tasman district council | Te Kaunihera o te tai o Aorere

Wastewater
Activity Management Plan
2024-2054

Quality Assurance Statement		
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Tasman District Council	Status:	Final
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Contents

1 Executive Summary

This Activity Management Plan (AMP) provides an overview of how the Council intends to manage the Wastewater 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 wastewater activity is funded. The risks and uncertainties involved in undertaking the activity and how we manage those are also outlined in the plan.

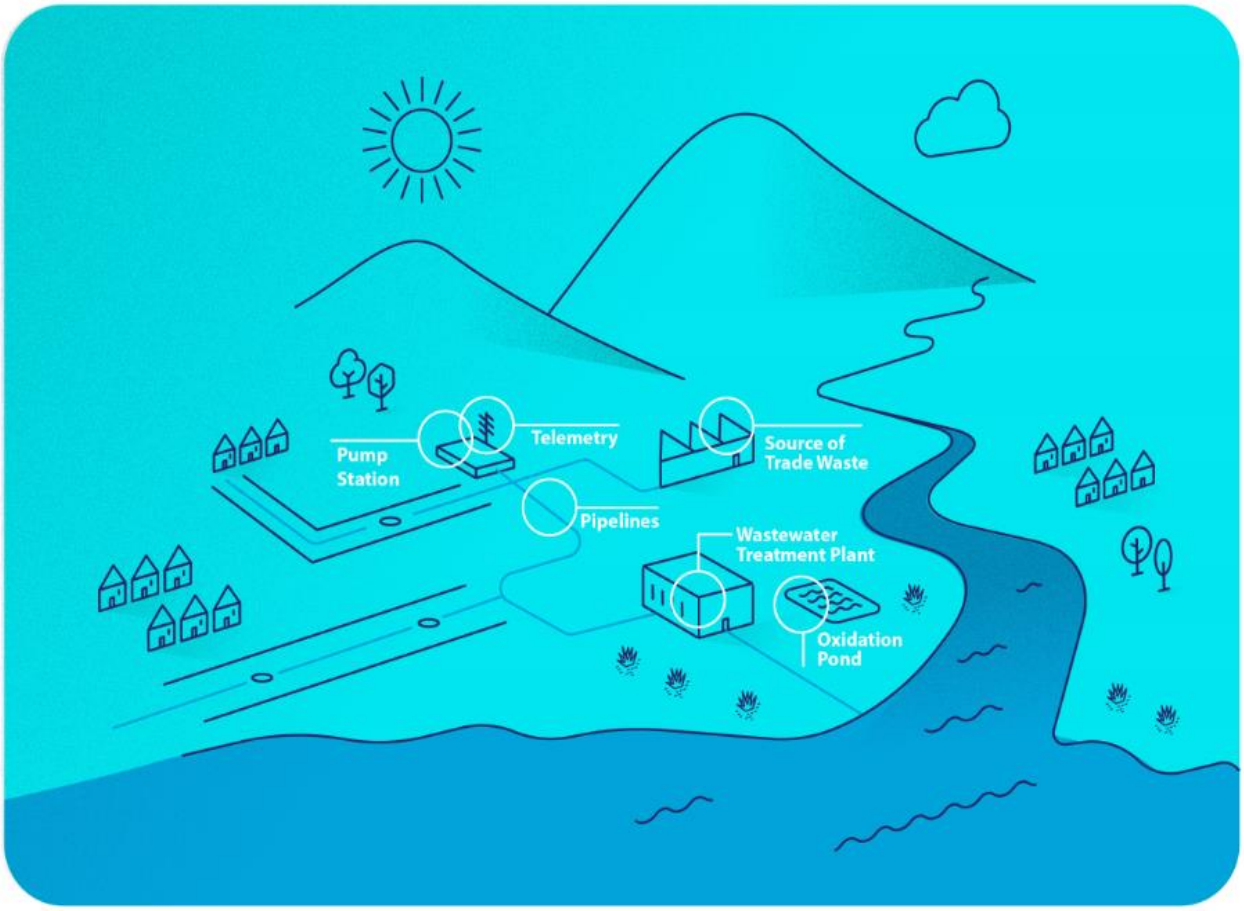
1.1 What We Do

We provide and manage wastewater collection, treatment, and disposal facilities for our residents connected to our nine wastewater networks. There are approximately 15,335 connections to our wastewater networks. These networks convey wastewater to eight treatment plants, seven of which we own and manage. The largest treatment plant (at Bell Island) is owned by both Nelson and Tasman Councils on a 50:50 share basis and is managed by the Nelson Regional Sewerage Business Unit.

We own and operate nine wastewater networks and manage associated infrastructure. Networks include:

- Collingwood
- Motueka, Riwaka and Kaiteriteri
- Murchison
- St. Arnaud
- Tākaka, Pōhara, Ligar Bay and Tata Beach
- Tapawera
- Upper Tākaka
- Māpua/Ruby Bay. Connects to Bell Island Wastewater treatment plant (WWTP)
- Waimea including Richmond, Hope, Brightwater, Wakefield. (Connects to Bell Island WWTP).

Below is an overview of the key components of the Wastewater Activity.



1.2 Why We Do It

Activity Goal
We aim to provide cost-effective and sustainable wastewater systems to protect public health whilst meeting environmental standards.

The provision of wastewater services is a core public health function of Local Government. We promote and protect public health, community well-being, and our environment within our District by planning, implementing, and maintaining our wastewater services. This is one of our key duties as required by the Health Act 1956.

1.3 Our Levels of Service

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

"Our wastewater systems do not adversely affect the receiving environment."	"Our wastewater activities are managed at a level that satisfies the community."	"Our wastewater systems reliably take out wastewater with a minimum of odours, overflows or disturbance to the public."	"Our wastewater systems are built, operated and maintained so that failures can be managed and responded to quickly."

The allocation in the planned budget is constrained and therefore providing existing services at current levels for the planning period will be challenging.

In terms of being able to manage overflows to surface water, as a result of low lying infrastructure and no budget available to make improvements, current levels of service may not be met in this area.

We will invest in increasing network capacity to assist in preventing overflows so that they do not adversely affect the environment where possible. We are also continuing the ongoing identification of inflow and infiltration issues and developing a program of rectifying the issues which will assist with a reduction in overflows.

1.4 Key Issues and response

The most important issues relating to this activity and how the Council is planning to respond are summarised in Table 1 below.

Table 1: Key Issues and Response

Key issue	The Council Response
Groundwater and rainwater in the Wastewater network. Inflow and infiltration (I&I) Groundwater and rainwater entering the network is a significant issue in some settlements. Heavy or prolonged rainfall can overload our pipe networks and wastewater treatment plants. In turn, this restricts residential and commercial growth because it uses up available network capacity. We then pump, convey, and treat the extra water, resulting in additional and unnecessary costs. High I&I levels may also dilute wastewater and lower the performance of our treatment plants.	• Install pipe flow meters and level sensors in storage chambers; • Invest in ongoing CCTV programme; • Invest in ongoing inflow and infiltration programme; • Refine pipe renewal programme; • Install low pressure pumped systems where appropriate; • Install emergency storage at key pump stations; • Continue to collect asset condition data to refine investment decisions.
Swimming pools Capture of rainfall and discharge to wastewater networks causes wastewater overflows.	Inflow investigation has demonstrated that capture of rainfall by swimming pools acting as hardstand and then the subsequent discharge of this rainfall to the wastewater network is a significant contributor to wastewater network overflows. This will need a change to legislation or local bylaws to enable a change in how rainfall capture and discharge from swimming pools are managed to reduce this inflow. Investigate means of diverting this rainfall inflow away from the wastewater network/ sewer.

Key issue	The Council Response
Providing infrastructure to allow for new homes and businesses. We expect that over the next 10 years, our population will grow by approximately 7,400 residents. To accommodate this growth, new houses will need to be built, most of which will need to be serviced for wastewater. We can supply some of this new demand where there is capacity in our existing infrastructure. Where capacity is not available, or if the infrastructure does not exist, we will need to provide upgraded or new infrastructure to enable growth.	• Pump Station in Wakefield which will pump all the way to the Beach Road Pump Station; • New rising main and pump station at Motueka West; • New reticulation Richmond South; • Staged upgrades from Brightwater Main Wastewater Pump station to Burkes Bank; • Upgrades to existing pump stations in Māpua; • Upgrades to existing pump stations and rising main at Tarakohe and Pōhara Camp; • Investment contribution to Nelson Regional Sewerage Business Unit for additional capacity.
Climate Change and Resilience Refer to Appendix C for the Climate Change Response Act 2002 that provides a framework to develop and implement clear and stable climate change policies. Investment is required to ensure our infrastructure can withstand the effects of climate change and natural hazard shock events which will be significant. Sea level rise means some coastal wastewater infrastructure will become increasingly vulnerable to inundation e.g. the Motueka Wastewater Treatment Plant. We need to optimise our wastewater treatment plants' performance as wastewater treatment processes are our largest source of greenhouse gas (GHG) emissions and biggest consumer of electricity.	• • Investing in emergency storage and standby power generation to ensure wastewater services can continue operating in the future and are adaptable to change; • New inland WWTP for Motueka; • Tākaka WWTP capacity reaching limits, upgrades required; • New mobile generators.
In September 2020, the National Policy Statement for Freshwater Management (NPS-FM) and as amended December 2022 and January 2024 (minor amendments) as the National Policy Statement for Freshwater Management 2020 Amendment No 1 and the National Environmental Standards for Freshwater came into force, providing	• The Council plan to work more closely with both community and iwi/mana whenua to: o Ensure that wastewater discharges do not adversely affect the freshwater and coastal water values o Seek guidance on how to give

Key issue	The Council Response
direction and requirements for the Councils to improve freshwater management under the Resource Management Act 1991. It is important to the region's iwi/Māori and the community to avoid contamination of water with wastewater (both treated and untreated).	effect to Te Mana o te Wai o Understand, support, and seek advice on how to enable the exercise of mātauranga Māori and tikanga Māori and kaitiakitanga o Ensure that wastewater discharges do not adversely affect cultural values and practices.
Affordable Water (prev. Three Waters) Reform and new regulations have now been repealed by the Water Services Acts Bill 2024. The first stages of the Government 'Local Water Done Well' programme is now being implemented.	• Wastewater infrastructure and service delivery remains within Tasman District Council.

1.5 Financial summary

1.5.1 Operational Programme

The Operational Programme covers all day-to-day activities that are required to manage the wastewater activity and includes operations and maintenance activities. The Council has planned to spend approximately $600 million (inflated) over the next 30 years to operate and maintain its wastewater networks efficiently.

1.5.2 Capital Programme

The Council plans to invest approximately $280 million(inflated) over the next 30 years on capital improvements.

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 sufficient to continue to manage risks in the medium term albeit with a focus only 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. i.e. Adaptation to climate change projects not funded, impact on inflow/inundation and consequently overflows and subsequent reduced level of service.

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

1.5.6 Assumptions and Uncertainties

The following uncertainties and key assumptions are identified and specific to the Wastewater (Networks and Treatment Plants) Activity:

- The Coalition Government has set out steps for the implementation of 'Local Water Done well'. For the development of this plan, we have assumed no change in service delivery model for the wastewater activity.
- Ongoing inflow and infiltration issues can utilise capacity in pipe networks and overwhelm wastewater treatment plants, there is uncertainty that the funding levels will be able to deliver improvements to the networks to reduce the likelihood of wastewater overflows to the receiving environment.
- Adaptation to climate change projects are not funded, therefore there will be a consequential impact on inflow to the network and inundation of the network. The impact of this will be a potential increase of wastewater overflows to the receiving environment and a reduced level of service (LoS).
- The delays in funding network upgrades for ageing infrastructure will mean reactive maintenance budgets will increase.
- 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 Wastewater activity. This is achieved through the planned management of assets, compliance with regulatory requirements, and the funding needed to provide the appropriate levels of service.

2.1 Rationale for Council Involvement

The provision of wastewater management services is considered to be a core service of local government and is something that the Council has always provided. The service provides many public benefits, and it is considered necessary to the community, so the Council undertakes the planning, implementation, and maintenance of wastewater services in the District.

Territorial Authorities have numerous responsibilities relating to wastewater. One such responsibility is the duty under the Health Act 1956 to improve, promote and protect health within the District.

This document outlines and summarises the Council's strategic and long-term management approach for the provision and maintenance of wastewater services to properties connected to Councils networks throughout the District.

2.2 Description of Assets and Services

Table 2 below provides an overview of the Key Wastewater Groups of assets that are owned and operated by the Council throughout the Tasman District (as of June 2023).

Table 2: Key Wastewater Assets

Wastewater Assets		Replacement Value	Depreciated Value
	Wastewater Treatment Plants (WWTPs)(x8)	$68.9	$41.8M
	50 % of Nelson Regional Sewerage Business Unit (Bell Island WWTP)	$47.8M	$31.5M
	TDC WWTPs (x7)	$21.1M	$10.3M

Wastewater Assets		Replacement Value	Depreciated Value
	80 pump stations	$60.0M	$29.3M
	3968 manholes	$30.2M	$19.1M
	391 km piped reticulation	$144.9M	$74.2M
	14,575 Wastewater Connections	$34.2M	$19.8M
	Low pressure pump stations (x1000 @ $15K ea.)	$15.0M	
	Other assets	$23.2M	$18.9M

Wastewater Assets	Replacement Value	Depreciated Value
Tasman's 50% contribution to Nelson Regional Sewerage Business Unit	$47.8M	$31.5M
Tasman District Council ASSETS	$397.5M	$213.4M
TOTAL VALUE OF WASTEWATER ASSETS	$445.3M	$244.9M

2.3 System overview

There are nine Council Wastewater Networks within the Tasman District. Table 3 below provides a summary of the networks, and who manages the reticulation and the Wastewater Treatment Plants (WWTPs).

Schematic diagrams of the features of each scheme are included in Appendix E of this plan. Table 3 below identifies the management status of the nine-wastewater networks.

Table 3: Management status

Wastewater Network s (managed by Tasman District Council)	Wastewater Treatment Plants (WWTPs)	Manages WWTP
Collingwood	Collingwood	Tasman District Council
Motueka (Riwaka and Kaiteriteri)	Motueka	Tasman District Council
Murchison	Murchison	Tasman District Council
St Arnaud	St Arnaud	Tasman District Council
Tākaka (Pōhara, Ligar Bay and Tata Beach)	Tākaka	Tasman District Council
Tapawera	Tapawera	Tasman District Council
Upper Tākaka	Upper Tākaka	Tasman District Council
Waimea (Richmond, Hope, Brightwater, Wakefield, and Māpua/Ruby Bay)	Bell Island	50:50 with NCC
Māpua/Ruby Bay	Bell Island	50:50 with NCC

The following sections provides a brief description of each network. Further details including network schematics and are available in Appendix D.

2.3.1 Collingwood

The Collingwood scheme was constructed in 1989 and services the Collingwood Township and connections along Collingwood-Bainham Main Road. Wastewater from the lower end of Beach Road drains into the Beach Road pump station, which discharges into a manhole further up Beach Road towards Elizabeth Street. This plus the remainder of the township drains into the Motel pump station (upgraded in 2010), which pumps on to the Wally's Rest pump station (upgraded in 2009).

Figure 1: Digital Telemetry Map

All pump stations have one duty and one standby pump with ultrasonic or hydrostatic level control. All pump station have digital telemetry. Wally's Rest and Motel pump station have emergency storage and flow meters.

All wastewater from Collingwood is pumped from the Wally's Rest pump station to the WWTP. The treatment plant is located approximately 1.5km west of the town on the Collingwood-Bainham Main Road and comprises an inlet screen, aerated oxidation pond followed by constructed wetlands with UV disinfection and telemetry, and final discharge to the Burton Ale Creek. The WWTP is located on a terrace 11 metres above sea level. There is an iron pan approximately one metre below ground level which means much of the site is boggy in winter making grounds maintenance difficult, and stormwater drains need to be regularly maintained.

The wetlands underwent a major rehabilitation in 2015 to improve the flow through the wetlands, reinstate eroded embankments and provide flow buffering through all five wetland cells. Previously flow was restricted to 8l/s and the final cell was prone to overflow in sustained heavy rainfall events. Flows can now achieve 12.5l/s which is the limit of UV disinfection system. Collingwood is very close to an estuary and the sea. The risk of a sewage overflow or malfunction of the treatment ponds and pump stations have potentially significant effects that must be mitigated against and managed. This scheme operates well although there are issues with periodic high storm flows that cause the treatment plant to fill and re-suspend solids deposited in the wetlands. This causes high turbidity and reduces the effectiveness of the UV disinfection system. Since the upgrade of the Motel and Wally's Rest pump stations, there have been no overflows of the pump stations.

Some parts of the Wastewater Network are very low lying and high tides can inundate manholes and other access points. There are also several properties on Beach Road that sit in a hollow below road level. During heavy rain events the land surrounding the houses can become inundated and the only way for the properties to drain is down their gully traps. This means the Collingwood network has the highest dry weather to wet weather flow ratio.

2.3.2 Motueka, Riwaka and Kaiteriteri Network

There are three settlements that discharge into the Motueka WWTP, including Motueka Township, Riwaka and Kaiteriteri.

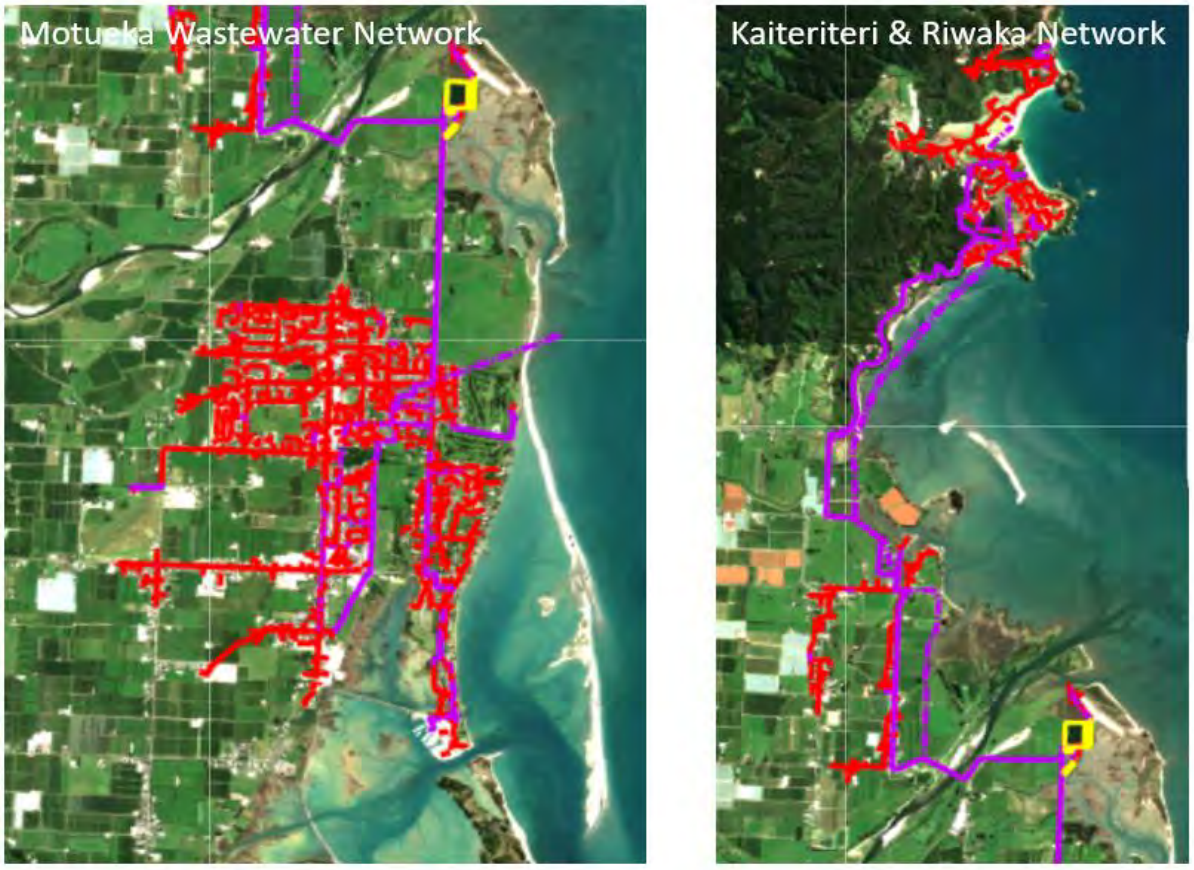


Figure 2: Wastewater Networks – Motueka, Kaiteriteri and Riwaka

2.3.3 Motueka

The Motueka Wastewater Network was initially constructed in the 1940s with untreated wastewater discharged to the coast until the WWTP, located just south of the Motueka River mouth, was constructed in 1980. The treatment plant has undergone several upgrades, the most recent in 2015/2016. The WWTP has a resource consent that is due to expire in 2035. The Council is currently investigating alternative inland sites for a new WWTP because the current location is vulnerable to sea level rise and coastal inundation. The treatment plant comprises a mechanical inlet screen with odour treatment, an aerated lagoon (constructed in 1990), followed by an oxidation pond which is divided into three by two rock bunds. The rock bunds have a recirculation spray system installed on them, so the bunds act as trickling filters, converting ammonia-nitrogen into nitrate and nitrite. After this final pond, wastewater is pumped through a membrane treatment system and out to the coast via two subsurface diffusers.

The membranes were expected to have a life of seven to 10 years, however the first set failed after five years and the second set after two years (2023). In 2023 - 2024 several improvements are planned to improve the life of the membranes and improve treatment plant performance for the remainder of its consented life span;

- The Council water supply will be extended to the site to be used for cleaning the membranes.
- Additional filtration installed prior to the membranes.
- Installation of a nitrification-denitrification treatment step to improve compliance with the discharge consent.

The area serviced by this network is flat, low lying and has high ground water. It has both gravity reticulation and a series of 20 pump stations. The present network involves some pump stations injecting into the rising main to the treatment plant while other pump stations pass the wastewater along from one to another until it is eventually pumped into the rising main by one of the main pump stations. The pump stations are fitted with duty and standby pumps. Digital telemetry and alarm systems are included on all pumping stations and the treatment plant.

The wastewater flow from the Motueka Township is measured by a magflow meter as it enters the treatment plant, and flows can be monitored in real time via the Council's telemetry system.

2.3.4 Kaiteriteri

The Kaiteriteri Wastewater System consists of piped reticulation, seven pumping stations and a vessel. Wastewater is conveyed to the Motueka Wastewater Treatment Plant (WWTP) for treatment. The Kaiteriteri system is made up of a number of sub-catchments and these relate to the various bays plus the large campground.

The reticulation in Kaiteriteri gravitates to the main pumping station at Martin Farm Road (wastewater is also pumped from Honeymoon and Breaker Bay into this system). Wastewater from Little Kaiteriteri is also pumped over the hill to Martin Farm pump station. From Martin Farm pump station, wastewater is pumped up to a vessel on the hill above Tapu and Stephens Bays. A control valve on the Kaiteriteri pipeline automatically opens/closes when the level in the vessel rises/falls to set points, so that the wastewater gravitates to the Motueka WWTP in a series of "pulses". The pipeline from the vessel along the Riwaka-Kaiteriteri Road is a 280mm PE pipe, installed in 2017/2018 to replace the 215mm PE pipe that went directly through Tapu Bay. Although this 215mm pipe is not in active service, it can be used in emergency with written approval from iwi.

There are three other small catchments. Two of these catchments (Tapu Bay and Talisman Heights) pump to Stephens Bay, which in turn pumps up to the vessel.

There is emergency storage at Stephens Bay, Little Kaiteriteri, Tapu Bay and Talisman Heights pump stations, as well as a large 100m^3 storage tank on Inlet Road near the campground. Only about half of this storage tank can be used, due to the low level of the manholes around the inlet near Bethany Camp. However, there is an additional 50m^3 of storage within the pipework under the estuary that can also store wastewater in the event that Martin Farm pump station is not operational.

All seven-pump stations and the vessel can be monitored remotely via the digital telemetry network. Due to low flow into the Honeymoon Bay and Breaker Bay pump stations, regular flushing with clean water is required to prevent septicity in summer. The pipeline from the vessel to the Motueka Treatment Plant is approximately nine kilometres long and over summer wastewater becomes septic and can cause odour issues at the WWTP. A chemical dosing system operates at the vessel, between 1 December and 26 February each year and works effectively to mitigate the seasonal issue.

2.3.5 Riwaka

The Riwaka serviced area is flat and low-lying. It consists of local gravity reticulation and a series of five pump stations. Pump stations pass the wastewater along from one to another until it reaches the Riwaka main pump station, which injects into the Kaiteriteri – Motueka WWTP rising main. The pump stations are fitted with duty and standby pumps, and all can be monitored remotely via the digital telemetry network.

The only emergency storage within the wastewater network is at the Riwaka Main pump station. This was installed in 2020. In recent years, the Little Sydney Stream has frequently flooded around five or six properties, including the tennis courts area. This has resulted in flood waters flooding the sewer down gully traps and causing significant overflows near the School Road pump station.

2.3.6 Murchison

The Murchison wastewater scheme was initially built in 1989 and services the urban Murchison Township area. The gravity reticulation discharges to two pump stations, and a WWTP on the western side of the Matakitaki River.

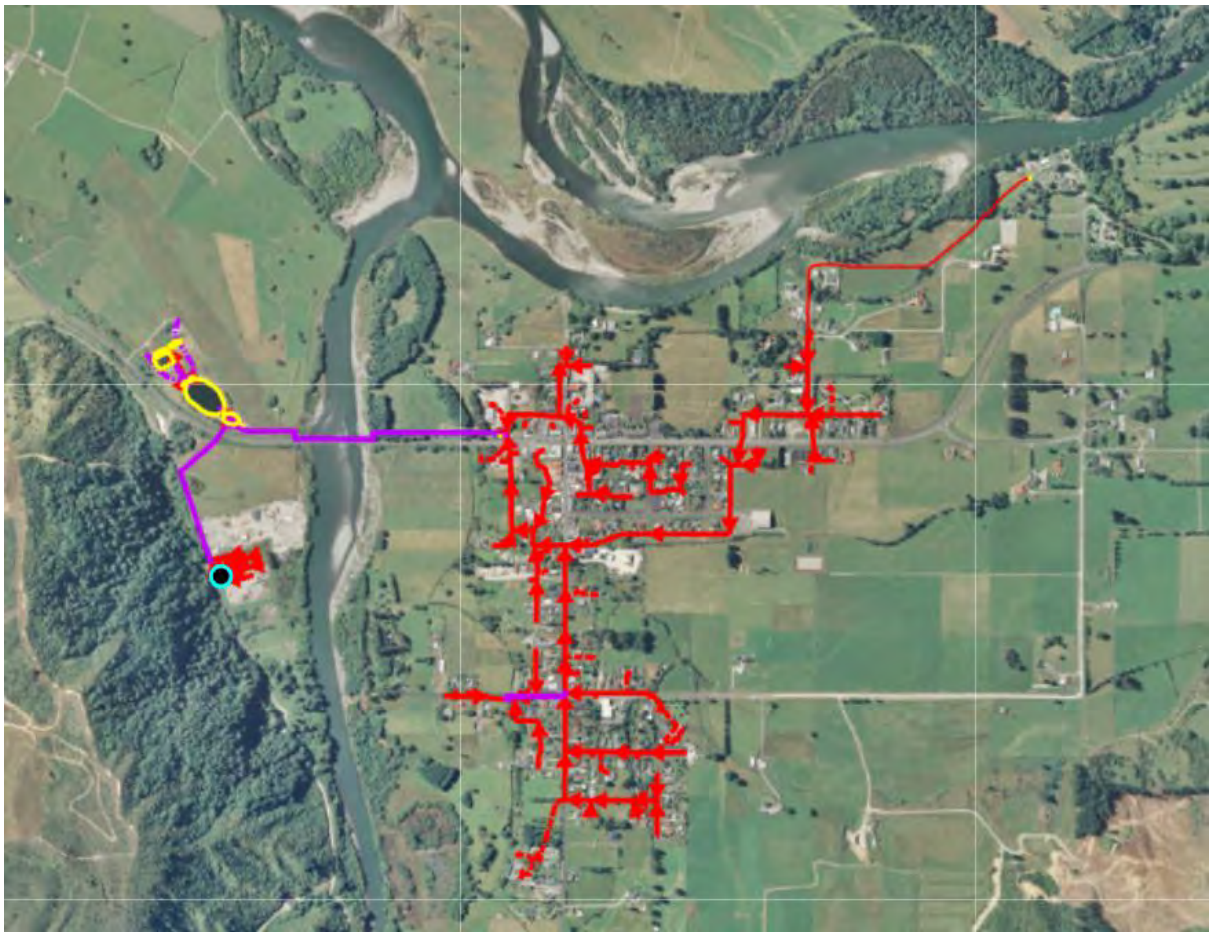


Figure 3: Murchison Wastewater Scheme

The Hotham Street pump station collects flows from the river end of Hotham Street and discharges into the gravity system at the corner of Hotham and Fairfax Streets. The remaining system gravitates to the main pump station in Waller Street. The Waller Street pump station pumps all of Murchison's wastewater to the treatment plant. Both pump stations operate duty and standby pumps and are monitored remotely via the digital telemetry network. Both pump stations were upgraded in 2011 along with the rising main under the State Highway6 (SH6) Bridge across the Matakitaki River. The Waller Street pump station upgrade included 10 hours emergency storage and the disconnection of an overflow soakage pit, which discharged into the gravels and groundwater adjacent to the pump station. The Waller Street pumps operate on alternating duty and cannot be operated together. This is to prevent damaging the remaining original parts of the rising main to the WWTP) as well as preventing overloading of the inlet screen at the WWTP.

Wastewater from the Council's Riverview campground is pumped into the gravity network and leachate from the closed Murchison landfill and the pit sump at the Resource Recovery Centre are pumped directly to the WWTP. The Council also operate a stock effluent dump point, located on SH6 north of Murchison. The dump point is in a Transportation asset area but is operated by Utilities under the Three Waters Operations and Maintenance Contract. The dump point has sensors that monitor tanks levels and indicate when the Maintenance Contractor needs to send a septage vacuum truck to empty the tank.

The Treatment Plant was upgraded in 2006 when an aeration lagoon with mechanical inlet screen was added prior to the existing oxidation pond. The oxidation pond was desludged and two HDPE baffles installed across the pond to aid circulation. A fine bubble aerator has been installed on the oxidation pond to aid mixing and movement of sludge away from the inlet.

The original gravel filter was upgraded, and a second filter added with a pump station alternately dosing the gravel filters. The treated wastewater is then discharged from the gravel filters to ground via subsurface disposal beds constructed in 2011.

Due to the isolated location of Murchison, a mobile generator was purchased for operating both the water and wastewater supplies in the event of a power failure.

Growth is planned for Murchison with the associated upgrading of Hotham Wastewater Pump Station (WWPS) and new pressure main from the pump station to Waller Street Pump Station, instead of into Fairfax Street gravity.

2.3.7 St Arnaud

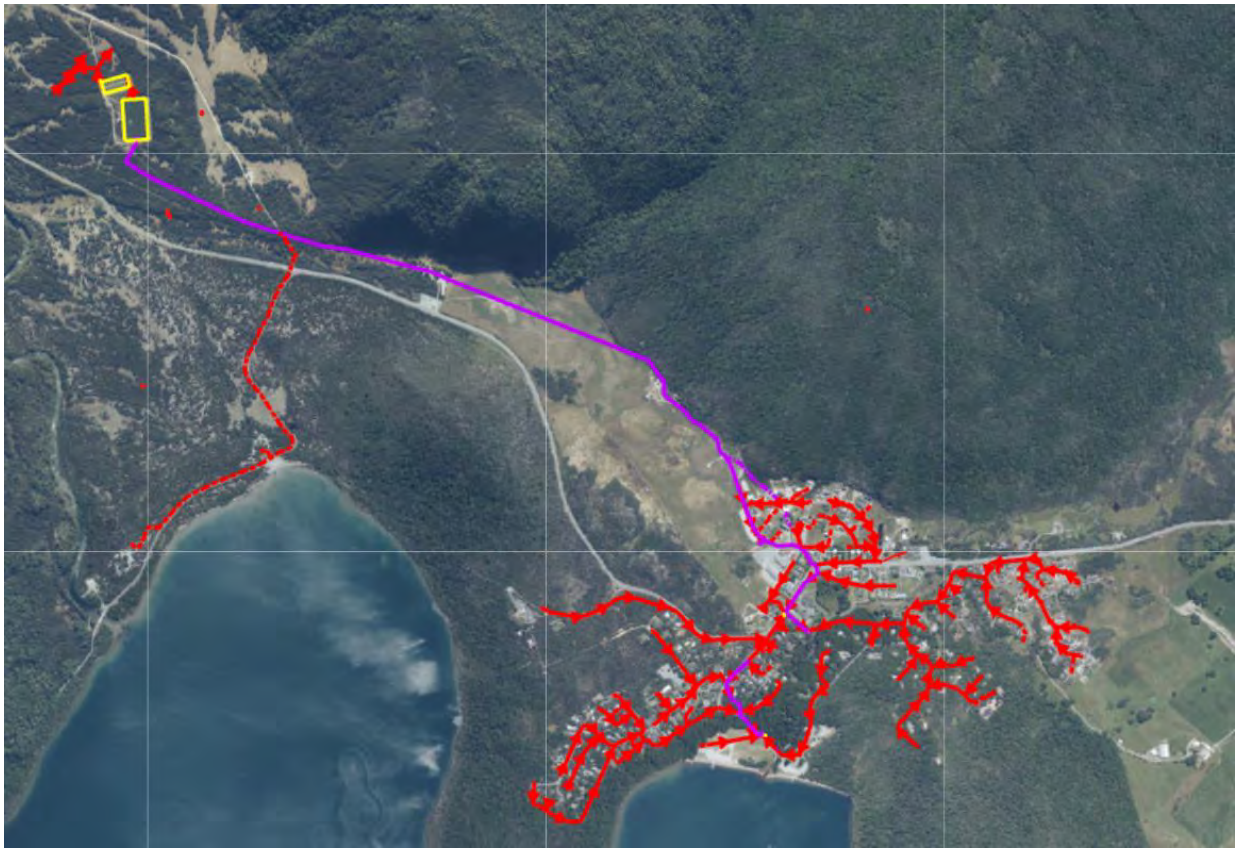


Figure 4 St Arnaud wastewater network

The St Arnaud wastewater system including the WWTP was built in 1999 and serves the St Arnaud Township and the Department of Conservation (DoC) campgrounds at Kerr Bay and West Bay. Reticulation drains by gravity to three pump stations. The Kerr Bay pump station (No.1) pumps up the hill to Rotoiti Street where it discharges into the gravity network draining to the Alpine Lodge pump station (No.2). The Beechnest pump station, constructed as part of a subdivision in 2009, pumps into the reticulation which drains to the Alpine Lodge pump station. From there the entire catchment is pumped to the treatment plant at Teetotal Flats.

The West Bay Campground, operated by the Department of Conservation (DoC) is only open between December and April and waste is pumped direct to the WWTP, injecting into the rising main from Alpine Lodge just prior to the WWTP.

The Council's pump stations have duty and standby pumps which are connected to the Council's digital telemetry system. The original two pump stations have six hours storage at peak occupancy while Beechnest has 10 hours storage at dry weather flows. A mobile generator is stored in St Arnaud in case of power failure, so the pump stations can be operated to prevent overflows into Lake Rotoiti or any of its tributaries. The generator can also be used to power the WWTP, although this can operate without electricity for many weeks.

The Wastewater Treatment Plant is located on 17.9 hectares owned by DoC. This land is held as a local reserve specifically for wastewater treatment and the Council is appointed to control and manage the reserve. The treatment plant consists of an aerated oxidation pond, two wetland cells with treated wastewater dosed into the ground via a subsurface pressure system. The disposal pump station doses each of the four soakage trenches, in order, utilising an automated sequencing valve. Should there be a fault with the pump station, or a power failure, there is a gravity emergency bypass of the sequencing valve and pump station to all soakage trenches. The oxidation pond aerator is controlled by a dissolved oxygen probe. A gravel trap exists prior to the Kerr Bay and Alpine Lodge pump stations. These require regular checking and cleaning out. The potential of a sewage overflow into Lake Rotoiti is rated as an extreme risk that needs careful management. The pump station closest to the Lake was located above known high Lake levels. The gravity pipeline from the DoC toilet block by the Lake edge at Kerr Bay has a manual valve on it that must be closed if lake rises sufficiently to flood the toilet block.

The Department of Conservation have a caravan dump station located in their Kerr Bay campground which is connected to the Council's gravity system. The dump station is suspected to be the source of material that has caused repeated blockages and overflows near, and at times, into Black Valley Stream, meters upstream of the lake.

2.3.8 Tākaka (Tākaka, Pōhara, Ligar Bay and Tata Beach)

The Tākaka township wastewater scheme was initially constructed in the mid-1980s. The network has grown and now spans several settlements including Tākaka, East Tākaka, Pōhara, Ligar Bay and Tata Beach and services several smaller communities in between. Most small communities have their own dedicated pump stations. The network is comprised of three main reticulated branches and 20 pump stations. All pump stations have digital telemetry and are fitted with duty and standby pumps, except Boyle Street. Boyle Street has a single pump with a spare pump stored at Waitapu pump station.

2.3.9 Tata Beach, Ligar Bay and Pōhara

The largest branch pumps wastewater flows from Tata Beach, Ligar Bay, Tarakohe, Pōhara, Clifton and Motupipi into Sunbelt pump station (PS). This coastal length of trunk main is about 11km has 13 pump stations both inline and injection.

The Council's Resource Recovery Centre also pumps effluent into the pressure main just before Sunbelt pump station. At Sunbelt pump station, wastewater is pumped directly to the Wastewater Treatment Plant (WWTP).

The section of pipe between Pōhara Valley, Pōhara campground and Richmond Road was originally constructed in 1994/1995 connecting these communities to the Tākaka wastewater scheme via a pumping/gravity main along Abel Tasman Drive. In 1995/1996, further outlying areas were including Clifton, Pōhara, Tarakohe, Ligar Bay and Tata Beach were connected.

The pressure main from Four Wind PS to Clifton was upgraded in 2019 and the main between Pōhara Valley and Pōhara was upgraded in 2023. The final upgrades planned for this section of the network include:

- installing emergency storage and other minor upgrades at Pōhara Camp Pump Station.
- Relocating and upgrading Tarakohe pump station and a new connecting pressure main to Pōhara Valley Pump Station.

These projects will provide for growth, improve network efficiency, and reduce the risk of overflows and odour.

2.3.10 Rototai

Flows from the small community of Rototai community including Tākaka Primary School are intercepted and pumped to the Waitapu pump station. From here, wastewater is pumped along SH60 and Haldane Road to the Tākaka WWTP. This short branch has only a few kilometers of pressures main and three pump stations. This system was constructed in 2006.

Primary School PS has high inflow and infiltration rates. Recently one stormwater connection to the wastewater network was removed, as were other leaks into manholes. Further investigation is needed.

There are known inflow and infiltration issues on a couple of branches of the Rototai network. Investigations to pin down the sources have been hampered by buried manholes and a lack of access points.

2.3.11 Tākaka and East Tākaka

The third branch also built in 2006, pumps wastewater from East Tākaka and the Dodson Road area including wastewater from the local hospital (Golden Bay Community Health) to Motupipi PS. This branch also conveys wastewater from Central Tākaka in gravity pipes to either Motupipi or Hiawatha Lane pump stations and then pumps directly to the WWTP.

2.3.12 Tākaka WWTP

The WWTP is located in the Tākaka River flood plain. The pond embankments have been designed to withstand a 1 in 50 year flood event. A major upgrade of the WWTP was completed in June 2015 and the WWTP now consists of a mechanical inlet screen, two aerated oxidation ponds (one with a baffle to aid circulation), a floating wetland, a dosing pump station and eight rapid infiltration basins (RIB). A septage facility for accepting some specific trade waste was also included as part of the upgrade. The WWTP is split over two adjacent sites, with the inlet works and ponds on the original site and the new RIB on a two hectare site elevated on a slightly higher river terrace.

The floating wetland removes algae before the treated wastewater is discharged into one of eight RIBs. Treated wastewater then filters though the underlying gravels into the groundwater. The groundwater flows towards the Tākaka River. Monitoring bores both upstream and downstream of the RIBs are sampled each month to confirm there is no bacterial contamination of the groundwater due to the discharge.

A weather station and telemetry were installed at the WWTP in 2014. The wastewater from all sources is measured by a magflow meter as it enters the treatment plant, and flows can be monitored in real time via the Council's digital telemetry system. A generator is located on site and can operate the WWTP in a power outage.

The capacity of the Tākaka WWTP is currently limited and is only able to service land already zoned residential or rural residential serviced. There is no capacity to enable any future growth areas. The current consent expires in 2038 and future planning may need to consider the relocation of the WWTP away from the flood plain.

In 2020 the RIBs failed which resulted in an overflow of treated wastewater onto neighbouring land and potentially into Te Kakau stream via land drainage. As a result the clogged gravel in the RIBs was replaced with larger clean gravel down to a depth of 1.4m. In 2023 two of the eight basins failed again. A much larger ninth basin was constructed in 2023 on the remaining Council land. This was funded by Fonterra and will only be used when Fonterra are discharging trade waste into Council's network in Spring or in emergency situations.

Filtration to remove algae, prior to disposal is being planned. This will extend the life of the RIB area. A nitrification – denitrification process is also planned to reduce the nutrient loading in the discharge. While not a discharge consent condition, it is expected that nutrient loading limits will soon be applied to all discharges to water by Taumata Arowai, in line with the principals of Te Mana o te Wai. Reducing nitrate and nitrogen concentrations in the discharge will also assist in reducing algae concentrations.

When the Tākaka River floods, access to the WWTP is cut off as there are two fords to cross. Flooding can occur several times each year but generally lasts less than 48 hours.

2.3.13 Upper Tākaka

The original wastewater scheme serving the Upper Tākaka village (which housed staff operating the Cobb Power Station) was operated under the ownership and control of Electricorp (previously NZ Electricity Department) since the early 1950s. In 1991, Electricorp upgraded the wastewater scheme and handed ownership over to Tasman District Council.

Wastewater gravitates to the only pump station on the north east corner of the village, which pumps to a treatment plant 600m to the north of the village. This plant comprises treatment in an oxidation pond followed by a wetland before discharging via overland seepage into the ground. There is no power at the WWTP site.

The wetland was replanted in 2008/2009 and the soakage area was extended and renovated in 2008. The oxidation pond was desludged in 2008.

The pump station operates with a duty and a standby pump with remote monitoring via the Council's digital telemetry system. The pump station, and treatment plant are on Council-owned land although surrounded by private farmland. Access to the treatment plant is via a right-of-way that passes through a ford. The rising main to the WWTP passes through private farmland and has been accidentally dug up on occasion.

2.3.14 Tapawera

The Tapawera wastewater scheme was originally installed by the New Zealand Forest Service in 1973. It services the residential area between Matai Crescent and Main Road Tapawera, including properties along Main Road Tapawera to the treatment plant. The service area includes the Tapawera Area School which has two swimming pools totalling 80m^3 of water.

The Tapawera scheme comprises a gravity reticulation system that discharges to the treatment plant to the west of the town. There are no wastewater pump stations within Tapawera. The treatment plant was upgraded in 2008. The final treatment process consists of a mechanical inlet screen, an HDPE lined aerated oxidation pond with two baffles followed by a pumped discharge to four rapid infiltration basins. Telemetry was installed as part of the upgrade along with a flow meter on the discharge pipe.

The Tapawera Treatment Plant is located on the upper terraces of the Motueka River but within its flood plain. Any failure of the system may have a negative effect on the surrounding groundwater and potentially the river. Therefore, the plant is managed to mitigate this risk.

2.3.15 Waimea (Brightwater, Wakefield, Hope, Richmond)

These settlements are grouped together because they are all connected via trunk mains that discharge into the Beach Road pump station that is owned and operated by the Nelson Regional Sewerage Business Unit (NRSBU). From the pump station wastewater is pumped to Bell Island Wastewater Treatment Plant.

2.3.16 Wakefield to Brightwater

The entire Wakefield reticulation network operates under gravity, gravitating to the Brightwater Main pump station (PS) via a 200mm diameter trunk main laid in the former railway reserve. There is a flume flow meter on this trunk main at Bird Road so flows from the Wakefield catchment can be monitored. The Brightwater reticulation network consists of a gravity pipe network combined with five pump stations. The gravity system discharges into one of the four pump stations with all wastewater passing through the Brightwater Main pump station. Leachate from the Eves Valley Landfill discharges into the Waimea West pump station.

All Brightwater and Wakefield wastewater arrives at the Brightwater Main pump station, located within private property. From there it is pumped up and over Burkes Bank to discharge into the manhole at the start of the gravity trunk main to Richmond. The Brightwater Main pump station is equipped with a standby diesel generator that automatically cuts in if the power supply fails. This pump station has duty and standby pumps. All five pump stations can be monitored via the Council's digital telemetry network.

The capacity of the trunk main from Wakefield to Beach Road pump station needs greater capacity to cater for growth. The Council have planned to construct a Pump Station in Wakefield and pump wastewater direct to Beach Road pump station, bypassing Brightwater. This will provide greater capacity in the Brightwater network and the trunk gravity main to Beach Road pump station in Richmond. The Brightwater Main pump station will be upgraded and a new pressure main from the pump station to Burkes Bank will be constructed.

Longer term, the Waimea Wastewater Strategy is investigating the best options for upgrading and managing wastewater to cater for long term growth on the Waimea Plains.

2.3.17 Hope to Richmond

Properties within the Hope area are discharged into the trunk gravity main that runs along the disused railway reserve (from Burkes Bank to the Beach Road NRSBU pump station). This trunk main also carries all of the Wakefield and Brightwater wastewater.

2.3.18 Richmond

The Richmond wastewater network is a gravity reticulation system originally installed in the 1950s. There is a small pump station on Hill Street South as well as a pump station near Headingly Lane, which serves the commercial/industrial area of Lower Queen Street and new residential developments in Richmond West. Both pump stations discharge into the gravity network. The Richmond West area is anticipated to mainly include low pressure pumped systems, with individual house pump stations owned by the Council with power supplied by the property owner. With the forecast growth in Richmond West, the Council anticipates the Headingly Lane pump station and downstream rising main will need to be upgraded. There are several alternative options that the Council will assess with the NRSBU that could address the capacity issues in the short and long term.

The investigation of sources of inflow and infiltration in Richmond are continuing. The volumes of stormwater entering the wastewater network in rain events has resulted in frequent multiple point overflows in the Beach Road/McPherson Street areas of Richmond.

Swimming pool capture of rainfall and discharge to the wastewater pipeline contribute to the wastewater overflows and decrease network capacity.

While the trunk main between Three Brothers Corner and the Beach Road pump station has sufficient capacity, the Beach Road pump station and downstream rising mains do not. The flow rate into the Beach Road pump station is limited to 387 l/s, controlled by an electronic flow meter and automatic penstock valve, which are monitored remotely via the analogue telemetry network. During heavy or prolonged rainfall, the wastewater network in low lying parts of Richmond surges and can overflow for twelve hours or more. There are two gravel traps between the trunk main flow meter and the Beach Road pump station that require regular clearing, particularly prior to and post significant rainfall events.

2.3.19 Māpua/Ruby Bay

Māpua was initially reticulated for wastewater in 1988 around the wharf area and the network has vastly expanded since. The reticulation network generally drains south and east via gravity, interspersed with pumping stations, delivering all wastewater to Māpua Wharf pump station. From the wharf, a rising main crosses the Māpua Channel to Rabbit Island and then to Bell Island Wastewater Treatment Plant (WWTP). The Council's responsibility for this rising main ends at the connection to the Nelson Regional Sewerage Business Unit inlet works on Bell Island.

There are 12 pump stations in the Māpua/Ruby Bay network, all with duty and standby pumps, with corresponding controls and telemetry. The Māpua Wharf pump station was upgraded in 2012 and includes a backup generator, emergency storage tanks and an odour treatment system.

Operation of the pump station is monitored in real time by the Council's telemetry system, which can be viewed and interrogated by the Council staff and the maintenance contractor. This contractor is responsible for monitoring and responding to alarms and ensuring the pump stations operate. Eight of the 12 pump stations are on the digital network and the remaining ones will be converted as part of future upgrades.

The rising main under the Māpua Channel is a 250mm diameter polyethylene (PE) pipeline. An additional unused polyethylene (PE) pipeline also crosses the channel, allowing for future growth in Māpua/Ruby Bay. The balance of the rising main to Bell Island WWTP is 355mm diameter PE and was installed in 2010. New housing developments in the area have put additional pressure on the network through private pipework which allows surface and ground water - Inflow and infiltration) to enter the wastewater network. This has led to the Council paying closer attention to plumbing work during building compliance inspections and educating local plumbers and drainlayers on acceptable plumbing solutions.

A new and emerging issue for wastewater networks is the growth in private swimming pools. These act as hardstand and capture rainfall which is then discharged to the wastewater network. The stormwater and subsequent discharge can put a significant volume of water into the wastewater network contributing to overflow potentials. Swimming pools are connected to wastewater network to prevent back wash discharges with (chemicals) discharging to the stormwater network where this type of discharge can cause adverse impacts on the receiving environment. This is a wider issue for the region, not just Māpua.

The Council is requiring new developments in low-lying areas to install low pressure pump systems that are able to hold 24 hours of storage to help manage the network when overloaded during long or heavy rainfall.

3 Strategic Direction

Strategic direction provides overall guidance to the Council and involves specifying the organisation's objectives, developing policies and plans designed to achieve these objectives, and then allocating resources to implement the plans.

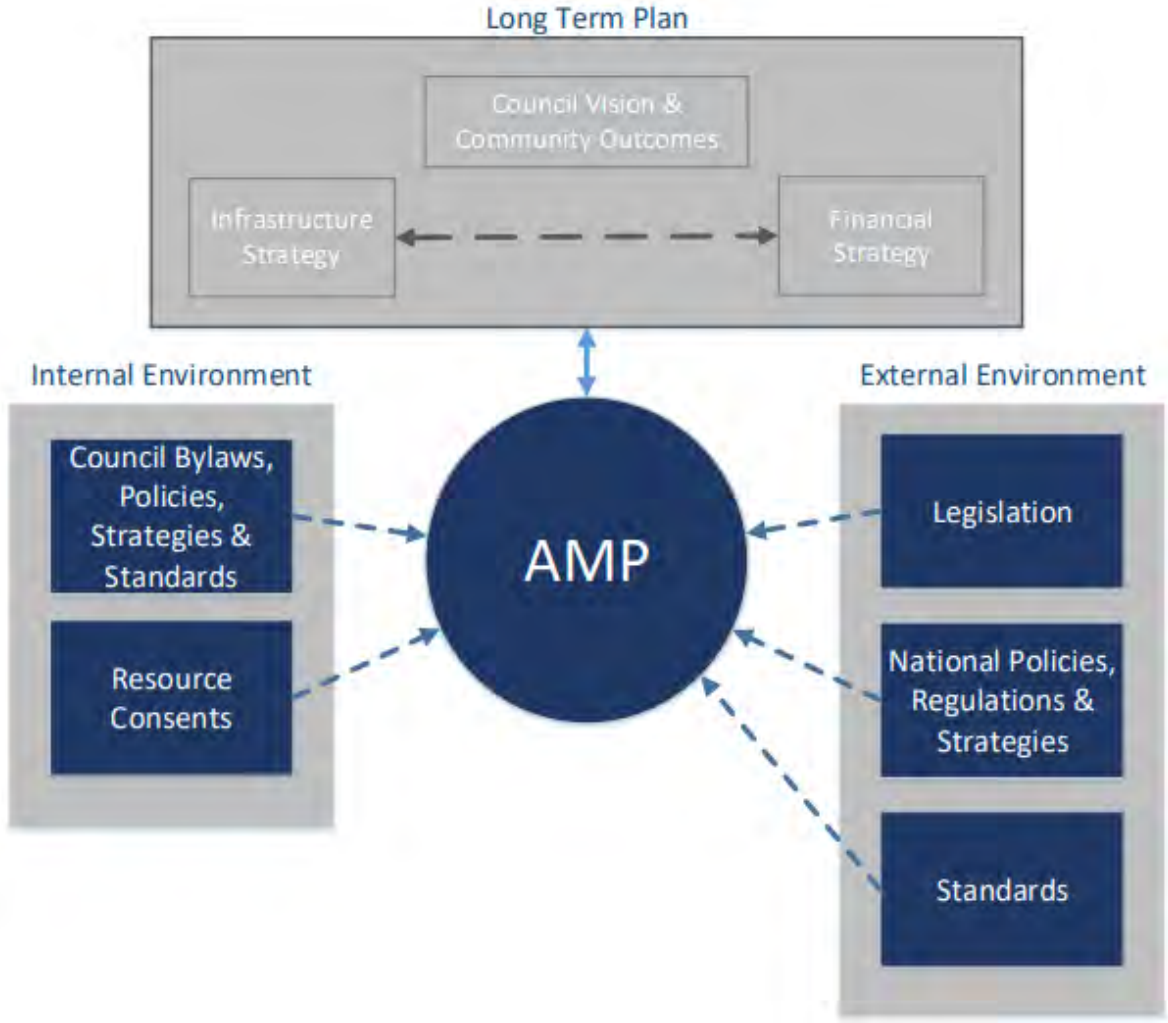
3.1 Our Goal

Activity Goal
We aim to provide cost effective and sustainable wastewater services that meet public health and environmental standards.

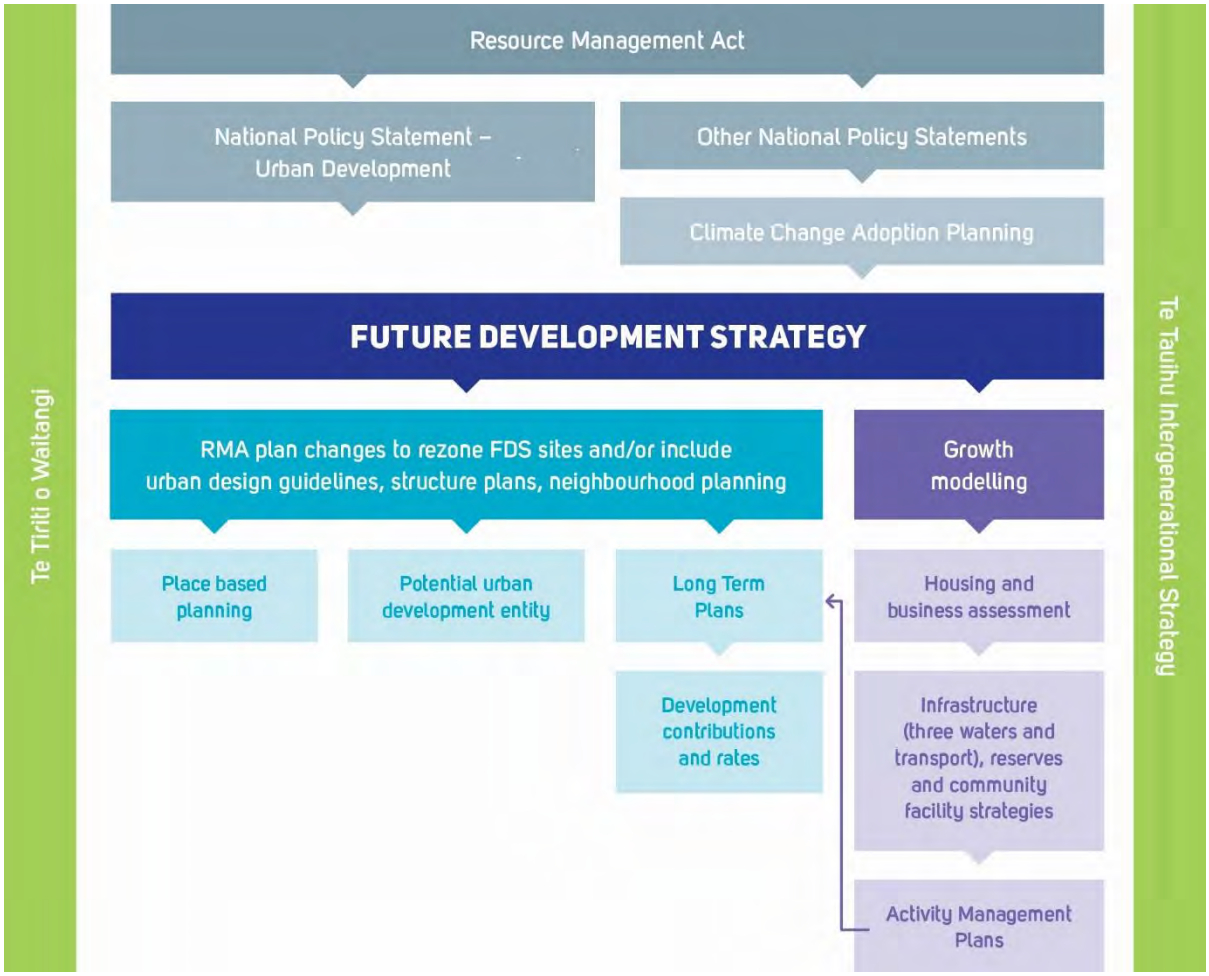
3.2 Strategic Alignment

This Activity Management Plan (AMP) is a key part of the 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 are illustrated in thetwo diagrams below:



The second diagram below illustrates where the Future Development Strategy (FDS) fits into the process.



Appendix C in this Activity Management Plan provides a list of all legislation , standards and policies relating to the Wastewater Activity.

3.2.1 Financial Strategy

The Financial Strategy outlines the Council's financial vision for the next 10 to 20 years and 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 (LTP).

3.2.2 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

Wastewater activity is guided by Council Bylaws, Policy Statements, and national legislation. Those that apply to the wastewater 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 current Act information, refer to https://www.legislation.govt.nz/

3.4 Our Partners and Stakeholders

3.4.1 Partnerships with Te Tau Ihu iwi

The Council is committed to strengthening partnerships with iwi of Te Tau Ihu 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.

NPS FM (2020) and Te Mana o te Wai principles connects Ngāti Waewae interests in the St Arnaud and Murchison WWTP's that are within the catchment that extends from Lake Rotoiti to the Buller river and out to the West Coast.

Iwi Management Plans are lodged by iwi authorities and received by the Council under the Resource Management Act 1991. Once lodged with Council, they are planning documents that the 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.

There has been 18 months of work with the regions iwi around wastewater treatment, this work will inform a draft high level strategy/ vision for the Tasman region to guide work relating to the regions eight wastewater treatment plants.

More information about iwi of Te Tauihu can be found on the Council's website at https://www.tasman.govt.nz/my-region/iwi/ and their own websites and social media channels.

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 works alongside a variety of stakeholders and partners to share knowledge and views, make the most of resources, and achieve shared goals. The Council has a Significance and Engagement Policy which is designed to guide the expectations of the relationship between the Council and the Tasman community.

The stakeholders 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, Health NZ Te Whatu Ora_-
- 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 local authorities
- Member 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:

- Long Term Financial Plan 2024-34
- Annual Plan 2023-2024
- Risk Management Policy

- Infrastructure Strategy
- Nelson Tasman Future Development Strategy 2023.

3.7 Strategic Approach for each Wastewater Network

Table 4: Strategic Approach for Wastewater Network

Network	Strategic Approach
Wakefield, Brightwater, Richmond/Hope, Māpua Ruby Bay	The issues facing this network include: • Rising costs of capital investment to increase capacity and treatment through Nelson Regional Sewerage Business Unit; • Sustained growth in all settlements is likely to lead to more frequent capacity issues in the Council's trunk mains and critical rising mains; • Ongoing need to reduce inflow and infiltration into the network; • Allowance for growth and infill capacity within the existing network; • Upgrading reticulation capacity, before, along-side or as part of growth to limit financial risk of development not occurring; • Existing wet weather overflows in Beach Road / McPherson Street area; • Spring tide surcharge over Beach Road and flood properties and inundate gulley traps); • Long term sustainability and capacity of Bell Island Wastewater Treatment Plant. The strategic approach to this network is to: • Continue to identify and repair defects and sources of inflow and infiltration; • Complete the Waimea long term wastewater strategy in 2024/2025 to confirm the long-term upgrading requirements, triggers, and timeframes; • Install Low Pressure Pumping Systems in areas of high ground water to service individual dwellings. These systems need to be controlled when they pump during heavy or prolonged rain fall events; and • Install Low Pressure Pumping Systems for intensification especially where no daytime capacity in the existing pipework exists.
Motueka, Riwaka, and Kaiteriteri	The issues facing this network include: • Motueka West is growing and there is insufficient capacity in the existing network;. • Parts of the Motueka reticulation system is known to have inflow and infiltration; • Lack of stormwater capacity leading to stormwater entering the wastewater network;

Network	Strategic Approach
	• The Motueka Wastewater Treatment Plant (WWTP) is located in an area of significant risk which will increase as sea level rise occurs. Pressure from out of zone developments to join the network. The strategic approach to this network is to: • Continue investigations to identify and repair system defects and sources of inflow and infiltration; • Continue to develop the Motueka Long Term Wastewater Strategy; to determine the long-term requirements of the network; • Long term, Motueka WWTP will be relocated away from the coast due to the impacts from sea level rise and river flooding; • Phase 1 is a strategic study to determine a suitable site, Phase 2 is designation and land purchase planned for 2028/2029, Phase 3 is a WWTP construction budget planned for 2031-2034; • Continue to engage with iwi and other stakeholders by providing input to the decision-making process; • Wastewater vision and actions for TDC and NRSBU working with Te Tau Ihu iwi will help support strategic decision making for the Motueka WWTP project.
Tākaka, Pōhara and Ligar Bay/Tata Beach	The issues facing this network include: • Odour issues in Ligar Bay and Pōhara; Growth in Pōhara exceeds existing capacity leading to overflows during wet weather; and • Sea level rise will impact coastal infrastructure. The strategic approach to these schemes is to: • Relocate and upgrade Tarakohe Pump Station and new rising main connection; • Re-purpose the existing pumping stations located at the Pōhara Camping Ground and Pōhara Valley to be injection pumping stations, into the new rising main from Tarakohe to Four Winds; • The Tarakohe Pump Station and new rising main project will increase capacity in the pipe network, address odour, and provide additional storage in the re-purposed pumping stations and it will also provide greater resilience against sea level rise; • Continue to identify and repair defects, inflow and infiltration; • Work towards increasing Tākaka WWTP capacity options may include consideration of a new site.
Collingwood	The main issues facing Collingwood network include: • an overflow can enter the coastal marine environment and the

Network	Strategic Approach
	response to any failure of the system can take some time due its remote location; • High wet weather flows. The strategic approach for this system is to: • Continue to identify and repair defect and inflow and infiltration.
Upper Tākaka	The Upper Tākaka scheme is small and has had significant investment in the past. It is operating adequately.
Tapawera	The treatment plant was upgraded on the basis that there would be little population growth in population in Tapawera. The upgrade was aimed at improving environmental outcomes rather than increasing treatment capacity of the plant. The strategic approach going forward is to maintain performance. The Tapawera scheme is small and has had significant investment in the past. It is operating adequately.
St. Arnaud	The St Arnaud network is a relatively new and was designed to cater for the peak population within the network as of 1999. Generally, the treatment system performs well, but there is evidence of increasing inflow during rain events, likely associated with new developments.
Murchison	No formal assessment of the reticulation condition has been undertaken, but there are no known concerns regarding the condition of these assets. Most of the infrastructure is of an age (approximately 25 years old) where condition problems are not expected. The Council intends to continue operating the asset to minimise its impact on the community and the environment.

4 Key Issues and Response

4.1 Key issues

The Council has identified key issues specific to the Wastewater activity, which are discussed in Table 5 below. Key issues are interrelated and often, investing in solutions will likely help address other issues to varying degrees.

Table 5: Key Issues

Key Issue	Response
Ground and rainwater in the wastewater network.	Infiltration is the unintentional entry of ground water into the wastewater network and inflow occurs when rainwater enters the network. Common points of entry include broken pipe and defective joints, as well as cracked manholes. Ground and rainwater entering the network is a significant issue in some parts of our networks. Particularly problematic sub catchments include Sunview Heights in Richmond, Woodlands, and Goodman Park in Motueka. Heavy or prolonged rainfall can overload our pipe networks and wastewater treatment plants. In turn, this restricts residential and commercial growth because it uses up available network capacity. We then pump, convey, and treat the extra water, resulting in additional and unnecessary costs. Excessive levels may also dilute wastewater and lower the performance of our treatment plants. We have been investing in an ongoing CCTV programme and an inflow and infiltration (I&I) programme over recent years and are making steady progress in identifying sources of inflow and infiltration and fixing them. These programmes help us collect condition and performance data that help inform our renewals programme. In cases, where I&I occur on private property, we serve notice to the owner. Where sources occur on the public network, we either do spot pipes repairs and seal manholes or include problematic section of pipes in our renewals programme.

Key Issue	Response
Providing infrastructure to allow for new homes and businesses	Enabling the construction of new subdivisions and associated infrastructure for our growing population is a priority for the Council. We expect that over the next 10 years, our population will grow by approximately 7,400 residents. To accommodate this growth, new houses will need to be built, most of which will need to be supplied with wastewater. We can supply some of this new demand where there is capacity in our existing infrastructure. Where capacity is not available, or if the infrastructure does not exist, we will need to provide upgraded or new infrastructure to enable growth. Growth is occurring faster than the Council previously anticipated in settlements such as Richmond, Māpua and Motueka, Brightwater and Wakefield. Furthermore, the Nelson-Tasman Future Development Strategy identified new settlements that will require significant infrastructure. In the near term, we are planning new pump stations and rising mains in Motueka West and Māpua. In the longer term we have planned for new pump stations and rising mains in Lower Moutere and the Jefferies Road area in Brightwater. In Brightwater and Wakefield, the wastewater system is operating close to capacity and a new bypass pump station needs to be built to cater for growth in the Wakefield. Parts of the trunk main between Wakefield and Richmond will require upgrading. Tākaka Wastewater pipe network has capacity for growth, but the WWTP has limited capacity for new growth outside existing land currently zoned for growth. The Council applies development contributions to growth projects so that developers meet the cost of the growth component of some projects, rather than ratepayers.
Climate Change and Resilience The Climate Change Response Act 2002 provides a framework to develop and implement clear and stable climate change policies. We need to optimise our wastewater treatment plants' performance as wastewater treatment processes are our largest source of greenhouse gas (GHG) emissions and biggest consumer of	The investment required to ensure our infrastructure can withstand the effects of climate change and natural hazard shock events will be significant. The Council expects changes to Tasman's climate will broadly include: The Council is responsible for providing wastewater infrastructure that is resilient to events that disrupts 'business as usual'. Examples of wastewater network disruption will likely include: • Overflows due to intense or prolonged wet weather; • Power failure causing the network to become overloaded; • A major break in wastewater pipes; and

Key Issue	Response
electricity. The investment required to ensure our wastewater network infrastructure can withstand the effects of climate change and natural hazard events presents a significant challenge for Council. The detail of changes to Tasman's climate is described in Section 9: Climate Change, Natural Hazards, and Environment of this plan. Council will need to consider the following and how it will impact wastewater infrastructure: • Changing temperatures and seasonality; • Changing rainfall patterns and intensity; and • Changes to sea level and coastal hazards. Tasman is susceptible to a range of natural hazards including: • Earthquakes, tsunami; • Flooding, slips, landslides; and • Coastal Inundation and saltwater intrusion.	• Sea level rise and coastal inundation that cause assets to fail with subsequent wastewater overflows to the receiving environment. All these types of events can limit our ability to provide adequate and reliable wastewater service to our community. Some pump stations within our networks have limited storage. This means at times of high flows due to prolonged or heavy rain, or during power outages, the network can only manage for a short period of time before we need to manage the overflow risk. As poor weather can bring both wind and rain, there are instances when high flows and power outages occur at the same time. To address this issue, we plan to invest in storage capacity so our network can handle higher flows or longer periods. This means our networks will be more resilient and less prone to overflows. We are also planning to invest in mobile generators to provide power to key pump stations during power outages enabling the network to continue operating. In Motueka, the wastewater treatment plant is located adjacent to the coast. The plant will be at increasing risk of coastal erosion and flooding due to the effects of climate change. In 2019, the Motueka wastewater working group was re-tasked. to commence early engagement with iwi, community, and stakeholders to consider a wastewater strategy for Motueka. The group membership included representatives from the Council, the Nelson Marlborough District Health Board, iwi, and Fish & Game. Part of this work included investigations into alternative sites for the wastewater treatment plant to meet conditions of the wastewater consent for Motueka WWTP, a feasibility study. This work has been on hold since 2022. The Council will commence the Motueka wastewater project in the 2024/2025 financial year, to refine planning, timeframes and budgets for the WWTP plant and network relocation and rebuild project.

5 Levels of Service

Activity Management Plans set out the Levels of Service the 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 the 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 wastewater 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

Table 6 summarises the levels of service and performance measures for the wastewater activity.

Note that the Blue shaded rows are the levels of service and performance measures to be included in the Long Term Plan. Unshaded white rows are technical measures that are only included in the Activity Management Plan.

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 2022/23	Future Performance Targets			
			Year 1	Year 2	Year 3	By Year 10
			2024/2025	2025/2026	2026/2027	2027 -2034
Our wastewater systems are built, operated, and maintained so that failures can be managed and responded to quickly.	The number of dry weather overflows from the Council wastewater system (expressed per 1,000 connections to wastewater system) is less than the target.1 (Mandatory measure one)	0.9 dry weather overflows (per 1,000 connections)	<5	<5	<5	<5
Our wastewater systems do not adversely affect the receiving environment	Compliance with resource consents for discharges from wastewater systems is achieved. As measured by the number of: • abatement notices • infringement notices • enforcement orders • convictions received in relation to those resource consents. (Mandatory measure two)	0 notices, orders, or convictions.	0 notices, orders, or convictions	0 notices, orders, or convictions	0 notices, orders, or convictions	0 notices, orders, or convictions

[1] Dry weather is defined as a continuous 96 hours with less than 1mm of rain within each 24-hour period. Measured by the number of contract job request.

Levels of Service	Performance Measure (we will know we are meeting the level of service if…)	Current Performance 2022/23	Future Performance Targets			
			Year 1	Year 2	Year 3	By Year 10
			2024/2025	2025/2026	2026/2027	2027 -2034
Our wastewater systems are built, operated, and maintained so that failures can be managed and responded to quickly	Overflows resulting from a blockage or other fault in the wastewater system are attended and resolved within the target timeframes. Measured by attendance and resolution times recorded in Confirm.[2] (Mandatory measure three)	Median Attendance time – 119 mins Median Resolution time – 8.4 hours	Median Attendance time ≤60 mins Median Resolution time ≤9 hrs.	Median Attendance time ≤60 mins Median Resolution time ≤9 hrs	Median Attendance time ≤60 mins Median Resolution time ≤9 hrs	Median Attendance time ≤60 mins Median Resolution time ≤9 hrs
Our wastewater systems reliably convey and treat wastewater with a minimum of odours, overflows, or disturbance to the public	The total number of complaints received about: • Odour • System faults • System blockages • Council's response to issues with its wastewater system. (Expressed per 1,000 connections.) Measured by the number of contract job request. (Mandatory measure four)	0.5 complaints received (per 1,000 connections)	<35	<35	<35	<35

[2] Attendance time – from the time Council receives notification to the time that service personnel reach the site. Resolution time – from the time Council receives notification to the time that the service personnel confirm resolution of the blockage or other fault. Measured by attendance and resolution times recorded in Confirm.

Levels of Service	Performance Measure (we will know we are meeting the level of service if…)	Current Performance 2022/23	Future Performance Targets			
			Year 1	Year 2	Year 3	By Year 10
			2024/2025	2025/2026	2026/2027	2027 -2034
Our wastewater activities are managed at a level that satisfies the community	Percentage of customers (who receive a service) are satisfied with the wastewater service. Measured through the annual residents' survey.	92%	>80%	>80%	>80%	>80%

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 without any significant changes.

5.3 Level of Service Performance and Analysis

Compliance with resource consents for discharges from wastewater systems.

This performance measure indicates how well the Council is managing the environmental impacts of its wastewater networks. Compliance with resource consents is less than 100%; with one failure at the Motueka WWTP potentially requiring an additional consent if the repair had not been achieved. Other abatement notices, or enforcement orders received during the last five years. The Department of Internal Affairs introduced this mandatory measure in 2015 and since then the Council has complied with it. The target will remain at zero. Minor breaches or technical non-compliances are not reported against this measure.

The Motueka Wastewater Treatment Plant had a catastrophic membrane failure in October 2023 and a resource consent was applied for the potential non-compliance with the consent conditions of RM141088 where partially treated wastewater from the oxidation ponds would enter the fresh or coastal waters. A controlled discharge to the former soakage beds prevented an uncontrolled discharge to freshwater or coastal water. The consent was anticipating a long lead in time for replacement membranes to arrive and be installed, this situation was avoided and a full repair with new membranes was achieved with no uncontrolled overflows to water by November 2023.

5.4 Customer satisfaction

The most recent residents' survey was undertaken in May 2023. This asked whether residents were satisfied with the wastewater 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 in table above.

5.5 Risks to achieving Levels of Service

Reduced funding for network upgrades and renewal may see a higher level of pipe failure and wastewater overflows.

Increase in Inflow and infiltration to the wastewater network causes a reduction in capacity within the pipe network and WWTPs, both can be overwhelmed in high rainfall events leading to wastewater overflows.

Ongoing inflow and infiltration investigations and remediation to network to reduce stormwater entering the wastewater network.

Unexpected reduction in the life of Motueka WWTP membranes from 5-7 years to 2 years.

The replacement cycle and budget for the Motueka WWTP membranes has been adjusted to anticipate the reduced life span. Ongoing work with the providers of the membranes to improve membrane performance.

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 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 the Council are managed through the 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 and overview of key drivers of demand and what demand management measures the Council has planned to implement.

6.1 Demand Drivers

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

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

6.2 Industrial/Commercial Use

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

Table 7: 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.

6.2.1 Tourism

Tasman is a popular tourist destination and the influx of visitors during peak summer periods in these destinations lead to an increased wastewater loading on the network. In particular Pōhara, Kaiteriteri and Māpua experience significant increases in demand because of the number of visitors to holiday homes and camping grounds during the summer months.

6.2.2 Climatic Influences and Weather Patterns

Climatic factors including rainfall, temperature and evaporation will affect the performance of the wastewater networks and WWTPs. The implications of climate change have the potential to increase the risks of overflow from the increased inflow and infiltration of rainfall and discharge to wastewater networks.

Further discussion on the impact of climate change is included in Section 9 of this plan.

6.2.3 Environmental Awareness

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

6.2.4 Council's Controls/Regulation Tools

The Council has several tools that influence wastewater discharges including pricing, consent conditions and education and advocacy programmes.

6.3 Assessing demand

The key demographic assumptions affecting future demand are:

- ongoing population growth over the next 30 years with the rate of growth slowing over time;
- an ageing population, with population increases in residents aged 65 years and over; and
- 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 household.

6.4 Demand Management

Demand management includes both asset and non-asset strategies to manage demand across the wastewater 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.

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.

Table 8: 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.

Condition Grade and Meaning	General Meaning
	Access: Restricted, potentially dangerous. Secure: Locks and/or structure easily breeched. Exposure: Exposure to elements evident e.g. leaks, overheating.
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 nine wastewater networks (including eight WWTPs).

Further details about specific assets are captured in Confirm and Active Manuals™.

7.2 Asset Criticality

The 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:

1. Number of people that would be affected if the asset failed.
2. Asset failure would prevent/impair use of a critical facility.
3. Ease of access/complexity of repair.
4. Asset failure has potential for environmental/health/cultural impacts.
5. 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.

7.3.1 Operation and Maintenance Contract

The operation and maintenance of the nine wastewater networks and eight WWTPs and will be 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.

7.3.2 Maintenance Strategies

7.3.2.1 Routine and Reactive Programme

The main maintenance strategies and approaches for the wastewater 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, pump station issues etc. Generally, routine work is more proactive and include activities listed in the table below:

Table 9: Summary of Routine Maintenance Activities

Maintenance activity	Description
Wastewater Treatment Plant (WWTP)	Regular maintenance and inspections of WWTP facilities including equipment. Routine testing of treated wastewater discharge quality.

7.3.3 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.

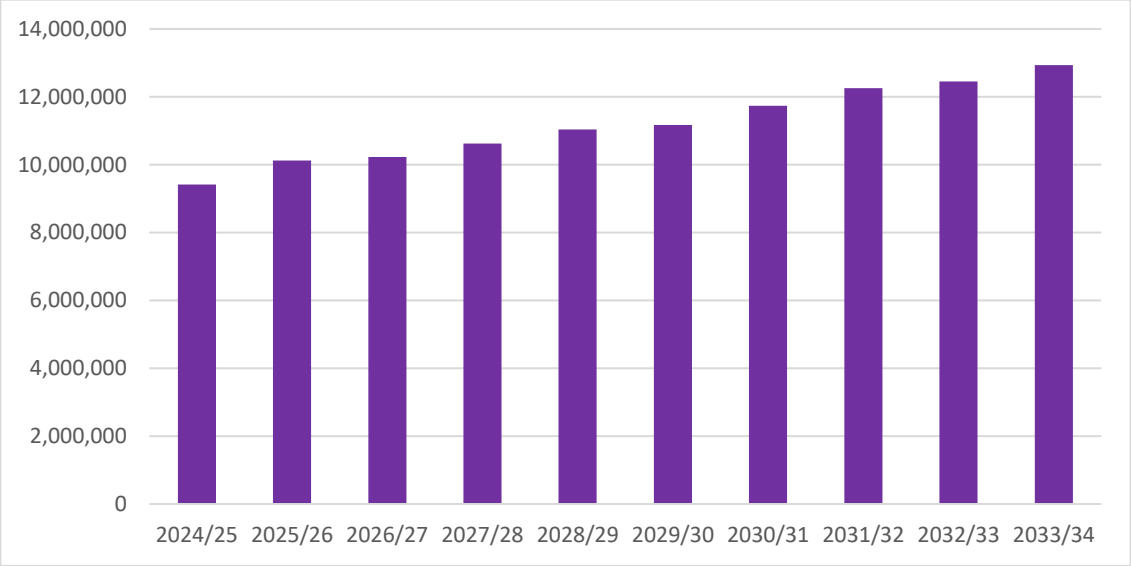


Figure 5: Direct Operations and Maintenance Expenditure Excluding Inflation

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.

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. After Year 5, the Council's investment in renewal starts to fall behind deprecation 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. 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.

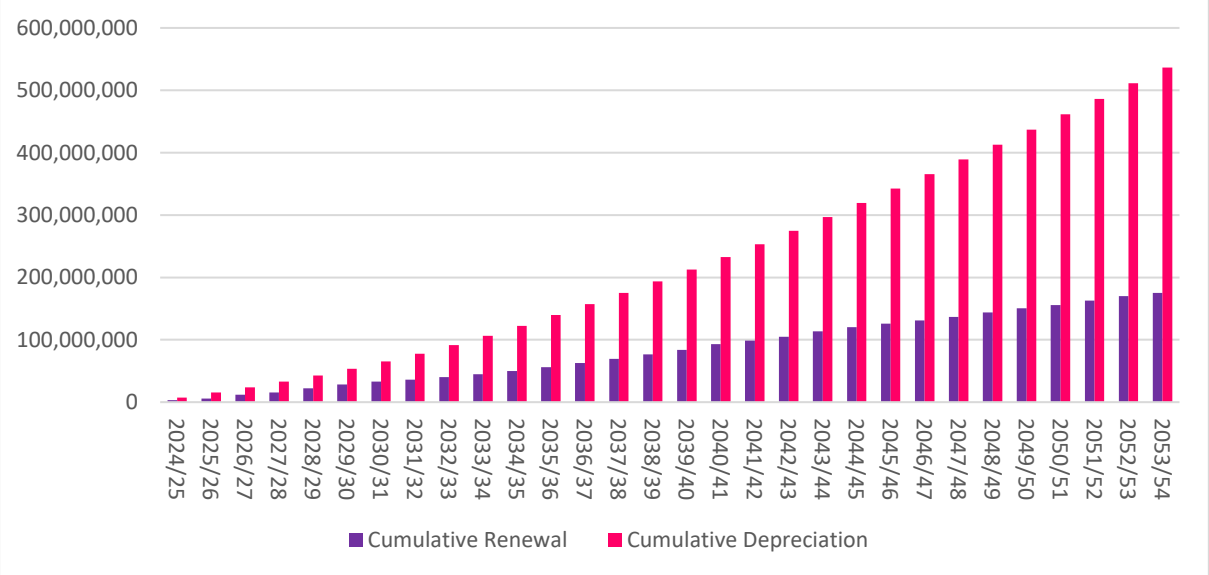


Figure 6: Cumulative Depreciation and Renewal Expenditure Comparison Including Inflation

7.4.3 Forecast Renewal Expenditure

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

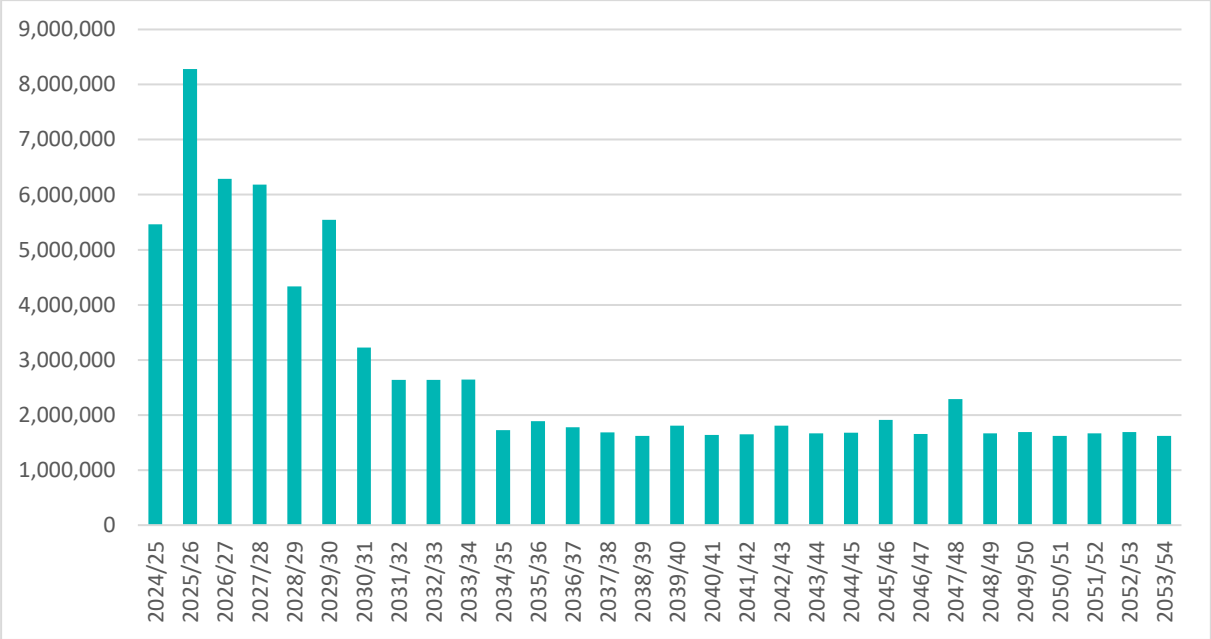


Figure 7: Direct Renewals Expenditure Excluding Inflation

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. Enabling growth is a priority for the Council.

7.5.1 Forecast New Capital Expenditure

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

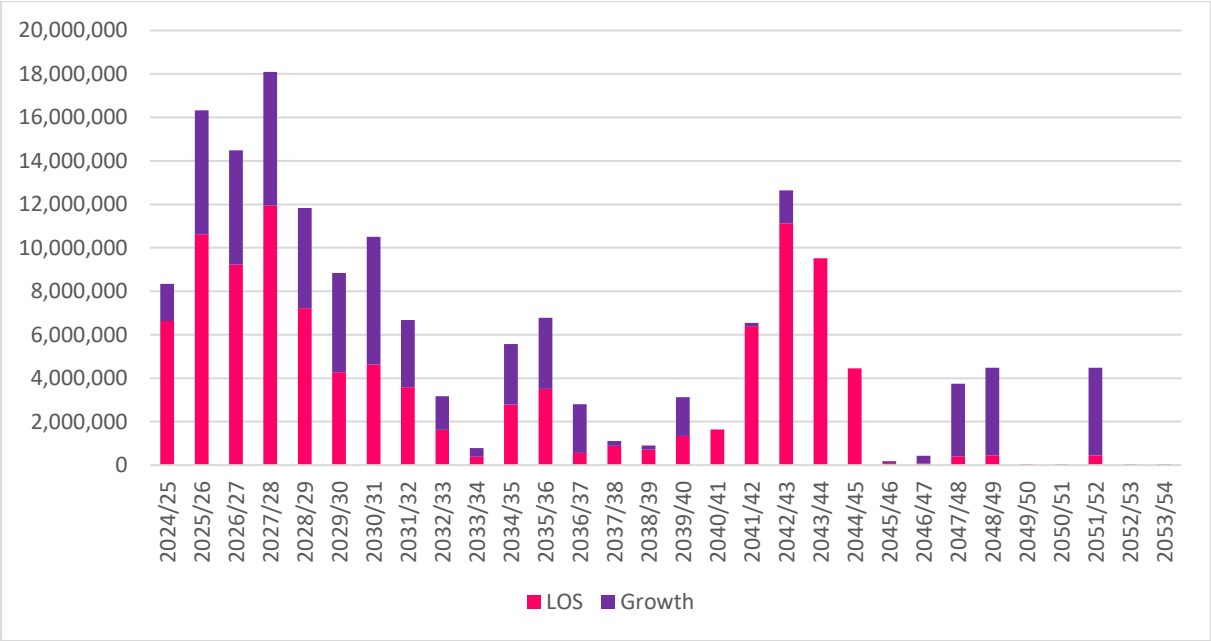


Figure 8: Direct New Capital Expenditure Excluding Inflation

7.6 Asset Disposal

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. There are no assets specifically identified for possible decommissioning and disposal within the next 10 years. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

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 wastewater activity is funded through a mixture of the following sources. These include development contributions, fees and charges, general rates, debt, subsidies, and targeted rates.

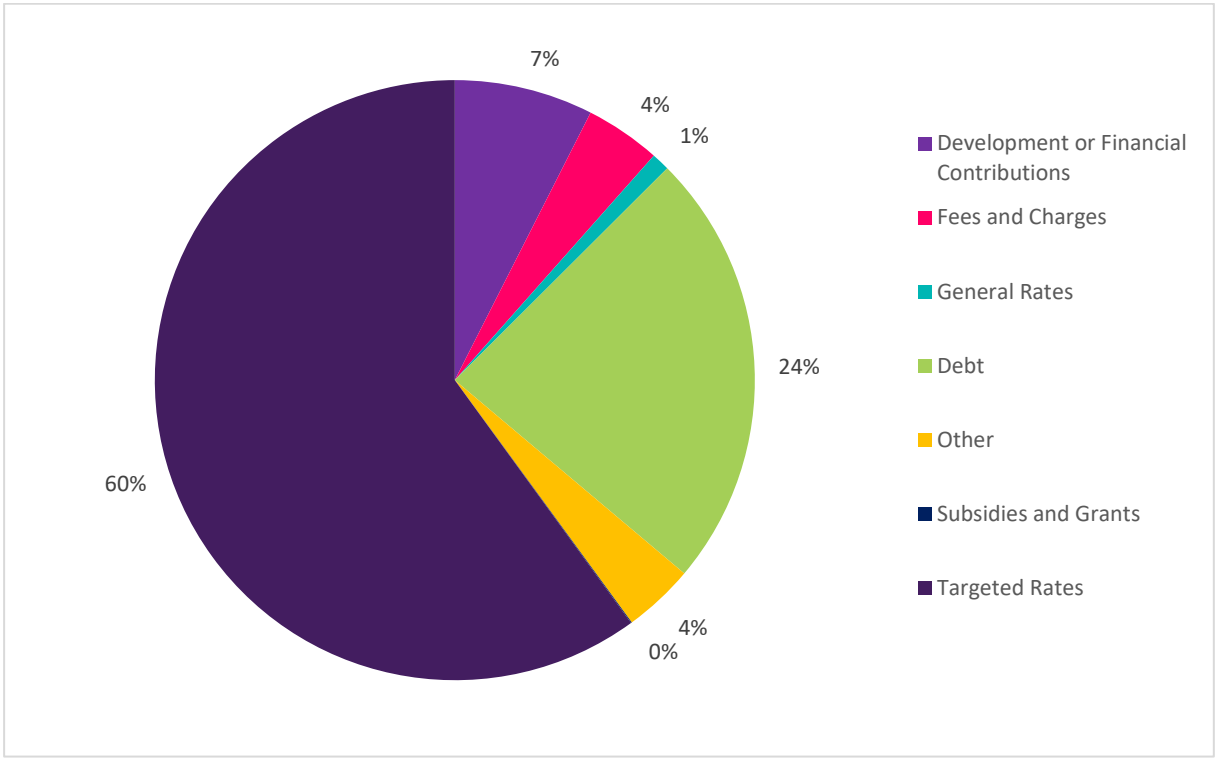


Figure 9: Funding Sources

8.1.1 Development Contributions

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 10: Wastewater Supply Development Contribution Charges: (as of 1 July 2023)

Catchment	Development Contribution per HUD $ (incl. GST) *
Waimea	$12,158
Motueka	$7054
Golden Bay	$8,885
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.

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 2020.

- NAMS Group Infrastructure Asset Valuation Guidelines – Edition 2.0.
- 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 wastewater 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 11: Data Confidence:

Asset Description	Confidence	Comments
Wastewater 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.

Table 12: Asset Lives

Item	Life (years)	Minimum Remaining Life (years)
Pipelines		
AC, EW pipe	60	5
Concrete, CI, DI, PVC, Unknown Pipe	80	5
PE pipe	120	5
Miscellaneous pipework and fittings associated with treatment plants and pump stations	15	2
Valves	50	5
Cleaning eyes, inspection points, property connections	80	5
Manholes	100	5
Flow Meters	15	2
Non pipeline assets		
Pump chambers	80	5
Variable speed drives, Wastewater treatment plant membranes	10	2
Low pressure pumps	25	2
Concrete structures	50	5
Buildings (All Materials)	50	5
Oxidation pond earthworks	Not depreciated	
Small Plant - pumps, aerators, odour control, generators	20	2
Electrical, telemetry, control cabinets	15	2

8.2.2 Depreciation

Depreciation of assets must be charged over their useful life. The 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 wastewater assets are undergoing a revaluation and data will be updated when it becomes available. The data baseline in the tables below, is as of 30 June 2020.

Table 13: Wastewater Asset Valuation Summary

Asset Type	Optimised Replacement Value ($000)	Optimised Depreciated Replacement Value ($000)	Annual Depreciation ($000/yr.)
Wastewater pipes	113,779	76,614	1,360
Wastewater Non-Pipe assets	131,147	94,973	2,580
Nelson Regional Sewerage (half share)	47,809	31,524	Funded from users
Total	292,735	203,111	3,940

Table 14: 2020/2023 Wastewater Valuation Comparison:

Year	Optimised Replacement Value ($000)	Optimised Depreciated Replacement Value ($000)	Annual Depreciation ($000/yr.)
2020	292,735	203,111	3,940
2023	tba	tba	tba
% Increase	tba	tba	tba

Overall, the wastewater assets are expected to have increased in optimised replacement value 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 will be higher due to higher unit rate increases for lower life asset.

8.3 Financial Summary

The Council's Funding Impact Statement (FIS) for this activity is included in Appendix F 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.

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)(l)-(iv) of the Local Government Act requires the Council to identify the estimated costs of the provision of additional capacity and the division of these costs between changes to demand for, or consumption of, the service, and changes to service provision levels and standards.

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

Note: *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.

To address this uncertainty, the Council has incorporated funding of scope risk into capital project budgets. The amount of scope risk included varies from 10% to 40% of the project estimate, depending on the expected complexity of the individual project. Based on history, it is unlikely that all individual projects will need the full amount of allocated scope risk funding, in reality there will be some under and overspending.

8.3.3 Total Expenditure

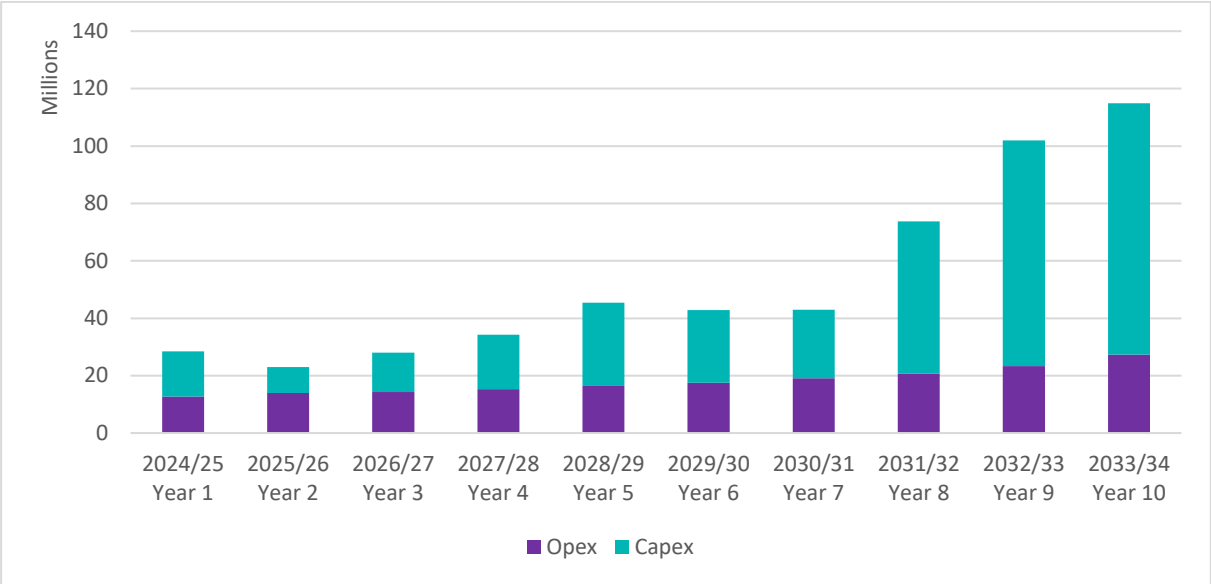


Figure 10: Total Expenditure

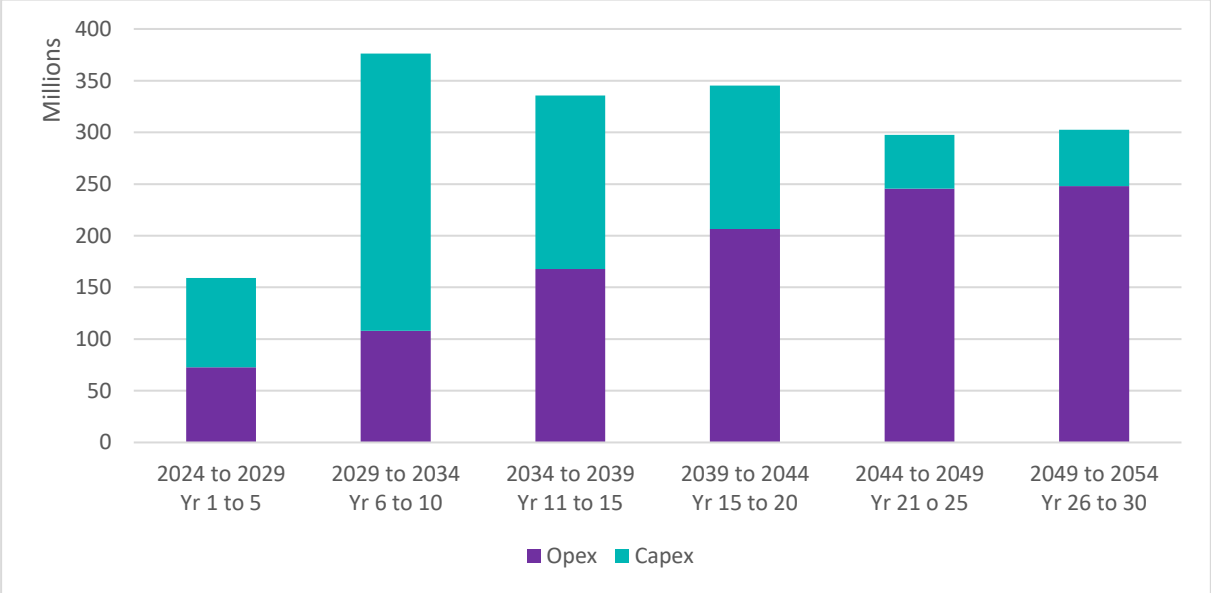


Figure 11: Total Expenditure - 5-year blocks

8.3.4 Total Income

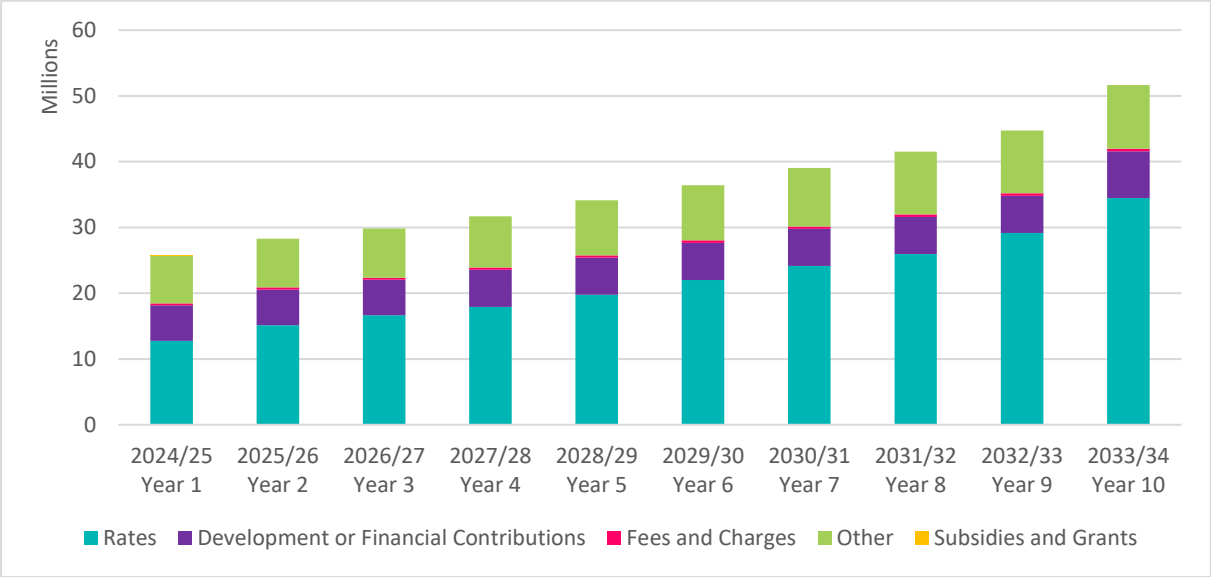


Figure 12: Total Income

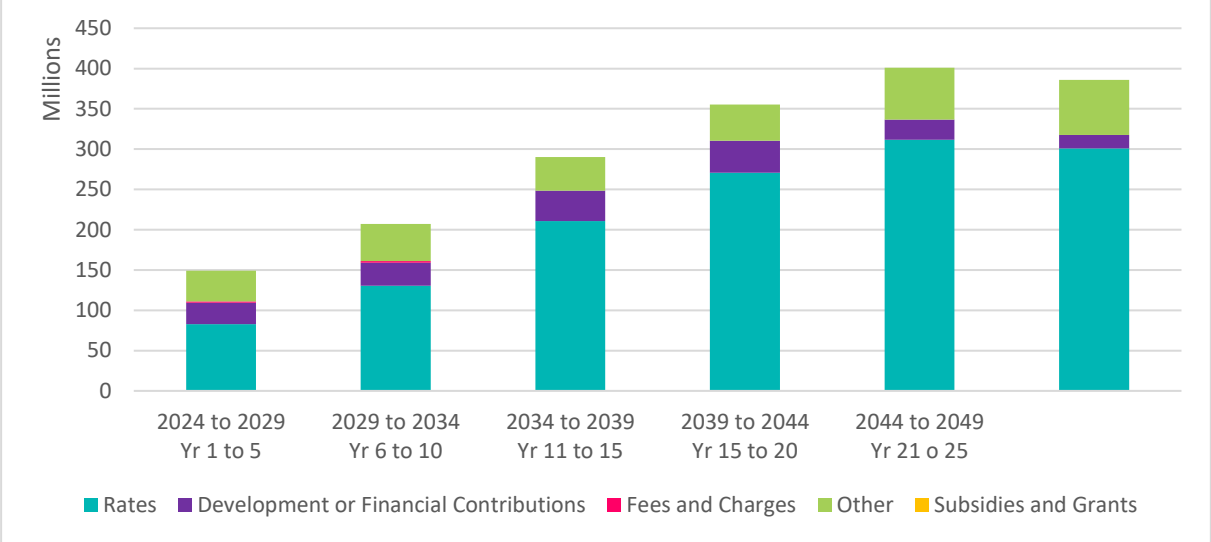


Figure 13: Total Income- 5 year blocks

8.3.5 Operational Costs

Operational costs for the Wastewater Activity are forecast to increase by an average of 13.2 per year for the first 10 years, and an average of 9.7% per year over 30 years at this time, direct operating costs are increasing due to the additional compliance and wastewater network and WWTP upgrades that are required. Both direct and indirect expenditure increase due to inflation.

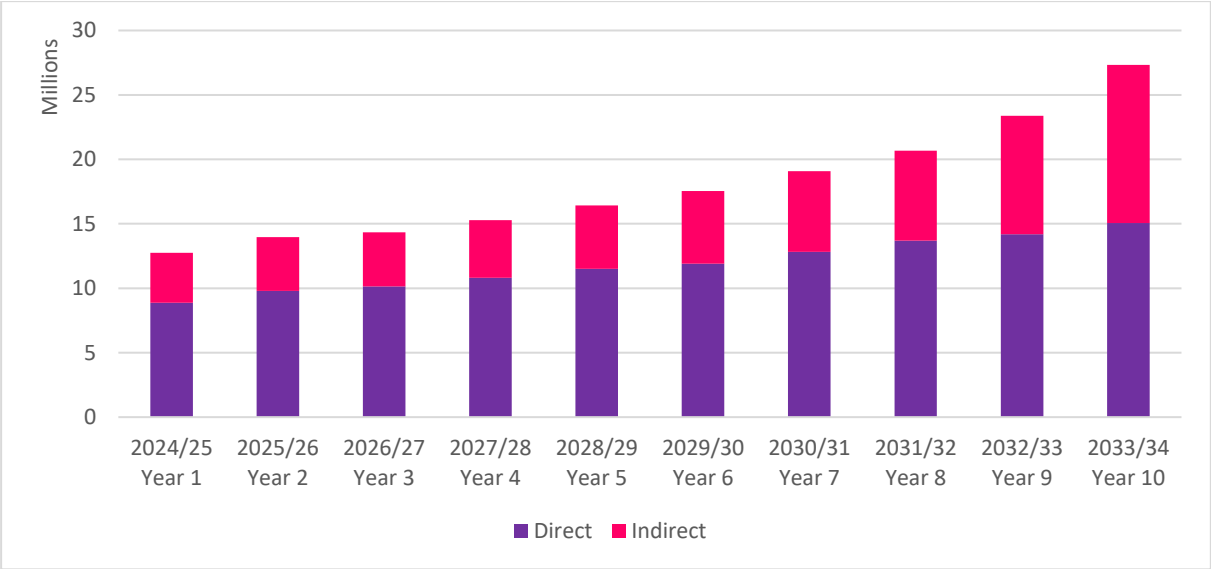


Figure 14: Direct and Indirect Five Yearly Operating Cost Years 1 to 10 Including Inflation

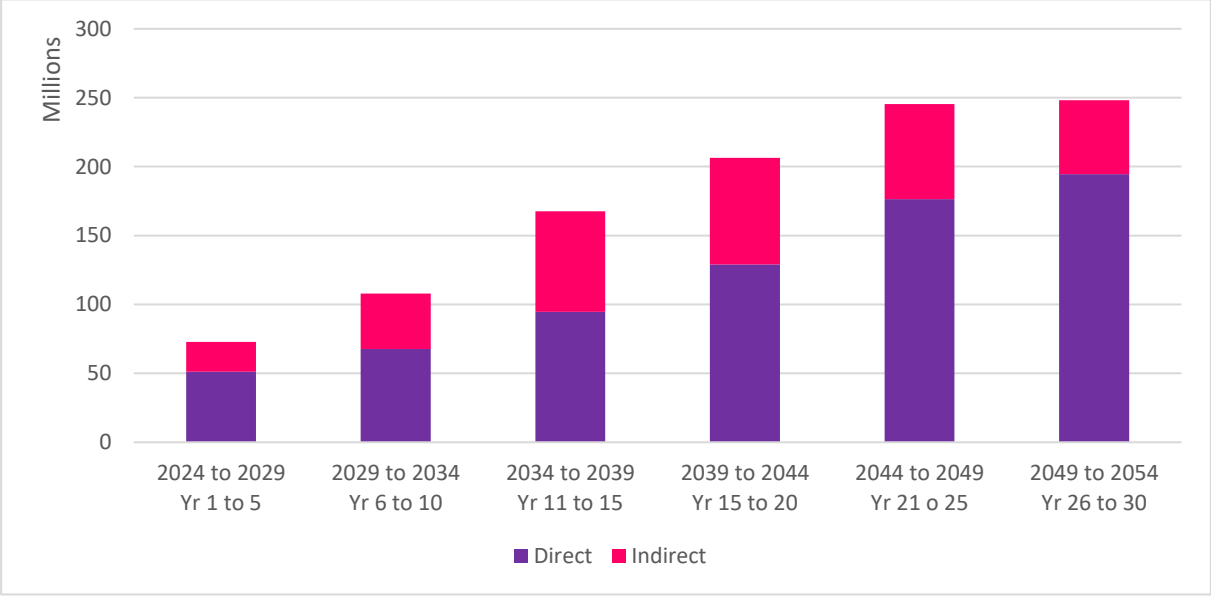


Figure 15: Direct and Indirect Five Yearly Operating Cost Years 1 to 30 Including Inflation

8.3.6 Capital Expenditure

The Council has planned to spend $359 million on capital improvements over the next 10 years. Of this, 28% is attributable to growth, 60% for level of service improvements,12% for asset renewal.

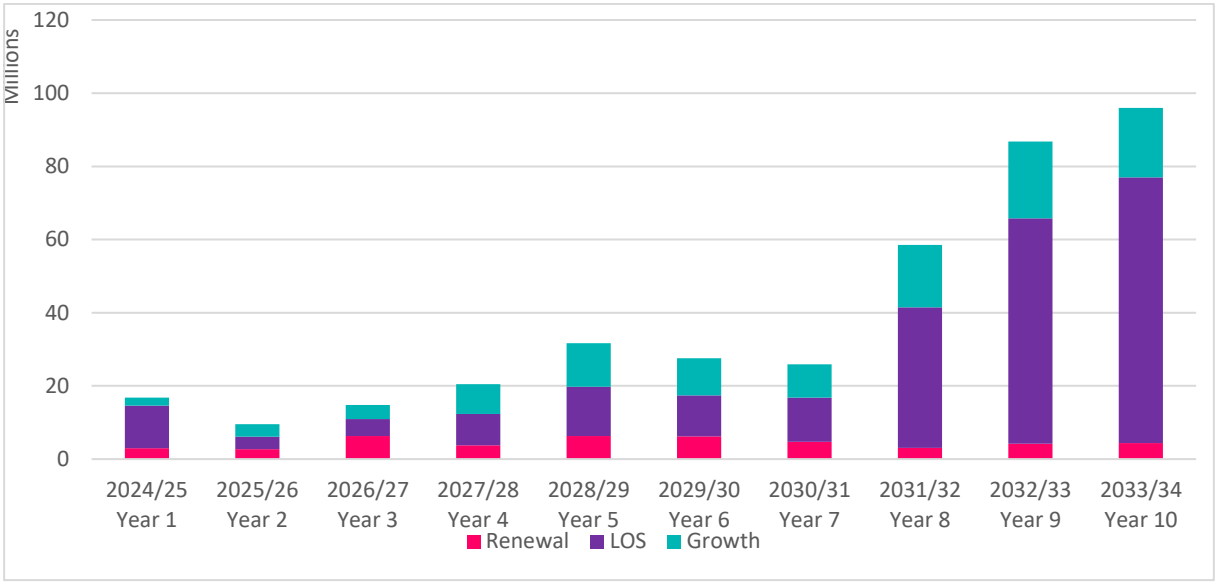


Figure 16: Annual Capital Expenditure Years 1 to 10 Including Inflation

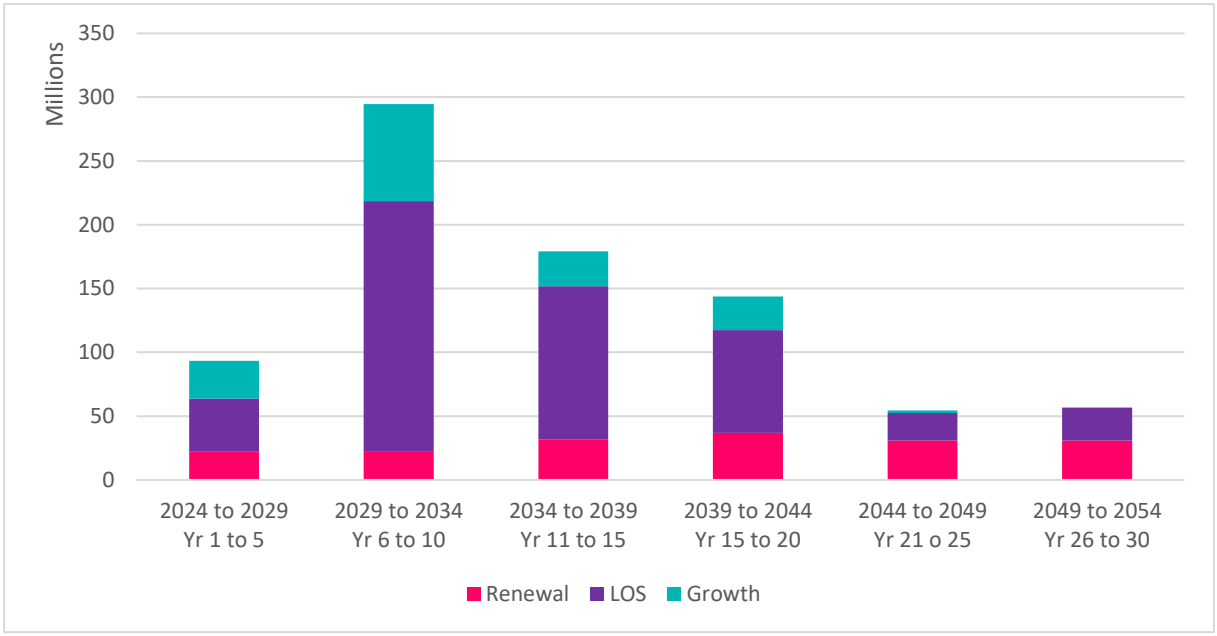


Figure 17: Five Yearly Capital Expenditure Years 1 to 30 Including Inflation

9 Climate Change, Natural Hazards, Resilience 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.

The Local Government Act 2002 requires local authorities to take a sustainable development approach while conducting their business, taking into account the current and future needs of communities for good-quality local infrastructure, and the efficient and effective delivery of services.

Sustainable development is a fundamental philosophy that is embraced in the Council's Vision, Mission and Objectives, and is reflected in the Council's community outcomes. The levels of service and the performance measures that flow from these inherently incorporate the achievement of sustainable outcomes.

Sustainability is measured against the triple bottom line framework that aims to create a balance between the three dimensions of performance, often referred to as people, planet and profit (3P's).

The Council operates, maintains and improves the Coastal Assets on behalf of its ratepayers. The Council uses its Financial Strategy to guide the development of an affordable work programme. The Council's finances are managed within the set debt limits and rates income rises to ensure economic viability for current and future generations.

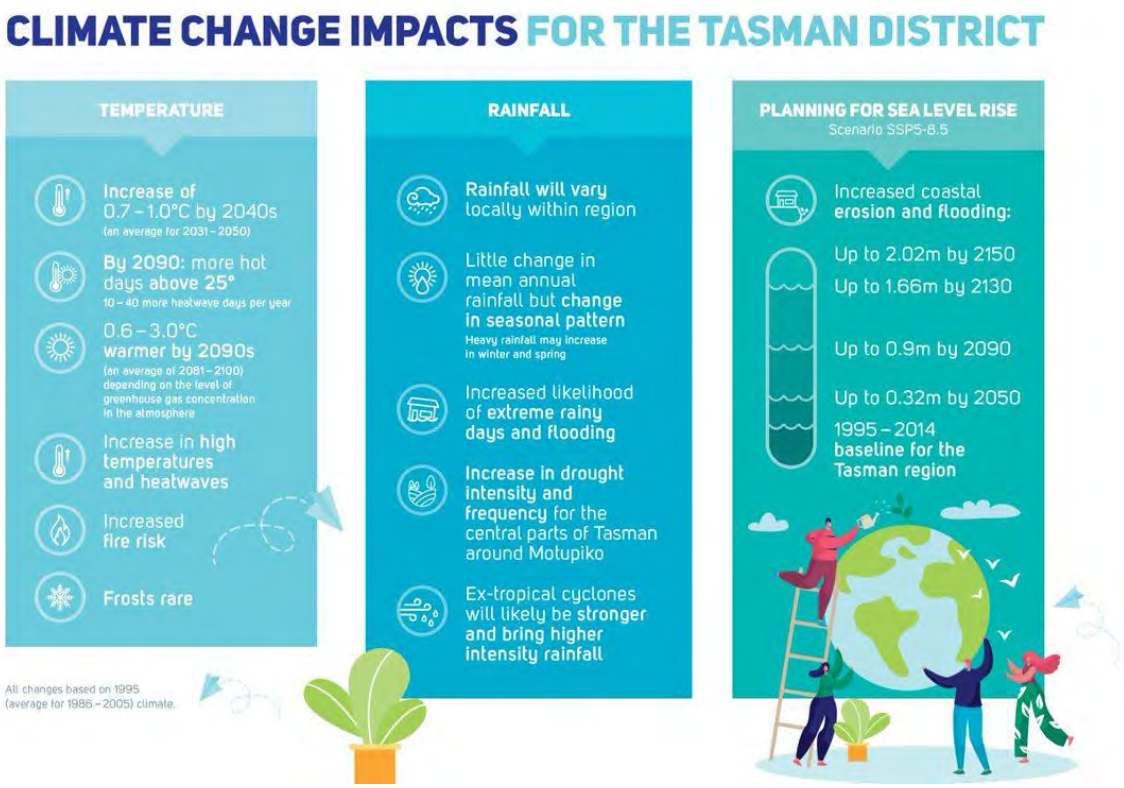
9.1 Climate Change

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

The 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.

The following infographic summarises climate change impacts for Tasman District.



The Council needs to plan for natural hazards and the effects of climate change and determine whether adaptation, mitigation, or retreat is appropriate, working in partnership with our communities. Council has a key role to play in reducing its own corporate greenhouse gas emissions and supporting and providing leadership on climate change mitigation actions across the community. Understanding and accounting for risks and resilience-building associated with climate change and natural hazards is another key role. Embedding climate change, natural hazards and building risk-analysis and resilience into core business is an important focus across Council's activities.

9.1.1 Climate Change Assumptions

The following key assumptions have been made regarding the potential impacts of climate change on the Council's Coastal Assets activity (see the Forecasting Assumptions section in the Council's Long Term Plan 2024-2034 for a detailed explanation of each of these assumptions):

- That Tasman's climate will change based on the NIWA-modelled climate change projections for Tasman District.
- That it is not possible to reduce the mid-century warming, due to the amount of greenhouse gas emissions already accumulated in the atmosphere.

That different climate change scenarios apply depending on the context:

- For infrastructure planning, subdivision, consenting and similar planning purposes, Council assumes the climate change scenario of RCP 8.5 or (for sea level rise) SSP5-8.5. This represents a "worst-case" scenario for the impacts of climate change, to avoid the risk of having to replace undersized infrastructure or abandon buildings or subdivisions.
- For other matters, such as planning the Council's proposed mitigation actions, a low-emissions scenario such as RCP 4.5 may be used as a baseline. This scenario assumes that global greenhouse gas emissions peak in the next few years and decline rapidly thereafter, leading to a global temperature increase of around 1.5°C by the end of the century.
- That sea levels will continue to rise and are likely to rise at an accelerated rate over time. The Tasman District is particularly vulnerable to sea level rise due to its extensive coastline. For low lying coastal land there will be increasing inundation and erosion from sea level rise and storm surge.

Our plans assume sea-level rise (SLR) of:

- 0.32m by 2050
- 0.9m by 2090
- 1.66m by 2130, and
- 2.02m by 2150
- (using a baseline of 1995-2014 with a mid-point (zero) at ~2005).

This based on the SSP5-8.5 (83rd percentile) in line with the Ministry for the Environment's Interim Guidance on the use of New Sea-level Rise Projections (August 2022) and sourced from the NZ SeaRise: Te Tai Pari O Aotearoa platform.

Ministry for the Environment (MfE) is currently undertaking a full update to the 2017 Coastal Hazards and Climate Change Guidance which is expected to be published in 2024. This information will be used to inform the Council work once available.

For coastal subdivisions, greenfield developments and major new infrastructure, the Council is planning for 1.66m SLR by 2130, and also factoring in the relevant rate of vertical land movement locally (as per the MfE 2022 guidance). The Tasman coastline is generally subsiding with rates typically in the order of -1.0mm to -4.0mm/year (i.e. -0.10 metres to -0.40 metres per 100 years) which will further exacerbate SLR.

The Council acknowledges that there is a range of potential impacts (environmental, social, economic and cultural) associated with climate change, and that these impacts may vary depending on the specific location within the Tasman District. A regional climate change risk assessment is underway to identify the key areas of vulnerability. The next step will be to develop appropriate strategies and adaptation plans to mitigate these risks.

9.1.2 Responding to Climate Change

9.1.2.1 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.

The 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, (mitigation[3]), building climate resilience (adaptation[4]), 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 from the Council's operations, as well as measures to enhance the resilience of our communities and ecosystems.

9.1.3 Resiliency of Wastewater Assets

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

The 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 likely climate change impacts for our region.

Key aspects for wastewater assets are:

- More frequent and more intense storms (increase in I&I issues)
- Sea Level Rise (vulnerability of Coastal WWTPs)
- Impacts on low lying pipe networks.

Management of impacts and building resilience opportunities identified to date are shown in the table below.

[3] Mitigation includes reducing greenhouse gas emissions and enhancing carbon sinks. The Council is committed to emissions reduction targets for its own activities in line with government targets.

[4] 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 moving those assets.

Table 15: Managing the Impact of Climate Change on Wastewater Assets and Services

Climate Change Risk	Projected Change	Potential Impact on Assets and Services	Management
Increased storminess and swells	Increased direct damage and vulnerability to erosion Flooding of low lying land from rivers and assets E.g. Motueka and Tākaka WWTPs	Extensive damage to or destruction of assets Inundation of WWTPs Increased inflow and infiltration leading to reduced pipe capacity, increased flows through WWTPs	Increased requirements for strenthening or replacement Retreat from the existing coastline.
Rising sea levels	Swamping or standing of assets. e.g. the Motueka Wastewater Treatment Plant Inundation on low lying networks assets e.g. manholes pump stations chambers and pipe networks.	Extensive damage to or destruction of assets Stranding of assets with changes to coastlines	Retreat from the existing coastline.

9.2 Natural Hazards

- The Tasman region is susceptible to a range of natural hazards including:
- Earthquakes, liquefaction, and slope instability;
- Flooding, drought, tornadoes, and wind; and
- Coastal inundation, erosion, and tsunami.

9.2.1 **Natural Hazard Assumptions** - Level of Uncertainty: Medium

The following key assumptions have been made regarding the potential impacts of natural hazards on the Council's Coastal Assets activity (see the Forecasting Assumptions section in the Council's Long Term Plan 2024-2034 for a detailed explanation of each of these assumptions):

- That there will be damaging natural hazard events during the term of Tasman's Long Term Plan 2024–2034. Since the year 2000, Tasman District has been impacted by at least 10 costly weather-related events of varying scales and it is reasonable to expect the next 10-year period to be similar. The frequency and severity of damaging weather-related events will increase into the future, due to climate change.

- There is a high likelihood of localised damaging events, such as from flooding, slope failure, strong winds, coastal erosion, wildfire etc. occurring within the next 10 years, and some of these will be costly (the 2013 Richmond flood was estimated to cost $45m). There remains a modest chance of larger, more widespread, damaging events – such as flooding across multiple catchments, drought, or a damaging regional earthquake (including the Alpine Fault) – occurring over this time, with long-lasting effects such as the damage to the Tākaka Hill roading system after Cyclone Gita.
- The Council assumes that 60% of the repairs to underground assets will be funded by central government and 51% of repairs to roading assets will be funded by New Zealand Transport Agency/Waka Kotahi (NZTA). If the district sustains storm damage, then the current arrangement with NZTA is that the funding assistance rate increases with the scale of damage.

9.2.2 Responding to Natural Hazards

The Council is responsible for providing wastewater infrastructure that is resilient to events that disrupts 'business as usual'. Examples of wastewater network disruption will likely include:

- Asset or landform destruction due to intense storms;
- Earthquake or landslide causing disruption to wastewater network; and
- A major break in wastewater pipes; and
- Sea level rise and coastal inundation that cause wastewater assets to fail.

All these types of events can limit our ability to provide adequate and reliable wastewater service to our community. Some pump stations within our networks have limited storage. This means at times of high flows due to prolonged or heavy rain, or during power outages, the network can only manage for a short period of time before we need to manage the overflow risk. As poor weather can bring both wind and rain, there are instances when high flows and power outages occur at the same time.

To address this issue, we plan to invest in storage capacity so our network can handle higher flows or longer periods. This means our networks will be more resilient and less prone to overflows.

The Council is planning to invest in mobile generators to provide power to key pump stations during power outages enabling the network to continue operating.

9.2.3 Resilience

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 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:

- debt headroom;
- 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
- NZTA subsidy of at least 51% towards transportation asset reinstatement.

9.3 Environment

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 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 wastewater systems.

9.3.7 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 wastewater activity are outlined in Table 16.

Table 16: Negative Effects for wastewater infrastructure

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

9.3.8 Potential Positive Effects

Potential positive effects are outlined in Table 17 below.

Table 17: Positive Effects for wastewater infrastructure

Effect	Description
Amenity and recreation	The Council's policies promote the enhancement of recreational and environmental amenity value when developing new assets through water sensitive design.
Economic Development	To enable commercial, business, and residential development activities have access to the wastewater network.
Environmental Protection	The Council maintains wastewater networks and treatment collection to minimise the potential for overflows to public spaces, to prevent and minimise overflows of untreated wastewater to freshwater and coastal marine area.
Safety and Personal Security	The Council maintains wastewater collection and treatment to minimise disruption to normal community activities and risk to life.

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 wastewater 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 Wastewater activity the Council has determined that the appropriate level of practice is 'Intermediate' with an 'Intermediate' 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 a 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 Strategic Planning Team, Operations are the responsibility of the Utilities and Transportation teams, while Projects and Contracts are managed by the Programme Delivery team.

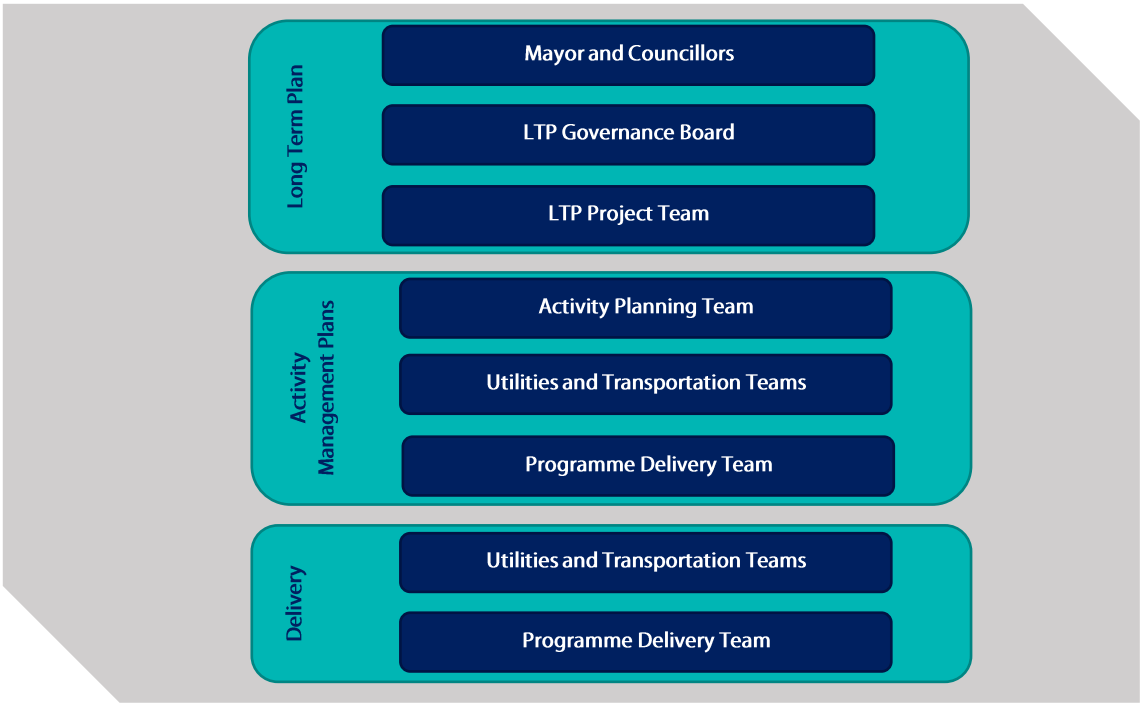


Figure 18: Teams Involved in Activity and Asset Management

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 the Council for implementation.

10.2.2 Staff Training

The Council allows for continued development of staff to ensure that best practice is maintained and that the Council retains the skills needed to make improvements in asset management practices.

10.2.3 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.

10.2.4 Procurement Strategy

The Council has a formal Procurement Strategy that it follows in order to engage contractors and consultants to assist the Council. This strategy has been prepared in part to meet 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 Council's strategies. It principally focuses on Engineering Services activities but is framed in the New Zealand Transport Agency procurement plan format, which is consistent with whole-of-government procurement initiatives.

10.2.5 Service Delivery Reviews

Section 17A was inserted into the Local Government Act which 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 18: Summary of Reviews

Scope of Review	Summary of Review	Review Date	Next Review
Three Waters Operations and Maintenance Contract 1065	An initial review found that current operations and maintenance contract arrangements were appropriate and that the new contract 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 department's ability to deliver 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 enable the project delivery requirements.

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 push 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.

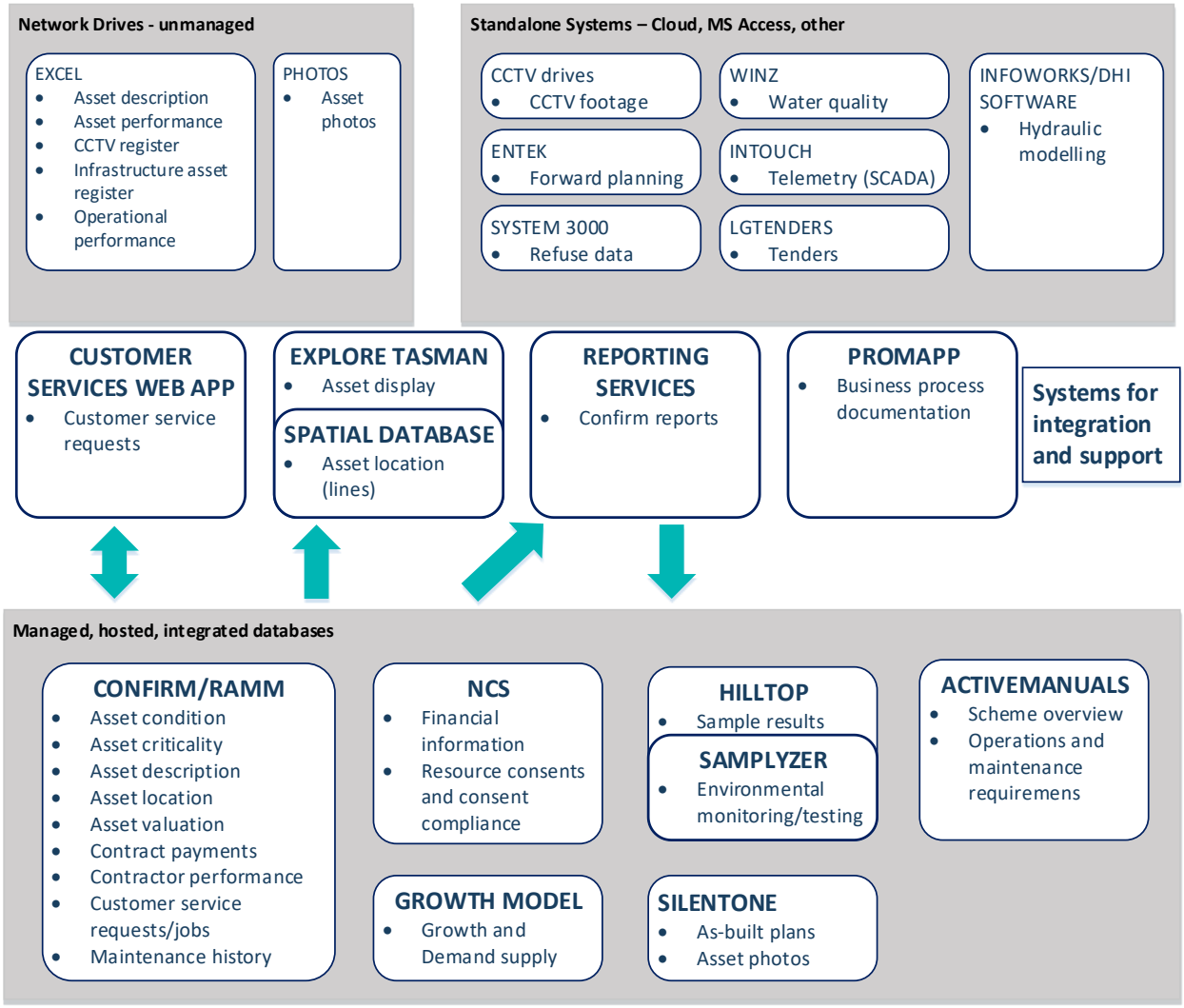


Figure 19: Council's Information Systems and Tools

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
- 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 the Council to prioritise and target investment appropriately. This helps 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 are 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. Table 19 below outlines the quality management approaches that support the Council's asset management processes and systems.

Table 19: Quality Management Approaches

Activity	Description
Process documentation	The 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 the 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 completed, and the outcomes used to update the AMP Improvement Plans.
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.

Activity	Description
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 will accept 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 as a tool to help the Council manage their assets, deliver on the 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 in consultation with Waugh Infrastructure Management Ltd.

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

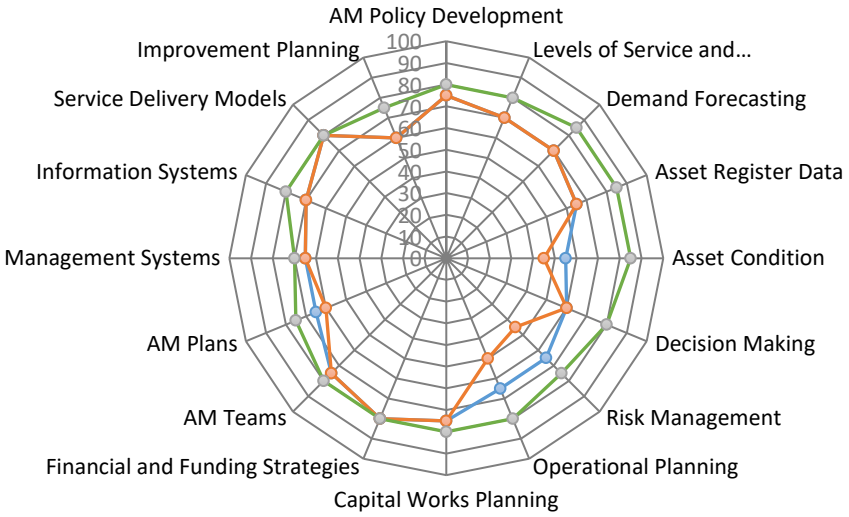


Figure 20: Comparison of Wastewater Asset Management Maturity Level

Figure 20 shows 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 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 intents to implement the recommendations into its asset planning processes and its 2027 Activity Management Plans.

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 the critical infrastructure

- developers and Council officers are operating in accordance with the Nelson Tasman Land Development Manual.

11.3.2 Summary of Planned Improvements

A list of the planned activity specific improvement items is shown in Table 20 below.

Table 20: Specific Improvement Items

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Team Responsible	Cost / Resource Type
Improve asset condition data	Operations and maintenance contact set up includes more responsibility to contractor to collect and populate condition data	Some asset condition data is incomplete. Improved understanding of condition data will help the 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

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Team Responsible	Cost / Resource Type
Develop Network Models	A hydraulic model of the Motueka network is nearly complete. The model for the Waimea network is underway.	Improve our understanding of network performance and identify where inflow and infiltration occur. Help determine how best to provide for growth and timing of upgrades.	High	Started	Ongoing	Activity Planning	Staff Time
Install network flow meters	Better understand flows in network sub catchments to target I&I	Improve our understanding of network performance and areas of inflow and infiltration.	High	Started	Ongoing	Activity Planning/ Utilities	Staff Time
Improve Pump Station storage capacity at key points in some networks	Identify locations where additional storage would be beneficial.	Need extra storage capacity during intense and long duration rainfall to prevent overflows into environment.	High	Ongoing	Ongoing	Programme Delivery and Utilities	Capital Works

Improvement Item	Further Information	Need for Improvement	Priority	Status	Expected Completion Date	Team Responsible	Cost / Resource Type
I&I investigation and programme of repairs and CCTV	Tools to achieve including modelling, flow meters etc.	Better using budgets to target specific area of worst problem and spread budgets a bit wider.	High	Ongoing	Ongoing	Utilities	Staff time and budgets
Develop Motueka Wastewater Strategy	Existing site vulnerable to climate change and culturally offensive to iwi.	New inland WWTP located away from coast that addresses changing needs of the community.	High	Started Paused 2022 recommence July 2024	2024/2025	Activity Planning	Staff Time, engagement with iwi and consultants

A list of general across activity improvement items is given in Table 21 below.

Table 21: General Activity Management 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 2025	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	2024	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

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	2031/32	2032/33	3033/34	2034-44	2044-54
	Corridor Access / Easements	Activities associated with Corridor Access Requests (CAR) and easement consents	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
	Low Pressure Household Systems Maintenance	Routine maintenance of low pressure pump systems	5,006,291	64,796	71,796	74,796	80,796	83,796	86,796	90,796	96,796	102,796	108,796	1,503,016	2,641,315
92012	Reticulation Contract Routine	Routine Works under 3 Waters Contract	3,422,910	108,297	114,297	114,297	114,297	114,297	114,297	114,297	114,297	114,297	114,297	1,142,970	1,142,970
92013	Treatment Plant Contract Routine	Routine Works under 3 Waters Contract	20,396,940	656,698	680,698	680,698	680,698	680,698	680,698	680,698	680,698	680,698	680,698	6,806,980	6,806,980
92014	Pump Stations Contract Routine	Routine Works under 3 Waters Contract	8,589,395	275,083	279,080	286,583	286,987	286,987	286,987	286,987	286,987	286,987	286,987	2,869,870	2,869,870
92018	Reticulation Contract Reactive	Reactive works under 3 Waters Contract	8,429,000	265,500	281,500	281,500	281,500	281,500	281,500	281,500	281,500	281,500	281,500	2,815,000	2,815,000
92019	Treatment Plant Contract Reactive	Reactive works under 3 Waters Contract	8,565,000	285,500	285,500	285,500	285,500	285,500	285,500	285,500	285,500	285,500	285,500	2,855,000	2,855,000
92020	Pump Stations Contract Reactive	Reactive works under 3 Waters Contract	10,213,224	317,500	325,500	325,500	325,500	325,500	325,500	325,500	326,500	328,500	330,000	3,392,125	3,565,599
92021	Wastewater Electricity	General District Wastewater Electricity costs	11,508,210	383,607	383,607	383,607	383,607	383,607	383,607	383,607	383,607	383,607	383,607	3,836,070	3,836,070
92022	Wastewater Asset Insurance	Councils insurances cover for damage	24,500,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000	8,000,000	8,000,000
92023	Rates and Water	Rates and Water Usage	9,750,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	3,250,000	3,250,000
92024	General Operations	Specialist advice and support	1,261,950	42,065	42,065	42,065	42,065	42,065	42,065	42,065	42,065	42,065	42,065	420,650	420,650
92025	SCADA/Telemetry	Telemetry and Scada Maintenance	450,120	15,004	15,004	15,004	15,004	15,004	15,004	15,004	15,004	15,004	15,004	150,040	150,040
92027	Inflow & Infiltration Strategy & Programme	Initiatives to identify sources of inflow and infiltration (inspections and DTS)	5,510,400	183,680	183,680	183,680	183,680	183,680	183,680	183,680	183,680	183,680	183,680	1,836,800	1,836,800
92028	CCTV Inspections & Data Capture	Inspection of reticulation to identify tree roots, blockages and defects.	3,963,360	132,112	132,112	132,112	132,112	132,112	132,112	132,112	132,112	132,112	132,112	1,321,120	1,321,120
92029	Consent Monitoring	Specialist sampling and monitoring associated with resources consents	1,050,391	35,010	35,010	35,010	35,010	35,010	35,010	35,010	35,101	35,010	35,010	350,100	350,100
92030	NRSBU User Charge	Nelson Regional Sewerage Business Unit- variable loading charges	104,496,481	1,630,239	1,876,986	1,850,553	2,007,641	2,046,251	2,047,125	2,234,062	2,275,218	2,391,151	2,623,192	35,272,576	48,241,487
92031	NRSBU Quota	Nelson Regional Sewerage Business Unit- agreed quota. Fixed costs	298,658,728	3,899,224	4,287,885	4,408,291	4,644,472	5,013,268	5,142,936	5,523,941	5,989,988	6,062,821	6,307,422	96,148,360	151,230,120

Appendix B Detailed Capital Budgets

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031/32	2032/33	3033/34	2034-44	2044-54
96001	Retrofit Inspection Points on Wastewater Laterals	Retrofit inspection points at boundaries of properties in areas of high inflow and infiltration	0	100	0	550,553	0	0	0	0	0	0	0	0	0	0	275,277	275,277
96002	Pond Sludge Removal	Remove sludge from ponds for reuse or disposal.	0	0	100	5,989,079	761,564	0	810,000	200,000	0	305,000	585,000	0	0	425,000	1,784,893	1,117,623
96006	Pohara Camp Pump Station	Upgrade capacity of pump station, install emergency storage, connect to new trunk main. Raise valve chamber lids	26	74	0	762,000	0	137,000	625,000	0	0	0	0	0	0	0	0	0
96007	New Stafford Drive Pump Station	New pump station at 69 Stafford Drive with storage and odour control	60	40	0	3,579,290	0	0	0	450,000	850,000	0	0	0	0	0	2,279,290	0
96011	Ruby Bay Pump Station Storage Upgrade	Install 68m^3 of emergency storage capacity	37	63	0	732,235	0	0	77,077	655,158	0	0	0	0	0	0	0	0
96013	New Rising Main Across Māpua Channel	Directional drill a new 315 ID HDPE pipe from Māpua wharf area to Rabbit Island	39	61	0	1,981,991	0	0	0	0	0	0	0	0	0	0	1,981,991	0
96015	New Brightwater North Pump Station & Rising Main	New pump station and rising main connecting to existing pump station to accommodate growth	77	23	0	1,986,000	0	0	0	0	0	100,000	1,886,000	0	0	0	0	0
96018	District Wide Reticulation Renewals	Renewal of reticulation at various locations	0	0	100	19,034,323	315,000	315,000	577,000	577,000	577,000	577,000	577,000	420,000	420,000	420,000	10,845,895	3,413,429
96019	New Motueka WWTP - Designations and Land Acquisition	Secure designations and land to	20	80	0	2,000,000	200,000	200,000	100,000	0	500,000	500,000	500,000	0	0	0	0	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031/32	2032/33	3033/34	2034-44	2044-54
		develop a new inland Wastewater Treatment Plant site.																
96020	New Motueka WWTP - Construction	Construct new inland WWTP	20	80	0	141,213,273	0	0	1,000,000	1,000,000	2,000,000	2,000,000	2,000,000	20,000,000	50,000,000	50,000,000	13,213,273	0
96036	Motueka WWTP - replacement membrane	Replace Motueka wastewater treatment plant membrane.	0	0	100	750,000	0	0	0	0	250,000	250,000	0	0	250,000	0	0	0
96038	District Wide planting budgets	Amenity and screening planting at wastewater facilities and along cleared pipe routes.	0	100	0	100,000	0	0	0	0	0	0	0	0	0	0	50,000	50,000
96039	Renewals at Pump Stations & WWTPs	Renewals of all mechanical and electrical assets: pumps, valves, wet well and valve chamber pipework, odour mitigation, flow meters, electrical, telemetry and back flow	0	0	100	51,047,231	740,000	723,000	844,000	414,000	1,257,000	554,000	877,000	758,000	1,381,000	860,000	22,108,007	20,531,223
96040	District Wide manhole lid replacements	Renewal of damaged manhole lids	0	0	100	2,345,041	20,097	20,097	20,097	20,097	90,291	90,291	90,291	90,291	90,291	82,000	828,291	902,907
96041	District wide carbon filters	Install carbon filters at key locations to address odour issues	0	100	0	655,194	0	0	50,097	50,097	0	0	0	0	0	0	555,000	0
96042	Wastewater Resource Consent Renewals	Renewal of resource consents for all wastewater facilities and assets	0	0	100	726,904	0	0	0	0	15,000	0	60,000	60,000	45,000	145,000	379,882	22,022
96043	Safety Improvements	Initiatives to implement health and safety improvements	0	100	0	737,000	72,000	74,000	64,000	62,000	53,000	95,000	95,000	95,000	74,000	53,000	0	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031/32	2032/33	3033/34	2034-44	2044-54
96045	District wide sludge reuse or disposal	Reuse sludge on-site where testing meet acceptable conditions, dispose to landfill if sludge cannot be reused as soil conditioner.	0	0	100	5,680,206	160,000	185,000	1,220,000	0	0	415,000	0	0	0	340,000	2,386,828	973,378
96046	New Telemetry	Convert the last remaining sites from analogue to digital	0	100	0	1,401,105	0	0	55,055	100,000	100,000	155,055	0	0	0	0	440,442	550,553
96047	Richmond South - reticulation and rising main	Staging rising main to accommodate growth in Richmond South	95	5	0	15,222,000	300,000	0	0	1,600,000	1,600,000	105,000	2,410,000	2,096,000	0	0	7,111,000	0
96053	Part A -Brightwater - Pump Station upgrade and rising main	Upgrade pump station with emergency storage capacity and new rising main (to Brightwater bridge	62	38	0	8,589,000	100,000	100,000	0	500,000	3,889,000	4,000,000	0	0	0	0	0	0
96055	Install Network Flow Meters and Sensors	Installation of flow meters at older pump stations, data helps assessing network upgrade needs	0	100	0	500,000	100,000	100,000	100,000	100,000	100,000	0	0	0	0	0	0	0
96059	Climate Change Action Plan (Capital)	Energy efficiency initiatives - installing a solar PV array on wastewater assets	0	100	0	603,913	53,360	0	0	0	0	0	0	0	0	0	275,277	275,277
96063	New Seaton Valley Road Pump Station & Rising Main	New pump station and rising main to accommodate future growth along Seaton Valley Road	66	34	0	4,321,327	0	0	0	0	0	0	300,000	2,700,000	0	0	0	1,321,327
96065	Growth Allowance	Allowance for the addition of smart technology to	100	0	0	224,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	0	0	0	0	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031/32	2032/33	3033/34	2034-44	2044-54
		low pressure pump systems																
96070	Jefferies Road Growth Area	Pump station and rising main to enable growth	90	10	0	4,789,811	0	0	0	0	0	0	0	0	0	0	4,789,811	0
96073	Higgs pump station connection to Aranui road	New 200m gravity pipe connecting into Aranui Road trunk main	90	10	0	550,000	0	100,000	450,000	0	0	0	0	0	0	0	0	0
96074	District Wide Reactive Reticulation Renewals	Various locations	0	0	100	7,500,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000	2,500,000
96076	Motueka WWTP nitrogen removal	Nitrogen removal to allow compliance with consent conditions	0	100	0	3,800,000	3,800,000	0	0	0	0	0	0	0	0	0	0	0
96080	Part B - Pump station at Wakefield and increase capacity	Pump station at Wakefield and rising main connecting gravity reticulation at Burkes Bank	62	38	0	21,500,000	100,000	100,000	300,000	4,000,000	9,000,000	8,000,000	0	0	0	0	0	0
96081	Part C - New pressure main from Burkes Banks to Beach Road	Includes pipework from Burkes Bank to Richmond south and to Beach Road	62	38	0	30,500,000	100,000	100,000	0	0	0	300,000	5,000,000	10,000,000	10,000,000	5,000,000	0	0
96082	Collingwood WWTP Upgrade	Upgrade to allow for growth and improvements to quality of discharge	0	100	0	2,235,000	200,000	0	0	0	0	115,000	260,000	1,660,000	0	0	0	0
96091	New - Murchison - Upgrade Hotham Street PS and new RM	Upgrade Hotham St Pump station and add a new pressure main to connect to pressure main to WWTP	0	100	0	1,045,000	0	0	0	210,000	835,000	0	0	0	0	0	0	0
96092	Murchison WWTP disposal bed renewal	To replace the existing disposal beds for the WWTP	0	0	100	355,000	0	0	355,000	0	0	0	0	0	0	0	0	0
96094	Relocate Tākaka WWTP	Replacement plant and	20	80	0	70,500,000	0	0	0	0	200,000	200,000	500,000	4,800,000	4,800,000	10,000,000	50,000,000	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031/32	2032/33	3033/34	2034-44	2044-54
		location for the WWTP																
96095	Richmond pressure connections	Convert existing connections to pressure	0	0	100	1,200,000	0	0	0	0	600,000	600,000	0	0	0	0	0	0
96097	Richmond Intensification	Increase capacity of reticulation	50	50	0	1,200,000	200,000	0	500,000	500,000	0	0	0	0	0	0	0	0
96098	Richmond Intensification - Oxford Street wastewater main	To increase the capacity of wastewater reticulation within the Oxford /Queen Street catchment.	50	50	0	1,100,000	0	0	0	0	550,000	550,000	0	0	0	0	0	0
96099	Richmond Intensification -new duplicate pipe	To increase capacity of pipe network	50	50	0	1,550,000	0	0	500,000	1,050,000	0	0	0	0	0	0	0	0
96101	St Arnaud - Alpine Lodge to WWTP Pressure Main Upgrade	To upgrade the pressure pipe class to a higher standard	0	20	80	2,251,000	0	0	0	100,000	510,000	1,641,000	0	0	0	0	0	0
96103	St Arnaud - New mechanical screen at WWTP	New mechanical screen to improve removal of non-biodegradable elements	0	0	100	151,000	0	0	0	151,000	0	0	0	0	0	0	0	0
96104	Tākaka - Abandon gravity system on Tata Beach Esplanade	Connect properties to Peninsular Road or pump direct to the Tata Beach Pumping station	0	0	100	900,000	0	0	0	200,000	700,000	0	0	0	0	0	0	0
96105	Tākaka - Increase capacity of pressure main	Connect properties to Peninsular Road or pump direct to the Tata beach Pumping station	24	76	0	2,050,000	0	0	175,000	825,000	1,050,000	0	0	0	0	0	0	0
96106	Tākaka - Pressure Main	Park Ave WWPS to Fresh Choice Pressure Main	24	76	0	1,570,000	0	0	0	0	0	0	0	0	0	0	1,570,000	0
96107	Tākaka WWTP - new disposal system & treatment upgrade	Replacement of existing basins	24	76	0	2,500,000	2,500,000	0	0	0	0	0	0	0	0	0	0	0
96111	Upper Tākaka Solar Pond Mixer	There is no power onsite, is	0	0	100	92,000	92,000	0	0	0	0	0	0	0	0	0	0	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget ($)										Total Budget	
			Growth	Inc LOS	Renewals	2024-54	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	3030/31	2031/32	2032/33	3033/34	2034-44	2044-54
		to reduce duck weed at oxidation pond																
96115	Tapawera WWTP Upgrade	Upgrade WWTP	0	20	80	750,000	0	0	0	0	0	0	750,000	0	0	0	0	0
96116	District Wide WWTP Nutrient Removal	Nutrient Removal	0	30	70	1,650,000	0	0	550,000	550,000	550,000	0	0	0	0	0	0	0
96117	Richmond South - reticulation in Bateup and Whites Road Area	Reticulation for areas identified for growth	94	6	0	1,960,000	0	0	500,000	500,000	450,000	450,000	60,000	0	0	0	0	0
96118	Richmond West - reticulation to service commercial/industrial	Upsize the pressure pipe reticulation	83	17	0	2,850,000	0	300,000	1,050,000	1,500,000	0	0	0	0	0	0	0	0
96124	New Rising Main Motueka - Stage 3	Stage 3	38	62	0	1,786,054	1,786,054	0	0	0	0	0	0	0	0	0	0	0
96125	Richmond South Wastewater Main (Section H)	Wastewater Main (Section H)	0	0	100	2,500,000	300,000	2,200,000	0	0	0	0	0	0	0	0	0	0
96126	New Rising Main Motueka - Stage 2 Pah Street to Bridge	Stage 2 Pah Street to Bridge	0	0	100	156,832	156,832	0	0	0	0	0	0	0	0	0	0	0
96127	Collingwood Wastewater Treatment Plant	CCTV for WWTP	0	0	100	5,000	5,000	0	0	0	0	0	0	0	0	0	0	0
	Capital Programme Scope Risk Adjustment	Capital Programme Scope Risk Adjustment	0	100	0	-43,972,836	-1,234,391	-493,610	-1,020,433	-1,559,635	-2,600,829	-2,128,435	-1,623,229	-4,292,929	-6,731,029	-6,757,500	-12,337,515	-3,193,301

Appendix C Legislation, National Policies, Strategies, Standards, Strategic Studies, Planned Wastewater Studies

Table 22: Key Legislation relating to Wastewater activities.

Key Legislation	How it relates to Wastewater Activity
The Health Act 1956	The Council have the responsibilities under the Health Act 1956 to improve, promote, and protect public health within the district. Some Councils uses provisions in the Health Act as legal bases to issue I&I defect notices to property owners. I&I problems lead to sewer overflows which in turn poses a risk to public health. The Health Act includes some specific and some implied references to wastewater services including: Section 23 grants powers to local authorities to protect public health. Section 25 gives powers to the Ministry of Health to order local authorities to provide sanitary works for the benefit of the district. Section 39 requires all dwelling houses and commercial businesses to provide sanitation facilities. Section 60 makes it an offence to cause the pollution of a water supply. This may be invoked if wastewater is allowed to get into a source of water used as a water supply.
Local Government Act 2002	The Local Government Act requires local authorities to prepare a ten-year Long-Term Plan and 30-year Infrastructure Strategy, which are to be reviewed every three years. The Act requires local authorities to be rigorous in their decision-making by identifying all practicable options and assessing those options by considering the benefits and costs in terms of the present and future well-being of the community. This activity management plan provides information to support the decisions considered in the Long-Term Plan. The Local Government Act includes some specific and some implied references to wastewater services including: Section 11A states local authorities are required to provide 'core services. Network services are listed as a core service. Section 125 requires the local authority to undertake an assessment of the water and sanitary services within its area. Section 126 states the purpose of an assessment is to assess the "adequacy of water and other sanitary services available to communities…" in terms of the quality of the service currently available; the potential health risks from the absence or deficiency of the service; the current and estimated future demand; and the potential consequences of discharges of sewage and stormwater. Section 146 and 148 give powers to territorial authorities to make bylaws for the control of waste, on-site wastewater systems and trade waste.

Key Legislation	How it relates to Wastewater Activity
Taumata Arowai—the Water Services Regulator Act 2020	The bill establishes Taumata Arowai - the Water Services Regulator as a new Crown Agent and provides for its objective's general functions operating principles, and governance arrangements. Taumata Arowai is responsible for a small number of complementary functions relating to improving the environmental performance of wastewater networks.
Water Services Act (2021)	Established drinking water standards and regulates all persons and organisations that supply drinking water.
Infrastructure Funding and Financing Act 2020	Provides a new legislative tool to enable private capital to support the provision of new infrastructure for housing and urban development. The Act provides opportunities for local councils, Māori and iwi, and developers to partner and deliver infrastructure, free of the council's debt limits or from charging high upfront costs to developers.
Covid-19 Recovery (Fast-track Consenting) Act 2020	This Act shortcuts the current resource consent process under the RMA to support New Zealand's recovery from the impacts of Covid-19. The Act's purpose is to urgently promote employment to support New Zealand's recovery and the certainty of ongoing investment across New Zealand, while continuing to promote the sustainable management of natural and physical resources.
Resource Management Act 1991	The Resource Management Act 1991 (RMA) is the principal legislation that sets out how we manage our environment sustainably. As well as managing air, soil, freshwater and the coastal marine area (and the effects of human activity on these resources), the RMA regulates land use and the provision of infrastructure, which are integral components of New Zealand's planning system. Many sections of the Act are relevant to the control of wastewater discharges and the process for seeking consent to undertake the activity. Specific sections include: Section 13 places restrictions on certain uses of the beds of lakes and rivers, which can affect maintenance of wastewater reticulation located near watercourses. 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.

Key Legislation	How it relates to Wastewater Activity
	Part 6 (sections 87A–165) describes the requirements for applying for resource consents and implementing resource consent processes.
Civil Defence Emergency Management Act 2002	Sets an expectation that the Council's lifeline utilities (which includes wastewater service) to prepare to function at the fullest possible extent during and after an emergency, even though this may be at a reduced level of service.
Health and Safety in Employment Act 1992 and 2015	Health and Safety legislation requires that staff and contractors are kept safe at work. New legislative changes to the act will mean improved health and safety measures will be required.
Utilities Access Act 2010	The processes and rules for coordinating work done in transport corridors by utility operators, or that affects utility operators' assets.
Te Tiriti o Waitangi – Treaty of Waitangi	The Treaty of Waitangi is an agreement between Māori and the Crown. Under Section 4 of the Local Government Act 2002, local authorities are required to 'recognise and respect the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and to maintain and improve opportunities for Māori to contribute to local government decision-making processes. Sections 77 and 81 detail the scale of requirement for local authorities to seek contributions and involvement from Māori in consultation and decision-making processes.
Climate Change Response Act 2002	The Climate Change Response Act 2002 puts in place a legal framework to support New Zealand to respond to climate change and meet its international obligations. It also establishes the New Zealand Emissions Trading Scheme.

Table 23: Key National Policies and Strategies that relate to this activity.

Documentation	Affect on the Wastewater 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 Statement for Freshwater Management (NPS-FM) 2020 with amendments in 2023 and Jan 2024	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. 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. Under Policy A2, every Regional Council is: • 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. This requirement is particularly relevant for the Council's discharges of treated effluent to freshwater.
New Zealand Coastal Policy Statement (NZCPS)	Guides local authorities in their day-to-day management of the coastal environment. Highlights declining coastal water quality because of contamination through stormwater and wastewater discharges. Policy 23 is particularly relevant to wastewater services. This policy does not allow the discharge of treated human sewage to water in the coastal environment unless there has been adequate consideration of alternative methods, sites, and routes for undertaking the discharge; and the decision is informed by an understanding of tangata whenua values and the effects on them.

Documentation	Affect on the Wastewater Activity
	In addition, objectives, policies, and rules in plans (such as the Tasman Resource Management Plan) which provide for the discharge of treated human sewage into waters of the coastal environment must have been subject to early and meaningful consultation with tangata whenua. The NZCPS is likely to influence the outcome of the consent applications for the new Motueka Wastewater Treatment Plant.
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 24: Standards

Standard	Affect on the Wastewater Activity
AS/NZS 3917:2013	Fixed Term Contract Management
ISO 24516-3:2017	Wastewater collection networks
NZS 9201.22:1999	Model general bylaws - Wastewater drainage
NZS 9201.23:2004	Model general bylaws - Trade waste
Water New Zealand's Infiltration and Inflow Control Manual	Provides information on inflow and infiltration and the corresponding issues, complexities, and good practice strategies to reduce and manage.
New Zealand Pipe Inspection Manual 3rd edition (2006)	An overview of tasks that can be completed using CCTV and how these activities can be used to manage wastewater and stormwater assets.
Ministry for the Environment: Coastal Hazards and Climate Change -Guidance for local government	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.
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.

Standard	Affect on the Wastewater Activity
Department of Internal Affairs publications: Supporting guidance for sewerage and the treatment and disposal of sewage (2014)	Guidance to help local authorities when setting levels of service and targets related to mandatory performance measures.
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 wastewater, wastewater treatment transport, energy, and housing).
Pressure Sewer National Guidelines (Water New Zealand)	The guidelines provide advice and recommendations for: • Decision Tree Guide • Ownership Models and Policies • Technical Issues • Operation and Maintenance.
Wastewater Renewals Framework – Gravity Pipelines (Quake Centre, IPWEA and Water New Zealand)	Framework and guidance resource to assist asset managers to make evidence-based decisions on the renewal of gravity wastewater pipelines. Concepts and recommendations could potentially be applied to water supply and stormwater networks.

Table 25: Strategic Studies related to Wastewater Activity

Network/Area	Strategic Studies	Date
Wakefield, Brightwater, Richmond/Hope and Māpua/Ruby Bay	Wakefield to Three Brothers Corner Wastewater Strategy	2020
	Hydraulic trunk main model for Richmond, Hope, Brightwater, Wakefield	2022- currently in development
	Māpua Wastewater Upgrade Strategy, MWH New Zealand Ltd	2009
	Programme Business Case – Māpua Water and Wastewater, Stantec New Zealand Ltd	2017
	Inflow and Infiltration: Assessment of Impacts and Drivers – Richmond Wastewater Catchment, MWH New Zealand Ltd	2010
	Inflow and Infiltration: Assessment of Impacts and Drivers – Motueka Wastewater Catchment, MWH New Zealand Ltd	2010
	Motueka Wastewater Network Modelling, WSP OPUS	2020
	Motueka Wastewater Treatment Plant Upgrade Design Report, Beca Ltd	2014
Tākaka, Pōhara and Ligar Bay/Tata Beach	Pōhara/Tata Beach Sewerage Upgrade, MWH New Zealand Ltd	2006

Network/Area	Strategic Studies	Date
District Wide	Trade Waste Implementation –The Council staff have compiled a list of likely trade waste dischargers and informed users of the need to apply for permits. 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. CCTV reports.	Ongoing 2005 Ongoing

Table 26: Summary of planned Wastewater Studies

Study Name	Brief Description	Planned
Sludge Management Strategy	Developing a strategy to manage sludge disposal or use from all Wastewater Treatment Plants. Will be reviewed every 10 years.	2023/2024
Waimea Long Term Wastewater Strategy	Strategic study to consider the long-term impact of climate change.	2024/2025
Motueka Long Term Wastewater Strategy	Strategic study to consider the long-term impact of climate change.	2024/2025 In development
Inflow and Infiltration Strategy and Programme	The Council has planned an annual programme to maintain a consistent proactive approach to this work. Staff are considering development of a strategy to document approach and direction.	Ongoing
Regional CCTV Inspections and Data Capture	The Council has planned annual programme to undertake CCTV around the District. Data and information gathered with inform renewals and modelling programmes.	Ongoing

Study Name	Brief Description	Planned
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 27: 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 in 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

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
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.	N/A	N/A

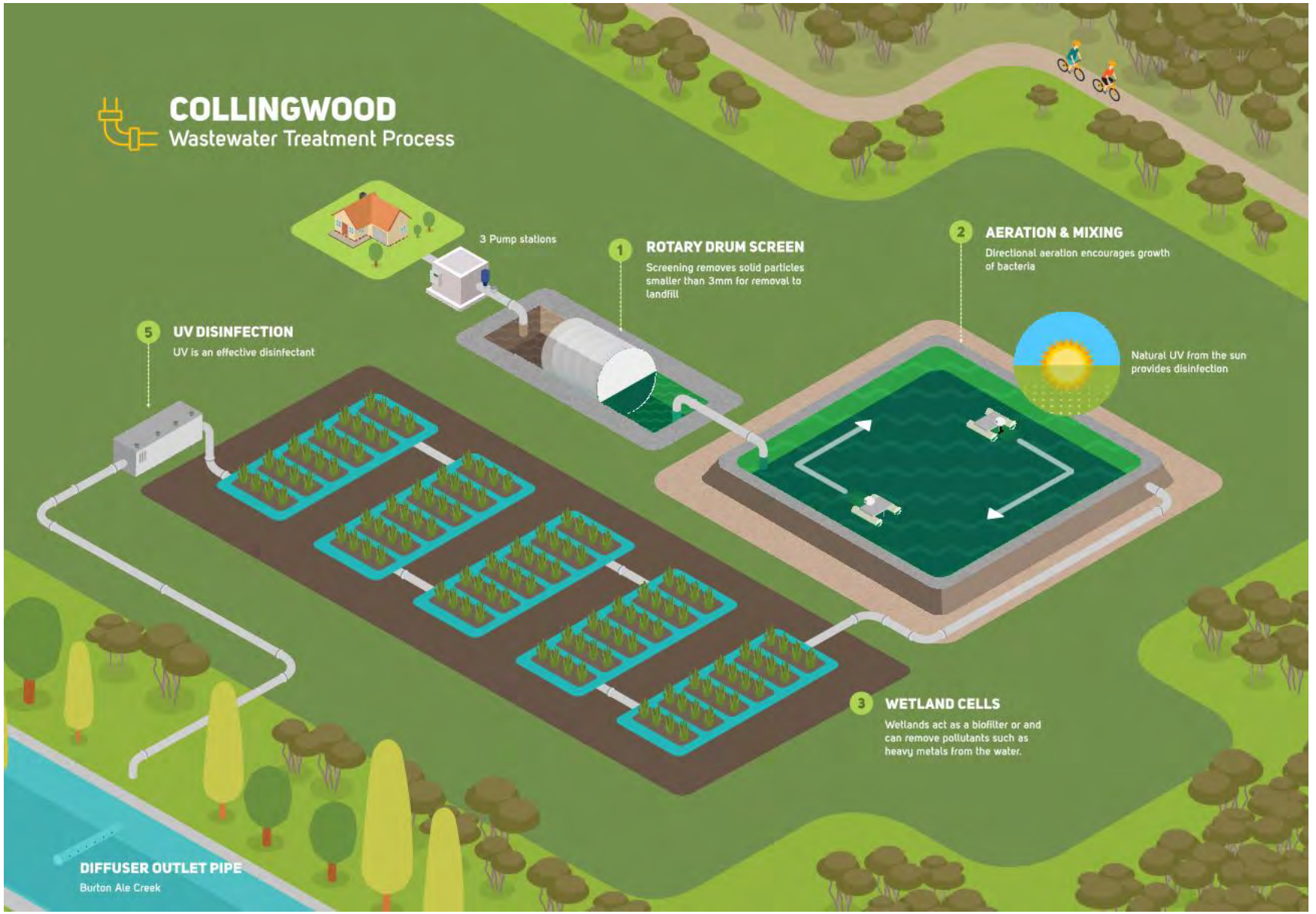
Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
		NCS also holds Water billing information, while asset details and spatial component are recorded in Confirm and cross-referenced.		
Infrastructure Asset Register	Spreadsheet	High level financial tracking spreadsheet for 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
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	Promapp	Promapp is process management software that provides a	2	5

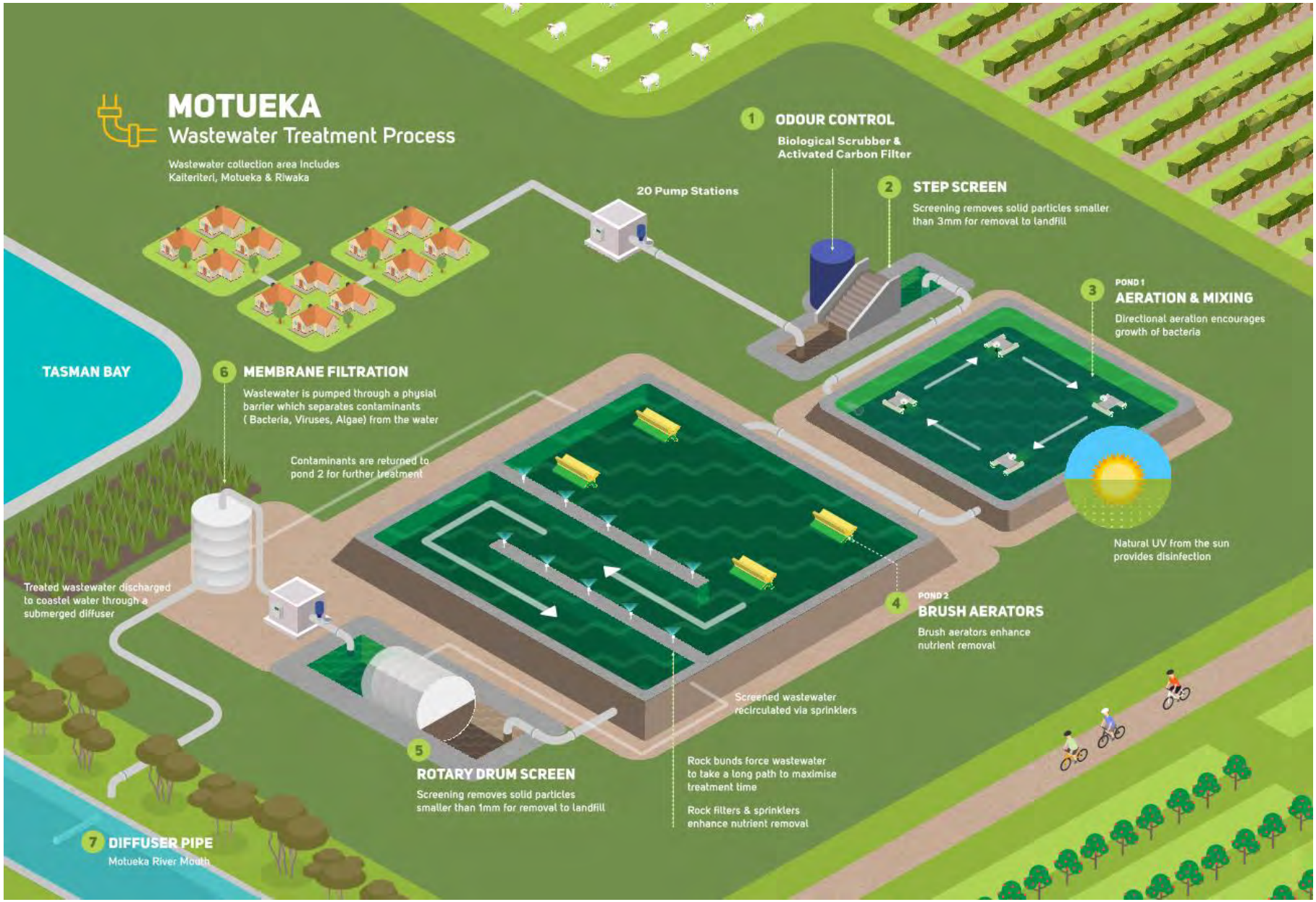
Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
documentation		central online repository where the Council's process diagrams, and documentation is stored. It was implemented in 2014 and there is a phased uptake by business units.		
Resource consents and consent compliance	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	Active Manuals™	Active Manuals™ 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

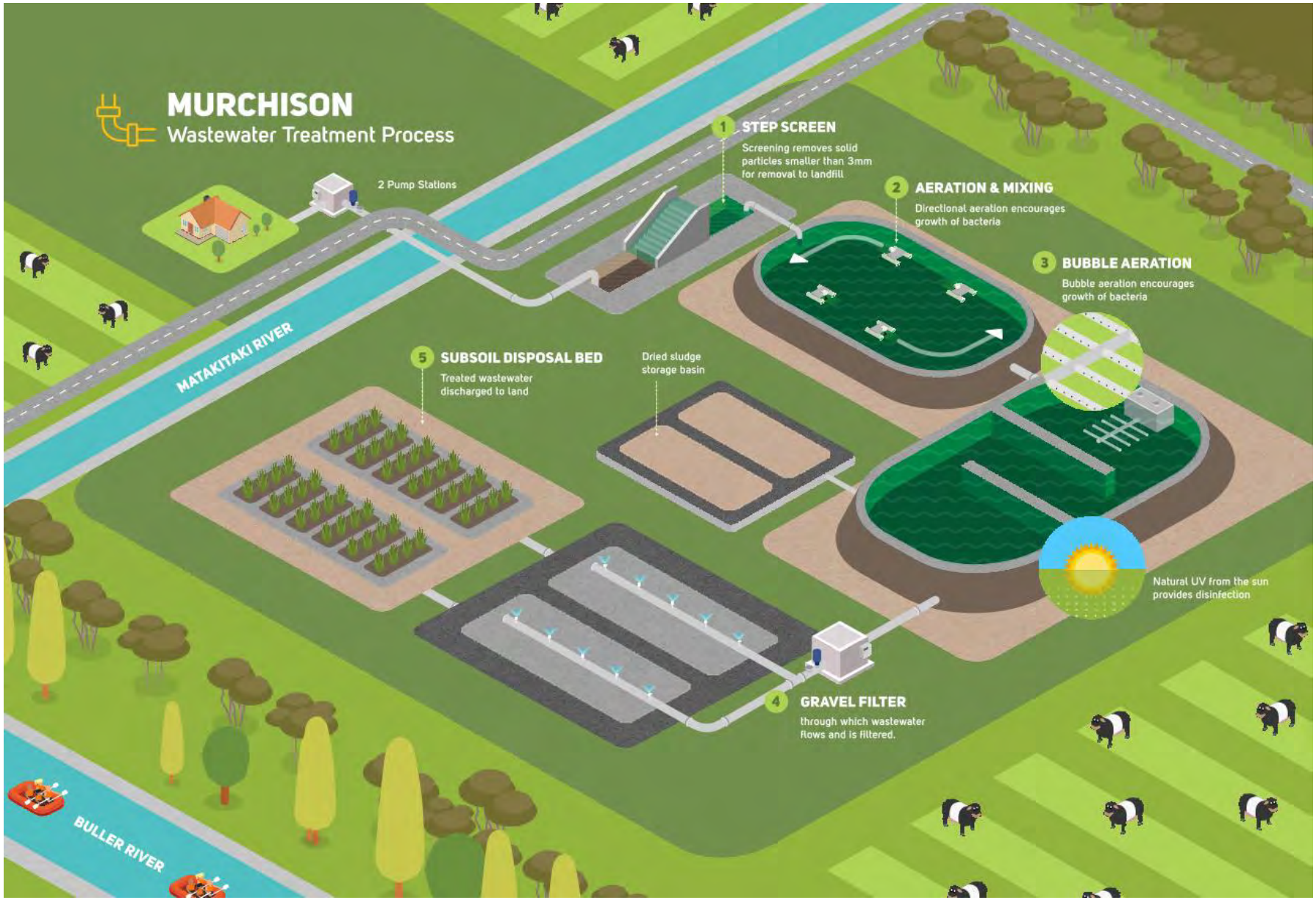
Appendix E Wastewater Network Schematics

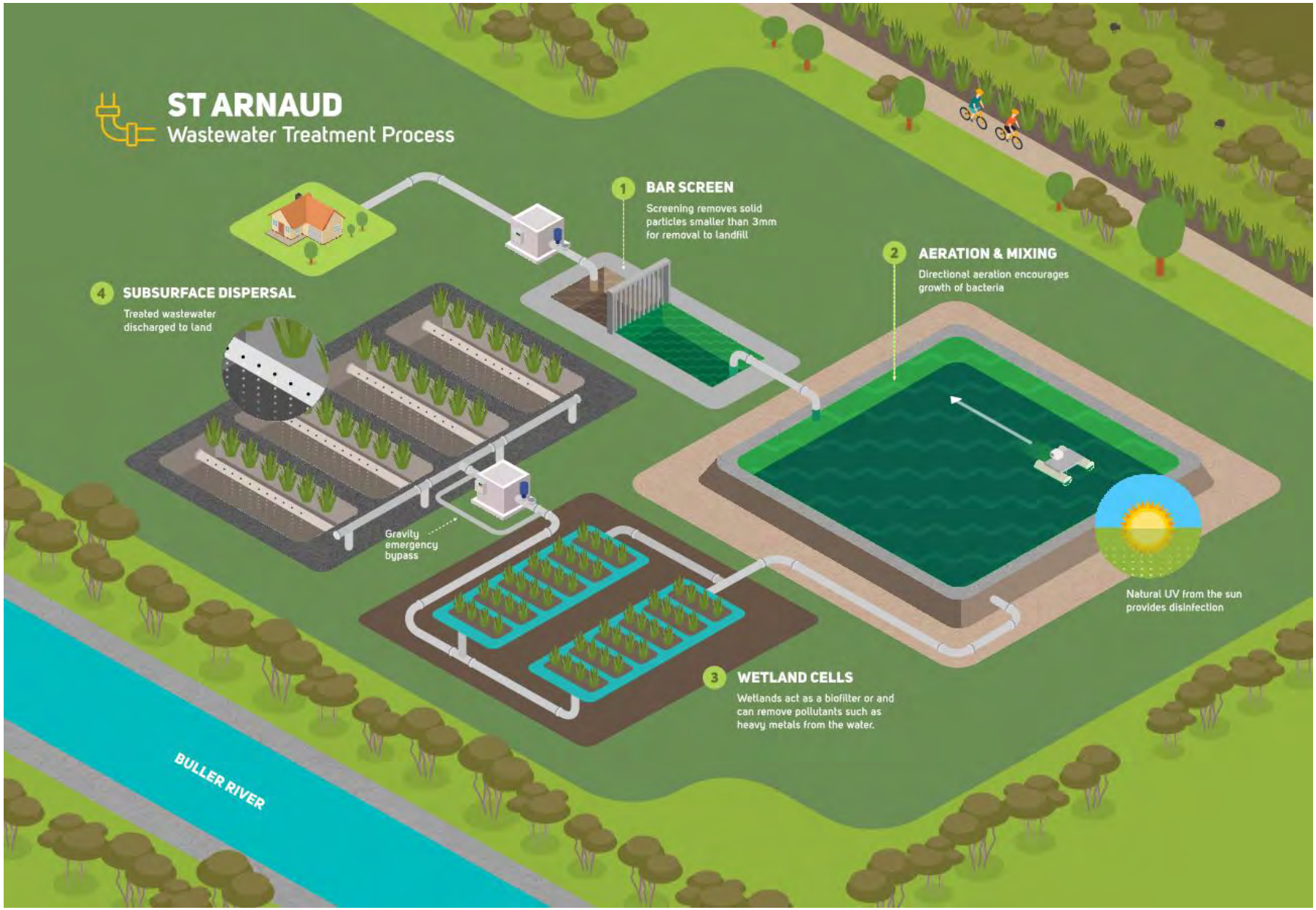
A network schematic has been produced for the following wastewater networks:

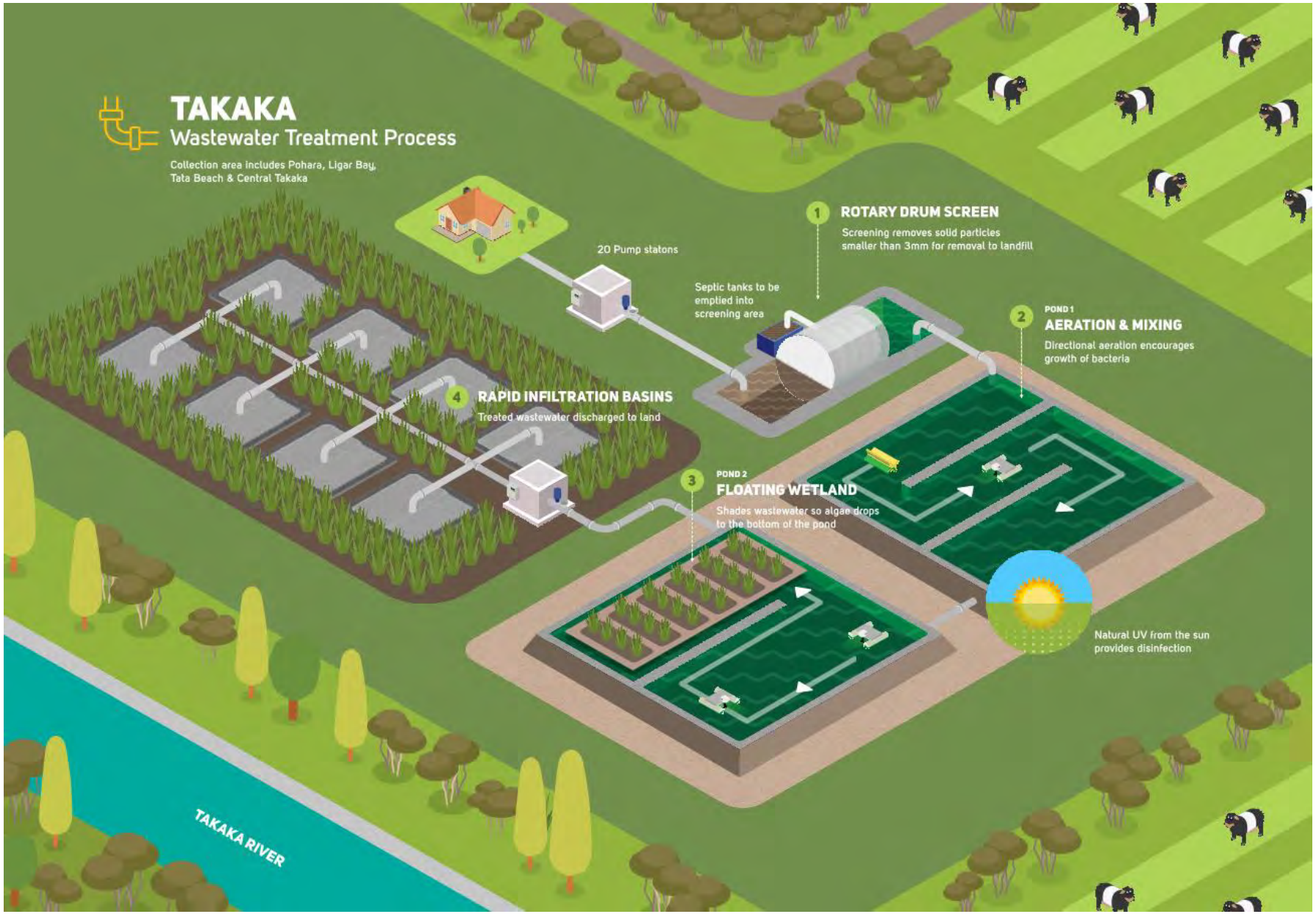
- Collingwood
- Motueka (includes Kaiteriteri and Riwaka)
- Murchison
- St Arnaud
- Tākaka (includes Pōhara, Ligar Bay and Tata Beach)
- Tapawera
- Waimea (includes Richmond, Brightwater and Wakefield)

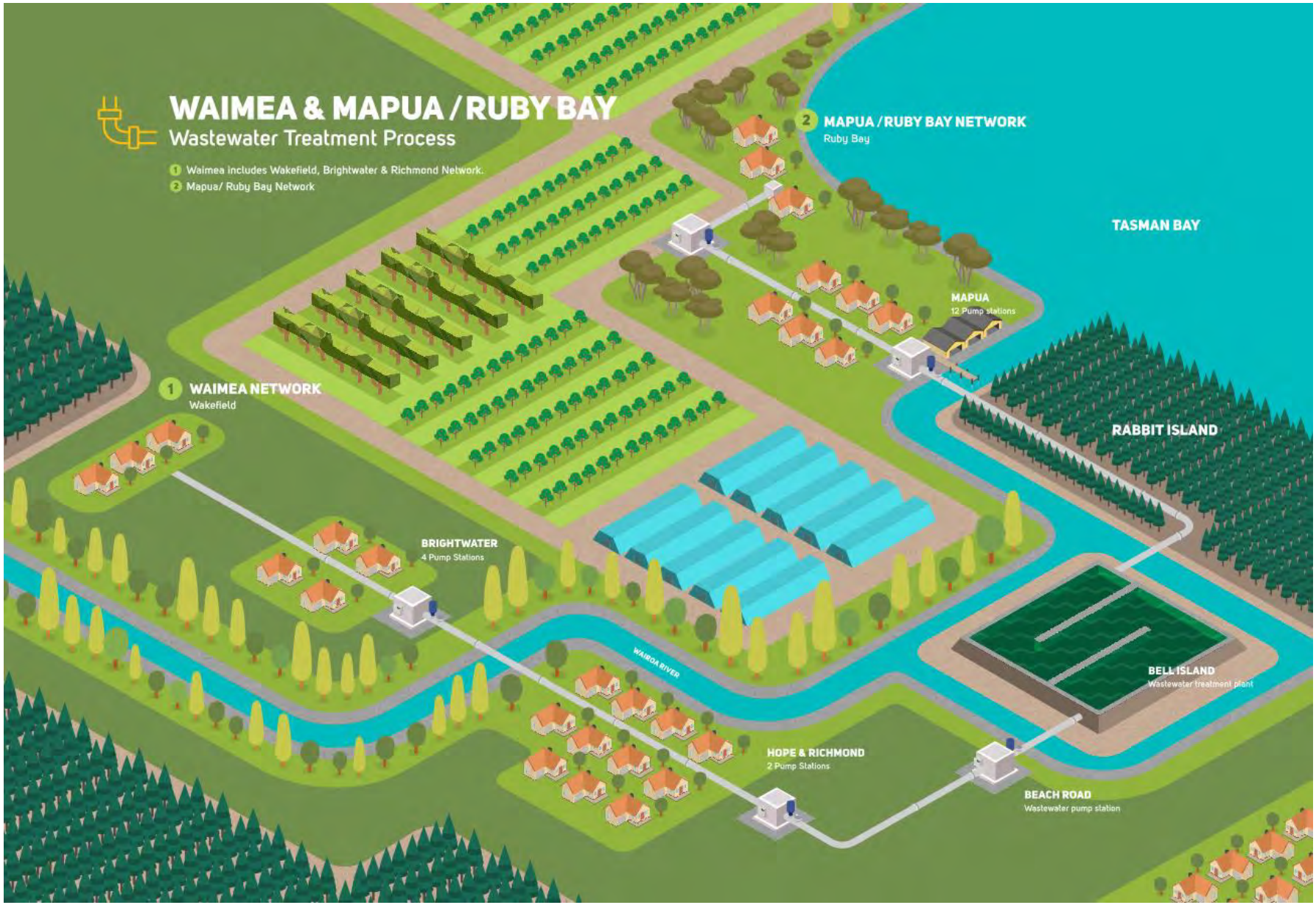

COLLINGWOOD
Wastewater Treatment Process
3 Pump stations
1 ROTARY DRUM SCREEN
Screening removes solid particles smaller than 3mm for removal to landfill
2 AERATION & MIXING
Directional aeration encourages growth of bacteria
Natural UV from the sun provides disinfection
5 UV DISINFECTION
UV is an effective disinfectant
3 WETLAND CELLS
Wetlands act as a biofilter or and can remove pollutants such as heavy metals from the water.
DIFFUSER OUTLET PIPE
Burton Ale Creek


MOTUEKA
Wastewater Treatment Process
Wastewater collection area includes Kaiteriteri, Motueka & Riwaka
20 Pump Stations
1 ODOUR CONTROL
Biological Scrubber & Activated Carbon Filter
2 STEP SCREEN
Screening removes solid particles smaller than 3mm for removal to landfill
POND 1
3 AERATION & MIXING
Directional aeration encourages growth of bacteria
TASMAN BAY
6 MEMBRANE FILTRATION
Wastewater is pumped through a physial barrier which separates contaminants (Bacteria, Viruses, Algae) from the water
Contaminants are returned to pond 2 for further treatment
Natural UV from the sun provides disinfection
Treated wastewater discharged to coastel water through a submerged diffuser
POND 2
4 BRUSH AERATORS
Brush aerators enhance nutrient removal
Screened wastewater recirculated via sprinklers
5 ROTARY DRUM SCREEN
Screening removes solid particles smaller than 1mm for removal to landfill
Rock bunds force wastewater to take a long path to maximise treatment time
Rock filters & sprinklers enhance nutrient removal
7 DIFFUSER PIPE
Motueka River Mouth


MURCHISON
Wastewater Treatment Process
2 Pump Stations
1 STEP SCREEN
Screening removes solid particles smaller than 3mm for removal to landfill
2 AERATION & MIXING
Directional aeration encourages growth of bacteria
3 BUBBLE AERATION
Bubble aeration encourages growth of bacteria
MATAKITAKI RIVER
5 SUBSOIL DISPOSAL BED
Treated wastewater discharged to land
Dried sludge storage basin
Natural UV from the sun provides disinfection
4 GRAVEL FILTER
through which wastewater flows and is filtered.
BULLER RIVER


ST ARNAUD
Wastewater Treatment Process
1 BAR SCREEN
Screening removes solid particles smaller than 3mm for removal to landfill
2 AERATION & MIXING
Directional aeration encourages growth of bacteria
3 WETLAND CELLS
Wetlands act as a biofilter or and can remove pollutants such as heavy metals from the water.
4 SUBSURFACE DISPERSAL
Treated wastewater discharged to land
Gravity emergency bypass
Natural UV from the sun provides disinfection
BULLER RIVER


TAKAKA
Wastewater Treatment Process
Collection area includes Pohara, Ligar Bay, Tata Beach & Central Takaka
20 Pump statons
1 ROTARY DRUM SCREEN
Screening removes solid particles smaller than 3mm for removal to landfill
Septic tanks to be emptied into screening area
POND 1
2 AERATION & MIXING
Directional aeration encourages growth of bacteria
4 RAPID INFILTRATION BASINS
Treated wastewater discharged to land
POND 2
3 FLOATING WETLAND
Shades wastewater so algae drops to the bottom of the pond
Natural UV from the sun provides disinfection
TAKAKA RIVER


WAIMEA & MAPUA / RUBY BAY
Wastewater Treatment Process
1 Waimea includes Wakefield, Brightwater & Richmond Network.
2 Mapua/ Ruby Bay Network
2 MAPUA / RUBY BAY NETWORK
Ruby Bay
TASMAN BAY
MAPUA
12 Pump Stations
1 WAIMEA NETWORK
Wakefield
RABBIT ISLAND
BRIGHTWATER
4 Pump Stations
WAIROA RIVER
BELL ISLAND
Wastewater treatment plant
HOPE & RICHMOND
2 Pump Stations
BEACH ROAD
Wastewater pump station

Appendix F FIS Statement

Wastewater

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											
0	General rates, uniform annual general charges, rates penalties	0	0	0	0	0	0	0	0	0	0	0
10,599	Targeted rates	11,243	12,936	15,286	16,473	18,214	20,070	21,611	23,108	25,188	28,284	32,377
0	Subsidies and grants for operating purposes	0	0	0	0	0	0	0	0	0	0	0
270	Fees and charges	264	291	313	321	330	338	347	356	364	373	382
0	Internal charges and overheads recovered	0	0	0	0	0	0	0	0	0	0	0
2,973	Local authorities fuel tax, fines, infringement fees, and other receipts	4,123	2,536	2,755	2,847	3,065	3,255	3,399	3,679	4,172	4,317	4,654
13,842	**Total operating funding**	**15,630**	**15,763**	**18,354**	**19,641**	**21,609**	**23,663**	**25,357**	**27,143**	**29,724**	**32,974**	**37,413**
	APPLICATIONS OF OPERATING FUNDING											
9,683	Payments to staff and suppliers	8,950	7,398	8,387	8,718	9,365	9,849	10,267	11,038	11,961	12,553	13,504
1,103	Finance costs	1,238	1,506	1,763	1,781	2,168	2,319	2,566	2,798	2,999	4,342	6,416
931	Internal charges and overheads applied	1,069	1,112	1,112	1,072	932	1,178	1,625	1,984	2,471	3,311	4,279
0	Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
11,717	**Total applications of operating funding**	**11,257**	**10,016**	**11,262**	**11,571**	**12,465**	**13,346**	**14,458**	**15,820**	**17,431**	**20,206**	**24,199**
2,125	**Surplus/(deficit) of operating funding**	**4,373**	**5,747**	**7,092**	**8,070**	**9,144**	**10,317**	**10,899**	**11,323**	**12,293**	**12,768**	**13,214**
	SOURCES OF CAPITAL FUNDING											
46	Subsidies and grants for capital expenditure	316	0	0	0	0	0	0	0	0	0	0
3,504	Development and financial contributions	3,110	5,202	5,202	5,202	5,431	5,431	5,431	5,431	5,423	5,423	6,927
2,116	Increase (decrease) in debt	3,736	7,875	(1,137)	2,279	2,299	7,348	4,781	3,683	23,801	44,207	54,074
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
5,666	**Total sources of capital funding**	**7,162**	**13,077**	**4,065**	**7,481**	**7,730**	**12,779**	**10,212**	**9,114**	**29,224**	**49,630**	**61,001**
	APPLICATIONS OF CAPITAL FUNDING											
	Capital expenditure											
889	- to meet additional demand	4,758	90	275	563	575	0	0	0	0	0	131
1,591	- to improve the level of service	4,783	13,734	6,869	9,661	17,495	27,892	24,129	18,085	25,884	22,217	30,013
5,611	- to replace existing assets	938	1,844	1,868	3,511	865	1,131	1,194	5,791	27,185	56,329	57,396
(300)	Increase (decrease) in reserves	1,056	3,156	2,145	1,816	(2,061)	(5,927)	(4,212)	(3,439)	(11,552)	(16,148)	(13,325)
0	Increase (decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
7,791	**Total applications of capital funding**	**11,535**	**18,824**	**11,157**	**15,551**	**16,874**	**23,096**	**21,111**	**20,437**	**41,517**	**62,398**	**74,215**
(2,125)	**Surplus/(deficit) of capital funding**	**(4,373)**	**(5,747)**	**(7,092)**	**(8,070)**	**(9,144)**	**(10,317)**	**(10,899)**	**(11,323)**	**(12,293)**	**(12,768)**	**(13,214)**
0	**Funding balance**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**