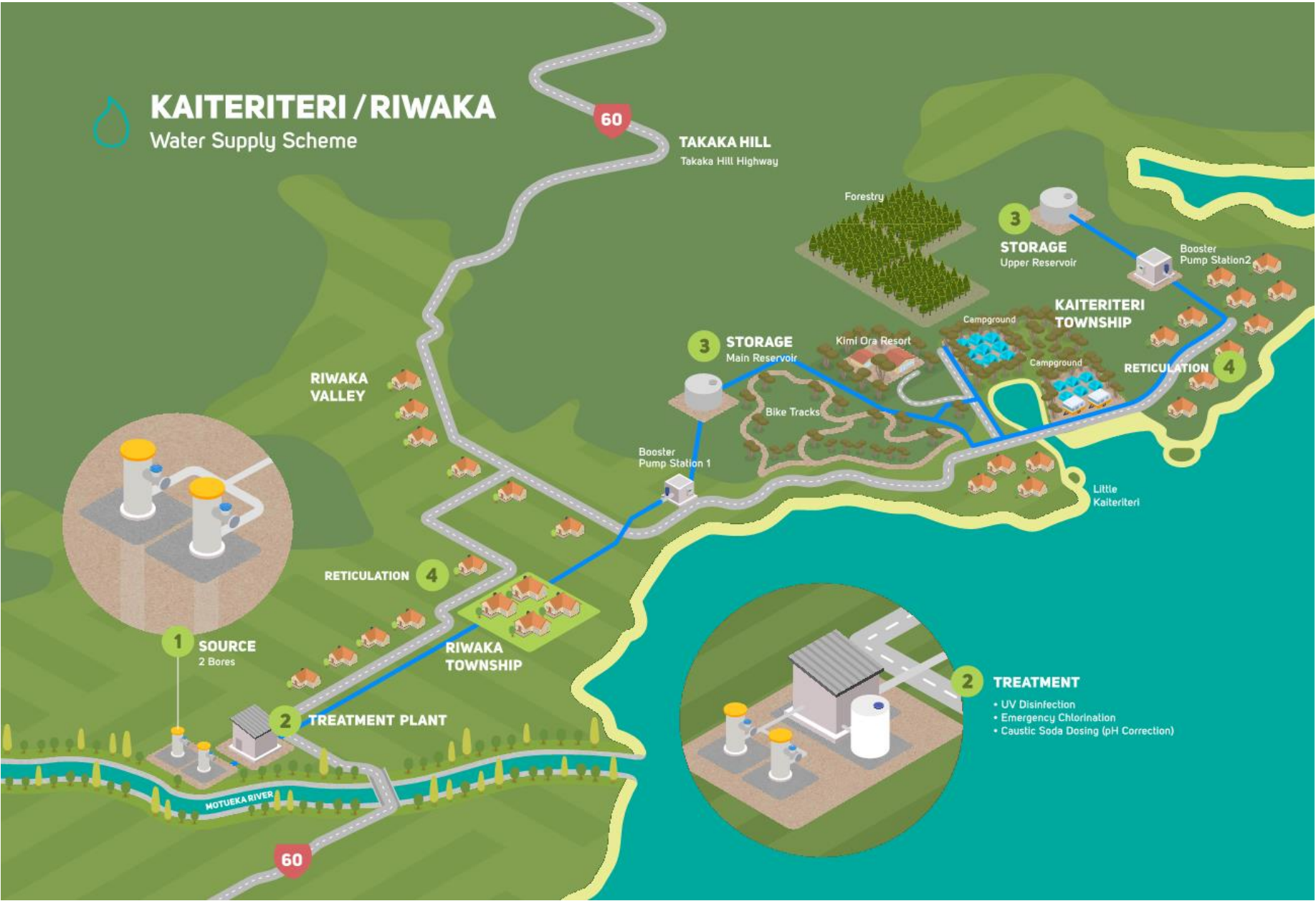
Network schematics are included for the following water supply schemes:

- Brightwater/Hope
- Collingwood
- Dovedale
- Eighty-Eight Valley
- Kaiteriteri/Riwaka
- Māpua /Ruby Bay
- Motueka
- Murchison
- Pōhara
- Redwoods 1 and 2
- Richmond
- Tapawera
- Upper Tākaka
- Wakefield

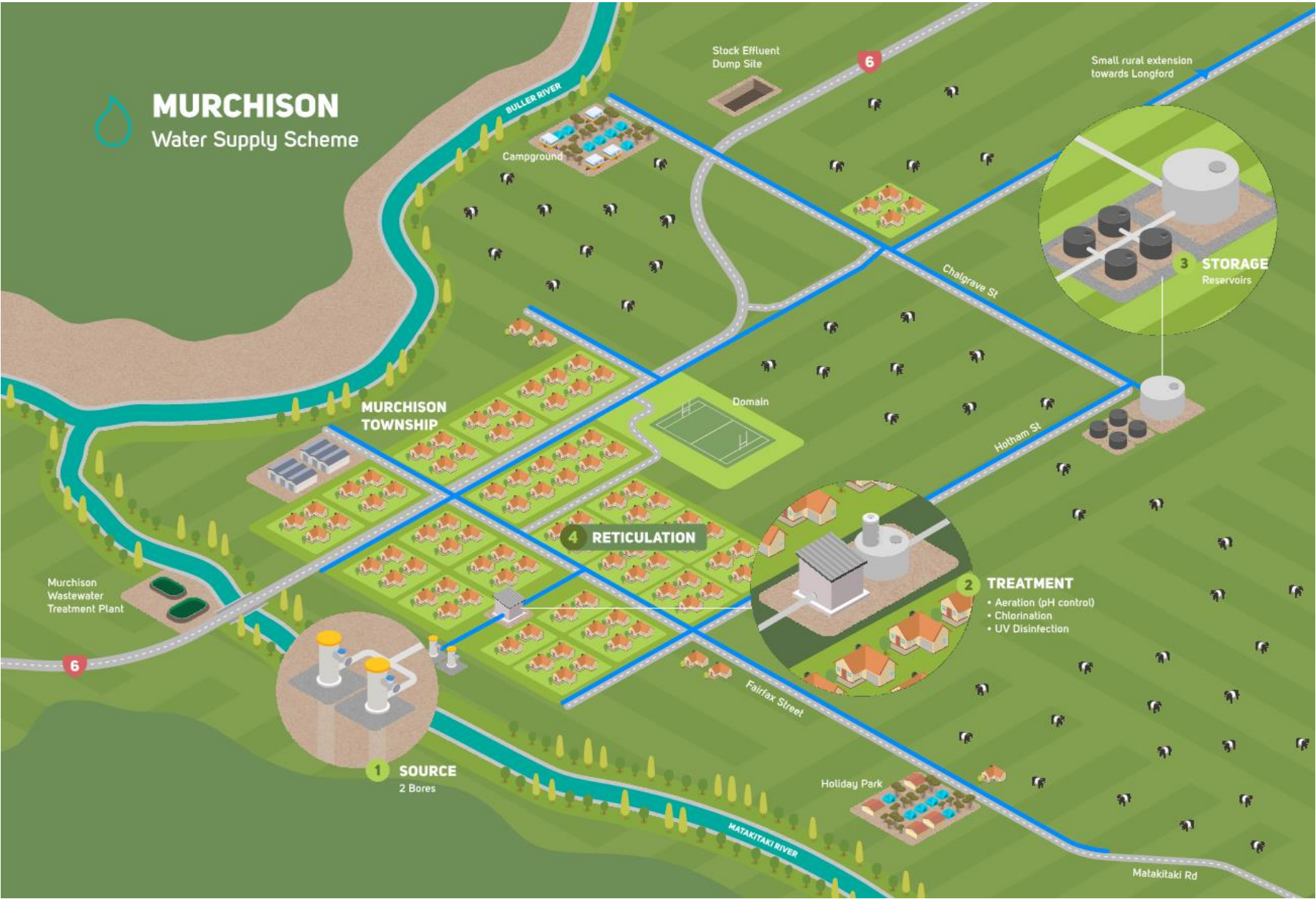
[Network schematics were not produced for Tākaka and Hamama.]

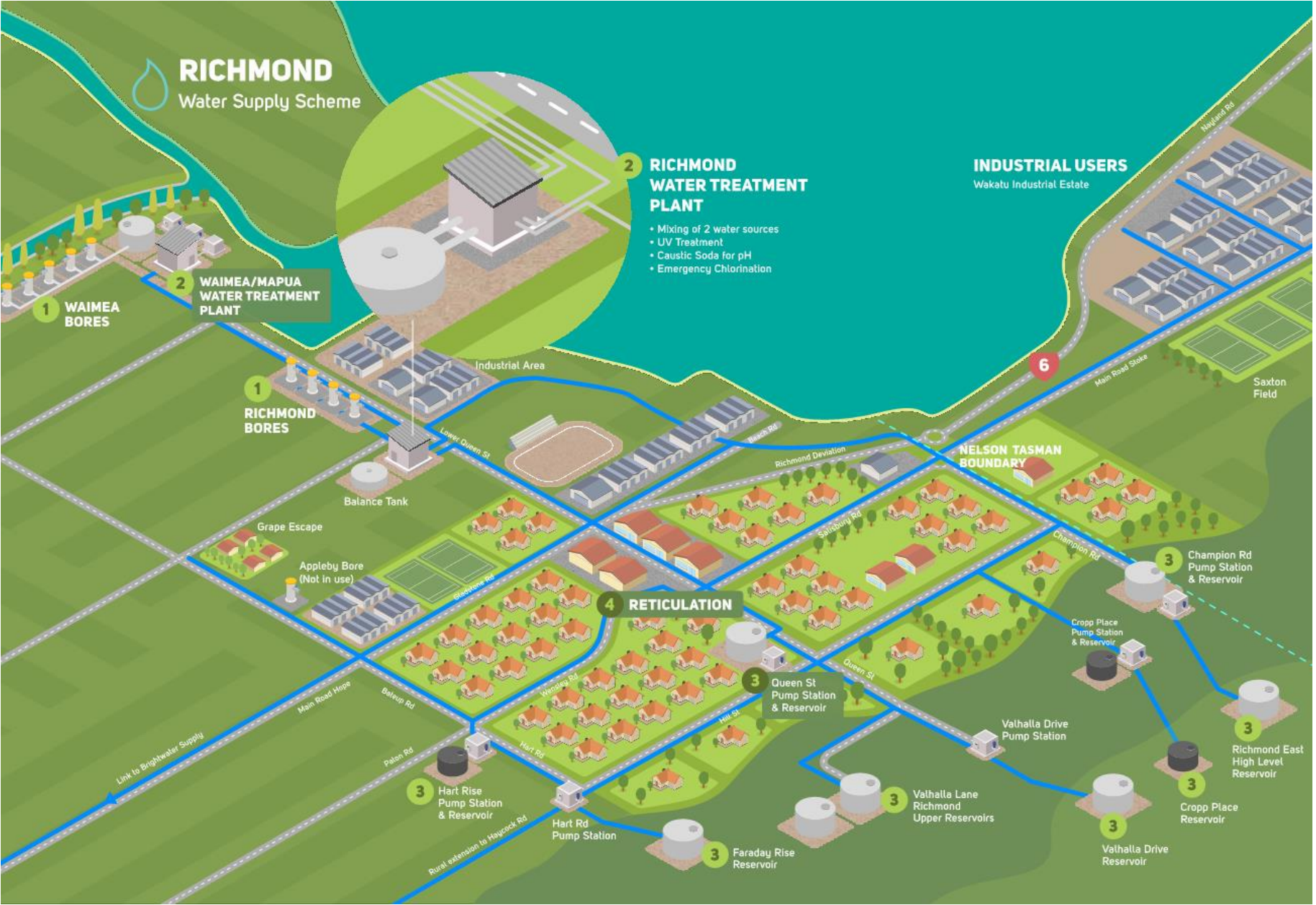
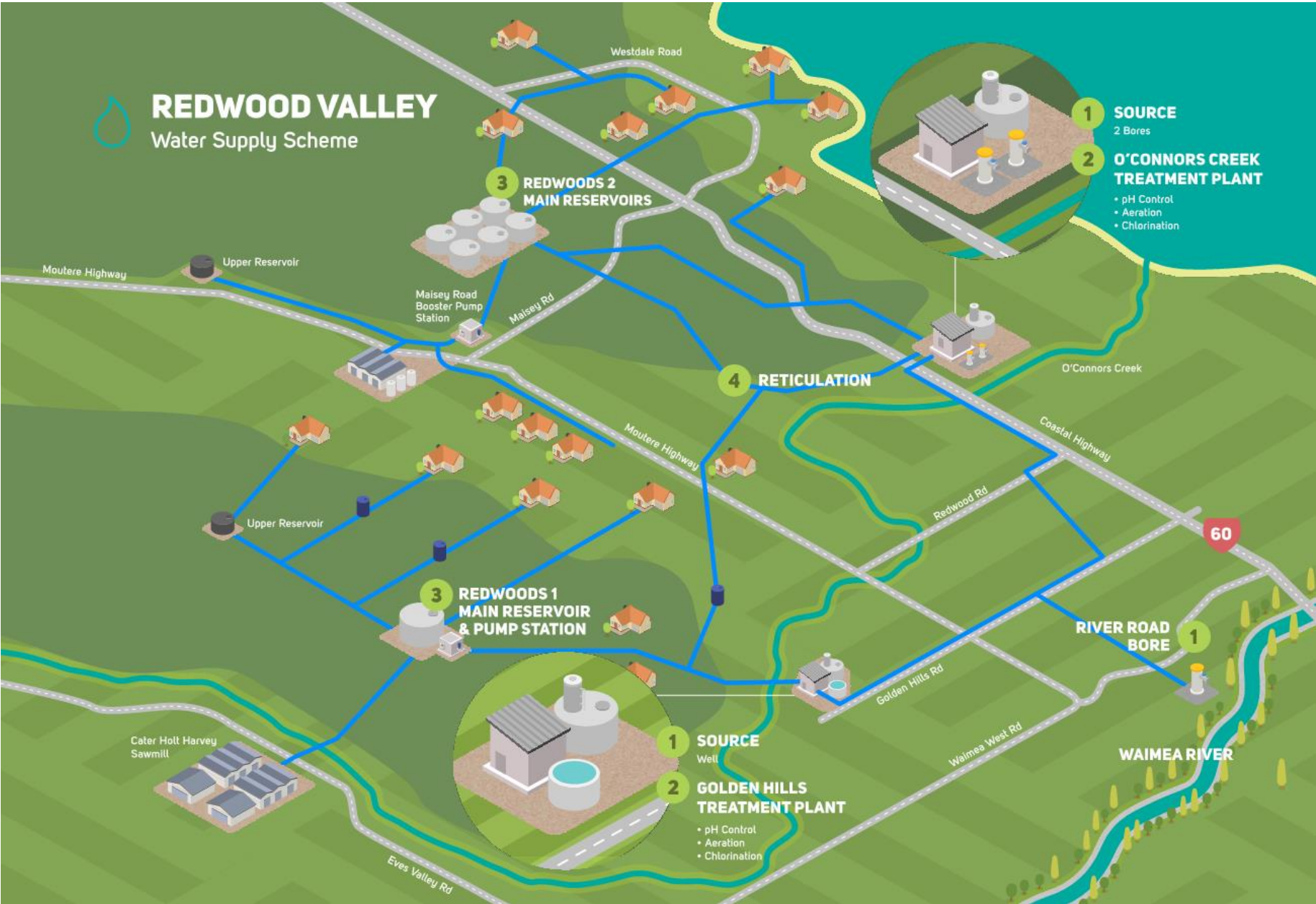


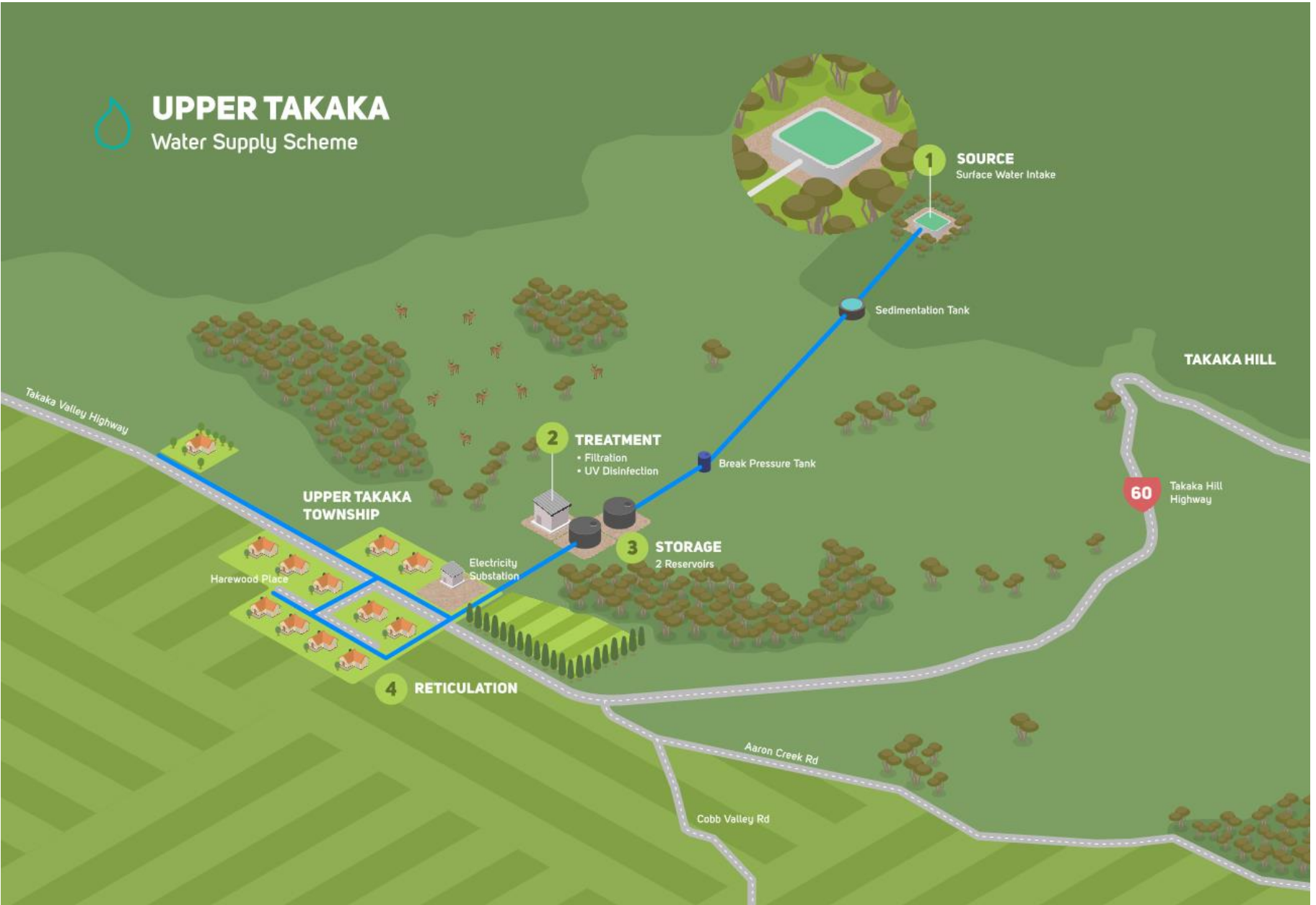
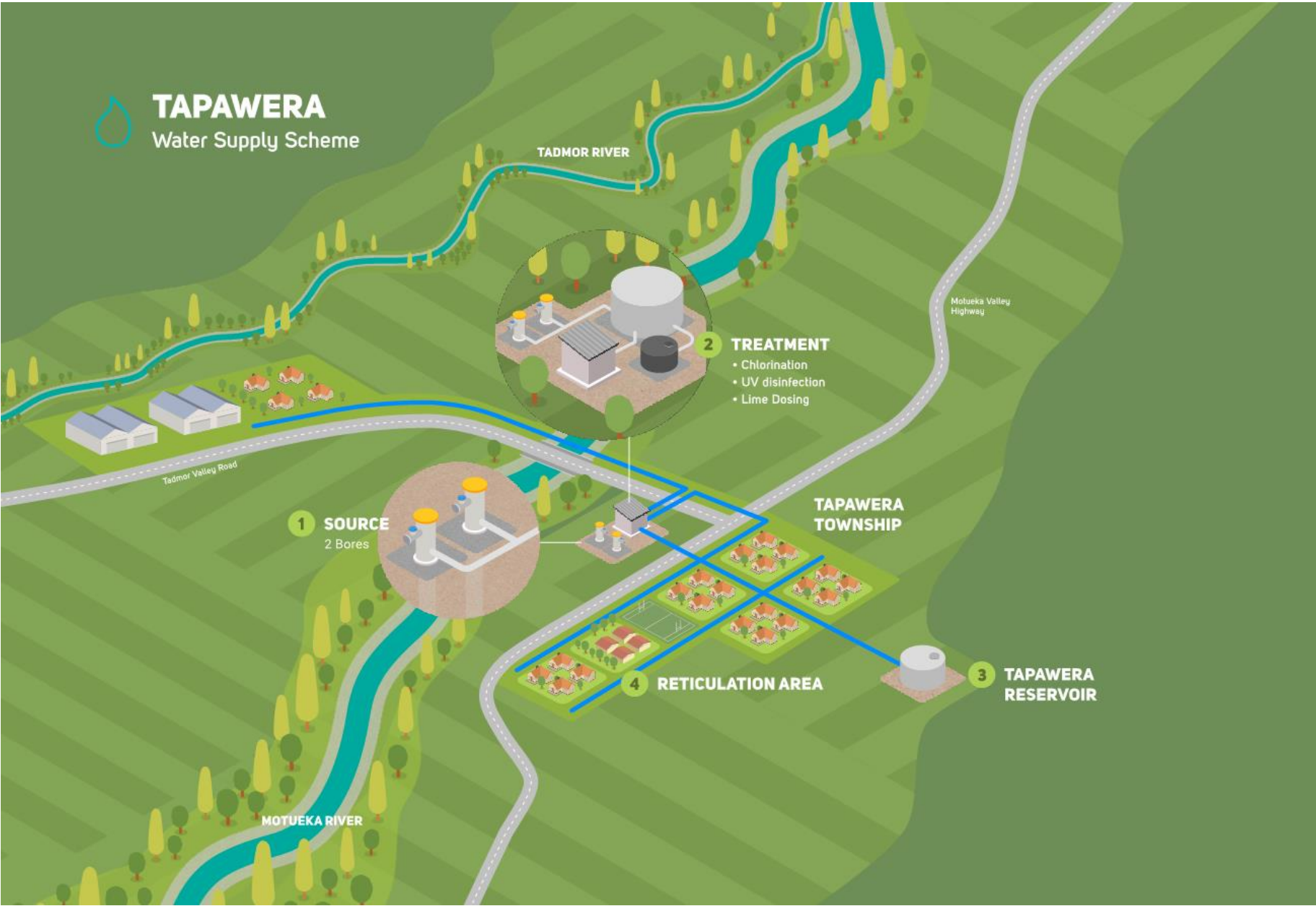


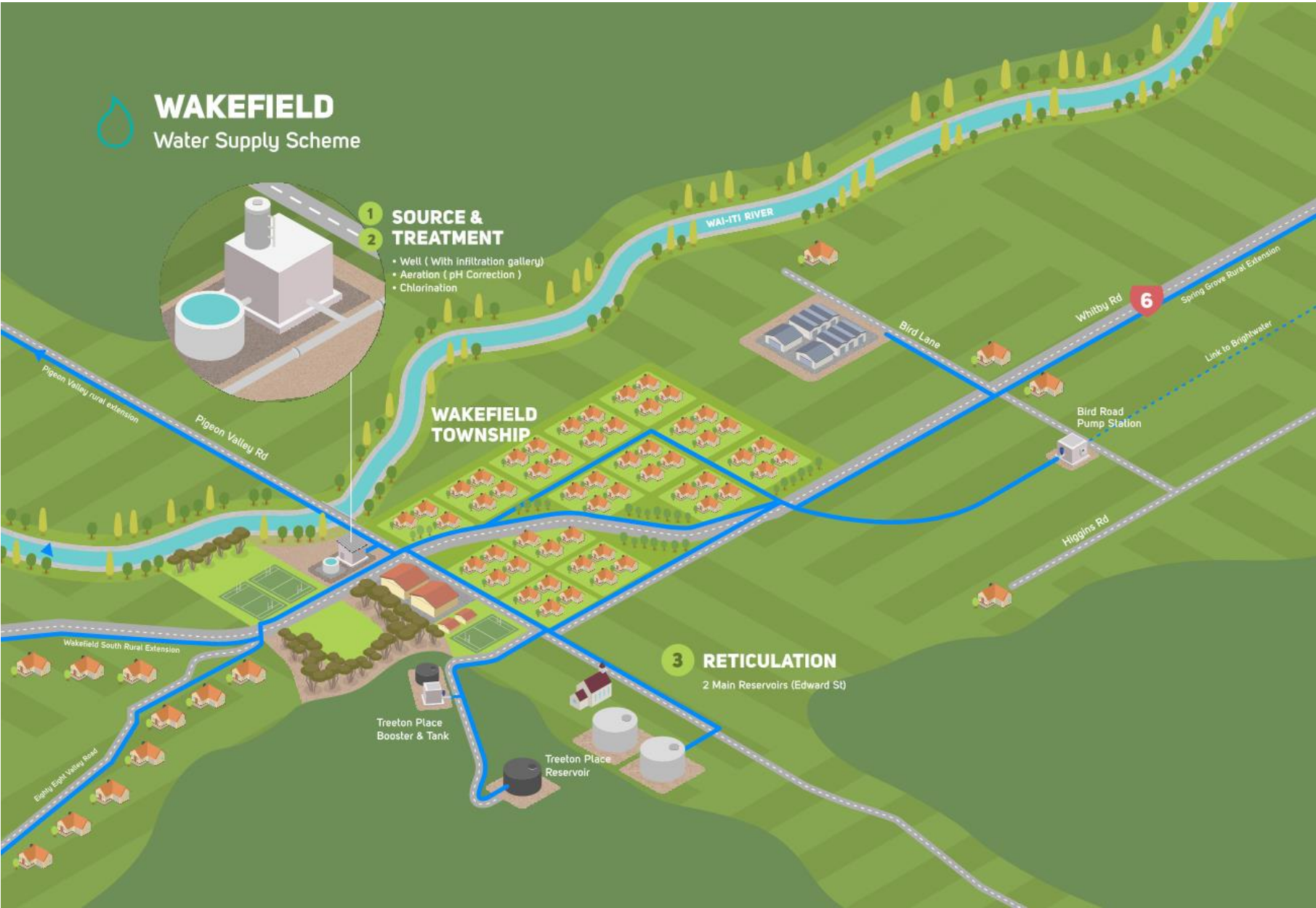












Appendix F: Water Supply FIS Statement

Water Supply
Funding Impact Statement

Actual 2023 \$000	Plan 2023/24 \$000	Plan 2024/25 \$000	Plan 2025/26 \$000	Plan 2026/27 \$000	Plan 2027/28 \$000	Plan 2028/29 \$000	Plan 2029/30 \$000	Plan 2030/31 \$000	Plan 2031/32 \$000	Plan 2032/33 \$000	Plan 2033/34 \$000
SOURCES OF OPERATING FUNDING											
359 General rates, uniform annual general charges, rates penalties	601	821	819	567	317	317	315	315	315	315	315
15,862 Targeted rates	16,539	18,754	20,478	21,887	23,484	25,259	25,915	27,065	28,503	29,485	30,244
258 Subsidies and grants for operating purposes	0	0	0	0	0	0	0	0	0	0	0
1,202 Fees and charges	1,864	1,440	1,520	1,574	1,626	1,693	1,697	1,728	1,770	1,781	1,772
0 Internal charges and overheads recovered	0	0	0	0	0	0	0	0	0	0	0
832 Local authorities fuel tax, fines, infringement fees, and other rec	2,199	3,209	3,291	3,292	3,294	3,295	3,297	3,298	3,299	3,301	3,302
18,513 Total operating funding	21,203	24,224	26,108	27,320	28,721	30,564	31,224	32,406	33,887	34,882	35,633
APPLICATIONS OF OPERATING FUNDING											
8,485 Payments to staff and suppliers	10,596	10,025	10,642	10,847	11,059	11,267	11,470	11,668	11,871	12,071	12,270
4,385 Finance costs	5,344	5,404	5,723	5,970	6,525	6,835	6,716	6,694	6,341	6,108	5,675
2,113 Internal charges and overheads applied	2,381	2,610	2,807	3,024	3,179	3,498	3,685	3,964	4,453	4,611	4,513
0 Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
14,983 Total applications of operating funding	18,321	18,039	19,172	19,841	20,763	21,600	21,871	22,326	22,665	22,790	22,458
3,530 Surplus/(deficit) of operating funding	2,882	6,185	6,936	7,479	7,958	8,964	9,353	10,080	11,222	12,092	13,175
SOURCES OF CAPITAL FUNDING											
153 Subsidies and grants for capital expenditure	0	0	0	0	0	0	0	0	0	0	0
2,654 Development and financial contributions	2,440	2,813	2,813	2,813	3,402	3,402	3,402	3,402	3,415	3,415	3,560
31,500 Increase (decrease) in debt	791	7,521	9,463	5,157	6,483	1,836	(130)	(2,505)	(4,469)	(6,364)	(7,912)
0 Gross proceeds from sale of assets	0	0	0	0	0	0	0	0	0	0	0
0 Lump sum contributions	0	0	0	0	0	0	0	0	0	0	0
0 Other dedicated capital funding	0	0	0	0	0	0	0	0	0	0	0
34,307 Total sources of capital funding	3,231	10,334	12,276	7,970	9,885	5,238	3,272	897	(1,054)	(2,949)	(4,352)
APPLICATIONS OF CAPITAL FUNDING											
Capital expenditure											
946 - to meet additional demand	28	4,607	3,158	0	0	0	0	0	0	0	0
17,236 - to improve the level of service	4,191	932	408	437	317	344	175	179	183	87	89
2,130 - to replace existing assets	5,542	13,283	17,268	15,205	21,296	16,047	14,716	14,335	9,863	6,748	3,750
1,307 Increase (decrease) in reserves	(3,648)	(2,303)	(1,622)	(193)	(3,770)	(2,189)	(2,266)	(3,537)	122	2,308	4,984
16,218 Increase (decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
37,837 Total applications of capital funding	6,113	16,519	19,212	15,449	17,843	14,202	12,625	10,977	10,168	9,143	8,823
(3,530) Surplus/(deficit) of capital funding	(2,882)	(6,185)	(6,936)	(7,479)	(7,958)	(8,964)	(9,353)	(10,080)	(11,222)	(12,092)	(13,175)
0 Funding balance	0	0	0	0	0	0	0	0	0	0	0